ASSUN

DRIVING THE FUTURE

TOTAL SOLUTION for Precision
DC Drive System 2025

Assun Motor is an innovative manufacturer for Advanced DC Drive Systems. Products including DC Coreless Brushed Motor, DC Slot-less Brushless Motor, Planetary Gearbox, Right angle planetary gearbox，Screw planetary gearbox，Mini harmonic gearbox，Built-in servo drive integrated motor and Controller, Servo actuator，Encoder, and Brake. With state-of-the-art technologies and dedicated engineering spirits, the high precision,reliability and efficiency DC drive systems by ASSUN are perfect for performance critical applications.

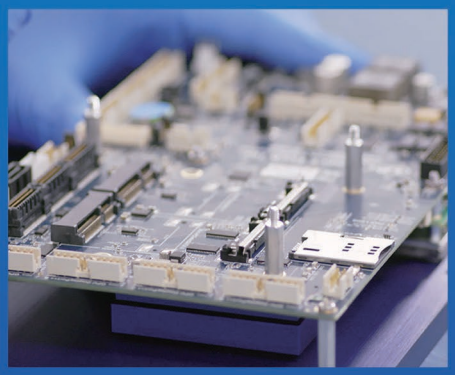
With the high automation manufacturing base in Shenzhen, sales offices in China, Assun Motor is able to provide high-quality sales, customization, and after-sales services to various industries, fields, and systems.

VISION

To provide cutting-edge DC motor drive solutions and redefine possibilities for applications across industries.

MISSION

Drive the future with precision in motion.



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BUSINESS INTRODUCTION

Assun Motor provide total solutions to Precision DC Drive. Started from the basic driving components—motor and gearbox, Assun has developed more enriched product line and now offers systematic DC drive products for motion control industry.

Motors by Assun include DC Coreless Brushed Motor, DC Slot-less Brushless Motor, electronics-integrated Servo Motor and Servo actuator， Special Coreless and Slot-less winding structure enabled the motors to perform much better in every technical aspect. Planetary Gearboxes are made with most advanced production technologies to ensure minor backlash and highest efficiency. Incremental and Absolute Encoders are made to provide reliable and precise feedback information. Servo Controllers by Assun provide bus control and analogue control to choose from, and are built to provide the most precise and reliable motion control to drive systems. Brakes has been developed to complete the whole drive system as the last brick.

Assun Motor has built the online shop inside the official website for customers to shop the standard products and combinations easily. Customers can browse every product with full detail on the website and shop their sample products or combinations for testing or development purposes.
Online sales have guaranteed lead time of 12 working days. Shipping time usually within 5 working days for worldwide.

Except for the online sales which was set up mainly for standard products and samples, Assun provides further sales services with global network for vast quantity orders and customized requirements. Flexibility and fast response are the core competence of Assun. We can carry out deep customization based on customers' needs and offer the most suitable solution for specific applications. In close cooperation, we can even develop new products for the customer to satisfy their needs and enrich our product line at the same time. The highly automated and well managed factory supports our customization service perfectly with the shortest lead time possible.

TECHNICAL TERMINOLOGY

Nominal Voltage
The DC power supply voltage value based on the motor design.

No-Load Current
When there is no load applied to the motor shaft, the current value under Nominal Voltage

No-Load Speed
When there is no load applied to the motor shaft, the RPM speed value under Nominal Voltage.

Standard Testing Environment
When motor are installed horizontally to a vertical wood board by front cover screw, and environment temperature at 25°, relevant humility 30%-60%.

Thermal Resistance
The added-up value of thermal resistances of between winding and housing, and between housing and Standard Testing Environment.

Maximum Winding Temperature
The maximum temperature limit for motor winding to ensure normal motor performance and lifetime.

Rated Torque
Maximum continuous torque applicable to the motor shaft under Nominal Voltage considering the limit of Maximum Winding Temperature.

Rated Speed
The rpm speed for the motor under Nominal Voltage and load of Rated Torque.

Rated Current
The current through motor winding when operating under Nominal Voltage and load of Rated Torque.

Rated Power
The power output under rated torque and rated speed.

Starting Current
The current through motor winding when powered by Nominal Voltage and motor speed is 0 rpm.

Stall Torque
The motor torque output under Starting Current and motor speed is 0 rpm.

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DC BRUSHLESS MOTOR

Assun DC Brushless Motors are manufactured with slot-less structure to achieve highest efficiency and top-notch dynamic performance. With 4 sub-categories and different sizes, Assun BLDC product line can offer DC drive solutions to various industries with precision drive needs.

Power rating from 3 watts to 500 watts, diameter from 8mm to 65mm, temperature level include 85°c, 125°c and 155°c, Assun BLDC motors have been made to fit for all kinds of applications. Speed driver can be integrated inside motor for more application convenience.

AM-BL1632AN	AM-BL3270AN	AM-BL2248AE	AM-BL2248BF	AM-BL45100BF
AM-BL1640AN	AM-BL3660AN	AM-BL2845AE	AM-BL2453BF	AM-BD2453AN
AM-BL2032AN	AM-BL45100AN	AM-BL3260AE	AM-BL2845BF	AM-BD2845AN
AM-BL2040AN	AM-BL65110DN	AM-BL3270AE	AM-BL3260BF	AM-BD3260AN
AM-BL2051AN	AM-BL0824AE	AM-BL3660AE	AM-BL3270BF	AM-BD3270AN
AM-BL2453AN	AM-BL1640AE	AM-BL4060AE	AM-BL3675BF	AM-BD3660AN
AM-BL2845AN	AM-BL2040AE	AM-BL4080AE	AM-BL3690BF	AM-BD45100AN
AM-BL3260AN	AM-BL2051AE	AM-BL45100AE	AM-BL4060BF	
	AM-BL2453AE			

Company Name Abbreviation

AM - BL 1640 AE - 2420

Motor Type
BL - Brushless Motor
CL - Brushed Motor

Motor Dimension
16 - Diameter (mm)
40 - Length (mm)

Number of Pole Pairs
A - 1 Pole Pair
B - 2 Pole Pairs
C - 3 Pole Pairs
D - 4 Pole Pairs

Temp.Level
N - 85°C
E - 125°C
F - 155°C
H - 180°C

Nominal Voltage & No Load Speed
24 - Nominal Voltage (V)
20 - No Load Speed (x1000 RPM)

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DC BRUSHLESS MOTOR

STANDARD SERIES

Assun standard series BLDC motors were designed with slot-less winding structure for highest efficiency and smooth operation. High quality hardware and sintered NdFeB magnets were adopted to ensure the performance, reliability and lifetime.

Standard series BLDC products are equipped with hall sensor, which customers may choose to remove in customized service. These motors are widely used and are suitable for most applications with normal operation conditions.

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DC BRUSHLESS MOTOR

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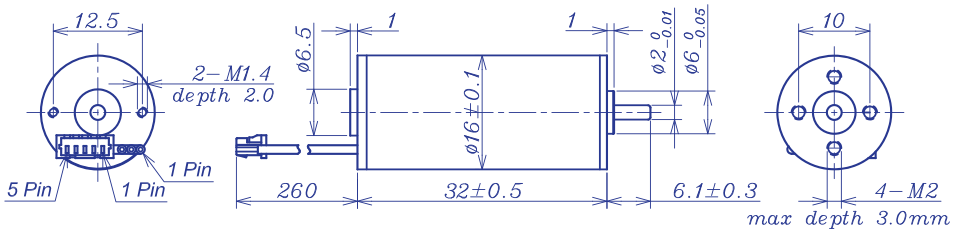
AM-BL1632AN Series



		Brushless Motor				Ball Bearings	
Motor Model		**1220**	**1214**	**1827**	**1817**	**2420**	**2416**
Nominal voltage	V	12	12	18	18	24	24
No load speed ±12%	rpm	19822	13840	26874	17253	19613	16063
No load current Max150%	mA	85	60	77	49	42	35
Recommend limit for continuous operating — Max cont. torque	mN.m	3.0	3.2	2.2	3.1	2.8	3.1
Rated Speed	rpm	16809	10528	24516	14233	16854	13135
Rated Current	mA	600	450	420	360	280	250
Rated Power	W	5.26	3.56	5.63	4.61	4.91	4.22
Starting current	mA	3947	1881	4787	2050	1990	1371
Stall Torque	mN.m	23	16	31	20	23	20
Maximum power output	W	11.8	5.6	21.5	9.2	11.9	8.2
Maximum Efficiency	%	73	67	76	71	73	71
Terminal resistance ±12%	Ω	3.04	6.38	3.76	8.78	12.06	17.5
Inductance (1KHz)	mH	0	0	0	0	0	0
Mechanical time constant	ms	2.73	2.79	2.76	2.65	2.65	2.58
Moment of inertia	gcm^2	0.3	0.3	0.3	0.3	0.3	0.3
Torque constant	mN.m/A	5.78	8.28	6.40	9.96	11.69	14.27
Speed constant	rpm/V	1652	1153	1493	958	843.5	820.9
Speed/torque gradient	rpm/mN.m	868.6	888.7	877.7	844.7	254.0	232.0
Weight	g	32.6	32.6	32.6	32.6	32.6	32.6

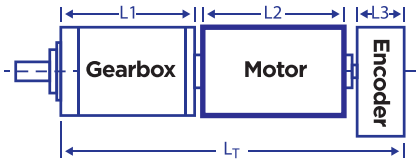
ADDITIONAL INFORMATION

Motor thermal resistance:	22.5 K/W	Motor thermal time constant:	407 S
Axial (dynamic):	1.5 N	Radial (5mm from mounting face):	6.0 N
Press-fit force (static):	40 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<2.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 26#)		Total Length: L_T=L1+L2+L3				
Cable 1:Yellow	Winding A	L1:16GP	L1:19GP	L2:BL16	L3:EN16S	L3:EN16T
Cable 2:Red	Winding B	15.9	18.8	32.0	10.7	12.0
Cable 3: Blue	Winding C	19.6	23.6			
Plug definition (AWG 28#) Molex:51021-0500		23.3	28.4			
		27	33.2			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3 :Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5 :Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL1632AN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-16GP
AM-19GP
AM-22GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage. At elevated ambient temperatures, load current must be reduced.

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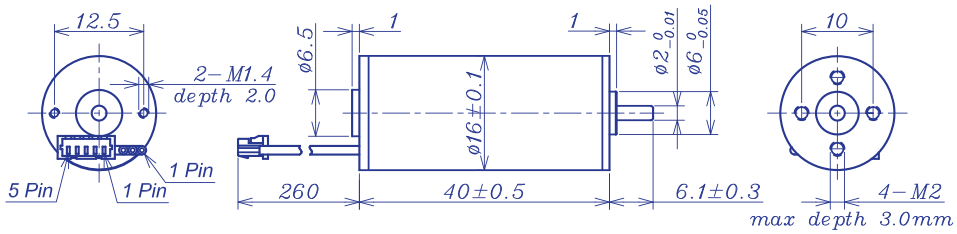


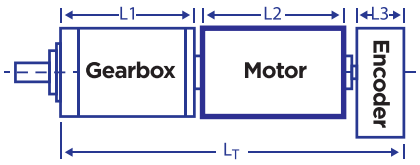
Motor Model			Brushless Motor 1234	1221	1216	1836	Ball Bearings 1821	1816	2419	2413
Nominal voltage		V	12	12	12	18	18	18	24	24
No load speed ±12%		rpm	34200	21000	16400	36300	20900	16160	19400	12600
No load current Max150%		mA	200	120	80	150	75	60	50	40
Recommend limit for continuous operating	Max cont. torque	mN.m	4.6	5.8	6.3	3.5	5.7	6.2	6.2	6.4
	Rated Speed	rpm	31782	17888	13242	34513	17874	13027	16136	9133
	Rated Current	mA	1600	1200	1000	900	780	650	580	400
	Rated Power	W	15.5	10.9	8.8	12.7	10.7	8.4	10.4	6.1
Starting current		mA	20000	7407	4858	15385	4945	3103	3200	1348
Stall torque		mN.m	66	39	33	71	39	32	37	23
Maximum power output		W	58.8	21.5	14.1	67.9	21.6	13.4	18.6	7.6
Maximum Efficiency		%	81	76	76	81	77	74	77	69
Terminal resistance ±12%		Ω	0.6	1.62	2.47	1.17	3.64	5.8	7.5	17.8
Inductance (1KH$_Z$)		mH	0.032	0.1	0.16	0.08	0.24	0.38	0.49	1.05
Mechanical time constant		ms	2.2	2.3	2.1	2.2	2.3	2.2	2.3	2.3
Moment of inertia		gcm^2	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
Torque constant		mN.m/A	3.3	5.4	6.9	4.7	8.1	10.4	11.6	17.6
Speed constant		rpm/V	2879	1779	1390	2037	1179	915	821	541
Speed/torque gradient		rpm/mN.m	520.7	536.8	499.4	508.2	529.8	509.0	529.6	545.7
Weight		g	42.2	42.1	41.8	42.1	42.2	41.8	41.9	41.8

ADDITIONAL INFORMATION

Motor thermal resistance:	17.9K/W	Motor thermal time constant:	439S
Axial (dynamic):	1.5 N	Radial (5mm from mounting face):	6.0 N
Press-fit force (static):	40 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<2.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 26#)		Total Length: L_T=L1+L2+L3				
Cable 1:Yellow	Winding A	L1:16GP	L1:19GP	L2:BL16	L3:EN16S	L3:EN16T
Cable 2:Red	Winding B	15.9	18.8	40.0	10.7	12.0
Cable 3: Blue	Winding C	19.6	23.6			
Plug definition (AWG 28#) Molex:51021-0500		23.3	28.4			
		27.0	33.2			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3 :Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5 :Blue	Hall C					

AM-BL1640AN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-16GP
AM-19GP
AM-22GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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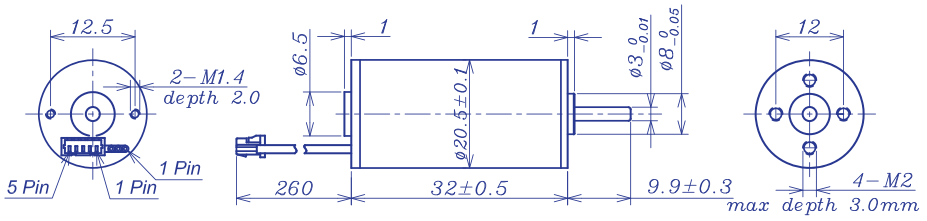


		Brushless Motor			Ball Bearings		
Motor Model		**1225**	**1220**	**1822**	**1819**	**2419**	**2415**
Nominal voltage	V	12	12	18	18	24	24
No load speed ±12%	rpm	24525	19908	22265	18634	19339	14850
No load current Max150%	mA	200	150	120	100	90	70
Recommend limit for continuous operating – Max cont. torque	mN.m	2.3	4.2	2.9	4.5	3.6	4.6
Rated Speed	rpm	23581	18096	21080	16679	17806	12731
Rated Current	mA	700	900	500	600	400	380
Rated Power	W	5.7	8.0	6.4	7.9	6.7	6.2
Starting current	mA	13187	8392	7258	4865	4000	2243
Stall torque	mN.m	60	47	54	43	45	32
Maximum power output	W	38.4	24.3	31.6	21.0	22.9	12.6
Maximum Efficiency	%	77	75	76	73	72	68
Terminal resistance ±12%	Ω	0.91	1.43	2.48	3.7	6.0	10.7
Inductance (1KHz)	mH	0.07	0.11	0.19	0.29	0.47	0.86
Mechanical time constant	ms	3.0	3.1	3.0	3.1	3.1	3.3
Moment of inertia	gcm^2	0.69	0.69	0.69	0.69	0.69	0.69
Torque constant	mN.m/A	4.6	5.7	7.6	9.0	11.6	15.0
Speed constant	rpm/V	2075	1689	1258	1057	824	639
Speed/torque gradient	rpm/mN.m	410.4	427.3	410.8	432.9	427.0	457.1
Weigh	g	52	52	52	52	52	52

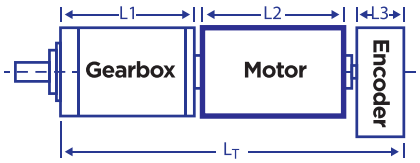
ADDITIONAL INFORMATION

Motor thermal resistance:	22.8K/W	Motor thermal time constant:	552S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 24#)		Total Length: L_T=L1+L2+L3				
Cable 1:Yellow	Winding A	**L1:19GP**	**L1:24GP**	**L2:BL20**	**L3:EN16S**	**L3:EN16T**
Cable 2:Red	Winding B	18.8	24	32.0	10.7	12.0
Cable 3: Blue	Winding C	23.6	34.3			
Plug definition (AWG 28#) Molex:51021-0500		28.4	42.8			
		33.2	51.3			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3 :Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5 :Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2032AN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-22GP
AM-24GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage. At elevated ambient temperatures, load current must be reduced.

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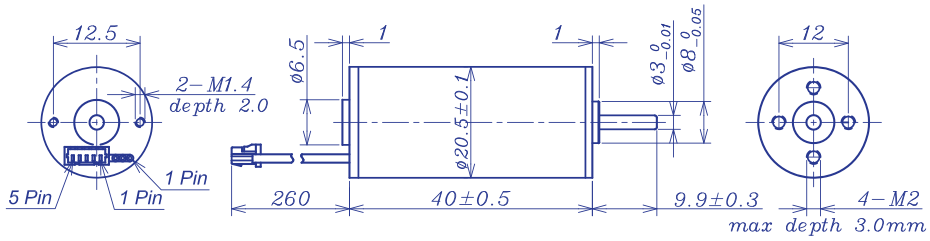


Motor Model			Brushless Motor 1226	1220	1216	Ball Bearings 1820	1817	2420	2417
Nominal voltage		V	12	12	12	18	18	24	24
No load speed ±12%		rpm	26000	20360	16260	19500	17350	20000	16600
No load current Max 150%		mA	350	190	180	150	140	110	95
Recommend limit for continuous operating	Max cont. torque	mN.m	5.4	7.3	8.5	7.4	6.4	6.7	7.5
	Rated Speed	rpm	24682	18605	14445	17760	15721	18454	14905
	Rated Current	mA	1600	1500	1400	1000	800	700	650
	Rated Power	W	14.0	14.2	12.8	13.7	10.6	12.9	11.8
Starting current		mA	25000	15385	11111	9677	7171	7742	5530
Stall torque		mN.m	107	84	76	83	68	86	74
Maximum power output		W	72.9	45.0	32.3	42.2	31.0	45.1	32.0
Maximum Efficiency		%	78	79	76	77	74	78	76
Terminal resistance ±12%		Ω	0.48	0.78	1.08	1.86	2.51	3.1	4.34
Inductance (1KHz)		mH	0.034	0.061	0.097	0.17	0.22	0.29	0.42
Mechanical time constant		ms	2.9	2.9	2.5	2.8	3.0	2.7	2.7
Moment of inertia		gcm^2	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Torque constant		mN.m/A	4.6	5.6	6.9	8.7	9.7	11.3	13.6
Speed constant		rpm/V	2197	1718	1377	1100	983	845	704
Speed/torque gradient		rpm/mN.m	242.7	241.1	214.5	235.8	254.0	232.0	225.1
Weight		g	65.9	66.2	66.6	65.7	65.4	65.1	65.9

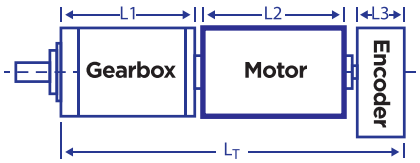
ADDITIONAL INFORMATION

Motor thermal resistance:	15 K/W	Motor thermal time constant:	673 S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 24#)		Total Length: L_T=L1+L2+L3				
Cable 1:Yellow	Winding A	L1:19GP	L1:24GP	L2:BL20	L3:EN16S	L3:EN16T
Cable 2:Red	Winding B	18.8	24	40.0	10.7	12.0
Cable 3: Blue	Winding C	23.6	34.3			
Plug definition (AWG 28#) Molex:51021-0500		28.4	42.8			
		33.2	51.3			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3 :Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5 :Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2040AN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-22GP
AM-24GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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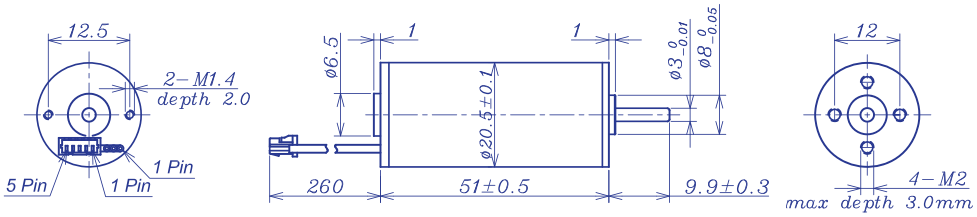
AM-BL2051AN Series



		Brushless Motor			Ball Bearings		
Motor Model		**1221**	**1216**	**2426**	**2421**	**3619**	**3624**
Nominal voltage	V	12	12	24	24	36	36
No load speed ±12%	rpm	20604	15670	25800	21400	19297	24781
No load current Max 150%	mA	250	185	155	126	65	90
Recommend limit for continuous operating — Max cont. torque	mN.m	6.9	9.5	3.0	6.6	9.8	5.6
Rated Speed	rpm	19520	14156	25336	20309	17917	23899
Rated Current	mA	1500	1500	500	750	620	500
Rated Power	W	14.1	14.1	8.1	14.1	18.4	14.1
Starting current	mA	24000	13793	19355	12371	7826	11613
Stall torque	mN.m	131	98	169	130	137	159
Maximum power output	W	70.5	40.3	114.3	72.7	69.3	102.9
Maximum Efficiency	%	81	78	83	81	83	83
Terminal resistance ±12%	Ω	0.5	0.87	1.24	1.94	4.6	3.1
Inductance (1KH$_Z$)	mH	0.04	0.07	0.1	0.16	0.47	0.29
Mechanical time constant	ms	2.4	2.4	2.3	2.5	2.1	2.3
Moment of inertia	gcm²	1.43	1.43	1.43	1.43	1.43	1.43
Torque constant	mN.m/A	5.5	7.2	8.8	10.6	17.7	13.8
Speed constant	rpm/V	1735	1324	1084	901	541	694
Speed/torque gradient	rpm/mN.m	157.6	159.6	152.5	164.9	140.7	156.2
Weight	g	87	87	87	87	87	87

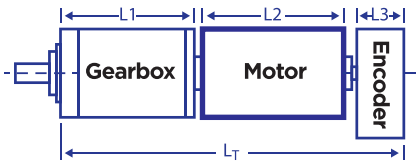
ADDITIONAL INFORMATION

Motor thermal resistance:	15 K/W	Motor thermal time constant:	720 S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (＜4.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 24#)		Total Length: L_T=L1+L2+L3				
Cable 1:Yellow	Winding A	**L1:19GP**	**L1:24GP**	**L2:BL20**	**L3:EN16S**	**L3:EN16T**
Cable 2:Red	Winding B	18.8	24	51.0	10.7	12.0
Cable 3: Blue	Winding C	23.6	34.3			
Plug definition (AWG 28#) Molex:51021-0500		28.4	42.8			
		33.2	51.3			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3 :Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5 :Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2051AN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-22GP
AM-24GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage. At elevated ambient temperatures, load current must be reduced.

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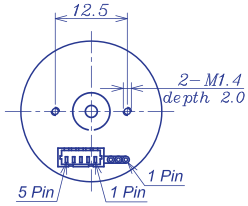
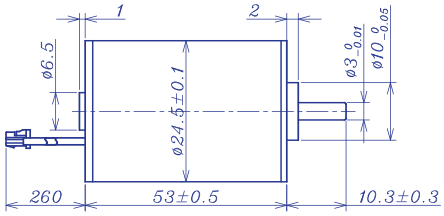
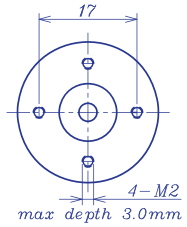






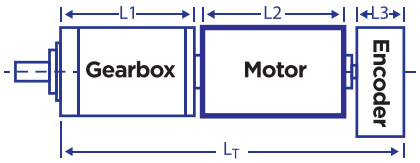
		Brushless Motor		Ball Bearings			
Motor Model		**1213**	**1210**	**1829**	**1813**	**2414**	**2410**
Nominal voltage	V	12	12	18	18	24	24
No load speed ±12%	rpm	13010	10460	28715	12920	13625	9770
No load current Max 150%	mA	180	140	420	115	100	75
Recommend limit for continuous operating – Max cont. torque	mN.m	21.1	22.3	9.4	22.2	20.0	23.8
Rated Speed	rpm	11582	8937.3	27928	11187	12320	8739
Rated Current	mA	2600	2200	2000	1800	1300	1100
Rated Power	W	25.6	20.9	27.5	26.0	25.8	20.9
Starting current	mA	22222	14286	58065	21676	12632	7273
Stall torque	mN.m	193	153	343	166	209	167
Maximum power output	W	65.6	40.2	257.5	56.0	74.6	42.7
Maximum Efficiency	%	83	81	84	82	83	81
Terminal resistance ±12%	Ω	0.54	0.84	0.29	1.42	1.9	3.3
Inductance (1KHz)	mH	0.055	0.092	0.032	0.14	0.14	0.45
Mechanical time constant	ms	2.4	2.5	3.0	2.8	2.4	2.1
Moment of inertia	gcm^2	3.45	3.45	3.45	3.45	3.45	3.45
Torque constant	mN.m/A	8.7	10.8	5.9	13.2	16.7	23.2
Speed constant	rpm/V	1093	880	1607	724	572	411
Speed/torque gradient	rpm/mN.m	67.6	68.2	83.8	78.0	65.2	58.5
Weigh	g	126.7	126.8	126.7	125.7	126.3	127.5

ADDITIONAL INFORMATION

Motor thermal resistance:	10.5 K/W	Motor thermal time constant:	768 S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 22#)	Total Length: L_T=L1+L2+L3				
Cable 1: Yellow Winding A	L1:24GP	L1:28GP	L2:BL24	L3:EN16S	L3:EN16T
Cable 2: Red Winding B	24	26.1	53.0	10.7	12.0
Cable 3: Blue Winding C	34.3	33.3			
Plug definition (AWG 28#) Molex: 51021-0500	42.8	40.5			
	51.3	47.7			
Plug 1: Brown Hall 3~16V					
Plug 2: Black Hall GND	Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.				
Plug 3: Yellow Hall A					
Plug 4: Red Hall B					
Plug 5: Blue Hall C					

AM-BL2453AN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-24GP
AM-28GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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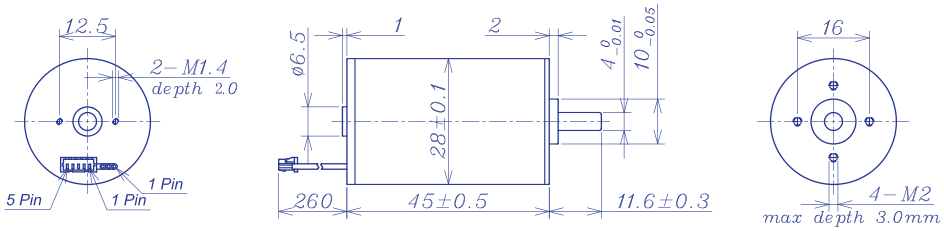


		Brushless Motor		Ball Bearings			
Motor Model		**1215**	**1210**	**1813**	**1810**	**2412**	**2409**
Nominal voltage	V	12	12	18	18	24	24
No load speed ±12%	rpm	14800	10000	12520	9680	11680	9080
No load current Max 150%	mA	300	190	170	120	120	85
Recommend limit for continuous operating – Max cont. torque	mN.m	28.4	34.2	30.4	33.1	28.8	35.4
Rated Speed	rpm	13374	8455	11222	8282	10401	7593
Rated Current	mA	4000	3200	2400	2000	1600	1500
Rated Power	W	39.8	30.2	35.7	28.7	31.4	28.1
Starting current	mA	60000	19672	21687	13139	13636	8727
Stall torque	mN.m	295	221	293	229	263	216
Maximum power output	W	114.3	57.9	96.1	58.0	80.4	51.3
Maximum Efficiency	%	83	81	83	82	82	81
Terminal resistance ±12%	Ω	0.31	0.61	0.83	1.37	1.76	2.75
Inductance (1KHz)	mH	0.034	0.086	0.126	0.22	0.27	0.46
Mechanical time constant	ms	3.3	2.9	2.8	2.7	2.9	2.7
Moment of inertia	gcm^2	6.19	6.19	6.19	6.19	6.19	6.19
Torque constant	mN.m/A	7.7	11.3	13.6	17.6	19.4	25.0
Speed constant	rpm/V	1243	841	701	543	491	382
Speed/torque gradient	rpm/mN.m	50.2	45.2	42.7	42.3	44.4	42.0
Weight	g	138.8	138.7	139.1	140.1	138.4	139.2

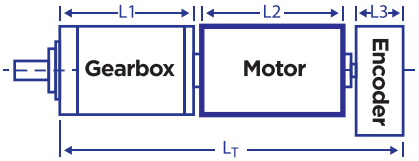
ADDITIONAL INFORMATION

Motor thermal resistance:	10.2 K/W	Motor thermal time constant:	822 S
Axial (dynamic):	4.0 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	110 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 22#)	Total Length: L_T=L1+L2+L3				
Cable 1:Yellow Winding A	L1:28GP	L1:32GP	L2:BL28	L3:EN16S	L3:EN16T
Cable 2:Red Winding B	26.1	27.4	45.0	10.7	12.0
Cable 3: Blue Winding C	33.3	35.9			
Plug definition (AWG 28#) Molex:51021-0500	40.5	44.4			
	47.7	52.9			
Plug 1: Brown Hall 3~16V					
Plug 2: Black Hall GND					
Plug 3 :Yellow Hall A					
Plug 4: Red Hall B					
Plug 5 :Blue Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2845AN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-28GP
AM-32GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage. At elevated ambient temperatures, load current must be reduced.

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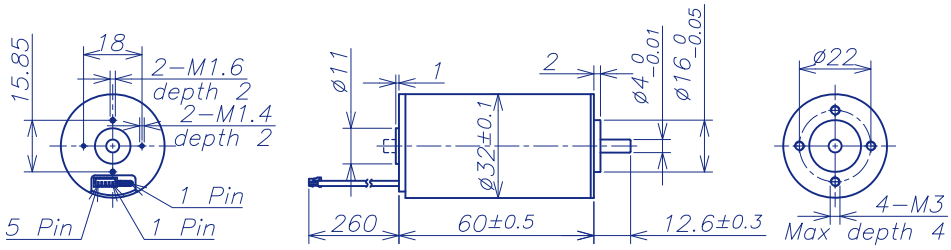


Motor Model		Brushless Motor 1212	1208	Ball Bearings 2413	2409	3613	3610
Nominal voltage	V	12	12	24	24	36	36
No load speed ±12%	rpm	12191	8127	12832	9752	12611	10449
No load current Max 150%	mA	355	192	190	160	125	94
Recommend limit for continuous operating: Max cont. torque	mN.m	31.3	42.1	28.6	34.4	29.1	36.2
Rated Speed	rpm	11507	7245	12243	9305	12001	9690
Rated Current	mA	3700	3200	1800	1600	1200	1200
Rated Power	W	37.7	32.0	36.7	32.5	36.6	36.7
Starting current	mA	60000	27907	35294	120168	22360	15319
Stall torque	mN.m	557	388	624	468	603	498
Maximum power output	W	177.9	82.6	209.5	119.5	199.0	136.2
Maximum Efficiency	%	85	84	86	85	86	85
Terminal resistance ±12%	Ω	0.2	0.43	0.68	1.19	1.61	2.35
Inductance (1KHz)	mH						
Mechanical time constant	ms	3.0	2.9	2.9	2.9	2.9	2.9
Moment of inertia	gcm^2	13.3	13.3	13.3	13.3	13.3	13.3
Torque constant	mN.m/A	9.3	14.0	17.8	23.4	27.1	32.7
Speed constant	rpm/V	1022	682	538	409	352	292
Speed/torque gradient	rpm/mN.m	21.9	20.9	20.6	20.8	20.9	21.0
Weight	g	240	240	240	240	240	240

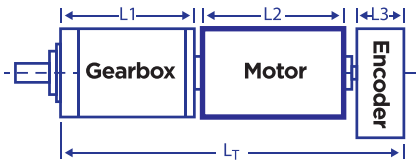
ADDITIONAL INFORMATION

Motor thermal resistance:	7.8 K/W	Motor thermal time constant:	1089 S
Axial (dynamic):	6.0 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth into flange:	4.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)		Total Length: L_T=L1+L2+L3				
Cable 1:Yellow	Winding A	L1:32GP	L1:36GP	L2:BL32	L3:EN22S	L3:EN24T
Cable 2:Red	Winding B	27.4	30.6	60.0	10.7	12.0
Cable 3: Blue	Winding C	35.9	39.6			
Plug definition (AWG 28#) Molex:51021-0500		44.4	48.6			
		52.9	57.6			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3 :Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5 :Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL3260AN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-32GP
AM-36GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage. At elevated ambient temperatures, load current must be reduced.

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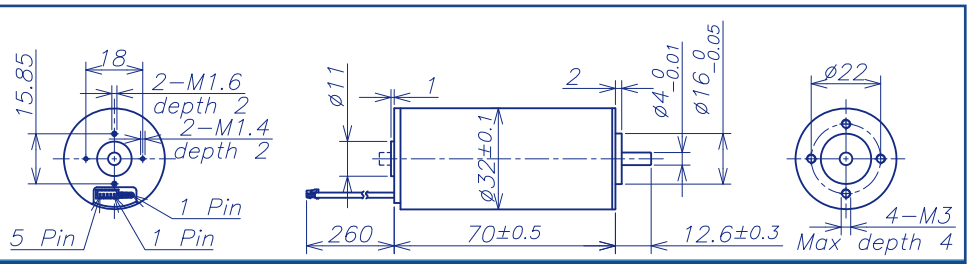


Motor Model			Brushless Motor 1210	1207	Ball Bearings 2412	2409	3611	3609
Nominal voltage		V	12	12	24	24	36	36
No load speed ±12%		rpm	9794	6529	11523	8904	10882	9182
No load current Max 150%		mA	355	192	190	127	94	80
Recommend limit for continuous operating	Max cont. torque	mN.m	40.0	52.4	35.8	47.9	44.2	49.2
	Rated Speed	rpm	9143	5721	10982	8184	10225	8465
	Rated Current	mA	3800	3200	2000	2000	1500	1400
	Rated Power	W	38.3	31.4	41.2	41.1	47.4	43.6
Starting current		mA	52174	24490	38710	23301	23377	16981
Stall torque		mN.m	602	423	762	593	733	630
Maximum power output		W	154.4	72.3	230.0	138.3	208.7	151.4
Maximum Efficiency		%	84	83	86	86	88	87
Terminal resistance ±12%		Ω	0.23	0.49	0.62	1.03	1.54	2.12
Inductance (1KH$_Z$)		mH	-	0.09	0.12	0.2	0.285	0.21
Mechanical time constant		ms	2.6	2.5	2.4	2.4	2.4	2.3
Moment of inertia		gcm^2	15.3	15.3	15.3	15.3	15.3	15.3
Torque constant		mN.m/A	11.6	17.4	19.8	25.6	31.5	37.3
Speed constant		rpm/V	822	548	482	373	303	256
Speed/torque gradient		rpm/mN.m	16.3	15.4	15.1	15.0	14.9	14.6
Weight		g	280	280	280	280	280	280

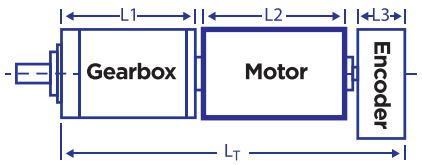
ADDITIONAL INFORMATION

Motor thermal resistance:	8.2 K/W	Motor thermal time constant:	822 S
Axial (dynamic):	6.0 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth into flange:	4.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	L1:32GP	L1:36GP	L2:BL32	L3:EN22S	L3:EN24T
Cable 2: Red	Winding B	27.4	30.6	70.0	10.7	12.0
Cable 3: Blue	Winding C	35.9	39.6			
Plug definition (AWG 28#) Molex: 51021-0500		44.4	48.6			
		52.9	57.6			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL3270AN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-32GP
AM-36GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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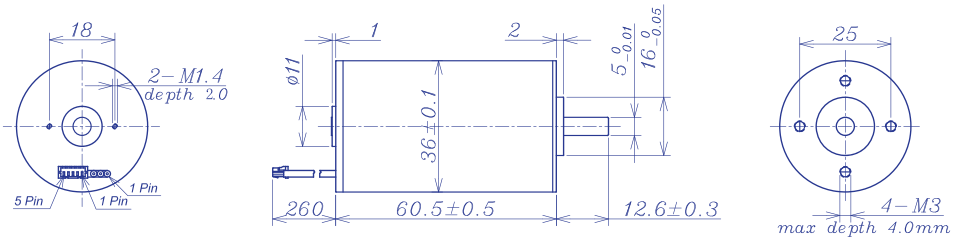


Motor Model			1211	1209	2413	2410	3612	3610
			Brushless Motor		Ball Bearings			
Nominal voltage		V	12	12	24	24	36	36
No load speed ±12%		rpm	11200	8840	12500	10200	12300	10450
No load current Max 150%		mA	400	230	220	165	120	105
Recommend limit for continuous operating	Max cont. torque	mN.m	47.6	51.2	36.1	43.2	41.2	45.7
	Rated Speed	rpm	10322	7928	11940	9489	11650	9758
	Rated Current	mA	5000	4200	2200	2100	1600	1500
	Rated Power	W	51.5	42.8	45.2	42.9	50.2	46.7
Starting current		mA	60000	38710	44444	27907	28125	21176
Stall torque		mN.m	607	496	807	620	779	690
Maximum power output		W	178.1	114.8	264.0	165.5	251.0	188.7
Maximum Efficiency		%	86	85	86	85	87	86
Terminal resistance ±12%		Ω	0.2	0.31	0.54	0.86	1.28	1.7
Inductance (1KHz)		mH	0.027	0.051	0.11	0.17	0.27	0.38
Mechanical time constant		ms	3.2	3.1	2.7	2.9	2.8	2.7
Moment of inertia		gcm^2	16.75	16.75	16.75	16.75	16.75	16.75
Torque constant		mN.m/A	10.2	12.9	18.2	22.3	27.8	32.7
Speed constant		rpm/V	938	741	523	428	343	292
Speed/torque gradient		rpm/mN.m	18.4	17.8	15.5	16.5	15.8	15.2
Weight		g	325.8	325.9	326.8	326.9	326.5	327.5

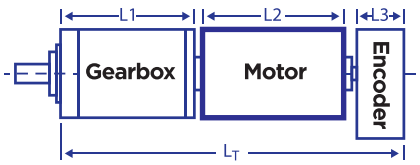
ADDITIONAL INFORMATION

Motor thermal resistance:	6.9 K/W	Motor thermal time constant:	1188S
Axial (dynamic):	6.0 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth into flange:	4.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	5 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	L1:36GP	L1:40GP	L2:BL36	L3:EN22S	L3:EN36T
Cable 2: Red	Winding B	39.6	46.8	60.5	10.7	12.0
Cable 3: Blue	Winding C	48.6	58.3			
Plug definition (AWG 28#) Molex: 51021-0500		57.6	69.8			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL3660AN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-36GP
AM-40GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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DC BRUSHLESS MOTOR

STANDARD SERIES

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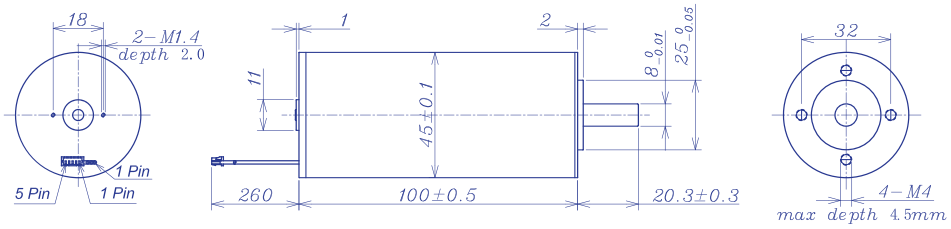
AM-BL45100AN Series



		Brushless Motor		Ball Bearings			
Motor Model		2411	2406	3610	3606	4810	4806
Nominal voltage	V	24	24	36	36	48	48
No load speed ±12%	rpm	11240	5900	10340	6380	10360	6450
No load current Max 150%	mA	600	320	390	200	370	190
Recommend limit for continuous operating – Max cont. torque	mN.m	69.0	161.5	69.9	123.4	49.8	120.8
Recommend limit for continuous operating – Rated Speed	rpm	10984	5466	10127	6032	10215	6108
Recommend limit for continuous operating – Rated Current	mA	4000	4500	2500	2500	1500	1900
Recommend limit for continuous operating – Rated Power	W	79.4	92.4	74.1	77.9	53.2	77.3
Starting current	mA	150000	57143	102857	42353	81356	32432
Stall torque	mN.m	3034	2195	3394	2261	3567	2278
Maximum power output	W	892.8	339.0	918.7	377.6	967.4	384.6
Maximum Efficiency	%	88	86	88	87	87	85
Terminal resistance ±12%	Ω	0.16	0.42	0.35	0.85	0.59	1.48
Inductance (1KHz)	mH	0.035	0.14	0.11	0.31	0.21	0.55
Mechanical time constant	ms	4.3	3.1	3.5	3.2	3.3	3.3
Moment of inertia	gcm^2	109.8	109.8	109.8	109.8	109.8	109.8
Torque constant	mN.m/A	20.3	38.6	33.1	53.6	44.0	70.6
Speed constant	rpm/V	470	247	288	178	217	135
Speed/torque gradient	rpm/mN.m	3.7	2.7	3.0	2.8	2.9	2.8
Weight	g	846.5	850.2	852.5	841.5	847.5	840.3

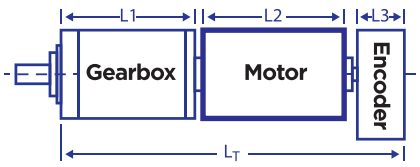
ADDITIONAL INFORMATION

Motor thermal resistance:	3.6 K/W	Motor thermal time constant:	1286 S
Axial (dynamic):	8.0 N	Radial (5mm from mounting face):	180.0 N
Press-fit force (static):	170 N	Max allowable screw depth into flange:	4.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<8.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	8 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 18#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	L1:45GP	L1:52GP	L2:BL45	L3:EN22S	L3:EN36T
Cable 2: Red	Winding B	36.1	46.3	100.0	10.7	12.0
Cable 3: Blue	Winding C	48.1	62.8			
Plug definition (AWG 28#) Molex: 51021-0500		60.1	79.3			
		72.1	95.8			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL45100AN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-45GP
AM-52GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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DC BRUSHLESS MOTOR
STANDARD SERIES

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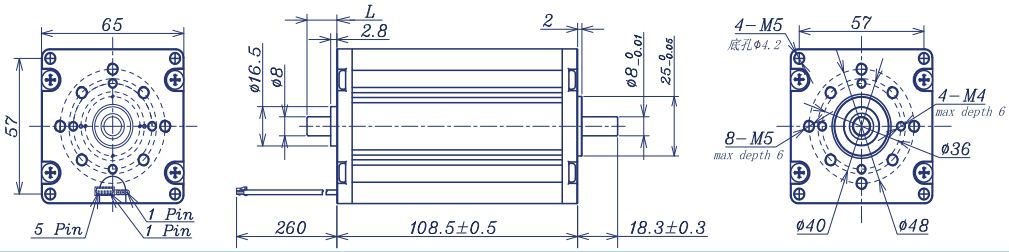
AM-BL65110DN Seires



		Brushless Motor	Ball Bearings				
Motor Model		2404	4004				
Nominal voltage	V	24	40				
No Load Speed ±12%	rpm	3550	3600				
No load current Max 150%	mA	225	135				
Recommend Limit for continuous operating – Max cont. torque	mN.m	403.0	403.5				
Rated Speed	rpm	3037	2922				
Rated Current	mA	6500	3800				
Rated Power	W	128.2	123.5				
Starting current	mA	43636	24096				
Stall torque	mN.m	2788	2638				
Maximum power output	W	259.1	238.3				
Maximum Efficiency	%	86	86				
Terminal resistance ±12%	Ω	0.55	1.66				
Inductance (1KH$_Z$)	mH		0.44				
Mechanical time constant	ms	19.8	20.4				
Moment of inertia	gcm^2	1486	1486				
Torque constant	mN.m/A	64.2	110.1				
Speed constant	rpm/V	149	87				
Speed/torque gradient	rpm/mN.m	1.3	1.3				
Weight	g	1300	1308				

ADDITIONAL INFORMATION

Motor thermal resistance:	2.6 K/W	Motor thermal time constant:	2025 S
Axial (dynamic):	30.0 N	Radial (5mm from mounting face):	180.0 N
Press-fit force (static):	150 N	Max allowable screw depth into flange:	6.0mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<12.0N)
Maximum winding temperature:	85°C	Ambient temperature range:	-30 to 65°C
Standard Rear Shaft Diameter:	8 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 18#)

Cable 1: Yellow	Winding A
Cable 2: Red	Winding B
Cable 3: Blue	Winding C

Plug definition (AWG 28#)
Molex: 51021-0500

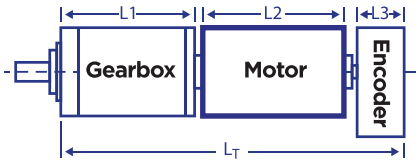
Plug 1: Brown	Hall 3~16V
Plug 2: Black	Hall GND
Plug 3: Yellow	Hall A
Plug 4: Red	Hall B
Plug 5: Blue	Hall C

Total Length: L_T=L1+L2+L3

L1:60GP		L2:BL65	L3:EN22S	L3:EN36T
73.5		108.5	10.7	12.0

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL65110DN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-60GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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HIGH TEMPERATURE SERIES (125℃)

Assun high temperature series BLDC motors have been upgraded from the standard series in material and magnets to fit for higher power and operation temperature. Applications with bad thermal dissipation environments or higher power demands could chose the high temperature series products for a safer and more guaranteed overall performance.

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HIGH TEMPERATURE SERIES

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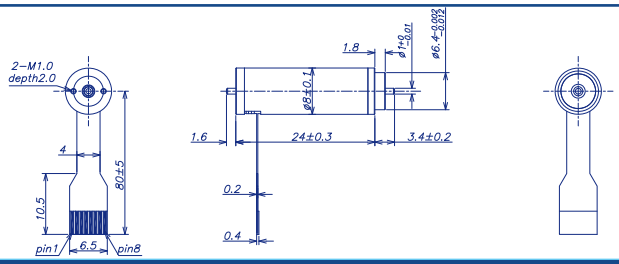
AM-BL0824AE Series



		Brushless Motor		Ball Bearings		
Motor Model			0629	0929	1230	
Nominal voltage		V	6	9	12	
No load speed ±12%		rpm	29000	29000	30500	
No load current Max 150%		mA	130	65	52	
Recommend limit for continuous operating	Max cont. torque	mN.m	1.23	1.26	1.26	
	Rated Speed	rpm	26700	21200	22800	
	Rated Current	mA	900	497	391	
	Rated Power	W	2.8	2.8	3.0	
Starting current		mA	3340	1700	1430	
Stall torque		mN.m	5.18	4.83	5.18	
Maximum power output		W	4.6	3.5	4.0	
Maximum Efficiency		%	66	66	65	
Terminal resistance ±12%		Ω	1.8	5.3	8.4	
Inductance (1KH$_Z$)		mH	0.026	0.089	0.144	
Mechanical time constant		ms	1.9	1.6	1.6	
Moment of inertia		gcm^2	0.025	0.025	0.025	
Torque constant		mN.m/A	1.55	2.84	3.62	
Speed constant		rpm/V	6160	3360	2650	
Speed/torque gradient		rpm/mN.m	7130	6260	6110	
Weight		g	--	--	--	

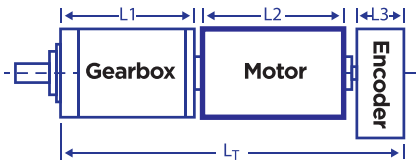
ADDITIONAL INFORMATION

Motor thermal resistance:	- K/W	Motor thermal time constant:	-S
Axial (dynamic):	0.2N	Radial (5mm from mounting face):	2 N
Press-fit force (static):	10N	Max allowable screw depth into flange:	NO
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC
Standard rear shaft diameter:	1 mm	Standard rear shaft length "L":	1.6 mm

Connection (FPC)		Total Length: L_T=L1+L2+L3				
PIN 1:	Winding A	L1:8GP		L2:BL08	L3:EN10S	
PIN 2:	Winding B	6.9		24.0	8	
PIN 3:	Winding C	9.7				
PIN 4:	Hall 3~16V	12.5				
PIN 5:	Hall GND	15.3				
PIN 6:	Hall A	18.1				
PIN 7:	Hall B					
PIN 8:	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL0824AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-8GP

Recommended Encoder:
Encoder S: AM-EN***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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HIGH TEMPERATURE SERIES

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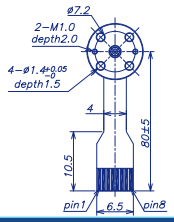
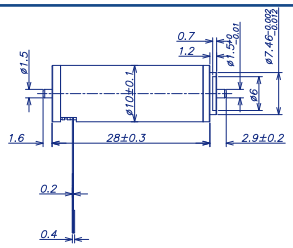
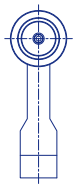
AM-BL1028AE Series







		Brushless Motor		Ball Bearings		
Motor Model			**1234**	**1834**	**2434**	
Nominal voltage		V	12	18	24	
No load speed ±12%		rpm	33500	33345	34000	
No load current Max 150%		mA	80	65	40	
Recommend limit for continuous operating	Max cont. torque	mN.m	1.6	1.6	1.6	
	Rated Speed	rpm	26800	26825	26360	
	Rated Current	mA	585	405	297	
	Rated Power	W	4.5	4.5	4.4	
Starting current		mA	2610	1807	1180	
Stall torque		mN.m	8.0	8.2	7.09	
Maximum power output		W	7.0	7.1	6.3	
Maximum Efficiency		%	65	63	64	
Terminal resistance ±12%		Ω	4.46	10	20.3	
Inductance (1KH$_Z$)		mH	Null	Null	Null	
Mechanical time constant		ms	5.1	5.1	5.1	
Moment of inertia		gcm^2	0.067	0.067	0.067	
Torque constant		mN.m/A	3.17	4.69	6.22	
Speed constant		rpm/V	2880	1921	1425	
Speed/torque gradient		rpm/mN.m	4182	4075	4799	
Weight		g	--	--	--	

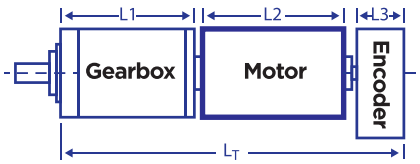
ADDITIONAL INFORMATION

Motor thermal resistance:	- K/W	Motor thermal time constant:	-S
Axial (dynamic):	0.5N	Radial (5mm from mounting face):	5 N
Press-fit force (static):	10N	Max allowable screw depth into flange:	NO
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC
Standard rear shaft diameter:	1.5 mm	Standard rear shaft length "L":	1.6 mm

Connection (FPC)		Total Length: L_T=L1+L2+L3				
PIN 1:	Winding A	**L1:10GP**	**L1:12GP**	**L2:BL10**	**L3:EN10S**	
PIN 2:	Winding B	6.8	15.4	28.0	8	
PIN 3:	Winding C	10	19.6			
PIN 4:	Hall 3~16V	13.2	23.8			
PIN 5:	Hall GND	16.4	28			
PIN 6:	Hall A	19.2	32.2			
PIN 7:	Hall B					
PIN 8:	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL1028AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-10GP
AM-12GP

Recommended Encoder:
Encoder S: AM-EN1008S***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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HIGH TEMPERATURE SERIES

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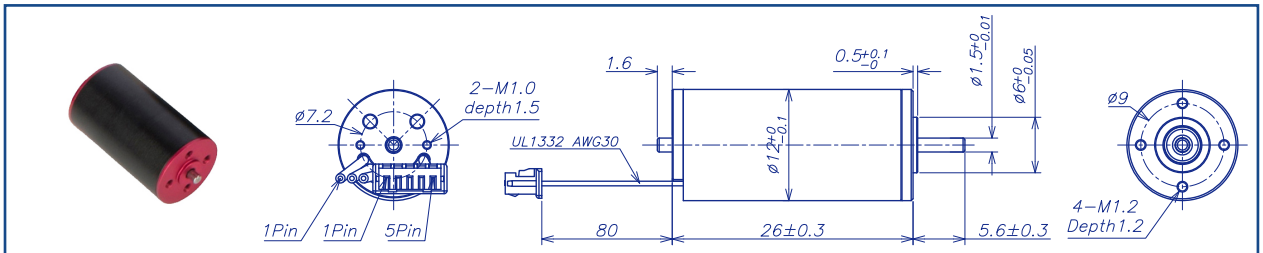
AM-BL1226AE Series



		Brushless Motor		Ball Bearings		
Motor Model			**0621**	**1229**	**2430**	
Nominal voltage		V	6	12	24	
No load speed ±12%		rpm	21180	29400	30020	
No load current Max 150%		mA	130	90	46	
Recommend limit for continuous operating	Max cont. torque	mN.m	2.13	2.38	2.38	
	Rated Speed	rpm	17310	25000	25620	
	Rated Current	mA	1032	778	397	
	Rated Power	W	3.86	6.2	6.4	
Starting current		mA	5013	4864	2440	
Stall torque		mN.m	11.6	15.9	16.25	
Maximum power output		W	6.5	12.2	12.7	
Maximum Efficiency		%	64	67	67	
Terminal resistance ±12%		Ω	1.2	2.56	9.85	
Inductance (1KH$_Z$)		mH	0.029	0.042	0.082	
Mechanical time constant		ms	5.1	5.1	5.1	
Moment of inertia		gcm^2	0.165	0.165	0.165	
Torque constant		mN.m/A	2.39	3.46	6.79	
Speed constant		rpm/V	3625	2498	1275	
Speed/torque gradient		rpm/mN.m	1817	1847	1847	
Weight		g	18.1	18.1	18.1	

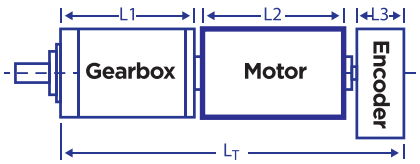
ADDITIONAL INFORMATION

Motor thermal resistance:	- K/W	Motor thermal time constant:	-S
Axial (dynamic):	0.5N	Radial (5mm from mounting face):	5 N
Press-fit force (static):	0.5N	Max allowable screw depth into flange:	1.2 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC
Standard rear shaft diameter:	1.5 mm	Standard rear shaft length "L":	1.6 mm

Connection (AWG 26#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	**L1:10GP**	**L1:12GP**	**L2:BL12**	**L3:EN10S**	
Cable 2: Red	Winding B	6.8	15.4	26.0	8	
Cable 3: Blue	Winding C	10	19.6			
Plug definition (AWG 28#) Molex: 51021-0500		13.2	23.8			
		16.4	28			
Plug 1: Brown	Hall 3~16V	19.2	32.2			
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL1226AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-10GP
AM-12GP

Recommended Encoder:
Encoder S: AM-EN1008S***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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HIGH TEMPERATURE SERIES

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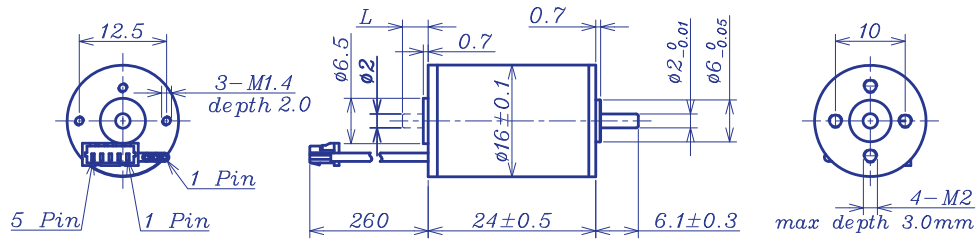
AM-BL1624AE Series



		Brushless Motor			Ball Bearings	
Motor Model		**0514**	**0614**	**0914**	**1213**	**1215**
Nominal voltage	V	4.5	6	9	12	12
No load speed ±12%	rpm	13550	14098	13550	13426	14800
No load current Max 150%	mA	150	125	75	65	60
Recommend limit for continuous operating — Max cont. torque	mN.m	2.5	2.5	2.5	2.5	2.6
Rated Speed	rpm	7771	8288	7992	7880	9382
Rated Current	mA	1000	780	500	380	420
Rated Power	W	2	2.1	2.1	2.0	2.6
Starting current	mA	2143	1714	1111	828	1043
Stall torque	mN.m	6	6	6	6	7
Maximum power output	W	2.1	2.2	2.2	2.1	2.8
Maximum Efficiency	%	54	53	55	52	58
Terminal resistance ±12%	Ω	2.1	3.5	8.1	14.5	11.5
Inductance (1KH$_Z$)	mH	Null	Null	Null	Null	0.5
Mechanical time constant	ms	4.6	4.7	4.4	4.5	4.1
Moment of inertia	gcm^2	0.19	0.19	0.19	0.19	0.19
Torque constant	mN.m/A	2.9	3.8	5.9	7.9	7.3
Speed constant	rpm/V	3238	2534	1615	1214	1309
Speed/torque gradient	rpm/mN.m	2305.3	2354.4	2211.1	2238.6	2062.2
Weight	g	31	31	31	31	31

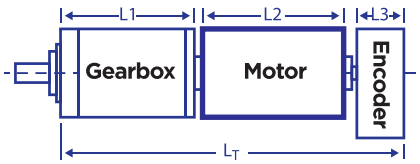
ADDITIONAL INFORMATION

Motor thermal resistance:	21.5 K/W	Motor thermal time constant:	409S
Axial (dynamic):	1.5 N	Radial (5mm from mounting face):	6.0 N
Press-fit force (static):	40 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<2.0N)
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	No mm

Connection (AWG 26#)	Total Length: L_T=L1+L2+L3				
Cable 1: Yellow Winding A	L1:16GP	L1:19GP	L2:BL16	L3:EN16S	L3:EN16T
Cable 2: Red Winding B	15.9	18.8	24.0	10.7	12.0
Cable 3: Blue Winding C	19.6	23.6			
Plug definition (AWG 28#) Molex: 51021-0500	23.3	28.4			
	27.0	33.2			
Plug 1: Brown Hall 3~16V					
Plug 2: Black Hall GND					
Plug 3: Yellow Hall A					
Plug 4: Red Hall B					
Plug 5: Blue Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL1624AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-16GP
AM-19GP
AM-22GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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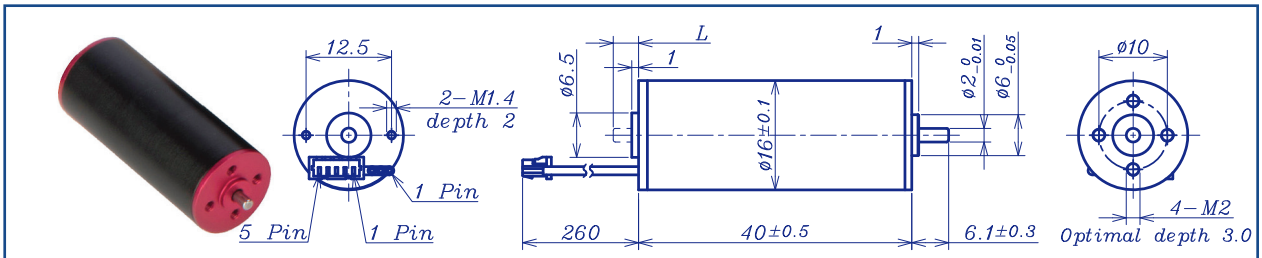
AM-BL1640AE Series



Motor Model			Brushless Motor 1234	1221	1216	Ball Bearings 1836	1821	1816	2419	2413
Nominal voltage		V	12	12	12	18	18	18	24	24
No load speed ±12%		rpm	34200	21000	16400	36300	20900	16160	19400	12600
No load current Max 150%		mA	200	120	80	150	75	60	50	40
Recommend limit for continuous operating	Max cont. torque	mN.m	7	7.9	8.7	6.3	7.9	8.2	8.1	8.1
	Rated Speed	rpm	30573	16735	12041	33083	16716	11965	15089	8170
	Rated Current	mA	2300	1600	1350	1500	1050	850	750	500
	Rated Power	W	22.3	13.9	11	21.9	13.8	10.3	12.9	6.9
Starting current		mA	20000	7407	4858	15385	4945	3103	3200	1348
Stall torque		mN.m	66	39	33	71	39	32	37	23
Maximum power output		W	58.8	21.5	14.1	67.9	21.6	13.4	18.6	7.6
Maximum Efficiency		%	81	76	76	81	77	74	77	69
Terminal resistance ±12%		Ω	0.6	1.62	2.47	1.17	3.64	5.8	7.5	17.8
Inductance (1KHz)		mH	0.032	0.1	0.16	0.08	0.24	0.38	0.49	1.05
Mechanical time constant		ms	2.2	2.3	2.1	2.2	2.3	2.2	2.3	2.3
Moment of inertia		gcm^2	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
Torque constant		mN.m/A	3.3	5.4	6.9	4.7	8.1	10.4	11.6	17.6
Speed constant		rpm/V	2879	1779	1390	2037	1179	915	821	541
Speed/torque gradient		rpm/mN.m	520.7	536.8	499.4	508.2	529.8	509	529.6	545.7
Weight		g	42.2	42.1	41.8	42.1	42.2	41.8	41.9	41.8

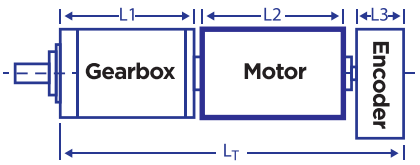
ADDITIONAL INFORMATION

Motor thermal resistance:	17.9 K/W	Motor thermal time constant:	439 S
Axial (dynamic):	1.5 N	Radial (5mm from mounting face):	6.0 N
Press-fit force (static):	40 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<2.0N)
Maximum winding temperature:	125ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 26#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	L1:16GP	L1:19GP	L2:BL16	L3:EN16S	L3:EN16T
Cable 2: Red	Winding B	15.9	18.8	40.0	10.7	12.0
Cable 3: Blue	Winding C	19.6	23.6			
Plug definition (AWG 28#) Molex: 51021-0500		23.3	28.4			
		27	33.2			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL1640AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-16GP
AM-19GP
AM-22GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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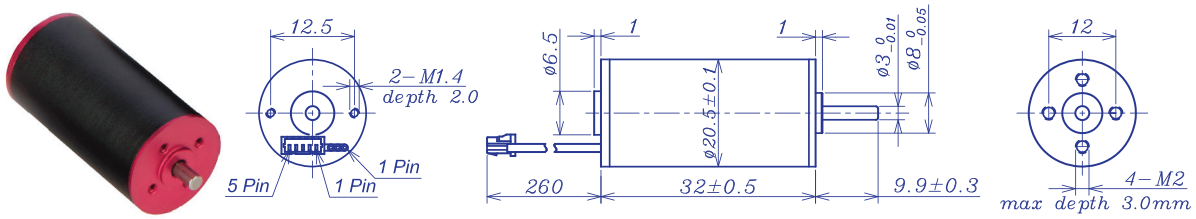


		Brushless Motor			Ball Bearings		
Motor Model		**1225**	**1220**	**1822**	**1819**	**2419**	**2415**
Nominal voltage	V	12	12	18	18	24	24
No load speed ±12%	rpm	24525	19908	22265	18634	19339	14850
No load current Max 150%	mA	200	150	120	100	90	70
Recommend limit for continuous operating – Max cont. torque	mN.m	6.0	7.1	6.7	7.0	6.5	6.7
Recommend limit for continuous operating – Rated Speed	rpm	22070	16889	19520	15584	16569	11775
Recommend limit for continuous operating – Rated Current	mA	1500	1400	1000	880	650	520
Recommend limit for continuous operating – Rated Power	W	13.8	12.5	13.7	11.5	11.3	8.3
Starting current	mA	13187	8392	7258	4865	4000	2243
Stall torque	mN.m	60	47	54	43	45	32
Maximum power output	W	38.4	24.3	31.6	21.0	22.9	12.6
Maximum Efficiency	%	77	75	76	73	72	68
Terminal resistance ±12%	Ω	0.91	1.43	2.48	3.7	6.0	10.7
Inductance (1KHz)	mH	0.07	0.11	0.19	0.29	0.47	0.86
Mechanical time constant	ms	3.0	3.1	3.0	3.1	3.1	3.3
Moment of inertia	gcm^2	0.69	0.69	0.69	0.69	0.69	0.69
Torque constant	mN.m/A	4.6	5.7	7.6	9.0	11.6	15.0
Speed constant	rpm/V	2075	1689	1258	1057	824	639
Speed/torque gradient	rpm/mN.m	410.4	427.3	410.8	432.9	427.0	457.1
Weight	g	52	52	52	52	52	52

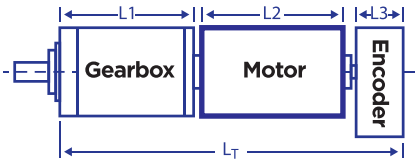
ADDITIONAL INFORMATION

Motor thermal resistance:	22.8 K/W	Motor thermal time constant:	552S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	125ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 24#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	**L1:19GP**	**L1:24GP**	**L2:BL20**	**L3:EN16S**	**L3:EN16T**
Cable 2: Red	Winding B	18.8	24.0	32.0	10.7	12.0
Cable 3: Blue	Winding C	23.6	34.3			
Plug definition (AWG 28#) Molex: 51021-0500		28.4	42.8			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2032AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-22GP
AM-24GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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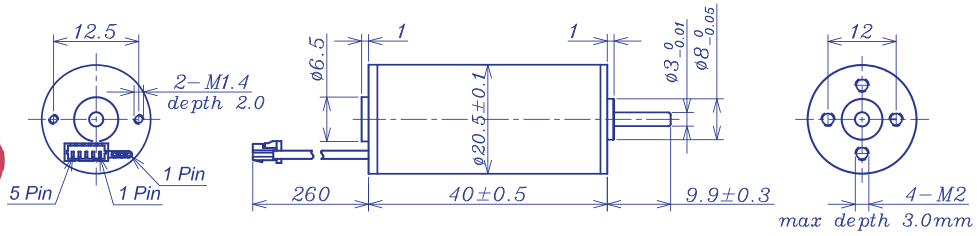


Motor Model			Brushless Motor 1226	1220	1216	Ball Bearings 1820	1817	2420	2417
Nominal voltage		V	12	12	12	18	18	24	24
No load speed ±12%		rpm	26000	20360	16260	19500	17350	20000	16600
No load current Max 150%		mA	350	190	180	150	140	110	95
Recommend limit for continuous operating	Max cont. torque	mN.m	8.5	12.3	13.3	11.7	11.9	12.3	12.3
	Rated Speed	rpm	23943	17399	13404	16737	14340	17144	13836
	Rated Current	mA	2300	2400	2100	1500	1360	1200	1000
	Rated Power	W	21.2	22.4	18.7	20.5	17.8	22.1	17.8
Starting current		mA	25000	15385	11111	9677	7171	7742	5530
Stall torque		mN.m	107	84	76	83	68	86	74
Maximum power output		W	72.9	45.0	32.3	42.2	31.0	45.1	32.0
Maximum Efficiency		%	78	79	76	77	74	78	76
Terminal resistance ±12%		Ω	0.48	0.78	1.08	1.86	2.51	3.1	4.34
Inductance (1KHz)		mH	0.04	0.061	0.097	0.17	0.22	0.29	0.42
Mechanical time constant		ms	2.9	2.9	2.5	2.8	3.0	2.7	2.7
Moment of inertia		gcm^2	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Torque constant		mN.m/A	4.3	5.6	6.9	8.7	9.7	11.3	13.6
Speed constant		rpm/V	2197	1718	1377	1100	983	845	704
Speed/torque gradient		rpm/mN.m	4242.7	241.1	214.5	235.8	254.0	232.0	225.1
Weight		g	65.9	66.2	66.6	65.7	65.4	65.1	65.9

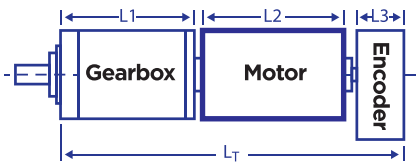
ADDITIONAL INFORMATION

Motor thermal resistance:	15 K/W	Motor thermal time constant:	637S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	125ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 24#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	L1:19GP	L1:24GP	L2:BL16	L3:EN16S	L3:EN16T
Cable 2: Red	Winding B	18.8	24.0	40.0	10.7	12.0
Cable 3: Blue	Winding C	23.6	34.3			
Plug definition (AWG 28#) Molex: 51021-0500		28.4	42.8			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2040AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-22GP
AM-24GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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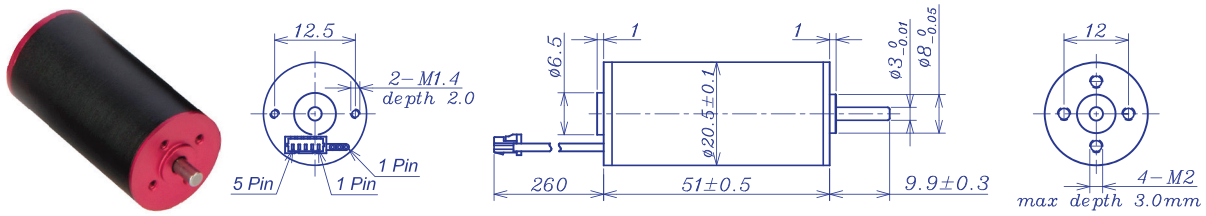


		Brushless Motor		Ball Bearings			
Motor Model		1221	1216	2426	2421	3619	3625
Nominal voltage	V	12	12	24	24	36	36
No load speed ±12%	rpm	20604	15670	25800	21400	19297	24781
No load current Max 150%	mA	250	185	155	126	65	90
Recommend limit for continuous operating – Max cont. torque	mN.m	14.0	14.5	10.6	12.0	14.8	12.0
Recommend limit for continuous operating – Rated Speed	rpm	18392	13350	24181	19418	17221	22910
Recommend limit for continuous operating – Rated Current	mA	2800	2200	1360	1260	900	960
Recommend limit for continuous operating – Rated Power	W	27.0	20.3	26.9	24.4	26.6	28.7
Starting current	mA	24000	13793	19355	12371	7826	11613
Stall torque	mN.m	131	98	169	130	137	159
Maximum power output	W	70.5	40.3	114.3	72.7	69.3	102.9
Maximum Efficiency	%	81	78	83	81	83	83
Terminal resistance ±12%	Ω	0.5	0.87	1.24	1.94	4.6	3.1
Inductance (1KHz)	mH	0.04	0.07	0.1	0.16	0.47	0.29
Mechanical time constant	ms	2.4	2.4	2.3	2.5	2.1	2.3
Moment of inertia	gcm^2	1.43	1.43	1.43	1.43	1.43	1.43
Torque constant	mN.m/A	5.5	7.2	8.8	20.6	17.7	13.8
Speed constant	rpm/V	1735	1324	1084	901	541	694
Speed/torque gradient	rpm/mN.m	157.6	159.6	152.5	164.9	140.7	156.2
Weight	g	87	87	87	87	87	87

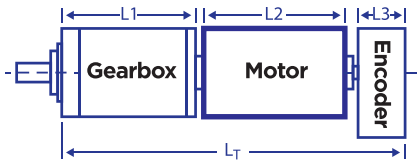
ADDITIONAL INFORMATION

Motor thermal resistance:	15 K/W	Motor thermal time constant:	720S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	125ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 24#)	Total Length: L_T=L1+L2+L3				
Cable 1: Yellow Winding A	L1:19GP	L1:24GP	L2:BL20	L3:EN16S	L3:EN16T
Cable 2: Red Winding B	18.8	24.0	51.0	10.7	12.0
Cable 3: Blue Winding C	23.6	34.3			
Plug definition (AWG 28#) Molex: 51021-0500	28.4	42.8			
Plug 1: Brown Hall 3~16V					
Plug 2: Black Hall GND					
Plug 3: Yellow Hall A					
Plug 4: Red Hall B					
Plug 5: Blue Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2051AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-22GP
AM-24GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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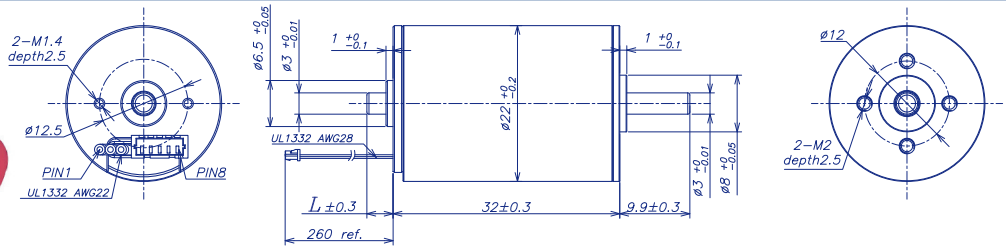


Motor Model			1212	1812	2412	3612		
			Brushless Motor		Ball Bearings			
Nominal voltage		V	12	18	24	36		
No load speed ±12%		rpm	11920	12000	12440	12080		
No load current Max 150%		mA	120	150	65	40		
Recommend limit for continuous operating	Max cont. torque	mN.m	10.2	13.9	10.8	10.6		
	Rated Speed	rpm	9050	8250	9330	8990		
	Rated Current	mA	1210	1100	660	430		
	Rated Power	W	9.66	12.0	10.6	10.0		
Starting current		mA	4700	2700	2500	1540		
Stall torque		mN.m	42.3	32	43.2	41.5		
Maximum power output		W	13.2	19.8	14.0	13.1		
Maximum Efficiency		%	70.5	68.5	70.7	70.2		
Terminal resistance ±12%		Ω	2.57	4.84	9.67	23.33		
Inductance (1KHz)		mH	-	-	-	-		
Mechanical time constant		ms	6.7	6.7	6.7	6.7		
Moment of inertia		gcm^2	2.8	2.8	2.8	2.8		
Torque constant		mN.m/A	9.33	11.9	17.88	27.6		
Speed constant		rpm/V	1024	611	534	346		
Speed/torque gradient		rpm/mN.m	281	389	287	291		
Weight		g	60.2	60.2	60.6	60.6		

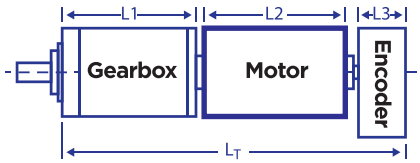
ADDITIONAL INFORMATION

Motor thermal resistance:	-K/W	Motor thermal time constant:	-S
Axial (dynamic):	4.0 N	Radial (5mm from mounting face):	4.0 N
Press-fit force (static):	60 N	Max allowable screw depth into flange:	2.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 24#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	L1:19GP	L1:24GP	L2:BL22	L3:EN16S	L3:EN16T
Cable 2: Red	Winding B	18.8	24.0	32.0	10.7	12.0
Cable 3: Blue	Winding C	23.6	34.3			
Plug definition (AWG 28#) Molex: 51021-0500		28.4	42.8			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2232AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-22GP
AM-24GP

Recommended Encoder:
Encoder S: AM-EN1611S***
Encoder T: AM-EN1612T***

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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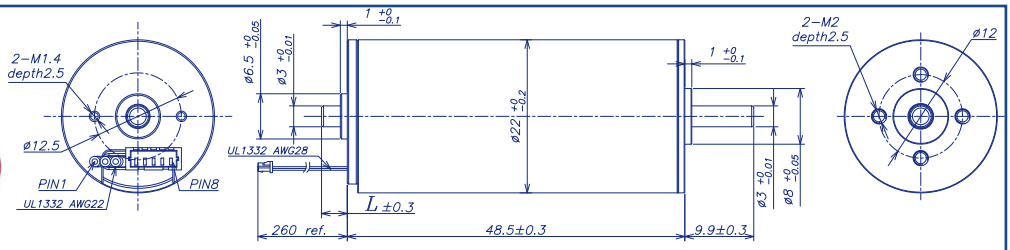


		Brushless Motor		Ball Bearings			
Motor Model		**2412**	**2432**				
Nominal voltage	V	24	24				
No load speed ±12%	rpm	11700	32000				
No load current Max 150%	mA	280	380				
Recommend limit for continuous operating – Max cont. torque	mN.m	22.5	22.7				
Recommend limit for continuous operating – Rated Speed	rpm	10400	30500				
Recommend limit for continuous operating – Rated Current	mA	1200	3400				
Recommend limit for continuous operating – Rated Power	W	24.5	72.7				
Starting current	mA	12100	64400				
Stall torque	mN.m	214	487				
Maximum power output	W	62	409				
Maximum Efficiency	%	86.7	91				
Terminal resistance ±12%	Ω	2	0.32				
Inductance (1KH$_Z$)	mH	-	-				
Mechanical time constant	ms	-	-				
Moment of inertia	gcm^2	4.2	4.2				
Torque constant	mN.m/A	17.7	7.6				
Speed constant	rpm/V	487	1367				
Speed/torque gradient	rpm/mN.m	54.7	65.9				
Weight	g	96.2	96.2				

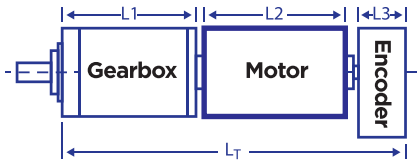
ADDITIONAL INFORMATION

Motor thermal resistance:	-K/W	Motor thermal time constant:	-S
Axial (dynamic):	4.0 N	Radial (5mm from mounting face):	4.0 N
Press-fit force (static):	60 N	Max allowable screw depth into flange:	2.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 65ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 24#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	L1:19GP	L1:24GP	L2:BL22	L3:EN16S	L3:EN16T
Cable 2: Red	Winding B	18.8	24.0	32.0	10.7	12.0
Cable 3: Blue	Winding C	23.6	34.3			
Plug definition (AWG 28#) Molex: 51021-0500		28.4	42.8			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2248AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-22GP
AM-24GP

Recommended Encoder:
Encoder S: AM-EN1611S***
Encoder T: AM-EN1612T***

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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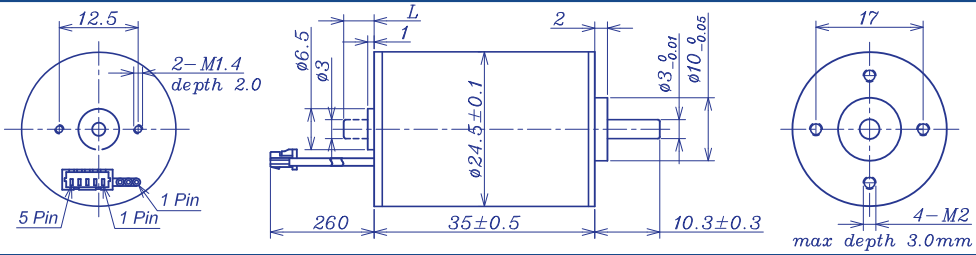
AM-BL2435AE Series



Motor Model			Brushless Motor 0915	1215	1815	Ball Bearings 2414	2412	2410	2809
Nominal voltage		V	9	12	18	24	24	24	28
No load speed ±12%		rpm	15350	15050	15350	14450	12040	10230	9700
No load current Max 150%		mA	95	90	85	80	60	50	40
Recommend limit for continuous operating	Max cont. torque	mN.m	14.2	14.8	14.6	14.4	14.8	16.5	16.5
	Rated Speed	rpm	12056	12073	12628	11862	9298	7165	6615
	Rated Current	mA	2650	2050	1400	1000	850	800	650
	Rated Power	W	17.9	18.7	19.3	17.8	14.4	12.4	11.4
Starting current		mA	12000	10000	7500	5217	3529	2553	1958
Stall torque		mN.m	66	75	82	80	65	55	52
Maximum power output		W	26.6	29.5	33	30.4	20.5	14.7	13.2
Maximum Efficiency		%	83	82	80	77	76	74	73
Terminal resistance ±12%		Ω	0.75	1.05	2.4	4.6	6.8	9.4	14.3
Inductance (1KHz)		mH	Null	Null	Null	Null	Null	Null	Null
Mechanical time constant		ms	4.7	4.0	3.8	3.6	3.7	3.7	3.8
Moment of inertia		gcm^2	1.92	1.92	1.92	1.92	1.92	1.92	1.92
Torque constant		mN.m/A	5.6	7.5	11.1	15.6	18.7	22	27
Speed constant		rpm/V	1719	1266	863	611	510	435	354
Speed/torque gradient		rpm/mN.m	232.1	201.3	187	180.1	185.5	186.1	187.3
Weight		g	84	84	84	84	84	84	84

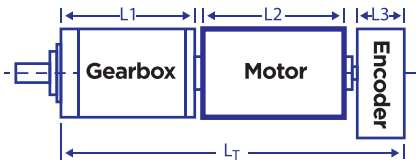
ADDITIONAL INFORMATION

Motor thermal resistance:	K/W	Motor thermal time constant:	S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 22#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	L1:24GP	L1:26GP	L2:BL16	L3:EN16S	L3:EN24T
Cable 2: Red	Winding B	24	25.7	35	10.7	12.0
Cable 3: Blue	Winding C	34.3	36			
Plug definition (AWG 28#) Molex: 51021-0500		42.8	44.5			
		51.3	53			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2435BF Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-24GP
AM-26GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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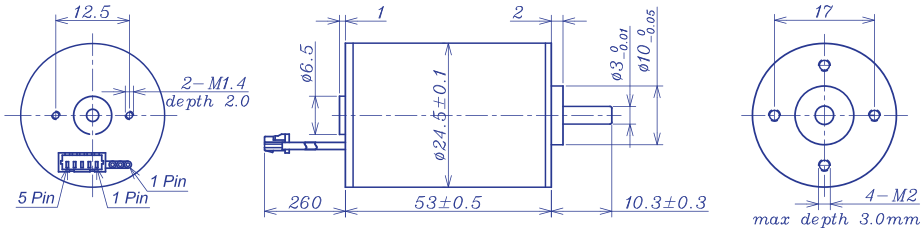


Motor Model		Brushless Motor 1213	1210	Ball Bearings 1829	1813	2414	2410
Nominal voltage	V	12	12	18	18	24	24
No load speed ±12%	rpm	13010	10460	28715	12920	13625	9770
No load current Max 150%	mA	180	140	420	115	100	75
Recommend limit for continuous operating: Max cont. torque	mN.m	30.3	31.6	12.4	27.5	30.0	33.1
Rated Speed	rpm	10962	8308	27679	10775	11668	7836
Rated Current	mA	3650	3050	2500	2200	1900	1500
Rated Power	W	34.8	27.5	35.8	31.0	36.7	27.1
Starting current	mA	22222	14286	58065	12676	12632	7273
Stall torque	mN.m	193	153	343	166	209	167
Maximum power output	W	65.6	40.2	257.5	56.0	74.6	42.7
Maximum Efficiency	%	83	81	84	82	83	81
Terminal resistance ±12%	Ω	0.54	0.84	0.31	1.42	1.9	3.3
Inductance (1KHz)	mH	0.055	0.092	0.02	0.14	0.23	0.45
Mechanical time constant	ms	2.4	2.5	3.0	2.8	2.4	2.1
Moment of inertia	gcm^2	3.45	3.45	3.45	3.45	3.45	3.45
Torque constant	mN.m/A	8.7	10.8	5.9	13.2	16.7	23.2
Speed constant	rpm/V	1093	880	1607	724	572	411
Speed/torque gradient	rpm/mN.m	67.6	68.2	83.8	78.0	65.2	58.5
Weight	g	126.7	126.8	126.7	125.7	126.3	127.5

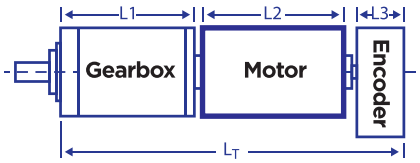
ADDITIONAL INFORMATION

Motor thermal resistance:	10.5 K/W	Motor thermal time constant:	768 S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	125ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 22#)	Total Length: L_T=L1+L2+L3				
Cable 1: Yellow Winding A	L1:24GP	L1:26GP	L2:BL24	L3:EN16S	L3:EN24T
Cable 2: Red Winding B	24.0	25.7	53.0	10.7	12.0
Cable 3: Blue Winding C	34.3	36			
Plug definition (AWG 28#) Molex: 51021-0500	42.8	44.5			
		53			
Plug 1: Brown Hall 3~16V					
Plug 2: Black Hall GND					
Plug 3: Yellow Hall A					
Plug 4: Red Hall B					
Plug 5: Blue Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2453AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-24GP
AM-26GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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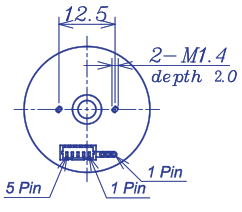
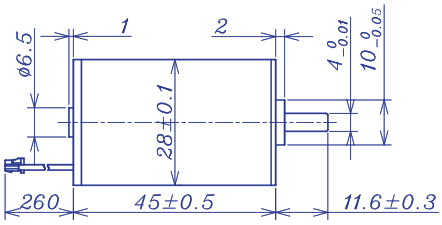
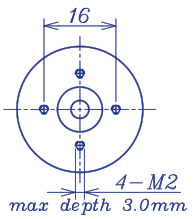






		Brushless Motor				Ball Bearings	
Motor Model		**1215**	**1210**	**1813**	**1810**	**2412**	**2409**
Nominal voltage	V	12	12	18	18	24	24
No load speed ±12%	rpm	14800	10000	12520	9680	11680	9080
No load current Max 150%	mA	300	190	170	120	120	85
Recommend limit for continuous operating – Max cont. torque	mN.m	33.8	38.7	37.2	40.1	36.6	40.4
Rated Speed	rpm	13105	8250	10913	7985	10055	7383
Rated Current	mA	4700	3600	2900	2400	2000	1700
Rated Power	W	46.4	33.4	42.6	33.5	38.5	31.2
Starting current	mA	38710	19672	21687	13139	13636	8727
Stall torque	mN.m	295	221	293	229	263	216
Maximum power output	W	114.3	57.9	96.1	58.0	80.4	51.3
Maximum Efficiency	%	83	81	83	82	82	81
Terminal resistance ±12%	Ω	0.31	0.61	0.83	1.37	1.76	2.75
Inductance ($1KH_Z$)	mH	0.034	0.086	0.126	0.22	0.27	0.46
Mechanical time constant	ms	3.3	2.9	2.8	2.7	2.9	2.7
Moment of inertia	gcm^2	6.19	6.19	6.19	6.19	6.19	6.19
Torque constant	mN.m/A	7.7	11.3	13.6	17.6	19.4	25.0
Speed constant	rpm/V	1243	1324	701	543	491	382
Speed/torque gradient	rpm/mN.m	50.2	45.2	42.7	42.3	44.4	42.0
Weight	g	138.8	138.7	139.1	140.1	138.4	139.2

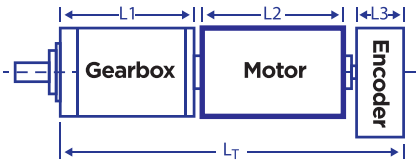
ADDITIONAL INFORMATION

Motor thermal resistance:	10.2K/W	Motor thermal time constant:	822S
Axial (dynamic):	4.0 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	125ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 22#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	**L1:28GP**	**L1:32GP**	**L2:BL28**	**L3:EN16S**	**L3:EN24T**
Cable 2: Red	Winding B	26.1	27.4	45.0	10.7	12.0
Cable 3: Blue	Winding C	33.3	35.9			
Plug definition (AWG 28#) Molex: 51021-0500		40.5	44.4			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2845AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-28GP
AM-32GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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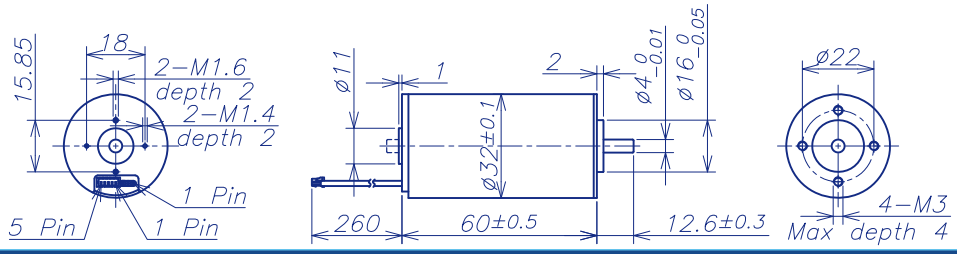


Motor Model		Brushless Motor 1212	1208	Ball Bearings 2413	2409	3613	3610
Nominal voltage	V	12	12	24	24	36	36
No load speed ±12%	rpm	12191	8127	12832	9680	12311	10449
No load current Max 150%	mA	355	192	190	127	125	94
Recommend limit for continuous operating: Max cont. torque	mN.m	52.7	60.3	49.9	57.8	50.8	55.8
Rated Speed	rpm	11037	6864	11805	8549	11548	9278
Rated Current	mA	6000	4500	3000	2600	2000	1800
Rated Power	W	61.0	43.4	61.7	51.7	61.5	54.2
Starting current	mA	60000	27907	35294	20168	22360	15319
Stall torque	mN.m	557	388	624	468	603	438
Maximum power output	W	177.9	82.6	209.5	119.5	80.4	136.2
Maximum Efficiency	%	85	84	86	85	86	85
Terminal resistance ±12%	Ω	0.2	0.43	0.68	1.19	1.61	2.35
Inductance (1KHz)	mH	0.029	0.069	0.12	0.2	N/A	0.42
Mechanical time constant	ms	3.0	2.9	2.9	2.9	2.9	2.9
Moment of inertia	gcm^2	13.3	13.3	13.3	13.3	13.3	13.3
Torque constant	mN.m/A	9.3	14.0	17.8	23.4	27.1	32.7
Speed constant	rpm/V	1022	682	538	409	352	292
Speed/torque gradient	rpm/mN.m	21.9	20.9	20.6	20.8	20.9	21.0
Weight	g	240	240	240	240	240	240

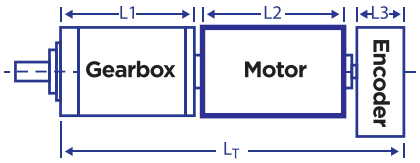
ADDITIONAL INFORMATION

Motor thermal resistance:	7.8 K/W	Motor thermal time constant:	1089 S
Axial (dynamic):	6.0 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	110N	Max allowable screw depth into flange:	4.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature:	125ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	L1:32GP	L1:36GP	L2:BL32	L3:EN22S	L3:EN24T
Cable 2: Red	Winding B	27.4	39.6	60.0	10.7	12.0
Cable 3: Blue	Winding C	35.9	48.6			
Plug definition (AWG 28#) Molex: 51021-0500		44.4	57.6			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL3260AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-28GP
AM-32GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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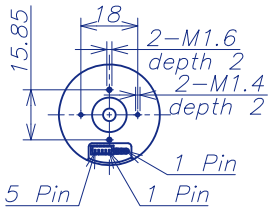
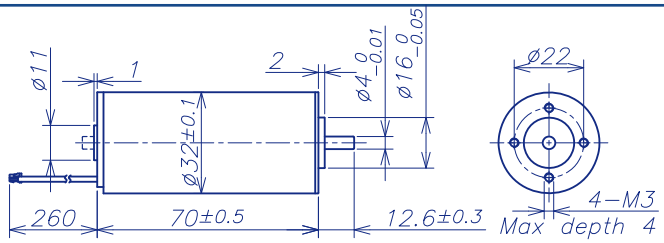
AM-BL3270AE Series





		Brushless Motor		Ball Bearings			
Motor Model		**1210**	**1207**	**2412**	**2409**	**3611**	**3609**
Nominal voltage	V	12	12	24	24	36	36
No load speed ±12%	rpm	9794	6529	11523	8904	10882	9182
No load current Max 150%	mA	355	192	190	127	94	80
Recommend limit for continuous operating — Max cont. torque	mN.m	64.4	75.0	65.5	73.5	72.6	71.5
Rated Speed	rpm	8746	5371	10533	7800	9804	8139
Rated Current	mA	5900	4500	3500	3000	2400	2000
Rated Power	W	59.0	42.2	72.3	60.1	74.5	61.0
Starting current	mA	52174	24490	38710	23301	23377	16981
Stall torque	mN.m	602	423	762	593	733	630
Maximum power output	W	154.4	72.3	230.0	138.3	208.7	151.4
Maximum Efficiency	%	84	83	86	56	88	87
Terminal resistance ±12%	Ω	0.23	0.49	0.62	1.03	1.54	2.12
Inductance (1KHz)	mH	N/A	0.09	0.12	0.2	0.285	0.21
Mechanical time constant	ms	2.6	2.5	2.4	2.4	2.4	2.3
Moment of inertia	gcm^2	15.3	15.3	15.3	15.3	15.3	15.3
Torque constant	mN.m/A	11.6	17.4	19.8	25.6	31.5	37.3
Speed constant	rpm/V	822	548	482	373	303	256
Speed/torque gradient	rpm/mN.m	16.3	15.4	15.1	15.0	14.9	14.6
Weight	g	280	280	280	280	280	280

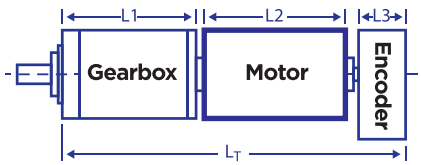
ADDITIONAL INFORMATION

Motor thermal resistance:	7.0 K/W	Motor thermal time constant:	1163 S
Axial (dynamic):	6.0 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	110N	Max allowable screw depth into flange:	4.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature:	125ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	**L1:32GP**	**L1:36GP**	**L2:BL32**	**L3:EN22S**	**L3:EN24T**
Cable 2: Red	Winding B	27.4	39.6	70.0	10.7	12.0
Cable 3: Blue	Winding C	35.9	48.6			
Plug definition (AWG 28#) Molex: 51021-0500		44.4	57.6			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL3270AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-32GP
AM-36GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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HIGH TEMPERATURE SERIES

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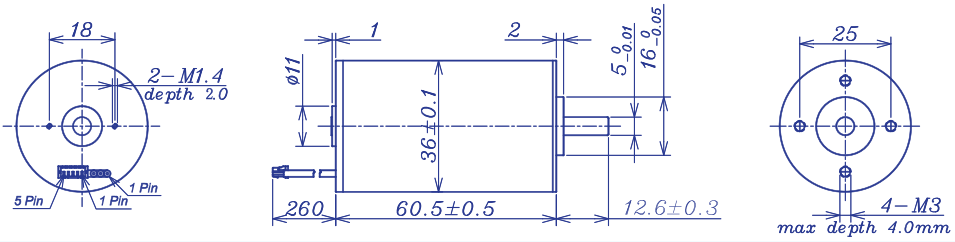
AM-BL3660AE Series



Motor Model			1211	1209	2413	2410	3612	3610
			Brushless Motor		Ball Bearings			
Nominal voltage		V	12	12	24	24	36	36
No load speed ±12%		rpm	11200	8840	12500	10200	12300	10450
No load current Max 150%		mA	320	230	220	165	120	105
Recommend limit for continuous operating	Max cont. torque	mN.m	70.0	74.4	70.8	74.5	74.6	78.4
	Rated Speed	rpm	9909	7504	11403	8974	11123	9262
	Rated Current	mA	7200	6000	4100	3500	2800	2500
	Rated Power	W	72.7	58.5	84.5	70.0	86.9	76.0
Starting current		mA	60000	38710	44444	27907	28125	21176
Stall torque		mN.m	607	496	807	620	779	690
Maximum power output		W	178.1	114.8	264.0	165.5	251.0	188.7
Maximum Efficiency		%	86	85	85	85	87	86
Terminal resistance ±12%		Ω	0.2	0.31	0.54	0.86	1.28	1.7
Inductance (1KH$_Z$)		mH	0.027	0.051	0.11	0.17	0.27	0.38
Mechanical time constant		ms	3.2	3.1	2.7	2.9	2.8	2.7
Moment of inertia		gcm^2	16.75	16.75	16.75	16.75	16.75	16.75
Torque constant		mN.m/A	10.2	12.9	18.2	22.3	27.8	32.7
Speed constant		rpm/V	938	741	523	428	343	292
Speed/torque gradient		rpm/mN.m	18.4	17.8	15.5	16.5	15.8	15.2
Weight		g	325.8	325.9	326.8	326.9	326.5	327.5

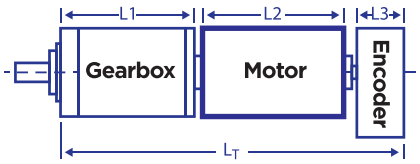
ADDITIONAL INFORMATION

Motor thermal resistance:	6.9K/W	Motor thermal time constant:	1188S
Axial (dynamic):	6.0 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	110N	Max allowable screw depth into flange:	4.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature:	125ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	5 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	L1:36GP	L1:40GP	L2:BL36	L3:EN22S	L3:EN36T
Cable 2: Red	Winding B	39.6	46.8	60.5	10.7	12.0
Cable 3: Blue	Winding C	48.6	58.3			
Plug definition (AWG 28#) Molex: 51021-0500		57.6	69.8			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL3660AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-36GP
AM-40GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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HIGH POWER SERIES

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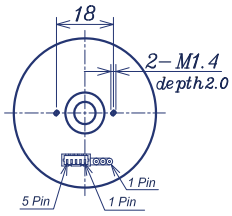
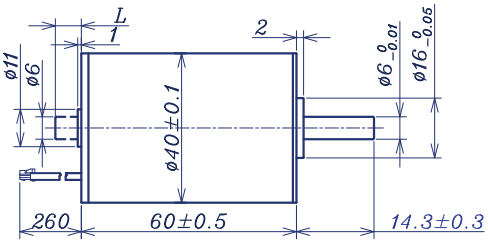
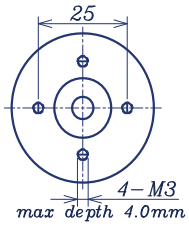
AM-BL4060AE Series







		Brushless Motor		Ball Bearings			
Motor Model		**1208**	**2408**	**3608**	**4809**		
Nominal voltage	V	12	24	36	48		
No load speed ±12%	rpm	7950	7940	8560	9100		
No load current Max 150%	mA	400	200	150	120		
Recommend limit for continuous operating — Max cont. torque	mN.m	89.7	89.7	95	95		
Rated Speed	rpm	6410	6250	6750	7350		
Rated Current	mA	6700	3350	2540	2020		
Rated Power	W	60	59	67.1	73.1		
Starting current	mA	33000	15000	11500	10000		
Stall torque	mN.m	460	420	450	490		
Maximum power output	W	96	87	100	118		
Maximum Efficiency	%	79.2	78.2	78.9	79.9		
Terminal resistance ±12%	Ω	-	-	-	-		
Inductance (1KHz)	mH	-	-	-	-		
Mechanical time constant	ms	9.5	9.5	9.5	9.5		
Moment of inertia	gcm^2	14.25	51.36	51.36	51.36		
Torque constant	mN.m/A	14.1	28.5	39.7	49.9		
Speed constant	rpm/V	680	337	242	193		
Speed/torque gradient	rpm/mN.m	17.16	18.8	19	18.3		
Weight	g	400	400	400	400		

ADDITIONAL INFORMATION

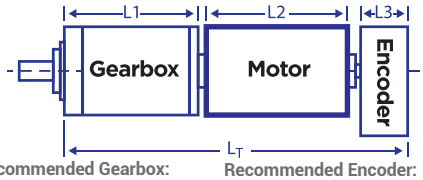
Motor thermal resistance:	- K/W	Motor thermal time constant:	- S
Axial (dynamic):	8.0 N	Radial (5mm from mounting face):	80 N
Press-fit force (static):	211 N	Max allowable screw depth into flange:	4.0mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<10 N)
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 65ºC
Standard rear shaft diameter:	5 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)

		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	**L1:36GP**	**L1:40GP**	**L2:BL40**	**L3:EN22S**	**L3:EN36T**
Cable 2: Red	Winding B	39.6	46.8	60	10.7	12.0
Cable 3: Blue	Winding C	48.6	58.3			
Plug definition (AWG 28#) Molex: 51021-0500		57.6	69.8			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL4060AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-36GP
AM-40GP

Recommended Encoder:
Encoder S: AM-EN2211S***
Encoder T: AM-EN3612T***

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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HIGH POWER SERIES

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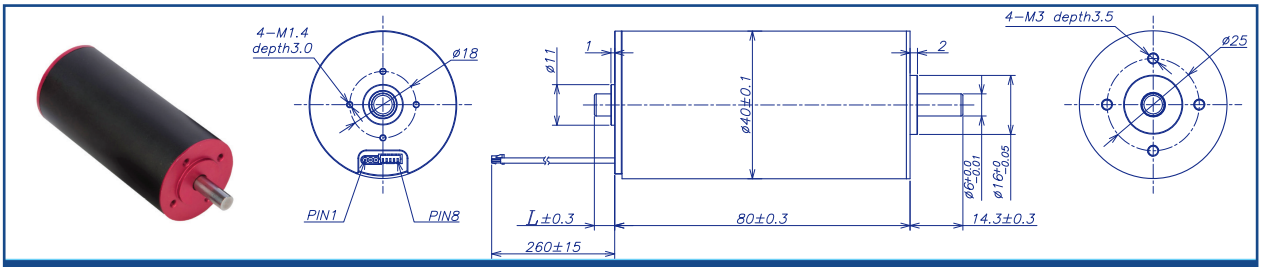
AM-BL4080AE Series



		Brushless Motor		Ball Bearings		
Motor Model			**1510**	**2410**	**4210**	**4810**
Nominal voltage		V	15	24	42	48
No load speed ±12%		rpm	10300	10140	10030	10140
No load current Max 150%		mA	680	320	180	160
Recommend limit for continuous operating	Max cont. torque	mN.m	169	163	160	163
	Rated Speed	rpm	9150	9000	8870	9000
	Rated Current	mA	11950	7100	3940	3550
	Rated Power	W	162	154	149	154
Starting current		mA	103000	60800	32900	30500
Stall torque		mN.m	1514	1452	1392	1459
Maximum power output		W	408	386	365	389
Maximum Efficiency		%	92	92	91.7	92
Terminal resistance ±12%		Ω	0.092	-	-	0.0869
Inductance (1KHz)		mH	-	-	-	-
Mechanical time constant		ms	3.76	3.74	3.72	3.6
Moment of inertia		gcm^2	54.1	54.2	54.1	54.1
Torque constant		mN.m/A	14.8	24.0	42.5	48
Speed constant		rpm/V	704	433	245	216
Speed/torque gradient		rpm/mN.m	6.8	6.98	7.2	6.95
Weight		g	520	520	520	520

ADDITIONAL INFORMATION

Motor thermal resistance:	- K/W	Motor thermal time constant:	- S
Axial (dynamic):	8.0 N	Radial (5mm from mounting face):	80 N
Press-fit force (static):	211 N	Max allowable screw depth into flange:	4.0mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<10 N)
Maximum winding temperature:	155ºC	Ambient temperature range:	-40 to 65ºC
Standard rear shaft diameter:	6 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)

Cable 1: Yellow	Winding A
Cable 2: Red	Winding B
Cable 3: Blue	Winding C

Plug definition (AWG 28#)
Molex: 51021-0500

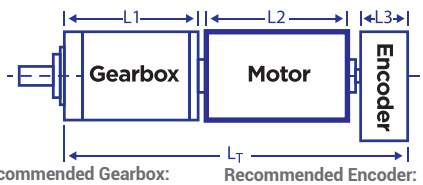
Plug 1: Brown Hall 3~16V
Plug 2: Black Hall GND
Plug 3: Yellow Hall A
Plug 4: Red Hall B
Plug 5: Blue Hall C

Total Length: L_T=L1+L2+L3

L1:36GP	L1:40GP	L2:BL40	L3:EN22S	L3:EN36T
39.6	46.8	60	10.7	12.0
48.6	58.3			
57.6	69.8			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL4080AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-36GP
AM-40GP

Recommended Encoder:
Encoder S: AM-EN2211S***
Encoder T: AM-EN3612T***

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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HIGH TEMPERATURE SERIES

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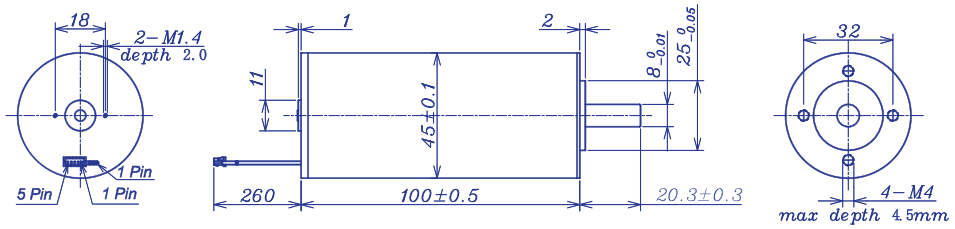
AM-BL45100AE Series



		Brushless Motor		Ball Bearings			
Motor Model			**2411**	**2406**	**3610**	**3606**	**4810**	**4806**
Nominal voltage		V	24	24	36	36	48	48
No load speed ±12%		rpm	11240	5900	10340	6380	10360	6450
No load current Max 150%		mA	600	320	390	200	370	190
Recommend limit for continuous operating	Max cont. torque	mN.m	160.4	238.7	179.2	246.7	151.1	233.8
	Rated Speed	rpm	10646	5258	9794	5684	9921	5788
	Rated Current	mA	8500	6500	5800	4800	3800	3500
	Rated Power	W	178.9	131.4	183.8	146.8	156.9	141.7
Starting current		mA	150000	57143	102857	42353	81356	32432
Stall torque		mN.m	3034	2195	3394	2261	3567	2278
Maximum power output		W	892.8	1339.0	918.7	377.6	967.4	384.6
Maximum Efficiency		%	88	86	88	87	87	85
Terminal resistance ±12%		Ω	0.16	0.42	0.35	0.85	0.59	1.48
Inductance (1KHz)		mH	0.035	0.14	0.11	0.31	0.21	0.55
Mechanical time constant		ms	4.3	3.1	3.5	3.2	3.3	3.3
Moment of inertia		gcm^2	109.8	109.8	109.8	109.8	109.8	109.8
Torque constant		mN.m/A	20.3	38.6	33.1	53.6	44.0	70.6
Speed constant		rpm/V	470	247	288	178	217	135
Speed/torque gradient		rpm/mN.m	3.7	2.7	3.0	2.8	2.9	2.8
Weight		g	846.5	850.0	852.5	841.5	847.5	840.3

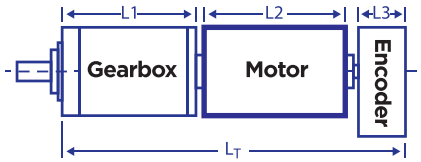
ADDITIONAL INFORMATION

Motor thermal resistance:	3.6K/W	Motor thermal time constant:	1286S
Axial (dynamic):	8.0 N	Radial (5mm from mounting face):	180.0 N
Press-fit force (static):	170N	Max allowable screw depth into flange:	4.5mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<8.0N)
Maximum winding temperature:	125°C	Ambient temperature range:	-30 to 65°C
Standard rear shaft diameter:	8 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 18#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	**L1:45GP**	**L1:52GP**	**L2:BL45**	**L3:EN22S**	**L3:EN36T**
Cable 2: Red	Winding B	60.1	79.3	100.0	10.7	12.0
Cable 3: Blue	Winding C	72.1				
Plug definition (AWG 28#) Molex: 51021-0500						
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL45100AE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-45GP
AM-52GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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Assun high power series BLDC motors are designed with multi-pole (4 poles) structure. Together with the high power and high torque output, these motors have also been upgraded to cope with high winding temperatures up to 155℃. Applications with heavy duty requirements now have the perfect choice to their best satisfaction.

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HIGH POWER SERIES

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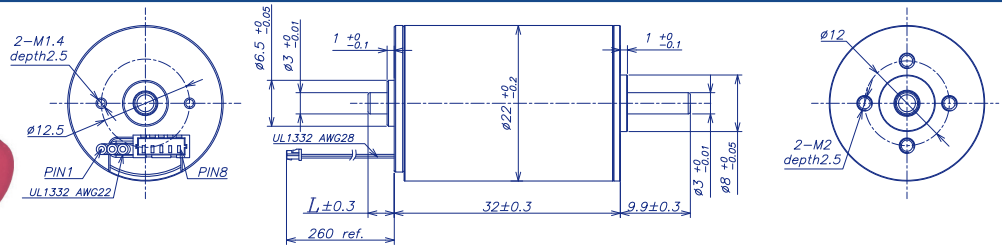
AM-BL2232BF Series



		Brushless Motor			Ball Bearings	
Motor Model		**0607**	**1207**	**1507**	**1807**	**2407**
Nominal voltage	V	6	12	15	18	24
No load speed ±12%	rpm	6850	6840	6900	6950	7000
No load current Max 150%	mA	135	70	60	50	40
Recommend limit for continuous operating — Max cont. torque	mN.m	14.8	14.8	14.8	14.8	14.8
Rated Speed	rpm	5600	5520	5470	5620	5550
Rated Current	mA	1800	900	730	610	460
Rated Power	W	8.7	8.5	8.5	8.7	8.6
Starting current	mA	9260	4378	3297	2978	2085
Stall torque	mN.m	81.1	76.7	71.4	77	71.2
Maximum power output	W	14.6	13.7	12.9	14	13
Maximum Efficiency	%	83	83	82	83	82
Terminal resistance ±12%	Ω	0.61	2.74	2.74	6	11.5
Inductance (1KHz)	mH	0.028	-	-	-	-
Mechanical time constant	ms	2.3	2.3	2.3	2.3	2.3
Moment of inertia	gcm^2	2.92	2.92	2.92	2.92	2.92
Torque constant	mN.m/A	8.89	17.8	22	26.3	34.7
Speed constant	rpm/V	1158	579	468	392	297
Speed/torque gradient	rpm/mN.m	84	89.3	96.7	90.3	98.3
Weight	g	-	-	-	-	-

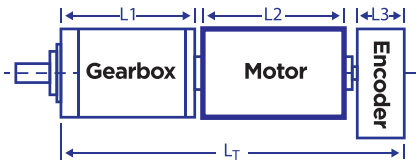
ADDITIONAL INFORMATION

Motor thermal resistance:	-K/W	Motor thermal time constant:	-S
Axial (dynamic):	4.0 N	Radial (5mm from mounting face):	4.0 N
Press-fit force (static):	60 N	Max allowable screw depth into flange:	2.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	155ºC	Ambient temperature range:	-40 to 65ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 22#)	Total Length: L_T=L1+L2+L3				
Cable 1: Yellow Winding A	L1:19GP	L1:24GP	L2:BL22	L3:EN16S	L3:EN16T
Cable 2: Red Winding B	18.8	24.0	32.0	10.7	12.0
Cable 3: Blue Winding C	23.6	34.3			
Plug definition (AWG 28#) Molex: 51021-0500	28.4	42.8			
Plug 1: Brown Hall 3~16V					
Plug 2: Black Hall GND					
Plug 3: Yellow Hall A					
Plug 4: Red Hall B					
Plug 5: Blue Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2232BF Combiniation Scheme



推荐齿轮箱：
AM-19GP
AM-22GP
AM-24GP

推荐编码器：
磁电编码器：AM-EN1611S***
光电编码器：AM-EN1612T***

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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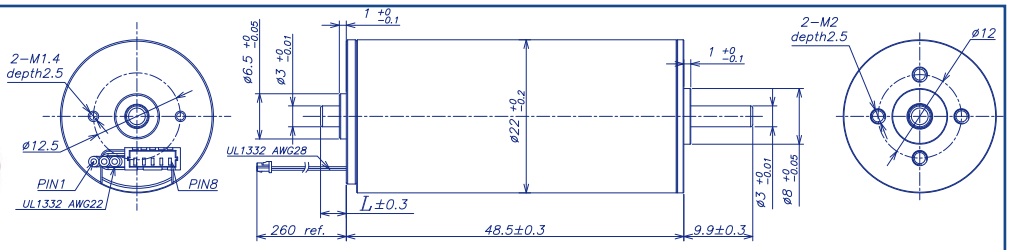
AM-BL2248BF Series



		Brushless Motor		Ball Bearings			
Motor Model			**1206**	**1806**	**2406**		
Nominal voltage		V	12	18	24		
No load speed ±12%		rpm	5950	6400	6200		
No load current Max 150%		mA	80	60	45		
Recommend limit for continuous operating	Max cont. torque	mN.m	26.4	26.4	26.4		
	Rated Speed	rpm	5000	5500	5300		
	Rated Current	mA	1480	1060	770		
	Rated Power	W	13.8	15.2	14.7		
Starting current		mA	10000	7260	5060		
Stall torque		mN.m	149	190	182		
Maximum power output		W	25.8	31.8	29.5		
Maximum Efficiency		%	81	82	81.7		
Terminal resistance ±12%		Ω	1.3	2.5	4.75		
Inductance (1KHz)		mH	-	-	-		
Mechanical time constant		ms	2.3	2.3	2.3		
Moment of inertia		gcm^2	2.92	2.92	2.92		
Torque constant		mN.m/A	18.9	26.4	36.2		
Speed constant		rpm/V	505	363	271		
Speed/torque gradient		rpm/mN.m	36	33.5	34.1		
Weight		g	95	95	95		

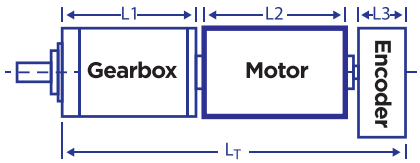
ADDITIONAL INFORMATION

Motor thermal resistance:	-K/W	Motor thermal time constant:	-S
Axial (dynamic):	4.0 N	Radial (5mm from mounting face):	4.0 N
Press-fit force (static):	60 N	Max allowable screw depth into flange:	2.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 65ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 24#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	L1:19GP	L1:24GP	L2:BL22	L3:EN16S	L3:EN16T
Cable 2: Red	Winding B	18.8	24.0	32.0	10.7	12.0
Cable 3: Blue	Winding C	23.6	34.3			
Plug definition (AWG 28#) Molex: 51021-0500		28.4	42.8			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2248BF Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-22GP
AM-24GP

Recommended Encoder:
Encoder S: AM-EN1611S***
Encoder T: AM-EN1612T***

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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DC BRUSHLESS MOTOR

HIGH POWER SERIES

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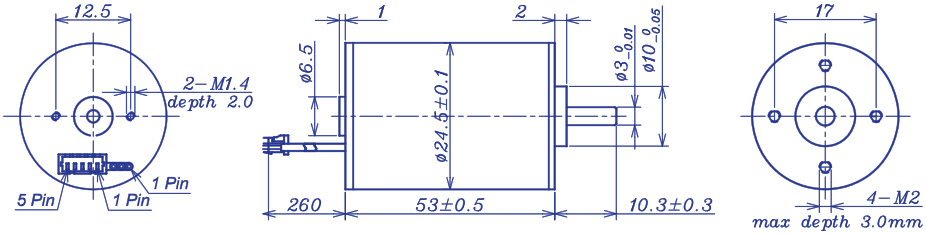
AM-BL2453BF Series



Motor Model		Brushless Motor 1212	1209	Ball Bearings 1812	1809	2412	2409
Nominal voltage	V	12	12	18	18	24	24
No load speed ±12%	rpm	11937	9182	11937	8952	11937	9182
No load current Max 150%	mA	358	300	239	200	179	150
Recommend limit for continuous operating: Max cont. torque	mN.m	46.48	51.17	54.16	53.76	46.48	56.16
Rated Speed	rpm	10799	8037	10769	7818	10954	7979
Rated Current	mA	5200	4400	4000	3000	2600	2400
Rated Power	W	52.56	43.07	61.08	44.02	53.32	46.93
Starting current	mA	54545	35294	40909	23684	31579	18321
Stall torque	mN.m	524	440	589	455	606	457
Maximum power output	W	163.6	105.9	174.1	106.6	189.5	109.9
Maximum Efficiency	%	84	82	85	82	86	83
Terminal resistance ±12%	Ω	0.22	0.34	0.44	0.76	0.76	1.31
Inductance (1KHz)	mH	0.016	0.03	0.036	2.06	2.73	2.10
Mechanical time constant	ms	2.38	2.18	2.12	2.06	2.08	2.10
Moment of inertia	gcm^2	9.97	9.97	9.97	9.97	9.97	9.97
Torque constant	mN.m/A	9.60	12.48	14.40	19.20	19.20	24.96
Speed constant	rpm/V	995	765	663	497	497	383
Speed/torque gradient	rpm/mN.m	22.8	20.8	20.3	19.7	19.7	20.1
Weight	g	180	180	180	180	180	180

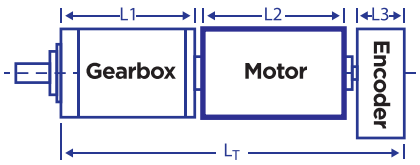
ADDITIONAL INFORMATION

Motor thermal resistance:	10.2 K/W	Motor thermal time constant:	768 S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	155ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 22#)	Total Length: L_T=L1+L2+L3				
Cable 1: Yellow Winding A	L1:24GP	L1:26GP	L2:BL24	L3:EN16S	L3:EN16T
Cable 2: Red Winding B	24	25.7	53.0	10.7	12.0
Cable 3: Blue Winding C	34.3	36			
Plug definition (AWG 28#) Molex: 51021-0500	42.8	44.5			
	51.3	53			
Plug 1: Brown Hall 3~16V					
Plug 2: Black Hall GND					
Plug 3: Yellow Hall A					
Plug 4: Red Hall B					
Plug 5: Blue Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2453BF Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-24GP
AM-26GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
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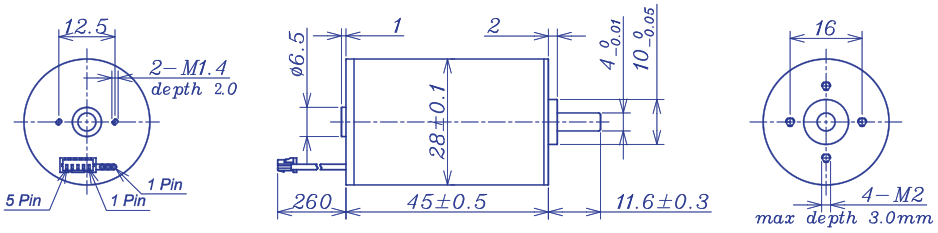
AM-BL2845BF Series



Motor Model			Brushless Motor 1210	1208	Ball Bearings 1810	1808	2410	2408
Nominal voltage		V	12	12	18	18	24	24
No load speed ±12%		rpm	10370	7930	10111	7995	10370	8171
No load current Max 150%		mA	417	333	278	222	208	167
Recommend limit for continuous operating	Max cont. torque	mN.m	61.69	61.66	59.87	64.03	59.49	65.44
	Rated Speed	rpm	9126	6684	8916	6801	9217	6996
	Rated Current	mA	6000	4600	3800	3200	2900	2500
	Rated Power	W	58.96	43.16	55.90	45.60	57.43	47.94
Starting current		mA	50000	29268	32143	21429	26087	17391
Stall torque		mN.m	553	523	546	455	577	488
Maximum power output		W	150.0	87.8	144.6	96.4	156.5	104.3
Maximum Efficiency		%	83	80	82	81	83	81
Terminal resistance ±12%		Ω	0.24	0.41	0.56	0.84	0.92	1.38
Inductance (1KH$_Z$)		mH	0.014	0.03	N/A	0.077	0.078	0.14
Mechanical time constant		ms	2.28	2.28	2.25	2.11	2.19	2.03
Moment of inertia		gcm^2	11.6	11.6	11.6	11.6	11.6	11.6
Torque constant		mN.m/A	11.06	14.45	17.00	21.50	22.10	28.05
Speed constant		rpm/V	864	661	562	444	432	340
Speed/torque gradient		rpm/mN.m	22.8	20.8	20.3	19.7	26.2	20.1
Weight		g	180	180	180	180	180	180

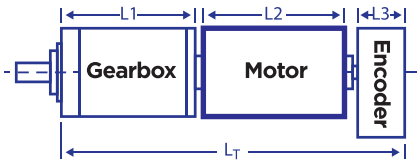
ADDITIONAL INFORMATION

Motor thermal resistance:	10.2 K/W	Motor thermal time constant:	822 S
Axial (dynamic):	4.0 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	155ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 22#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	L1:28GP	L1:32GP	L2:BL28	L3:EN16S	L3:EN16T
Cable 2: Red	Winding B	26.1	27.4	45.0	10.7	12.0
Cable 3: Blue	Winding C	33.3	35.9			
Plug definition (AWG 28#) Molex: 51021-0500		40.5	44.4			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL2845BF Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-28GP
AM-32GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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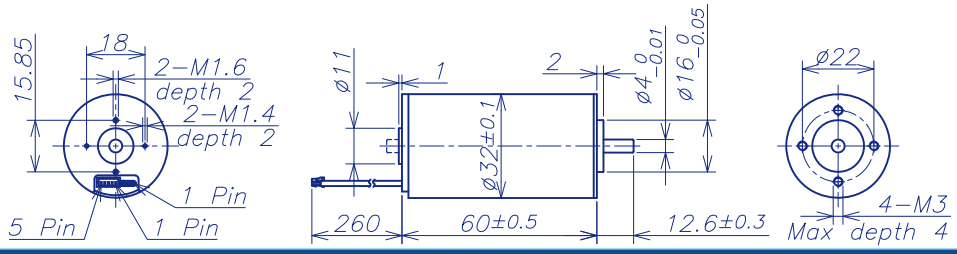
AM-BL3260BF Series



Motor Model		Brushless Motor 1208	1207	Ball Bearings 2409	2407	3609	3607
Nominal voltage	V	12	12	24	24	36	36
No load speed ±12%	rpm	8244	6870	9160	7495	8833	7274
No load current Max 150%	mA	400	300	270	180	150	140
Recommend limit for continuous operating: Max cont. torque	mN.m	119.54	121.76	114.84	116.82	110.92	116.26
Rated Speed	rpm	7378	6000	8372	6708	8104	6523
Rated Current	mA	9000	7600	4800	4000	3000	2600
Rated Power	W	92.36	76.50	100.69	82.05	94.14	79.41
Starting current	mA	85714	60000	55814	38095	36364	25175
Stall torque	mN.m	1191	1001	1396	1165	1415	1190
Maximum power output	W	257.1	180.0	334.9	228.6	327.3	226.6
Maximum Efficiency	%	87	86	88	87	88	86
Terminal resistance ±12%	Ω	0.14	0.20	0.43	0.63	0.99	1.43
Inductance (1KHz)	mH	0.013	N/A	0.063	0.094	0.15	0.22
Mechanical time constant	ms	1.11	1.10	1.05	1.03	1.00	0.98
Moment of inertia	gcm^2	15.3	15.3	15.3	15.3	15.3	15.3
Torque constant	mN.m/A	13.9	16.68	25.02	30.58	38.92	47.26
Speed constant	rpm/V	687	572	382	312	245	202
Speed/torque gradient	rpm/mN.m	6.9	6.9	6.6	6.4	6.2	6.1
Weight	g	240	240	240	240	240	240

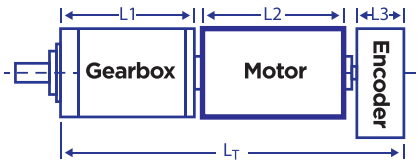
ADDITIONAL INFORMATION

Motor thermal resistance:	7.8 K/W	Motor thermal time constant:	1089 S
Axial (dynamic):	6.0 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth into flange:	4.0mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature:	155ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	L1:32GP	L1:36GP	L2:BL28	L3:EN22S	L3:EN124T
Cable 2: Red	Winding B	27.4	39.6	60.0	10.7	12.0
Cable 3: Blue	Winding C	35.9	48.6			
Plug definition (AWG 28#) Molex: 51021-0500		44.4	57.6			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL3260BF Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-32GP
AM-36GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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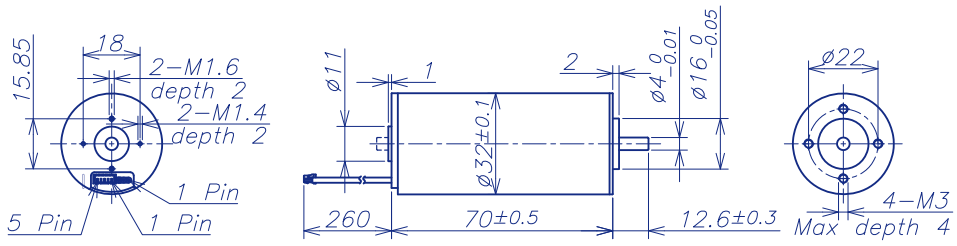
AM-BL3270BF Series



		Brushless Motor		Ball Bearings			
Motor Model		**1208**	**1207**	**2409**	**2407**	**3609**	**3607**
Nominal voltage	V	12	12	24	24	36	36
No load speed ±12%	rpm	8426	6741	8988	7095	8792	7222
No load current Max 150%	mA	750	500	375	250	250	167
Recommend limit for continuous operating — Max cont. torque	mN.m	125.8	139.4	123.0	140.5	123.2	139.6
Recommend limit for continuous operating — Rated Speed	rpm	7653	5959	8325	6347	8128	6513
Recommend limit for continuous operating — Rated Current	mA	10000	8700	5200	4600	3400	3100
Recommend limit for continuous operating — Rated Power	W	100.83	86.99	107.27	93.39	104.83	95.221
Starting current	mA	109091	750000	70588	43636	45000	31579
Stall torque	mN.m	1484	1275	1800	1409	1760	1503
Maximum power output	W	327.3	225.0	423.5	261.8	405.0	284.2
Maximum Efficiency	%	84	84	86	85	86	86
Terminal resistance ±12%	Ω	0.11	0.15	0.34	0.55	0.80	1.14
Inductance (1KHz)	mH	0.01	0.01	0.048	0.08	0.12	0.18
Mechanical time constant	ms	1.12	1.05	0.99	1.00	0.99	0.95
Moment of inertia	gcm^2	18.9	18.9	18.9	18.9	18.9	18.9
Torque constant	mN.m/A	13.6	17.0	25.5	32.3	39.1	47.6
Speed constant	rpm/V	702	562	374	296	244	201
Speed/torque gradient	rpm/mN.m	5.7	5.3	5.0	5.0	5.0	4.8
Weight	g	280	280	280	280	280	280

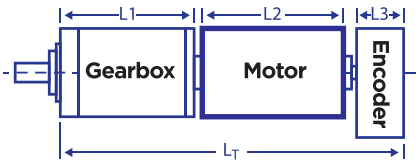
ADDITIONAL INFORMATION

Motor thermal resistance:	7.0 K/W	Motor thermal time constant:	1163 S
Axial (dynamic):	6.0 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth into flange:	4.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature:	155ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	**L1:32GP**	**L1:36GP**	**L2:BL28**	**L3:EN22S**	**L3:EN24T**
Cable 2: Red	Winding B	27.4	39.6	70.0	10.7	12.0
Cable 3: Blue	Winding C	35.9	48.6			
Plug definition (AWG 28#) Molex: 51021-0500		44.4	57.6			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL3270BF Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-32GP
AM-36GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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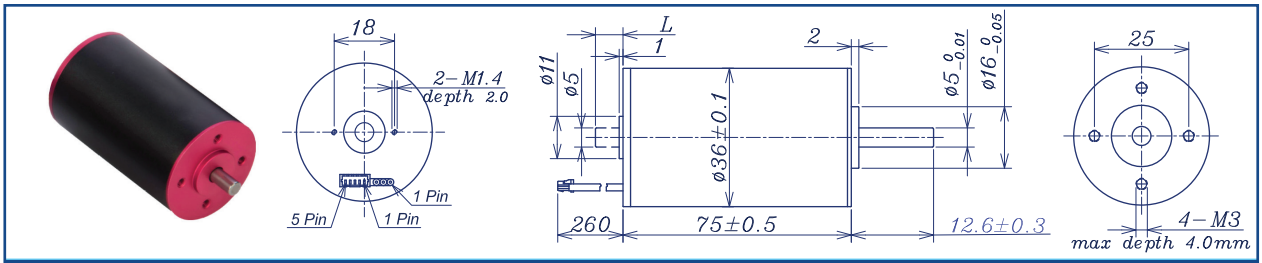
AM-BL3675BF Series



		Brushless Motor		Ball Bearings			
Motor Model		**2408**	**2406**	**3609**	**3606**	**4808**	**4806**
Nominal voltage	V	24	24	36	36	48	48
No load speed ±12%	rpm	8013	6128	9192	6250	8334	5953
No load current Max 150%	mA	454	338	339	225	227	169
Recommend limit for continuous operating — Max cont. torque	mN.m	187.22	211.76	174.32	207.63	185.52	220.26
Rated Speed	rpm	7452	5530	8694	5674	7815	5394
Rated Current	mA	7000	6000	5000	4000	3600	2800
Rated Power	W	146.11	122.64	158.71	123.37	151.83	114.43
Starting current	mA	100000	61538	92308	43373	57831	29814
Stall torque	mN.m	2860	2302	3452	2386	3181	2296
Maximum power output	W	600.0	369.2	830.8	390.4	694.30	357.7
Maximum Efficiency	%	87	86	88	86	88	86
Terminal resistance ±12%	Ω	0.24	0.39	0.39	0.83	0.83	1.61
Inductance (1KHz)	mH	0.39	0.068	N/A	N/A	N/A	0.33
Mechanical time constant	ms	1.85	1.76	1.76	1.73	1.73	1.72
Moment of inertia	gcm^2	63.21	63.21	63.21	63.21	63.21	63.21
Torque constant	mN.m/A	28.6	37.4	37.4	55	55	77
Speed constant	rpm/V	334	255	255	174	174	120
Speed/torque gradient	rpm/mN.m	2.8	2.7	2.7	2.6	2.6	2.6
Weight	g	400	400	400	400	400	400

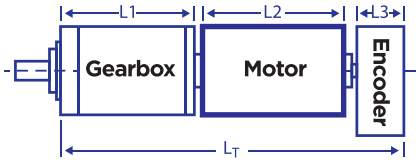
ADDITIONAL INFORMATION

Motor thermal resistance:	5.4 K/W	Motor thermal time constant:	1273 S
Axial (dynamic):	6.0 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth into flange:	4.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature:	155ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	5 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	**L1:36GP**	**L1:40GP**	**L2:BL36**	**L3:EN22S**	**L3:EN36T**
Cable 2: Red	Winding B	39.6	46.8	75	10.7	12.0
Cable 3: Blue	Winding C	48.6	58.3			
Plug definition (AWG 28#) Molex: 51021-0500		57.6	69.8			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL3675BF Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-36GP
AM-40GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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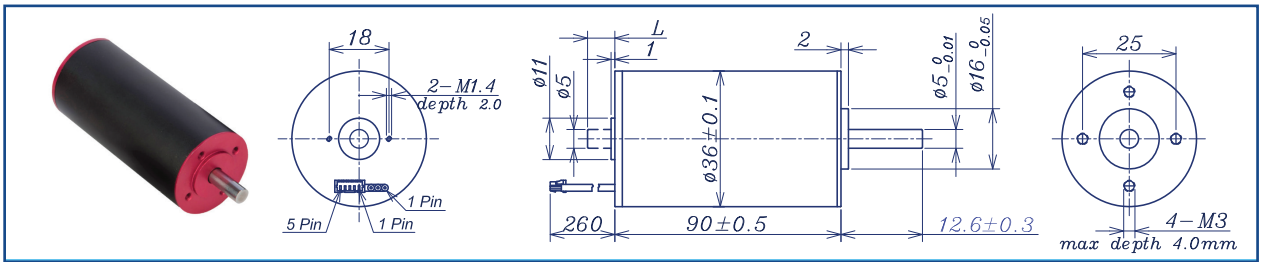
AM-BL3690BF Series



		Brushless Motor		Ball Bearings			
Motor Model		2408	2406	3609	3610	4809	4805
Nominal voltage	V	24	24	36	36	48	48
No load speed ±12%	rpm	8488	6063	9095	5093	8935	4993
No load current Max 150%	mA	521	358	375	178	281	125
Recommend limit for continuous operating – Max cont. torque	mN.m	207.33	235.65	205.07	257.99	201.04	263.93
Rated Speed	rpm	7995	5529	8626	4533	8474	4425
Rated Current	mA	8200	6600	5800	4000	4200	3000
Rated Power	W	173.59	136.62	185.23	122.46	178.40	122.30
Starting current	mA	141176	75000	112500	36364	81356	26374
Stall torque	mN.m	3812	2835	4253	2455	4174	2421
Maximum power output	W	847.1	450.0	1012.5	327.3	976.3	316.5
Maximum Efficiency	%	88	87	89	86	89	87
Terminal resistance ±12%	Ω	0.17	0.32	0.32	0.99	0.59	1.82
Inductance ($1KH_Z$)	mH	0.19	0.068	0.064	N/A	N/A	0.37
Mechanical time constant	ms	0.32	1.69	1.69	1.64	1.69	1.63
Moment of inertia	gcm^2	74.56	74.56	74.56	74.56	74.56	74.56
Torque constant	mN.m/A	27	37.8	37.8	67.5	51.3	91.8
Speed constant	rpm/V	354	253	253	141	186	104
Speed/torque gradient	rpm/mN.m	2.2	2.1	2.1	2.1	2.1	2.1
Weight	g	480	480	480	480	480	480

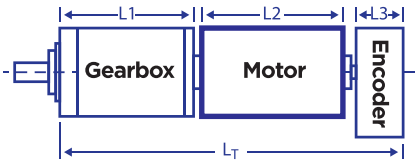
ADDITIONAL INFORMATION

Motor thermal resistance:	4.2K/W	Motor thermal time constant:	1380S
Axial (dynamic):	6.0 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth into flange:	4.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature:	155ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	5 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	L1:36GP	L1:40GP	L2:BL36	L3:EN22S	L3:EN36T
Cable 2: Red	Winding B	39.6	46.8	90	10.7	12.0
Cable 3: Blue	Winding C	48.6	58.3			
Plug definition (AWG 28#) Molex: 51021-0500		57.6	69.8			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL3690BF Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-36GP
AM-40GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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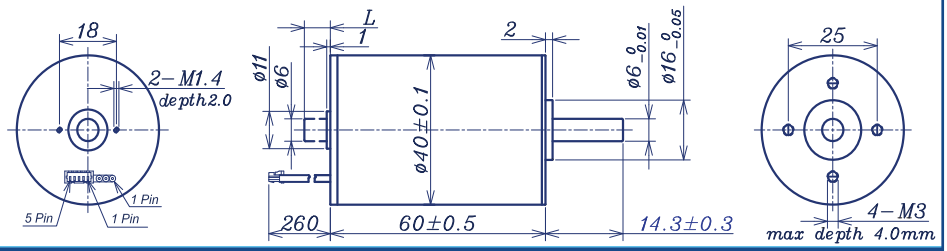
AM-BL4060BF Series



		Brushless Motor		Ball Bearings			
Motor Model		**2409**	**2407**	**3609**	**3607**	**4809**	**4807**
Nominal voltage	V	24	24	36	36	48	48
No load speed ±12%	rpm	9095	7074	9095	7074	9095	7074
No load current Max 150%	mA	375	292	250	150	188	146
Recommend limit for continuous operating – Max cont. torque	mN.m	177.03	184.94	171.99	184.97	182.04	191.42
Rated Speed	rpm	8534	6425	8573	6539	8569	6530
Rated Current	mA	7400	6000	4800	4000	3800	3100
Rated Power	W	158.2	126.38	154.41	126.66	163.36	130.89
Starting current	mA	120000	77419	83721	52941	65753	40336
Stall torque	mN.m	3024	2508	3165	2573	3314	2614
Maximum power output	W	720.0	464.5	753.5	476.5	789.0	484.0
Maximum Efficiency	%	89	88	89	88	90	88
Terminal resistance ±12%	Ω	0.22	0.31	0.43	0.68	0.7319	1.17
Inductance (1KH$_Z$)	mH	0.04	0.057	0.076	0.15	0.15	0.23
Mechanical time constant	ms	2.72	2.55	2.60	2.49	2.49	2.45
Moment of inertia	gcm^2	86.51	86.51	86.51	86.51	86.51	86.51
Torque constant	mN.m/A	25.2	32.4	37.8	48.6	50.4	64.8
Speed constant	rpm/V	379	295	253	196	189	147
Speed/torque gradient	rpm/mN.m	3.0	2.8	2.9	2.7	2.7	2.7
Weight	g	356	356	356	356	356	356

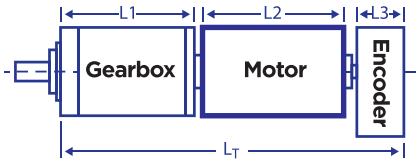
ADDITIONAL INFORMATION

Motor thermal resistance:	5.6 K/W	Motor thermal time constant:	1163 S
Axial (dynamic):	6.0 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth into flange:	4.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature:	155ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	5 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	**L1:40GP**	**L1:45GP**	**L2:BL40**	**L3:EN22S**	**L3:EN36T**
Cable 2: Red	Winding B	35.3	36.1	60	10.7	12.0
Cable 3: Blue	Winding C	46.8	48.1			
Plug definition (AWG 28#) Molex: 51021-0500		58.3	60.1			
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL4060BF Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-40GP
AM-45GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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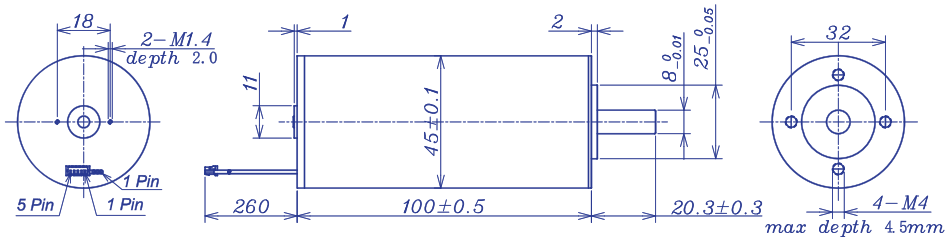
AM-BL45100BF Series



		Brushless Motor		Ball Bearings			
Motor Model		**2407**	**2406**	**3608**	**3606**	**4808**	**4807**
Nominal voltage	V	24	24	36	36	48	48
No load speed ±12%	rpm	7569	5823	9200	5684	7579	7075
No load current Max 150%	mA	900	650	700	289	367	350
Recommend limit for continuous operating – Max cont. torque	mN.m	354.79	358.2	234.3	381.69	280.20	230
Rated Speed	rpm	6397	5427	8812	5382	7350	6804
Rated Current	mA	11000	9600	7000	6600	5000	3890
Rated Power	W	237.68	203.55	216.2	215.12	215.67	163.86
Starting current	mA	218182	141176	149904	124138	165517	111628
Stall torque	mN.m	7423	5557	5549	7508	10010	7258
Maximum power output	W	1390.1	847.1	1336.6	1117.2	1986.2	1339.5
Maximum Efficiency	%	90	88	87	91	91	89
Terminal resistance ±12%	Ω	0.11	0.17	0.16	0.29	0.29	0.43
Inductance (1KH$_Z$)	mH	0.023	0.043	0.035	0.035	0.082	0.13
Mechanical time constant	ms	2.16	2.49	3.9	1.8	1.8	1.71
Moment of inertia	gcm^2	227.14	227.14	227.14	227.14	227.14	227.14
Torque constant	mN.m/A	34.02	39.36	37.2	60.48	60.48	65.02
Speed constant	rpm/V	281	243	257	158	158	147
Speed/torque gradient	rpm/mN.m	0.9	1.0	1.7	0.8	0.8	1
Weight	g	757	757	757	757	757	757

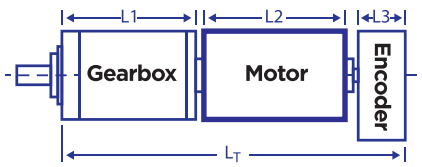
ADDITIONAL INFORMATION

Motor thermal resistance:	3.3 K/W	Motor thermal time constant:	1740 S
Axial (dynamic):	8.0 N	Radial (5mm from mounting face):	180.0 N
Press-fit force (static):	170 N	Max allowable screw depth into flange:	4.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<8.0N)
Maximum winding temperature:	155ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	8 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 18#)		Total Length: L_T=L1+L2+L3				
Cable 1: Yellow	Winding A	**L1:45GP**	**L1:52GP**	**L2:BL45**	**L3:EN22S**	**L3:EN36T**
Cable 2: Red	Winding B	60.1	79.3	100.0	10.7	12.0
Cable 3: Blue	Winding C	72.1				
Plug definition (AWG 28#) Molex: 51021-0500						
Plug 1: Brown	Hall 3~16V					
Plug 2: Black	Hall GND					
Plug 3: Yellow	Hall A					
Plug 4: Red	Hall B					
Plug 5: Blue	Hall C					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BL45100BF Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-45GP
AM-52GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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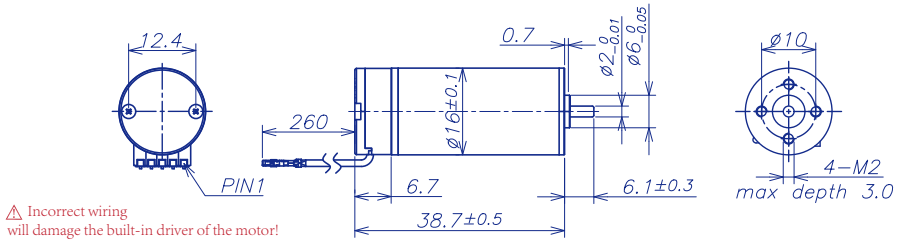
AM-BD1639AN Series



⚠ Incorrect wiring will damage the built-in driver of the motor!

			Brushless Motor		Ball Bearings			
Motor Model			1220	1214	1827	1817	2420	2416
Nominal voltage		V	12	12	18	18	24	24
No load speed ±12%		rpm	19822	13840	26874	17253	19613	16063
No load current Max 150%		mA	85	60	77	49	42	35
Recommend limit for continuous operating	Max cont. torque	mN.m	3.0	3.2	2.2	3.1	2.8	3.1
	Rated Speed	rpm	16809	10528	24516	14233	16854	13135
	Rated Current	mA	600	450	420	360	280	250
	Rated Power	W	5.26	3.56	5.63	4.61	4.91	4.22
Starting current		mA	3947	1881	4787	2050	1990	1371
Stall torque		mN.m	23	16	31	20	23	20
Maximum power output		W	11.8	5.6	21.5	9.2	11.9	8.2
Maximum Efficiency		%	73	67	76	71	73	71
Operating Range		V	12~24	12~24	12~24	12~24	12~24	12~24
Type of Current			. ì !	. ì !	. ì !	. ì !	. ì !	. ì !
Mechanical time constant		ms	2.73	2.79	2.76	2.65	2.65	2.58
Moment of inertia		gcm^2	0.3	0.3	0.3	0.3	0.3	0.3
Torque constant		mN.m/A	5.78	8.28	6.40	9.96	11.69	14.27
Speed constant		rpm/V	1652	1153	1493	958	843.5	820.9
Speed/torque gradient		rpm/mN.m	868.6	888.7	877.7	844.7	254.0	232.0
Weight		g	40.6	40.6	40.6	40.6	40.6	40.6

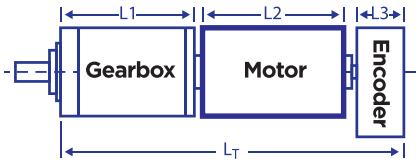
ADDITIONAL INFORMATION

Motor thermal resistance:	22.5 K/W	Motor thermal time constant:	407 S
Axial (dynamic):	1.5 N	Radial (5mm from mounting face):	6.0 N
Press-fit force (static):	40 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<2.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0 mm

Connection (AWG 28#)		Total Length: L_T=L1+L2+L3				
		L1:16GP	L1:19GP	L1:ííGP	L2:BD16	
Cable 1:	+Vcc	15.9	18.8	18.ô	46.7	
Cable 2:	GND	19.6	23.6	23.ò		
Cable 3:	CW/CCW	23.3	28.4	28.ð		
Cable 4:	FG Pulse	27.0	33.2	33.î		
Cable 5:	PWM					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BD1639AN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-16GP
AM-19GP
AM-22GP

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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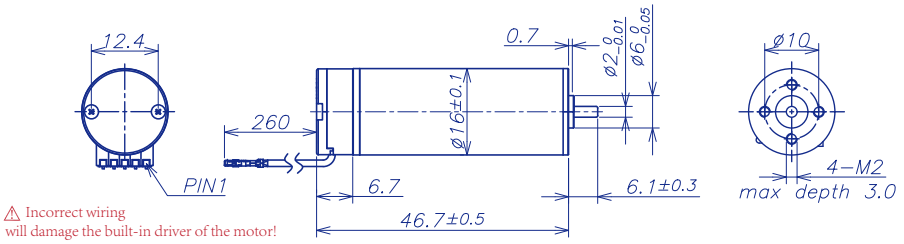


		Brushless Motor				Ball Bearings			
Motor Model		**1234**	**1221**	**1216**	**1836**	**1821**	**1816**	**2419**	**2413**
Nominal voltage	V	12	12	12	18	18	18	24	24
No load speed ±12%	rpm	34200	21000	16400	36300	20900	16160	19400	12600
No load current Max 150%	mA	200	120	80	150	75	60	50	40
Recommend limit for continuous operating — Max cont. torque	mN.m	4.6	5.8	6.3	3.5	5.7	6.2	6.2	6.4
Rated Speed	rpm	31782	17888	13242	34513	17874	13027	16136	9133
Rated Current	mA	1600	1200	1000	900	780	650	580	400
Rated Power	W	15.5	10.9	8.8	12.7	10.7	8.4	10.4	6.1
Starting current	mA	20000	7407	4858	15385	4945	3103	3200	1348
Stall torque	mN.m	66	39	33	71	39	32	37	23
Maximum power output	W	58.8	21.5	14.1	67.9	21.6	13.4	18.6	7.6
Maximum Efficiency	%	81	76	76	81	77	74	77	69
Operating Range	V	12~24	12~24	12~24	12~24	12~24	12~24	12~24	12~24
Type of Current		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mechanical time constant	ms	2.2	2.3	2.1	2.2	2.3	2.2	2.3	2.3
Moment of inertia	gcm^2	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
Torque constant	mN.m/A	3.3	5.4	6.9	4.7	8.1	10.4	11.6	17.6
Speed constant	rpm/V	2879	1779	1390	2037	1179	915	821	541
Speed/torque gradient	rpm/mN.m	520.7	536.8	499.4	508.2	529.8	509.0	529.6	545.7
Weight	g	50.2	50.1	49.8	50.1	50.2	49.8	49.9	49.8

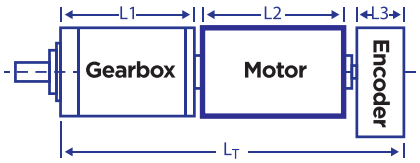
ADDITIONAL INFORMATION

Motor thermal resistance:	17.9K/W	Motor thermal time constant:	439S
Axial (dynamic):	1.5 N	Radial (5mm from mounting face):	6.0 N
Press-fit force (static):	40 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<2.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0 mm

Connection (AWG 28#)		Total Length: L_T=L1+L2+L3				
		L1:16GP	L1:19GP	L1:ííGP	L2:BD16	
Cable 1:	+Vcc	15.9	18.8	18.ô	46.7	
Cable 2:	GND	19.6	23.6	23.ò		
Cable 3:	CW/CCW	23.3	28.4	28.ð		
Cable 4:	FG Pulse	27.0	33.2	33.î		
Cable 5:	PWM					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BD1647AN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-16GP
AM-19GP
AM-22GP

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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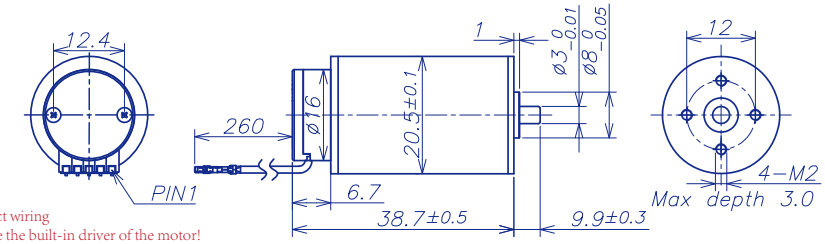
AM-BD2039AN Series



⚠ Incorrect wiring will damage the built-in driver of the motor!

		Brushless Motor		Ball Bearings			
Motor Model		**1225**	**1220**	**1822**	**1819**	**2419**	**2415**
Nominal voltage	V	12	12	18	18	24	24
No load speed ±12%	rpm	24525	19908	22265	18634	19339	14850
No load current Max 150%	mA	200	200	120	100	90	70
Recommend limit for continuous operating — Max cont. torque	mN.m	2.3	4.2	2.9	4.5	3.6	4.6
Rated Speed	rpm	23581	18096	21080	16679	17806	12731
Rated Current	mA	700	900	500	600	400	380
Rated Power	W	5.7	8.0	6.4	7.9	6.7	6.2
Starting current	mA	13187	8392	7258	4865	4000	2243
Stall torque	mN.m	60	47	54	43	45	32
Maximum power output	W	38.4	24.3	31.6	21.0	22.9	12.6
Maximum Efficiency	%	77	75	76	73	72	68
Operating Range	V	12~24	12~24	12~24	12~24	12~24	12~24
Type of Current		. ì !	. ì !	. ì !	. ì !	. ì !	. ì !
Mechanical time constant	ms	3.0	3.1	3.0	3.1	3.1	3.3
Moment of inertia	gcm^2	0.69	0.69	0.69	0.69	0.69	0.69
Torque constant	mN.m/A	4.6	5.7	7.6	9.0	11.6	15.0
Speed constant	rpm/V	2075	1689	1258	1057	824	639
Speed/torque gradient	rpm/mN.m	410.4	427.3	410.8	432.9	427.0	457.1
Weight	g	60	60	60	60	60	60

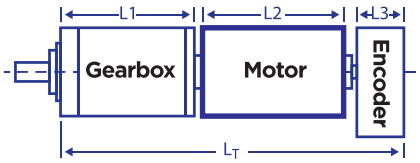
ADDITIONAL INFORMATION

Motor thermal resistance:	22.5 K/W	Motor thermal time constant:	407 S
Axial (dynamic):	1.5 N	Radial (5mm from mounting face):	6.0 N
Press-fit force (static):	40 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<2.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 28#)		Total Length: L_T=L1+L2+L3				
		L1:19GP	L1:íí GP	L1:24GP	L2:BD20	
Cable 1:	+Vcc	18.8	18.ô	24	38.7	
Cable 2:	GND	23.6	23.ò	34.3		
Cable 3:	CW/CCW	28.4	28.ð	42.8		
Cable 4:	FG Pulse	33.2	33.î	51.3		
Cable 5:	PWM					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BD2039AN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-22GP
AM-24GP

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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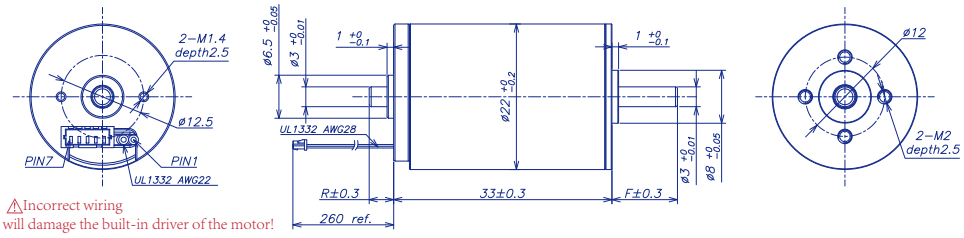
AM-BD2233AE Series



⚠Incorrect wiring will damage the built-in driver of the motor!

		Brushless Motor	Ball Bearings			
Motor Model		1212	1812	2412		
Nominal voltage		V	12	18	24		
No load speed ±12%		rpm	11920	12000	12440		
No load current Max 150%		mA	120	150	65		
Recommend limit for continuous operating	Max cont. torque	mN.m	10.2	13.9	10.8		
	Rated Speed	rpm	9050	8250	9330		
	Rated Current	mA	1210	1100	660		
	Rated Power	W	9.66	12.0	10.6		
Starting current		mA	4700	2700	2500		
Stall torque		mN.m	42.3	32	43.2		
Maximum power output		W	13.2	19.8	14.0		
Maximum Efficiency		%	70.5	68.5	70.7		
Operating Range		V	12~24	12~24	12~24		
Type of Current			N/A	N/A	N/A		
Mechanical time constant		ms	6.7	6.7	6.7		
Moment of inertia		gcm^2	2.8	2.8	2.8		
Torque constant		mN.m/A	9.33	11.9	17.88		
Speed constant		rpm/V	1024	611	534		
Speed/torque gradient		rpm/mN.m	281	389	287		
Weight		g	61	61	61		

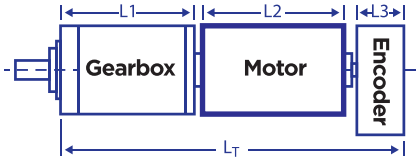
ADDITIONAL INFORMATION

Motor thermal resistance:	-K/W	Motor thermal time constant:	-S
Axial (dynamic):	4.0 N	Radial (5mm from mounting face):	4.0 N
Press-fit force (static):	60 N	Max allowable screw depth into flange:	2.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 24#)	Total Length: L_T=L1+L2+L3				
	L1:19GP	L1:24GP	L2:BL22	L3:EN16S	L3:EN16T
Cable 1: Red +Vcc	18.8	24.0	32.0	10.7	12.0
Cable 2: Blue GND	23.6	34.3			
Plug definition (AWG 28#) Molex: 51021-0500	28.4	42.8			
Plug 1: Brown GND					
Plug 2: Black FG Pulse					
Plug 3 : Yellow CW/CCW					
Plug 4: Red PWM					
Plug 5: Blue Brake					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BD2453AN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-22GP
AM-24GP

Recommended Encoder:
Encoder S: AM-EN1611S***
Encoder T: AM-EN1612T***

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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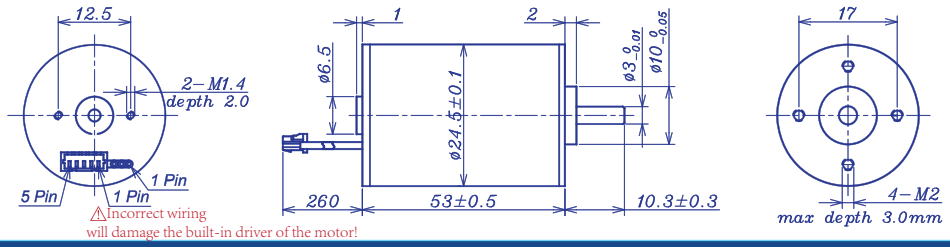
AM-BD2453AN Series



Motor Model		Brushless Motor 1213	1210	1813	Ball Bearings 2414	2410
Nominal voltage	V	12	12	18	24	24
No load speed ±12%	rpm	13010	10460	12920	13625	9770
No load current Max 150%	mA	180	140	115	100	75
Recommend limit for continuous operating: Max cont. torque	mN.m	17.6	18.7	18.3	18.4	21.5
Rated Speed	rpm	11818	9188	11495	12429	8514
Rated Current	mA	2200	1860	1500	1200	1000
Rated Power	W	21.8	18.0	22.0	23.9	19.1
Starting current	mA	22222	14286	12676	12632	7273
Stall torque	mN.m	193	153	166	209	167
Maximum power output	W	65.6	40.2	56.0	74.6	42.7
Maximum Efficiency	%	83	81	82	83	81
Operating Range	V	10~28	10~28	10~28	10~28	10~28
Type of Current		Controlled	Controlled	Controlled	Controlled	Controlled
Mechanical time constant	ms	2.4	2.5	2.8	2.4	2.1
Moment of inertia	gcm^2	3.45	3.45	3.45	3.45	3.45
Torque constant	mN.m/A	8.7	10.8	13.2	16.7	23.2
Speed constant	rpm/V	1093	880	724	572	411
Speed/torque gradient	rpm/mN.m	67.6	68.2	78.0	65.2	58.5
Weight	g	126.7	126.8	125.7	126.3	127.5

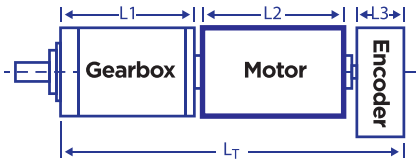
ADDITIONAL INFORMATION

Motor thermal resistance:	10.5 K/W	Motor thermal time constant:	768S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 22#)	Total Length: L_T=L1+L2+L3 L1:24GP	L1:26GP	L2:BD24	L3:EN16S	L3:EN16T
Cable 1: Red +Vcc	24	25.7	53.0	10.7	12.0
Cable 2: Blue GND	34.3	36			
Plug definition (AWG 28#) Molex: 51021-0500	42.8	44.5			
	51.3	53			
Plug 1: Brown GND					
Plug 2: Black FG Pulse					
Plug 3 : Yellow CW/CCW					
Plug 4: Red PWM					
Plug 5: Blue Brake					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BD2453AN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-24GP
AM-26GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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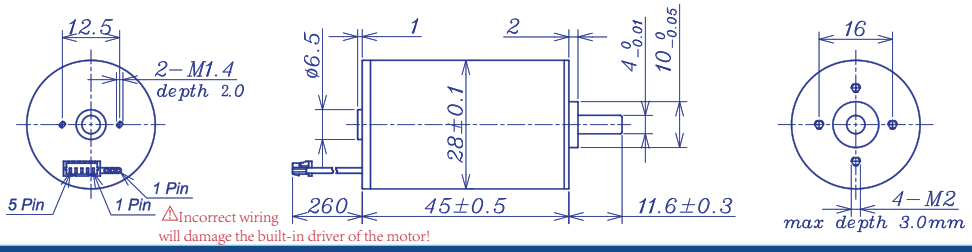
AM-BD2845AN Series



		Brushless Motor					Ball Bearings	
Motor Model		**1203**	**1215**	**1210**	**1813**	**1810**	**2412**	**2409**
Nominal voltage	V	12	12	12	18	18	24	24
No load speed ±12%	rpm	3300	14800	10000	12520	9680	11680	9080
No load current Max 150%	mA	55	300	190	170	120	120	85
Recommend limit for continuous operating – Max cont. torque	mN.m	25.2	20.7	26.2	23.8	26.0	24.1	27.9
Recommend limit for continuous operating – Rated Speed	rpm	2122	13760	8814	11502	8580	10608	7909
Recommend limit for continuous operating – Rated Current	mA	800	3000	2500	1920	1600	1360	1200
Recommend limit for continuous operating – Rated Power	W	5.6	29.9	24.2	28.7	23.4	26.8	23.1
Starting current	mA	2143	38710	19672	21687	13139	13636	8727
Stall torque	mN.m	71	21	221	293	229	263	216
Maximum power output	W	6.1	114.3	57.9	96.1	58.0	80.4	51.3
Maximum Efficiency	%	71	83	81	83	82	82	81
Operating Range	V	10~28	10~28	10~28	10~28	10~28	10~28	10~28
Type of Current		Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Mechanical time constant	ms	3.0	3.3	2.9	2.8	2.7	2.9	2.7
Moment of inertia	gcm^2	6.19	6.19	6.19	6.19	6.19	6.19	6.19
Torque constant	mN.m/A	33.8	7.7	11.3	13.6	17.6	19.4	25.0
Speed constant	rpm/V	282	1243	841	701	543	491	382
Speed/torque gradient	rpm/mN.m	46.7	50.2	45.2	42.7	42.3	44.4	42.0
Weight	g	138.8	138.8	138.7	139.1	140.1	138.4	139.2

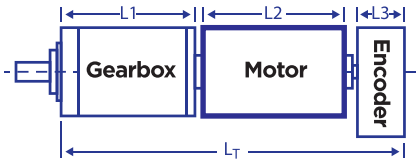
ADDITIONAL INFORMATION

Motor thermal resistance:	10.2 K/W	Motor thermal time constant:	822 S
Axial (dynamic):	4.0 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 22#)	Total Length: L_T=L1+L2+L3				
	L1:28GP	L1:32GP	L2:BD28	L3:EN16S	L3:EN16T
Cable 1: Red +Vcc	26.1	25.9	45.0	10.7	12.0
Cable 2: Blue GND	33.3	35.9			
Plug definition (AWG 28#) Molex: 51021-0500	40.5	44.4			
Plug 1: Brown GND					
Plug 2: Black FG Pulse					
Plug 3 : Yellow CW/CCW					
Plug 4: Red PWM					
Plug 5: Blue Brake					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BD2845AN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-28GP
AM-32GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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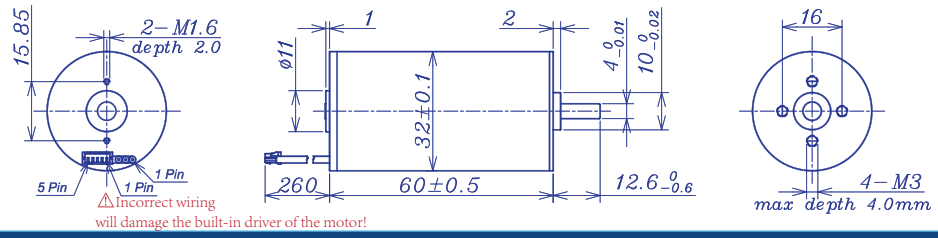
AM-BD3260AN Series



Motor Model			Brushless Motor 1212	1208	Ball Bearings 2413	2409	2408	2407
Nominal voltage		V	12	12	24	24	24	24
No load speed ±12%		rpm	12191	8127	12832	9752	8448	7008
No load current Max 150%		mA	355	192	190	127	110	86
Recommend limit for continuous operating	Max cont. torque	mN.m	23.8	36.5	21.5	29.7	32.0	36.1
	Rated Speed	rpm	11671	7362	12390	9133	7769	6237
	Rated Current	mA	2900	2800	1400	1400	1300	1200
	Rated Power	W	29.1	28.2	27.9	28.4	26.1	23.6
Starting current		mA	60000	27907	35294	20168	14907	10213
Stall torque		mN.m	557	388	624	468	398	328
Maximum power output		W	177.9	82.6	209.5	119.5	88.1	60.2
Maximum Efficiency		%	85	84	86	85	84	82
Operating Range		V	10~28	10~28	10~28	10~28	10~28	10~28
Type of Current			Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Mechanical time constant		ms	3.0	2.9	2.9	2.9	3.0	3.0
Moment of inertia		gcm^2	13.3	13.3	13.3	13.3	13.3	13.3
Torque constant		mN.m/A	9.3	14.0	17.8	23.4	26.9	32.4
Speed constant		rpm/V	1022	682	538	409	355	294
Speed/torque gradient		rpm/mN.m	21.9	20.9	20.6	20.8	21.2	21.3
Weight		g	240	240	240	240	240	240

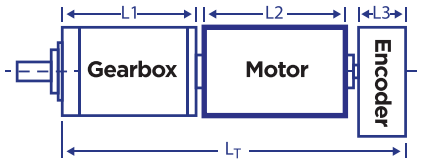
ADDITIONAL INFORMATION

Motor thermal resistance:	7.8 K/W	Motor thermal time constant:	1089 S
Axial (dynamic):	4.0 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum radial play:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard Rear Shaft Diameter:	4 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)		Total Length: L_T=L1+L2+L3				
		L1:32GP	L1:36GP	L2:BD32	L3:EN22S	L3:EN24T
Cable 1: Red	+Vcc	27.4	39.6	60.0	10.7	12.0
Cable 2: Blue	GND	35.9	48.9			
Plug definition (AWG 28#) Molex: 51021-0500		44.4	57.6			
Plug 1: Brown	GND					
Plug 2: Black	FG Pulse					
Plug 3 : Yellow	CW/CCW					
Plug 4: Red	PWM					
Plug 5: Blue	Brake					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BD3260AN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-32GP
AM-36GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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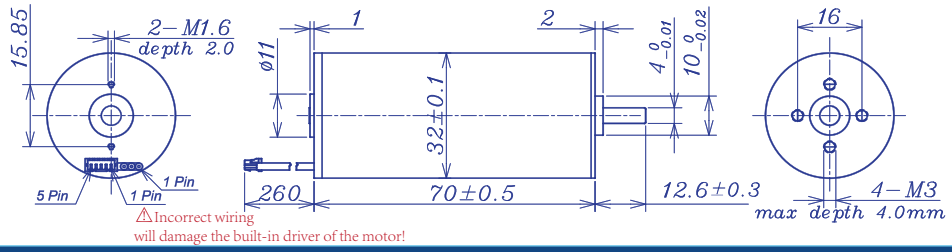
AM-BD3270AN Series



Motor Model			Brushless Motor 1210	1207	Ball Bearings 2412	2409	2407	2406
Nominal voltage		V	12	12	24	24	24	24
No load speed ±12%		rpm	9794	6529	11523	8904	7255	6121
No load current Max 150%		mA	355	192	190	127	88	75
Recommend limit for continuous running	Max cont. torque	mN.m	30.7	45.4	33.8	46.7	47.5	51.1
	Rated Speed	rpm	9294	5828	11011	8204	6547	5373
	Rated Current	mA	3000	2800	1900	1950	1600	1450
	Rated Power	W	29.9	27.7	39.0	40.1	32.6	28.8
Starting current		mA	52174	24490	38710	23301	15584	11321
Stall torque		mN.m	602	423	762	593	487	418
Maximum power output		W	154.4	72.3	230.0	138.3	92.5	67.0
Maximum Efficiency		%	84	83	86	86	86	84
Operating Range		V	10~28	10~28	10~28	10~28	10~28	10~28
Type of Current			Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Mechanical time constant		ms	2.6	2.5	2.4	2.4	2.4	2.3
Moment of inertia		gcm^2	15.3	15.3	15.3	15.3	15.3	15.3
Torque constant		mN.m/A	11.6	17.4	19.8	25.6	31.4	37.2
Speed constant		rpm/V	822	548	482	373	304	257
Speed/torque gradient		rpm/mN.m	16.3	15.4	15.1	15.0	14.9	14.6
Weight		g	290	290	290	290	290	290

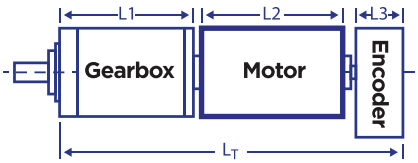
ADDITIONAL INFORMATION

Motor thermal resistance:	8.2 K/W	Motor thermal time constant:	822 S
Axial (dynamic):	4.0 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)	Total Length: L_T=L1+L2+L3				
	L1:32GP	L1:36GP	L2:BD32	L3:EN22S	L3:EN24T
Cable 1: Red +Vcc	27.4	39.6	70.0	10.7	12.0
Cable 2: Blue GND	35.9	48.6			
Plug definition (AWG 28#) Molex: 51021-0500	44.4	57.6			
Plug 1: Brown GND					
Plug 2: Black FG Pulse					
Plug 3 : Yellow CW/CCW					
Plug 4: Red PWM					
Plug 5: Blue Brake					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BD3270AN Combination Scheme



Recommended Gearbox:
AM-32GP
AM-36GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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DC BRUSHLESS MOTOR

SPEED DRIVER INTEGRATED SERIES

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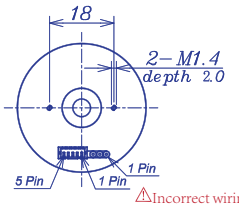
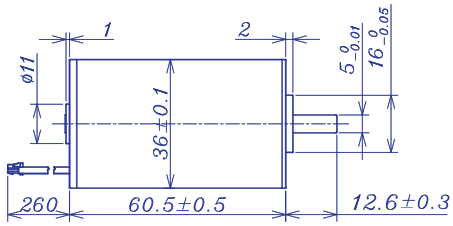
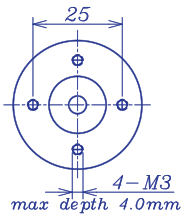
AM-BD3660AN Series



⚠Incorrect wiring will damage the built-in driver of the motor!





Motor Model		Brushless Motor 1211	1209	Ball Bearings 2413	2410	2408	2407
Nominal voltage	V	12	12	24	24	24	24
No load speed ±12%	rpm	11200	8840	12500	10200	8200	6966
No load current Max 150%	mA	320	230	220	165	100	85
Recommend limit for continuous operating: Max cont. torque	mN.m	39.5	43.4	32.5	41.0	50.0	56.1
Rated Speed	rpm	10472	8066	11997	9525	7409	6116
Rated Current	mA	4200	3600	2000	2000	1900	1800
Rated Power	W	43.3	36.7	40.8	40.9	38.8	35.9
Starting current	mA	60000	38710	44444	27907	18750	14118
Stall torque	mN.m	607	496	807	620	518	459
Maximum power output	W	178.1	114.8	264.0	165.5	111.3	83.7
Maximum Efficiency	%	86	85	86	85	86	85
Operating Range	V	10~28	10~28	10~28	10~28	10~28	10~28
Type of Current		Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Mechanical time constant	ms	3.2	3.1	2.7	2.9	2.8	2.7
Moment of inertia	gcm^2	16.75	16.75	16.75	16.75	16.75	16.75
Torque constant	mN.m/A	10.2	12.9	18.2	22.3	27.8	32.7
Speed constant	rpm/V	938	741	523	428	343	292
Speed/torque gradient	rpm/mN.m	18.4	17.8	15.5	16.5	15.8	15.2
Weight	g	326.3	326.8	327.4	327.2	328.1	328.4

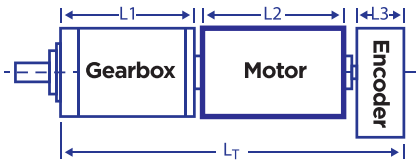
ADDITIONAL INFORMATION

Motor thermal resistance:	6.9 K/W	Motor thermal time constant:	1188 S
Axial (dynamic):	6.0 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth into flange:	4.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	5 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)	Total Length: L_T=L1+L2+L3 L1:36GP	L1:40GP	L2:BD36	L3:EN22S	L3:EN36T
Cable 1: Red +Vcc	30.6	35.3	60.5	10.7	12.0
Cable 2: Blue GND	39.6	46.8			
Plug definition (AWG 28#) Molex: 51021-0500	48.6	58.3			
	57.6	69.8			
Plug 1: Brown GND					
Plug 2: Black FG Pulse					
Plug 3 : Yellow CW/CCW					
Plug 4: Red PWM					
Plug 5: Blue Brake					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BD3660AN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-36GP
AM-40GP

c
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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DC BRUSHLESS MOTOR

SPEED DRIVER INTEGRATED SERIES

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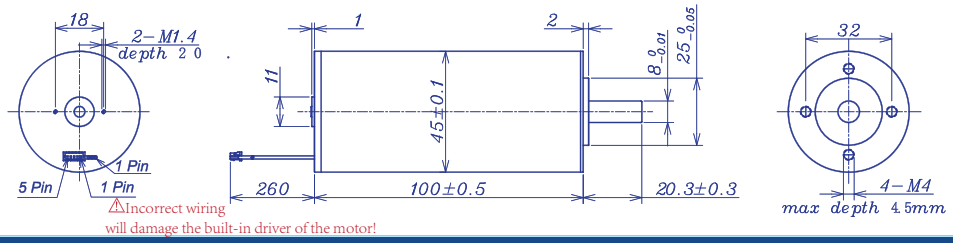
AM-BD45100AN Series



⚠Incorrect wiring will damage the built-in driver of the motor!

Motor Model			2411	2406	2407	2404	2405	2403
			Brushless Motor		Ball Bearings			
Nominal voltage		V	24	24	24	24	24	24
No load speed	±12%	rpm	11240	5900	6912	4272	5208	3240
No load current	Max 150%	mA	600	320	320	180	220	160
Recommend limit for continuous operating	Max cont. torque	mN.m	48.7	134.4	121.4	171.6	156.7	170.9
	Rated Speed	rpm	11059	5539	6539	3782	4747	2748
	Rated Current	mA	3000	3800	4000	3400	3800	2600
	Rated Power	W	56.4	78.0	83.2	68.0	77.9	49.2
Starting current		mA	150000	57143	68571	28235	40678	16216
Stall torque		mN.m	3034	2195	2252	1496	1771	1125
Maximum power output		W	892.8	339.0	407.6	167.3	241.4	95.4
Maximum Efficiency		%	88	86	87	85	86	81
Operating Range		V	10~28	10~28	10~28	10~28	10~28	10~28
Type of Current			Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Mechanical time constant		ms	4.3	3.1	3.5	3.3	3.4	3.3
Moment of inertia		gcm^2	109.8	109.8	109.8	109.8	109.8	109.8
Torque constant		mN.m/A	20.3	38.6	33.0	53.3	43.8	70.0
Speed constant		rpm/V	470	247	289	179	218	136
Speed/torque gradient		rpm/mN.m	3.7	2.7	3.1	2.9	2.9	2.9
Weight		g	846.5	850.2	852.5	841.5	847.5	840.3

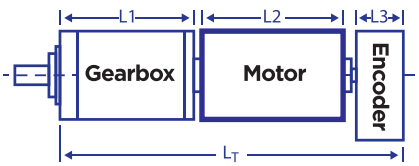
ADDITIONAL INFORMATION

Motor thermal resistance:	3.6 K/W	Motor thermal time constant:	1286S
Axial (dynamic):	6.0 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth into flange:	4.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	8 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 18#)		Total Length: L_T=L1+L2+L3				
		L1:45GP	L1:52GP	L2:BD45	L3:EN22S	L3:EN36T
Cable 1: Red	+Vcc	60.1	79.3	100.0	10.7	12.0
Cable 2: Blue	GND	72.1				
Plug definition (AWG 28#) Molex: 51021-0500						
Plug 1: Brown	GND					
Plug 2: Black	FG Pulse					
Plug 3 : Yellow	CW/CCW					
Plug 4: Red	PWM					
Plug 5: Blue	Brake					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BD45100AN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-45GP
AM-52GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
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DC BRUSHED MOTOR

Assun DC Brushed Motors are manufactured with coreless rotors for high efficiency, smooth operation and low inertia. These coreless brushed motors are perfect for applications with high efficiency and precision control needs.

Power rating from less than 1 watt to 490 watts, diameter from 8mm to 40mm, Assun DC brushed motors can be used for various DC drive systems. Graphite and metal brushes are to be chosen for different operation conditions.

AM-CL1025MAF	AM-CL2235MAE	AM-CL2831MAN	AM-CL2235GAE	AM-CL2968GAE
AM-CL1623MAN	AM-CL2248MAE	AM-CL2845MAN	AM-CL2248GAE	AM-CL3570GAN
AM-CL1626MAN	AM-CL2532MAN	AM-CL2847MAE	AM-CL2642GAE	AM-CL3570GAF
AM-CL1633MAN	AM-CL2545MAN	AM-CL2857MAE	AM-CL2657GAE	AM-CL4071GAE
AM-CL1642MAN	AM-CL2642MAE	AM-CL2968MAE	AM-CL2847GAE	AM-CL50108GAF
AM-CL1643MAN	AM-CL2657MAE	AM-CL1935GAE	AM-CL2857GAE	
AM-CL1935MAE				

AM - CL 1643 MAE - 1206

- **AM** — Company Name Abbreviation
- **CL** — Motor Type
  - CL - Brushed Motor
  - BL - Brushless Motor
- **1643** — Motor Dimension
  - 16 - Diameter (mm)
  - 43 - Length (mm)
- **M** — Brush Metal
  - M - Metal Brush
  - G - Graphite Brush
- **A** — Number of Pole Pairs
  - A - 1 Pole Pair
  - B - 2 Pole Pairs
  - C - 3 Pole Pairs
  - D - 4 Pole Pairs
- **E** — Temp.Level
  - N - 85°C
  - E - 125°C
  - F - 150°C
  - H - 180°C
- **1206** — Nominal Voltage & No Load Speed
  - 12 - Nominal Voltage (V)
  - 06 - No Load Speed (x1000 RPM)

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DC BRUSHED MOTOR

BRUSHED METAL SERIES

Assun Metal Brush Series Coreless motors are manufactured with coreless rotors and metal brush commutators. The high efficiency and precision character of metal brushed coreless motor made it perfect for energy critical and fast responding applications such as medical tools and robotic actuators.

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DC BRUSHED CORELESS MOTOR

METAL BRUSH

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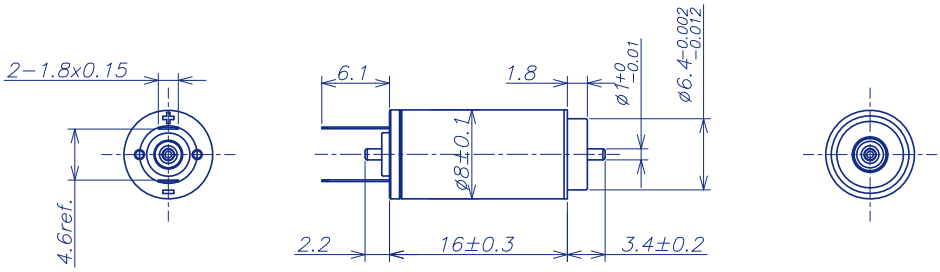
AM-CL0816MAE SERIES



			Precious metal brush		Ball bearings		
Motor Model			**0611**	**0912**	**1213**		
Nominal voltage		V	6	9	12		
No load speed	±12%	rpm	11000	11900	12900		
No load current	Max 150%	mA	5	4	3		
Recommend limit for continuous operating	Max cont. torque	mN.m	0.64	0.65	0.61		
	Rated speed	rpm	4190	5190	5800		
	Rated current	mA	130	95	73		
	Rated power	W	0.3	0.4	0.4		
Starting current		mA	207	130	130		
Stall torque		mN.m	1.05	1.17	1.13		
Maximum power output		W	0.3	0.4	0.4		
Maximum efficiency		%	73	74	74		
Terminal resistance	±12%	Ω	29	54	92		
Inductance	(1KHZ)	mH	0.095	0.18	0.275		
Mechanical time constant		ms	4.2	4.25	4.25		
Moment of inertia		gcm ^{2}	0.04	0.04	0.04		
Torque constant		mN.m/A	5.08	7.07	8.71		
Speed constant		rpm/V	1880	1350	1100		
Speed/ torque gradient		rpm/mN.m	10700	10400	11600		
Weight		g	5	5	5		

ADDITIONAL INFORMATION

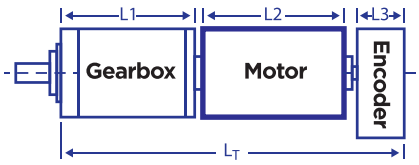
Motor thermal resistance:	-K/W	Motor thermal time constant:	-S
Axial (dynamic):	0.1 N	Radial (5mm from mounting face):	0.6 N
Press-fit force (static):	8.8 N	Max allowable screw depth into flange:	NO
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC
Standard rear shaft diameter:	1 mm	Standard rear shaft length "L":	0/2.2 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:8GP			L2:CL08	L3: EN10S
6.9			16.0	8
9.7				
12.5				
15.3				
18.1				

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL0816MAE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-8GP

Recommended Encoder:
Encoder S: AM-EN***

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
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DC BRUSHED CORELESS MOTOR

METAL BRUSH

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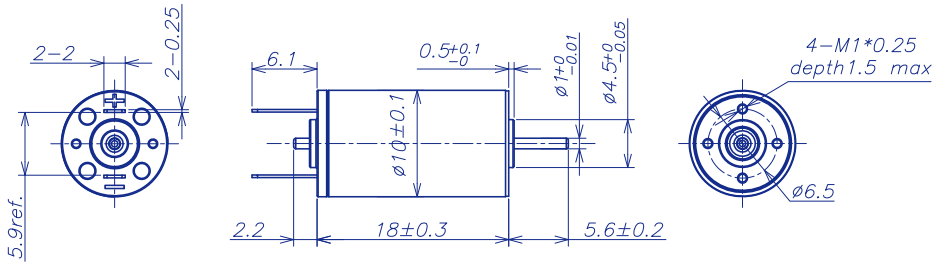
AM-CL1018MAE SERIES



		Precious metal brush		Ball bearings				
Motor Model		**0113**	**0313**	**0413**	**0612**	**0913**	**1212**	
Nominal voltage	V	1.5	3	4.5	6	9	12	
No load speed ±12%	rpm	11500	12900	12500	11200	12860	12300	
No load current Max 150%	mA	82	43	27	12	10	7	
Recommend limit for continuous operating — Max cont. torque	mN.m	0.91	0.92	0.92	0.9	0.8	0.9	
Recommend limit for continuous operating — Rated speed	rpm	4430	4590	4170	6070	8170	6840	
Recommend limit for continuous operating — Rated current	mA	900	500	310	157	108	87	
Recommend limit for continuous operating — Rated power	W	1.3	1.3	1.3	0.5	0.7	0.6	
Starting current	mA	1300	740	460	331	281	190	
Stall torque	mN.m	1.4	1.5	1.4	1.98	2.19	2.03	
Maximum power output	W	2.64	2.64	5.4	0.58	0.7	0.65	
Maximum efficiency	%	58	58	58	81	81	81	
Terminal resistance ±12%	Ω	1.0	4.0	9.7	18.4	32	64	
Inductance (1KHZ)	mH	0.01	0.05	0.12	0.21	0.18	0.55	
Mechanical time constant	ms	7.24	7.19	7.21	7.2	7.2	7.2	
Moment of inertia	gcm ²	0.077	0.077	0.076	0.08	0.08	0.08	
Torque constant	mN.m/A	1.07	2.07	3.2	6.23	8.1	11.25	
Speed constant	rpm/V	8950	4600	2980	1927	1482	1065	
Speed/ torque gradient	rpm/mN.m	9030	8970	9060	5599	5862	6060	
Weight	g	7	7	7	7	7	7	

ADDITIONAL INFORMATION

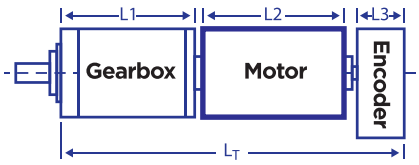
Motor thermal resistance:	37.6K/W	Motor thermal time constant:	156S
Axial (dynamic):	0.5 N	Radial (5mm from mounting face):	1.5 N
Press-fit force (static):	0.5 N	Max allowable screw depth into flange:	1.2mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play	Preset
Maximum winding temperature:	125°C	Ambient temperature range:	-40 to 85°C
Standard rear shaft diameter:	1 mm	Standard rear shaft length "L":	0/2.2 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:10GP	L1:12GP		L2:CL10	L3: EN10S
6.8	15.4		18.0	8
10	19.6			
13.2	23.8			
16.4	28			
19.6	32.2			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL1018MAE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-10GP
AM-12GP

Recommended Encoder:
Encoder S: AM-EN1008S***

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
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DC BRUSHED CORELESS MOTOR

METAL BRUSH

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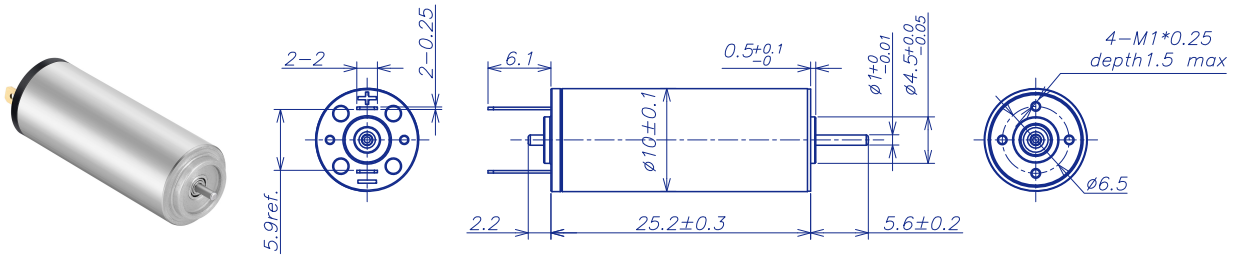
AM-CL1025MAE SERIES



			Precious metal brush			Ball bearings		
Motor Model			**0112**	**0312**	**0412**	**0612**	**0912**	**1212**
Nominal voltage		V	1.5	3	4.5	6	9	12
No load speed	±12%	rpm	11500	12300	11900	12300	11900	12800
No load current	Max 150%	mA	70	28	25	12	12	8
Recommend limit for continuous operating	Max cont. torque	mN.m	1	2.1	2.1	2.1	2	2.1
	Rated speed	rpm	9100	7850	7010	6410	6680	6640
	Rated current	mA	920	810	640	460	300	230
	Rated power	W	1	1.7	2.2	1.4	2	1.5
Starting current		mA	4200	2200	1500	950	680	470
Stall torque		mN.m	5.1	5.8	4.5	4.39	4.5	4.36
Maximum power output		W	1.5	1.9	3.3	1.4	3	1.5
Maximum efficiency		%	75	89	77	80	75	81
Terminal resistance	±12%	Ω	0.35	1.36	2.8	6.3	13	25.4
Inductance	(1KHZ)	mH	0.01	0.022	0.04	0.083	0.18	0.25
Mechanical time constant		ms	3.68	3.7	3.54	3.7	3.56	3.7
Moment of inertia		gcm ^{2}	0.15	0.14	0.15	0.14	0.13	0.14
Torque constant		mN.m/A	1.21	2.68	3.52	4.7	7.04	9.38
Speed constant		rpm/V	7870	4157	2710	2076	1360	1085
Speed/ torque gradient		rpm/mN.m	2300	2117	2240	2801	2550	2931
Weight		g	11	11	11	11	11	11

ADDITIONAL INFORMATION

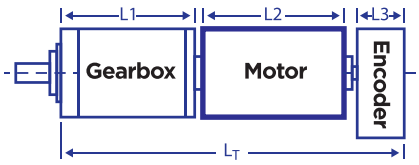
Motor thermal resistance:	36.1K/W	Motor thermal time constant:	151S
Axial (dynamic):	0.5 N	Radial (5mm from mounting face):	1.5 N
Press-fit force (static):	0.5 N	Max allowable screw depth into flange:	1.2mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play	Preset
Maximum winding temperature:	155ºC	Ambient temperature range:	-40 to 85ºC
Standard rear shaft diameter:	1 mm	Standard rear shaft length "L":	0/2.2 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:10GP	L1:12GP		L2:CL10	L3: EN10S
6.8	15.4		25.2	8
10	19.6			
13.2	23.8			
16.4	28			
19.6	32.2			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL1025MAE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-10GP
AM-12GP

Recommended Encoder:
Encoder S: AM-EN1008S***

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
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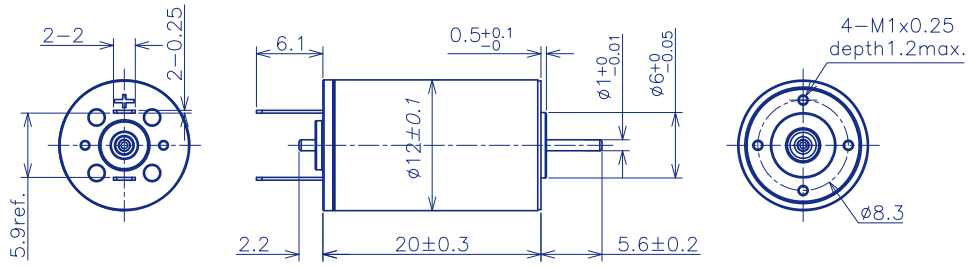
AM-CL1220MAE SERIES



Motor Model			0309	0613	0913	1213	1513		
			Precious metal brush		Ball bearings				
Nominal voltage		V	3	6	9	12	15		
No load speed	±12%	rpm	9040	13360	13450	13600	13120		
No load current	Max 150%	mA	30	25	15	10	10		
Recommend limit for continuous operating	Max cont. torque	mN.m	1.9	1.3	1.3	1.3	1.3		
	Rated speed	rpm	3660	10110	10320	9870	10250		
	Rated current	mA	650	414	278	210	163		
	Rated power	W	1.3	1.4	1.4	1.3	1.4		
Starting current		mA	1000	1636	1144	740	713		
Stall torque		mN.m	3.3	5.35	5.58	4.75	5.75		
Maximum power output		W	2.0	2.0	2.0	1.7	2.0		
Maximum efficiency		%	69	62	62	62	62		
Terminal resistance	±12%	Ω	2.7	3.65	7.85	16.2	21		
Inductance	(1KHZ)	mH	0.07	0.28	0.64	0.21	0.16		
Mechanical time constant		ms	8.37	8.6	8.6	8.6	8.6		
Moment of inertia		gcm^2	0.286	0.284	0.284	0.284	0.284		
Torque constant		mN.m/A	3.06	3.316	4.94	6.5	8.45		
Speed constant		rpm/V	3120	2256	1513	1149	887		
Speed/ torque gradient		rpm/mN.m	2800	2496	2412	2865	2203		
Weight		g	11	11	11	11	11		

ADDITIONAL INFORMATION

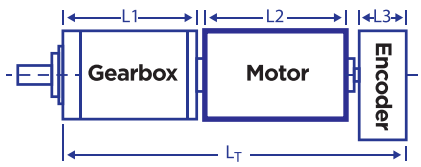
Motor thermal resistance:	31K/W	Motor thermal time constant:	194S
Axial (dynamic):	0.5 N	Radial (5mm from mounting face):	1.5 N
Press-fit force (static):	0.5 N	Max allowable screw depth into flange:	1.2mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play	Preset
Maximum winding temperature:	125°C	Ambient temperature range:	-40 to 85°C
Standard rear shaft diameter:	1 mm	Standard rear shaft length "L":	0/2.2 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:10GP	L1:12GP		L2:CL12	L3: EN10S
6.8	15.4		20	8
10	19.6			
13.2	23.8			
16.4	28			
19.6	32.2			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL1220MAE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-10GP
AM-12GP

Recommended Encoder:
Encoder S: AM-EN1008S***

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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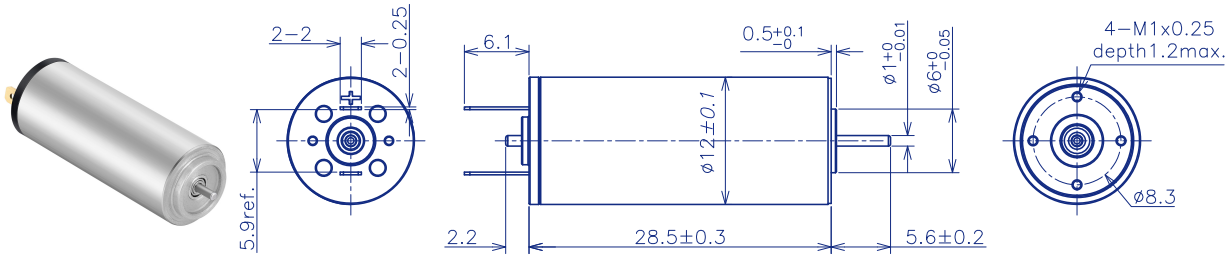
AM-CL1228MAE SERIES



		Precious metal brush		Ball bearings				
Motor Model		**0309**	**0611**	**0911**	**1209**	**1211**	**1811**	
Nominal voltage	V	3	6	9	12	12	18	
No load speed ±12%	rpm	8710	11300	11060	9180	11500	11050	
No load current Max 150%	mA	30	13	12	8	8	6	
Recommend limit for continuous operating — Max cont. torque	mN.m	2.68	3.6	3.6	3.6	3.6	3.6	
Recommend limit for continuous operating — Rated speed	rpm	6130	7370	6670	4910	7277	6580	
Recommend limit for continuous operating — Rated current	mA	910	743	484	302	377	242	
Recommend limit for continuous operating — Rated power	W	2.2	2.8	2.5	1.85	2.74	2.48	
Starting current	mA	3000	2110	1202	640	1011	589	
Stall torque	mN.m	9.8	10.36	9.08	7.73	9.8	8.9	
Maximum power output	W	3.3	3.1	2.6	1.85	2.9	2.6	
Maximum efficiency	%	81	83	80	80	82	80	
Terminal resistance ±12%	Ω	0.9	2.84	7.5	18	11.8	30.5	
Inductance (1KHZ)	mH	0.03	0.034	0.28	0.5	0.128	1.1	
Mechanical time constant	ms	4.55	4.5	4.5	4.5	4.5	4.5	
Moment of inertia	gcm^2	0.484	0.5	0.5	0.5	0.5	0.5	
Torque constant	mN.m/A	3.22	4.93	7.62	12.23	9.76	15.25	
Speed constant	rpm/V	2970	1890	1240	773	966	621	
Speed/ torque gradient	rpm/mN.m	898	1091	1218	1187	1173	1243	
Weight	g	16	16	16	16	16	16	

ADDITIONAL INFORMATION

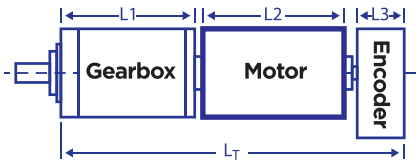
Motor thermal resistance:	31K/W	Motor thermal time constant:	194S
Axial (dynamic):	0.5 N	Radial (5mm from mounting face):	1.5 N
Press-fit force (static):	0.5 N	Max allowable screw depth into flange:	1.2mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play	Preset
Maximum winding temperature:	125°C	Ambient temperature range:	-40 to 85°C
Standard rear shaft diameter:	1 mm	Standard rear shaft length "L":	0/2.2 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:10GP	L1:12GP		L2:CL12	L3: EN10S
6.8	15.4		28.5	8
10	19.6			
13.2	23.8			
16.4	28			
19.6	32.2			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL1228MAE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-10GP
AM-12GP

Recommended Encoder:
Encoder S: AM-EN1008S***

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
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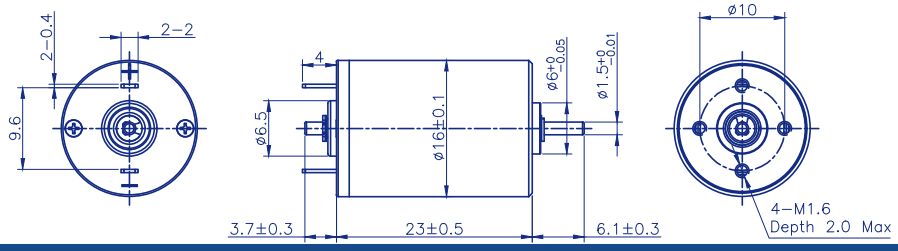


Precious metal brush	Ball Bearings							
Motor Model			**0310**	**0610**	**1212**	**1213**	**2412**	
Nominal voltage		V	3	6	12	12	24	
No load speed ±12%		rpm	10000	10200	12040	13600	12050	
No load current Max 150%		mA	60	30	18	20	10	
Recommend limit for continuous operating	Max cont. torque	mN.m	1.8	1.8	1.8	1.8	1.8	
	Rated Speed	rpm	6440	6810	8370	10000	8450	
	Rated Current	mA	680	345	204	230	102	
	Rated Power	W	1.2	1.28	1.58	1.9	1.6	
Starting current		mA	1807	983	629	812	321	
Stall torque		mN.m	5.07	5.43	5.91	6.82	6.03	
Maximum power output		W	1.3	1.45	1.86	2.43	1.9	
Maximum Efficiency		%	70	71	72	74	72	
Terminal resistance ±12%		Ω	1.08	4.23	7.45	4.8	4.8	
Inductance (1KHz)		mH	0.038	0.15	0.27	0.152	0.152	
Mechanical time constant		ms	16.9	16.9	16.9	16.9	16.9	
Moment of inertia		gcm^2	1.33	1.33	1.33	1.33	1.33	
Torque constant		mN.m/A	2.9	5.7	9.67	8.75	19.35	
Speed constant		rpm/V	3333	1700	1003	1133	502	
Speed/torque gradient		rpm/mN.m	1970	1879	2038	1994	1998	
Weight		g	18.5	18.5	18.5	18.5	18.5	

ADDITIONAL INFORMATION

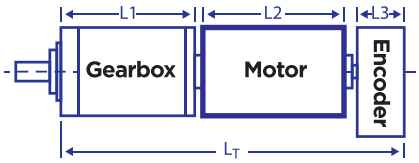
Motor thermal resistance:	41.7K/W	Motor thermal time constant:	379S
Axial (dynamic):	0.8 N	Radial (5mm from mounting face):	12 N
Press-fit force (static):	26 N	Max allowable screw depth into flange:	1.8 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125°C	Ambient temperature range:	-30 to 65°C
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0/3.7 mm

Total Length (Gearbox and Motor): L=L1+L2+L3

L1:16GP	L1:19GP		L2:CL16	L3: EN16S
15.9	18.8		23	10.7
23.3	23.6			
27.0	28.4			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL1623MAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-16GP
AM-19GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
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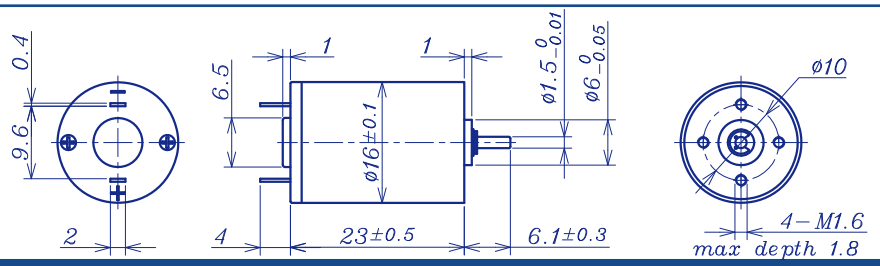
METAL BRUSH

AM-CL1623MAN SERIES



Precious metal brush				Ball Bearings				
Motor Model			**0109**	**0108**	**0310**	**0308**	**0610**	**0608**	**1212**
Nominal voltage		V	1.5	1.5	3	3	6	6	12
No load speed ±12%		rpm	9100	7850	10130	7690	9875	7574	12440
No load current Max 150%		mA	60	55	35	23	22	18	14
Recommend limit for continuous operating	Max cont. torque	mN.m	1.2	1.3	1.9	2.1	2.2	2.1	2.1
	Rated Speed	rpm	7596	6106	7674	5142	7202	4861	9839
	Rated Current	mA	850	800	700	600	400	300	250
	Rated Power	W	1.0	0.9	1.5	1.1	1.6	1.1	2.2
Starting current		mA	4839	3409	2778	1765	1418	805	1143
Stall torque		mN.m	7	6	8	6	8	6	10
Maximum power output		W	1.8	1.2	2.0	1.3	2.1	1.2	3.3
Maximum Efficiency		%	79	76	79	78	77	72	79
Terminal resistance ±12%		Ω	0.31	0.44	1.08	1.7	4.23	7.45	10.5
Inductance (1KHz)		mH	0.001	0.006	0.038	0.058	0.15	0.27	0.41
Mechanical time constant		ms	17.6	18.7	19.0	17.2	16.9	17.7	16.9
Moment of inertia		gcm^2	1.37	1.37	1.37	1.37	1.3	1.3	1.33
Torque constant		mN.m/A	1.6	1.8	2.8	3.7	5.7	7.4	9.1
Speed constant		rpm/V	6143	5319	3420	2597	1672	1291	1050
Speed/torque gradient		rpm/mN.m	1225	1304	1323	1201	1238	1301	1211
Weight		g	18.6	18.6	18.6	18.4	18.4	18.4	18.5

ADDITIONAL INFORMATION

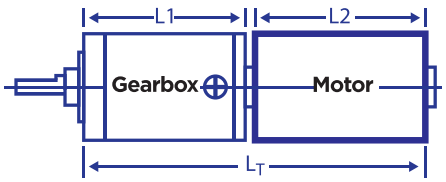
Motor thermal resistance:	41.7K/W	Motor thermal time constant:	379S
Axial (dynamic):	0.8 N	Radial (5mm from mounting face):	12 N
Press-fit force (static):	26 N	Max allowable screw depth into flange:	1.8 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0/3.7 mm

Total Length (Gearbox and Motor): L=L1+L2+L3

L1:16GP	L1:19GP		L2:CL16	
15.9	18.8		22.50	
23.3	23.6			
27.0	28.4			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL1623MAN Combination Scheme



Recommended Gearbox:

Planetary Gearbox:

AM-16GP

AM-19GP

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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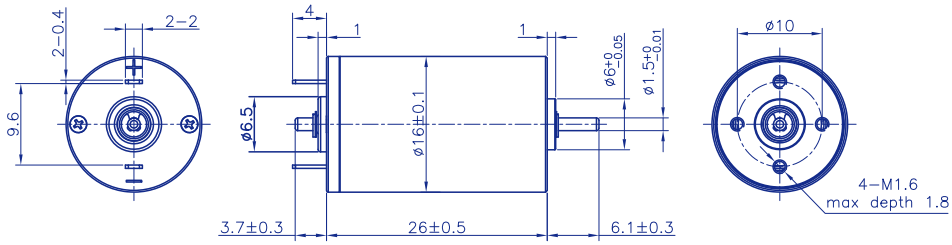
AM-CL1626MAE SERIES （With an Encoder）



		Precious metal brush		Ball Bearings			
Motor Model		1213	1813	2413	3613		
Nominal voltage	V	12	18	24	36		
No load speed ±12%	rpm	13260	13140	13470	13140		
No load current Max 150%	mA	35	22	18	12		
Recommend limit for continuous operating — Max cont. torque	mN.m	5.3	5.3	5.3	5.3		
Rated Speed	rpm	12300	10250	10440	10300		
Rated Current	mA	849	560	430	280		
Rated Power	W	5.7	5.7	5.8	5.7		
Starting current	mA	3675	2468	1860	1259		
Stall torque	mN.m	23.7	24.1	23.59	24.6		
Maximum power output	W	8.2	8.3	8.3	8.5		
Maximum Efficiency	%	62	62	62	62		
Terminal resistance ±12%	Ω	3.3	7.3	12.9	28.6		
Inductance (1KHz)	mH	N/A	N/A	N/A	N/A		
Mechanical time constant	ms	16.9	16.9	16.9	16.9		
Moment of inertia	gcm^2	0.54	0.54	0.54	0.54		
Torque constant	mN.m/A	6.5	9.85	12.8	19.7		
Speed constant	rpm/V	1116	736	566	368		
Speed/torque gradient	rpm/mN.m	560	545	571	534		
Weight	g	18.5	18.5	18.5	18.5		

ADDITIONAL INFORMATION

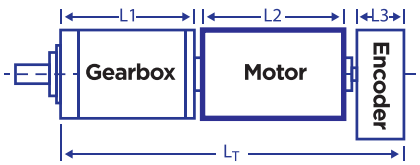
Motor thermal resistance:	37.6K/W	Motor thermal time constant:	400S
Axial (dynamic):	3.4 N	Radial (5mm from mounting face):	2.6 N
Press-fit force (static):	36 N	Max allowable screw depth into flange:	1.8 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:16GP	L1:19GP		L2:CL16	L3: EN16S
15.9	18.8		26.0	10.7
23.3	23.6			
27.0	28.4			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL1626MAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-16GP
AM-19GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
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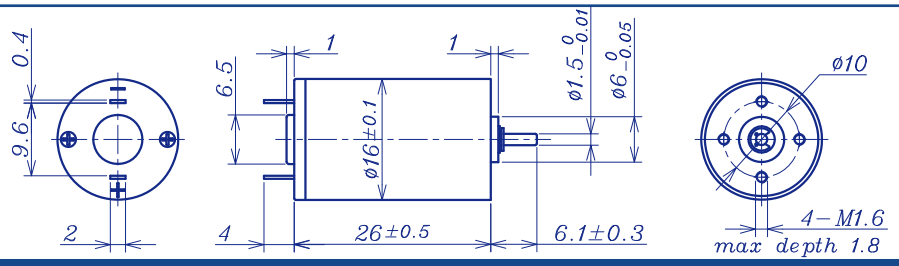
AM-CL1626MAN SERIES



Motor Model			0109	0308	0310	0608	0610	1210	1212	2414
			Precious metal brush			Ball Bearings				
Nominal voltage		V	1.5	3	3	6	6	12	12	24
No load speed ±12%		rpm	9350	8256	10340	8129	10544	10691	12075	14306
No load current Max 150%		mA	68	25	25	10	18	10	9.2	12
Recommend limit for continuous operating	Max cont. torque	mN.m	1.2	2.5	2.1	2.7	1.8	2.5	2.3	2.2
	Rated Speed	rpm	8117	5736	8594	6001	9134	8426	10247	12476
	Rated Current	mA	850	750	800	400	350	250	250	150
	Rated Power	W	1.0	1.5	1.9	1.7	1.7	2.2	2.4	2.9
Starting current		mA	6000	2400	4615	1500	2500	1143	1600	1091
Stall torque		mN.m	9	8	13	10	13	12	15	17
Maximum power output		W	2.2	1.8	3.4	2.2	3.7	3.4	4.7	6.4
Maximum Efficiency		%	80	81	86	84	84	82	85	80
Terminal resistance ±12%		Ω	0.25	1.25	0.65	4.0	2.4	10.5	7.5	22
Inductance (1KH$_Z$)		mH	0.003	0.031	0.016	0.15	0.095	0.4	0.29	0.85
Mechanical time constant		ms	14.2	12.7	10.3	9.8	9.9	11.2	10.1	10.5
Moment of inertia		gcm^2	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Torque constant		mN.m/A	1.5	3.4	2.8	7.0	5.4	10.6	9.4	15.8
Speed constant		rpm/V	6305	2781	3465	1364	1770	899	1012	603
Speed/torque gradient		rpm/mN.m	1041	1012	817	779	787	888	804	837
Weight		g	22.6	22.4	22.4	22.4	22.4	22.1	22.2	22.4

ADDITIONAL INFORMATION

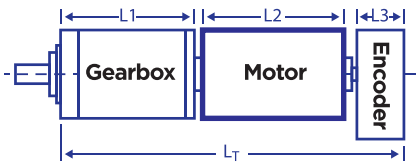
Motor thermal resistance:	37.6K/W	Motor thermal time constant:	400S
Axial (dynamic):	3.4 N	Radial (5mm from mounting face):	2.6 N
Press-fit force (static):	36 N	Max allowable screw depth into flange:	1.8 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:16GP	L1:19GP		L2:CL16	L3: EN16S
15.9	18.8		26.0	10.7
23.3	23.6			
27.0	28.4			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL1626MAN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-16GP
AM-19GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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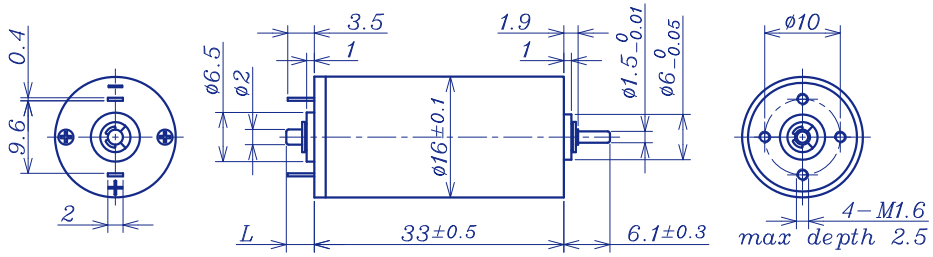


			Precious metal brush			Ball bearings			
Motor Model			**0308**	**0305**	**0607**	**0606**	**0605**	**1207**	**1205**
Nominal voltage		V	3	3	6	6	6	12	12
No load speed	±12%	rpm	7700	5370	7250	5790	5280	6600	5645
No load current	Max 150%	mA	50	30	35	22	24	14	12
Recommend limit for continuous operating	Max cont. torque	mN.m	2.9	3.3	3.5	3.7	3.5	3.2	3.45
	Rated speed	rpm	6204	3931	5775	4354	3813	5165	4019
	Rated current	mA	850	650	480	400	350	200	180
	Rated power	W	1.9	1.3	2.1	1.7	1.4	1.7	1.45
Starting current		mA	4167	2344	2222	1546	1198	870	625
Stall torque		mN.m	15	12	17	15	1.2	15	13
Maximum power output		W	3.1	1.7	3.2	2.3	1.7	2.5	1.5
Maximum efficiency		%	79	79	76	78	74	76	76
Terminal resistance	±12%	Ω	0.72	1.28	2.7	3.88	5.01	13.8	19.2
Inductance	(1KHZ)	mH	0.024	0.061	0.15	0.22	0.28	0.74	1.21
Mechanical time constant		ms	11.5	10.7	10.4	9.5	10.3	10.5	10.7
Moment of inertia		gcm ^{2}	2.15	2.32	2.32	2.32	2.32	2.22	2.29
Torque constant		mN.m/A	3.7	5.3	7.8	9.8	10.6	17.1	20.3
Speed constant		rpm/V	2598	1813	1228	979	898	559	470
Speed/ torque gradient		rpm/mN.m	509	441	426	389	423	452	445
Weight		g	27.9	28.7	28.7	28.6	28.7	28.1	28.6

ADDITIONAL INFORMATION

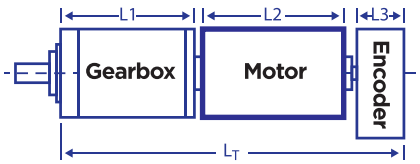
Motor thermal resistance:	25.2K/W	Motor thermal time constant:	1286S
Axial (dynamic):	1.0 N	Radial (5mm from mounting face):	180.0 N
Press-fit force (static):	16 (90)N	Max allowable screw depth into flange:	4.5mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play	0 (<8.0N)
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0/3.7 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:16GP	L1: 19GP		L2:CL16	L3: EN16S
15.9	18.8		33.0	10.7
23.3	23.6			
27.0	28.4			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL1633MAN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-16GP
AM-19GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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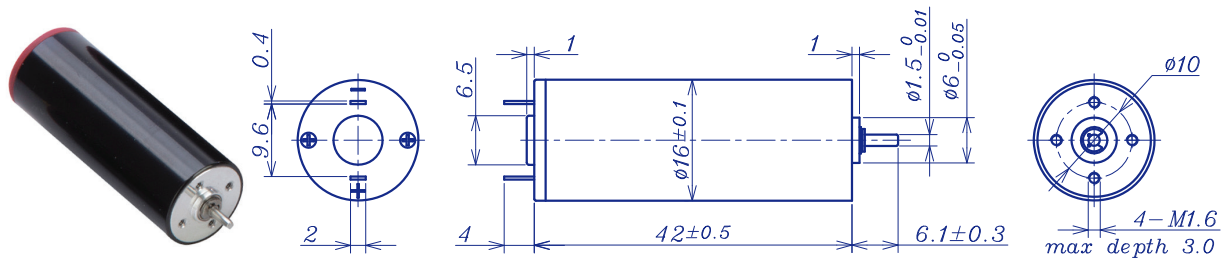


			Precious metal brush				Ball bearings			
Motor Model			**0609**	**1210**	**2409**	**2411**	**3609**	**3611**	**4809**	**4811**
Nominal voltage		V	6	12	24	24	36	36	48	48
No load speed	±12%	rpm	9222	9952	9450	11120	9207	11682	9339	11253
No load current	Max 150%	mA	19	10.5	6.0	7.0	4.5	5.0	3.5	4.2
Recommend limit for continuous operating	Max cont. torque	mN.m	5.3	5.0	5.2	4.2	5.4	4.3	5.2	4.3
	Rated speed	rpm	8094	8874	8393	10215	8090	10700	8122	10242
	Rated current	mA	850	450	220	210	150	150	110	110
	Rated power	W	4.5	4.7	4.5	4.5	4.6	4.8	4.4	4.6
Starting current		mA	7059	4068	1920	2500	1204	1731	821	1182
Stall torque		mN.m	44	47	46	51	45	51	40	48
Maximum power output		W	10.5	12.1	11.4	14.9	10.8	15.5	9.8	14.1
Maximum efficiency		%	90	90	89	90	88	90	87	88
Terminal resistance	±12%	Ω	0.85	2.95	12.5	9.6	29.9	20.8	58.5	40.6
Inductance	(1KHZ)	mH	0.054	0.2	0.95	0.66	2.22	2.22	3.8	3.8
Mechanical time constant		ms	7.0	6.7	6.4	6.8	6.1	7.3	7.1	9.6
Moment of inertia		gcm^2	3.14	3.01	3.01	3.01	2.8	3.01	2.9	3.9
Torque constant		mN.m/A	6.2	11.5	24.2	20.6	37.2	29.3	48.9	40.6
Speed constant		rpm/V	1541	831	395	465	257	325	195	235
Speed/ torque gradient		rpm/mN.m	211	214	204	217	206	231	234	235
Weight		g	39.0	38.5	38.5	38.5	38.5	38.6	37.9	38.1

ADDITIONAL INFORMATION

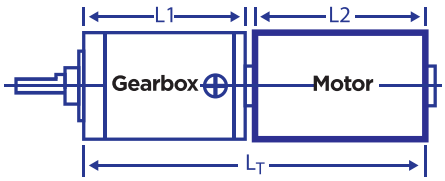
Motor thermal resistance:	K/W	Motor thermal time constant:	S
Axial (dynamic):	3.4 N	Radial (5mm from mounting face):	6.0 N
Press-fit force (static):	36N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play	Preset
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	N/A	Standard rear shaft length "L":	N/A

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:16GP	L1: 19GP		L2:CL16	
15.9	18.8		42.0	
23.3	23.6			
27.0	28.4			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL1642MAN Combination Scheme



Recommended Gearbox:

Planetary Gearbox:
AM-16GP
AM-19GP

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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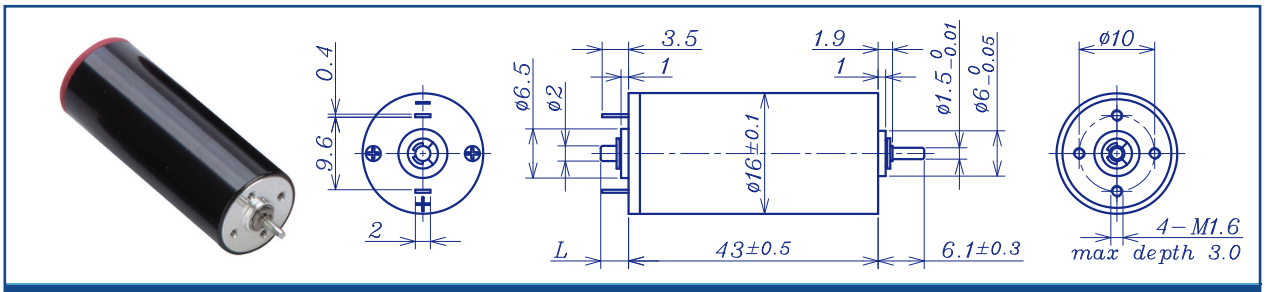


			Precious metal brush			Ball bearings				
Motor Model			**0307**	**0305**	**0607**	**0605**	**0907**	**1206**	**1204**	**2607**
Nominal voltage		V	3	3	6	6	9	12	12	26
No load speed	±12%	rpm	6730	5242	6620	4987	6878	6360	4400	7080
No load current	Max 150%	mA	65	50	32	23	24	16	10	10
Recommend limit for continuous operating	Max cont. torque	mN.m	3.3	4.0	5.3	5.4	5.3	5.4	6.2	5.2
	Rated speed	rpm	5768	4058	5207	3607	5462	5008	2728	5580
	Rated current	mA	850	800	650	500	450	320	250	160
	Rated power	W	2.0	1.7	2.9	2.0	3.0	2.8	1.8	3.0
Starting current		mA	5556	3371	2927	1754	2093	1446	642	718
Stall torque		mN.m	23	18	25	20	26	25	16	24
Maximum power output		W	4.1	2.5	4.3	2.6	4.6	4.2	1.9	4.5
Maximum efficiency		%	80	77	80	78	80	80	77	78
Terminal resistance	±12%	Ω	0.54	0.89	2.05	3.42	4.3	8.3	18.7	36.7
Inductance	(1KHZ)	mH	0.018	0.037	0.11	0.21	0.24	0.52	1.1	2.01
Mechanical time constant		ms	9.3	9.0	8.2	8.2	8.7	7.7	8.3	8.7
Moment of inertia		gcm^2	3.04	2.94	2.94	3.11	3.07	2.94	2.91	2.87
Torque constant		mN.m/A	4.2	5.4	8.6	11.4	12.4	17.8	25.6	34.6
Speed constant		rpm/V	2270	1774	1116	841	773	536	372	276
Speed/ torque gradient		rpm/mN.m	291	293	267	253	269	250	272	289
Weight		g	38.9	38.6	38.7	40.1	40.1	38.7	38.5	38.4

ADDITIONAL INFORMATION

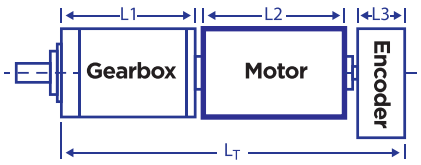
Motor thermal resistance:	24.9K/W	Motor thermal time constant:	412 S
Axial (dynamic):	1.0 N	Radial (5mm from mounting face):	1.8 N
Press-fit force (static):	16(70)N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play	Preset
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0/3.7 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:16GP	L1: 19GP		L2:CL16	L3: EN16S
15.9	18.8		43.0	10.7
23.3	23.6			
27.0	28.4			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL1643MAN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-16GP
AM-19GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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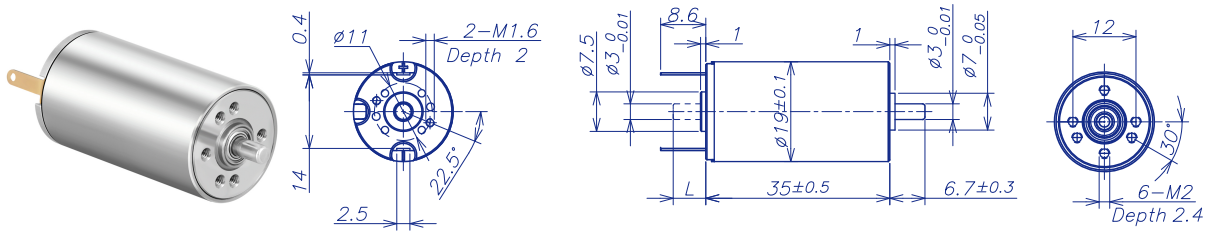
AM-CL1935MAE Series



			Precious metal brush		Ball bearings			
Motor Model			0506	0607	0907	1206	1807	2406
Nominal voltage		V	4.5	6	9	12	18	24
No load speed	±12%	rpm	5900	6620	6600	6480	6600	6450
No load current	Max 150%	mA	60	51	34	26	18	12.5
Recommend limit for continuous operating	Max cont. torque	mN.m	8.9	10.7	11.2	11.1	11.1	11.2
	Rated speed	rpm	4502	4949	4835	4749	4911	4725
	Rated current	mA	1300	1300	900	660	450	330
	Rated power	W	4.2	5.5	5.7	5.5	5.7	5.5
Starting current		mA	5294	5000	3273	2400	1706	1200
Stall torque		mN.m	38	42	42	42	44	42
Maximum power output		W	5.8	7.3	7.2	7	7.5	7.1
Maximum efficiency		%	80	81	81	80	81	81
Terminal resistance	±12%	Ω	0.85	1.2	2.75	5	10.55	20
Inductance	(1KHZ)	mH	Null	0.11	Null	Null	Null	1.86
Mechanical time constant		ms	5.4	5.4	5.5	5.4	5.2	5.3
Moment of inertia		gcm²	3.3	3.3	3.3	3.3	3.3	3.3
Torque constant		mN.m/A	7.2	8.6	12.9	17.5	25.8	35.2
Speed constant		rpm/V	1326	1115	741	546	371	272
Speed/torque gradient		rpm/mN.m	156.5	156.1	158.1	156	151.7	154.5
Weight		g	53	53	53	53	53	53

ADDITIONAL INFORMATION

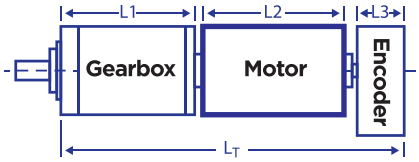
Motor thermal resistance:	19.5 K/W	Motor thermal time constant:	643 S
Axial (dynamic):	2.5N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	16(90)N	Max allowable screw depth into flange:	2.4 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85 °C

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:19GP	L1:24GP		L2:CL19	L3: EN16S
18.8	24		35.0	10.7
23.6	34.3			L3: EN16T
28.4	42.8			12
33.2	51.3			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL1935MAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-24GP

Recommended Encoder:
Encoder S: AM-EN1611S***
3 Channels
Encoder T: AM-EN1612T***
3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
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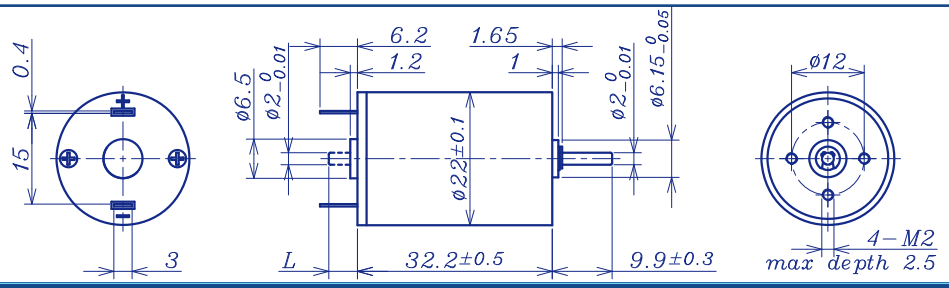


Motor Model			Precious metal brush 0308	0305	0607	Ball bearings 0605	1207	1205	2407	2406
Nominal voltage		V	3	3	6	6	12	12	24	24
No load speed	±12%	rpm	7600	4500	6998	5006	6548	4986	7048	6167
No load current	Max 150%	mA	55	30	27	14	10.2	7	6.5	8.5
Recommend limit for continuous operating	Max cont. torque	mN.m	3.2	5.2	5.9	7.2	6.8	7.8	6.9	7.1
	Rated speed	rpm	6998	3745	6083	3843	5448	3769	5901	5041
	Rated current	mA	900	850	750	650	400	350	220	200
	Rated power	W	2.3	2.0	3.8	2.9	3.9	3.1	4.3	3.7
Starting current		mA	10714	4918	5556	2752	2330	1412	1319	1057
Stall torque		mN.m	40	31	45	31	40	32	42	39
Maximum power output		W	8.0	3.6	8.3	4.1	6.9	4.2	7.8	6.2
Maximum efficiency		%	86	85	87	86	87	86	86	83
Terminal resistance	±12%	Ω	0.28	0.61	1.08	2.18	4.84	8.50	18.2	22.7
Inductance	(1KHZ)	mH	0.015	0.037	0.68	0.14	0.32	0.54	1.1	1.38
Mechanical time constant		ms	11.4	9.2	9.8	9.9	9.8	9.5	9.6	9.3
Moment of inertia		gcm²	5.75	6.02	6.02	5.88	5.75	5.82	5.55	5.55
Torque constant		mN.m/A	3.8	6.3	8.1	11.4	17.4	22.9	32.4	36.9
Speed constant		rpm/V	2546	1509	1172	839	548	418	295	259
Speed/torque gradient		rpm/mN.m	190.1	145.5	155.4	160.5	162.0	155.2	166.0	159.5
Weight		g	56.4	56.9	56.9	56.7	56.5	56.6	56.3	56.3

ADDITIONAL INFORMATION

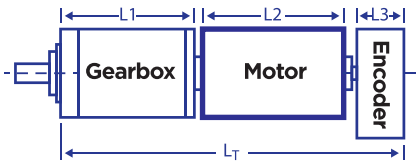
Motor thermal resistance:	24.5K/W	Motor thermal time constant:	685 S
Axial (dynamic):	5.9 N	Radial (5mm from mounting face):	8.0 N
Press-fit force (static):	16(90)N	Max allowable screw depth into flange:	2.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play	Preset
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0/3.7 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:19GP	L1: 24GP		L2:CL22	L3: EN22S
18.8	24.0		32.2	10.7
23.6	34.3			
28.4	42.8			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2232MAN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-24GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
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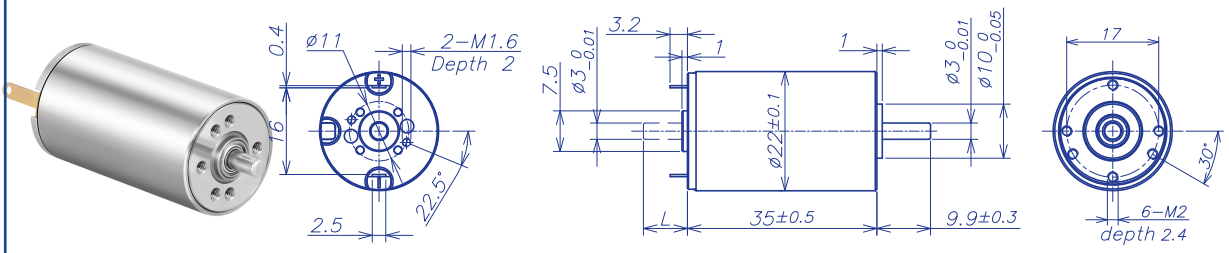
AM-CL2235MAE Series



			Precious metal brush				Ball bearings		
Motor Model			0606	0906	1206	1806	2406	3606	4806
Nominal voltage		V	6	9	12	18	24	36	48
No load speed	±12%	rpm	5700	6000	5800	5950	6020	6000	6400
No load current	Max 150%	mA	55	36	28	18	15	11	9
Recommend limit for continuous operating	Max cont. torque	mN.m	11.4	15.1	15.1	15.3	14.5	14.4	13.6
	Rated speed	rpm	4746	4714	4540	4675	4774	4757	5247
	Rated current	mA	1200	1100	800	550	400	265	200
	Rated power	W	5.7	7.5	7.2	7.5	7.3	7.2	7.5
Starting current		mA	6897	5000	3582	2500	1875	1237	1069
Stall torque		mN.m	68.2	70.6	69.7	71.2	70.2	69.6	75.3
Maximum power output		W	10.2	11.1	10.6	11.1	11.1	10.9	12.6
Maximum efficiency		%	83	84	83	84	83	82	82
Terminal resistance	±12%	Ω	0.87	1.8	3.35	7.2	12.8	29.1	44.9
Inductance	(1KHZ)	mH	0.11	Null	Null	Null	1.54	Null	Null
Mechanical time constant		ms	5.3	5.4	5.3	5.3	5.5	5.5	6.4
Moment of inertia		gcm ²	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Torque constant		mN.m/A	10	14.2	19.6	28.7	37.8	56.8	71.0
Speed constant		rpm/V	958	672	487	333	253	168	134
Speed/ torque gradient		rpm/mN.m	83.6	85	83.2	83.6	85.7	86.2	85.0
Weight		g	75	75	75	75	75	75	75

ADDITIONAL INFORMATION

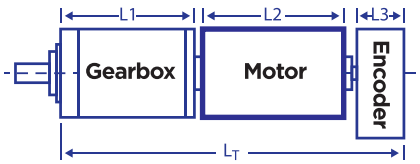
Motor thermal resistance:	15.7 K/W	Motor thermal time constant:	709 S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	16 (90)N	Max allowable screw depth into flange:	2.4mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play	Preset
Maximum winding temperature:	125°C	Ambient temperature range:	-40 to 85°C

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:24GP	**L1:22GP**	L1:26GP	L2:CL22	L3: EN16S
24.0	18.9	25.7	35.0	10.7
34.3	23.7	36.0		L3: EN16T
42.8	28.5	44.5		12.0
51.3	33.3	53.0		

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2235MAE Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-24GP
AM-22GP
AM-26GP

Recommended Encoder:
Encoder S: AM-EN1611S***
3 Channels
Encoder T: AM-EN1612T***
3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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DC BRUSHED CORELESS MOTOR

METAL BRUSH

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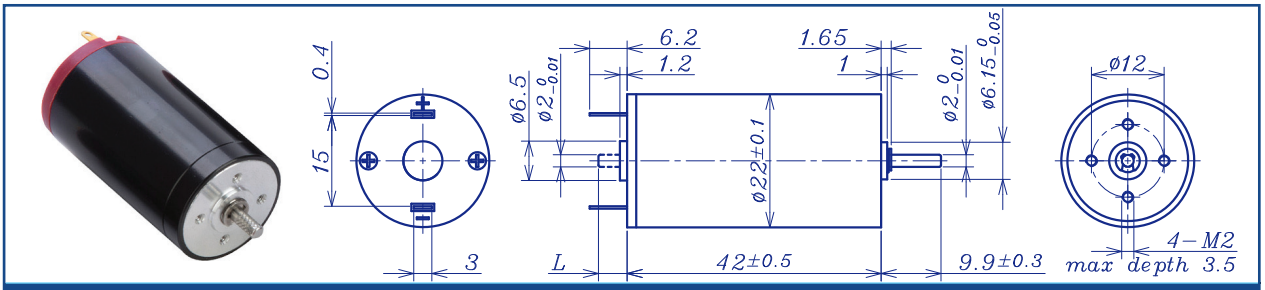
AM-CL2242MAN SERIES



			Precious metal brush				Ball bearings			
Motor Model			**0606**	**0605**	**1207**	**1205**	**2407**	**2405**	**4806**	**4804**
Nominal voltage		V	6	6	12	12	24	24	48	48
No load speed	±12%	rpm	6426	5045	7150	5457	7125	4743	6457	4487
No load current	Max 150%	mA	46	30	24	20	13	7.5	6.5	3.7
Recommend limit for continuous operating	Max cont. torque	mN.m	8.3	10.4	12.4	13.2	14.0	15.0	13.6	14.9
	Rated speed	rpm	5833	4369	6352	4657	6240	3843	5615	3591
	Rated current	mA	980	950	800	650	450	320	200	150
	Rated power	W	5.1	4.8	8.2	6.4	9.2	6.0	8.0	5.6
Starting current		mA	10169	6818	6977	4317	3529	1655	1463	736
Stall torque		mN.m	90	77	111	90	113	79	103	74
Maximum power output		W	15.1	10.1	20.8	12.8	21.0	9.8	17.4	8.7
Maximum efficiency		%	87	87	89	87	88	87	87	86
Terminal resistance	±12%	Ω	0.59	0.88	1.72	2.78	6.80	14.5	32.8	65.2
Inductance	(1KHZ)	mH	0.36	0.09	0.23	0.44	0.7	3.01	4.01	5.01
Mechanical time constant		ms	6.5	6.2	6.0	5.8	6.0	5.5	5.8	5.8
Moment of inertia		gcm^2	8.66	8.92	8.92	9.06	9.06	8.79	8.73	9.12
Torque constant		mN.m/A	8.9	11.3	16.0	20.9	32.0	48.1	70.5	101.6
Speed constant		rpm/V	1076	846	598	457	298	199	135	94
Speed/ torque gradient		rpm/mN.m	71.5	66.0	64.4	60.8	63.2	59.8	63.1	60.3
Weight		g	79.5	79.8	79.8	80.1	80.1	79.6	79.5	80.1

ADDITIONAL INFORMATION

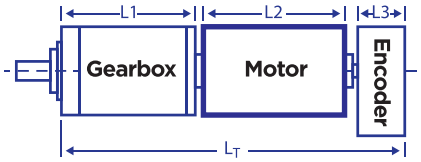
Motor thermal resistance:	18.4 K/W	Motor thermal time constant:	798 S
Axial (dynamic):	5.9 N	Radial (5mm from mounting face):	8.0 N
Press-fit force (static):	16(70)N	Max allowable screw depth into flange:	3.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play	Preset
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0/3.7 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:19GP	L1: 24GP		L2:CL22	L3: EN22S
18.8	24.0		42.0	10.7
23.6	34.3			
28.4	42.8			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2242MAN Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-24GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
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DC BRUSHED CORELESS MOTOR __

METAL Brush

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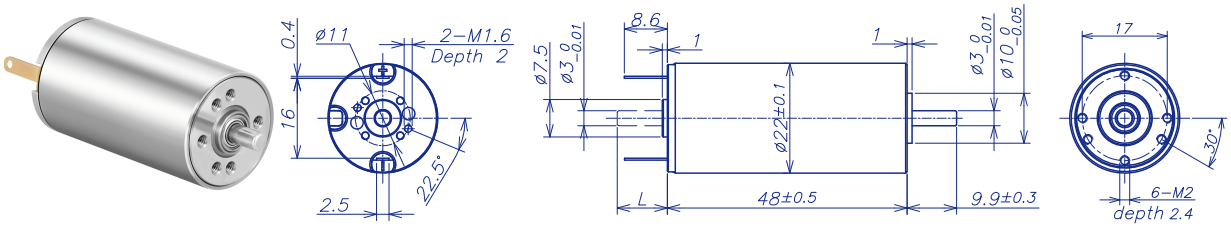
AM-CL2248MAE Series



			Precious metal brush			Ball bearings				
Motor Model			0606	0906	1206	1806	2406	2806	3606	4806
Nominal voltage		V	6	9	12	18	24	28	36	48
No load speed	±12%	rpm	6160	6160	6160	6160	6160	6210	6180	6180
No load current	Max 150%	mA	70	60	50	35	25	20	18	10
Recommend limit for continuous operating	Max cont. torque	mN.m	14.1	21.4	29.5	29.8	29.2	29.2	29.2	27.8
	Rated speed	rpm	5650	5630	5100	5080	5060	5050	5070	5180
	Rated current	mA	1520	1540	1580	1040	800	720	550	400
	Rated power	W	8.3	12.6	15.8	15.9	15.5	15.4	15.1	15.1
Starting current		mA	17600	16360	8000	6000	4000	4000	3000	2000
Stall torque		mN.m	170	248	171.6	171	163	157	163	171.4
Maximum power output		W	27	40	27.8	27.5	26.3	25.4	26.3	27.8
Maximum efficiency		%	91	90	90	89	89	89	89	91
Terminal resistance	±12%	Ω	0.34	0.55	1.5	3.06	6.5	8	12.8	21.5
Inductance	(1KHZ)	mH	0.053	Null	Null	Null	Null	Null	Null	3.6
Mechanical time constant		ms	3.9	2.9	4.3	3.9	4.6	4.3	4.1	3.9
Moment of inertia		gcm^2	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
Torque constant		mN.m/A	9.73	14.4	19.5	29.2	39	44.9	58	77.3
Speed constant		rpm/V	1026	684	513	342	257	222	172	128.7
Speed/ torque gradient		rpm/mN.m	36.2	24.8	35.9	36	37.8	39.6	37.8	36
Weight		g	102	102	102	102	102	102	102	102

ADDITIONAL INFORMATION

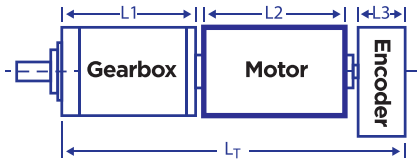
Motor thermal resistance:	12.2 K/W	Motor thermal time constant:	835 S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16 N
Press-fit force (static):	16(90) N	Max allowable screw depth into flange:	2.4 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:24GP	L1:26GP	L2:CL22	L3:EN16S	L3:EN16T
24.0	25.7	48.0	10.7	12.0
34.3	36.0			
42.8	44.5			
51.3	53.0			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2248MAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-24GP
AM-26GP

Recommended Encoder:
Encoder S: AM-EN1611S***
3 Channels
Encoder T: AM-EN1612T***
3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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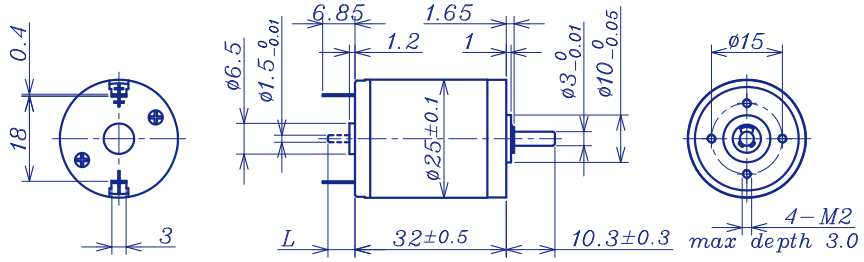
AM-CL2532MAN SERIES



			Precious metal brush				Ball bearings				
Motor Model			**0306**	**0304**	**0606**	**0604**	**1206**	**1204**	**2408**	**2406**	**2405**
Nominal voltage		V	3	3	6	6	12	12	24	24	24
No load speed	±12%	rpm	6010	3993	6073	4155	6592	4070	8280	6166	4850
No load current	Max 150%	mA	120	74	53	37	24	20	20	15	9.5
Recommend limit for continuous operation	Max cont. torque	mN.m	3.9	6.2	6.0	7.6	6.5	7.7	6.7	7.5	11.2
	Rated speed	rpm	5420	3162	5279	3125	5717	3035	7385	5110	3315
	Rated current	mA	950	950	700	600	400	300	262	220	250
	Rated power	W	2.2	2.0	3.3	2.5	3.9	2.5	5.8	4.0	3.9
Starting current		mA	8571	4286	5000	2308	2857	1121	2242	1212	769
Stall torque		mN.m	40	30	46	31	49	30	60	44	35
Maximum power output		W	6.2	3.1	7.3	3.4	8.4	3.2	6.4	7.1	4.5
Maximum efficiency		%	78	75	80	76	83	75	82	79	79
Terminal resistance	±12%	Ω	0.35	0.7	1.2	2.6	4.2	10.7	10.7	19.8	31.2
Inductance	(1KHZ)	mH	0.014	0.048	0.086	0.02	0.34	0.87	0.87	1.48	2.36
Mechanical time constant		ms	17.1	14.8	13.9	15.0	14.4	14.1	14.1	14.8	13.3
Moment of inertia		gcm²	10.8	10.5	10.1	10.6	10.2	10.1	10.1	10.1	9.28
Torque constant		mN.m/A	4.7	7.1	9.3	13.6	17.2	27.7	27.7	36.7	46.7
Speed constant		rpm/V	2032	1354	1023	704	554	345	345	260	205
Speed/torque gradient		rpm/mN.m	151.3	134.5	131.5	134.9	135.0	133.6	133.6	140.3	136.8
Weight		g	73.3	72.9	72.4	73.0	72.6	72.4	72.4	72.4	72.2

ADDITIONAL INFORMATION

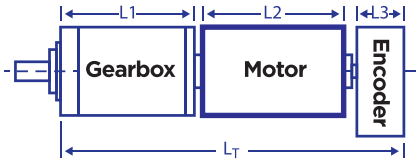
Motor thermal resistance:	16.6 K/W	Motor thermal time constant:	780 S
Axial (dynamic):	7.3 N	Radial (5mm from mounting face):	8.0N
Press-fit force (static):	16(120)N	Max allowable screw depth into flange:	3.0mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play	Preset
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to ºC65
Standard rear shaft diameter:	1.5 mm	Standard rear shaft length "L":	0/3.7 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1: 24GP	L1: 26GP	L2:CL25	L3: EN16S
24.0	25.7	32.0	10.7
34.3	36		
42.8	44.5		

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2532MAN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-24GP
AM-26GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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DC BRUSHED CORELESS MOTOR

METAL BRUSH

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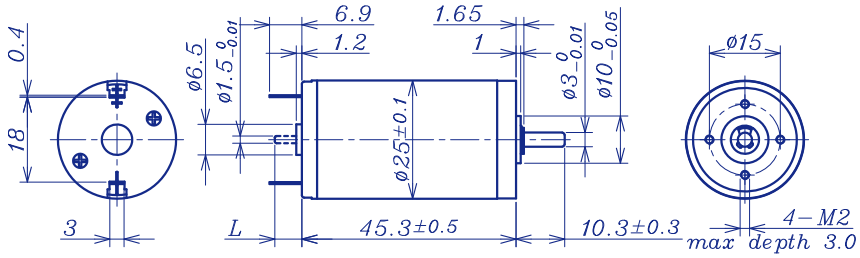
AM-CL2545MAN SERIES



			Precious metal brush			Ball bearings				
Motor Model			**0606**	**0604**	**1206**	**1204**	**2406**	**2404**	**4807**	**4805**
Nominal voltage		V	6	6	12	12	24	24	48	48
No load speed	±12%	rpm	5960	4070	5920	4100	6020	4250	6850	4900
No load current	Max 150%	mA	88	47	38	26	24	14	13	7
Recommend limit for continuous operation	Max cont. torque	mN.m	8.2	12.6	17.6	18.2	18.8	22.3	20.4	27.3
	Rated speed	rpm	5641	3583	5251	3461	5374	3472	6102	3818
	Rated current	mA	950	950	950	680	520	430	320	300
	Rated power	W	4.9	4.7	9.7	6.6	10.5	8.1	13.1	10.9
Starting current		mA	16216	7595	8108	4225	4461	2286	2824	1333
Stall torque		mN.m	154.2	105.6	155.5	116.6	168.0	121.8	187.2	123.4
Maximum power output		W	24.1	11.3	24.1	12.5	26.5	13.5	33.6	15.8
Maximum efficiency		%	86	85	87	85	86	85	87	86
Terminal resistance	±12%	Ω	0.37	0.79	1.48	2.84	5.38	10.5	17.0	36
Inductance	(1KHZ)	mH	0.03	0.07	0.15	0.36	0.60	1.19	2.05	3.6
Mechanical time constant		ms	5.0	5.4	5.3	5.2	5.1	5.0	5.2	5.4
Moment of inertia		gcm²	12.3	13.5	13.5	13.5	13.5	13.6	13.6	12.9
Torque constant		mN.m/A	9.6	14.0	19.3	27.8	37.9	53.6	66.6	93.1
Speed constant		rpm/V	999	683	496	344	252	178	143	103
Speed/torque gradient		rpm/mN.m	38.6	38.5	38.1	35.1	35.8	34.9	36.6	39.7
Weight		g	108	108	108	108	108	108	108	108

ADDITIONAL INFORMATION

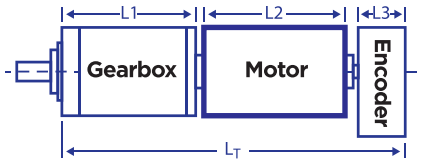
Motor thermal resistance:	18.6 K/W	Motor thermal time constant:	969 S
Axial (dynamic):	7.3 N	Radial (5mm from mounting face):	20.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play	Preset
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to °C65
Standard rear shaft diameter:	1.5 mm	Standard rear shaft length "L":	0/3.7 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1: 24GP	L1: 26GP	L2:CL25	L3: EN16S
24.0	25.7	45.3	10.7
34.3	36		
42.8	44.5		

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2545MAN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-24GP
AM-26GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
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DC BRUSHED CORELESS MOTOR __

METAL Brush

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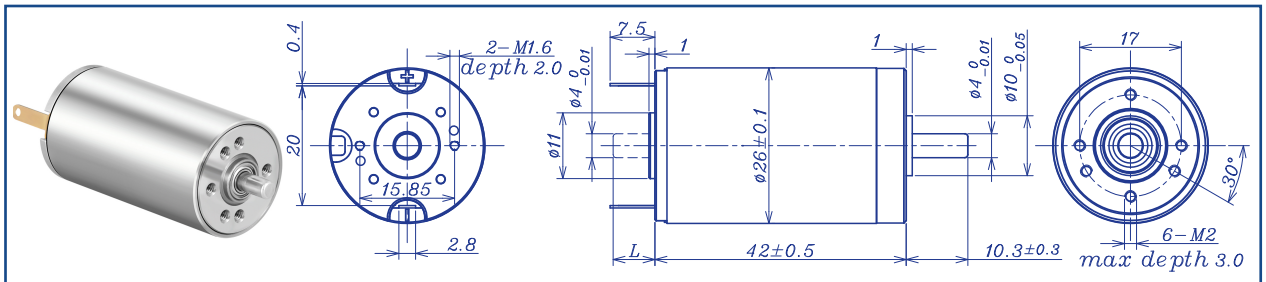
AM-CL2642MAE Series



		Precious metal brush			Ball bearings			
Motor Model		**0605**	**0905**	**1205**	**1805**	**2405**	**3605**	**4805**
Nominal voltage	V	6	9	12	18	24	36	48
No load speed ±12%	rpm	5000	5000	5100	4950	4900	5100	5250
No load current Max 150%	mA	65	43	32	22	16	12	9
Recommend limit for continuous operating: Max cont. torque	mN.m	24.3	25.2	26.1	24.8	25.3	25	25.3
Rated speed	rpm	4034	3985	4127	3937	3917	4116	4283
Rated current	mA	2200	1520	1200	740	560	385	300
Rated power	W	10.3	10.5	11.3	10.2	10.4	10.8	11.3
Starting current	mA	11111	7317	6154	3529	2727	1946	1589
Stall torque	mN.m	125.8	124.3	136.8	121	126.1	129.6	137.2
Maximum power output	W	16.5	16.3	18.3	15.7	16.2	17.3	18.9
Maximum efficiency	%	85	85	86	85	85	85	86
Terminal resistance ±12%	Ω	0.54	1.23	1.95	5.1	8.8	18.5	30.2
Inductance (1KHZ)	mH	Null	Null	0.293	Null	Null	Null	4.56
Mechanical time constant	ms	5.7	5.8	5.4	5.9	5.6	5.7	5.5
Moment of inertia	gcm²	13.8	13.8	13.8	13.8	13.8	13.8	13.8
Torque constant	mN.m/A	11.4	17.1	22.4	34.5	46.5	67	86.8
Speed constant	rpm/V	838	559	427	277	205	143	110
Speed/torque gradient	rpm/mN.m	39.7	40.2	37.3	40.9	38.9	39.4	38.3
Weight	g	122	122	122	122	122	122	122

ADDITIONAL INFORMATION

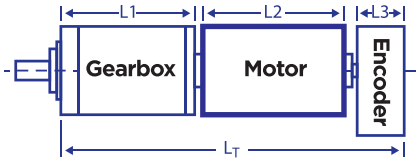
Motor thermal resistance:	16.5 K/W	Motor thermal time constant:	**** S
Axial (dynamic):	7.3 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:26GP	L1: 28GP	L2:CL26	L3: EN22S	L3: EN24T
25.7	26.1	42	10.7	12.0
36	33.3			
44.5	40.5			
53	47.7			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2642MAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-26GP
AM-28GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
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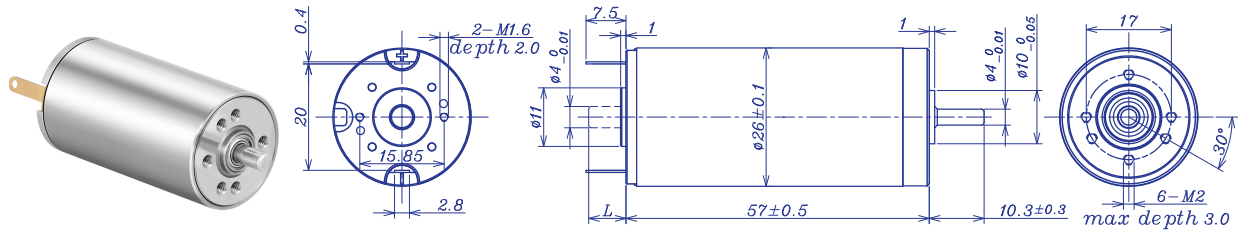


			Precious metal brush		Ball bearings			
Motor Model			0605	0905	1206	1805	2405	3605
Nominal voltage		V	6	9	12	18	24	36
No load speed	±12%	rpm	5200	5400	5540	5400	5400	5288
No load current	Max 150%	mA	83	57	42	28	21	13
Recommend limit for continuous operating	Max cont. torque	mN.m	23.3	34.0	40.4	42.3	41.4	41.3
	Rated speed	rpm	4850	4884	4915	4715	4751	4650
	Rated current	mA	2200	2200	2000	1360	1000	650
	Rated power	W	11.8	17.4	20.8	21.0	20.6	20.1
Starting current		mA	31579	22500	17391	11111	8163	5294
Stall torque		mN.m	346.1	356.3	358.0	351.9	344.7	342.5
Maximum power output		W	47.1	50.4	51.9	50.0	48.7	47.4
Maximum efficiency		%	90	90	90	90	90	90
Terminal resistance	±12%	Ω	0.19	0.4	0.69	1.62	2.94	6.8
Inductance	(1KHZ)	mH	0.041	Null	Null	Null	Null	1.4
Mechanical time constant		ms	3.2	3.3	3.3	3.3	3.4	3.3
Moment of inertia		gcm²	20.6	20.6	20.6	20.6	20.6	20.6
Torque constant		mN.m/A	11.0	15.9	20.6	31.8	42.3	64.9
Speed constant		rpm/V	869	602	463	301	226	147
Speed/torque gradient		rpm/mN.m	15.0	15.2	15.5	15.3	15.7	15.4
Weight		g	176	176	176	176	176	176

ADDITIONAL INFORMATION

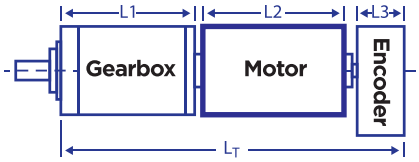
Motor thermal resistance:	11.2K/W	Motor thermal time constant:	1172 S
Axial (dynamic):	7.3 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85 °C

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:26GP	L1: 28GP	L2:26GP		L3: EN22S
25.7	26.1	42		10.7
36	33.3			L3: EN24T
44.5	40.5			12
53	47.7			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2657MAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-26GP
AM-28GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~ 3 Channels
Encoder T: AM-EN2412T***
2~ 3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
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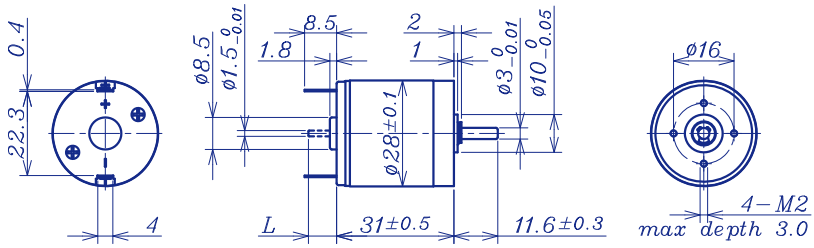


			Precious metal brush			Ball bearings				
Motor Model			**0606**	**0604**	**1207**	**1204**	**2406**	**2404**	**4806**	**4805**
Nominal voltage		V	6	6	12	12	24	24	48	48
No load speed	±12%	rpm	6276	3960	7437	4000	6050	4288	6430	5704
No load current	Max 150%	mA	45	25	30	13	10	6.5	6.5	5.3
Recommend limit for continuous operation	Max cont. torque	mN.m	5.9	8.3	5.7	8.1	9.0	11.3	10.2	9.1
	Rated speed	rpm	5690	3195	6860	3199	5186	3130	5731	4742
	Rated current	mA	700	600	400	300	250	220	150	120
	Rated power	W	3.5	2.8	4.1	2.7	4.9	3.7	5.7	4.5
Starting current		mA	7059	3000	4800	1446	1690	797	878	686
Stall torque		mN.m	64	43	73	41	63	42	62	54
Maximum power output		W	10.5	4.4	14.2	4.3	10.0	4.7	10.4	8.1
Maximum efficiency		%	85	83	85	82	85	83	84	83
Terminal resistance	±12%	Ω	0.85	2.0	2.5	8.3	14.2	30.1	54.7	70
Inductance	(1KHZ)	mH	0.063	0.17	0.19	0.69	1.2	2.4	4.1	5.1
Mechanical time constant		ms	17.1	16.1	16.1	16.1	15.6	16.4	17.3	17.7
Moment of inertia		gcm²	16.6	16.6	15.6	15.6	15.6	15.3	15.8	16.1
Torque constant		mN.m/A	9.1	14.3	15.3	28.4	37.7	53.0	70.8	79.7
Speed constant		rpm/V	1053	666	624	336	254	180	135	120
Speed/torque gradient		rpm/mN.m	98.6	92.8	101.8	98.3	95.6	102.3	104.3	105.1
Weight		g	86.2	86.2	85.3	85.3	85.3	85	85.3	85.2

ADDITIONAL INFORMATION

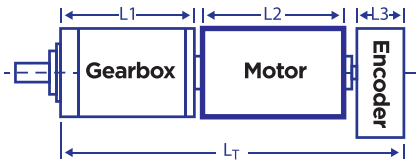
Motor thermal resistance:	19.3 K/W	Motor thermal time constant:	817.2 S
Axial (dynamic):	7.3 N	Radial (5mm from mounting face):	24.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play	Preset
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to °C65
Standard rear shaft diameter:	1.5 mm	Standard rear shaft length "L":	0/3.7 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:28GP	L1: 32GP	L2:CL28	L3: EN16S
26.1	27.4	31.0	10.7
33.3	35.9		
40.5	44.4		

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2831MAN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-28GP
AM-32GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

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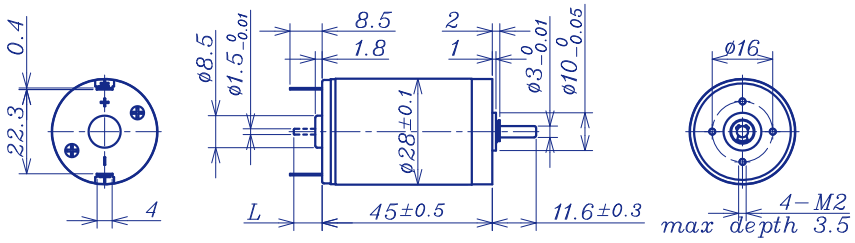


			Precious metal brush			Ball bearings				
Motor Model			0606	0604	1206	1204	2406	2404	4806	4805
Nominal voltage		V	6	6	12	12	24	24	48	48
No load speed	±12%	rpm	6150	4450	6240	4350	5960	4536	6520	4900
No load current	Max 150%	mA	91	59	53	35	25	12	14	9
Recommend limit for continuous operating	Max cont. torque	mN.m	8.0	11.4	16.4	21.6	22.8	24.6	29.1	29.9
	Rated speed	rpm	5911	4151	5837	3794	5396	3944	5834	4097
	Rated current	mA	950	950	950	860	620	500	430	330
	Rated power	W	4.9	5.0	10.0	8.6	12.9	10.2	17.8	12.8
Starting current		mA	22222	13333	13953	6486	6316	3750	3967	1967
Stall torque		mN.m	205.3	170.2	254.3	169.0	240.9	188.3	276.9	182.3
Maximum power output		W	33.1	19.8	41.5	19.3	37.6	22.4	47.3	23.4
Maximum efficiency		%	88	87	88	86	88	89	88	87
Terminal resistance	±12%	Ω	0.27	0.45	0.86	1.85	3.80	6.4	12.1	24.4
Inductance	(1KHZ)	mH	0.02	0.05	0.11	0.21	0.47	0.77	1.47	3.00
Mechanical time constant		ms	6.3	6.0	5.2	5.3	5.1	5.0	4.8	5.3
Moment of inertia		gcm²	20.1	21.8	20.4	19.8	19.5	19.8	19.5	19.0
Torque constant		mN.m/A	9.3	12.8	18.3	26.2	38.3	50.4	70.1	93.1
Speed constant		rpm/V	1029	745	522	364	249	190	136	103
Speed/torque gradient		rpm/mN.m	30.0	26.2	24.5	25.7	24.7	24.1	23.5	26.9
Weight		g	140	140	136	136	136	136	136	136

ADDITIONAL INFORMATION

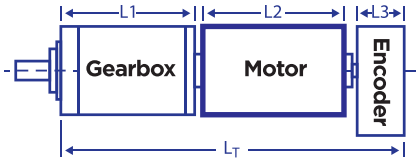
Motor thermal resistance:	15.6 K/W	Motor thermal time constant:	1086 S
Axial (dynamic):	7.3 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth into flange:	3.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to °C65
Standard rear shaft diameter:	1.5 mm	Standard rear shaft length "L":	0/3.7 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:28GP	L1: 32GP	L2:CL28	L3: EN16S
26.1	27.4	45.0	10.7
33.3	35.9		
40.5	44.4		

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2845MAN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-28GP
AM-32GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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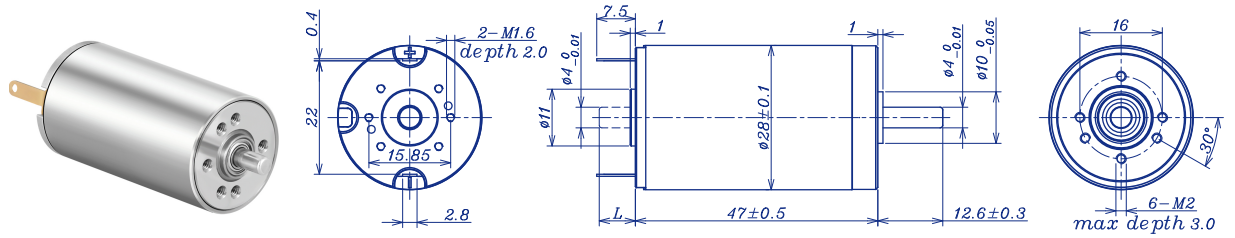


Motor Model			Precious brush 0605	0905	Ball bearings 1205	1805	2405	4805
Nominal voltage		V	6	9	12	18	24	48
No load speed	±12%	rpm	5110	5200	5100	5220	5100	5200
No load current	Max 150%	mA	81	56	40.5	28	20	10.5
Recommend limit for continuous operating	Max cont. torque	mN.m	23.7	35.3	38.3	36.8	39.4	38.6
	Rated speed	rpm	4621	4479	4334	4469	4340	4483
	Rated current	mA	2200	2200	1750	1150	900	450
	Rated power	W	11.5	16.6	17.4	17.2	17.9	18.1
Starting current		mA	22222	15517	11429	7826	5926	3200
Stall torque		mN.m	247.4	254.6	255	255.9	264.5	280.2
Maximum power output		W	33.1	34.7	34	35	35.3	38.1
Maximum efficiency		%	88	88	88	88	89	89
Terminal resistance	±12%	Ω	0.27	0.58	1.05	2.3	4.05	15
Inductance	(1KHZ)	mH	Null	0.087	0.18	Null	Null	2.66
Mechanical time constant		ms	4.9	4.8	4.7	4.8	4.5	4.4
Moment of inertia		gcm²	22.5	22.5	22.5	22.5	22.5	22.5
Torque constant		mN.m/A	11.2	16.5	22.4	32.8	44.8	87.9
Speed constant		rpm/V	855	580	427	291	213	109
Speed/torque gradient		rpm/mN.m	20.7	20.4	20	20.4	19.3	18.6
Weight		g	158	158	158	158	158	158

ADDITIONAL INFORMATION

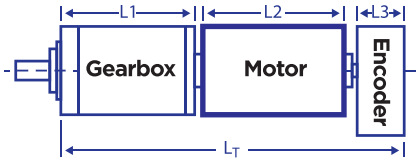
Motor thermal resistance:	15.6 K/W	Motor thermal time constant:	1086 S
Axial (dynamic):	7.3 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85 °C

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:26GP	L1: 28GP	L1:32GP	L2:CL28	L3: EN22S
25.7	26.1	27.4	47.0	10.7
36	33.3	35.9		L3: EN24T
44.5	40.5	44.4		12
53	47.7	52.9		

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2847GAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-26GP
AM-28GP
AM-32GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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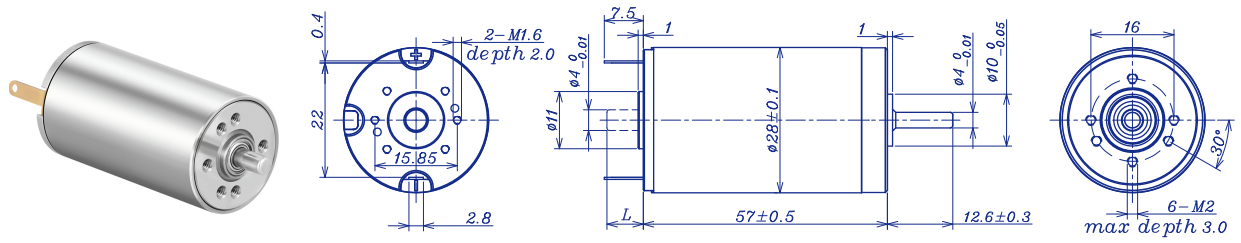


			Precious metal brush		Ball bearings			
Motor Model			0605	0906	1205	1805	2405	3605
Nominal voltage		V	6	9	12	18	24	36
No load speed	±12%	rpm	5700	5900	5400	5700	5500	5700
No load current	Max 150%	mA	80	56	37	32	19	13
Recommend limit for continuous operating	Max cont. torque	mN.m	21.3	31.2	45.8	42	48.3	47.4
	Rated speed	rpm	5450	5537	4857	5200	5020	5123
	Rated current	mA	2200	2200	2200	1420	1200	800
	Rated power	W	12.1	18.1	23.3	22.9	25.4	25.4
Starting current		mA	48387	34884	21544	16000	11429	7792
Stall torque		mN.m	485	507	456	485	466	468
Maximum power output		W	72.3	78.2	64.4	72.4	68.3	69.9
Maximum efficiency		%	92	92	92	92	92	92
Terminal resistance	±12%	Ω	0.124	0.258	0.557	1.15	2.1	4.62
Inductance	(1KHZ)	mH	0.018	Null	Null	Null	Null	0.89
Mechanical time constant		ms	3.5	3.5	3.5	3.6	3.6	3.6
Moment of inertia		gcm²	28.4	28.4	28.4	28.4	28.4	28.4
Torque constant		mN.m/A	10	14.5	21.2	30.2	40.9	60.2
Speed constant		rpm/V	952	657	451	316.7	234	158.6
Speed/torque gradient		rpm/mN.m	11.8	11.6	11.9	11.8	12	12
Weight		g	173	173	173	173	173	173

ADDITIONAL INFORMATION

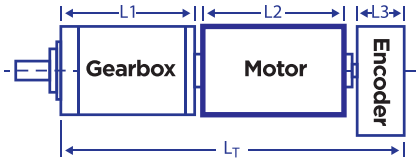
Motor thermal resistance:	10.3 K/W	Motor thermal time constant:	1175 S
Axial (dynamic):	7.3 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85 °C

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:26GP	L1: 28GP	L1:32GP	L2:CL28	L3: EN22S
25.7	26.1	27.4	57.0	10.7
36	33.3	35.9		L3: EN24T
44.5	40.5	44.4		12
53	47.7	52.9		

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2857MAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-26GP
AM-28GP
AM-32GP

Recommended Encoder:
Encoder S: AM-EN2211S***
3 Channels
Encoder T: AM-EN2412T***
3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
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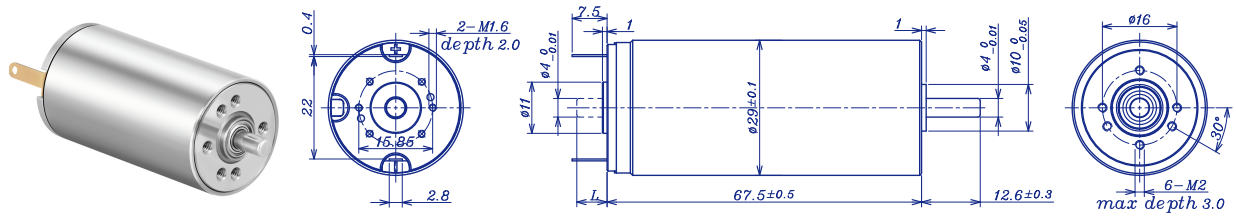


			Precious metal brush		Ball bearings			
Motor Model			1206	1806	2406	3606	4806	6006
Nominal voltage		V	12	18	24	36	48	60
No load speed	±12%	rpm	6025	5875	6026	6026	6026	6026
No load current	Max 150%	mA	100	70	50	40	30	25
Recommend limit for continuous operating	Max cont. torque	mN.m	43	43	45	44	44	44
	Rated speed	rpm	5680	5540	5670	5675	5685	5680
	Rated current	mA	2400	1600	1250	820	620	500
	Rated power	W	25.6	24.9	26.7	26.2	26.2	26.2
Starting current		mA	40000	26000	20000	14000	10000	8000
Stall torque		mN.m	751	754	756	763	779	776
Maximum power output		W	118	116	119	120	122	122
Maximum efficiency		%	89	89	89	89	89	89
Terminal resistance	±12%	Ω	0.35	0.7	1.25	2.7	4.7	7.4
Inductance	(1KHZ)	mH	Null	Null	Null	Null	Null	Null
Mechanical time constant		ms	3.5	3	3.2	3	3	3
Moment of inertia		gcm²	35.3	35.3	35.3	35.3	35.3	35.3
Torque constant		mN.m/A	18.7	28.8	37.3	56.2	74.9	93.6
Speed constant		rpm/V	502	326	251	167	126	101
Speed/torque gradient		rpm/mN.m	8	7.8	8	7.9	7.74	7.8
Weight		g	267	267	267	267	267	267

ADDITIONAL INFORMATION

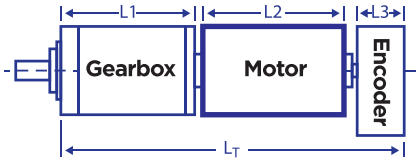
Motor thermal resistance:	*** K/W	Motor thermal time constant:	*** S
Axial (dynamic):	7.3 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:26GP	L1: 28GP	L1:32GP	L2:CL29	L3: EN22S
25.7	26.1	27.4	67.5	10.7
36	33.3	35.9		L3: EN24T
44.5	40.5	44.4		12
53	47.7	52.9		

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2968GAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-26GP
AM-28GP
AM-32GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

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GRAPHITE BRUSH SERIES

Assun Graphite Brush Series Coreless motors are manufactured with coreless rotors and Graphite brush commutators. Benefited from the graphite brushes, these motors are more robust and can operate in higher current which lead to higher torque and power output. It's ideal for applications that need high power output and operate in harsh environments.

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DC BRUSHED CORELESS MOTOR __

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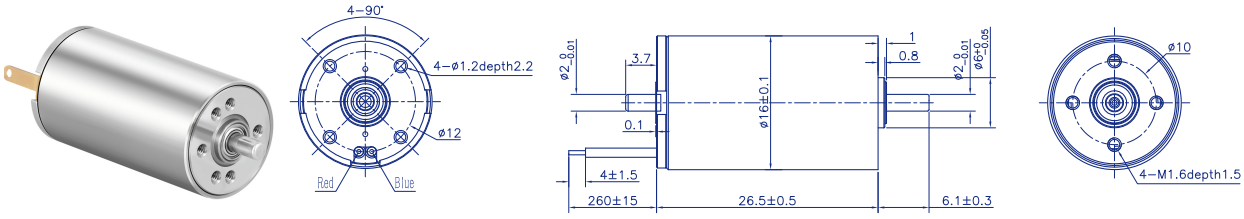
DC BRUSHED MOTOR

AM-CL1626GAE Series



			Graphite brush		Ball bearings				
Motor Model			**0613**	**0913**	**1213**	**1813**	**2413**	**4813**	
Nominal voltage		V	6	9	12	18	24	48	
No load speed	±12%	rpm	12520	13280	13280	12660	12760	13150	
No load current	Max 150%	mA	76	51	40	26	20	10	
Recommend limit for continuous operating	Max cont. torque	mN.m	5.45	5.4	5.36	5.21	5.43	5.32	
	Rated speed	rpm	9300	9300	10300	9220	9480	9230	
	Rated current	mA	1300	870	680	421	330	168	
	Rated power	W	5.3	5.3	5.8	5.0	5.4	5.14	
Starting current		mA	4835	3130	2880	1480	1220	538	
Stall torque		mN.m	21.15	20.3	23.83	19.16	21.1	17.82	
Maximum power output		W	6.9	6.7	8.3	6.35	7.1	6.1	
Maximum efficiency		%	75	75	76	74	76	74	
Terminal resistance	±12%	Ω	1.25	2.9	4.2	12.2	19.4	89	
Inductance	(1KHZ)	mH	N/A	N/A	N/A	N/A	0.495	N/A	
Mechanical time constant		ms	6.4	6.4	6.4	6.4	6.4	6.4	
Moment of inertia		gcm²	1.02	1.02	1.02	1.02	1.02	1.02	
Torque constant		mN.m/A	4.44	6.58	8.39	13.17	17.6	33.74	
Speed constant		rpm/V	2120	1431	1122	716	540	279	
Speed/torque gradient		rpm/mN.m	592	625	557	660	603	738	
Weight		g	18.5	18.5	18.5	18.5	18.5	18.5	

ADDITIONAL INFORMATION

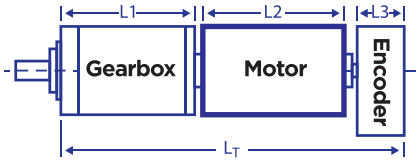
Motor thermal resistance:	24.2 K/W	Motor thermal time constant:	235 S
Axial (dynamic):	0.8 N	Radial (5mm from mounting face):	2.0 N
Press-fit force (static):	18 N	Max allowable screw depth into flange:	1.8 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125°C	Ambient temperature range:	-40 to 85°C
Standard rear shaft diameter:	2.0mm	Standard rear shaft length "L":	0/3.7 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:16GP	L2:CL16	L3: EN16-S	
15.9	26	8	
19.6			
23.3			
27.0			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL1626GAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-16GP

Recommended Encoder:
Encoder S: AM-EN1608S***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

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Graphite Brush

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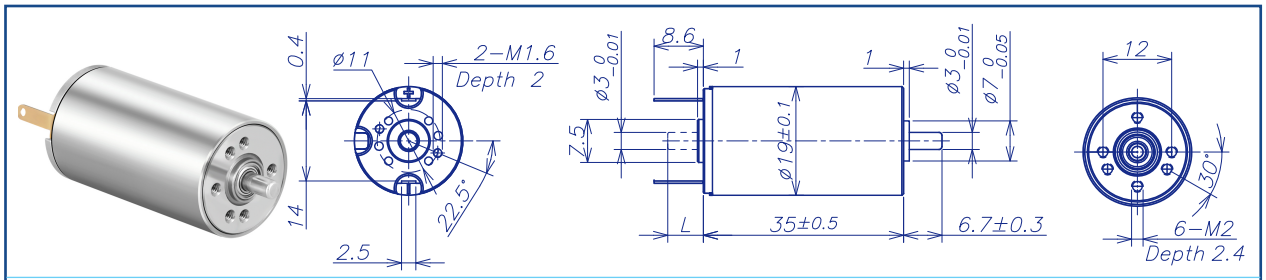
AM-CL1935GAE Series



			Graphite brush		Ball bearings				
Motor Model			**0613**	**0913**	**1213**	**1813**	**2413**	**3613**	**4813**
Nominal voltage		V	6	9	12	18	24	36	48
No load speed	±12%	rpm	13100	13100	13100	13100	12900	13100	12700
No load current	Max 150%	mA	170	110	86	60	45	30	22
Recommend limit for continuous operating	Max cont. torque	mN.m	10.5	11.1	11	11.6	11.5	11.7	11.7
	Rated speed	rpm	10953	11089	11275	11269	11087	11349	10931
	Rated current	mA	2600	1820	1360	950	700	480	350
	Rated power	W	12.1	12.9	13.0	13.7	13.4	13.9	13.4
Starting current		mA	15000	11250	9231	6429	4706	3396	2376
Stall torque		mN.m	64	72	79	83	82	88	84
Maximum power output		W	22.0	24.8	27.2	28.4	27.7	30	28
Maximum efficiency		%	80	81	82	82	81	82	82
Terminal resistance	±12%	Ω	0.4	0.8	1.3	2.8	5.1	10.6	20.2
Inductance	(1KHZ)	mH	Null	Null	Null	Null	0.48	Null	Null
Mechanical time constant		ms	7.1	6.3	5.7	5.5	5.4	5.2	5.2
Moment of inertia		gcm²	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Torque constant		mN.m/A	4.3	6.5	8.7	13	17.6	26	35.8
Speed constant		rpm/V	2208	1470	1102	735	543	367	267
Speed/torque gradient		rpm/mN.m	204.3	181	165.3	158.2	157.3	149.6	150.9
Weight		g	53	53	53	53	53	53	53

ADDITIONAL INFORMATION

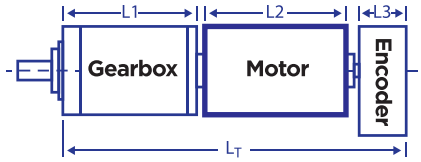
Motor thermal resistance:	26.5 K/W	Motor thermal time constant:	**** S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	16(90)N	Max allowable screw depth into flange:	2. 4 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125°C	Ambient temperature range:	-40 to 85°C
Standard rear shaft diameter:	3.0mm	Standard rear shaft length "L":	0/3.7/5.5mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:19GP	L2:CL19	L3: EN16 S	L3: EN16 T
18.8	35	10.7	12
23.6			
28.4			
33.2			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL1935GAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
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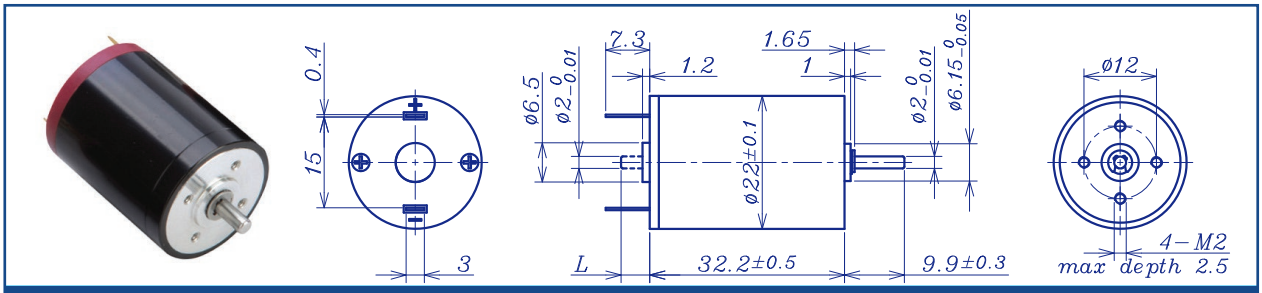
AM-CL2232GAN SERIES



Motor Model			Graohite brush 0609	0606	Ball Bearings 1209	1206	2409	2406
Nominal voltage		V	6	6	12	12	24	24
No load speed ±12%		rpm	8622	6285	8638	5735	9183	6132
No load current Max 150%		mA	87	51	45	25	26	19
Recommend limit for continuous operating	Max cont. torque	mN.m	5.0	6.7	7.3	8.4	7.3	8.5
	Rated Speed	rpm	7735	5093	7385	4229	7988	4627
	Rated Current	mA	850	800	600	450	320	250
	Rated Power	W	4.1	3.6	5.6	3.7	6.1	4.1
Starting current		mA	7500	4000	3871	1644	2286	960
Stall torque		mN.m	49	36	50	32	56	34
Maximum power output		W	11.0	5.8	11.3	4.8	13.4	5.5
Maximum Efficiency		%	80	79	80	77	80	74
Terminal resistance ±12%		Ω	0.8	1.5	3.1	7.3	10.5	25.0
Inductance (1KHz)		mH	0.036	0.09	0.23	0.44	0.70	1.5
Mechanical time constant		ms	9.5	9.5	9.3	9.7	8.9	9.6
Moment of inertia		gcm^2	5.15	5.13	5.15	5.15	5.15	5.14
Torque constant		mN.m/A	6.6	9.0	13.1	19.7	24.7	36.6
Speed constant		rpm/V	1454	1061	728	485	387	261
Speed/torque gradient		rpm/mN.m	177.1	176.8	172.2	180.0	164.7	177.9
Weight		g	57.0	57.1	56.5	57.0	56.8	57.0

ADDITIONAL INFORMATION

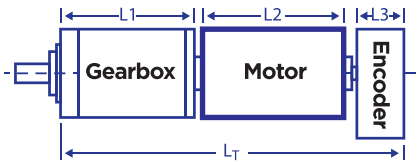
Motor thermal resistance:	24.5K/W	Motor thermal time constant:	685S
Axial (dynamic):	5.9 N	Radial (5mm from mounting face):	8.0 N
Press-fit force (static):	16(90) N	Max allowable screw depth into flange:	2.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0/3.7 mm

Total Length (Gearbox and Motor): L=L1+L2+L3

L1:19GP	L1:24GP		L2:CL22	L3:EN22S
18.8	24.0		32.2	10.7
23.6	34.3			
28.4	42.8			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2232GAN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-24GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
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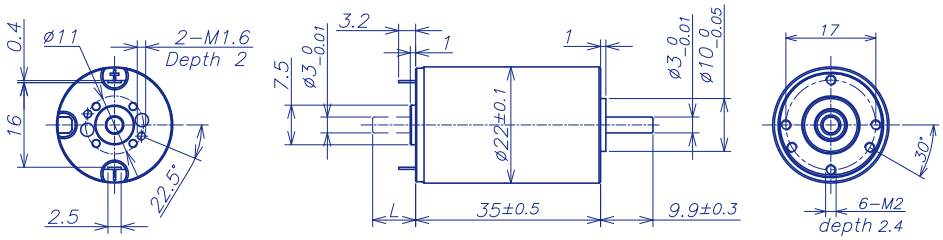
AM-CL2235GAE Series



			Graphite brush		Ball bearings			
Motor Model			0612	1212	1812	2412	3612	4812
Nominal voltage		V	6	12	18	24	36	48
No load speed	±12%	rpm	12000	11800	12100	12000	12200	12300
No load current	Max 150%	mA	330	160	110	80	60	45
Recommend limit for continuous operating	Max cont. torque	mN.m	12.1	13.3	12.5	13.2	12.2	12.7
	Rated speed	rpm	10855	10555	11011	10796	11083	11173
	Rated current	mA	2900	1550	1000	780	500	390
	Rated power	W	13.8	14.7	14.4	14.9	14.2	14.9
Starting current		mA	27273	13333	10000	7059	4865	3810
Stall torque		mN.m	127.1	126.4	138.9	131.8	133.7	138.6
Maximum power output		W	39.9	39	44	41.4	42.7	44.6
Maximum efficiency		%	79	79	80	80	79	79
Terminal resistance	±12%	Ω	0.22	0.9	1.8	3.4	7.4	12.6
Inductance	(1KHZ)	mH	0.023	0.11	Null	0.35	0.8	1.4
Mechanical time constant		ms	6	6	5.6	5.8	5.8	5.7
Moment of inertia		gcm²	6.1	6.1	6.1	6.1	6.1	6.1
Torque constant		mN.m/A	4.7	9.6	14	18.9	27.8	36.8
Speed constant		rpm/V	2024	995	680	506	343	259
Speed/torque gradient		rpm/mN.m	94.4	93.4	87.1	91.1	91.2	88.7
Weight		g	75	75	75	75	75	75

ADDITIONAL INFORMATION

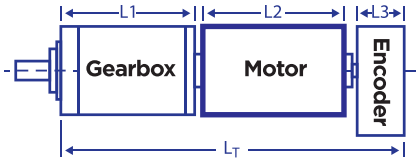
Motor thermal resistance:	15.7 K/W	Motor thermal time constant:	709 S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	16(90)N	Max allowable screw depth into flange:	2.4 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85 °C

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:24GP	L1:26GP		L2: CL22	L3: EN16S
24	25.7		35	10.7
34.3	36			**L3: EN16T**
42.8	44.5			12
51.3	53			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2235GAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-24GP
AM-26GP

Recommended Encoder:
Encoder S: AM-EN1611S***
3 Channels
Encoder T: AM-EN1612T***
3 Channels

For more combination specs, visit Assun Motor werbsite.

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DC BRUSHED CORELESS MOTOR

GRAPHITE BRUSH

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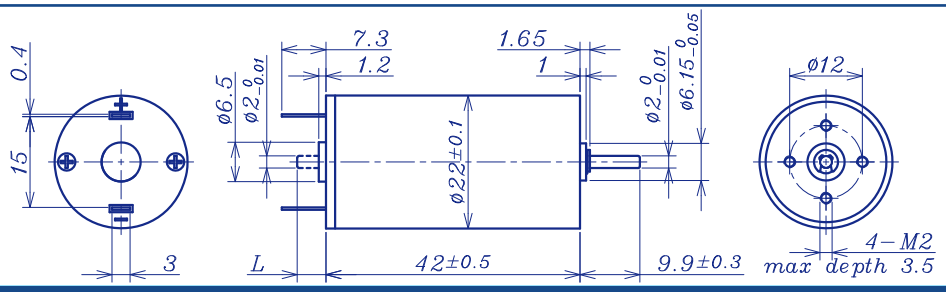
AM-CL2242GAN Series



Motor Model			Graphite brush 0609	0606	Ball Bearings 1209	1206	2408	2406	4810	4805
Nominal voltage		V	6	6	12	12	24	24	48	48
No load speed ±12%		rpm	9020	5720	9596	5818	8100	6260	9732	5260
No load current Max 150%		mA	130	78	77	45	40	22	18	8.5
Recommend limit for continuous operating	Max cont. torque	mN.m	7.4	11.1	7.4	11.8	12.1	11.9	9.9	14.8
	Rated Speed	rpm	8453	5019	9044	5078	7340	5501	9105	4398
	Rated Current	mA	1300	1200	700	650	450	350	230	180
	Rated Power	W	6.5	5.9	7.0	6.3	9.3	6.9	9.5	6.8
Starting current		mA	18750	9231	10909	4800	4615	2727	3310	1055
Stall torque		mN.m	117	91	128	93	130	98	154	90
Maximum power output		W	27.7	13.6	32.3	14.1	27.5	16.1	39.3	12.5
Maximum Efficiency		%	84	82	84	82	88	83	86	83
Terminal resistance ±12%		Ω	0.32	0.65	1.10	2.50	5.20	8.80	14.5	45.5
Inductance (1KHz)		mH	0.014	0.046	0.075	0.23	0.47	0.81	1.35	4.45
Mechanical time constant		ms	7.1	5.8	6.7	5.9	5.7	6.0	5.8	5.5
Moment of inertia		gcm^2	8.86	8.73	8.61	8.99	8.73	8.99	8.79	9.06
Torque constant		mN.m/A	6.3	9.9	11.9	19.5	28.2	36.3	46.8	86.4
Speed constant		rpm/V	1514	961	805	489	339	263	204	110
Speed/torque gradient		rpm/mN.m	76.8	62.9	74.7	62.7	62.5	63.7	63.1	58.2
Weight		g	80.2	80.1	79.8	80.4	80.1	80.4	80.1	80.5

ADDITIONAL INFORMATION

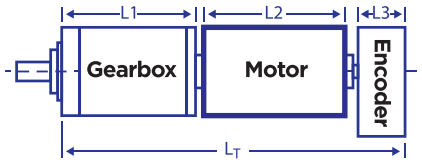
Motor thermal resistance:	18.4 K/W	Motor thermal time constant:	798 S
Axial (dynamic):	5.9 N	Radial (5mm from mounting face):	8.0 N
Press-fit force (static):	16(70) N	Max allowable screw depth into flange:	3.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0/3.7 mm

Total Length (Gearbox and Motor): L=L1+L2+L3

L1:19GP	L1: 24GP		L2:CL22	L3:EN22S
18.8	24.0		42.0	10.7
23.6	34.3			
28.4	42.8			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2242GAN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-19GP
AM-24GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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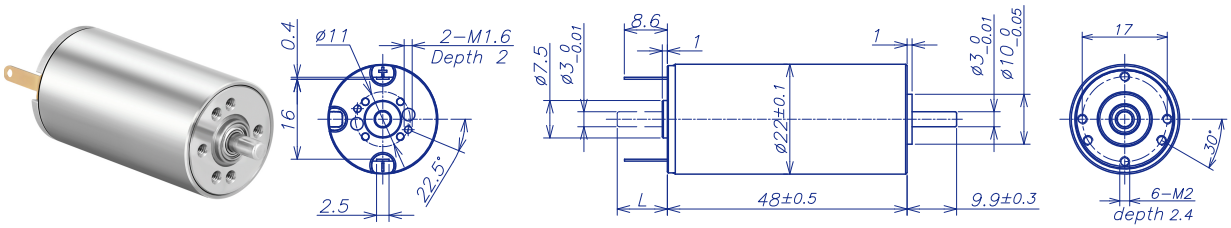
AM-CL2248GAE Series



			Graphite brush		Ball bearings			
Motor Model			0911	1212	1812	2412	3612	4812
Nominal voltage		V	9	12	18	24	36	48
No load speed	±12%	rpm	11400	12300	12200	11900	12000	11900
No load current	Max 150%	mA	250	210	136	100	65	55
Recommend limit for continuous operating	Max cont. torque	mN.m	19.9	18.4	18.4	18.2	18.9	18.9
	Rated speed	rpm	10657	11582	11510	11189	11287	11183
	Rated current	mA	2900	2200	1450	1050	730	550
	Rated power	W	22.2	22.3	22.2	21.3	22.4	22.2
Starting current		mA	40909	34286	23377	16000	11250	8276
Stall torque		mN.m	304.7	315.5	325.5	304.3	318.6	315
Maximum power output		W	90.9	101.6	104	94.8	100.1	98
Maximum efficiency		%	85	85	85	85	85	84
Terminal resistance	±12%	Ω	0.22	0.35	0.77	1.5	3.2	5.8
Inductance	(1KHZ)	mH	0.034	Null	Null	Null	Null	0.94
Mechanical time constant		ms	3.6	3.8	3.6	3.8	3.7	3.7
Moment of inertia		gcm²	9.3	9.3	9.3	9.3	9.3	9.3
Torque constant		mN.m/A	7.5	9.3	14	19.1	28.5	38.3
Speed constant		rpm/V	1274	1031	682	499	335	250
Speed/torque gradient		rpm/mN.m	37.4	39	37.5	39.1	37.7	38
Weight		g	104	104	104	104	104	104

ADDITIONAL INFORMATION

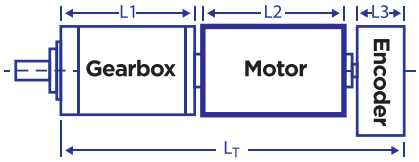
Motor thermal resistance:	12.2 K/W	Motor thermal time constant:	835 S
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	16(90)N	Max allowable screw depth into flange:	2.4 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85 °C

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:24GP	L1:26GP		L2:CL22	L3:EN16S
24	25.7		48.0	10.7
34.3	36			L3:EN16T
42.8	44.5			12.0
51.3	53			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2248GAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-24GP
AM-26GP

Recommended Encoder:
Encoder S: AM-EN1611S***
3 Channels
Encoder T: AM-EN1612T***
3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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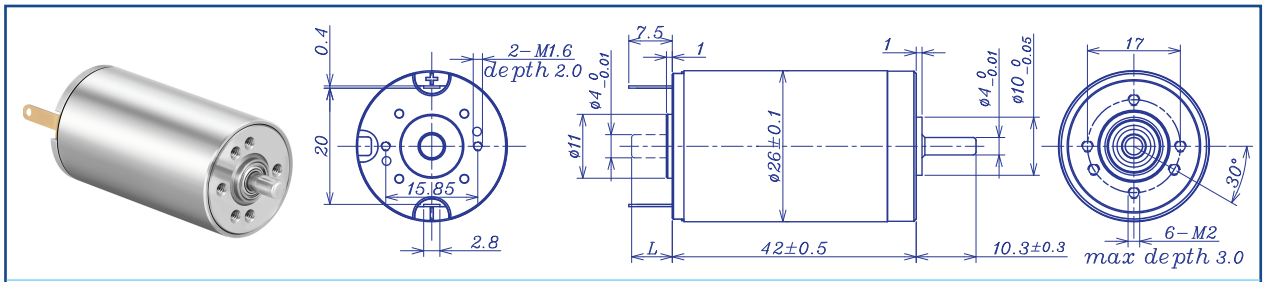
AM-CL2642GAE Series



		Graphite brush		Ball bearings		
Motor Model			**1210**	**1810**	**2410**	**3610**	**4810**
Nominal voltage		V	12	18	24	36	48
No load speed	±12%	rpm	10230	10229	9950	10040	10090
No load current	Max 150%	mA	142	95	68	46	35
Recommend limit for continuous operating	Max cont. torque	mN.m	25.1	25.1	25.2	25.3	25.5
	Rated speed	rpm	9164	9153	8800	8954	9002
	Rated current	mA	2400	1600	1170	790	600
	Rated power	W	24.1	24.1	23.2	23.7	24
Starting current		mA	21818	14400	9600	6923	5275
Stall torque		mN.m	241.2	238.8	218	233.9	236.4
Maximum power output		W	64.6	63.9	56.8	61.5	62.5
Maximum efficiency		%	85	84	84	84	84
Terminal resistance	±12%	Ω	0.55	1.25	2.5	5.2	9.1
Inductance	(1KHZ)	mH	Null	Null	Null	Null	Null
Mechanical time constant		ms	6.1	6.2	6.6	6.2	6.2
Moment of inertia		gcm²	13.8	13.8	13.8	13.8	13.8
Torque constant		mN.m/A	11.1	16.7	22.9	34	45.1
Speed constant		rpm/V	858	572	418	281	212
Speed/torque gradient		rpm/mN.m	42.4	42.8	45.6	42.9	42.7
Weight		g	122	122	122	122	122

ADDITIONAL INFORMATION

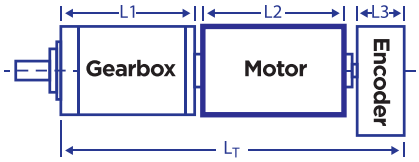
Motor thermal resistance:	16.5 K/W	Motor thermal time constant:	**** S
Axial (dynamic):	7.3 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC
Standard rear shaft diameter:	4.0 mm	Standard rear shaft length "L":	No mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:26GP	L1: 28GP	L2:CL26	L3: EN22S	L3:EN24T
25.7	26.1	42	10.7	12.0
36	33.3			
44.5	40.5			
53	47.7			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2642GAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-26GP
AM-28GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
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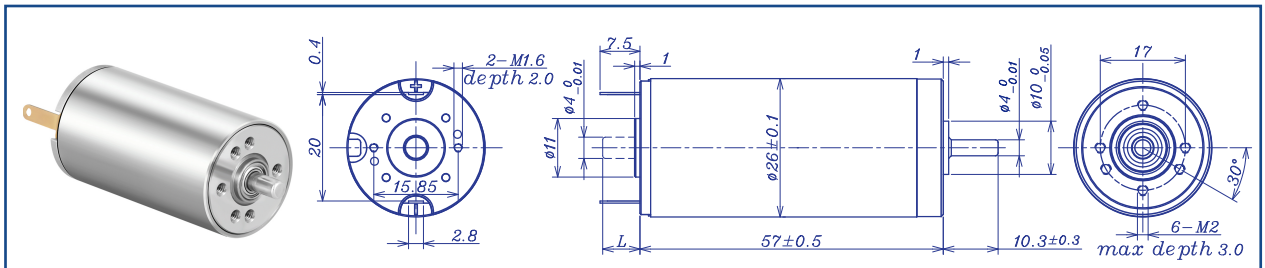
AM-CL2657GAE Series



			Graphite brush		Ball bearings			
Motor Model			**1211**	**1811**	**2411**	**3611**	**4811**	**6011**
Nominal voltage		V	12	18	24	36	48	60
No load speed	±12%	rpm	10700	11030	11200	11100	10950	11300
No load current	Max 150%	mA	180	128	100	65	48	40
Recommend limit for continuous operating	Max cont. torque	mN.m	45.1	44.6	44.1	44.3	44.7	43.5
	Rated speed	rpm	9907	10271	10462	10346	10190	10553
	Rated current	mA	4400	3000	2260	1500	1120	900
	Rated power	W	46.7	48	48.3	48	47.7	48
Starting current		mA	57143	41860	32877	21176	15484	13043
Stall torque		mN.m	608.1	648.4	668.7	651.8	644.1	567.3
Maximum power output		W	170.4	187.2	196.1	189.4	184.7	194.5
Maximum efficiency		%	89	89	89	89	89	89
Terminal resistance	±12%	Ω	0.21	0.43	0.73	1.7	3.1	4.6
Inductance	(1KHZ)	mH	Null	Null	0.13	Null	Null	Null
Mechanical time constant		ms	3.8	3.7	3.6	3.7	3.7	3.7
Moment of inertia		gcm²	20.6	20.6	20.6	20.6	20.6	20.6
Torque constant		mN.m/A	10.7	15.5	20.4	30.9	41.7	50.5
Speed constant		rpm/V	894	615	468	309	229	189
Speed/torque gradient		rpm/mN.m	17.6	17	16.7	17	17	17.2
Weight		g	180	180	180	180	180	180

ADDITIONAL INFORMATION

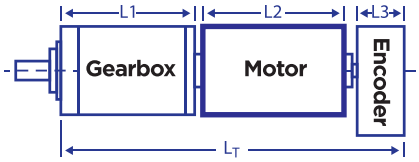
Motor thermal resistance:	11.2 K/W	Motor thermal time constant:	1172 S
Axial (dynamic):	7.3 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC
Standard rear shaft diameter:	4.0 mm	Standard rear shaft length "L":	No mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:26GP	L1: 28GP	L2:CL26	L3: EN22S	L3:EN24T
25.7	26.1	42	10.7	12.0
36	33.3			
44.5	40.5			
53	47.7			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2657GAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-26GP
AM-28GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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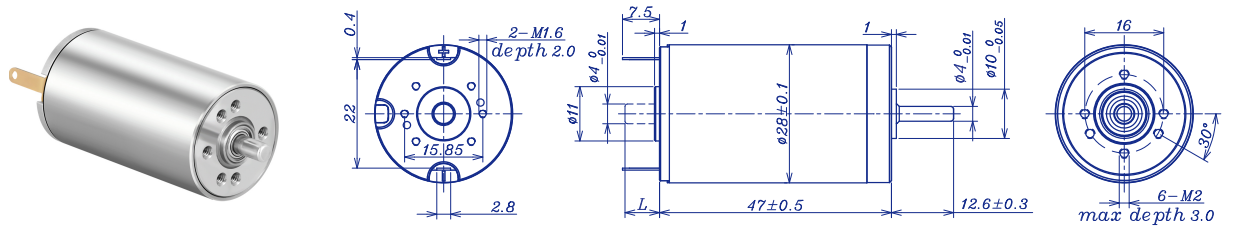


			Graphite brush		Ball bearings			
Motor Model			**1210**	**1810**	**2410**	**3610**	**4810**	**6010**
Nominal voltage		V	12	18	24	36	48	60
No load speed	±12%	rpm	9880	10140	10000	10140	9883	10360
No load current	Max 150%	mA	165	115	80	60	45	40
Recommend limit for continuous operating	Max cont. torque	mN.m	27.0	26.8	29.2	25.0	25.6	24.2
	Rated speed	rpm	9359	9602	9411	9638	9401	9887
	Rated current	mA	2500	1700	1360	800	600	480
	Rated power	W	26.4	26.9	28.8	25.2	25.2	25.1
Starting current		mA	44444	30000	21818	15000	11429	9677
Stall torque		mN.m	511.7	504.7	496.4	504.5	525.9	530.8
Maximum power output		W	132.3	134.0	130.0	133.9	136.1	144.0
Maximum efficiency		%	88	88	88	88	88	88
Terminal resistance	±12%	Ω	0.27	0.6	1.1	2.4	4.2	6.2
Inductance	(1KHZ)	mH						
Mechanical time constant		ms	4.5	4.7	4.7	4.7	4.4	4.6
Moment of inertia		gcm²	22.5	22.5	22.5	22.5	22.5	22.5
Torque constant		mN.m/A	11.6	16.9	22.8	33.8	46.2	55.1
Speed constant		rpm/V	826	566	418	283	207	173
Speed/torque gradient		rpm/mN.m	19.3	20.1	20.1	20.1	18.8	19.5
Weight		g	158	158	158	158	158	158

ADDITIONAL INFORMATION

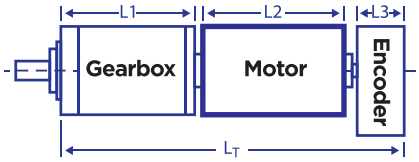
Motor thermal resistance:	15.6 K/W	Motor thermal time constant:	1086 S
Axial (dynamic):	7.3 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth into flange:	3.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to °C65
Standard rear shaft diameter:	1.5 mm	Standard rear shaft length "L":	0/3.7 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:28GP	L1: 32GP	L2:CL28	L3: EN22S
25.9	27.4	47.0	10.7
33.1	35.9		**L3: EN24T**
40.3	44.4		12

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2847GAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-28GP
AM-32GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
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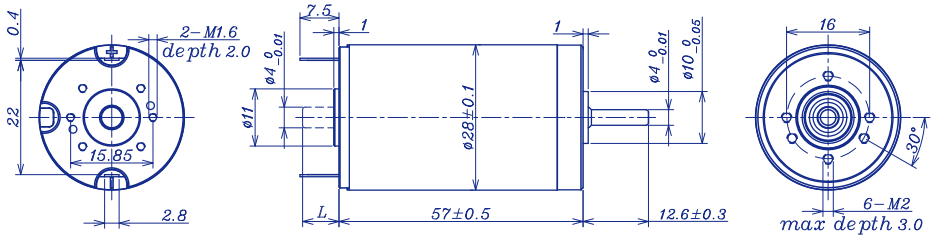


			Graphite brush		Ball bearings			
Motor Model			**1211**	**1811**	**2410**	**3611**	**4811**	**6010**
Nominal voltage		V	12	18	24	36	48	60
No load speed	±12%	rpm	10900	11400	10266	10960	10680	10290
No load current	Max 150%	mA	210	155	95	72	53	40
Recommend limit for continuous operating	Max cont. torque	mN.m	55.5	51.8	55.8	54.1	55.5	54.4
	Rated speed	rpm	10177	10744	9643	10338	10044	9667
	Rated current	mA	5500	3600	2600	1800	1350	1020
	Rated power	W	59.1	58.3	56.3	58.5	58.4	55.1
Starting current		mA	80000	60000	41379	30508	21818	16216
Stall torque		mN.m	836.6	900	919.5	952.4	931.9	898.5
Maximum power output		W	238.7	268.6	247.1	273.3	260.5	242
Maximum efficiency		%	90	90	91	91	90	90
Terminal resistance	±12%	Ω	0.15	0.3	0.58	1.18	2.2	3.7
Inductance	(1KHZ)	mH	Null	Null	0.11	Null	Null	Null
Mechanical time constant		ms	3.9	3.8	3.3	3.4	3.4	3.4
Moment of inertia		gcm²	28.4	28.4	28.4	28.4	28.4	28.4
Torque constant		mN.m/A	10.5	15.0	22.3	31.3	42.8	55.5
Speed constant		rpm/V	911	635	429	305	223	172
Speed/torque gradient		rpm/mN.m	13.0	12.7	11.2	11.5	11.5	11.5
Weight		g						

ADDITIONAL INFORMATION

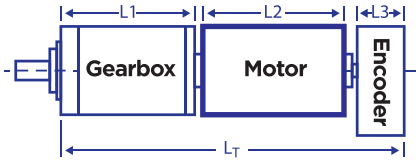
Motor thermal resistance:	12.4 K/W	Motor thermal time constant:	**** S
Axial (dynamic):	7.3 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth into flange:	3.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC
Standard rear shaft diameter:	4.0 mm	Standard rear shaft length "L":	No mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:26GP	L1:28GP	L1:32GP	L2: CL28	L3: EN22S
25.7	26.1	27.4	57	10.7
36	33.3	35.9		**L3: EN24T**
44.5	40.5	44.4		12
53	47.7	52.9		

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2857GAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-26GP
AM-28GP
AM-32GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

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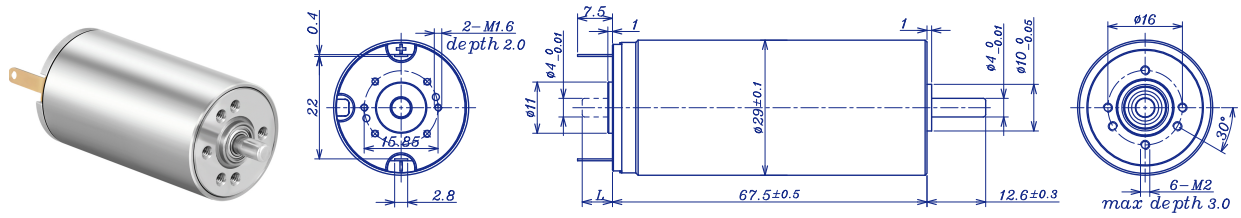


			Graphite brush		Ball bearings			
Motor Model			**1210**	**1810**	**2410**	**3610**	**4810**	**6010**
Nominal voltage		V	12	18	24	36	48	60
No load speed	±12%	rpm	9790	9780	9800	9760	9780	9770
No load current	Max 150%	mA	240	160	120	80	65	55
Recommend limit for continuous operating	Max cont. torque	mN.m	56.7	62.1	67.2	63.9	64.8	62.3
	Rated speed	rpm	9233	9221	9270	9216	9271	9266
	Rated current	mA	5100	3700	3000	1900	1450	1120
	Rated power	W	54.8	59.9	65.2	61.7	62.9	60.4
Starting current		mA	85714	62069	53333	32727	26667	20690
Stall torque		mN.m	997.7	1085.3	1241.6	1147.1	1243.7	1206.9
Maximum power output		W	255.7	277.9	318.6	293.1	318.4	308.7
Maximum efficiency		%	90	90	91	90	90	90
Terminal resistance	±12%	Ω	0.14	0.29	0.45	1.1	1.8	2.9
Inductance	(1KHZ)	mH	0.094					
Mechanical time constant		ms	3.6	3.3	2.9	3.1	2.9	3
Moment of inertia		gcm²	35.3	35.3	35.3	35.3	35.3	35.3
Torque constant		mN.m/A	11.7	17.5	23.3	35.1	46.8	58.5
Speed constant		rpm/V	818	545	409	272	204	163
Speed/torque gradient		rpm/mN.m	9.8	9	7.9	8.5	7.9	8.1
Weight		g	268	268	268	268	268	268

ADDITIONAL INFORMATION

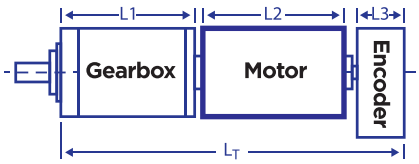
Motor thermal resistance:	10.6 K/W	Motor thermal time constant:	**** S
Axial (dynamic):	7.3 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth into flange:	3.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-40 to 85ºC
Standard rear shaft diameter:	4.0 mm	Standard rear shaft length "L":	L mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:26GP	L1:28GP	L1:32GP	L2: CL28	L3: EN22S
25.7	26.1	27.4	57	10.7
36	33.3	35.9		**L3: EN24T**
44.5	40.5	44.4		12
53	47.7	52.9		

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL2968GAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-26GP
AM-28GP
AM-32GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor werbsite.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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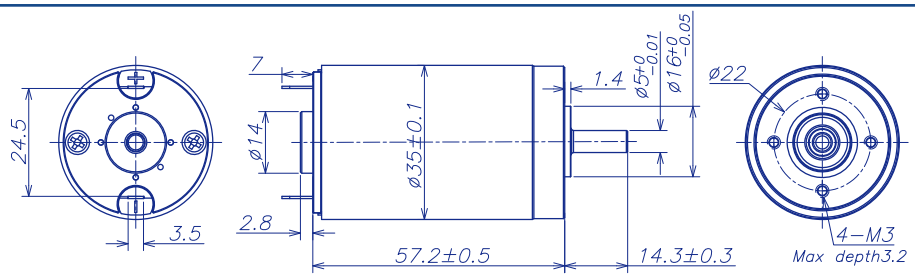
AM-CL3557GAE SERIES



		Graphite brush		Ball Bearings			
Motor Model		**0904**	**1504**	**2404**	**3604**		
Nominal voltage	V	9	15	24	36		
No load speed ±12%	rpm	4420	4550	4500	4500		
No load current +150%	mA	160	100	60	40		
Recom-mended Limit for Conti-nuous Running: Max cont. torque	mN.m	115	115	115	115		
Rated Speed	rpm	3360	3540	3430	3470		
Rated Current	mA	6140	3800	2350	1560		
Rated Power	W	41	42.6	41.3	42		
Starting current	mA	25310	16650	9680	6670		
Stall torque	mN.m	484	514	484	500		
Max power output	W	56	61	57	59		
Maximum Efficiency	%	85	85	84	85		
Terminal R ±12%	Ω	0.35	0.9	2.3	5.4		
Inductance (1KHz)	mH	N/A	N/A	0.36	N/A		
Mech. time constant	ms	6.0	6.0	6.0	6.0		
Moment of inertia	gcm^2	85	85	85	85		
Torque constant	mN.m/A	19.2	31	50.3	75.5		
Speed constant	rpm/V	493	305	189	126		
Speed/torque gradient	rpm/mN.m	9.1	8.86	9.3	9.0		
Weight	g	220	220	220	220		

ADDITIONAL INFORMATION

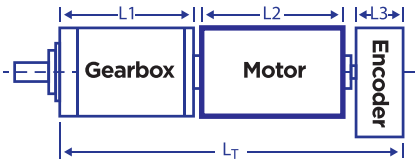
Motor thermal resistance:	9.1K/W	Motor thermal time constant:	1352S
Axial (dynamic):	5.5 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	100(1000) N	Max allowable screw depth into flange:	4.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125°C	Ambient temperature range:	-40 to 85°C
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Total Length (Gearbox and Motor) LT=L1+L2+L3

L1:36GP	L1:40GP	L1:45GP	L2:CL35	L3:EN22S
30.6	35.3	36.1	70.5	10.7
39.6	46.8	48.1		L3:EN24T
48.6	58.3	60.1		12.0
57.6	69.8	72.1		

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL3557GAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-36GP
AM-40GP
AM-45GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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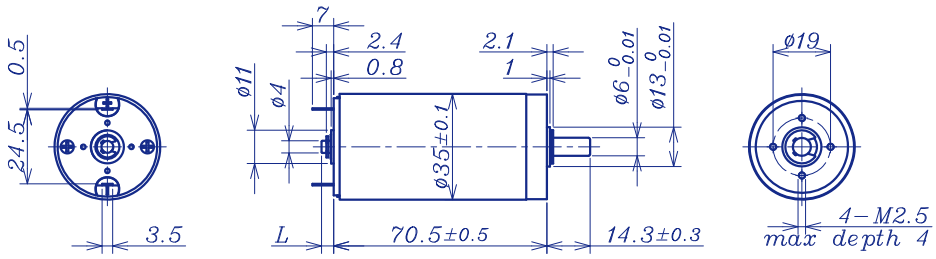
AM-CL3570GAN SERIES



		Graphite brush				Ball Bearings				
Motor Model		1206	1204	2408	2406	2404	4806	4804	4803	4802
Nominal voltage	V	12	12	24	24	24	48	48	48	48
No load speed ±12%	rpm	6140	4150	7800	5930	4020	6060	4040	3240	1756
No load current +150%	mA	190	130	155	100	70	55	33	26	12
Recom-mended Limit for Conti-nuous Running: Max cont. torque	mN.m	63.3	73.3	59.9	69.3	81.1	67.4	86.6	87.7	100.3
Rated Speed	rpm	5632	3695	7433	5506	3541	5686	3573	2740	1223
Rated Current	mA	3600	2800	2200	1900	1500	950	800	650	400
Rated Power	W	37.4	28.4	46.6	40.0	30.1	40.2	32.4	25.2	12.9
Starting current	mA	41379	24490	43636	25263	12060	14545	6667	4068	1290
Stall torque	mN.m	765	669	1274	969	680	1092	749	568	331
Max power output	W	123.0	72.7	260.2	150.4	71.5	173.2	79.2	48.2	15.2
Maximum Efficiency	%	87	86	88	88	85	88	86	85	82
Terminal R ±12%	Ω	0.29	0.49	0.55	0.95	1.99	3.3	7.2	11.8	37.2
Inductance (1KHz)	mH	0.036	0.11	0.11	0.21	0.45	0.83	1.71	2.75	9.6
Mech. time constant	ms	8.8	7.1	7.1	6.9	6.5	6.1	6.2	6.4	6.2
Moment of inertia	gcm^2	105.3	108.7	111	108.4	105.6	104.4	110.5	106.4	110.8
Torque constant	mN.m/A	18.6	27.5	29.3	38.5	56.7	75.4	112.9	140.6	258.6
Speed constant	rpm/V	514	348	326	248	168	127	85	68	37
Speed/torque gradient	rpm/mN.m	8.0	6.2	6.1	6.1	5.9	5.6	5.4	5.7	5.3
Weight	g	348.3	350.2	350.2	350.5	348.2	347.4	351.4	348.7	351.6

ADDITIONAL INFORMATION

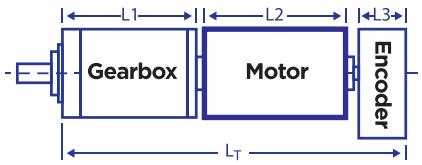
Motor thermal resistance:	9.1K/W	Motor thermal time constant:	1352S
Axial (dynamic):	5.5 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	100(1000) N	Max allowable screw depth into flange:	4.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	85ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	3.7/5.5 mm

Total Length (Gearbox and Motor) L_T=L1+L2+L3

L1:36GP	L1:40GP	L1:45GP	L2:CL35	L3:EN22S
39.6	46.8	62.8	70.5	10.7
48.6	58.3	74.8		L3:EN24T
57.6	69.8			12.0

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL3570GAN Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-36GP
AM-40GP
AM-45GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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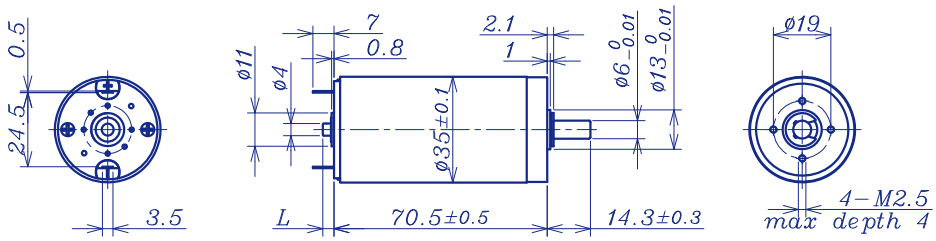
AM-CL3570GAF SERIES (155℃)



		Graphite brush			Ball Bearings					
Motor Model		**1206**	**1204**	**2408**	**2406**	**2404**	**4806**	**4804**	**4803**	**4802**
Nominal voltage	V	12	12	24	24	24	48	48	48	48
No load speed ±12%	rpm	6400	4320	8130	6180	4190	6310	4210	3380	1830
No load current +150%	mA	182	125	130	96	67	53	32	25	12
Recom-mended Limit for Conti-nuous Running: Max cont. torque	mN.m	96.6	112.8	103.1	107.3	116.0	104.7	115.7	117.9	126.1
Rated Speed	rpm	5558	3562	7444	5467	3445	5584	3532	2648	1103
Rated Current	mA	5600	4400	3800	3000	2200	1500	1100	900	520
Rated Power	W	56.2	42.1	80.4	61.4	41.9	61.2	42.8	32.7	14.6
Starting current	mA	41379	24490	43636	25263	12060	12632	6667	4068	1290
Stall torque	mN.m	734	643	1223	930	652	910	719	545	317
Max power output	W	123.0	72.7	260.3	150.4	71.6	150.3	79.2	48.2	15.2
Maximum Efficiency	%	87	86	89	88	86	87	87	85	82
Terminal R ±12%	Ω	0.29	0.49	0.55	0.95	1.99	3.3	7.2	11.8	37.2
Inductance (1KHz)	mH	0.036	0.11	0.11	0.21	0.45	0.83	1.71	2.75	9.6
Mech. time constant	ms	9.6	7.6	7.7	7.5	7.1	7.6	6.8	6.9	6.7
Moment of inertia	gcm^2	105.3	108.7	111	108.4	105.6	104.4	110.5	106.4	110.8
Torque constant	mN.m/A	17.8	26.4	28.1	36.9	54.4	72.3	108.4	134.8	248.1
Speed constant	rpm/V	536	362	340	258	176	132	88	71	38
Speed/torque gradient	rpm/mN.m	8.7	6.7	6.6	6.6	6.4	6.9	5.9	6.2	5.8
Weight	g	348.3	350.2	350.2	350.5	348.2	347.4	351.4	348.7	351.6

ADDITIONAL INFORMATION

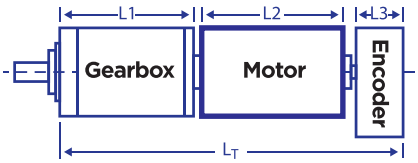
Motor thermal resistance:	9.1K/W	Motor thermal time constant:	1352S
Axial (dynamic):	5.5 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	100(1000) N	Max allowable screw depth into flange:	4.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	155ºC	Ambient temperature range:	-40 to 100ºC
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	3.7/5.5 mm

Total Length (Gearbox and Motor) L_T=L1+L2+L3

L1:36GP	L1:40GP	L1:45GP	L2:CL35	L3:EN22S
39.6	46.8	60.1	70.5	10.7
48.6	58.3	72.1		L3:EN24T
57.6	69.8			12.0

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL3570GAF Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-36GP
AM-40GP
AM-45GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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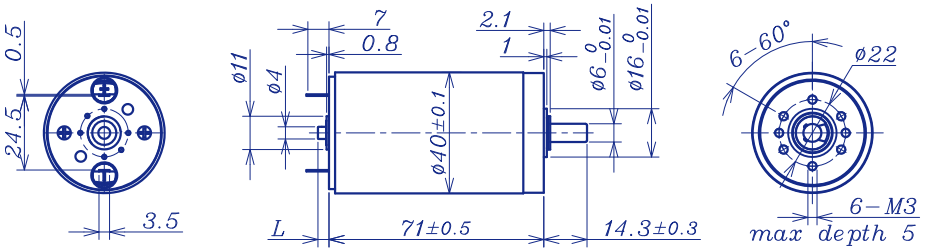
AM-CL4071GAE SERIES (125℃)



Motor Model			Graphite brush 1207	2408	4809	Ball Bearings 4806	4805	4804	4803	4802
Nominal voltage		V	12	24	48	48	48	48	48	48
No load speed ±12%		rpm	6800	8450	8900	7000	6100	4000	2800	2250
No load current Max 150%		mA	275	170	70	65	56	36	25	22
Recommend limit for continuous operation	Max cont. torque	mN.m	96.1	144.3	150.6	169.5	153.2	155.6	158.7	186.0
	Rated Speed	rpm	6312	7905	8235	5747	5475	3361	2142	1470
	Rated Current	mA	6000	5500	3000	2400	2100	1400	1000	860
	Rated Power	W	63.5	119.4	130.4	102.0	87.8	54.8	35.6	28.6
Starting current		mA	80000	82759	41206	26667	20000	8571	4174	2981
Stall torque		mN.m	1339	2235	2106	1931	1494	974	675	657
Maximum power output		W	238.4	494.5	490.6	318.4	238.7	102.0	49.5	35.3
Maximum Efficiency		%	89	91	92	90	90	87	85	84
Terminal resistance ±12%		Ω	0.15	0.29	1.17	1.8	2.4	5.6	11.5	16.1
Inductance (1KHz)		mH	0.03	0.08	0.34	0.55	0.76	1.84	3.65	5.3
Mechanical time constant		ms	6.6	4.9	5.3	4.1	5.1	5.3	5.2	3.9
Moment of inertia		gcm^2	123.5	122.6	120.8	120.8	120.2	122.2	120.5	120.7
Torque constant		mN.m/A	16.8	27.1	51.4	72.6	74.9	114.1	162.7	221.9
Speed constant		rpm/V	569	353	186	132	127	84	59	43
Speed/torque gradient		rpm/mN.m	5.1	3.8	4.2	3.3	4.1	4.1	3.2	3.1
Weight		g	495	496	498	495	496	497	495	496

ADDITIONAL INFORMATION

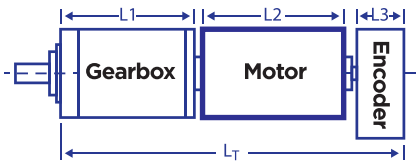
Motor thermal resistance:	-K/W	Motor thermal time constant:	-S
Axial (dynamic):	5.5 N	Radial (5mm from mounting face):	29.0 N
Press-fit force (static):	100(1000) N	Max allowable screw depth into flange:	5.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature:	125ºC	Ambient temperature range:	-30 to 65ºC
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	3.7/5.5 mm

Total Length (Gearbox and Motor) L_T=L1+L2+L3

L1:40GP	L1:45GP	L2: CL40	L3:EN22S	L3:EN24T
46.8	60.1	71	10.7	12.0
58.3	72.1			
69.8				

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL4071GAE Combination Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-40GP
AM-45GP

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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DC BRUSHED CORELESS MOTOR

Graphite Brush

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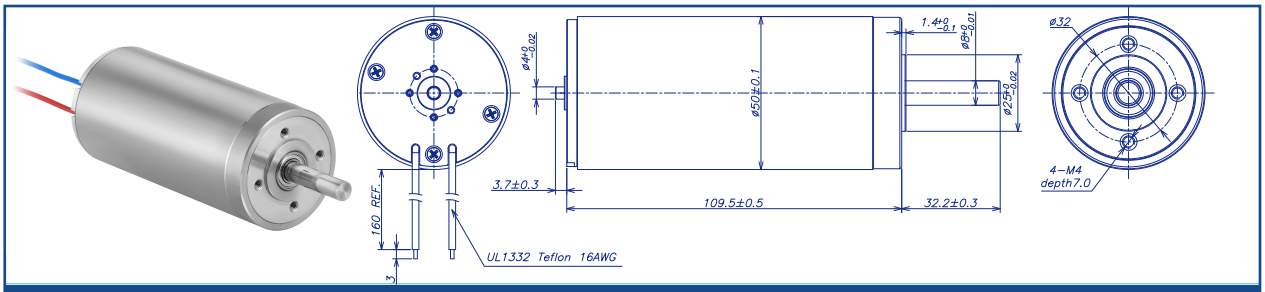
AM-CL50109GAF Series



			Graphite brush		Ball bearings			
Motor Model			2406	2708	4805	7003		
Nominal voltage		V	24	27	48	70		
No load speed	±12%	rpm	5900	7626	4940	3013		
No load current	Max 150%	mA	470	350	95	40		
Recommend limit for continuous operating	Max cont. torque	mN.m	405	420	420	452		
	Rated speed	rpm	5687	7390	4490	2610		
	Rated current	mA	10800	12780	4480	2000		
	Rated power	W	241	325	197.5	123		
Starting current		mA	256798	402402	82235	20897		
Stall torque		mN.m	9905	13585	7936	4830		
Maximum power output		W	1537	2712	985	364		
Maximum efficiency		%	92	94	92	90		
Terminal resistance	±12%	Ω	0.094	0.067	0.57	3.3		
Inductance	(1KHZ)	mH	-	-	-	-		
Mechanical time constant		ms	3.8	3.8	3.8	3.8		
Moment of inertia		gcm²	545	545	545	545		
Torque constant		mN.m/A	38.62	33.8	96.5	231.7		
Speed constant		rpm/V	247	289	104	41		
Speed/torque gradient		rpm/mN.m	0.6	0.561	0.6	0.6		
Weight		g	1250	1150	1250	1250		

ADDITIONAL INFORMATION

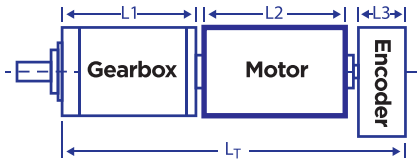
Motor thermal resistance:	-K/W	Motor thermal time constant:	- S
Axial (dynamic):	30N	Radial (5mm from mounting face):	100N
Press-fit force (static):	150N	Max allowable screw depth into flange:	6.5mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	Present
Maximum winding temperature:	125ºC	Ambient temperature range:	-30 to 100ºC
Standard rear shaft diameter:	8.0 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Total Length (Gearbox and Motor): L_T=L1+L2+L3

L1:45GP	L1: 52GP	L2:CL50	L3: EN22S	L3:EN24T
36.1	46.3	109.5	10.7	12.0
48.1	62.8			
60.1	79.3			
72.1	95.8			

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-CL50109GAF Combination Scheme



Recommended Gearbox:
Planetary Gearbox:

AM-45GP
AM-52GP

Recommended Encoder:
Encoder S: AM-EN2211S***
Encoder T: AM-EN2412T***

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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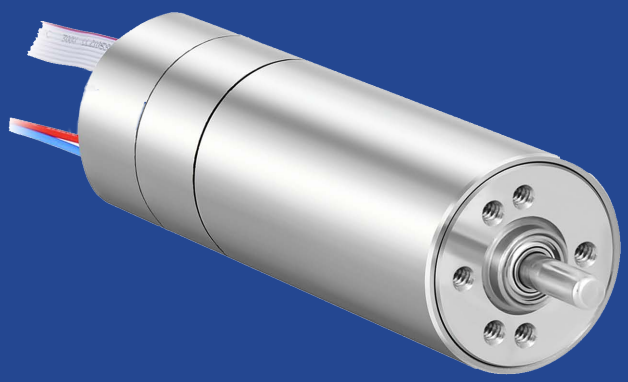
INTEGRATED SERVO MOTOR

Assun Servo Motors are built with servo controller integrated inside the Assun brushless motor. With diameter from 20mm to 65mm, Assun servo motors can be connected directly to the industrial PLC and are ideal for applications that need simple and precise position control.



AM-PC16 AM-PC20 AM-PC22 AM-PI22 AM-PC28 AM-PC32
AM-PC36 AM-PC45

AM - PI2051AN - 2412

Company Name Abbreviation

Motor Dimension
20 - Diameter (mm)
51 Length (mm)

Temperature level
N 85°C
E 125°C
F 155°C
H 180°C

Number of Pole Pairs
A - 1 Pole Pair
B - 2 Pole Pairs
C - 3 Pole Pairs
D - 4 Pole Pairs

Servo Motor Type
PI - Controller Integrated Servo Motor
PC - Controller Integrated + CAN Communication Servo Motor
PP - Controller Integrated + Profibus Communication Servo Motor
PE - Controller Integrated + EtherCAT Communication Servo Motor

Nominal Voltage & Rated Speed
24 - Nominal Voltage (V)
12 - Rated Speed (×1000rpm)

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ASSUN SERVO MOTOR

PULSE & CAN BUS CONTROL

Assun Servo Motor are DC brushless motors with integrated position servo controller. It uses traditional analogue or digital signal input for position control. As feedback function integrated inside, no more encoders are needed and thus achieving compact overall sizes.

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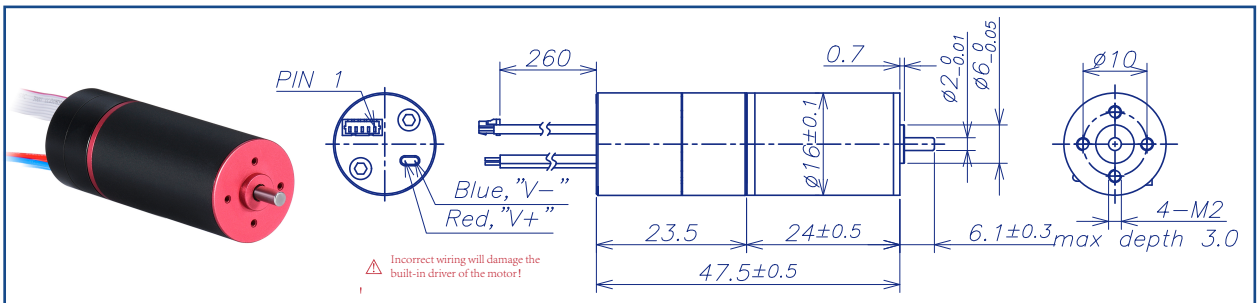
ASSUN SERVO MOTOR

BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushless

ASSUN DRIVING THE FUTURE

AM-PC1648AE SERIES (Built-In CAN+RS485 Communication Protocol)



	Brushless Servo Motor		Ball Bearing				
Motor Model		**1213**	**1215**				
Nominal voltage	V	12	12				
Voltage Range	V	9.5~14.5	9.5~14.5				
Standby current	mA	55	55				
Rated current	mA	380	420				
Torque constant	mN.m/A	6.6	6.2				
Rated torque	mN·m	2.5	2.6				
Rated speed	rpm	7800	9300				
Pulse number / circle	Pulse / circle	16384	16384				
Overload torque	mN.m	5	5.2				
Maximum overload time	second	5	5				
Moment of inertia	gcm^2	0.19	0.19				
Weight	g	51	51				

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	**** K/W	Motor thermal time constant:	**** S
Axial (dynamic):	1.5 N	Radial (5mm from head face):	6.0 N
Press-fit force (static):	40 N	Max allowable screw depth info flange:	3.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<2.0N)
Maximum winding temperature	125ºC	Ambient temperature range:	-40 to 85ºC

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. DGND 2. CAN-L 3. CAN-H	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-B	5. RS485-A

Sensor Connector:Molex 51021-0500

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

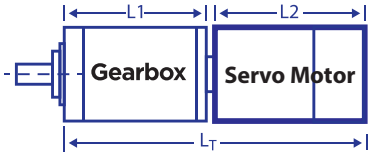
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:16GP	L1:19GP	L2:PC16
15.9	18.8	47.5
19.6	23.6	
23.3	28.4	
27	33.2	

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC1648AE Combiniation Scheme



Recommended Gearbox:

AM-16GP
AM-19GP

For more combination specs, visit Assun Motor website.

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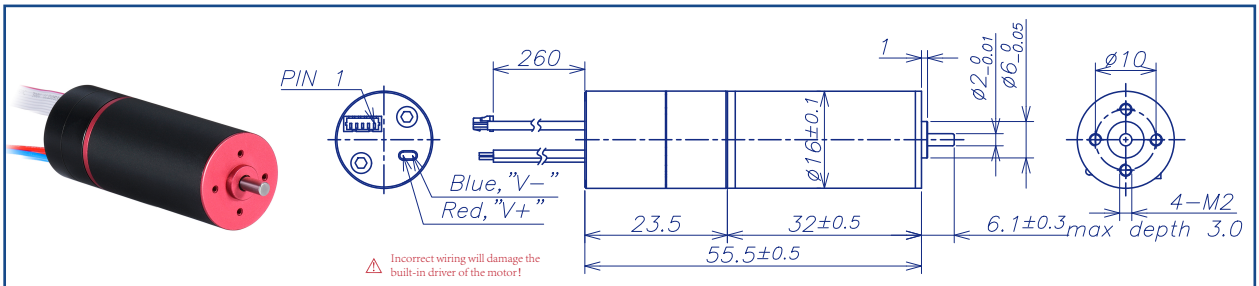
ASSUN SERVO MOTOR

BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushless

ASSUN DRIVING THE FUTURE

AM-PC1656AN SERIES (Built-In CAN+RS485 Communication Protocol)



		Brushless Servo Motor		Ball Bearing			
Motor Model		**1220**	**1214**	**1827**	**1817**	**2420**	**2416**
Nominal voltage	V	12	12	18	18	24	24
Voltage Range	V	9.5~14.5	9.5~14.5	15.5~20.5	15.5~20.5	21.5~26.5	21.5~26.5
Standby current	mA	55	55	45	45	35	35
Rated current	mA	600	450	420	360	280	250
Torque constant	mN.m/A	5	7.1	5.2	8.6	10	12.4
Rated torque	mN·m	3	3.2	2.2	3.1	2.8	3.1
Rated speed	rpm	16800	10500	24500	14200	16800	13100
Pulse number / circle	Pulse / circle	16384	16384	16384	16384	16384	16384
Overload torque	mN.m	6	6.4	4.4	6.2	5.2	6.2
Maximum overload time	second	5	5	5	5	5	5
Moment of inertia	gcm^2	0.3	0.3	0.3	0.3	0.3	0.3
Weight	g	52.6	52.6	52.6	52.6	52.6	52.6

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	22.5 K/W	Motor thermal time constant:	407 S
Axial (dynamic):	1.5 N	Radial (5mm from head face):	6.0 N
Press-fit force (static):	40 N	Max allowable screw depth info flange:	3.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature	85℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. DGND 2. CAN-L 3. CAN-H	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-B	5. RS485-A

Sensor Connector:Molex 51021-0500

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

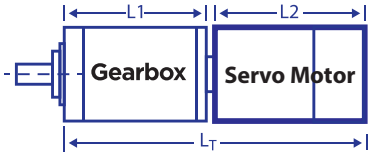
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:16GP	L1:19GP	L2:PC16
15.9	18.8	55.5
19.6	23.6	
23.3	28.4	
27	33.2	

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC1656AN Combiniation Scheme



Recommended Gearbox:

AM-16GP
AM-19GP

For more combination specs, visit Assun Motor website.

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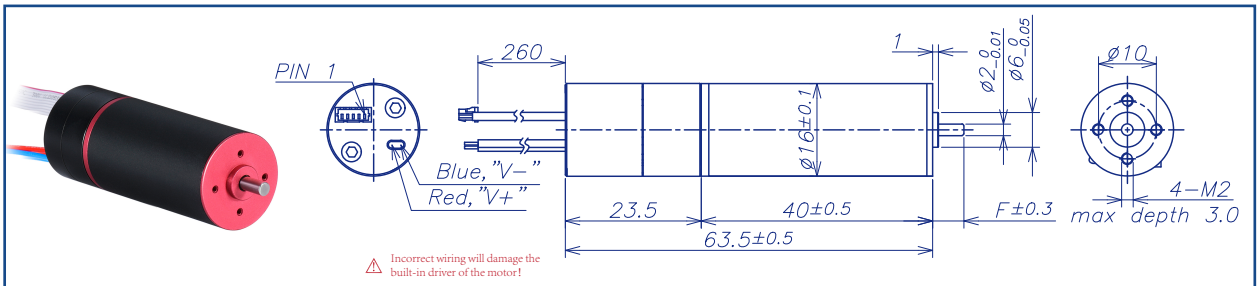
ASSUN SERVO MOTOR

BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushless

ASSUN DRIVING THE FUTURE

AM-PC1664AN SERIES (Built-In CAN+RS485 Communication Protocol)



		Brushless Servo Motor				Ball Bearing			
Motor Model		**1234**	**1221**	**1216**	**1836**	**1821**	**1816**	**2419**	**2413**
Nominal voltage	V	12	12	12	18	18	18	24	24
Voltage Range	V	9.5~14.5	9.5~14.5	9.5~14.5	15.5~20.5	15.5~20.5	15.5~20.5	21.5~26.5	21.5~26.5
Standby current	mA	55	55	55	45	45	45	35	35
Rated current	mA	1600	1200	1000	900	780	650	580	400
Torque constant	mN.m/A	2.9	4.8	6.3	3.9	73	9.5	10.7	16.0
Rated torque	mN·m	4.6	5.8	6.3	3.5	5.7	6.2	6.2	6.4
Rated speed	rpm	31700	17800	13200	34500	17800	13000	16100	9100
Pulse number / circle	Pulse / circle	16384	16384	16384	16384	16384	16384	16384	16384
Overload torque	mN.m	9.2	11.6	12.6	7	11.4	12.4	12.4	12.8
Maximum overload time	second	5	5	5	5	5	5	5	5
Moment of inertia	gcm²	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
Weight	g	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2

Additional Information

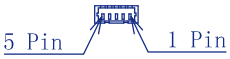
Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	17.9 K/W	Motor thermal time constant:	439 S
Axial (dynamic):	1.5 N	Radial (5mm from head face):	6.0 N
Press-fit force (static):	40 N	Max allowable screw depth info flange:	3.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature	85℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. DGND 2. CAN-L 3. CAN-H	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-B	5. RS485-A

Sensor Connector:Molex 51021-0500



H VIEW

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

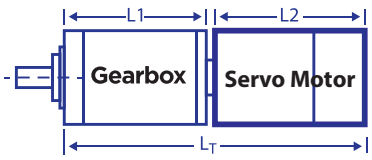
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:16GP	L1:19GP	L2:PC16
15.9	18.8	63.5
19.6	23.6	
23.3	28.4	
27	33.2	

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC1664AN Combiniation Scheme



Recommended Gearbox:

AM-16GP
AM-19GP

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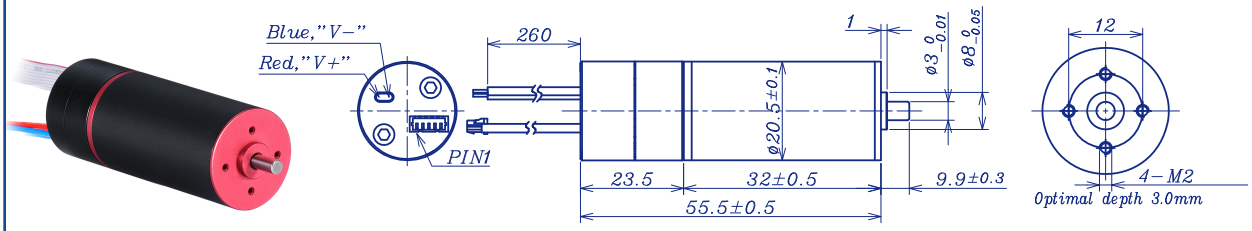
SERVO MOTOR

ASSUN SERVO MOTOR

BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushless

ASSUN DRIVING THE FUTURE

AM-PC2056AN SERIES (Built-In CAN+RS485 Communication Protocol)



⚠ Incorrect wiring will damage the built-in driver of the motor!

	Brushless Servo Motor			Ball Bearing			
Motor Model		**1225**	**1220**	**1822**	**1819**	**2419**	**2415**
Nominal voltage	V	12	12	18	18	24	24
Voltage Range	V	9.5~14.5	9.5~14.5	15.5~20.5	15.5~20.5	21.5~26.5	21.5~26.5
Standby current	mA	55	55	45	45	35	35
Rated current	mA	700	900	500	600	400	380
Torque constant	mN.m/A	3.2	4.5	5.6	7.2	8.6	11.6
Rated torque	mN·m	2.3	4.0	2.8	4.3	3.4	4.4
Rated speed	rpm	23500	18000	21000	16500	17500	12500
Pulse number / circle	Pulse / circle	16384	16384	16384	16384	16384	16384
Overload torque	mN.m	4.6	8	5.6	8.6	6.8	8.8
Maximum overload time	second	5	5	5	5	5	5
Moment of inertia	gcm^2	0.69	0.69	0.69	0.69	0.69	0.69
Weight	g	72	72	72	72	72	72

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	22.8 K/W	Motor thermal time constant:	552 S
Axial (dynamic):	2.5 N	Radial (5mm from head face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth info flange:	3.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature	85℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. CAN-H 2. CAN-L 3. DGND	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-B	5. RS485-A

Sensor Connector:Molex 51021-0500

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

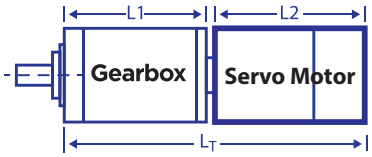
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:19GP	L1:24GP		L2 :PC20	
18.8	24		55.5	
23.6	34.3			
28.4	42.8			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC2056AN Combiniation Scheme



Recommended Gearbox:

AM-19GP
AM-24GP

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BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushless

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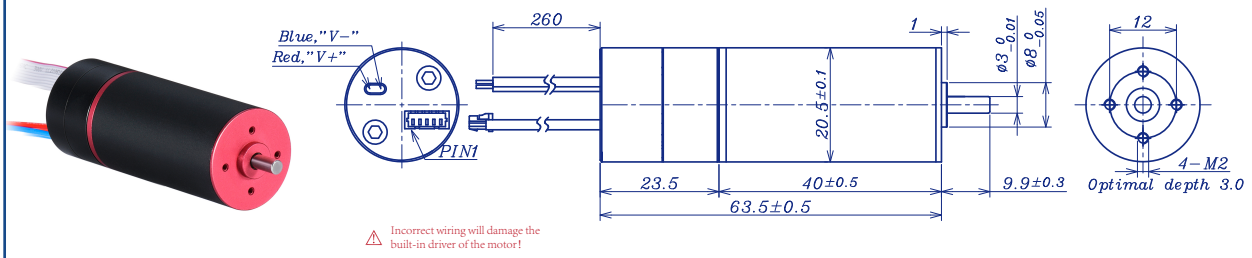
DRIVING THE FUTURE

伺服电机

AM-PC2064AN SERIES (Built-In CAN+RS485 Communication Protocol)



		Brushless Servo Motor			Ball Bearing			
Motor Model		**1226**	**1220**	**1216**	**1820**	**1817**	**2420**	**2417**
Nominal voltage	V	12	12	12	18	18	24	24
Voltage Range	V	9.5~14.5	9.5~14.5	9.5~14.5	15.5~20.5	15.5~20.5	21.5~26.5	21.5~26.5
Standby current	mA	55	55	55	45	45	35	35
Rated current	mA	1600	1500	1400	1000	800	700	650
Torque constant	mN.m/A	3.2	4.7	5.8	8.5	7.7	9.2	11.1
Rated torque	mN·m	5.2	7.0	8.2	7.1	6.1	6.4	7.2
Rated speed	rpm	24500	18500	14200	17500	15500	18200	14600
Pulse number / circle	Pulse / circle	16384	16384	16384	16384	16384	16384	16384
Overload torque	mN.m	10.4	14	16.4	14.2	12.2	12.8	14.4
Maximum overload time	second	5	5	5	5	5	5	5
Moment of inertia	gcm^2	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Weight	g	85.9	86.2	86.6	85.7	85.4	85.1	85.9

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	15 K/W	Motor thermal time constant:	673S
Axial (dynamic):	2.5 N	Radial (5mm from head face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth info flange:	3.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature	85℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. CAN-H 2. CAN-L 3. DGND	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-B	5. RS485-A

Sensor Connector:Molex 51021-0500

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

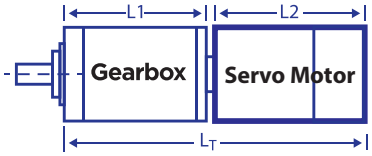
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:19GP	L1:24GP		L2 :PC20	
18.8	24		63.5	
23.6	34.3			
28.4	42.8			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC2064AN Combination Scheme



Recommended Gearbox:

AM-19GP
AM-24GP

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ASSUN SERVO MOTOR

BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushless

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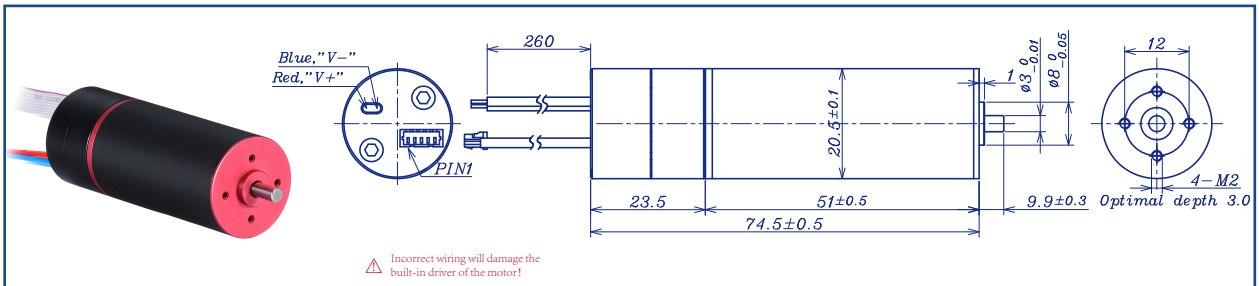
AM-PC2075AN SERIES (Built-In CAN+RS485 Communication Protocol)



⚠ Incorrect wiring will damage the built-in driver of the motor!

		Brushless Servo Motor		Ball Bearing			
Motor Model		**1221**	**1216**	**2426**	**2421**		
Nominal voltage	V	12	12	24	24		
Voltage Range	V	9.5~14.5	9.5~14.5	21.5~26.5	21.5~26.5		
Standby current	mA	55	55	35	35		
Rated current	mA	1500	1500	500	750		
Torque constant	mN.m/A	4.4	6.1	5.8	8.4		
Rated torque	mN·m	6.6	9.1	2.9	6.3		
Rated speed	rpm	19000	14000	25000	20000		
Pulse number / circle	Pulse / circle	16384	16384	16384	16384		
Overload torque	mN.m	13.2	18.2	5.8	12.6		
Maximum overload time	second	5	5	5	5		
Moment of inertia	gcm²	1.43	1.43	1.43	1.43		
Weight	g	177.6	179.6	172.5	184.9		

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	15 K/W	Motor thermal time constant:	720 S
Axial (dynamic):	2.5 N	Radial (5mm from head face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth info flange:	3.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature	85℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. CAN-H 2. CAN-L 3. DGND	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-B	5. RS485-A

Sensor Connector:Molex 51021-0500

H VIEW

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

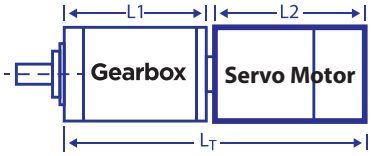
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:19GP	L1:24GP		L2 :PC20	
18.8	24		74.5	
23.6	34.3			
28.4	42.8			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC2075AN Combiniation Scheme



Recommended Gearbox:

AM-19GP
AM-24GP

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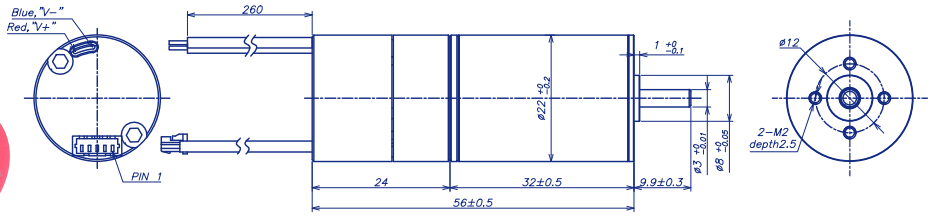
SERVO MOTOR

ASSUN SERVO MOTOR

BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushless

ASSUN DRIVING THE FUTURE

AM-PC2256AE SERIES (Built-In CAN+RS485 Communication Protocol)



Incorrect wiring will damage the built-in driver of the motor!

	Brushless Servo Motor			Ball Bearing			
Motor Model		**1212**	**1812**	**2412**			
Nominal voltage	V	12	18	24			
Voltage Range	V	9.5~14.5	15.5~20.5	21.5~26.5			
Standby current	mA	55	45	35			
Rated current	mA	1210	1100	660			
Torque constant	mN.m/A	8.4	12.6	16.36			
Rated torque	mN·m	10.2	13.9	10.8			
Rated speed	rpm	9000	8200	9300			
Pulse number / circle	Pulse / circle	16384	16384	16384			
Overload torque	mN.m	20.4	27.8	21.6			
Maximum overload time	second	5	5	5			
Moment of inertia	gcm²	2.8	2.8	2.8			
Weight	g	80.2	80.2	80.2			

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	- K/W	Motor thermal time constant:	-S
Axial (dynamic):	4 N	Radial (5mm from head face):	4.0 N
Press-fit force (static):	60 N	Max allowable screw depth info flange:	2.5 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature	125°C	Ambient temperature range:	-40 to 100 °C

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. DGND 2. CAN-H 3. CAN-L	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-A	5. RS485-B

Sensor Connector:Molex 51021-0500

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

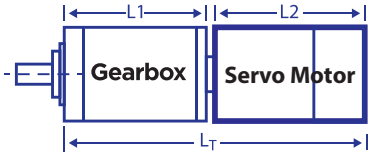
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:19GP	L1:24GP		L2 :PC22	
18.8	24		56	
23.6	34.3			
28.4	42.8			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC2256AE Combiniation Scheme



Recommended Gearbox:

AM-19GP
AM-24GP

For more combination specs, visit Assun Motor website.

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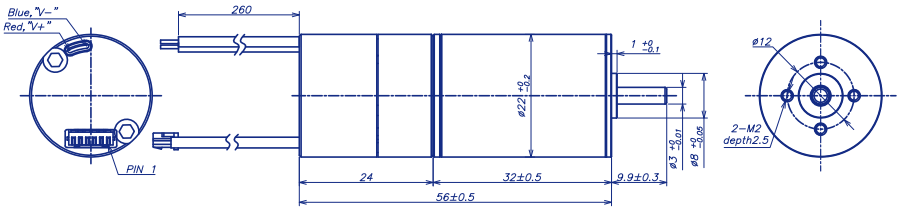
BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushless

ASSUN DRIVING THE FUTURE

AM-PI2256AE SERIES

(Built in RS485 communication protocol, pulse+direction control)



⚠ Incorrect wiring will damage the built-in driver of the motor!

	Brushless Servo Motor			Ball Bearing			
Motor Model		**1212**	**1812**	**2412**			
Nominal voltage	V	12	18	24			
Voltage Range	V	9.5~14.5	15.5~20.5	21.5~26.5			
Standby current	mA	55	45	35			
Rated current	mA	1210	1100	660			
Torque constant	mN.m/A	8.4	12.6	16.36			
Rated torque	mN·m	10.2	13.9	10.8			
Rated speed	rpm	9000	8200	9300			
Pulse number / circle	Pulse / circle	16384	16384	16384			
Overload torque	mN.m	20.4	27.8	21.6			
Maximum overload time	second	5	5	5			
Moment of inertia	gcm²	2.8	2.8	2.8			
Weight	g	80.2	80.2	80.2			

Additional Information

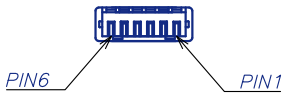
Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	- K/W	Motor thermal time constant:	-S
Axial (dynamic):	4 N	Radial (5mm from head face):	4.0 N
Press-fit force (static):	60 N	Max allowable screw depth info flange:	2.5 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature	125℃	Ambient temperature range:	-40 to 100 ℃

Part Information

Control function description	Pin Definition	
PULS (Pulse input) SIGN (Direction input)	1.DO-3 2. SIGN 3.DGND 4. PULS	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate：57600bps,8,1,N,N.	5. RS485-A	6. RS485-B

Molex：87439-0600



Cable color Pin1~6：Brown-Green-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data：

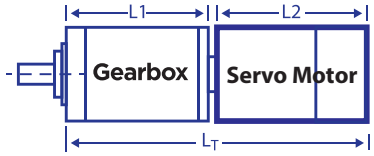
Website：https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:19GP	L1:24GP		L2 :PC22	
18.8	24		56	
23.6	34.3			
28.4	42.8			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PI2256AE Combiniation Scheme



Recommended Gearbox:

AM-19GP
AM-24GP

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BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushless

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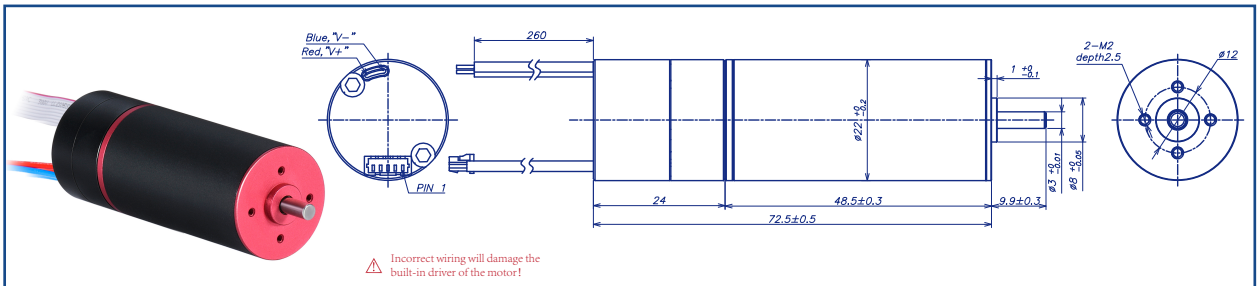
AM-PC2273AE SERIES (Built-In CAN+RS485 Communication Protocol)



	Brushless Servo Motor		Ball Bearing				
Motor Model		**2412**					
Nominal voltage	V	24					
Voltage Range	V	21.5~26.5					
Standby current	mA	35					
Rated current	mA	1200					
Torque constant	mN.m/A	18.8					
Rated torque	mN·m	22.5					
Rated speed	rpm	10400					
Pulse number / circle	Pulse / circle	16384					
Overload torque	mN.m	45					
Maximum overload time	second	5					
Moment of inertia	gcm²	4.2					
Weight	g	116.2					

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	- K/W	Motor thermal time constant:	-S
Axial (dynamic):	4 N	Radial (5mm from head face):	4.0 N
Press-fit force (static):	60 N	Max allowable screw depth info flange:	2.5 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature	125°C	Ambient temperature range:	-40 to 100 °C

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. DGND 2. CAN-H 3. CAN-L	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-A	5. RS485-B

Sensor Connector:Molex 51021-0500

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

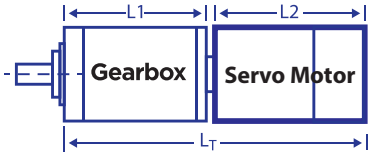
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:19GP	L1:24GP		L2 :PC22	
18.8	24		72.5	
23.6	34.3			
28.4	42.8			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC2273AE Combiniation Scheme



Recommended Gearbox:

AM-19GP
AM-24GP

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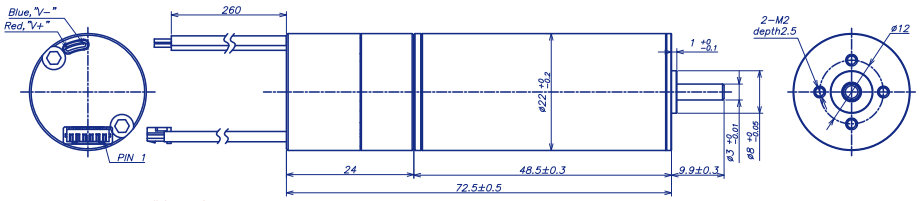
BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushless

ASSUN DRIVING THE FUTURE

AM-PI2273AE SERIES

(Built in RS485 communication protocol, pulse+direction control)



⚠ Incorrect wiring will damage the built-in driver of the motor!

Brushless Servo Motor			Ball Bearing				
Motor Model		**2412**					
Nominal voltage	V	24					
Voltage Range	V	21.5~26.5					
Standby current	mA	35					
Rated current	mA	1200					
Torque constant	mN.m/A	18.8					
Rated torque	mN·m	22.5					
Rated speed	rpm	10400					
Pulse number / circle	Pulse / circle	16384					
Overload torque	mN.m	45					
Maximum overload time	second	5					
Moment of inertia	gcm^2	4.2					
Weight	g	116.2					

Additional Information

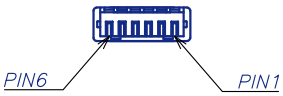
Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	- K/W	Motor thermal time constant:	-S
Axial (dynamic):	4 N	Radial (5mm from head face):	4.0 N
Press-fit force (static):	60 N	Max allowable screw depth info flange:	2.5 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature	125℃	Ambient temperature range:	-40 to 100 ℃

Part Information

Control function description	Pin Definition	
PULS (Pulse input) SIGN (Direction input)	1.DO-3 2. SIGN 3.DGND 4. PULS	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate：57600bps,8,1,N,N.	5. RS485-A	6. RS485-B

Molex：87439-0600



Cable color Pin1~6：Brown-Green-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data：

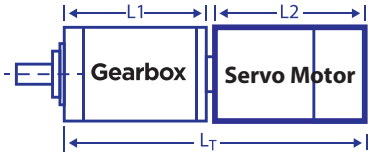
Website：https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:19GP	L1:24GP		L2 :PC22	
18.8	24		72.5	
23.6	34.3			
28.4	42.8			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PI2273AE Combiniation Scheme



Recommended Gearbox:

AM-19GP
AM-24GP

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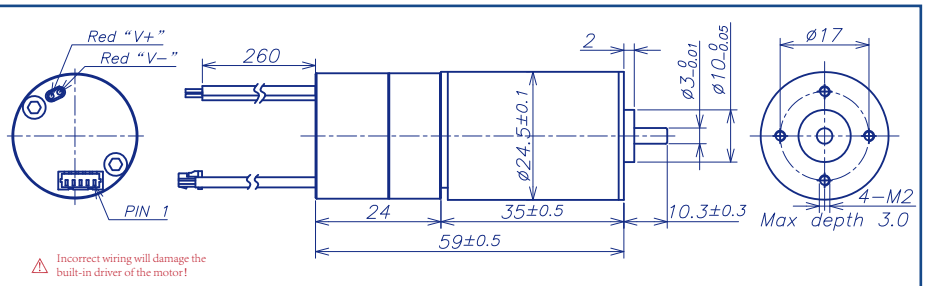
AM-PC2459AE SERIES (Built-In CAN+RS485 Communication Protocol)



	Brushless Servo Motor			Ball Bearing		
Motor Model		**1215**	**1815**	**2414**	**2412**	**2410**
Nominal voltage	V	12	18	24	24	24
Voltage Range	V	9.5~14.5	15.5~20.5	21.5~26.5	21.5~26.5	21.5~26.5
Standby current	mA	55	45	35	35	35
Rated current	mA	85	80	75	55	45
Torque constant	mN.m/A	167	175	184	258	351
Rated torque	mN·m	14.2	14.0	13.8	14.2	15.8
Rated speed	rpm	12000	12600	11800	9200	7100
Pulse number / circle	Pulse / circle	16384	16384	16384	16384	16384
Overload torque	mN.m	28.4	28.0	27.6	28.4	31.6
Maximum overload time	second	5	5	5	5	5
Moment of inertia	gcm²	1.92	1.92	1.92	1.92	1.92
Weight	g	100	100	100	100	100

Additional Information

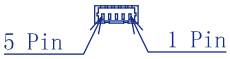
Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	20.7K/W	Motor thermal time constant:	272 S
Axial (dynamic):	2.5N	Radial (5mm from head face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth info flange:	3 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature	125°C	Ambient temperature range:	-40 to 85 °C

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. DGND 2. CAN-H 3. CAN-L	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-A	5. RS485-B

Sensor Connector:Molex 51021-0500



H VIEW

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

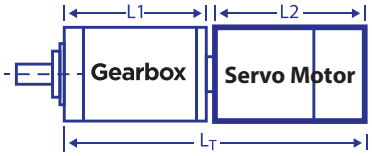
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:24GP	L1:26GP		L2 :PC24
24	25.7		59
34.3	36		
42.8	44.5		
51.3	53		

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC2459AE Combiniation Scheme



Recommended Gearbox:

AM-24GP
AM-26GP

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BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushless

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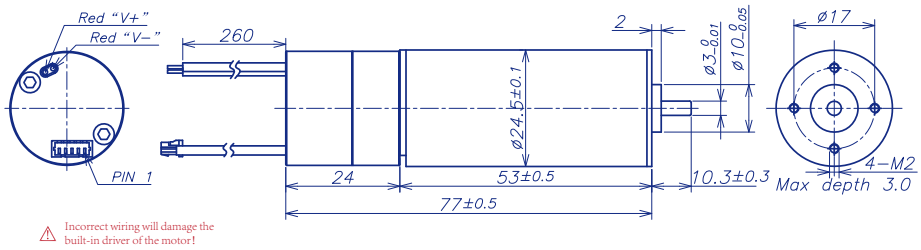
AM-PC2477AE SERIES (Built-In CAN+RS485 Communication Protocol)



		Brushless Servo Motor		Ball Bearing			
Motor Model		**1213**	**1210**	**1829**	**1813**	**2414**	**2410**
Nominal voltage	V	12	12	18	18	24	24
Voltage Range	V	9.5~14.5	9.5~14.5	15.5~20.5	15.5~20.5	21.5~26.5	21.5~26.5
Standby current	mA	55	55	45	45	35	35
Rated current	mA	170	130	410	110	90	70
Torque constant	mN.m/A	169.4	233.1	29.0	240	297.8	454.3
Rated torque	mN·m	28.8	30.3	11.9	26.4	26.8	31.8
Rated speed	rpm	10900	8300	27600	10700	11600	7800
Pulse number / circle	Pulse / circle	16384	16384	16384	16384	16384	16384
Overload torque	mN.m	57.6	60.6	23.8	52.8	53.6	63.6
Maximum overload time	second	5	5	5	5	5	5
Moment of inertia	gcm²	3.45	3.45	3.45	3.45	3.45	3.45
Weight	g	148.7	148.8	148.7	147.7	148.3	149.5

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	10.5 K/W	Motor thermal time constant:	768 S
Axial (dynamic):	2.5 N	Radial (5mm from head face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth info flange:	3 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature	125°C	Ambient temperature range:	-40 to 85 °C

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. DGND 2. CAN-H 3. CAN-L	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-A	5. RS485-B

Sensor Connector:Molex 51021-0500

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

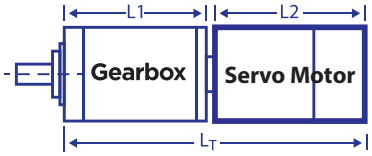
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:24GP	L1:26GP		L2 :PC24	
24	25.7		77	
34.3	36			
42.8	44.5			
51.3	53			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC2477AE Combiniation Scheme



Recommended Gearbox:

AM-24GP
AM-26GP

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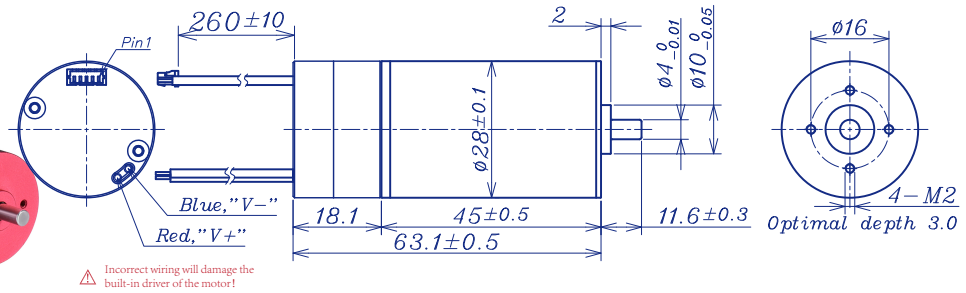
AM-PC2863AN SERIES (Built-In CAN+RS485 Communication Protocol)



		Brushless Servo Motor		Ball Bearing			
Motor Model		**1215**	**1210**	**1813**	**1810**	**2412**	**2409**
Nominal voltage	V	12	12	18	18	24	24
Voltage Range	V	9.5~14.5	9.5~14.5	15.5~20.5	15.5~20.5	21.5~26.5	21.5~26.5
Standby current	mA	55	55	45	45	35	35
Rated current	mA	4000	3200	2400	2000	1600	1500
Torque constant	mN.m/A	6.8	10.3	12.2	15.9	17.3	22.6
Rated torque	mN·m	27.2	32.8	79.2	31.8	27.6	34.0
Rated speed	rpm	13200	8200	11000	8000	10200	7500
Pulse number / circle	Pulse / circle	16384	16384	16384	16384	16384	16384
Overload torque	mN.m	54.4	65.6	58.4	63.6	55.2	68
Maximum overload time	second	5	5	5	5	5	5
Moment of inertia	gcm²	6.19	6.19	6.19	6.19	6.19	6.19
Weight	g	163.8	163.7	164.1	165.1	163.4	164.2

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	10.2K/W	Motor thermal time constant:	822 S
Axial (dynamic):	4.0 N	Radial (5mm from head face):	16.0 N
Press-fit force (static):	110 N	Max allowable screw depth info flange:	3.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature	85℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	1. DGND 2. RS485-B 3. RS485-A	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	4. CAN-H	5. CAN-L

Sensor Connector:Molex 51021-0500

H VIEW

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

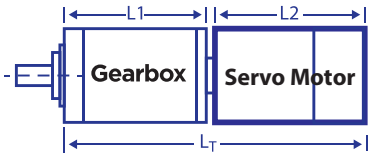
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:28GP	L1:32GP		L2 :PC28	
26.1	27.4		63.1	
33.3	35.9			
40.5	44.4			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC2863AN Combiniation Scheme



Recommended Gearbox:

AM-28GP
AM-32GP

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BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushless

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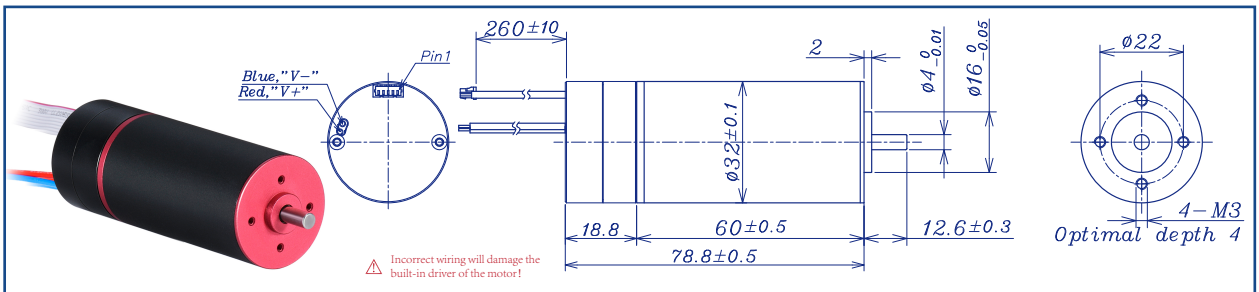
AM-PC3279AN SERIES (Built-In CAN+RS485 Communication Protocol)



	Brushless Servo Motor			Ball Bearing			
Motor Model		**1212**	**1208**	**2413**	**2409**	**3613**	**3610**
Nominal voltage	V	12	12	24	24	36	36
Voltage Range	V	14.5~9.5	14.5~9.5	21.5~26.5	21.5~26.5	33.5~38.5	33.5~38.5
Standby current	mA	55	55	35	35	25	25
Rated current	mA	3700	3200	1800	1600	1200	1200
Torque constant	mN.m/A	8.1	12.6	15.2	20.6	23.3	28.9
Rated torque	mN·m	30.0	40.4	27.5	33.0	27.9	34.7
Rated speed	rpm	11500	7000	12000	9200	12000	9500
Pulse number / circle	Pulse / circle	16384	16384	16384	16384	16384	16384
Overload torque	mN.m	60	80.8	55	66	55.8	69.4
Maximum overload time	second	5	5	5	5	5	5
Moment of inertia	gcm²	13.3	13.3	13.3	13.3	13.3	13.3
Weight	g	270	270	270	270	270	270

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	7.8 K/W	Motor thermal time constant:	1089 S
Axial (dynamic):	6.0 N	Radial (5mm from head face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth info flange:	4.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature	85℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. CAN-H 2. DGND 3. CAN-L	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-B	5. RS485-A

Sensor Connector:Molex 51021-0500

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

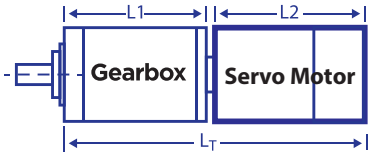
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:32GP	L1:36GP		L2 :PC32	
27.4	30.6		78.8	
35.9	39.6			
44.4	57.6			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC3279AN Combiniation Scheme



Recommended Gearbox:

AM-32GP
AM-36GP

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BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushless

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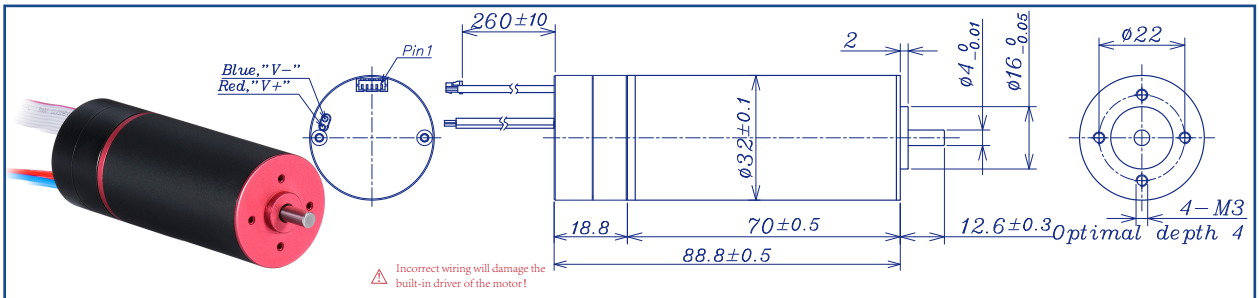
AM-PC3289AN SERIES (Built-In CAN+RS485 Communication Protocol)



		Brushless Servo Motor		Ball Bearing			
Motor Model		**1210**	**1207**	**2412**	**2409**	**3611**	**3609**
Nominal voltage	V	12	12	24	24	36	36
Voltage Range	V	14.5~9.5	14.5~9.5	21.5~26.5	21.5~26.5	33.5~38.5	33.5~38.5
Standby current	mA	55	55	35	35	25	25
Rated current	mA	3800	3200	2000	2000	1500	1400
Torque constant	mN.m/A	10.1	15.7	17.2	23.0	28.3	33.7
Rated torque	mN·m	38.4	50.3	34.4	46.0	42.4	47.2
Rated speed	rpm	9000	5600	10800	8000	10000	8400
Pulse number / circle	Pulse / circle	16384	16384	16384	16384	16384	16384
Overload torque	mN.m	76.8	100.6	68.8	92	84.8	94.4
Maximum overload time	second	5	5	5	5	5	5
Moment of inertia	gcm²	15.3	15.3	15.3	15.3	15.3	15.3
Weight	g	310	310	310	310	310	310

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	8.2 K/W	Motor thermal time constant:	822 S
Axial (dynamic):	6.0 N	Radial (5mm from head face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth info flange:	4.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature	85℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. CAN-H 2. DGND 3. CAN-L	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-B	5. RS485-A

Sensor Connector:Molex 51021-0500

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

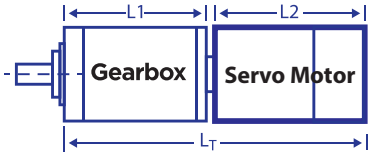
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:32GP	L1:36GP		L2 :PC32	
27.4	30.6		88.8	
35.9	39.6			
44.4	57.6			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC3289AN Combination Scheme



Recommended Gearbox:

AM-32GP
AM-36GP

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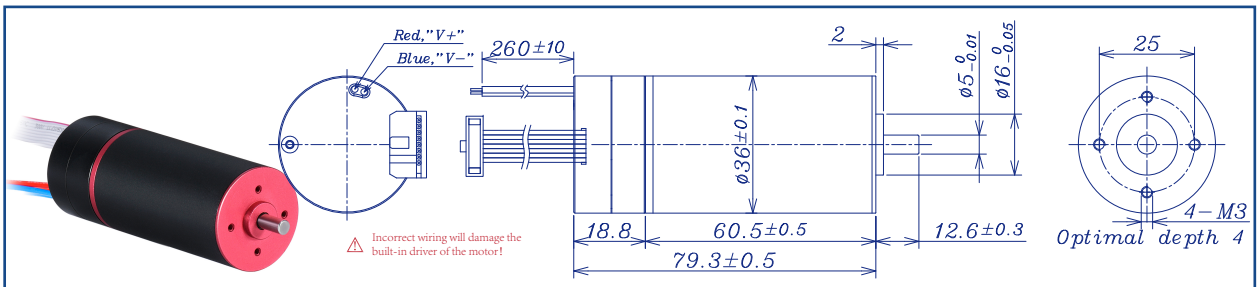
AM-PC3679AN SERIES (Built-In CAN+RS485 Communication Protocol， Pulse+Direction Control)



		Brushless Servo Motor		Ball Bearing			
Motor Model		**1211**	**1209**	**2413**	**2410**	**3612**	**3610**
Nominal voltage	V	12	12	24	24	36	36
Voltage Range	V	14.5~9.5	14.5~9.5	21.5~26.5	21.5~26.5	33.5~38.5	33.5~38.5
Standby current	mA	55	55	35	35	25	25
Rated current	mA	5000	4200	2200	2100	1600	1500
Torque constant	mN.m/A	9.1	11.7	15.7	20.1	24.7	29.3
Rated torque	mN·m	45.7	49.1	34.6	38.0	39.5	43.8
Rated speed	rpm	10000	7800	11500	9000	1120	9500
Pulse number / circle	Pulse / circle	16384	16384	16384	16384	16384	16384
Overload torque	mN.m	91.4	98.2	69.2	76	79	87.6
Maximum overload time	second	5	5	5	5	5	5
Moment of inertia	gcm^2	16.75	16.75	16.75	16.75	16.75	16.75
Weight	g	360.8	361	361.9	362.0	361.6	362.6

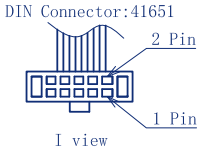
Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	6.9 K/W	Motor thermal time constant:	1188 S
Axial (dynamic):	6.0 N	Radial (5mm from head face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth info flange:	4.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature	85℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. CAN-H	2. CAN-L
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate：57600bps,8,1,N,N.	3. RS485-B	4. RS485-A
PULS (Pules input)	5. NC	6. PULS
SIGN (Direction input)	7. SIGN	8. DGND



Cable color Pin1：Red，the other：Gray

Wiring diagram

PC software and full set of data：

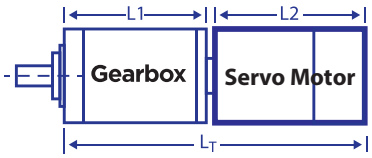
Website：https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:36GP	L1:40GP		L2 :PC36
39.6	46.8		79.3
48.6	58.3		
57.6	69.8		

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC3679AN Combiniation Scheme



Recommended Gearbox:

AM-36GP
AM-40GP

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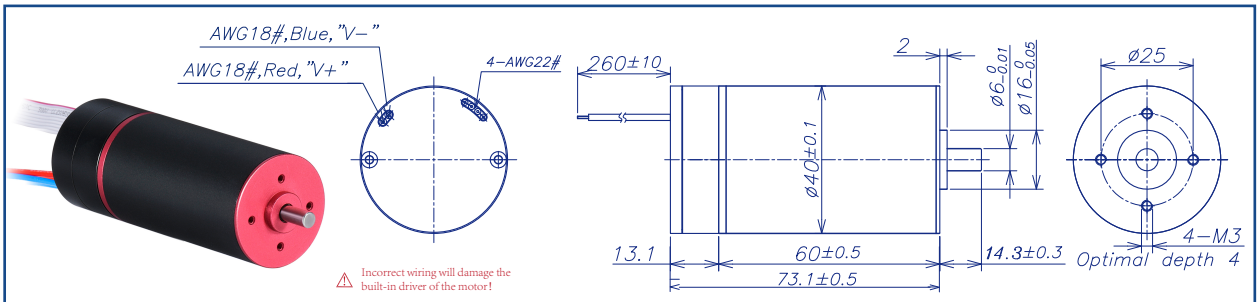


		Brushless Servo Motor		Ball Bearing		
Motor Model		**1208**	**2408**	**3608**		
Nominal voltage	V	24	24	36		
Voltage Range	V	21.5~26.5	21.5~26.5	33.5~38.5		
Standby current	mA	35	35	25		
Rated current	mA	6700	3350	2540		
Torque constant	mN.m/A	14.1	28.5	39.7		
Rated torque	mN·m	89.7	89.7	95		
Rated speed	rpm	6410	6250	6750		
Pulse number / circle	Pulse / circle	16384	16384	16384		
Overload torque	mN.m	460	420	450		
Maximum overload time	second	5	5	5		
Moment of inertia	gcm^2	14.25	51.36	51.36		
Weight	g	396	396	396		

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	5.6 K/W	Motor thermal time constant:	1163 S
Axial (dynamic):	6.0 N	Radial (5mm from head face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth info flange:	4 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature	155℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
DO Digital Output（5~24VDC） DI Digital Input（5~24VDC）	1. D GND	4. DI-1
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate：57600bps,8,1,N,N.	3. RS485-A	4. RS485-B

Wiring diagram:NO

Cable color Pin1~4：Black-Yellow-Red-Blue

PC software and full set of data：

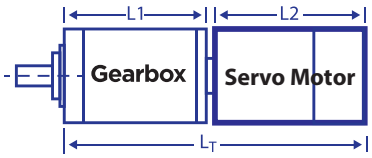
Website：https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:40GP	**L1:45GP**		**L2 :PC40**	
36.1	36.1		73.1	
48.1	48.1			
60.1	60.1			
	72.1			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PP4073BF Combiniation Scheme



Recommended Gearbox:

AM-40GP
AM-45GP

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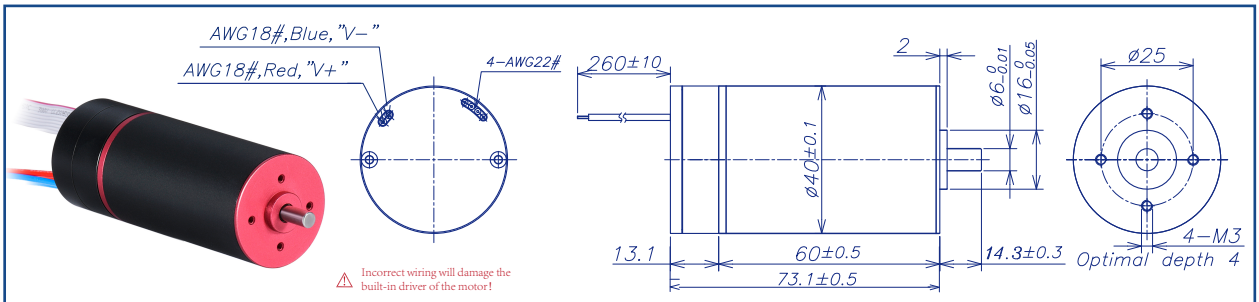


		Brushless Servo Motor		Ball Bearing	
Motor Model		**2409**	**2407**	**3609**	**3607**
Nominal voltage	V	24	24	36	36
Voltage Range	V	21.5~26.5	21.5~26.5	33.5~38.5	33.5~38.5
Standby current	mA	35	35	25	25
Rated current	mA	7400	6000	4800	4000
Torque constant	mN.m/A	23.0	29.6	34.4	44.4
Rated torque	mN·m	170	177.5	165	177.6
Rated speed	rpm	8200	6000	8500	6500
Pulse number / circle	Pulse / circle	16384	16384	16384	16384
Overload torque	mN.m	340	355	330	355.2
Maximum overload time	second	5	5	5	5
Moment of inertia	gcm^2	86.51	86.51	86.51	86.51
Weight	g	396	396	396	396

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	5.6 K/W	Motor thermal time constant:	1163 S
Axial (dynamic):	6.0 N	Radial (5mm from head face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth info flange:	4 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature	155℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
DO Digital Output（5~24VDC） DI Digital Input（5~24VDC）	1. D GND	4. DI-1
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate：57600bps,8,1,N,N.	3. RS485-A	4. RS485-B

Wiring diagram:NO

Cable color Pin1~4：Black-Yellow-Red-Blue

PC software and full set of data：

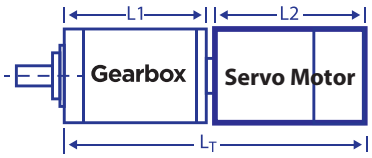
Website：https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:40GP	**L1:45GP**		**L2 :PC40**
36.1	36.1		73.1
48.1	48.1		
60.1	60.1		
	72.1		

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PP4073BF Combiniation Scheme



Recommended Gearbox:

AM-40GP
AM-45GP

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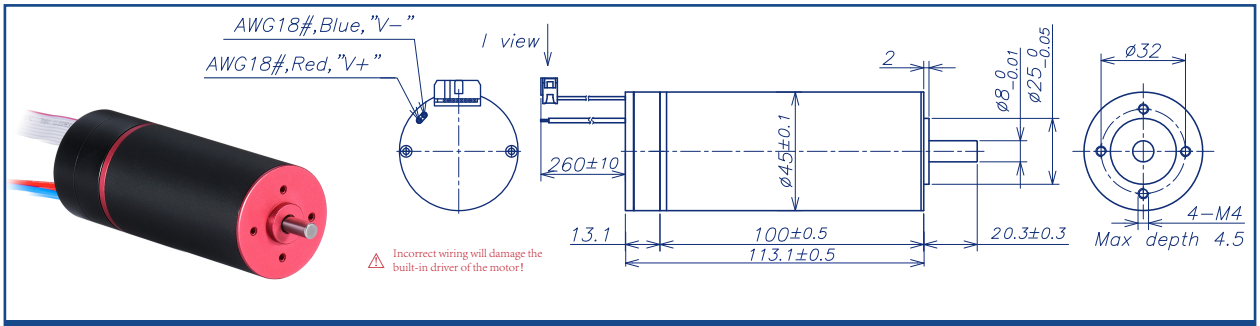
AM-PC45113AE SERIES (Built-In CAN+RS485 Communication Protocol)



		Brushless Servo Motor		Ball Bearing			
Motor Model		**2411**	**2406**	**3610**	**3606**	**4810**	**4806**
Nominal voltage	V	24	24	36	36	48	48
Voltage Range	V	21.5~26.5	21.5~26.5	33.5~38.5	33.5~38.5	45.5~50.5	45.5~50.5
Standby current	mA	35	35	25	25	15	15
Rated current	mA	8500	6500	5800	4800	3800	3500
Torque constant	mN.m/A	18.1	35.2	29.7	49.0	38.1	36.6
Rated torque	mN·m	154	229	172	237	145	128
Rated speed	rpm	10600	5200	9700	5600	9900	5700
Pulse number / circle	Pulse / circle	16384	16384	16384	16384	16384	16384
Overload torque	mN.m	308	458	344	474	290	256
Maximum overload time	second	5	5	5	5	5	5
Moment of inertia	gcm^2	109.8	109.8	109.8	109.8	109.8	109.8
Weight	g	891.5	895.2	897.5	886.5	892.5	885.3

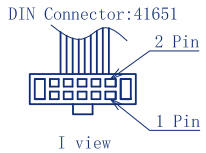
Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	3.6 K/W	Motor thermal time constant:	1286 S
Axial (dynamic):	8.0 N	Radial (5mm from head face):	180.0 N
Press-fit force (static):	170 N	Max allowable screw depth info flange:	4.5 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<8.0N)
Maximum winding temperature	125℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	1. RS485-B	2. RS485-A
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	3. CAN-H	4. CAN-L
DO Digital Output (5~24VDC)	5. DO-1	6. DI-1
DI Digital Input (5~24VDC)	7. DI-2	8. NC



Cable color Pin1: Red, the other: Gray

Wiring diagram

PC software and full set of data:

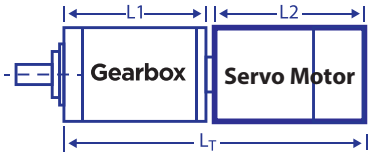
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:45GP	L1:52GP		L2 :PC45	
36.1	46.3		113.1	
48.1	62.8			
60.1	79.3			
72.1	95.8			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC45113AE Combiniation Scheme



Recommended Gearbox:

AM-45GP
AM-52GP

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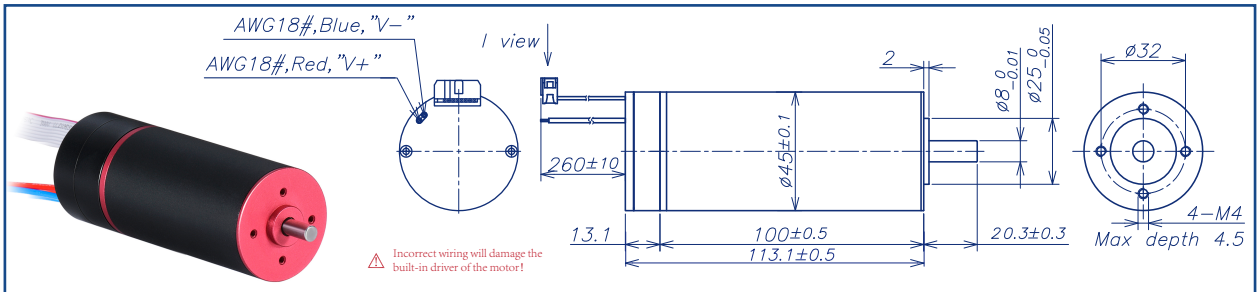
AM-PC45113AN SERIES (Built-In CAN+RS485 Communication Protocol)



		Brushless Servo Motor		Ball Bearing			
Motor Model		**2411**	**2406**	**3610**	**3606**	**4810**	**4806**
Nominal voltage	V	24	24	36	36	48	48
Voltage Range	V	21.5~26.5	21.5~26.5	33.5~38.5	33.5~38.5	45.5~50.5	45.5~50.5
Standby current	mA	35	35	25	25	15	15
Rated current	mA	4000	4500	2500	2500	1500	1900
Torque constant	mN.m/A	16.5	3434	26.8	47.4	31.9	61.0
Rated torque	mN·m	66.0	155.0	67.0	118.5	47.8	116
Rated speed	rpm	10600	5400	10000	6000	10000	6000
Pulse number / circle	Pulse / circle	16384	16384	16384	16384	16384	16384
Overload torque	mN.m	132	310	134	237	95.6	232
Maximum overload time	second	5	5	5	5	5	5
Moment of inertia	gcm^2	109.8	109.8	109.8	109.8	109.8	109.8
Weight	g	891.5	895.2	897.5	886.5	892.5	885.3

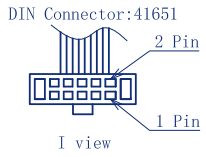
Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	3.6 K/W	Motor thermal time constant:	1286 S
Axial (dynamic):	8.0 N	Radial (5mm from head face):	180.0 N
Press-fit force (static):	100 N	Max allowable screw depth info flange:	4.5 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature	85℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	1. RS485-B	2. RS485-A
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	3. CAN-H	4. CAN-L
DO Digital Output (5~24VDC)	5. DO-1	6. DI-1
DI Digital Input (5~24VDC)	7. DI-2	8. NC



Cable color Pin1: Red, the other: Gray

Wiring diagram

PC software and full set of data:

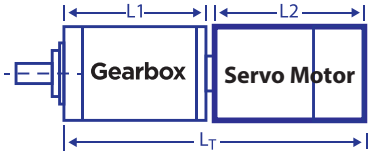
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:45GP	L1:52GP		L2 :PC45	
36.1	46.3		113.1	
48.1	62.8			
60.1	79.3			
72.1	95.8			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC45113AN Combiniation Scheme



Recommended Gearbox:

AM-45GP
AM-52GP

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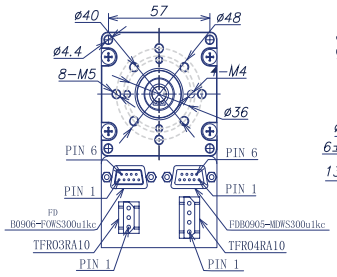
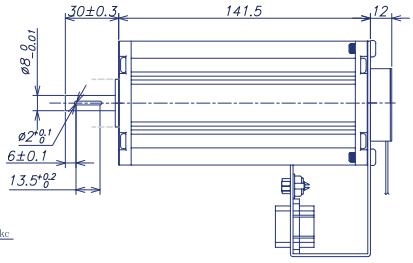
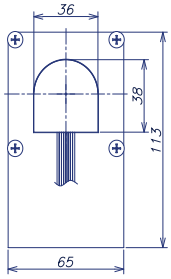
SERVO MOTOR

AM-PC65140DN SERIES (Built-In Position Control, with Encoder)







Brushless Servo Motor							Ball Bearing
Motor Model		**2403**					
Nominal voltage	V	24					
Gearbox Ratio	X:1	1 (No Gear)					
No Load Current Max 150%	mA	420					
No Load Speed	rpm	3000					
Rated Torque	mN·m	305					
Rated Current	A	5.4					
Rated Speed	rpm	3000					
Encoder Information							
Type	Incremental	Optical Encoder					
Channels	2 Channels						
Resolution	PPR	1000					
Max. Working Frequency	KHz	55					

Additional Information

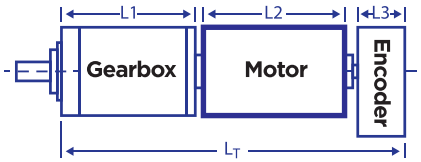
Pin No.	Connector	Signal Description	Pin No.	Connector	Signal Description
Connection Port: TFR03RA10			Connection Port: TFR04RA10		
Pin 1	192900-0452	+24V Sensor Supply (From Motor)	Pin 1	192900-0446	+24V Motor Supply (From System)
Pin 2	192900-0452	Original Sensor Signal (To Motor)	Pin 2	192900-0446	0V GND (Motor Supply)
Pin 3	192900-0452	0V GND（Sensor Supply）	Pin 3	192900-0446	+24V DC Logic Supply (From System)
Connection Port: FDB0905-MDWS300u1kc			Pin 4	192900-0446	0V GND (Logic Supply)
Pin 1		Digital Signal Input (Customizable)	Connection Port: FDB0906-FOWS300u1kc		
Pin 2		CAN_L	Pin 1		B
Pin 3		CAN_GND	Pin 2		CAN_L
Pin 4		Left Limit Input（Customizable）	Pin 3		B-
Pin 5		Right Limit Input（Customizable）	Pin 4		A-
Pin 6		Digital Signal Input（Customizable）	Pin 5		A
Pin 7		CAN-H	Pin 6		CAN_GND
Pin 8		Digital Signal Output（Customizable）	Pin 7		CAN_H

Total Length L_T=L1+L2+L3

L1:60GP		L2 :PC65		L3: EN36
73.5		141.5		12

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC65140DN Combiniation Scheme



Recommended Gearbox:
AM-60GP

Recommended Encoder:
Optical Encoder: AM-EN3612T***

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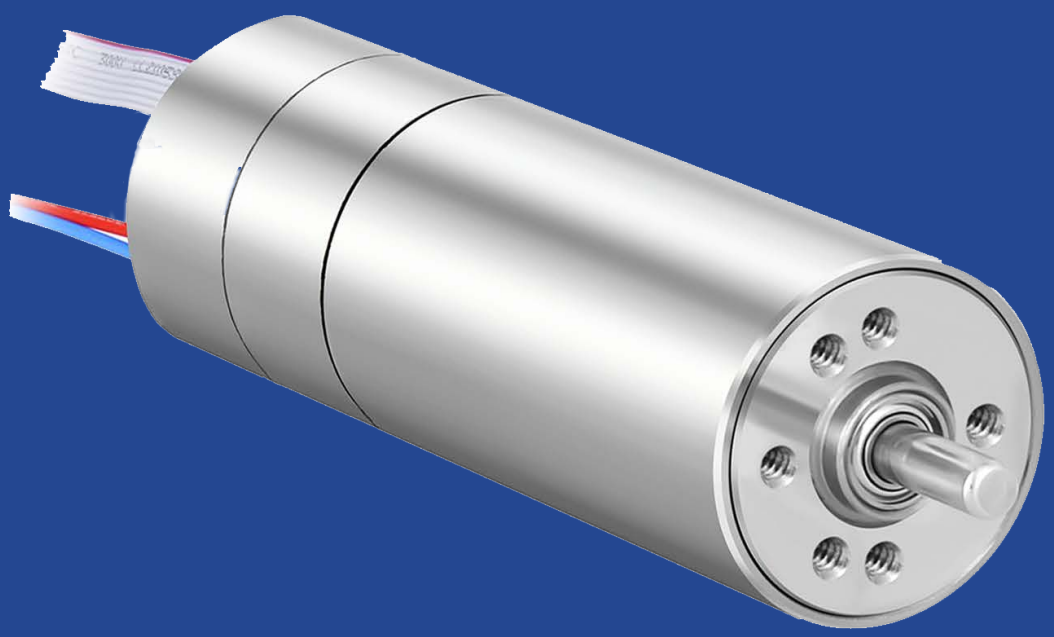
ASSUN SERVO MOTOR（DC Brushed）

PULSH & CAN BUS CONTROUE

Assun Servo Motor are DC brushless motors with integrated position servo controller. It uses traditional analogue or digital signal input for position control. As feedback function integrated inside, no more encoders are needed and thus achieving compact overall sizes.



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ASSUN SERVO MOTOR

BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushed

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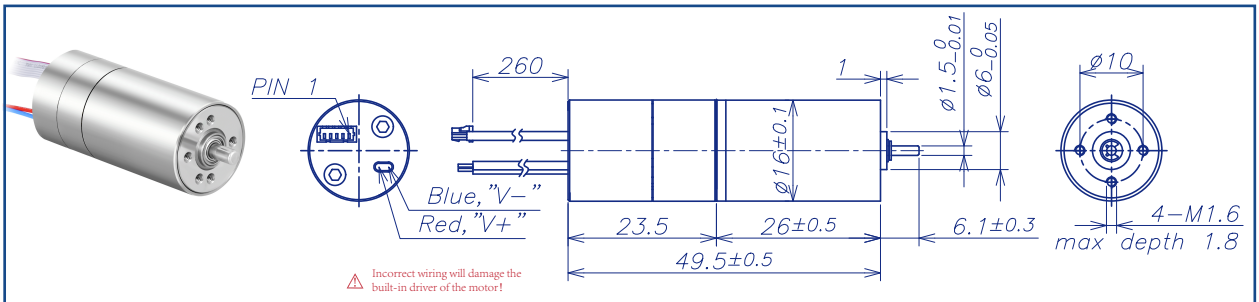
AM-PC1650MAN SERIES (Built-In CAN+RS485 Communication Protocol)



	Brushed Servo Motor			Ball Bearing			
Motor Model		**1210**	**1212**	**2414**			
Nominal voltage	V	12	12	24			
Voltage Range	V	9.5~14.5	9.5~14.5	21.5~26.5			
Standby current	mA	55	55	35			
Rated current	mA	250	250	150			
Torque constant	mN.m/A	10	9.2	14.7			
Rated torque	mN·m	2.5	2.3	2.2			
Rated speed	rpm	8400	10200	12400			
Pulse number / circle	Pulse / circle	16384	16384	16384			
Overload torque	mN.m	5	4.6	4.4			
Maximum overload time	second	5	5	5			
Moment of inertia	gcm^2	1.2	1.2	1.2			
Weight	g	42.1	42.2	42.4			

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	37.6K/W	Motor thermal time constant:	400 S
Axial (dynamic):	3.4N	Radial (5mm from head face):	2.6 N
Press-fit force (static):	36 N	Max allowable screw depth info flange:	1.8 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature	85℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. DGND 2. CAN-L 3. CAN-H	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-B	5. RS485-A

Sensor Connector:Molex 51021-0500

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

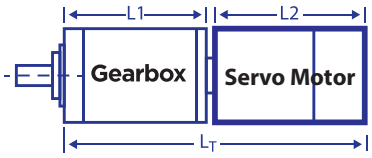
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:16GP	L1:19GP	L2:PC16
15.9	18.8	49.5
19.6	23.6	
23.3	28.4	
27	33.2	

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC1650MAN Combiniation Scheme



Recommended Gearbox:

AM-16GP
AM-19GP

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BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushed

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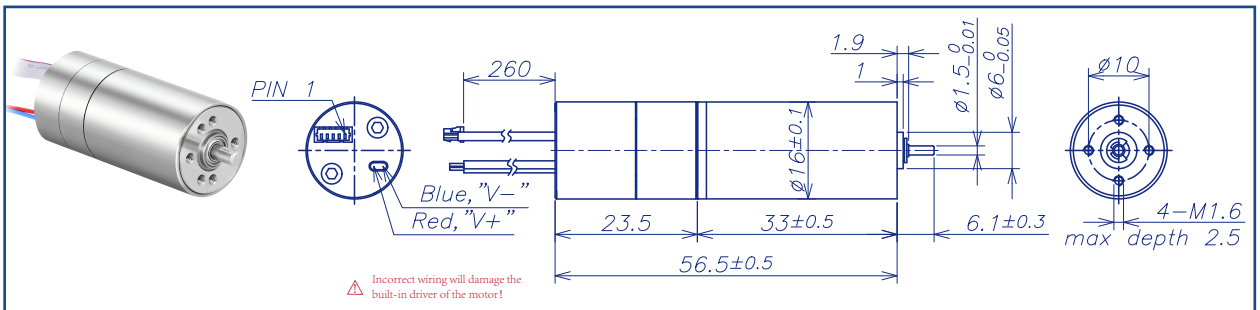
AM-PC1657MAN SERIES (Built-In CAN+RS485 Communication Protocol)



		Brushed Servo Motor		Ball Bearing			
Motor Model		**1207**	**1205**				
Nominal voltage	V	12	12				
Voltage Range	V	9.5~14.5	9.5~14.5				
Standby current	mA	55	55				
Rated current	mA	200	188				
Torque constant	mN.m/A	16	19.1				
Rated torque	mN·m	3.2	3.6				
Rated speed	rpm	5100	3600				
Pulse number / circle	Pulse / circle	16384	16384				
Overload torque	mN.m	6.4	7.2				
Maximum overload time	second	5	5				
Moment of inertia	gcm²	2.22	2.29				
Weight	g	48.1	48.6				

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	25.2K/W	Motor thermal time constant:	1286S
Axial (dynamic):	1.0N	Radial (5mm from head face):	1.5N
Press-fit force (static):	16(90) N	Max allowable screw depth info flange:	2.5 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	0(<8N)
Maximum winding temperature	85℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. DGND 2. CAN-L 3. CAN-H	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-B	5. RS485-A

Sensor Connector:Molex 51021-0500

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

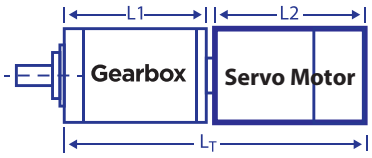
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:16GP	L1:19GP	L2:PC16
15.9	18.8	56.5
19.6	23.6	
23.3	28.4	
27	33.2	

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC1657MAN Combiniation Scheme



Recommended Gearbox:

AM-16GP
AM-19GP

For more combination specs, visit Assun Motor website.

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ASSUN SERVO MOTOR

BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushed

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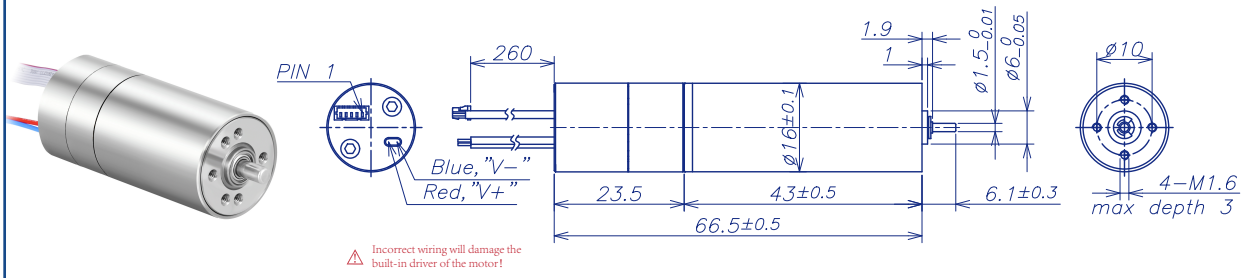
AM-PC1667MAN SERIES (Built-In CAN+RS485 Communication Protocol)



	Brushed Servo Motor			Ball Bearing			
Motor Model		**1206**	**1204**	**2607**			
Nominal voltage	V	12	12	26			
Voltage Range	V	9.5~14.5	9.5~14.5	23.5~28.5			
Standby current	mA	55	55	30			
Rated current	mA	320	250	160			
Torque constant	mN.m/A	16.9	24.8	32.5			
Rated torque	mN·m	5.4	6.2	5.2			
Rated speed	rpm	5000	2700	5500			
Pulse number / circle	Pulse / circle	16384	16384	16384			
Overload torque	mN.m	10.8	12.4	10.4			
Maximum overload time	second	5	5	5			
Moment of inertia	gcm²	2.94	2.91	2.87			
Weight	g	58.7	58.5	58.4			

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	24.9K/W	Motor thermal time constant:	412 S
Axial (dynamic):	1.0N	Radial (5mm from head face):	1.8N
Press-fit force (static):	16(70) N	Max allowable screw depth info flange:	3.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature	85℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. DGND 2. CAN-L 3. CAN-H	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-B	5. RS485-A

Sensor Connector:Molex 51021-0500

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

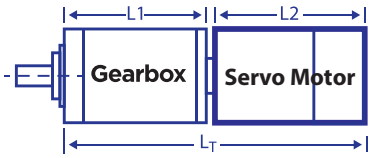
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:16GP	L1:19GP	L2:PC16
15.9	18.8	66.5
19.6	23.6	
23.3	28.4	
27	33.2	

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC1667MAN Combiniation Scheme



Recommended Gearbox:

AM-16GP
AM-19GP

For more combination specs, visit Assun Motor website.

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ASSUN SERVO MOTOR

BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushed

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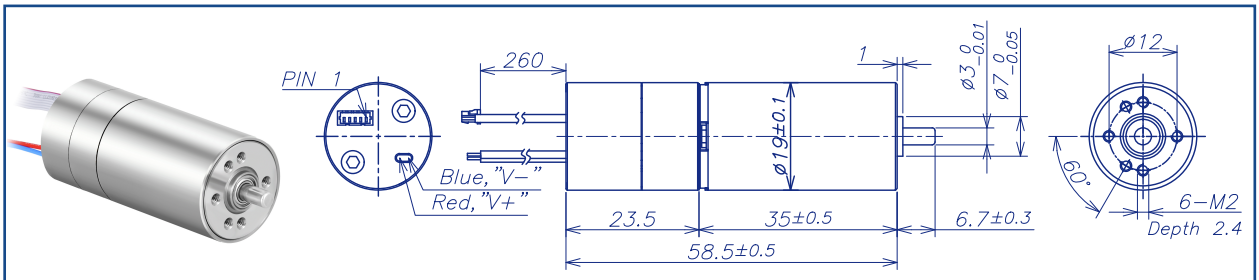
AM-PC1959GAE SERIES (Built-In CAN+RS485 Communication Protocol)



		Brushed Servo Motor		Ball Bearing			
Motor Model		**1213**	**1813**	**2413**			
Nominal voltage	V	12	18	24			
Voltage Range	V	9.5~14.5	9.5~14.5	9.5~14.5			
Standby current	mA	55	45	35			
Rated current	mA	1300	900	500			
Torque constant	mN.m/A	8.2	12.3	13			
Rated torque	mN·m	10.6	11.1	6.5			
Rated speed	rpm	11200	11200	1200			
Pulse number / circle	Pulse / circle	16384	16384	16384			
Overload torque	mN.m	21.2	22.2	13			
Maximum overload time	second	5	5	5			
Moment of inertia	gcm²	3.3	3.3	3.3			
Weight	g	78	78	78			

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	26.5 K/W	Motor thermal time constant:	**** S
Axial (dynamic):	2.5 N	Radial (5mm from head face):	16.0 N
Press-fit force (static):	16(90)N	Max allowable screw depth info flange:	2. 4 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature	125°C	Ambient temperature range:	-40 to 85°C

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. CAN-H 2. CAN-L 3. DGND	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-B	5. RS485-A

Sensor Connector:Molex 51021-0500

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

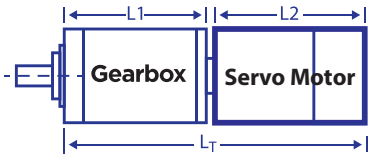
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:19GP	L2:CL19
18.8	58.5
23.6	
28.4	
33.2	

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC1959GAE Combiniation Scheme



Recommended Gearbox:

AM-19GP

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SERVO MOTOR

ASSUN SERVO MOTOR

BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushed

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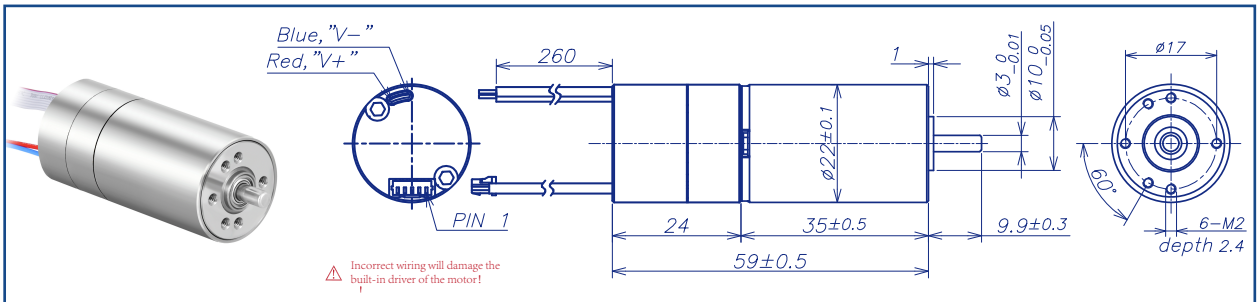
AM-PC2259GAE SERIES (Built-In CAN+RS485 Communication Protocol)



	Brushed Servo Motor			Ball Bearing			
Motor Model		**1212**	**1812**	**2412**			
Nominal voltage	V	12	18	24			
Voltage Range	V	9.5~14.5	15.5~20.5	21.5~26.5			
Standby current	mA	55	45	35			
Rated current	mA	1550	1000	780			
Torque constant	mN.m/A	8.6	12.5	16.9			
Rated torque	mN·m	13.3	12.5	13.2			
Rated speed	rpm	4700	2700	2500			
Pulse number / circle	Pulse / circle	16384	16384	16384			
Overload torque	mN.m	26.6	25	26.4			
Maximum overload time	second	5	5	5			
Moment of inertia	gcm²	6.1	6.1	6.1			
Weight	g	95	95	95			

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	15.7 K/W	Motor thermal time constant:	709 S
Axial (dynamic):	2.5 N	Radial (5mm from head face):	16.0 N
Press-fit force (static):	16(90)N	Max allowable screw depth info flange:	2.4 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature	125°C	Ambient temperature range:	-40 to 85°C

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. DGND 2. CAN-H 3. CAN-L	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-A	5. RS485-B

Sensor Connector:Molex 51021-0500

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

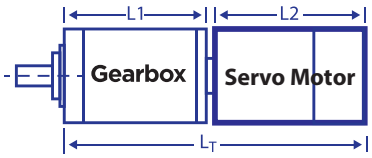
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:24GP	**L1:26GP**		**L2: CL22**	
24	25.7		59	
34.3	36			
42.8	44.5			
51.3	53			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC2259GAE Combiniation Scheme



Recommended Gearbox:

AM-24GP
AM-26GP

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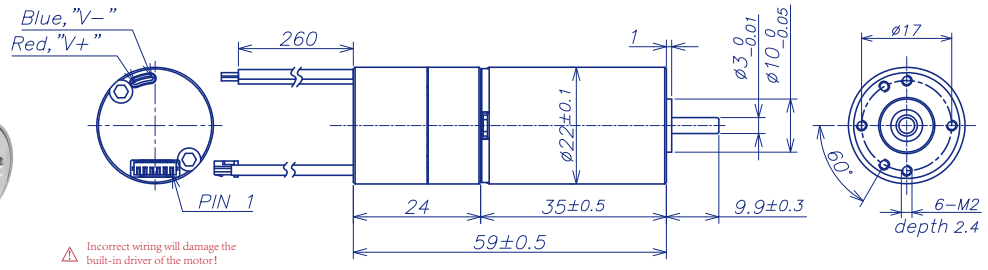
AM-PI2259GAE SERIES
(Built in RS485 communication protocol, pulse+direction control)



	Brushed Servo Motor			Ball Bearing			
Motor Model		**1212**	**1812**	**2412**			
Nominal voltage	V	12	18	24			
Voltage Range	V	9.5~14.5	15.5~20.5	21.5~26.5			
Standby current	mA	55	45	35			
Rated current	mA	1550	1000	780			
Torque constant	mN.m/A	8.6	12.5	16.9			
Rated torque	mN·m	13.3	12.5	13.2			
Rated speed	rpm	4700	2700	2500			
Pulse number / circle	Pulse / circle	16384	16384	16384			
Overload torque	mN.m	26.6	25	26.4			
Maximum overload time	second	5	5	5			
Moment of inertia	gcm^2	6.1	6.1	6.1			
Weight	g	95	95	95			

Additional Information

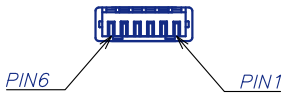
Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	15.7 K/W	Motor thermal time constant:	709 S
Axial (dynamic):	2.5 N	Radial (5mm from head face):	16.0 N
Press-fit force (static):	16(90)N	Max allowable screw depth info flange:	2.4 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature	125°C	Ambient temperature range:	-40 to 85°C

Part Information

Control function description	Pin Definition	
PULS (Pulse input) SIGN (Direction input)	1.DO-3 2. SIGN 3.DGND 4. PULS	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	5. RS485-A	6. RS485-B

Molex: 87439-0600



Cable color Pin1~6: Brown-Green-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

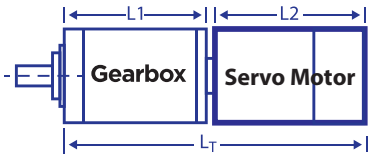
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:24GP	**L1:26GP**		**L2: CL22**
24	25.7		59
34.3	36		
42.8	44.5		
51.3	53		

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PI2259GAE Combiniation Scheme



Recommended Gearbox:

AM-24GP
AM-26GP

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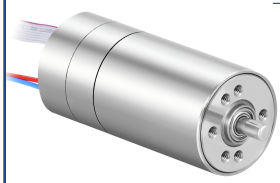
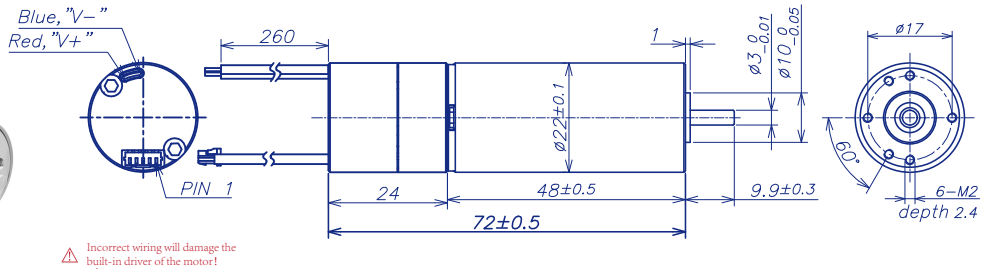
AM-PC2272GAE SERIES (Built-In CAN+RS485 Communication Protocol)





⚠ Incorrect wiring will damage the built-in driver of the motor!

	Brushed Servo Motor			Ball Bearing			
Motor Model		**1212**	**1812**	**2412**			
Nominal voltage	V	12	18	24			
Voltage Range	V	9.5~14.5	15.5~20.5	21.5~26.5			
Standby current	mA	55	45	35			
Rated current	mA	2200	1400	1000			
Torque constant	mN.m/A	8.4	13.1	18.2			
Rated torque	mN·m	18.4	18.4	18.2			
Rated speed	rpm	11500	11500	11100			
Pulse number / circle	Pulse / circle	16384	16384	16384			
Overload torque	mN.m	36.8	36.8	36.4			
Maximum overload time	second	5	5	5			
Moment of inertia	gcm²	9.3	9.3	9.3			
Weight	g	124	124	124			

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	12.2 K/W	Motor thermal time constant:	835S
Axial (dynamic):	2.5 N	Radial (5mm from head face):	16.0N
Press-fit force (static):	16(90)N	Max allowable screw depth info flange:	2.4 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature	125°C	Ambient temperature range:	-40 to 85°C

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. DGND 2. CAN-H 3. CAN-L	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	4. RS485-A	5. RS485-B

Sensor Connector:Molex 51021-0500

H VIEW

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

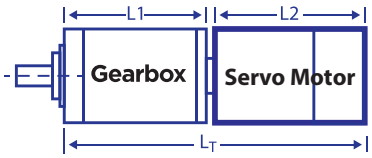
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:24GP	**L1:26GP**		**L2: CL22**	
24	25.7		72	
34.3	36			
42.8	44.5			
51.3	53			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC2272GAE Combiniation Scheme



Recommended Gearbox:

AM-24GP
AM-26GP

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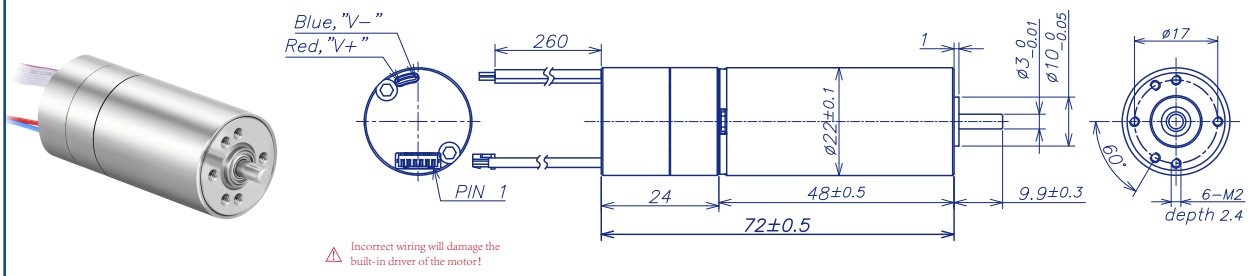


	Brushed Servo Motor			Ball Bearing			
Motor Model		**1212**	**1812**	**2412**			
Nominal voltage	V	12	18	24			
Voltage Range	V	9.5~14.5	15.5~20.5	21.5~26.5			
Standby current	mA	55	45	35			
Rated current	mA	2200	1400	1000			
Torque constant	mN.m/A	8.4	13.1	18.2			
Rated torque	mN·m	18.4	18.4	18.2			
Rated speed	rpm	11500	11500	11100			
Pulse number / circle	Pulse / circle	16384	16384	16384			
Overload torque	mN.m	36.8	36.8	36.4			
Maximum overload time	second	5	5	5			
Moment of inertia	gcm^2	9.3	9.3	9.3			
Weight	g	124	124	124			

Additional Information

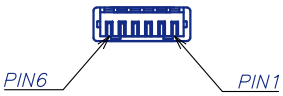
Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	12.2 K/W	Motor thermal time constant:	835S
Axial (dynamic):	2.5 N	Radial (5mm from head face):	16.0N
Press-fit force (static):	16(90)N	Max allowable screw depth info flange:	2.4 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature	125°C	Ambient temperature range:	-40 to 85°C

Part Information

Control function description	Pin Definition	
PULS (Pulse input) SIGN (Direction input)	1.DO-3 2. SIGN 3.DGND 4. PULS	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	5. RS485-A	6. RS485-B

Molex: 87439-0600



Cable color Pin1~6: Brown-Green-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

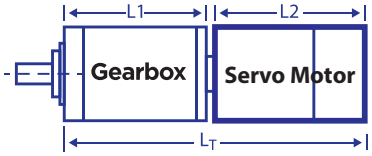
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:24GP	**L1:26GP**		**L2: CL22**
24	25.7		72
34.3	36		
42.8	44.5		
51.3	53		

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PI2272GAE Combiniation Scheme



Recommended Gearbox:

AM-24GP
AM-26GP

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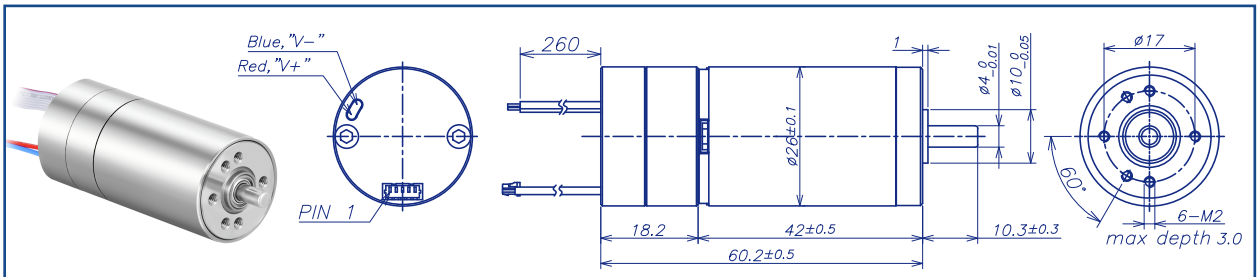
AM-PC2660GAE SERIES (Built-In CAN+RS485 Communication Protocol)



⚠ Incorrect wiring will damage the built-in driver of the motor!

	Brushed Servo Motor			Ball Bearing			
Motor Model		**1205**	**1805**	**2405**			
Nominal voltage	V	12	18	24			
Voltage Range	V	9.5~14.5	15.5~20.5	21.5~26.5			
Standby current	mA	55	45	35			
Rated current	mA	1150	700	530			
Torque constant	mN.m/A	21.7	34	15.8			
Rated torque	mN·m	25	23.8	24.3			
Rated speed	rpm	4100	3900	3900			
Pulse number / circle	Pulse / circle	16384	16384	16384			
Overload torque	mN.m	50	47.6	48.6			
Maximum overload time	second	5	5	5			
Moment of inertia	gcm²	13.8	13.8	13.8			
Weight	g	147	147	147			

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	16.5 K/W	Motor thermal time constant:	**** S
Axial (dynamic):	7.3 N	Radial (5mm from head face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth info flange:	3.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature	125ºC	Ambient temperature range:	-40 to 85ºC

Part Information

Control function description	Pin Definition	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	1. DGND 2. RS485-B 3. RS485-A	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	4. CAN-L	5. CAN-H

Sensor Connector:Molex 51021-0500

H VIEW

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

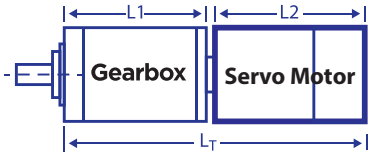
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:26GP	**L1: 28GP**	**L2:PC26**		
25.7	26.1	60.2		
36	33.3			
44.5	40.5			
53	47.7			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC2660GAE Combiniation Scheme



Recommended Gearbox:

AM-26GP
AM-28GP

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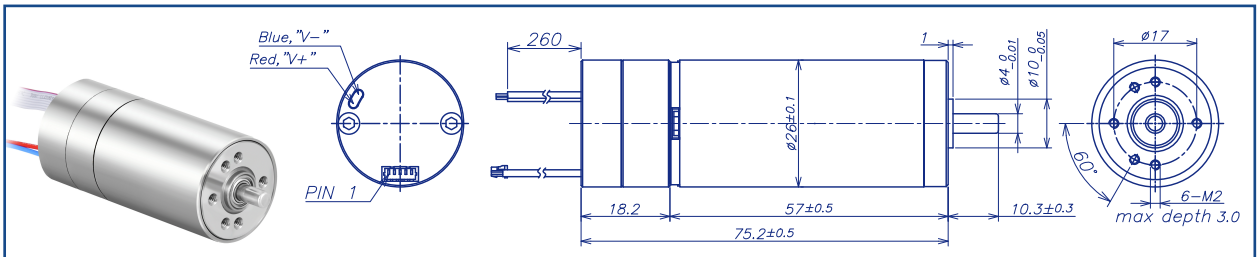
AM-PC2675GAE SERIES (Built-In CAN+RS485 Communication Protocol)



⚠ Incorrect wiring will damage the built-in driver of the motor!

		Brushed Servo Motor		Ball Bearing			
Motor Model		**1211**	**1811**	**1811**			
Nominal voltage	V	12	18	18			
Voltage Range	V	9.5~14.5	15.5~20.5	15.5~20.5			
Standby current	mA	55	45	45			
Rated current	mA	4350	2960	2230			
Torque constant	mN.m/A	10	14.5	19			
Rated torque	mN·m	43.3	42.8	42.3			
Rated speed	rpm	9900	10200	10400			
Pulse number / circle	Pulse / circle	16384	16384	16384			
Overload torque	mN.m	86.6	85.6	84.6			
Maximum overload time	second	5	5	5			
Moment of inertia	gcm²	20.6	20.6	20.6			
Weight	g	205	205	205			

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	11.2 K/W	Motor thermal time constant:	1172 S
Axial (dynamic):	7.3 N	Radial (5mm from head face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth info flange:	3.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature	125°C	Ambient temperature range:	-40 to 85°C

Part Information

Control function description	Pin Definition	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	1. DGND 2. RS485-B 3. RS485-A	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	4. CAN-L	5. CAN-H

Sensor Connector:Molex 51021-0500

H VIEW

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

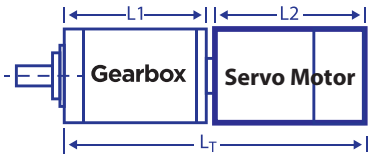
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:26GP	L1: 28GP	L2:PC26		
25.7	26.1	75.2		
36	33.3			
44.5	40.5			
53	47.7			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC2675GAE Combiniation Scheme



Recommended Gearbox:

AM-26GP
AM-28GP

For more combination specs, visit Assun Motor website.

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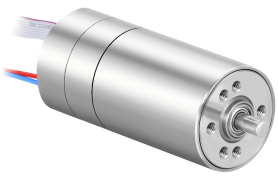
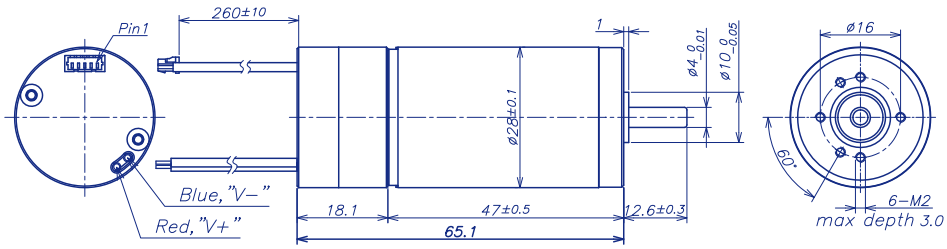




⚠ Incorrect wiring will damage the built-in driver of the motor!

		Brushed Servo Motor		Ball Bearing			
Motor Model		**1210**	**1810**	**2410**			
Nominal voltage	V	12	18	24			
Voltage Range	V	9.5~14.5	15.5~20.5	21.5~26.5			
Standby current	mA	55	45	35			
Rated current	mA	2500	1700	1360			
Torque constant	mN.m/A	10.8	15.7	21.5			
Rated torque	mN·m	27	26.8	29.2			
Rated speed	rpm	9300	9600	9400			
Pulse number / circle	Pulse / circle	16384	16384	16384			
Overload torque	mN.m	54	53.6	58.4			
Maximum overload time	second	5	5	5			
Moment of inertia	gcm²	22.5	22.5	22.5			
Weight	g	183	183	183			

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	15.6 K/W	Motor thermal time constant:	1086 S
Axial (dynamic):	7.3 N	Radial (5mm from head face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth info flange:	3.5 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature	125ºC	Ambient temperature range:	-40 to 85ºC

Part Information

Control function description	Pin Definition	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	1. DGND 2. RS485-B 3. RS485-A	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	4. CAN-H	5. CAN-L

Sensor Connector:Molex 51021-0500

H VIEW

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

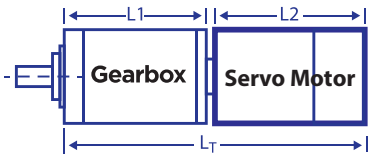
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:28GP	L1: 32GP	L2:PC28		
25.9	27.4	65.1		
33.1	35.9			
40.3	44.4			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC2865GAE Combiniation Scheme



Recommended Gearbox:
AM-26GP
AM-28GP
AM-32GP

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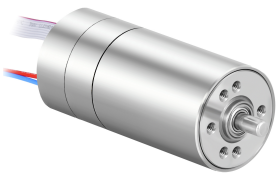
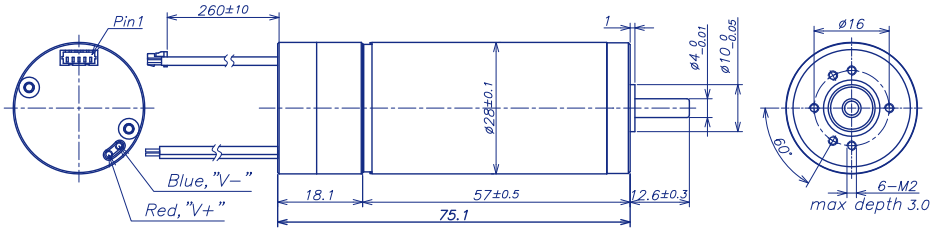
AM-PC2875GAE SERIES (Built-In CAN+RS485 Communication Protocol)





⚠ Incorrect wiring will damage the built-in driver of the motor!

		Brushed Servo Motor		Ball Bearing			
Motor Model		**1211**	**1811**	**2410**			
Nominal voltage	V	12	18	24			
Voltage Range	V	9.5~14.5	15.5~20.5	21.5~26.5			
Standby current	mA	55	45	35			
Rated current	mA	5500	3600	2600			
Torque constant	mN.m/A	10.1	14.4	21.5			
Rated torque	mN·m	55.5	51.8	55.8			
Rated speed	rpm	10100	10700	9600			
Pulse number / circle	Pulse / circle	16384	16384	16384			
Overload torque	mN.m	111	103.6	111.6			
Maximum overload time	second	5	5	5			
Moment of inertia	gcm²	28.4	28.4	28.4			
Weight	g	225	225	225			

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	12.4 K/W	Motor thermal time constant:	**** S
Axial (dynamic):	7.3 N	Radial (5mm from head face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth info flange:	3.5 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature	125ºC	Ambient temperature range:	-40 to 85ºC

Part Information

Control function description	Pin Definition	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	1. DGND 2. RS485-B 3. RS485-A	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	4. CAN-H	5. CAN-L

Sensor Connector:Molex 51021-0500

H VIEW

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

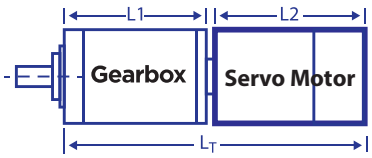
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:28GP	L1: 32GP	L2:PC28		
25.9	27.4	75.1		
33.1	35.9			
40.3	44.4			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC2875GAE Combiniation Scheme



Recommended Gearbox:
AM-26GP
AM-28GP
AM-32GP

For more combination specs, visit Assun Motor website.

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ASSUN SERVO MOTOR

BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushed

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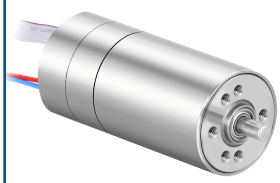
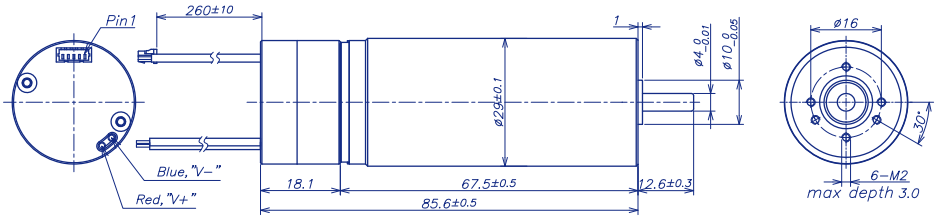
AM-PC2986GAE SERIES (Built-In CAN+RS485 Communication Protocol)





⚠ Incorrect wiring will damage the built-in driver of the motor!

		Brushed Servo Motor		Ball Bearing			
Motor Model		**1210**	**1810**	**2410**			
Nominal voltage	V	12	18	24			
Voltage Range	V	9.5~14.5	15.5~20.5	21.5~26.5			
Standby current	mA	55	45	35			
Rated current	mA	5100	3700	3000			
Torque constant	mN.m/A	11.1	16.8	22.4			
Rated torque	mN·m	56.7	62.1	67.2			
Rated speed	rpm	9200	9200	9200			
Pulse number / circle	Pulse / circle	16384	16384	16384			
Overload torque	mN.m	113.4	124.2	134.4			
Maximum overload time	second	5	5	5			
Moment of inertia	gcm²	35.3	35.3	35.3			
Weight	g	293	293	293			

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	10.6 K/W	Motor thermal time constant:	**** S
Axial (dynamic):	7.3 N	Radial (5mm from head face):	28.0 N
Press-fit force (static):	60(120)N	Max allowable screw depth info flange:	3.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature	125ºC	Ambient temperature range:	-40 to 85ºC

Part Information

Control function description	Pin Definition	
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate: 57600bps,8,1,N,N.	1. DGND 2. RS485-B 3. RS485-A	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	4. CAN-H	5. CAN-L

Sensor Connector:Molex 51021-0500

H VIEW

Cable color Pin1~5: Brown-Black-Yellow-Red-Blue

Wiring diagram

PC software and full set of data:

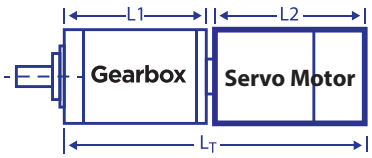
Website: https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:26GP	L1:28GP	L1:32GP	L2: PC29
25.7	26.1	27.4	85.6
36	33.3	35.9	
44.5	40.5	44.4	
53	47.7	52.9	

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC2986GAE Combiniation Scheme



Recommended Gearbox:
AM-26GP
AM-28GP
AM-32GP

For more combination specs, visit Assun Motor website.

Download datasheet: https://assunmotor.com/documents-download

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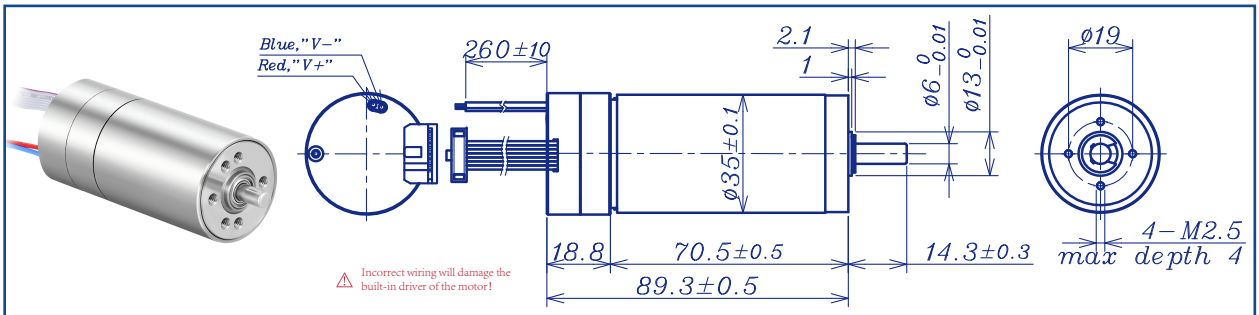
ASSUN SERVO MOTOR

BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushed

AM-PC3589GAF SERIES (Built-In CAN+RS485 Communication Protocol， Pulse+Direction Control)



	Brushed Servo Motor			Ball Bearing		
Motor Model		**1206**	**1204**	**2408**	**2406**	**2404**
Nominal voltage	V	12	12	24	24	24
Voltage Range	V	14.5~9.5	14.5~9.5	21.5~26.5	21.5~26.5	21.5~26.5
Standby current	mA	55	55	35	35	35
Rated current	mA	5600	4400	3800	3000	2200
Torque constant	mN.m/A	17.25	25.6	27.1	35.8	52.7
Rated torque	mN·m	96.6	112.8	103.1	107.3	116
Rated speed	rpm	5500	3500	7400	5400	3400
Pulse number / circle	Pulse / circle	16384	16384	16384	16384	16384
Overload torque	mN.m	193.2	225.6	206.2	214.6	232
Maximum overload time	second	5	5	5	5	5
Moment of inertia	gcm²	105.3	108.7	111	108.4	105.6
Weight	g	383.3	385.2	385.2	385.5	383.2

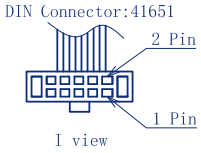
Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	9.1 K/W	Motor thermal time constant:	1352 S
Axial (dynamic):	5.5 N	Radial (5mm from head face):	28.0 N
Press-fit force (static):	100 N	Max allowable screw depth info flange:	4.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature	155℃	Ambient temperature range:	-40 to 100 ℃

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. CAN-H	2. CAN-L
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate：57600bps,8,1,N,N.	3. RS485-B	4. RS485-A
PULS (Pules input)	5. NC	6. PULS
SIGN (Direction input)	7. SIGN	8. DGND



Cable color Pin1：Red，the other：Gray

Wiring diagram

PC software and full set of data：

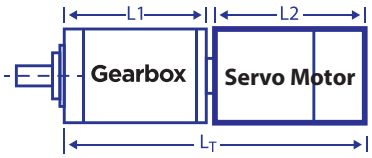
Website：https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:36GP	L1:40GP		L2 :PC35
39.6	46.8		89.3
48.6	58.3		
57.6	69.8		

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC3589GAF Combiniation Scheme



Recommended Gearbox:

AM-36GP
AM-40GP
AM-45GP

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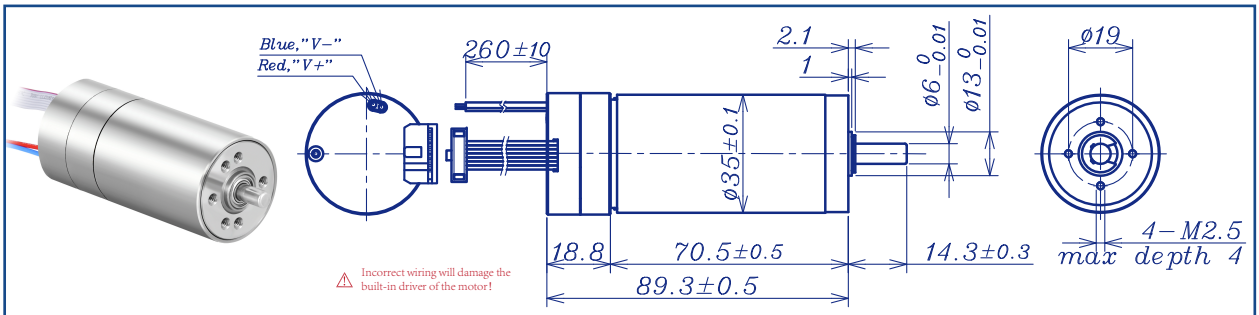
BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushed

AM-PC3589GAN SERIES (Built-In CAN+RS485 Communication Protocol， Pulse+Direction Control)



	Brushed Servo Motor			Ball Bearing		
Motor Model		**1206**	**1204**	**2408**	**2406**	**2404**
Nominal voltage	V	12	12	24	24	24
Voltage Range	V	14.5~9.5	14.5~9.5	21.5~26.5	21.5~26.5	21.5~26.5
Standby current	mA	55	55	35	35	35
Rated current	mA	3600	2800	2200	1900	1500
Torque constant	mN.m/A	16.9	25.1	26.1	35.0	51.9
Rated torque	mN·m	60.8	70.3	57.5	66.5	77.8
Rated speed	rpm	5600	3600	7400	5500	3500
Pulse number / circle	Pulse / circle	16384	16384	16384	16384	16384
Overload torque	mN.m	121.6	140.6	115	133	155.6
Maximum overload time	second	5	5	5	5	5
Moment of inertia	gcm²	110	110	110	110	110
Weight	g	383.3	385.2	385.2	385.5	383.2

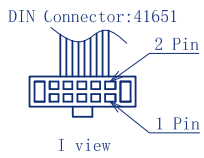
Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	9.1 K/W	Motor thermal time constant:	1352 S
Axial (dynamic):	5.5 N	Radial (5mm from head face):	28.0 N
Press-fit force (static):	100 N	Max allowable screw depth info flange:	4.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature	85℃	Ambient temperature range:	-40 to 65 ℃

Part Information

Control function description	Pin Definition	
CANOPEN DS 301 + 402 (Default node id: 0x08,500kbps)	1. CAN-H	2. CAN-L
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate：57600bps,8,1,N,N.	3. RS485-B	4. RS485-A
PULS (Pules input)	5. NC	6. PULS
SIGN (Direction input)	7. SIGN	8. DGND



Cable color Pin1：Red，the other：Gray

Wiring diagram

PC software and full set of data：

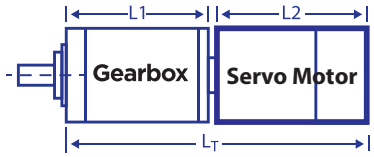
Website：https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:36GP	L1:40GP		L2 :PC35
39.6	46.8		89.3
48.6	58.3		
57.6	69.8		

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-PC3589GAN Combiniation Scheme



Recommended Gearbox:

AM-36GP
AM-40GP

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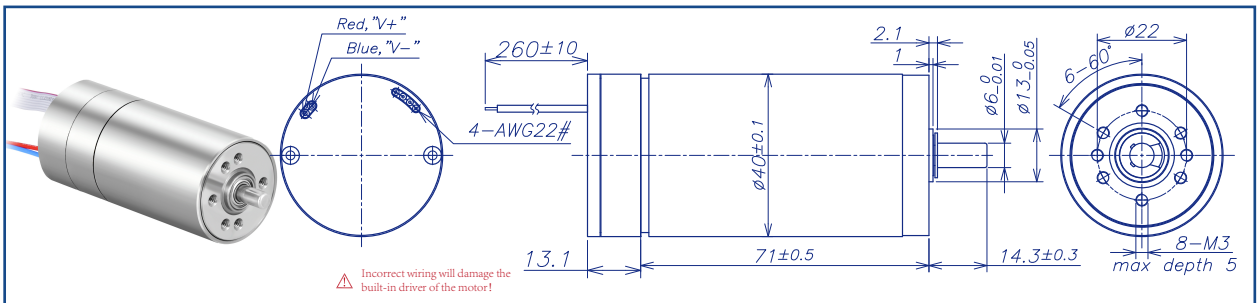
ASSUN SERVO MOTOR

BUILT-IN SERVO DRIVE INTEGRATED MOTOR-Brushed

ASSUN DRIVING THE FUTURE

AM-PP4084GAE SERIES (Built-In Communication Protocol)



	Brushless Servo Motor		Ball Bearing			
Motor Model		**1207**	**2408**			
Nominal voltage	V	12	24			
Voltage Range	V	9.5~14.5	21.5~26.5			
Standby current	mA	55	35			
Rated current	mA	6000	5500			
Torque constant	mN.m/A	16	26.2			
Rated torque	mN·m	96.1	144.3			
Rated speed	rpm	6300	7900			
Pulse number / circle	Pulse / circle	16384	16384			
Overload torque	mN.m	192.2	288.6			
Maximum overload time	second	5	5			
Moment of inertia	gcm²	123.5	122.6			
Weight	g	535	536			

Additional Information

Note: Excessive shock loads and periodic oscillations can cause the motor to run unsteadily. Stabilize the system by improving the load.

Motor thermal resistance:	--K/W	Motor thermal time constant:	--S
Axial (dynamic):	5.5 N	Radial (5mm from head face):	29.0 N
Press-fit force (static):	100(1000) N	Max allowable screw depth info flange:	5.0 mm
Maximum radial runout (5mm from the thread surface):	≤0.02 mm	Axial play:	Preset
Maximum winding temperature	125°C	Ambient temperature range:	-40 to 65°C

Part Information

Control function description	Pin Definition	
DO Digital Output（5~24VDC） DI Digital Input（5~24VDC）	1. D GND	4. DI-1
MODBUS RS485 (RTU) Default node id: 0X08 Baud rate：57600bps,8,1,N,N.	3. RS485-A	4. RS485-B

Wiring diagram:NO

Cable color Pin1~4：Black-Yellow-Red-Blue

PC software and full set of data：

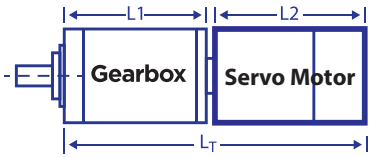
Website：https://www.assunmotor.com.cn/zlxz

Total Length LT=L1+L2+L3

L1:40GP	**L1:45GP**		**L2 :PC40**	
36.1	36.1		84.1	
48.1	48.1			
60.1	60.1			
	72.1			

Note: The customer can select the gearbox to match the motor. It is recommended to weld motor shaft gears, some of which are listed here for reference.

AM-P P4084GAE Combiniation Scheme



Recommended Gearbox:

AM-40GP
AM-45GP

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ASSUN
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PLANETARY GEARBOX

Assun Planetary Gearbox are made for precision DC drive systems. The high efficiency, small backlash, and wide range of stages and ratios made the gearboxes ideal for various DC drive applications.
With diameter from 8mm to 60mm, wide range ratios and various output torques, customers could choose their best fitting gearbox for combination.

AM-16P	AM-32P	AM-8GP	AM-24GP	AM-45GP
AM-22P	AM-36P	AM-10GP	AM-28GP	AM-52GP
AM-26P	AM-45P	AM-16GP	AM-32GP	
AM-28P		AM-19GP	AM-36GP	
		AM-22GP	AM-40GP	

Company Name Abbreviation

AM - 16 GP A - 5.4:1

Gearbox Dimension
16 - Diameter (mm)

Gearbox Type
GP - Precisions Gearbox
P - Regular Gearbox

Gearbox Stage
A : First Stage
B : Second Stage
C : Three Stage
D : Four Stage

Gear Ratio

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ASSUN
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PLANETARY GEARBOX

REGULAR SERIES

Assun Planetary Gearbox of regular series are most widely used planetary gearbox for DC drive system. With diameter from 16mm to 45mm, these gearboxes made by hobbing gears provide a bunch of choices for customers' applications.

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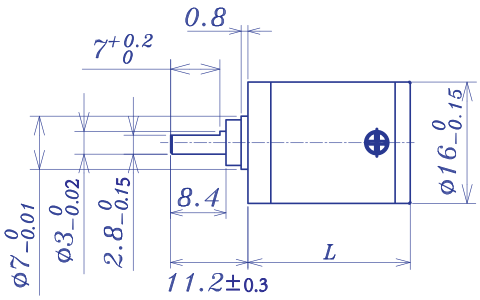
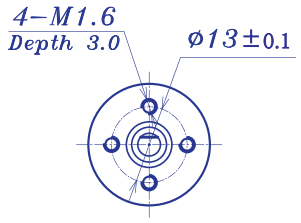
AM-16P Series





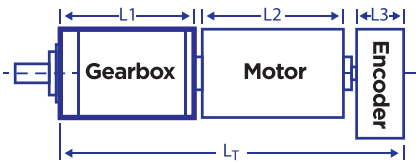
GEARBOX CHARACTER

Gear type	Straight teeth	Average backlash on load	≤3°
Output shaft	Stainless steel hardened	Radial Play	≤0.04
Main gear	Alloy Steel	Permisssible axial load	≤10N
Ring gear	Steel	Permissible force press fits	≤50N (5mm from mounting face)
Adapter plate	Copper	Recommended inut speed	≤10000RPM
Bearing AT output	Ball bearing	Operating temperature range	-20°C ~ +100°C
Axial play	0-0.3	Operating humidity range	10-90%RH
Directions	CW/CCW		

GEARBOX DATA

Number of stage	1	2		3			4			5	
Reduction ratio X:1	3.3	11	19	37	62	97	175	370	591	742	1996
	3.8	12	20	41	64	104	198	410	690	1014	2458
	4.4	14	24	47	72	109	231	455	850	1185	3027
	5.4	16	29	53	76	128	270	522		1386	3728
		18			84	158	316	561		1621	4592
Reduction ratio absolute	63/19	3969/361	3249/169	250049/6859		1215/16	21625/1216		6561/16	759375/1024	
	15/4	945/76	81/4	59635/1444		185193/2197	50625/256		5000/211/10985	10965375/10816	
	57/13	225/16	1539/65	3375/64		45927/475	192375/832		1240029/2375	41668425/35152	
	27/5	855/52	729/25	14175/304		87723/845	731025/2704		2368521/4225	158340015/114244	
		1701/95		12825/208		2187/20	2777895/8788		59049/100	601692057/371293	
				204687/3211		41553/325	10556001/28561		1121931/625	285012027/142805	
				48735/676		19683/125			531441/625	135005697/54925	
										63950067/21125	
										30292137/8125	
										14348907/3125	
Gearbox lenght "L" (mm)	18.5	22.4		26.3			30.2			34.0	
Max. continuous torque (N.m)	0.3	0.5		0.6			0.7			0.7	
Max. intermitten torque (N.m)	0.5	0.7		0.9			1			1	
Gearbox efficiency	90%	81%		72%			65%			59%	
Moment of inertia range (g.cm²)	0.06	0.05		0.05			0.05			0.05	
Gearbox weight approx (g)	23	28		31			36			40	
Gearbox model	AM-16PA-X-01	AM-16PB-X-01		AM-16PC-X-01			AM-16PD-X-01			AM-16PE-X-01	

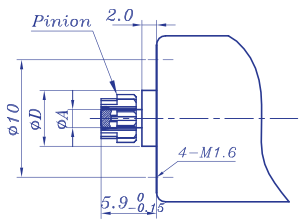
AM-16P Example of combination



INPUT GEARBOX DATA

Modulus	0.3			
Press angle	20°			
Teeth number	10	13	16	19
Max gear hole "A"	1.5	2.0		
Max motor shaft	1.5	2.0		
Motor dimension "D"	6.0			

MOTOR DIMENSION



Recommend Motor:

Coreless Motor:
AM-CL1642MA

Coreless Motor (w/E):
AM-CL1623MAN
AM-CL1626MAN
AM-CL1633MAN
AM-CL1643MAN

Brushless Motor (w/E)
AM-BL1640A/B

Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN1611S***

Suitable for Brushless Motor
Encoder S: AM-EN1611S***
Encoder T: AM-EN1612T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	52.2	59.1	70	82.2
Gearbox length L_1	18.5	22.4	26.3	30.2
Motor length L_2	23	26	33	40
Encoder length L_3	10.7	10.7	10.7	12

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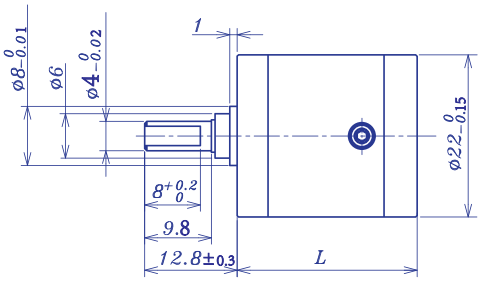
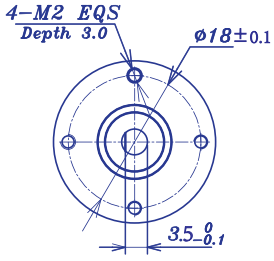
AM-22P Series





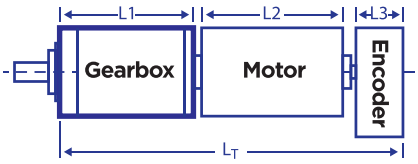
GEARBOX CHARACTER

Gear type	Straight teeth	Average backlash on load	≤2°
Output shaft	Stainless steel hardened	Radial Play	≤0.1
Main gear	Alloy Steel	Permisssible axial load	≤40N
Ring gear	Steel	Permissible force press fits	≤100N (5mm from mounting face)
Adapter plate	Copper	Recommended inut speed	≤10000RPM
Bearing AT output	Ball bearing	Operating temperature range	-20°C ~ +100°C
Axial play	0-0.3	Operating humidity range	10-90%RH
Directions	CW/CCW		

GEARBOX DATA

Number of stage	1	2		3			4			5	
Reduction ratio X:1	3.3 3.8 4.4 5.4	11 12 14 16 18	19 20 24 29	37 41 47 53	62 64 72 76 84	97 104 109 128 158	175 198 231 270 316	370 410 455 522 561	591 690 850	742 1014 1185 1386 1621	1996 2458 3027 3728 4592
Reduction ratio absolute	63/19 15/4 57/13 27/5	3969/361 945/76 225/16 855/52 1701/95	3249/169 81/4 1539/65 729/25	250047/6859 59535/1444 3375/64 14175/304 12825/208 204687/3211 48735/676	1215/16 185193/2197 45927/475 87723/845 2187/20 41553/325 19683/125		21625/1216 50625/256 192375/832 731025/2704 2777895/8788 10556001/28561	6561/16 5000211/10985 1240029/2375 2368521/4225 59049/100 1121931/625 531441/625		759375/1024 10965375/10816 41668425/35152 158340015/114244 601692057/371293 285012027/142805 135005697/54925 63950067/21125 30292137/8125 14348907/3125	
Gearbox lenght "L" (mm)	22.3	27.3		32.3			37.3			42.6	
Max. continuous torque (N.m)	0.6	0.8		1			1.2			1.2	
Max. intermitten torque (N.m)	0.9	1.2		1.5			1.8			1.8	
Gearbox efficiency	90%	81%		72%			65%			59%	
Moment of inertia range (g.cm²)	0.5	0.4		0.5			0.4			0.5	
Gearbox weight approx (g)	56	68		82			92			103	
Gearbox model	AM-22PA-X-01	AM-22PB-X-01		AM-22PC-X-01			AM-22PD-X-01			AM-22PE-X-01	

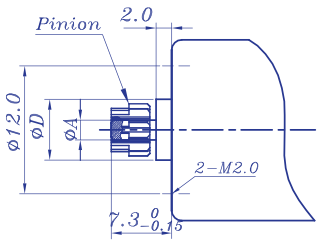
AM-22P Example of combination



INPUT GEARBOX DATA

Modulus	0.35			
Press angle	20°			
Teeth number	10	13	16	19
Max gear hole "A"	2.0		3.0	
Max motor shaft	2.0		3.0	
Motor dimension "D"	6.15		8.0	

MOTOR DIMENSION



Recommend Motor:

Coreless Motor: (w/E):
AM-CL2232MAN
AM-CL2232GAN
AM-CL2242MAN
AM-CL2242GAN

Brushless Motor (w/E):
AM-BL2040AN
AM-BL2453AN

Recommend Encoder:

Suitable for Coreless Motor

Encoder S: AM-EN2211S***

Suitable for Brushless Motor

Encoder S: AM-EN1611S***

Encoder T: AM-EN1612T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	66.5	80.0	80.3	101
Gearbox length L_1	22.3	27.3	32.3	37.3
Motor length L_2	32.2	42	40	53
Encoder length L_3	12	10.7	12	10.7

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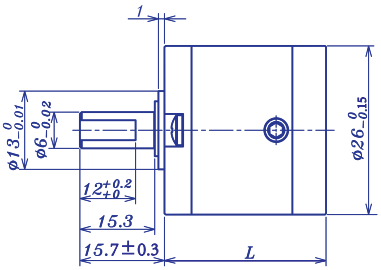
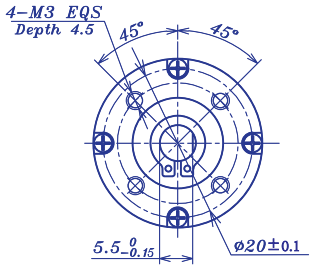
AM-26P Series





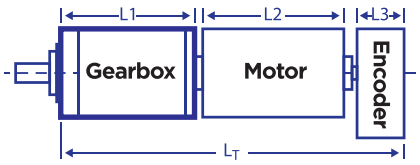
GEARBOX CHARACTER

Gear type	Straight teeth	Average backlash on load	≤2°
Output shaft	Stainless steel hardened	Radial Play	≤0.1
Main gear	Alloy Steel	Permisssible axial load	≤80N
Ring gear	Steel	Permissible force press fits	≤150N (5mm from mounting face)
Adapter plate	Alluminium alloy	Recommended inut speed	≤8000RPM
Bearing AT output	Ball bearing	Operating temperature range	-20°C ~ +100°C
Axial play	0-0.3	Operating humidity range	10-90%RH
Directions	CW/CCW		

GEARBOX DATA

Number of stage	1	2			3			4		
Reduction ratio X:1	3.4	12	18	28	40	74	129	296	534	1016
	3.8	13	19	29	45	85	152	327	637	1136
	4.4	15	20	35	50	95	184	375	760	1304
	5.3	17	23	44	56	106	233	405	860	1556
	6.7		26		65	121	296	447	965	1975
Reduction ratio absolute	24/7	576/49	18/1	441/16	13824/343		189/2	85169/288		194481/256
	23/6	92/7	484/25	88/3	2208/49		3381/32	122452/375		7744/9
	22/5	529/36	161/8	35/1	1053/21		4851/40	234256/625		15435/16
	21/4	253/15	231/10	400/9	12167/2		1936/15	25921/64		64000/63
	20/3		230/9		5819/90		3200/21	53361/100		92000/81
					5566/75		735/4	101871/160		35200/27
					10648/125		700/3			14000/9
							8000/27			160000/81
Gearbox lenght "L" (mm)	28.2	34.5			40.8			47.1		
Max. continuous torque (N.m)	1.3	1.7			2.1			2.6		
Max. intermitten torque (N.m)	1.9	2.6			3.2			3.8		
Gearbox efficiency	90%	81%			72%			65%		
Moment of inertia range (g.cm²)	1	0.9			0.6			0.6		
Gearbox weight approx (g)	65	85			105			120		
Gearbox model	AM-26PA-X-01	AM-26PB-X-01			AM-26PC-X-01			AM-26PD-X-01		

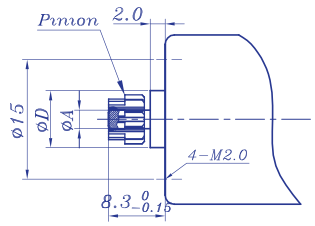
AM-26P Example of combination



INPUT GEARBOX DATA

Modulus	0.4				
Press angle	20°				
Teeth number	9	12	15	18	21
Max gear hole "A"	1.5	3.0	4.0		
Max motor shaft	1.5	3.0	4.0		
Motor dimension "D"	10.0				

MOTOR DIMENSION



Recommend Motor:

Coreless Motor (w/E):
AM-CL2532MAN
AM-CL2545MAN

Brushless Motor (w/E)
AM-BL2453AN

Recommend Encoder:

Suitable for Coreless Motor

Encoder S: AM-EN1611S***

Suitable for Brushless Motor

Encoder S: AM-EN1611S***

Encoder T: AM-EN2412T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	72.2	90.2
Gearbox length L_1	28.2	34.5
Motor length L_2	32	45
Encoder length L_3	12	10.7

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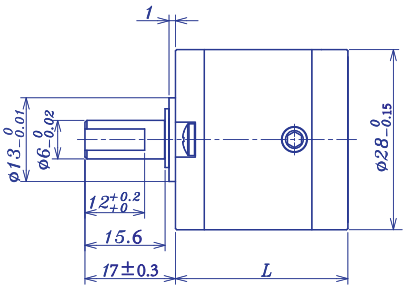
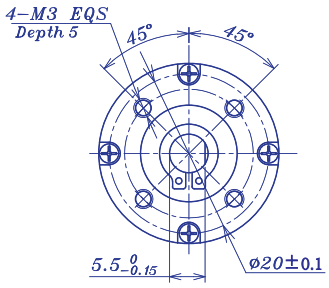
AM-28P Series





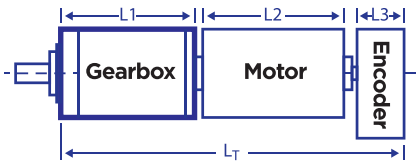
GEARBOX CHARACTER

Gear type	Straight teeth	Average backlash on load	≤2°
Output shaft	Stainless steel hardened	Radial Play	≤0.1
Main gear	Alloy Steel	Permisssible axial load	≤80N
Ring gear	Steel	Permissible force press fits	≤150N (5mm from mounting face)
Adapter plate	Aluminum Alloy	Recommended inut speed	≤8000RPM
Bearing AT output	Ball bearing	Operating temperature range	-20°C ~ +100°C
Axial play	0-0.3	Operating humidity range	10-90%RH
Directions	CW/CCW		

GEARBOX DATA

Number of stage	1	2	3	4
Reduction ratio X:1	3.4 3.8 4.4 5.3 6.7	12 18 28 13 19 29 15 20 35 17 23 44 26	40 74 129 45 85 152 50 95 184 56 106 233 65 121 296	296 534 1016 327 637 1136 375 760 1304 405 860 1556 447 965 1975
Reduction ratio absolute	24/7 23/6 22/5 21/4 20/3	576/49 18/1 441/16 92/7 484/25 88/3 529/36 16//18 35/1 253/15 231/10 400/9 230/9	13824/343 189/2 2208/49 3381/32 1053/21 4851/40 12167/2 1936/15 5819/90 3200/21 5566/75 735/4 10648/125 700/3 8000/27	85169/288 194481/256 122452/375 7744/9 234256/625 15435/16 25921/64 64000/63 53361/100 92000/81 101871/160 35200/27 14000/9 160000/81
Gearbox lenght "L" (mm)	26.9	33.2	39.5	45.8
Max. continuous torque (N.m)	1.3	1.7	2.1	2.6
Max. intermitten torque (N.m)	1.9	2.6	3.2	3.8
Gearbox efficiency	90%	81%	72%	65%
Moment of inertia range (g.cm²)	1	0.9	0.6	0.6
Gearbox weight approx (g)	78	102	126	149
Gearbox model	AM-28PA-X-01	AM-28PB-X-01	AM-28PC-X-01	AM-28PD-X-01

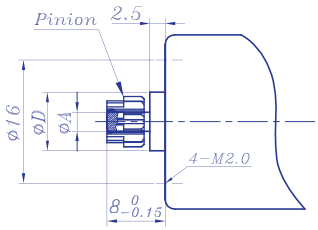
AM-28P Example of combination



INPUT GEARBOX DATA

Modulus	0.4				
Press angle	20°				
Teeth number	9	12	15	18	21
Max gear hole "A"	1.5	3.0	4.0		
Max motor shaft	1.5	3.0	4.0		
Motor dimension "D"	10.0				

MOTOR DIMENSION



Recommend Motor:

Coreless Motor:
AM-CL2532MAN
AM-CL2545MAN
AM-CL2831MAN
AM-CL2845MAN

Brushless Motor
AM-BL2845AN
AM-BL2453AN

Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN1611S***

Suitable for Brushless Motor
Encoder S: AM-EN1611S***
Encoder T: AM-EN2412T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	69.6	90.2	81.2	109.5
Gearbox length L_1	26.9	33.2	39.5	45.8
Motor length L_2	32	45	31	53
Encoder length L_3	10.7	12	10.7	10.7

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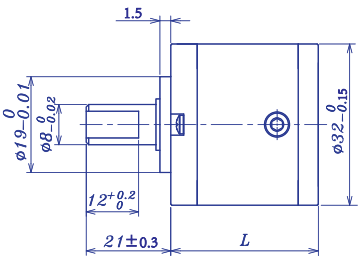
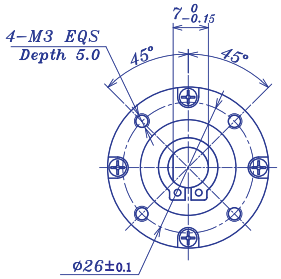
AM-32P Series





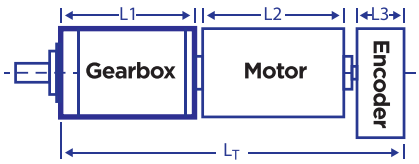
GEARBOX CHARACTER

Gear type	Straight teeth	Average backlash on load	≤2°
Output shaft	Stainless steel hardened	Radial Play	≤0.1
Main gear	Alloy Steel	Permisssible axial load	≤110N
Ring gear	Steel	Permissible force press fits	≤200N (5mm from mounting face)
Adapter plate	Aluminium alloy	Recommended inut speed	≤8000RPM
Bearing AT output	Ball bearing	Operating temperature range	-20ºC ~ +100ºC
Axial play	0-0.3	Operating humidity range	10-90%RH
Directions	CW/CCW		

GEARBOX DATA

Number of stage	1	2	3	4
Reduction ratio X:1	3.4 3.8 4.4 5.3 6.7	12 18 28 13 19 29 15 20 35 17 23 44 26	40 74 129 45 85 152 50 95 184 56 106 233 65 121 296	296 534 1016 327 637 1136 375 760 1304 405 860 1556 447 965 1975
Reduction ratio absolute	24/7 23/6 22/5 21/4 20/3	576/49 18/1 441/16 92/7 484/25 88/3 529/36 16//18 35/1 253/15 231/10 400/9 230/9	13824/343 189/2 2208/49 3381/32 1053/21 4851/40 12167/2 1936/15 5819/90 3200/21 5566/75 735/4 10648/125 700/3 8000/27	85169/288 194481/256 122452/375 7744/9 234256/625 15435/16 25921/64 64000/63 53361/100 92000/81 101871/160 35200/27 14000/9 160000/81
Gearbox lenght "L" (mm)	31.2	38.7	46.2	53.7
Max. continuous torque (N.m)	1.9	2.5	3.2	3.9
Max. intermitten torque (N.m)	2.9	3.8	4.8	5.7
Gearbox efficiency	90%	81%	72%	65%
Moment of inertia range (g.cm²)	1.5	1	1	1
Gearbox weight approx (g)	135	168	200	236
Gearbox model	AM-32PA-X-01	AM-32PB-X-01	AM-32PC-X-01	AM-32PD-X-01

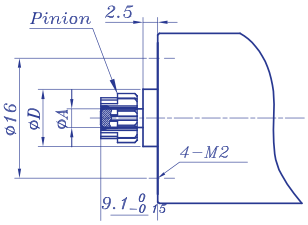
AM-32P Example of combination



INPUT GEARBOX DATA

Modulus	0.45				
Press angle	20°				
Teeth number	9	12	15	18	21
Max gear hole "A"	2.0	3.0	4.0	5.0	6.0
Max motor shaft	2.0	3.0	4.0	5.0	6.0
Motor dimension "D"	10.0			16.0	

MOTOR DIMENSION



Recommend Motor:

Coreless Motor: (w/E)
AM-CL2831MAN
AM-CL2845MAN

Brushless Motor (w/E)
AM-BL2845AN

Recommend Encoder:

Suitable for Coreless Motor

Encoder S: AM-EN1611S***

Suitable for Brushless Motor

Encoder S: AM-EN1611S***

Encoder T: AM-EN2412T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	72.9	95.7
Gearbox length L_1	31.2	38.7
Motor length L_2	31	45
Encoder length L_3	10.7	12

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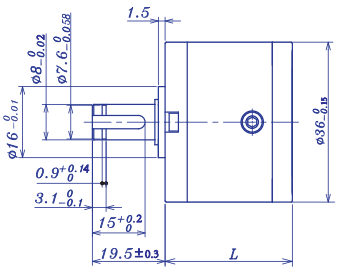
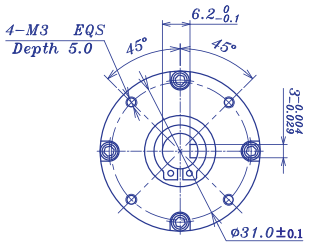
AM-36P Series





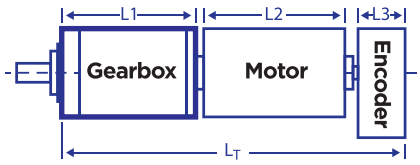
GEARBOX CHARACTER

Gear type	Straight teeth	Average backlash on load	≤2.5º
Output shaft	Stainless steel hardened	Radial Play	≤0.06
Main gear	Alloy Steel	Permisssible axial load	≤150N
Ring gear	Steel	Permissible force press fits	≤240N (5mm from mounting face)
Adapter plate	Aluminium alloy	Recommended inut speed	≤8000RPM
Bearing AT output	Ball bearing	Operating temperature range	-20ºC ~ +100ºC
Axial play	0-0.3	Operating humidity range	10-90%RH
Directions	CW/CCW		

GEARBOX DATA

Number of stage	1	2	3	4
Reduction ratio X:1	3.4 3.8 4.3 5.1 6.3	12 22 13 26 14 32 16 40 19	40 83 162 44 98 171 50 111 202 66 131 75 150	224 399 649 1270 255 421 738 283 446 824 322 513 948 358 570 1078
Reduction ratio absolute	75/22 72/19 69/16 66/13 63/10	5625/484 2277/104 2700/209 4356/169 5814/361 2079/65 621/38 3969/100 4761/256	421875/10648 75141/676 101250/2299 287496/2197 388125/7744 71441/475 16200/247 137214/845 15525/208 273861/1600 20493/247 130977/650 313632/3211	607500/2717 107163/209 1164375/4576 5143824/9025 139725/494 2464749/3800 1071225/3328 18896409/25600 1414017/3952 9056124/10985 4499145/11264 2250423/2375 1352538/3211 17253243/16000 980100/2197 8251551/6500
Gearbox lenght "L" (mm)	30.7	39.3	47.9	56.5
Max. continuous torque (N.m)	2.7	3.6	4.5	5.4
Max. intermitten torque (N.m)	4	5.3	6.6	7.9
Gearbox efficiency	90%	81%	72%	65%
Moment of inertia range (g.cm²)	4.9	4.9	6.1	6.1
Gearbox weight approx (g)	162	208	288	323
Gearbox model	AM-36PA-X-01	AM-36PB-X-01	AM-36PC-X-01	AM-36PD-X-01

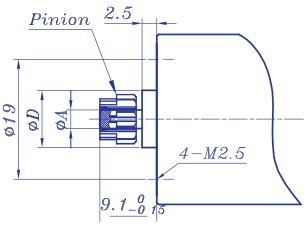
AM-36P Example of combination



INPUT GEARBOX DATA

Modulus	0.5				
Press angle	20°				
Teeth number	10	13	16	19	22
Max gear hole "A"	2.5	4.0	5.0	6.0	
Max motor shaft	2.5	4.0	5.0	6.0	
Motor dimension "D"	13				

MOTOR DIMENSION



Recommend Motor:

Coreless Motor: (w/E)
AM-CL3570GAN

Brushless Motor (w/E)
AM-BL3660AN
AM-BL3675BF
AM-BL3690BF

Recommend Encoder:

Suitable for Coreless Motor

Encoder S: AM-EN2211S***
Encoder T: AM-EN2412T***

Suitable for Brushless Motor

Encoder S: AM-EN2211S***

Encoder T: AM-EN3612T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	113.2	110.5
Gearbox length L_1	30.7	39.3
Motor length L_2	70.5	60.5
Encoder length L_3	12	10.7

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PLANETARY GEARBOX

REGULAR SERIES

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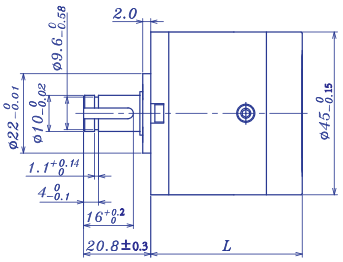
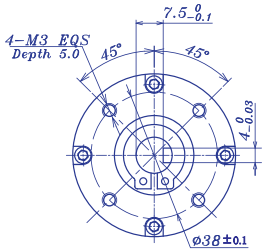
AM-45P Series





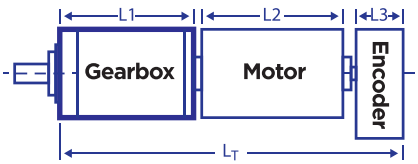
GEARBOX CHARACTER

Gear type	Straight teeth	Average backlash on load	≤1.5°
Output shaft	Stainless steel hardened	Radial Play	≤0.06
Main gear	Alloy Steel	Permisssible axial load	≤150N
Ring gear	Steel	Permissible force press fits	≤280N (5mm from mounting face)
Adapter plate	Aluminium alloy	Recommended inut speed	≤8000RPM
Bearing AT output	Ball bearing	Operating temperature range	-20°C ~ +100°C
Axial play	0-0.3	Operating humidity range	10-90%RH
Directions	CW/CCW		

GEARBOX DATA

Number of stage	1	2	3	4
Reduction ratio X:1	3.4 3.8 4.3 5.1 6.3	12 22 13 26 14 32 16 40 19	40 83 162 44 98 171 50 111 202 66 131 75 150	224 399 649 1270 255 421 738 283 446 824 322 513 948 358 570 1078
Reduction ratio absolute	75/22 72/19 69/16 66/13 63/10	5625/484 2277/104 2700/209 4356/169 5814/361 2079/65 621/38 3969/100 4761/256	421875/10648 75141/676 101250/2299 287496/2197 388125/7744 71441/475 16200/247 137214/845 15525/208 273861/1600 20493/247 130977/650 313632/3211	607500/2717 107163/209 1164375/4576 5143824/9025 139725/494 2464749/3800 1071225/3328 18896409/25600 1414017/3952 9056124/10985 4499145/11264 2250423/2375 1352538/3211 17253243/16000 980100/2197 8251551/6500
Gearbox lenght "L" (mm)	38.9	49.7	60.5	71.3
Max. continuous torque (N.m)	5.4	7.2	9	10.8
Max. intermitten torque (N.m)	7.9	10.6	13.2	15.9
Gearbox efficiency	90%	81%	72%	65%
Moment of inertia range (g.cm²)	12	14	14	15
Gearbox weight approx (g)	305	418	520	633
Gearbox model	AM-45PA-X-01	AM-45PB-X-01	AM-45PC-X-01	AM-45PD-X-01

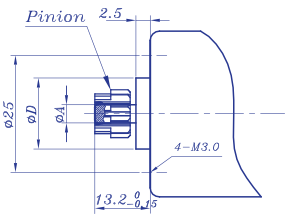
AM-45P Example of combination



INPUT GEARBOX DATA

Modulus	0.6				
Press angle	20°				
Teeth number	10	13	16	19	22
Max gear hole "A"	2.5	5.0	6.0	8.0	
Max motor shaft	2.5	5.0	6.0	8.0	
Motor dimension "D"	13.0			16.0	

MOTOR DIMENSION



Recommend Motor:

Coreless Motor: (w/E)
AM-CL3570GAN
AM-CL4071GAE

Brushless Motor (w/E)
AM-BL3660AN
AM-BL45100AN

Recommend Encoder:

Suitable for Coreless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN2412T***

Suitable for Brushless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN3612T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	119.6	121.7	172.5
Gearbox length L_1	38.9	49.7	60.5
Motor length L_2	70	60	100
Encoder length L_3	10.7	12	12

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PLANETARY GEARBOX

PRECISION SERIES

Assun Planetary Gearbox of precision series are manufactured with the latest production technology to achieve very low backlash, higher efficiency, longer lifetime and higher output torque. Diameter from 8mm to 60mm, the precision series planetary gearboxes offer a wide range of high precision choices for DC drive solution.

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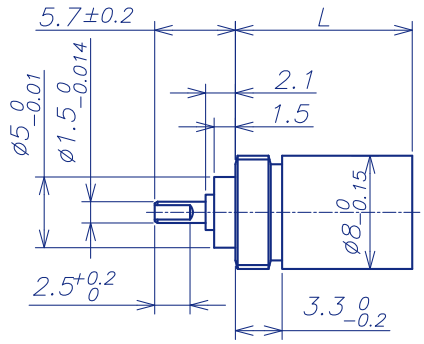
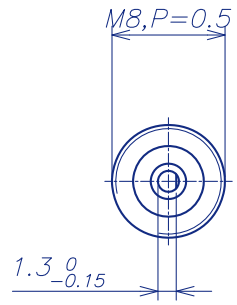
AM-8GP Series





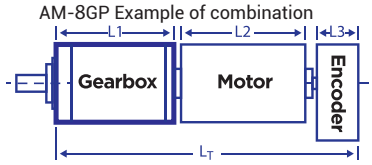
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (6mm from flange)	max 0.1mm				
Output shaft	Stainless steel hardened	Permissible force press fits	max. 10 N				
Main gear	Alloy Steel hardened	Permisssible axial load (dynamic)	max. 5N				
Ring gear	Stainless steel hardened	Recommended inut speed	12000RPM				
Adapter plate	Stainless steel	Operating temperature range	-40°C ~ +100°C				
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH				
Axial play	0-0.3	Number of stages	1	2	3	4	5
Directions	CW/CCW	Permissible load (5mm from flange)	5N	6N	7N	8N	8N

GEARBOX DATA

Number of stage	1	2	3	4	5
Reduction ratio X:1	4	16	64	256	1024
Reduction ratio absolute	4/1	16/1	64/1	256/1	1024/1
Motor shaft max. diametre (mm)	1.0	1.0	1.0	1.0	1.0
Gearbox lenght "L" (mm)	6.9	9.7	12.5	15.3	18.1
Max. continuous torque (N.m)	0.01	0.02	0.06	0.08	0.1
Max. intermittent torque (N.m)	0.015	0.03	0.09	0.2	0.2
Average backlash no load	1.8°	2.0°	2.2°	2.5°	2.8°
Gearbox efficiency	90%	81%	73%	65%	59%
Max. mass inertia (g.cm²)	0.002	0.003	0.003	0.003	0.003
Gearbox weight approx (g)	3	3.5	4	4.5	5
gearbox model	AM-8GPA-X	AM-8GPB-X	AM-8GPC-X	AM-8GPD-X	AM-8GPE-X

AM-8GP Example of combination



Recommend Motor:
Coreless Motor (w/E):
AM-CL08***

Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN***

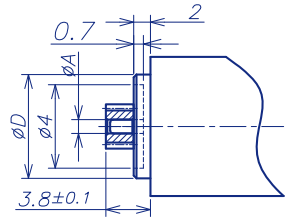
Brushless Motor (w/E):
AM-BL08***

Suitable for Brushless Motor
Encoder S:
Encoder T:

INPUT GEARBOX DATA

Modulus	0.2
Press angle	20°
Teeth number	13
Max gear hole "A"	1.0
Max motor shaft	1.0
Motor dimension "D"	6.4

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	38.9
Gear box length L_1	6.9
Motor length L_2	24
Encoder length L_3	8

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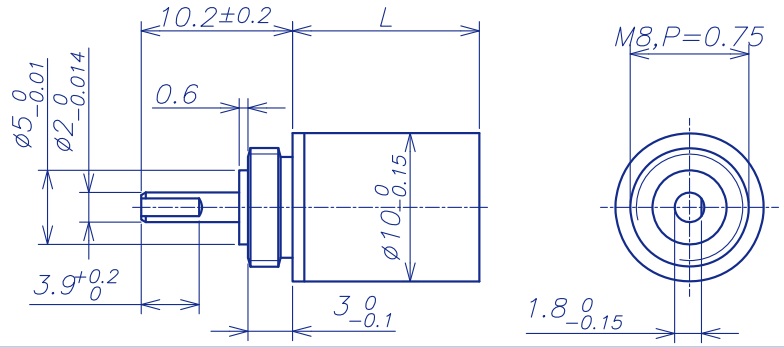
AM-10GP Series



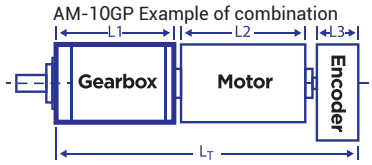
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (6mm from flange)	max 0.1mm
Output shaft	Stainless steel hardened	Permissible force press fits	max. 10 N
Main gear	Alloy Steel hardened	Permisssible axial load (dynamic)	max. 5N
Ring gear	Stainless steel hardened	Recommended inut speed	12000RPM
Adapter plate	Stainless steel	Operating temperature range	-40°C ~ +100°C
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH
Axial play	0-0.3	Number of stages	1 2 3 4 5
Directions	CW/CCW	Permissible load (5mm from flange)	10N 10N 15N 17N 17N

GEARBOX DATA

Number of stage	1	2	3	4	5
Reduction ratio X:1	4	16	64	256	1024
Reduction ratio absolute	4/1	16/1	64/1	256/1	1024/1
Motor shaft max. diametre (mm)	1.5	1.5	1.5	1.5	1.5
Gearbox lenght "L" (mm)	6.8	10	13.2	16.4	19.6
Max. continuous torque (N.m)	0.01	0.03	0.1	0.15	0.15
Max. intermittent torque (N.m)	0.02	0.05	0.15	0.2	0.2
Average backlash no load	1.5°	1.8°	1.9°	2.0°	2.0°
Gearbox efficiency	90%	81%	73%	65%	59%
Max. mass inertia (g.cm²)	0.003	0.004	0.004	0.004	0.004
Gearbox weight approx (g)	5	7	8	10	12
gearbox model	AM-10GPA-X	AM-10GPB-X	AM-10GPC-X	AM-10GPD-X	AM-10GPE-X

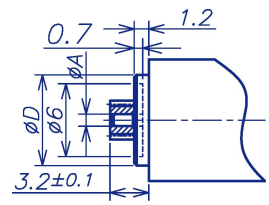
AM-10GP Example of combination



INPUT GEARBOX DATA

Modulus	0.2
Press angle	20°
Teeth number	13
Max gear hole "A"	1.5
Max motor shaft	1.5
Motor dimension "D"	7.46

MOTOR DIMENSION



Recommend Motor:
Coreless Motor (w/E):
AM-CL10***

Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN1008S***

Brushless Motor (w/E):

Suitable for Brushless Motor
Encoder S:
Encoder T:

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	40
Gear box length L_1	6.8
Motor length L_2	25.2
Encoder length L_3	8

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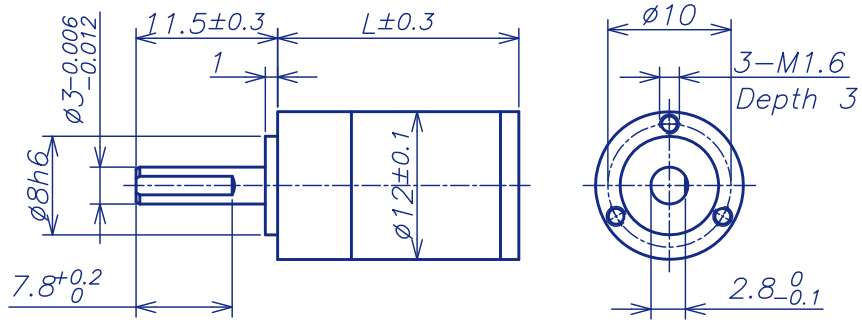
AM-12GP Series



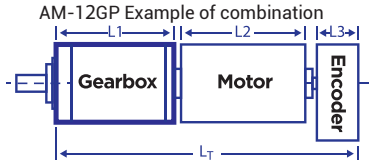
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (6mm from flange)	max 0.1mm				
Output shaft	Stainless steel hardened	Permissible force press fits	max. 100N				
Main gear	Alloy Steel hardened	Permisssible axial load (dynamic)	max. 20N				
Ring gear	Stainless steel hardened	Recommended inut speed	16000RPM				
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC				
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH				
Axial play	0-0.1	Number of stages	1	2	3	4	5
Directions	CW/CCW	Permissible load (5mm from flange)	30N	45N	60N	60N	60N

GEARBOX DATA

Number of stage	1		2		3		4		5
Reduction ratio X:1	4	5.3	16 21	28	64 85 114	152	256 341 455 607	809	1820 1365 1024
Reduction ratio absolute	1/4	16/3	16/1 64/3	256/9	64/1 256/3 1024/9	4096/27	256/1 1024/3 4096/9 16384/27	65536/81	16384/9 4096/3 1024/1
Motor shaft max. diametre (mm)	1.5	1	1.5	1	1.5	1	1.5		1.5
Gearbox lenght "L" (mm)	15.4		19.6		23.8		28.0		32.2
Max. continuous torque (N.m)	0.1		0.14		0.2		0.24		0.24
Max. intermittent torque (N.m)	0.12		0.17		0.24		0.29		0.29
Average backlash no load	1.3º		1.5º		1.6º		1.6º		1.6º
Gearbox efficiency	90%		81%		73%		65%		59%
Max. mass inertia (g.cm²)	0.01		0.01		0.009		0.009		0.009
Gearbox weight approx (g)	11		14		17		20		23
gearbox model	AM-12GPA-X		AM-12GPB-X		AM-12GPC-X		AM-12GPD-X		AM-12GPE-X

AM-12GP Example of combination



Recommend Motor:
Coreless Motor (w/E):
AM-CL10***
AM-CL12***

Brushless Motor (w/E):

Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN1008S***

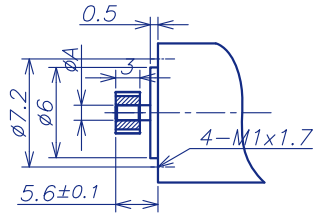
Suitable for Brushless Motor
Encoder S: AM-EN1008S***

Encoder T:

INPUT GEARBOX DATA

Modulus	0.25	
Press angle	20°	
Teeth number	9	13
Max gear hole "A"	1.0	1.5
Max motor shaft	1.0	1.5
Motor dimension "D"	6	6

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T
Gear box length L_1
Motor length L_2
Encoder length L_3

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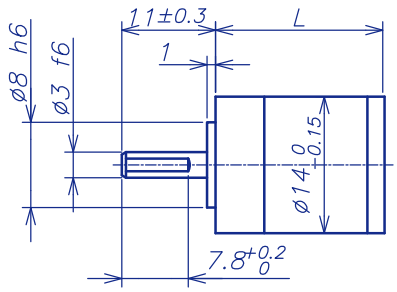
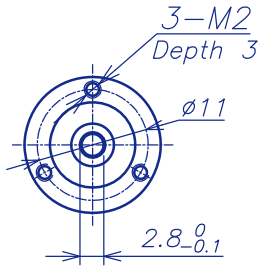
AM-14GP Series





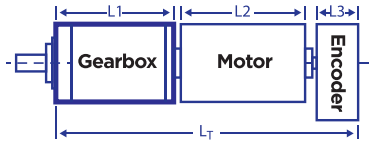
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (6mm from flange)	max 0.1mm
Output shaft	Stainless steel hardened	Permissible force press fits	max. 100 N
Main gear	Alloy Steel hardened	Permisssible axial load (dynamic)	max. 10N
Ring gear	Stainless steel hardened	Recommended inut speed	13120RPM
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH
Axial play	0-0.3	Number of stages	1 2 3 4
Directions	CW/CCW	Permissible load (8mm from flange)	30N 45N 50N 60N

GEARBOX DATA

Number of stage	1			2		3			4		
Reduction ratio X:1	3.9	5.3	6.6	16 21 26 28 35	44	62 83 103 111	138 150 172 186 231	287	243 326 406 439 546 590	679 734 794 913 987 1135	1227 1526	1897
Reduction ratio absolute	75/19	69/13	33/5	5625/361 5175/247 495/19 4761/169 2277/65	1089/25	421845/6859 388125/4693 37125/361 357075/3211	34155/247 328509/2197 3267/19 157113/405 75141/325	35937/125	31640625/130321 29109375/89167 2784375/6859 26780625/61009 2561625/4693 24638175/41743	245025/361 2356695/3211 22667121/28561 225423/247 10840797/10985 107811/95 5184729/4225 2479653/1625		1185921/625
Motor shaft max. diametre (mm)	1			1		1			1			
Gearbox lenght "L" (mm)	17.8			22.8		27.8			32.8			
Max. continuous torque (N.m)	0.15			0.2		0.25			0.35			
Max. intermittent torque (N.m)	0.20			0.25		0.35			0.45			
Average backlash no load	1.3º			1.4º		1.5º			1.6º			
Gearbox efficiency	90%			81%		73%			65%			
Max. mass inertia (g.cm²)	0.05			0.05		0.05			0.05			
Gearbox weight approx (g)	16			21		26			31			
gearbox model	AM-14GPA-X			AM-14GPB-X		AM-14GPC-X			AM-14GPD-X			

AM-14GP Example of combination



Recommend Motor:

Coreless Motor (w/E):
AM-CL12**MAN

Brushless Motor (w/E):

Recommend Encoder:

Suitable for Coreless Motor

Encoder S: AM-EN1008S***

Suitable for Brushless Motor

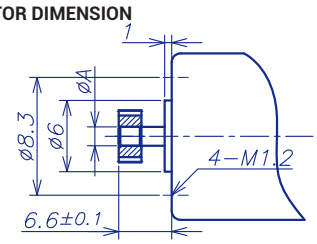
Encoder S:

Encoder T:

INPUT GEARBOX DATA

Modulus	0.2		
Press angle	20°		
Teeth number	10	13	19
Max gear hole "A"	2.0		
Max motor shaft	2.0		
Motor dimension "D"	6.0		

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	45.8	50.8	55.8
Gear box length L_1	17.8	22.8	27.8
Motor length L_2	20.5	20.5	20.5
Encoder length L_3	7.5	7.5	7.5

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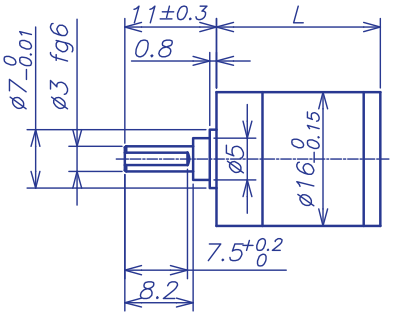
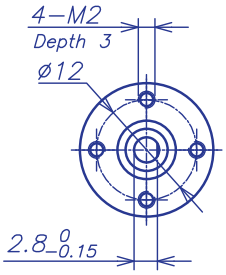
AM-16GP Series





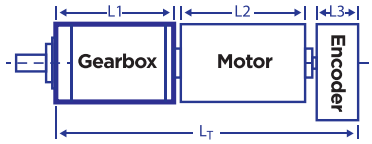
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (6mm from flange)	max 0.1mm
Output shaft	Stainless steel hardened	Permissible force press fits	max. 100 N
Main gear	Alloy Steel hardened	Permisssible axial load (dynamic)	max. 10N
Ring gear	Stainless steel hardened	Recommended inut speed	8000RPM
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH
Axial play	0-0.3	Number of stages	1 2 3 4
Directions	CW/CCW	Permissible load (6mm from flange)	15N 23N 23N 23N

GEARBOX DATA

Number of stage	1			2		3			4		
Reduction ratio X:1	3.8	4.4	5.4	14 16 19 20 24	29	53 62 72 76	84 89 104 109 128	157	198 231 270 285 316 333	370 590 389 690 410 455 479 561	850
Reduction ratio absolute	15/4	57/13	27/5	225/16 855/52 3249/169 81/4 1539/65	729/25	3375/64 12825/208 48735/676 1215/16	185193/2197 4617/52 87723/845 2187/20 41551/325	19683/125	50625/256 192375/832 731025/2704 18225/64 2777895/8788 69255/208	10556001/28561 263169/676 6561/16 5000211/10985 124659/260 2368521/4225 59049/100 1121931/1625	531441/625
Motor shaft max. diametre (mm)	2		1.5	2	1.5	2		1.5	2		1.5
Gearbox lenght "L" (mm)	15.9			19.6		23.3			27		
Max. continuous torque (N.m)	0.1			0.2		0.25			0.3		
Max. intermittent torque (N.m)	0.15			0.3		0.375			0.45		
Average backlash no load	1.2º			1.4º		1.5º			1.5º		
Gearbox efficiency	90%			81%		73%			65%		
Max. mass inertia (g.cm²)	0.05			0.06		0.06			0.06		
Gearbox weight approx (g)	20			25		30			35		
gearbox model	AM-16GPA-X			AM-16GPB-X		AM-16GPC-X			AM-16GPD-X		

AM-16GP Example of combination



Recommend Motor:

Coreless Motor (w/E):
AM-CL1623MAN
AM-CL1626MAN
AM-CL1633MAN
AM-CL1643MAN

Brushless Motor (w/E):
AM-BL1632AN
AM-BL1640AN

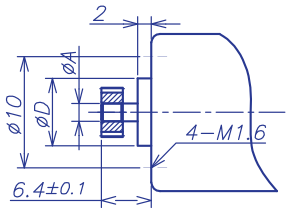
Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN1611S***

Suitable for Brushless Motor
Encoder S: AM-EN1611S***
Encoder T: AM-EN1612T***

INPUT GEARBOX DATA

Modulus	0.3		
Press angle	20°		
Teeth number	10	13	16
Max gear hole "A"	1.5	2.0	
Max motor shaft	1.5	2.0	
Motor dimension "D"	6.0		

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	38.9	67	79
Gear box length L_1	15.9	23.3	27
Motor length L_2	23	33	40
Encoder length L_3	-	10.7	12

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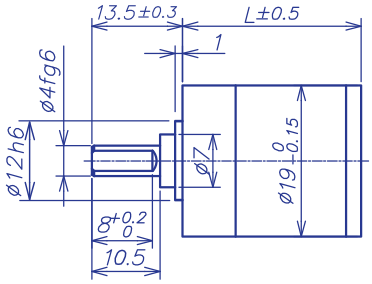
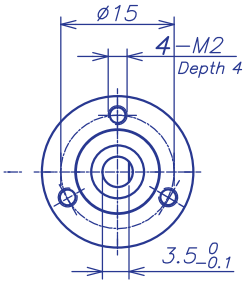
AM-19GP Series





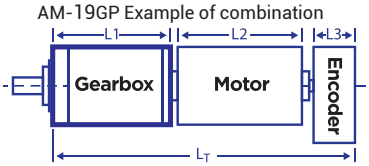
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (8mm from flange)	max 0.1mm
Output shaft	Stainless steel hardened	Permissible force press fits	max. 100 N
Main gear	Alloy steel hardened	Permisssible axial load (dynamic)	max. 50N
Ring gear	Stainless steel hardened	Recommended inut speed	8000RPM
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH
Axial play	0-0.3	Number of stages	1 2 3 4
Directions	CW/CCW	Permissible load (8mm from flange)	40N 60N 60N 60N

GEARBOX DATA

Number of stage	1			2		3			4			
Reduction ratio X:1	3.8	4.4 4.7	5.4	14 16 20	19 22 24 25 29	53 62 72 76 89 109	82 110	84 102 104 128 136 157	198 231 270 285 333 410	246 441 316 389 479 590	370 455 549 561 690 735	850
Reduction ratio absolute	15/4	57/13 14/3	27/5	225/16 855/52 81/4	3249/169 196/19 1539/65 126/5 729/25	3375/64 12825/208 48735/676 1215/16 4617/52 2187/20	245/3 7182/65	185193/2197 2744/27 87723/845 41551/325 3402/25 19683/125	50625/256 192375/832 731025/2704 18225/64 69255/208 6561/16	7875/32 441/1 2777895/8788 263169/676 124659/260 59049/100	10556001/28561 5000211/10985 2744/5 2368521/4225 1121931/1625 91854/125 531441/3225	
Motor shaft max. diametre (mm)	3	2		3	2	3		2	3		2	
Gearbox lenght "L" (mm)	18.8			23.6		28.4			33.2			
Max. continuous torque (N.m)	0.2			0.3		0.5			0.6			
Max. intermittent torque (N.m)	0.3			0.45		0.75			0.9			
Average backlash no load	1.2º			1.4º		1.4º			1.4º			
Gearbox efficiency	90%			81%		73%			65%			
Max. mass inertia (g.cm²)	0.1			0.1		0.1			0.1			
Gearbox weight approx (g)	35			45		55			65			
gearbox model	AM-19GPA-X			AM-19GPB-X		AM-19GPC-X			AM-19GPD-X			

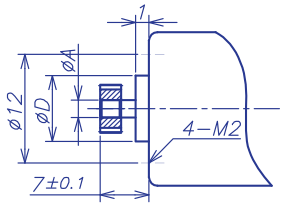
AM-19GP Example of combination



INPUT GEARBOX DATA

Modulus	0.35		
Press angle	20°		
Teeth number	10	13	16
Max gear hole "A"	2	2	3
Max motor shaft	2	2	3
Motor dimension "D"	5	5.5	6.5

MOTOR DIMENSION



Recommend Motor:

Coreless Motor (w/E):	Brushless Motor (w/E):
AM-CL1623MAN	AM-BL1632AN
AM-CL1626MAN	AM-BL1640AN
AM-CL1633MAN	AM-BL2032AN
AM-CL1643MAN	AM-BL2040AN
AM-CL2232GAN	AM-BL2051AN
AM-CL2232MAN	
AM-CL2242GAN	
AM-CL2242MAN	
AM-CL1934GAE	

Recommend Encoder:

Suitable for Coreless Motor
Encoder S: AM-EN1611S***
AM-EN2211S***

Suitable for Brushless Motor
Encoder S: AM-EN1611S***
Encoder T: AM-EN1612T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	41.8	74.3	80.4
Gearbox length L_1	18.8	23.6	28.4
Motor length L_2	23	40	40
Encoder length L_3	-	10.7	12

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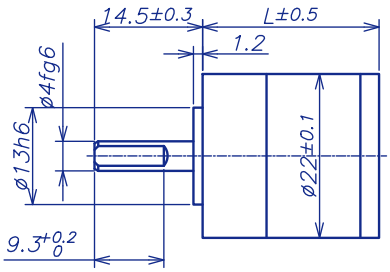
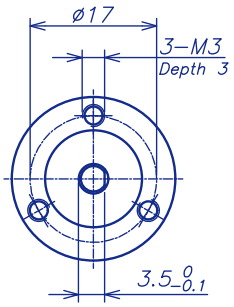
AM-22GP Series





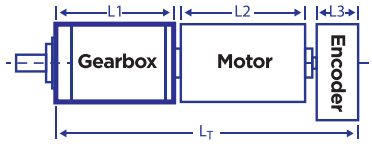
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (8mm from flange)	max. 0.1mm
Output shaft	Stainless steel hardened	Permissible force press fits	max. 100 N
Main gear	Alloy Steel hardened	Permisssible axial load (dynamic)	max. 40N
Ring gear	Stainless steel hardened	Recommended inut speed	12000RPM
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH
Axial play	0-0.3	Number of stages	1 2 3 4
Directions	CW/CCW	Permissible load (10mm from flange)	55N 75N 100N 100N

GEARBOX DATA

Number of stage	1			2		3			4		
Reduction ratio X:1	3.1	4.0	5.1 6.0	10 13 16	19 20 24 26 36	31 40 50 59 64	75 81 96 104	113 132 144 156 183 216	158 186 201 237 256 302	326 576 356 384 415 453 528	679 1296 733 792 864 933 1100
Reduction ratio absolute	22/7	4/1	56/11 6/1	484/49 88/7 16/1	132/7 224/11 24/1 3136/121 36/1	10648/343 1936/49 352/7 2904/49 64/1	528/7 896/11 96/1 12544/121	792/7 175616/1331 144/1 18816/121 2016/11 216/1	7744/49 63888/343 1408/7 11616/49 256/1 2112/7	3584/11 17424/49 384/1 50176/121 3168/7 702464/1331 576/1	4752/7 8064/11 1053696/1331 864/1 112896/121 12096/11 1296/1
Motor shaft max. diametre (mm)	3		2	3	2	3		2	3		2
Gearbox lenght "L" (mm)	18.9			23.7		28.5			33.3		
Max. continuous torque (N.m)	0.4			0.7		1.2			1.5		
Max. intermittent torque (N.m)	0.6			0.8		1.4			1.7		
Average backlash no load	1.1°			1.3°		1.3°			1.3°		
Gearbox efficiency	90%			81%		73%			65%		
Max. mass inertia (g.cm²)	0.28			0.31		0.31			0.31		
Gearbox weight approx (g)	45			55		65			75		
gearbox model	AM-22GPA-X			AM-22GPB-X		AM-22GPC-X			AM-22GPD-X		

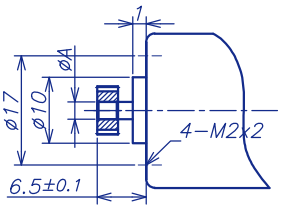
AM-22GP Example of combination



INPUT GEARBOX DATA

Modulus	0.4		
Press angle	20°		
Teeth number	9	15	21
Max gear hole "A"	2	3	3
Max motor shaft	2	3	3

MOTOR DIMENSION



Recommend Motor:

Coreless Motor (w/E):
AM-CL16***
AM-CL19***
AM-CL22***

Brushless Motor (w/E):
AM-BL16***
AM-BL20***
AM-BL22***

Recommend Encoder:

Suitable for Coreless Motor
Encoder S: AM-EN1611S***
AM-EN2211S***

Suitable for Brushless Motor
Encoder S: AM-EN1611S***
Encoder T: AM-EN1612T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	41.9	74.4	80.5
Gear box length L_1	18.9	23.7	28.5
Motor length L_2	23	40	40
Encoder length L_3	-	10.7	12

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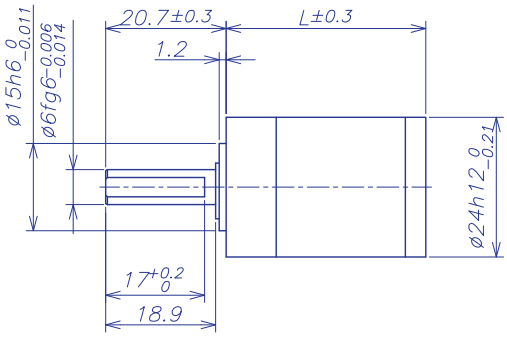
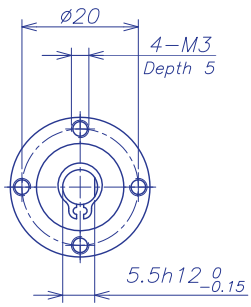
AM-24GP Series





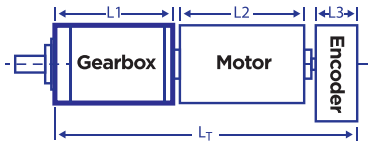
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (10mm from flange)	max 0.1mm			
Output shaft	Stainless steel hardened	Permissible force press fits	max. 120 N			
Main gear	Alloy steel hardened	Permisssible axial load (dynamic)	max. 100N			
Ring gear	Stainless steel hardened	Recommended inut speed	10000RPM			
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC			
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH			
Axial play	0-0.3	Number of stages	1	2	3	4
Directions	CW/CCW	Permissible load (12mm from flange)	95N	110N	120N	120N

GEARBOX DATA

Number of stage	1			2		3			4		
Reduction ratio X:1	3.7	4.3	6.0	13 16 19 22 26	36	49 58 69 81 95	113 132 156	216	181 214 252 298 353 413	488 572 676	792 936 1296
Reduction ratio absolute	11/3	13/3	6/1	121/9 143/9 169/9 22/1 26/1	36/1	1331/27 1573/27 1859/27 2197/27 286/3	338/3 132/1 156/1 216/1	216/1	14641/81 17303/81 20449/81 24167/81 28561/81 3718/9	4394/9 572/1 676/1	792/1 936/1 1296/1
Motor shaft max. diametre (mm)	4		2	4	2	4		2	4		2
Gearbox lenght "L" (mm)	24			34.3		42.8			51.3		
Max. continuous torque (N.m)	1			2.25		4.5			4.5		
Max. intermittent torque (N.m)	1.5			3.4		6			6		
Average backlash no load	1.2º			1.4º		1.5º			1.5º		
Gearbox efficiency	90%			81%		73%			65%		
Max. mass inertia (g.cm²)	0.58			0.58		0.58			0.58		
Gearbox weight approx (g)	80			110		140			170		
gearbox model	AM-24GPA-X			AM-24GPB-X		AM-24GPC-X			AM-24GPD-X		

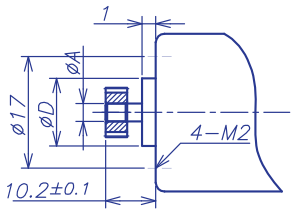
AM-24GP Example of combination



INPUT GEARBOX DATA

Modulus	0.5		
Press angle	20°		
Teeth number	8	12	15
Max gear hole "A"	2	4	4
Max motor shaft	2	4	4
Motor dimension "D"	6	8	8.5

MOTOR DIMENSION



Recommend Motor:

Coreless Motor (w/E)	Brushless Motor (w/E)
AM-CL2232GAN	AM-BL2032AN
AM-CL2232MAN	AM-BL2040AN
AM-CL2242GAN	AM-BL2051AN
AM-CL2242MAN	AM-BL2453AN
AM-CL2532MAN	
AM-CL2545MAN	

Recommend Encoder:

Suitable for Coreless Motor

Encoder S: AM-EN1611S***

Encoder S: AM-EN2211S***

Suitable for Brushless Motor

Encoder S: AM-EN1611S***

Encoder T: AM-EN2412T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	87	110.5	108.3
Gear box length L_1	34.3	42.8	51.3
Motor length L_2	42	57	45
Encoder length L_3	10.7	10.7	12

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PLANETARY GEARBOX

PRECISION SERIES

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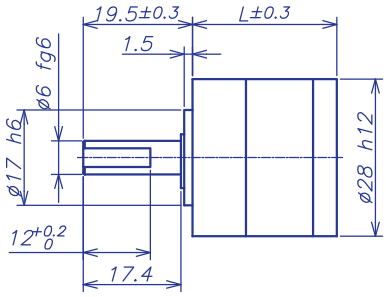
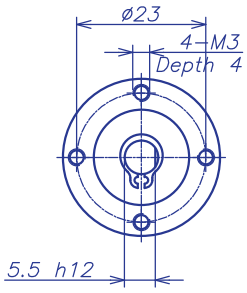
AM-28GP Series





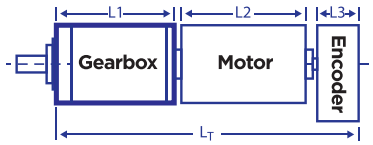
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (10mm from flange)	max 0.1mm			
Output shaft	Stainless steel hardened	Permissible force press fits	max. 150 N			
Main gear	Alloy steel hardened	Permisssible axial load (dynamic)	max. 100N			
Ring gear	Stainless steel hardened	Recommended inut speed	8000RPM			
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC			
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH			
Axial play	0-0.3	Number of stages	1	2	3	4
Directions	CW/CCW	Permissible load (13mm from flange)	65N	100N	120N	120N

GEARBOX DATA

Number of stage	1			2		3			4			
Reduction ratio X:1	3.4	4.2	5.8	11 14 17 19 24	33	38 47 59 65	72 81 100 112 138	190	130 160 198 221 244 273	301 337 377 416 465 574	642 792	1093
Reduction ratio absolute	27/8	25/6	23/4	729/64 225/16 625/36 621/32 575/24	529/16	19683/512 6075/128 1875/32 16767/256	15625/216 5175/64 14375/144 14283/128 13225/96	12167/64	531441/4096 164025/1024 50625/256 452709/2048 15625/64 139725/512	390625/1296 43125/128 385641/1024 359375/864 119025/256 330625/576 328509/512 304175/384		279841/256
Motor shaft max. diametre (mm)	4		3	4	3	4		3	4			3
Gearbox lenght "L" (mm)	26.1			33.3		40.5			47.7			
Max. continuous torque (N.m)	0.6			0.8		2.0			2.4			
Max. intermittent torque (N.m)	0.9			1.2		3.0			3.6			
Average backlash no load	0.8°			1.0°		1.0°			1.0°			
Gearbox efficiency	90%			81%		73%			65%			
Max. mass inertia (g.cm²)	0.89			0.94		0.95			0.95			
Gearbox weight approx (g)	140			170		200			230			
gearbox model	AM-28GPA-X			AM-28GPB-X		AM-28GPC-X			AM-28GPD-X			

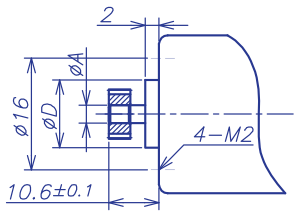
AM-28GP Example of combination



INPUT GEARBOX DATA

Modulus	0.4		
Press angle	20°		
Teeth number	12	18	24
Max gear hole "A"	3	4	4
Max motor shaft	3	4	4
Motor dimension "D"	6	8.5	10.5

MOTOR DIMENSION



Recommend Motor:

Coreless Motor (w/E)	Brushless Motor (w/E)
AM-CL2532MAN	AM-BL2453AN
AM-CL2545MAN	AM-BL2845AN
AM-CL2831MAN	
AM-CL2845MAN	

Recommend Encoder:

Suitable for Coreless Motor

Encoder S: AM-EN1611S***

Suitable for Brushless Motor

Encoder S: AM-EN1611S***

Encoder T: AM-EN2412T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	67.8	89	105.5
Gear box length L_1	26.1	33.3	40.5
Motor length L_2	31	45	53
Encoder length L_3	10.7	10.7	12

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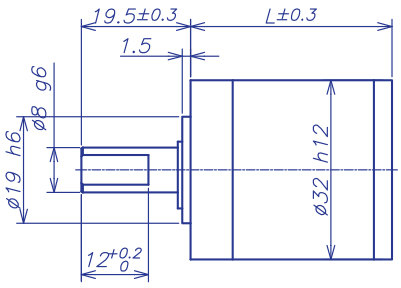
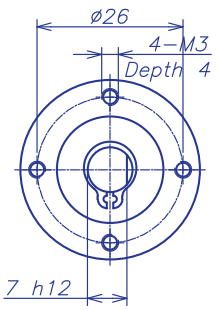
AM-32GP Series





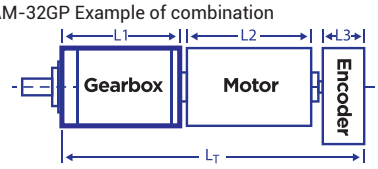
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (10mm from flange)	max 0.1mm
Output shaft	Stainless steel hardened	Permissible force press fits	max. 150 N
Main gear	Alloy steel hardened	Permisssible axial load (dynamic)	max. 120N
Ring gear	Stainless steel hardened	Recommended inut speed	8000RPM
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH
Axial play	0-0.3	Number of stages	1 2 3 4
Directions	CW/CCW	Permissible load (13mm from flange)	80N 130N 145N 145N

GEARBOX DATA

Number of stage	1			2		3			4		
Reduction ratio X:1	3.4	4.2	5.8	11 14 17 19 24	33	38 47 59 65	72 81 100 112 138	190	130 160 198 221 244 273	301 642 337 792 377 416 465 574	1093
Reduction ratio absolute	27/8	25/6	23/4	729/64 225/16 625/36 621/32 575/24	529/16	19683/512 6075/128 1875/32 16767/256	15625/216 5175/64 14375/144 14283/128 13225/96	12167/64	531441/4096 164025/1024 50625/256 452709/2048 15625/64 139725/512	390625/1296 43125/128 385641/1024 359375/864 119025/256 330625/576 328509/512 304175/384	279841/256
Motor shaft max. diametre (mm)	4		3	4	3	4		3	4		3
Gearbox lenght "L" (mm)	27.4			35.9		44.4			52.9		
Max. continuous torque (N.m)	0.8			2		3.6			4		
Max. intermittent torque (N.m)	1.2			3		5.4			6		
Average backlash no load	0.8°			1.0°		1.0°			1.0°		
Gearbox efficiency	90%			81%		73%			65%		
Max. mass inertia (g.cm²)	1.75			1.82		1.82			1.82		
Gearbox weight approx (g)	155			200		245			290		
gearbox model	AM-32GPA-X			AM-32GPB-X		AM-32GPC-X			AM-32GPD-X		

AM-32GP Example of combination



Recommend Motor:

Coreless Motor (w/E)	Brushless Motor (w/E)
AM-CL2831MAN	AM-BL2453AN
AM-CL2845MAN	AM-BL2845AN
	AM-BL3260AN
	AM-BL3270AN
	AM-BD2845AN
	AM-BD3260AN
	AM-BD3270AN

Recommend Encoder:

Suitable for Coreless Motor

Encoder S: AM-EN1611S***
2~3 Channels

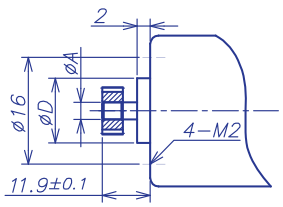
Suitable for Brushless Motor

Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels
Encoder S: AM-EN2211S***
2~3 Channels

INPUT GEARBOX DATA

Modulus	0.45		
Press angle	20°		
Teeth number	12	18	24
Max gear hole "A"	3	4	4
Max motor shaft	3	4	4
Motor dimension "D"	7	10	12

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	83.1	106.6	126.4
Gear box length L_1	27.4	35.9	44.4
Motor length L_2	45	60	70
Encoder length L_3	10.7	10.7	12

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PLANETARY GEARBOX

PRECISION SERIES

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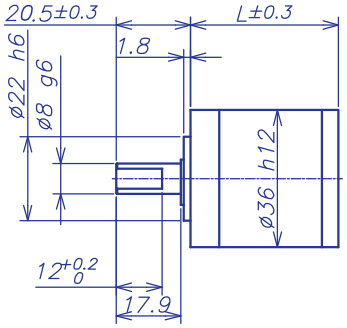
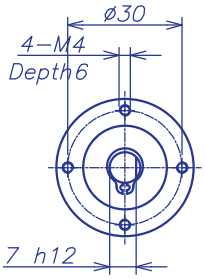
AM-36GP Series





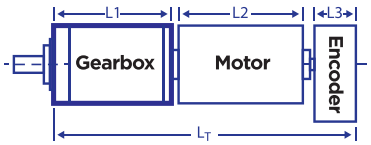
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (10mm from flange)	max 0.1mm			
Output shaft	Stainless steel hardened	Permissible force press fits	max. 150 N			
Main gear	Alloy steel hardened	Permisssible axial load (dynamic)	max. 150N			
Ring gear	Stainless steel hardened	Recommended inut speed	8000RPM			
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC			
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH			
Axial play	0-0.3	Number of stages	1	2	3	4
Directions	CW/CCW	Permissible load (14mm from flange)	140N	230N	230N	230N

GEARBOX DATA

Number of stage	1			2		3			4		
Reduction ratio X:1	3.5	4.3	6.0	12 15 19 21 26	36	43 53 66 74	81 91 113 126 156	216	150 186 230 257 285 319	353 394 441 488 546 676	756 936	1296
Reduction ratio absolute	7/2	13/3	6/1	49/4 91/6 169/9 21/1 26/1	36/1	343/8 637/12 1183/18 147/2	2197/27 91/1 338/3 126/1 156/1	216/1	2401/16 4459/24 8281/36 1029/4 15379/54 637/2	28561/81 1183/3 441/1 4394/9 546/1 676/1 756/1 936/1		1296/1
Motor shaft max. diametre (mm)	6		4	6	4	6		4	6			4
Gearbox lenght "L" (mm)	30.6			39.6		48.6			57.6			
Max. continuous torque (N.m)	1.2			3		5			6			
Max. intermittent torque (N.m)	1.8			4.5		7.5			9			
Average backlash no load	0.7°			0.8°		0.8°			0.8°			
Gearbox efficiency	90%			81%		73%			65%			
Max. mass inertia (g.cm²)	3			3.17		3.18			3.18			
Gearbox weight approx (g)	210			270		330			360			
gearbox model	AM-36GPA-X			AM-36GPB-X		AM-36GPC-X			AM-36GPD-X			

AM-36GP Example of combination



Recommend Motor:
Coreless Motor (w/E)
AM-CL3570GAN
AM-CL4071GAE
Brushless Motor (w/E)
AM-BL3260AN AM-BD3260AN
AM-BL3270AN AM-BD3270AN
AM-BL3660AN AM-BD3660AN
AM-BL3675BF
AM-BL3690BF

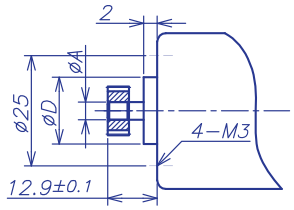
Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN2412T***

Suitable for Brushless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN2412T***
AM-EN3612T***

INPUT GEARBOX DATA

Modulus	0.5		
Press angle	20°		
Teeth number	12	18	24
Max gear hole "A"	4	6	6
Max motor shaft	4	6	6
Motor dimension "D"	8	11	13.5

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	120.3	119.3	159.6
Gear box length L_1	39.6	48.6	57.6
Motor length L_2	70	60	90
Encoder length L_3	10.7	10.7	12

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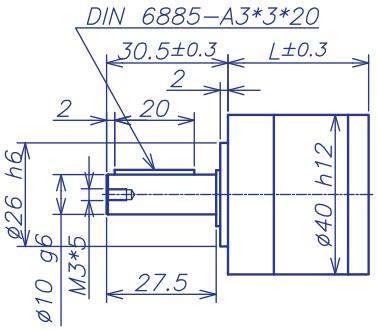
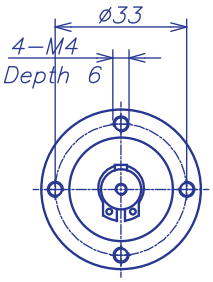
AM-40GP Series





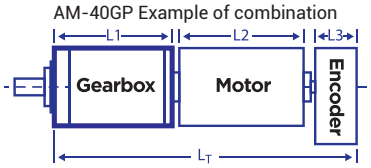
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (10mm from flange)	max 0.1mm			
Output shaft	Stainless steel hardened	Permissible force press fits	max. 150 N			
Main gear	Alloy steel hardened	Permisssible axial load (dynamic)	max. 150N			
Ring gear	Stainless steel hardened	Recommended inut speed	8000RPM			
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC			
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH			
Axial play	0-0.3	Number of stages	1	2	3	4
Directions	CW/CCW	Permissible load (18mm from flange)	170N	250N	300N	300N

GEARBOX DATA

Number of stage	1			2		3			4		
Reduction ratio X:1	3.3	4	5.5	11 13 16 18 22	30	34 42 52 58	64 72 88 98 121	166	112 137 169 189 208 232	256 286 320 352 393 484 541 666	915
Reduction ratio absolute	13/4	4/1	11/2	169/16 13/1 16/1 143/8 22/1	121/4	2197/64 169/4 52/1 1859/32	64/1 143/2 88/1 1573/16 121/1	1331/8	28561/256 2197/16 169/1 24167/128 208/1 1859/8	256/1 286/1 20449/64 352/1 1573/4 484/1 17303/32 1331/2	14641/16
Motor shaft max. diametre (mm)	6		5	6	5	6		5	6		5
Gearbox lenght "L" (mm)	35.3			46.8		58.3			69.8		
Max. continuous torque (N.m)	2			3		7			9		
Max. intermittent torque (N.m)	3			4.5		10.5			13.5		
Average backlash no load	0.7°			0.8°		0.8°			0.8°		
Gearbox efficiency	90%			81%		73%			65%		
Max. mass inertia (g.cm²)	7.12			7.46		7.49			7.5		
Gearbox weight approx (g)	320			415		510			605		
gearbox model	AM-40GPA-X			AM-40GPB-X		AM-40GPC-X			AM-40GPD-X		

AM-40GP Example of combination



Recommend Motor:
Coreless Motor (w/E)
AM-CL3570GAN
AM-CL4071GAE

Brushless Motor (w/E)
AM-BL3660AN
AM-BL3675BF
AM-BL3690BF
AM-BL4060BF
AM-BD3660AN

Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN2211S***

Encoder T: AM-EN2412T***

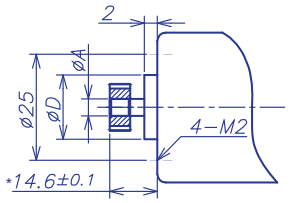
Suitable for Brushless Motor
Encoder S: AM-EN2211S***

Encoder T: AM-EN2412T***
AM-EN3612T***

INPUT GEARBOX DATA

Modulus	0.6		
Press angle	20°		
Teeth number	12	18	24
Max gear hole "A"	5	6	6
Max motor shaft	5	6	6
Motor dimension "D"	9.5	13	16

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	127.5	129	141.8
Gear box length L_1*	46.8	58.3	69.8
Motor length L_2	70	60	60
Encoder length L_3	10.7	10.7	12

*Note: If combined with AM-CL3570, L1=L+5mm, distance between gear and motor=14.6+5mm.

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PLANETARY GEARBOX

PRECISION SERIES

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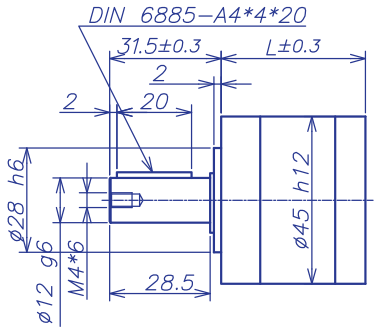
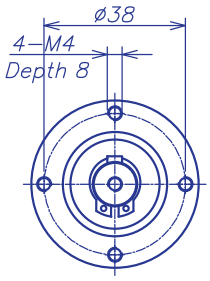
AM-45GP Series





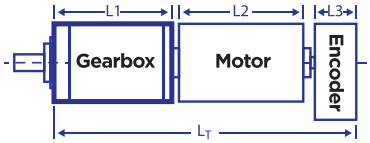
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (10mm from flange)	max 0.1mm			
Output shaft	Stainless steel hardened	Permissible force press fits	max. 300 N			
Main gear	Alloy steel hardened	Permisssible axial load (dynamic)	max. 150N			
Ring gear	Alloy steel hardened	Recommended inut speed	8000RPM			
Adapter plate	Stainless steel hardened	Operating temperature range	-40ºC ~ +100ºC			
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH			
Axial play	0-0.3	Number of stages	1	2	3	4
Directions	CW/CCW	Permissible load (18mm from flange)	180N	280N	370N	370N

GEARBOX DATA

Number of stage	1			2		3			4			
Reduction ratio X:1	3.3	4.0	5.2	11 13 16 17 21	27	37 44 53 58	64 69 83 90 108	141	123 148 178 193 213 231	256 277 300 333 361 433	469 562	731
Reduction ratio absolute	10/3	4/1	26/5	100/9 40/3 16/1 52/3 104/5	676/25	1000/27 400/9 160/3 520/9	64/1 208/3 416/5 1352/15 2704/25	17576/125	10000/81 4000/27 1600/9 5200/27 640/3 2080/9	256/1 832/3 2704/9 1664/5 5408/15 10816/25 35152/75 70304/125		456976/625
Motor shaft max. diametre (mm)	8		6	8	6	8		6	8			6
Gearbox lenght "L" (mm)	36.1			48.1		60.1			72.1			
Max. continuous torque (N.m)	3			7		12			14			
Max. intermittent torque (N.m)	4.5			10.5		18			21			
Average backlash no load	0.6°			0.7°		0.7°			0.7°			
Gearbox efficiency	90%			81%		73%			65%			
Max. mass inertia (g.cm²)	12.85			13.35		13.39			13.4			
Gearbox weight approx (g)	435			560		685			810			
gearbox model	AM-45GPA-X			AM-45GPB-X		AM-45GPC-X			AM-45GPD-X			

AM-45GP Example of combination



Recommend Motor:
Coreless Motor (w/E)
AM-CL3570GAN
AM-CL4071GAE
Brushless Motor (w/E)
AM-BL3660AN AM-BD3660AN
AM-BL3675BF AM-BD45100AN
AM-BL3690BF
AM-BL4060BF
AM-BL45100AN
AM-BL45100BF

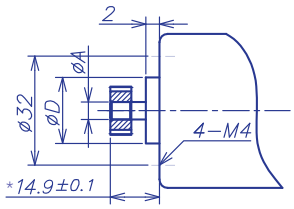
Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN2412T***

Suitable for Brushless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN3612T***

INPUT GEARBOX DATA

Modulus	0.6		
Press angle	20°		
Teeth number	15	21	27
Max gear hole "A"	6.0	8.0	8.0
Max motor shaft	6.0	8.0	8.0
Motor dimension "D"	11	15	18

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	130.8	184.1
Gear box length L_1*	60.1	72.1
Motor length L_2	60	100
Encoder length L_3	10.7	12

*Note: If combined with AM-CL3570, L1=L+5mm, distance between gear and motor=14.9+5mm.

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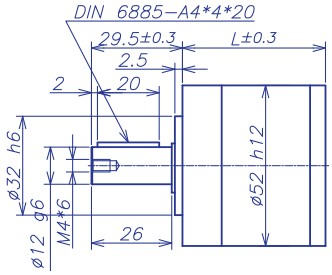
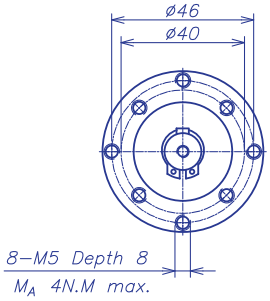
AM-52GP Series





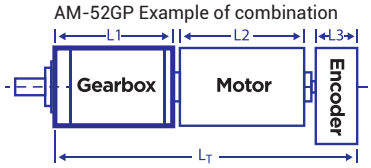
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (12mm from flange)	max 0.1mm			
Output shaft	Stainless steel hardened	Permissible force press fits	max. 500 N			
Main gear	Alloy steel hardened	Permisssible axial load (dynamic)	max. 200N			
Ring gear	Alloy steel hardened	Recommended inut speed	6000RPM			
Adapter plate	Aluminium alloy	Operating temperature range	-40ºC ~ +100ºC			
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH			
Axial play	0-0.3	Number of stages	1	2	3	4
Directions	CW/CCW	Permissible load (12mm from flange)	420N	630N	900N	900N

GEARBOX DATA

Number of stage	1		2		3		4		
Reduction ratio X:1	3.5	4.3	12 15 21	19 26	43 53 66 74 126	81 91 113 156	150 186 230 257 285	319 394 441 546 756	353 488 546 676 936
Reduction ratio absolute	7/2	13/3	49/4 91/6 21/1	169/9 26/1	343/8 637/12 1183/18 147/2 126/1	2197/27 91/1 338/3 156/1	2401/16 4459/24 8281/36 1029/4 15379/54	637/2 1183/3 441/1 546/1 756/1	28561/81 4394/9 546/1 676/1 936/1
Motor shaft max. diametre (mm)	10	8	10	8	10	8	10		8
Gearbox lenght "L" (mm)	46.3		62.8		79.3		95.8		
Max. continuous torque (N.m)	4		15		30		30		
Max. intermittent torque (N.m)	6		22.5		45		45		
Average backlash no load	0.6°		0.7°		0.7°		0.7°		
Gearbox efficiency	90%		81%		73%		65%		
Max. mass inertia (g.cm²)	19.99		20.98		21.06		21.07		
Gearbox weight approx (g)	510		720		930		1140		
gearbox model	AM-52GPA-X		AM-52GPB-X		AM-52GPC-X		AM-52GPD-X		

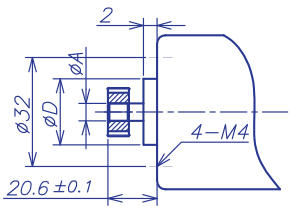
AM-52GP Example of combination



INPUT GEARBOX DATA

Modulus	0.7		
Press angle	20°		
Teeth number	12	18	24
Max gear hole "A"	-	8.0	10
Max motor shaft	-	8.0	10
Motor dimension "D"	-	15	19

MOTOR DIMENSION



Recommend Motor:
Coreless Motor (w/E)

Brushless Motor (w/E)
AM-BL4060BF AM-BD45100AN
AM-BL45100AN
AM-BL45100BF

Recommend Encoder:
Suitable for Coreless Motor
-

Suitable for Brushless Motor
Encoder S: AM-EN2211S***

Encoder T: AM-EN3612T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	190
Gear box length L_1	79.3
Motor length L_2	100
Encoder length L_3	10.7

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PLANETARY GEARBOX

HIGH PERFORMANCE SERIES

Assun Planetary Gearbox of high performance series are manufactured with the latest production technology to achieve very low backlash, higher output torque, longer lifetime. Diameter from 12mm to 52mm, the high performance series planetary gearboxes offer a wide range of high precision choices for DC drive solution.

AM-12HP	AM-16HP	AM-19HP	AM-22HP	AM-26HP	AM-28HP
AM-32HP	AM-36HP	AM-40HP	AM-45HP	AM-52HP	

Company Name Abbreviation

AM - 16 HP A - 5.4:1

Gearbox Dimension
16 - Diameter (mm)

Gearbox Type
HP - High Performance

Gearbox Stage
A : One Stage
B : Two Stage
C : Three Stage
D : Four Stage

Gear Ratio

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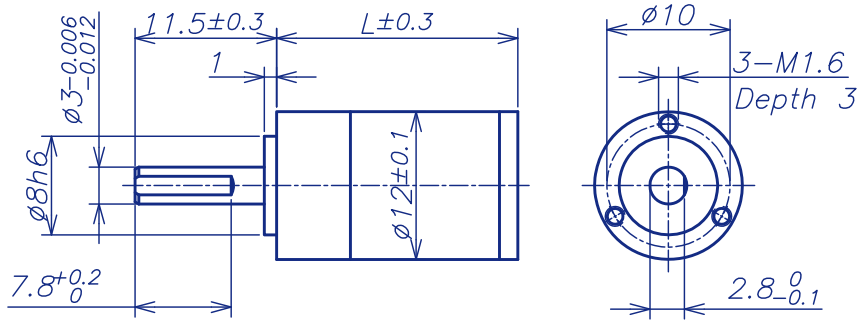
AM-12HP Series



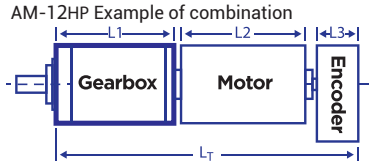
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (6mm from flange)	max 0.1mm				
Output shaft	Stainless steel hardened	Permissible force press fits	max. 100N				
Main gear	Alloy Steel hardened	Permisssible axial load (dynamic)	max. 20N				
Ring gear	Stainless steel hardened	Recommended inut speed	16000RPM				
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC				
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH				
Axial play	0-0.1	Number of stages	1	2	3	4	5
Directions	CW/CCW	Permissible load (5mm from flange)	30N	45N	60N	60N	60N

GEARBOX DATA

Number of stage	1		2		3		4		5
Reduction ratio X:1	4	5.3	16 21	28	64 85 114	152	256 341 455 607	809	1820 1365 1024
Reduction ratio absolute	4/1	16/4	16/1 64/3	256/9	64/1 256/3 1024/9	4096/27	256/1 1024/3 4096/9 16384/27	65536/81	16384/9 4096/3 1024/1
Motor shaft max. diametre (mm)	1.5	1	1.5	1	1.5	1	1.5		1.5
Gearbox lenght "L" (mm)	15.9		20.6		25.3		30.0		34.7
Max. continuous torque (N.m)	0.15		0.24		0.29		0.35		0.35
Max. intermittent torque (N.m)	0.18		0.29		0.35		0.42		0.42
Average backlash no load	1.3º		1.5º		1.6º		1.6º		1.6º
Gearbox efficiency	90%		81%		73%		65%		59%
Max. mass inertia (g.cm²)	0.01		0.01		0.009		0.009		0.009
Gearbox weight approx (g)	11		14		17		21		24
gearbox model	AM-12HPA-X		AM-12HPB-X		AM-12HPC-X		AM-12HPD-X		AM-12HPE-X

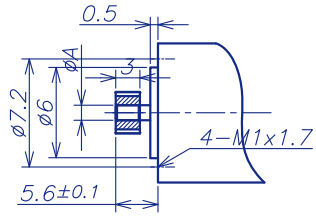
AM-12HP Example of combination



INPUT GEARBOX DATA

Modulus	0.25	
Press angle	20°	
Teeth number	9	13
Max gear hole "A"	1.0	1.5
Max motor shaft	1.0	1.5
Motor dimension "D"	7.46	7.46

MOTOR DIMENSION



Recommend Motor:
Coreless Motor (w/E):
AM-CL12***

Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN1008S***

Brushless Motor (w/E):

Suitable for Brushless Motor
Encoder S:
Encoder T:

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T
Gear box length L_1
Motor length L_2
Encoder length L_3

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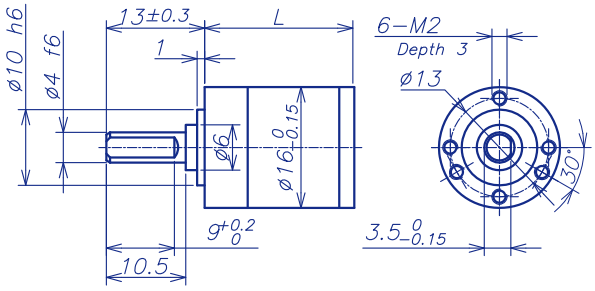
AM-16HP Series



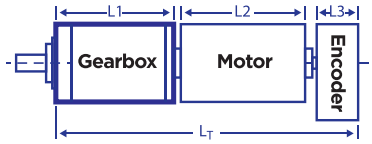
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (6mm from flange)	max 0.1mm
Output shaft	Stainless steel hardened	Permissible force press fits	max. 100 N
Main gear	Alloy Steel hardened	Permisssible axial load (dynamic)	max. 30N
Ring gear	Stainless steel hardened	Recommended inut speed	16000RPM
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH
Axial play	0-0.3	Number of stages	1 2 3 4
Directions	CW/CCW	Permissible load (6mm from flange)	30N 45N 70N 70N

GEARBOX DATA

Number of stage	1			2		3			4		
Reduction ratio X:1	3.8	4.4	5.4	14 16 19 20 24	29	53 62 72 76	84 89 104 109 128	157	198 231 270 285 316 333	370 590 389 690 410 455 479 561	850
Reduction ratio absolute	15/4	57/13	27/5	225/16 855/52 3249/169 81/4 1539/65	729/25	3375/64 12825/208 48735/676 1215/16	185193/2197 4617/52 87723/845 2187/20 41551/325	19683/125	50625/256 192375/832 731025/2704 18225/64 2777895/8788 69255/208	10556001/28561 263169/676 6561/16 5000211/10985 124659/260 2368521/4225 59049/100 1121931/1625	531441/625
Motor shaft max. diametre (mm)	2		1.5	2	1.5	2		1.5	2		1.5
Gearbox lenght "L" (mm)	16.1			19.8		23.5			27.2		
Max. continuous torque (N.m)	0.1			0.5		0.8			0.9		
Max. intermittent torque (N.m)	0.12			0.7		1			1.08		
Average backlash no load	1.2º			1.4º		1.5º			1.5º		
Gearbox efficiency	90%			81%		73%			65%		
Max. mass inertia (g.cm²)	0.04			0.04		0.04			0.04		
Gearbox weight approx (g)	25			30		35			40		
gearbox model	AM-16HPA-X			AM-16HPB-X		AM-16HPC-X			AM-16HPD-X		

AM-16HP Example of combination



Recommend Motor:

Coreless Motor (w/E):
AM-CL1623MAN
AM-CL1626MAN
AM-CL1633MAN
AM-CL1643MAN

Brushless Motor (w/E):
AM-BL1632AN
AM-BL1640AN

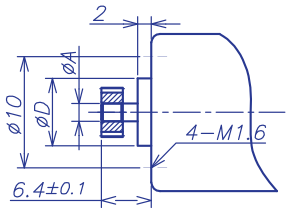
Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN1611S***

Suitable for Brushless Motor
Encoder S: AM-EN1611S***
Encoder T: AM-EN1612T***

INPUT GEARBOX DATA

Modulus	0.3		
Press angle	20°		
Teeth number	10	13	16
Max gear hole "A"	1.5	2.0	
Max motor shaft	1.5	2.0	
Motor dimension "D"	6.0		

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	39.1	67.2	79.2
Gear box length L_1	16.1	23.5	27.2
Motor length L_2	23	33	40
Encoder length L_3	-	10.7	12

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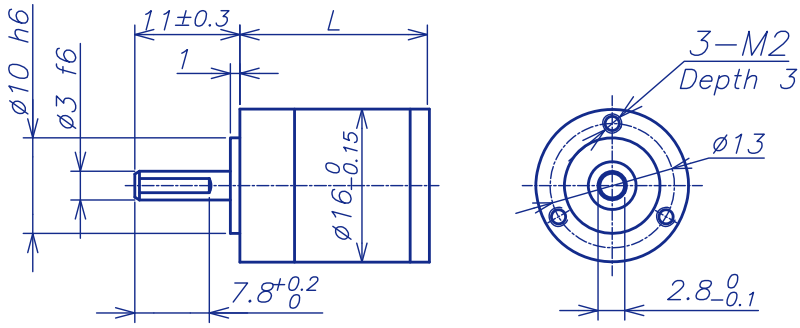
AM-16XP Series



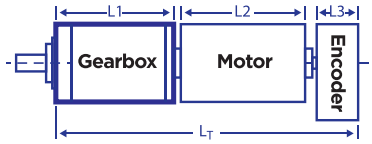
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (6mm from flange)	max 0.1mm
Output shaft	Stainless steel hardened	Permissible force press fits	max. 100 N
Main gear	Alloy Steel hardened	Permisssible axial load (dynamic)	max. 10N
Ring gear	Stainless steel hardened	Recommended inut speed	16000RPM
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH
Axial play	0-0.3	Number of stages	1 2 3 4
Directions	CW/CCW	Permissible load (6mm from flange)	30N 45N 70N 70N

GEARBOX DATA

Number of stage	1			2		3			4			
Reduction ratio X:1	3.9	5.3	6.6	16 21 26 28 35	44	62 83 103 111	138 150 172 186 231	287	243 326 406 439 546 590	679 734 794 913 987 1135	1227 1526	1897
Reduction ratio absolute	75/19	69/13	33/5	5625/361 5175/247 495/19 4761/169 2277/65	1089/25	421845/6859 388125/4693 185625/1805 357075/3211	170775/1235 328509/2197 81675/475 157113/1805 75141/325	35937/125	31640625/130321 29109375/89167 13921875/34295 26780625/61009 12808125/23465 24638175/41743	6125625/9025 11783475/16055 22667121/28561 5635575/6175 10840797/10985 2695275/2375 5184729/4225 2479653/1625		1185921/625
Motor shaft max. diametre (mm)	1.5		1	1.5	1	1.5		1	1.5			1
Gearbox lenght "L" (mm)	16.5			20.7		24.9			29.1			
Max. continuous torque (N.m)	0.2			0.25		0.35			0.45			
Max. intermittent torque (N.m)	0.25			0.35		0.45			0.55			
Average backlash no load	1.2º			1.4º		1.5º			1.5º			
Gearbox efficiency	90%			81%		73%			65%			
Max. mass inertia (g.cm²)	0.05			0.05		0.05			0.05			
Gearbox weight approx (g)	25			30		35			40			
gearbox model	AM-16XPA-X			AM-16XPB-X		AM-16XPC-X			AM-16XPD-X			

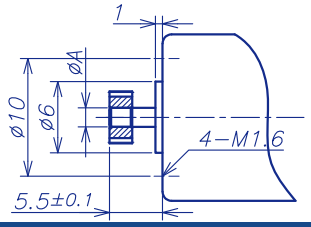
AM-16XP Example of combination



INPUT GEARBOX DATA

Modulus	0.24		
Press angle	20°		
Teeth number	10	13	19
Max gear hole "A"	1.0	1.5	
Max motor shaft	1.0	1.5	

MOTOR DIMENSION



Recommend Motor:

Coreless Motor (w/E):
AM-CL1623MAN
AM-CL1626MAN
AM-CL1633MAN
AM-CL1643MAN

Brushless Motor (w/E):
AM-BL1632AN
AM-BL1640AN

Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN1611S***

Suitable for Brushless Motor
Encoder S: AM-EN1611S***
Encoder T: AM-EN1612T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	39.5	64.4	76.9
Gear box length L_1	16.5	20.7	24.9
Motor length L_2	23	33	40
Encoder length L_3	-	10.7	12

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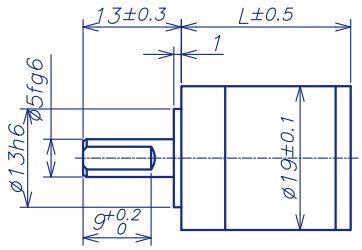
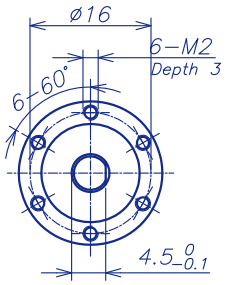
AM-19HP Series





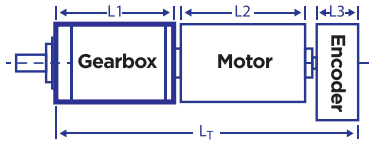
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (8mm from flange)	max 0.1mm
Output shaft	Stainless steel hardened	Permissible force press fits	max. 100 N
Main gear	Alloy Steel hardened	Permisssible axial load (dynamic)	max. 50N
Ring gear	Stainless steel hardened	Recommended inut speed	15000RPM
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH
Axial play	0-0.3	Number of stages	1 2 3 4
Directions	CW/CCW	Permissible load (5mm from flange)	60N 100N 120N 120N

GEARBOX DATA

Number of stage	1			2		3		4		
Reduction ratio X:1	3.8	4.4	5.4	14 16 20	19 24 29	53 62 76	72 84 89 104 109 128	198 231 270 285 333 410	316 389 479 590	370 455 561 690
Reduction ratio absolute	15/4	57/13	27/5	225/16 855/52 81/4	3249/169 1539/65 729/25	3375/64 12825/208 1215/16	48735/676 185193/2197 4617/52 87723/845 2187/20 41553/325	50625/256 192375/832 731025/2704 18225/64 69255/208 6561/16	2777895/8788 263169/676 124659/260 59049/100	10556001/28561 5000211/10985 2368521/4225 1121931/1625
Motor shaft max. diametre (mm)	3	2		3	2	3	2	3	2	
Gearbox lenght "L" (mm)	17.6			22.4		27.2		32		
Max. continuous torque (N.m)	0.2			0.9		1.6		2		
Max. intermittent torque (N.m)	0.3			1.1		2		2.5		
Average backlash no load	1.2º			1.4º		1.4º		1.4º		
Gearbox efficiency	90%			81%		73%		65%		
Max. mass inertia (g.cm²)	0.11			0.11		0.11		0.11		
Gearbox weight approx (g)	40			50		60		70		
gearbox model	AM-19HPA-X			AM-19HPB-X		AM-19HPC-X		AM-19HPD-X		

AM-19HP Example of combination



Recommend Motor:

Coreless Motor (w/E):
AM-CL16***
AM-CL19***
AM-CL22***

Brushless Motor (w/E):
AM-BL16***
AM-BL20***

Recommend Encoder:

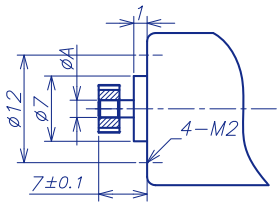
Suitable for Coreless Motor
Encoder S: AM-EN1611S***
AM-EN2211S***

Suitable for Brushless Motor
Encoder S: AM-EN1611S***
Encoder T: AM-EN1612T***

INPUT GEARBOX DATA

Modulus	0.35		
Press angle	20°		
Teeth number	10	13	16
Max gear hole "A"	2	2	3
Max motor shaft	2	2	3

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	40.6	73.1	79.2
Gear box length L_1	17.6	22.4	27.2
Motor length L_2	23	40	40
Encoder length L_3	-	10.7	12

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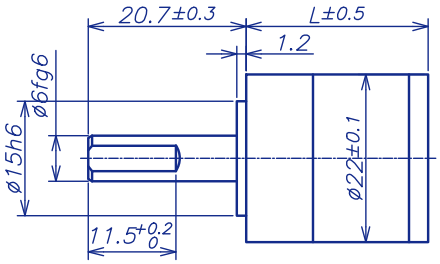
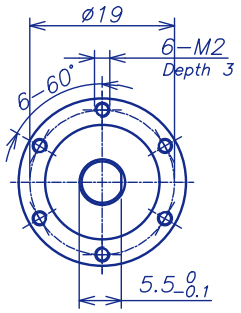
AM-22HP Series





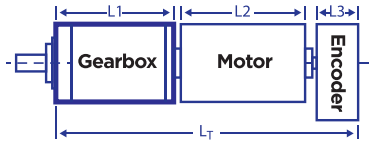
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (8mm from flange)	max 0.1mm
Output shaft	Stainless steel hardened	Permissible force press fits	max. 120 N
Main gear	Alloy Steel hardened	Permisssible axial load (dynamic)	max. 100N
Ring gear	Stainless steel hardened	Recommended inut speed	12000RPM
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH
Axial play	0-0.3	Number of stages	1 2 3 4
Directions	CW/CCW	Permissible load (10mm from flange)	60N 100N 120N 120N

GEARBOX DATA

Number of stage	1			2		3			4		
Reduction ratio X:1	3.1	4.0	6.0	10 13 16	19 24 36	31 40 50 59 64	75 96	113 144 216	158 186 201 237 256 302	356 384 453 576	679 864 1296
Reduction ratio absolute	22/7	4/1	6/1	484/49 88/7 16/1	132/7 24/1 36/1	10648/343 1936/49 352/7 2904/49 64/1	528/7 96/1	792/7 144/1 216/1	7744/49 63888/343 1408/7 11616/49 256/1 2112/7	17424/49 384/1 3168/7 576/1	4752/7 864/1 1296/1
Motor shaft max. diametre (mm)	3		2	3	2	3		2	3		2
Gearbox lenght "L" (mm)	19.1			23.9		28.7			33.5		
Max. continuous torque (N.m)	0.8			2.5		3.2			3.8		
Max. intermittent torque (N.m)	1			3		3.8			4.5		
Average backlash no load	1.1°			1.3°		1.3°			1.3°		
Gearbox efficiency	90%			81%		73%			65%		
Max. mass inertia (g.cm²)	0.36			0.36		0.36			0.36		
Gearbox weight approx (g)	55			70		85			100		
gearbox model	AM-22HPA-X			AM-22HPB-X		AM-22HPC-X			AM-22HPD-X		

AM-22HP Example of combination



Recommend Motor:

Coreless Motor (w/E):
AM-CL16***
AM-CL19***
AM-CL22***

Brushless Motor (w/E):
AM-BL16***
AM-BL20***

Recommend Encoder:

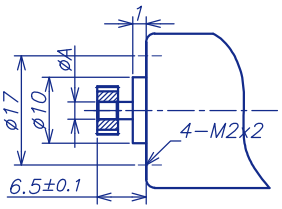
Suitable for Coreless Motor
Encoder S: AM-EN1611S***
AM-EN2211S***

Suitable for Brushless Motor
Encoder S: AM-EN1611S***
Encoder T: AM-EN1612T***

INPUT GEARBOX DATA

Modulus	0.4		
Press angle	20°		
Teeth number	9	15	21
Max gear hole "A"	2	3	3
Max motor shaft	2	3	3

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	42.1	74.6	80.7
Gear box length L_1	19.1	23.9	28.7
Motor length L_2	23	40	40
Encoder length L_3	-	10.7	12

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PLANETARY GEARBOX

HIGH PERFORMANCE SERIES

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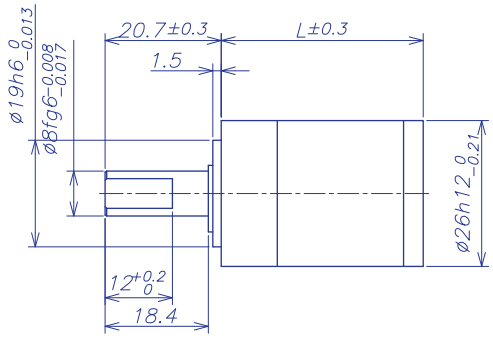
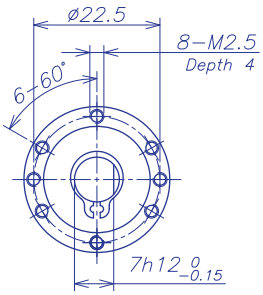
AM-26 HP Series





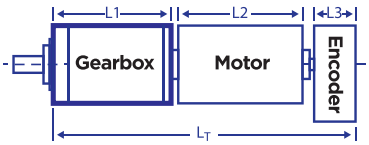
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (10mm from flange)	max 0.1mm
Output shaft	Stainless steel hardened	Permissible force press fits	max. 150 N
Main gear	Alloy steel hardened	Permisssible axial load (dynamic)	max. 110N
Ring gear	Stainless steel hardened	Recommended inut speed	10000RPM
Adapter plate	Stainless steel	Operating temperature range	-40°C ~ +100°C
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH
Axial play	0-0.3	Number of stages	1 2 3 4
Directions	CW/CCW	Permissible load (10mm from flange)	150N 170N 170N 170N

GEARBOX DATA

Number of stage	1			2		3			4		
Reduction ratio X:1	3.7	4.3	6.0	13 16 19 22 26	36	49 58 69 81 95	113 132 156	216	181 214 252 298 353 413	488 572 676	792 936 1296
Reduction ratio absolute	11/3	13/3	6/1	121/9 143/9 169/9 22/1 26/1	36/1	1331/27 1573/27 1859/27 2197/27 286/3	338/3 132/1 156/1 216/1	216/1	14641/81 17303/81 20449/81 24167/81 28561/81 3718/9	4394/9 572/1 676/1	792/1 936/1 1296/1
Motor shaft max. diametre (mm)	4		2	4	2	4		2	4		2
Gearbox lenght "L" (mm)	25.7			36		44.5			53		
Max. continuous torque (N.m)	1			3		5			6		
Max. intermittent torque (N.m)	1.5			4.5		7.5			9		
Average backlash no load	1.2°			1.4°		1.5°			1.5°		
Gearbox efficiency	90%			81%		73%			65%		
Max. mass inertia (g.cm²)	0.63			0.58		0.58			0.58		
Gearbox weight approx (g)	110			140		170			200		
gearbox model	AM-26HPA-X			AM-26HPB-X		AM-26HPC-X			AM-26HPD-X		

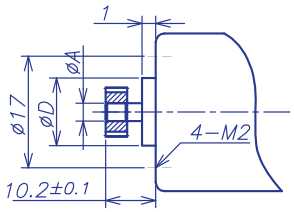
AM-26HP Example of combination



INPUT GEARBOX DATA

Modulus	0.5		
Press angle	20°		
Teeth number	8	12	15
Max gear hole "A"	2	4	4
Max motor shaft	2	4	4
Motor dimension "D"	6	8	8.5

MOTOR DIMENSION



Recommend Motor:

Coreless Motor (w/E)	Brushless Motor (w/E)
AM-CL25***	AM-BL20***
AM-CL26***	AM-BL24***
AM-CL28***	AM-BL28***
	AM-BD28***

Recommend Encoder:

Suitable for Coreless Motor

Encoder S: AM-EN2211S***

Suitable for Brushless Motor

Encoder S: AM-EN2211S***

Encoder T: AM-EN2412T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	88.7	112.2	110
Gear box length L_1	36	44.5	53
Motor length L_2	42	57	45
Encoder length L_3	10.7	10.7	12

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PLANETARY GEARBOX

HIGH PERFORMANCE SERIES

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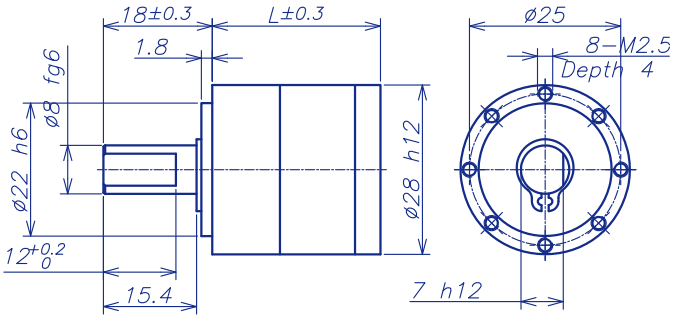
AM-28HP Series



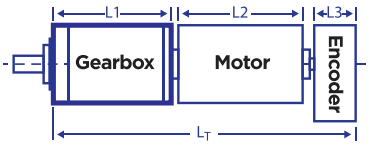
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (10mm from flange)	max 0.1mm			
Output shaft	Stainless steel hardened	Permissible force press fits	max. 200 N			
Main gear	Alloy steel hardened	Permisssible axial load (dynamic)	max. 150N			
Ring gear	Stainless steel hardened	Recommended inut speed	10000RPM			
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC			
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH			
Axial play	0-0.3	Number of stages	1	2	3	4
Directions	CW/CCW	Permissible load (13mm from flange)	150N	255N	250N	250N

GEARBOX DATA

Number of stage	1			2		3			4		
Reduction ratio X:1	3.4	4.2	5.8	11 14 17 19 24	33	47 59	72 81 100	138	160 198 244 273 301	337 416 465 574	792
Reduction ratio absolute	27/8	25/6	23/4	729/64 225/16 625/36 621/32 575/24	529/16	6075/128 1875/32	15625/216 5175/64 14375/144	13225/96	164025/1024 50625/256 15625/64 139725/512 390625/1296	43125/128 359375/864 119025/256 330625/576	304175/384
Motor shaft max. diametre (mm)	4		3	4	3	4		3	4		3
Gearbox lenght "L" (mm)	27.8			35		42.2			49.4		
Max. continuous torque (N.m)	2			3		5			6		
Max. intermittent torque (N.m)	3			4.5		7.5			9		
Average backlash no load	0.8°			1.0°		1.0°			1.0°		
Gearbox efficiency	90%			81%		73%			65%		
Max. mass inertia (g.cm²)	0.95			0.95		0.95			0.95		
Gearbox weight approx (g)	125			155		185			215		
gearbox model	AM-28HPA-X			AM-28HPB-X		AM-28HPC-X			AM-28HPD-X		

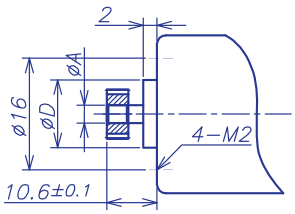
AM-28HP Example of combination



INPUT GEARBOX DATA

Modulus	0.4		
Press angle	20°		
Teeth number	12	18	24
Max gear hole "A"	3	4	4
Max motor shaft	3	4	4
Motor dimension "D"	6	8.5	10.5

MOTOR DIMENSION



Recommend Motor:

Coreless Motor (w/E)	Brushless Motor (w/E)
AM-CL2532MAN	AM-BL2453AN
AM-CL2545MAN	AM-BL2845AN
AM-CL2831MAN	
AM-CL2845MAN	

Recommend Encoder:

Suitable for Coreless Motor

Encoder S: AM-EN1611S***

Suitable for Brushless Motor

Encoder S: AM-EN1611S***

Encoder T: AM-EN2412T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	69.5	90.7	107.2
Gear box length L_1	27.8	35	42.2
Motor length L_2	31	45	53
Encoder length L_3	10.7	10.7	12

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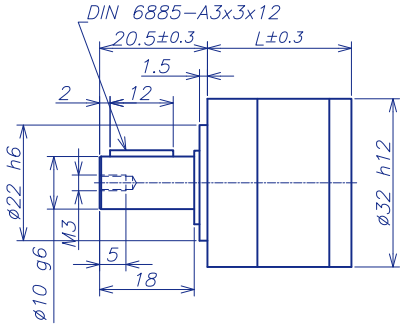
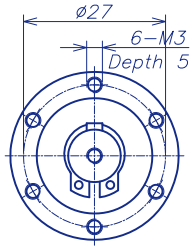
AM-32HP Series





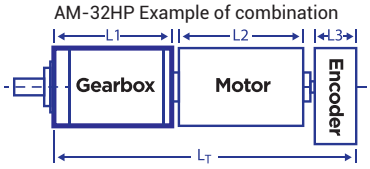
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (10mm from flange)	max 0.1mm			
Output shaft	Stainless steel hardened	Permissible force press fits	max. 150 N			
Main gear	Alloy steel hardened	Permisssible axial load (dynamic)	max. 120N			
Ring gear	Stainless steel hardened	Recommended inut speed	10000RPM			
Adapter plate	Stainless steel	Operating temperature range	-40°C ~ +100°C			
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH			
Axial play	0-0.3	Number of stages	1	2	3	4
Directions	CW/CCW	Permissible load (13mm from flange)	110N	175N	205N	205N

GEARBOX DATA

Number of stage	1			2		3			4		
Reduction ratio X:1	3.4	4.2	5.8	11 14 17 19 24	33	47 59	72 81 100	138	160 198 244 273	337 416 465 574	792
Reduction ratio absolute	27/8	25/6	23/4	729/64 225/16 625/36 621/32 575/24	529/16	6075/128 1875/32	15625/216 5175/64 14375/144	12167/64 13225/96	164025/1024 50625/256 15625/64 139725/512	43125/128 359375/864 119025/256 330625/576	304175/384
Motor shaft max. diametre (mm)	4		3	4	3	4		3	4		3
Gearbox lenght "L" (mm)	27.4			35.9		44.4			52.9		
Max. continuous torque (N.m)	3			5		8.5			9.5		
Max. intermittent torque (N.m)	4.5			7.5		12.5			14		
Average backlash no load	0.8°			1.0°		1.0°			1.0°		
Gearbox efficiency	90%			81%		73%			65%		
Max. mass inertia (g.cm²)	1.6			1.49		1.48			1.48		
Gearbox weight approx (g)	160			240		260			310		
gearbox model	AM-32HPA-X			AM-32HPB-X		AM-32HPC-X			AM-32HPD-X		

AM-32HP Example of combination



Recommend Motor:

Coreless Motor (w/E)	Brushless Motor (w/E)
AM-CL2831MAN	AM-BL2453AN
AM-CL2845MAN	AM-BL2845AN
	AM-BL3260AN
	AM-BL3270AN
	AM-BD2845AN
	AM-BD3260AN
	AM-BD3270AN

Recommend Encoder:

Suitable for Coreless Motor

Encoder S: AM-EN1611S***
2~3 Channels

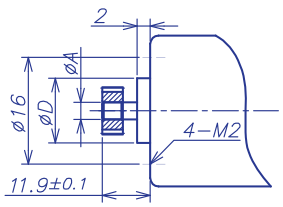
Suitable for Brushless Motor

Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels
Encoder S: AM-EN2211S***
2~3 Channels

INPUT GEARBOX DATA

Modulus	0.45		
Press angle	20°		
Teeth number	12	18	24
Max gear hole "A"	3	4	4
Max motor shaft	3	4	4
Motor dimension "D"	7	10	12

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	83.1	106.6	126.4
Gear box length L_1	27.4	35.9	44.4
Motor length L_2	45	60	70
Encoder length L_3	10.7	10.7	12

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PLANETARY GEARBOX

HIGH PERFORMANCE SERIES

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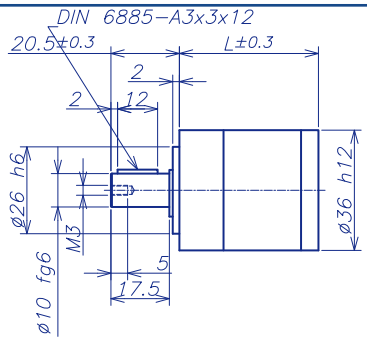
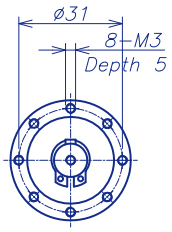
AM-36HP Series





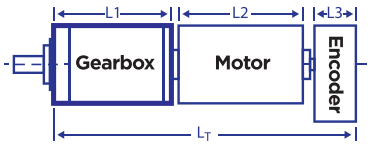
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (10mm from flange)	max 0.1mm			
Output shaft	Stainless steel hardened	Permissible force press fits	max. 150 N			
Main gear	Alloy steel hardened	Permisssible axial load (dynamic)	max. 150N			
Ring gear	Stainless steel hardened	Recommended inut speed	10000RPM			
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC			
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH			
Axial play	0-0.3	Number of stages	1	2	3	4
Directions	CW/CCW	Permissible load (14mm from flange)	220N	340N	370N	370N

GEARBOX DATA

Number of stage	1			2		3			4			
Reduction ratio X:1	3.5	4.3	6.0	12 15 19 21 26	36	43 53 66 74	91 113 126 156	216	150 186 230 257 285 319	353 394 441 488 546 676	756 936	1296
Reduction ratio absolute	7/2	13/3	6/1	49/4 91/6 169/9 21/1 26/1	36/1	343/8 637/12 1183/18 147/2	91/1 338/3 126/1 156/1	216/1	2401/16 4459/24 8281/36 1029/4 15379/54 637/2	28561/81 1183/3 441/1 4394/9 546/1 676/1	756/1 936/1	1296/1
Motor shaft max. diametre (mm)	6		4	6	4	6		4	6			4
Gearbox lenght "L" (mm)	32.6			41.6		50.6			59.6			
Max. continuous torque (N.m)	3			5		10			10			
Max. intermittent torque (N.m)	4.5			7.5		15			15			
Average backlash no load	0.7°			0.8°		0.8°			0.8°			
Gearbox efficiency	90%			81%		73%			65%			
Max. mass inertia (g.cm²)	3.34			3.25		3.24			3.24			
Gearbox weight approx (g)	240			300		360			420			
gearbox model	AM-36HPA-X			AM-36HPB-X		AM-36HPC-X			AM-36HPD-X			

AM-36HP Example of combination



Recommend Motor:
Coreless Motor (w/E)
AM-CL3570GAN
AM-CL4071GAE
Brushless Motor (w/E)
AM-BL3260AN AM-BD3260AN
AM-BL3270AN AM-BD3270AN
AM-BL3660AN AM-BD3660AN
AM-BL3675BF
AM-BL3690BF

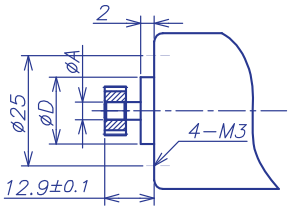
Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN2412T***

Suitable for Brushless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN2412T***
AM-EN3612T***

INPUT GEARBOX DATA

Modulus	0.5		
Press angle	20°		
Teeth number	12	18	24
Max gear hole "A"	4	6	6
Max motor shaft	4	6	6
Motor dimension "D"	8	11	13.5

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	122.3	121.3	161.6
Gear box length L_1	41.6	50.6	59.6
Motor length L_2	70	60	90
Encoder length L_3	10.7	10.7	12

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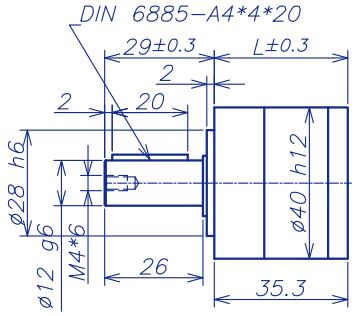
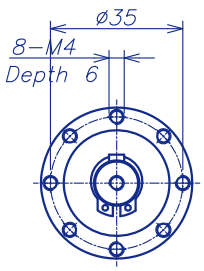
AM-40HP Series





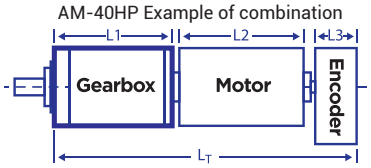
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (10mm from flange)	max 0.1mm			
Output shaft	Stainless steel hardened	Permissible force press fits	max. 150 N			
Main gear	Alloy steel hardened	Permisssible axial load (dynamic)	max. 150N			
Ring gear	Stainless steel hardened	Recommended inut speed	10000RPM			
Adapter plate	Stainless steel	Operating temperature range	-40ºC ~ +100ºC			
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH			
Axial play	0-0.3	Number of stages	1	2	3	4
Directions	CW/CCW	Permissible load (18mm from flange)	210N	310N	380N	380N

GEARBOX DATA

Number of stage	1			2		3			4			
Reduction ratio X:1	3.3	4	5.5	11 13 16 18 22	30	34 42 52 58	64 72 88	98 121 166	112 137 169 189 208 232	256 286 320 352 393 484	541 666	915
Reduction ratio absolute	13/4	4/1	11/2	169/16 13/1 16/1 143/8 22/1	121/4	2197/64 169/4 52/1 1859/32	64/1 143/2 88/1	1573/16 121/1 1331/8	28561/256 2197/16 169/1 24167/128 208/1 1859/8	256/1 286/1 20449/64 352/1 1573/4 484/1	17303/32 1331/2	14641/16
Motor shaft max. diametre (mm)	6		5	6	5	6		5	6			5
Gearbox lenght "L" (mm)	35.3			46.8		58.3			69.8			
Max. continuous torque (N.m)	3.5			7		14			15			
Max. intermittent torque (N.m)	5.25			10.5		21			22.5			
Average backlash no load	0.7°			0.8°		0.8°			0.8°			
Gearbox efficiency	90%			81%		73%			65%			
Max. mass inertia (g.cm²)	8.14			8.58		8.62			8.63			
Gearbox weight approx (g)	320			420		520			620			
gearbox model	AM-40HPA-X			AM-40HPB-X		AM-40HPC-X			AM-40HPD-X			

AM-40HP Example of combination



Recommend Motor:
Coreless Motor (w/E)
AM-CL3570GAN
AM-CL4071GAE

Brushless Motor (w/E)
AM-BL3660AN
AM-BL3675BF
AM-BL3690BF
AM-BL4060BF
AM-BD3660AN

Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN2211S***

Encoder T: AM-EN2412T***

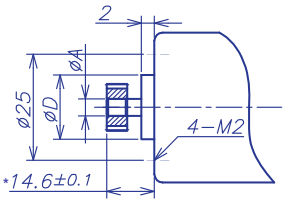
Suitable for Brushless Motor
Encoder S: AM-EN2211S***

Encoder T: AM-EN2412T***
AM-EN3612T***

INPUT GEARBOX DATA

Modulus	0.6		
Press angle	20°		
Teeth number	12	18	24
Max gear hole "A"	5	6	6
Max motor shaft	5	6	6
Motor dimension "D"	9.5	13	16

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	127.5	129	141.8
Gear box length L_1*	46.8	58.3	69.8
Motor length L_2	70	60	60
Encoder length L_3	10.7	10.7	12

*Note: If combined with AM-CL3570, L1=L+5mm, distance between gear and motor=14.6+5mm.

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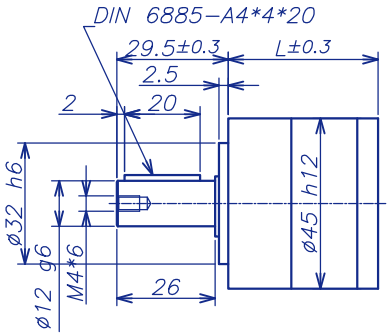
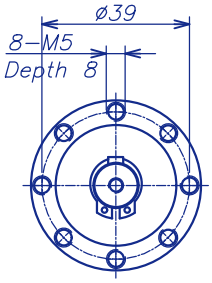
AM-45HP Series





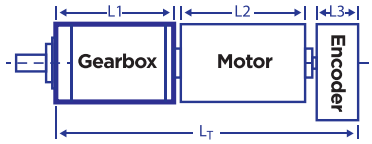
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (10mm from flange)	max 0.1mm
Output shaft	Stainless steel hardened	Permissible force press fits	max. 500 N
Main gear	Alloy Steel hardened	Permisssible axial load (dynamic)	max. 200N
Ring gear	Alloy Steel hardened	Recommended inut speed	10000RPM
Adapter plate	Stainless steel hardened	Operating temperature range	-40ºC ~ +100ºC
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH
Axial play	0-0.3	Number of stages	1 2 3 4
Directions	CW/CCW	Permissible load (18mm from flange)	315N 470N 550N 550N

GEARBOX DATA

Number of stage	1				2			3		4			
Reduction ratio X:1	3.3	4.0	5.2	8	11 13 16 21	17 27	32 42	37 44 53 58 69	107 139	178 193 213 231 277	300 361 427 462 555	469 721	853 1109
Reduction ratio absolute	10/3	4/1	26/5	8/1	100/9 40/3 16/1 104/5	52/3 676/25	32/1 208/5	1000/27 400/9 160/3 520/9 208/3	320/3 416/3	1600/9 5200/27 640/3 2080/9 832/3	2704/9 5408/15 1280/3 4160/9 1664/3	35152/75 10816/15	2560/3 3328/3
Motor shaft max. diametre (mm)	8		6	3	8	6	3	8	3	8		6	3
Gearbox lenght "L" (mm)	39.6				51.6			63.6		75.6			
Max. continuous torque (N.m)	4				15			30		30			
Max. intermittent torque (N.m)	5				18.75			37.5		37.5			
Average backlash no load	0.7°				0.8°			0.8°		0.8°			
Gearbox efficiency	90%				81%			73%		65%			
Max. mass inertia (g.cm²)	15.13				15.71			15.77		15.77			
Gearbox weight approx (g)	460				590			730		850			
gearbox model	AM-45HPA-X				AM-45HPB-X			AM-45HPC-X		AM-45HPD-X			

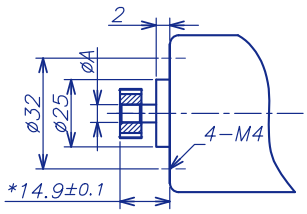
AM-45HP Example of combination



INPUT GEARBOX DATA

Modulus	0.6			
Press angle	20°			
Teeth number	9	15	21	27
Max gear hole "A"	3.0	6.0	8.0	8.0
Max motor shaft	3.0	6.0	8.0	8.0

MOTOR DIMENSION



Recommend Motor:

Coreless Motor (w/E):
AM-CL35***

Brushless Motor (w/E):
AM-BL36***
AM-BL40***
AM-BL45***
AM-BD36***

Recommend Encoder:

Suitable for Coreless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN2412T***

Suitable for Brushless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN3612T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	134.3	187.6
Gear box length L_1	63.6	75.6
Motor length L_2	60	100
Encoder length L_3	10.7	12

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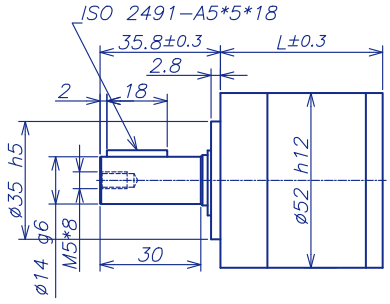
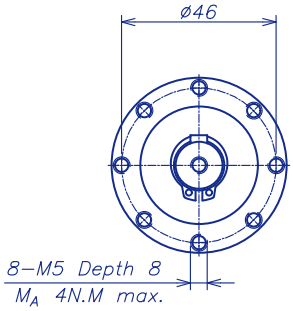
AM-52HP Series





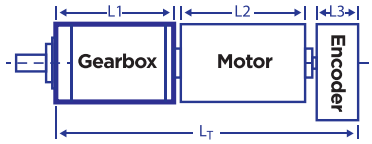
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (12mm from flange)	max 0.1mm
Output shaft	Stainless steel hardened	Permissible force press fits	max. 600 N
Main gear	Alloy Steel hardened	Permisssible axial load (dynamic)	max. 200N
Ring gear	Alloy Steel hardened	Recommended inut speed	8000RPM
Adapter plate	Aluminum alloy	Operating temperature range	-40ºC ~ +100ºC
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH
Axial play	0-0.3	Number of stages	1 2 3 4
Directions	CW/CCW	Permissible load (24mm from flange)	340N 520N 590N 590N

GEARBOX DATA

Number of stage	1			2			3			4		
Reduction ratio X:1	3.5	4.3	6	12 15 21	19 26	36	43 53 74	66 91	126	150 186 230 257 319 441	285 394 546	756
Reduction ratio absolute	7/2	13/3	6/1	49/4 91/6 21/1	169/9 26/1	36/1	343/8 637/12 147/2	1183/18 91/1	126/1	2401/16 4459/24 8281/36 1029/4 637/2 441/1	15379/54 1183/3 546/1	756/1
Motor shaft max. diametre (mm)	10	8	4	10	8	4	10	8	4	10	8	4
Gearbox lenght "L" (mm)	48.3			64.8			81.3			97.8		
Max. continuous torque (N.m)	6			20			50			50		
Max. intermittent torque (N.m)	9			30			75			75		
Average backlash no load	0.6°			0.7°			0.7°			0.7°		
Gearbox efficiency	90%			81%			73%			65%		
Max. mass inertia (g.cm²)	25.34			26.75			26.86			26.87		
Gearbox weight approx (g)	520			750			970			1200		
gearbox model	AM-52HPA-X			AM-52HPB-X			AM-52HPC-X			AM-52HPD-X		

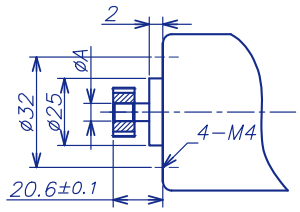
AM-52HP Example of combination



INPUT GEARBOX DATA

Modulus	0.7		
Press angle	20°		
Teeth number	12	18	24
Max gear hole "A"	4	8.0	10
Max motor shaft	4	8.0	10

MOTOR DIMENSION



Recommend Motor:

Coreless Motor (w/E):
-

Brushless Motor (w/E):
AM-BL36***
AM-BL40***
AM-BL45***

Recommend Encoder:

Suitable for Coreless Motor Encoder S: -

Suitable for Brushless Motor
Encoder S: AM-EN2211S***

Encoder T: AM-EN3612T***

GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	192
Gear box length L_1	81.3
Motor length L_2	100
Encoder length L_3	10.7

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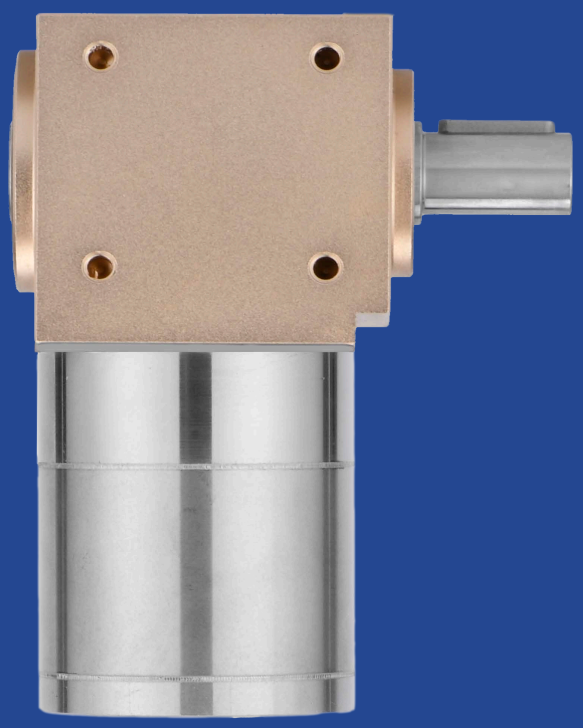
RIGHT ANGLE PLANETARY GEARBOX

HIGH PERFORMANCE SERIES

The angle between the output shaft and input shaft of a right angle planetary gearbox is 90 degrees, which means they are in a perpendicular relationship. This design allows the gearbox to save space during installation and is suitable for situations that require 360 degree installation without dead corners. Its compact structure can withstand high load conditions with small volume and light weight.



AM-40HR

Company Name Abbreviation

AM - 40HRA - 5.5:1

Gearbox Dimension
40 - Diameter (mm)

Gearbox Type
HR - Right angle planetary gearbox

Gearbox Stage
A : One Stage
B : Two Stage
C : Three Stage
D : Four Stage

Gear Ratio

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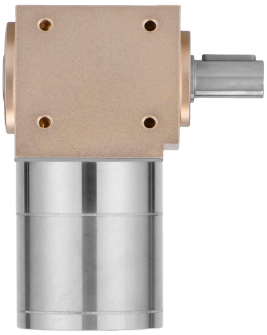
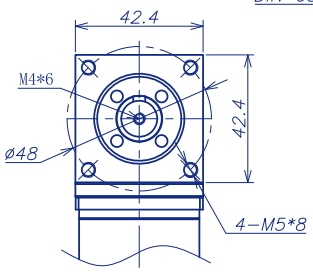
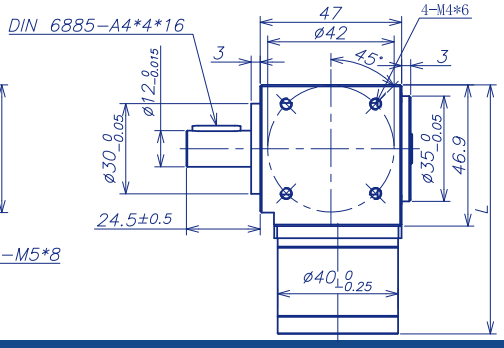
AM-40HR Series







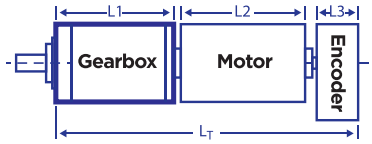
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (10mm from flange)	max 0.1mm
Output shaft	Stainless steel hardened	Permissible force press fits	max. 150 N
Main gear	Alloy Steel hardened	Permisssible axial load (dynamic)	max. 150N
Ring gear	Alloy Steel hardened	Recommended inut speed	10000RPM
Adapter plate	Aluminum alloy	Operating temperature range	-40°C ~ +100°C
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH
Axial play	0-0.3	Number of stages	1 2 3 4
Directions	CW/CCW	Permissible load (17mm from flange)	210N 310N 380N 380N

GEARBOX DATA

Number of stage	1			2		3			4		
Reduction ratio X:1	3.3	4	5.5	11 13 16 18 22	30	34 42 52 58	64 72 88	98 121 166	112 137 169 189 208 232	256 286 320 352 393 484	541 666 915
Reduction ratio absolute	13/4	4/1	11/2	169/16 13/1 16/1 143/8 22/1	121/4	2197/64 169/4 52/1 1859/32	64/1 143/2 88/1	1573/16 121/1 1331/8	2856/256 2197/16 169/1 24167/128 208/1 1859/8	256/1 286/1 20449/64 352/1 1573/1 484/1	17303/32 1331/2 14641/16
Motor shaft max. diametre (mm)	6		5	6	5	6		5	6		5
Gearbox lenght "L" (mm)	82.2			93.7		105.2			116.7		
Max. continuous torque (N.m)	3.5			7		12.6			12.6		
Max. intermittent torque (N.m)	5.25			10.5		19			19		
Average backlash no load	0.9°			1°		1°			1°		
Gearbox efficiency	81%			73%		65%			59%		
Max. mass inertia (g.cm²)	8.14			8.58		8.62			8.63		
Gearbox weight approx (g)	700			800		900			1000		
gearbox model	AM-40HRA-X			AM-40HRB-X		AM-40HRC-X			AM-40HRD-X		

AM-40HR Example of combination



Recommend Motor:

Coreless Motor (w/E):
AM-CL3570GA

Brushless Motor (w/E):
AM-BL32***
AM-BL36***
AM-BL40***

Recommend Encoder:

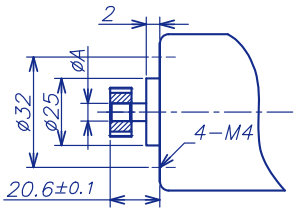
Suitable for Coreless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN2412T***

Suitable for Brushless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN2412T***
AM-EN3612T***

INPUT GEARBOX DATA

Modulus	0.6		
Press angle	20°		
Teeth number	12	18	24
Max gear hole "A"	5	6	6
Max motor shaft	5	6	6

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	162.9
Gear box length L_1	82.2
Motor length L_2	70
Encoder length L_3	10.7

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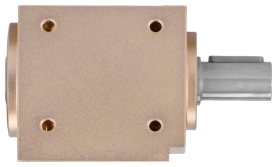
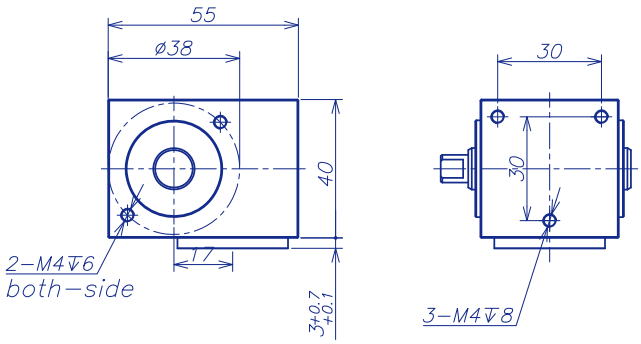
AM-40WG Series





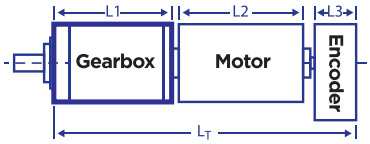
GEARBOX CHARACTER

Gear type	worm and worm gear	Permissible force press fits	max. 150 N
Output shaft	Stainless steel hardened	Permisssible axial load (dynamic)	max. 100N
Worm	Alloy structural steel	Recommended inut speed	6100RPM
Worm Gear	Aluminum bronze	Operating temperature range	-40°C ~ +100°C
Adapter plate	Aluminium alloy	Operating humidity range	10-90%RH
Bearing AT output	Ball bearing	Number of stages	1
Directions	CW/CCW	Permissible load (6mm from flange)	200N

GEARBOX DATA

Number of stage	1										
Reduction ratio X:1	5										
Reduction ratio absolute	5/1										
Motor shaft max. diametre (mm)	6										
Gearbox lenght "L" (mm)	40										
Max. continuous torque (N.m)	0.32										
Max. intermittent torque (N.m)	1.5										
Average backlash no load	0.5°										
Gearbox efficiency	41.6%										
Max. mass inertia (g.cm²)	0.05										
Gearbox weight approx (g)	790										
gearbox model	AM-40WG-X										

AM-40WG Example of combination



Recommend Motor:

Coreless Motor (w/E):
AM-CL4071GA

Brushless Motor (w/E):
AM-BL40***

Recommend Encoder:

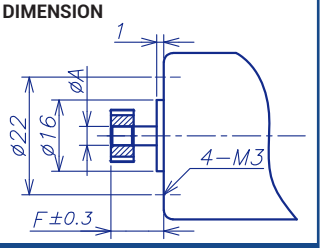
Suitable for Coreless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN2412T***

Suitable for Brushless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN2412T***
AM-EN3612T***

INPUT GEARBOX DATA

Modulus	0.95
Press angle	20°
Teeth number	1
Max gear hole "A"	6
Max motor shaft	6

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	121.7	110.7
Gear box length L_1	40	40
Motor length L_2	71	60
Encoder length L_3	10.7	10.7

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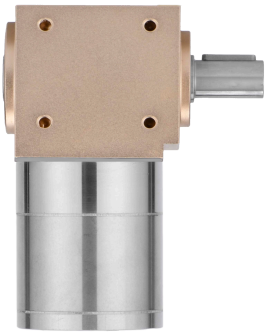
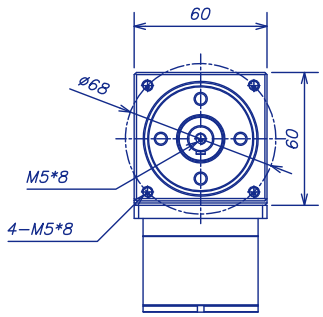
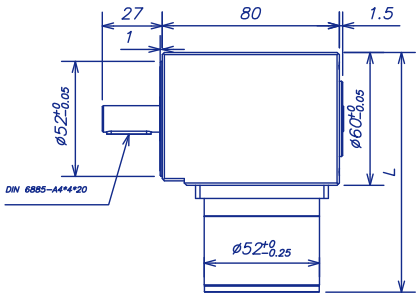
AM-52HR Series







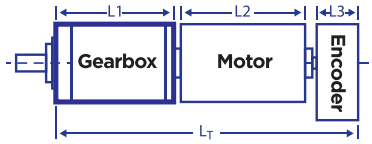
GEARBOX CHARACTER

Gear type	Straight teeth	Radial Play (12mm from flange)	max 0.1mm			
Output shaft	Stainless steel hardened	Permissible force press fits	max. 500 N			
Main gear	Alloy Steel hardened	Permisssible axial load (dynamic)	max. 200N			
Ring gear	Alloy Steel hardened	Recommended inut speed	6000RPM			
Adapter plate	Aluminum alloy	Operating temperature range	-40°C ~ +100°C			
Bearing AT output	Ball bearing	Operating humidity range	10-90%RH			
Axial play	0-0.3	Number of stages	1	2	3	4
Directions	CW/CCW	Permissible load (12mm from flange)	420N	630N	900N	900N

GEARBOX DATA

Number of stage	1		2		3		4		
Reduction ratio X:1	3.5	4.3	12 15 21	19 26	43 53 66 74 126	81 91 113 156	150 186 230 257 285	319 394 441 546 756	353 488 676 936
Reduction ratio absolute	7/2	13/3	49/4 91/6 21/1	169/9 26/1	343/8 637/12 1183/18 147/2 126/1	2197/27 91/1 338/3 156/1	2401/16 4459/24 8281/36 1029/4 15379/54	637/2 1183/3 441/1 546/1 756/1	28561/81 4394/9 676/1 936/1
Motor shaft max. diametre (mm)	10	8	10	8	10	8	10		8
Gearbox lenght "L" (mm)	106.3		122.8		139.3		155.8		
Max. continuous torque (N.m)	4		15		30		30		
Max. intermittent torque (N.m)	6		22.5		45		45		
Average backlash no load	0.6°		0.7°		0.7°		0.7°		
Gearbox efficiency	90%		81%		73%		65%		
Max. mass inertia (g.cm²)	19.99		20.98		21.06		21.07		
Gearbox weight approx (g)	1386		1596		1806		2016		
gearbox model	AM-52HRA-X		AM-52HRB-X		AM-52HRC-X		AM-52HRD-X		

AM-52HR Example of combination



Recommend Motor:

Coreless Motor (w/E):
AM-CL40**GA
AM-CL50109GA

Brushless Motor (w/E):
AM-BL36*** AM-BL45***
AM-BL40*** AM-BL52***

Recommend Encoder:

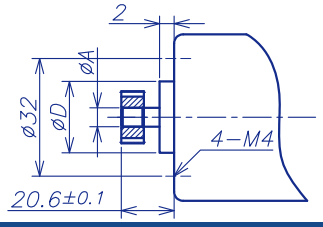
Suitable for Coreless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN2412T***

Suitable for Brushless Motor
Encoder S: AM-EN2211S***
Encoder T: AM-EN3612T***

INPUT GEARBOX DATA

Modulus	0.7		
Press angle	20°		
Teeth number	12	18	24
Max gear hole "A"	-	8	10
Max motor shaft	-	15	19

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	190
Gear box length L_1	106.3
Motor length L_2	100
Encoder length L_3	10.7

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ASSUN
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HARMONIC DRIVE GEARBOX MINI

PRECISION SERIES

Assun harmonic gearbox is a gearbox that uses a flexible ring called a wave generator to transmit torque from the input shaft to the output shaft. The wave generator is in contact with two other components: a flexible spline and a circular spline; And equipped with a series of small zero clearance gears and actuators. Very suitable for semiconductors and robots.

AM-11XB(CSF-2.5)

AM-13XB(CSF-03)

AM-20XB(CSF-05)

AM-30XB(CSF-08)

AM-40XB(CSF-11)

Company Name Abbreviation

AM - 13 XB (CSF-03) -30

Gearbox Dimension
13 - Diameter (mm)

Gearbox Type
XB- Harmonic gearbox

Gearbox Stage
03
05
08
11

Gear Ratio

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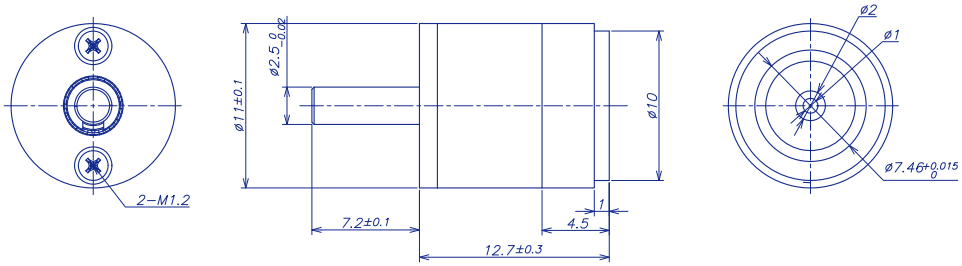
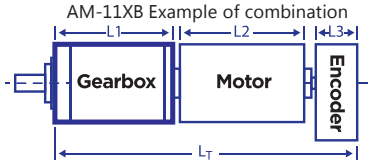
AM-11XB(CSF-2.5) Series



PARAMETER				
Reduction ratio	30	50		
Nominal torque at input speed 2000r/min(N.m)	0.06	0.11		
Peak torque at start-stop(N.m)	0.13	0.21		
Maximum of average load torque(N.m)	0.1	0.13		
Max intermittent torque(N.m)	0.21	0.40		
Backlash(Arcses)	≤20	≤20		
Maximum input speed(r/min)	7000			
Average input speed(r/min)	3500			
Inertia(1/4GD)(g.cm^2)	1x10^{-4}			
Weight (g)	≤0.03kg			
Designed life	7000			
Efficiency in nominal torque(25℃)	62%	65%		
Harmonic drive gearbox model	AM-11XBC-30	AM-11XBC-50		

AM-11XB Example of combination



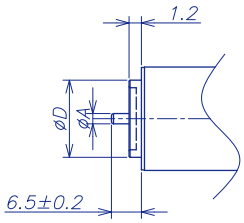
Recommend Motor:
Coreless Motor (w/E)
AM-CL10**
AM-CL12**
Brushless Motor (w/E)
AM-BL12**

Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN1008S***
Encoder T: -

Suitable for Brushless Motor Encoder S:
AM-EN1008S***
Encoder T: -

INPUT GEARBOX DATA	
Max gear hole "A"	ϕ1 H7

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"	
Gear motor length L_T	45.2
Harmonic length L_1	12.7
Motor length L_2	25
Encoder length L_3	7.5

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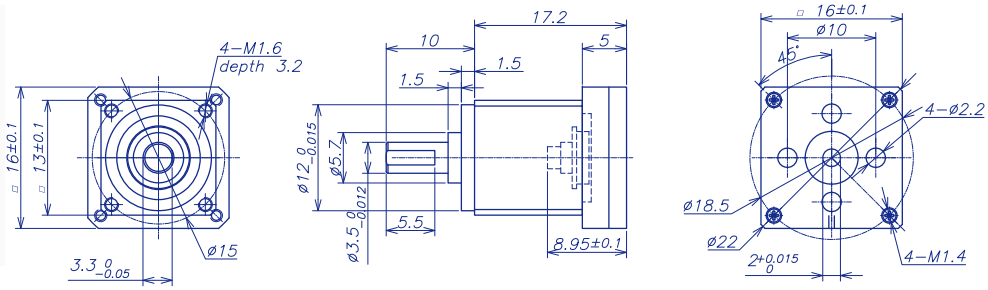
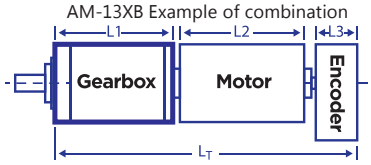
AM-13XB(CSF-03) Series



PARAMETER				
Reduction ratio	30	50		
Nominal torque at input speed 2000r/min(N.m)	0.06	0.11		
Peak torque at start-stop(N.m)	0.13	0.21		
Maximum of average load torque(N.m)	0.1	0.13		
Max intermittent torque(N.m)	0.22	0.41		
Backlash(Arcses)	≤20	≤20		
Maximum input speed(r/min)	10000			
Average input speed(r/min)	6500			
Inertia(1/4GD)(g.cm^2)	5.3×10^{-7}			
Weight (g)	≤0.03kg			
Designed life	7000			
Efficiency in nominal torque(25℃)	62%	65%		
Harmonic drive gearbox model	AM-13XBC-30	AM-13XBC-50		

AM-13XB Example of combination



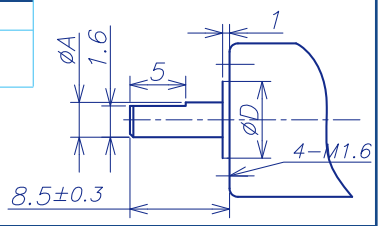
Recommend Motor:
Coreless Motor (w/E)
AM-CL1633/43
Brushless Motor (w/E)
AM-BL16**

Recommend Encoder:
Suitable for Coreless Motor
Encoder S: AM-EN1611S***
Encoder T: -

Suitable for Brushless Motor
Encoder S: AM-EN1611S***
Encoder T: AM-EN1612T***

INPUT GEARBOX DATA	
Max gear hole "A"	ϕ 2 H7

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"	
Gear motor length L_T	55.4
Harmonic length L_1	11.7
Motor length L_2	33
Encoder length L_3	10.7

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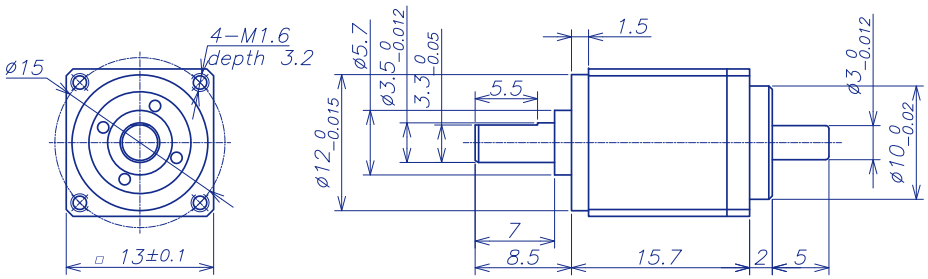
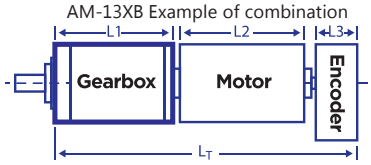
AM-13XB(CSF-03) (Double output shaft) Series



PARAMETER				
Reduction ratio	30	50		
Nominal torque at input speed 2000r/min(N.m)	0.06	0.11		
Peak torque at start-stop(N.m)	0.13	0.21		
Maximum of average load torque(N.m)	0.1	0.13		
Max intermittent torque(N.m)	0.22	0.41		
Backlash(Arcses)	≤20	≤20		
Maximum input speed(r/min)	10000			
Average input speed(r/min)	6500			
Inertia(1/4GD)(g.cm^2)	$5.3x10^{-7}$			
Weight (g)	≤0.03kg			
Designed life	7000			
Efficiency in nominal torque(25℃)	62%	65%		
Harmonic drive gearbox model	AM-13XBC-30	AM-13XBC-50		

AM-13XB Example of combination



Recommend Motor:
Coreless Motor (w/E)
-
Brushless Motor (w/E)
-

Recommend Encoder:
Suitable for Coreless Motor
Encoder S: -
Encoder T: -

Suitable for Brushless Motor
Encoder S: -
Encoder T: -

INPUT GEARBOX DATA	
Max gear hole "A"	-

MOTOR DIMENSION

GEARBOX MOTOR LENGTH "LT"	
Gear motor length L_T	-
Harmonic length L_1	-
Motor length L_2	-
Encoder length L_3	-

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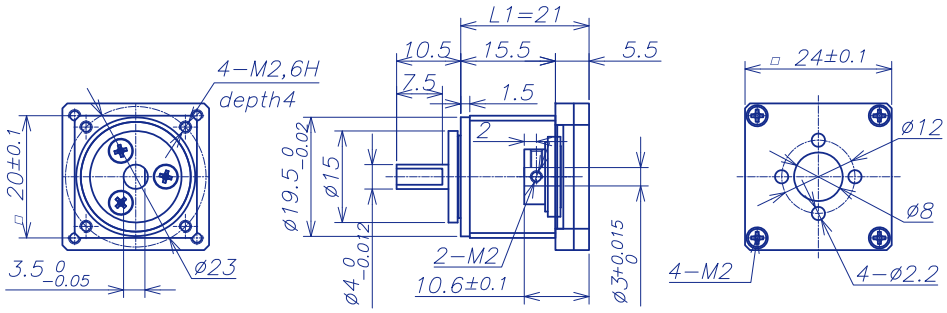
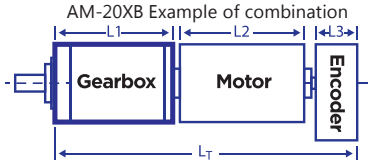
AM-20XB(CSF-05) Series



PARAMETER				
Reduction ratio	30	50	80	
Nominal torque at input speed 2000r/min(N.m)	0.25	0.4	0.52	
Peak torque at start-stop(N.m)	0.5	0.9	1.35	
Maximum of average load torque(N.m)	0.38	0.53	0.84	
Max intermittent torque(N.m)	0.9	1.8	2.5	
Backlash(Arcses)	≤20	≤20	≤10	
Maximum input speed(r/min)	10000			
Average input speed(r/min)	6500			
Inertia(1/4GD)(g.cm^2)	$2.5x10^{-4}$			
Weight (g)	≤0.05kg			
Designed life	7000			
Efficiency in nominal torque(25℃)	62%	65%	60%	
Harmonic drive gearbox model	AM-20XBC-30	AM-20XBC-50	AM-20XBC-80	

AM-20XB Example of combination



Recommend Motor:
Coreless Motor (w/E)
AM-CL22**

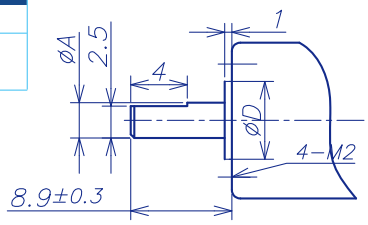
Brushless Motor (w/E)
AM-BL20**
AM-BL24**

Recommend Encoder:
Suitable for Coreless Motor
Encoder S:
AM-EN1611S***
Encoder T:
-

Suitable for Brushless Motor
Encoder S:
AM-EN1611S***
Encoder T:
AM-EN1612T***

INPUT GEARBOX DATA	
Max gear hole "A"	ϕ 3h7
With 2-M2x3 GB/T77-2000 hexagon flat-end set screws	

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"	
Gear motor length L_T	70
Harmonic length L_1	19.3
Motor length L_2	40
Encoder length L_3	10.7

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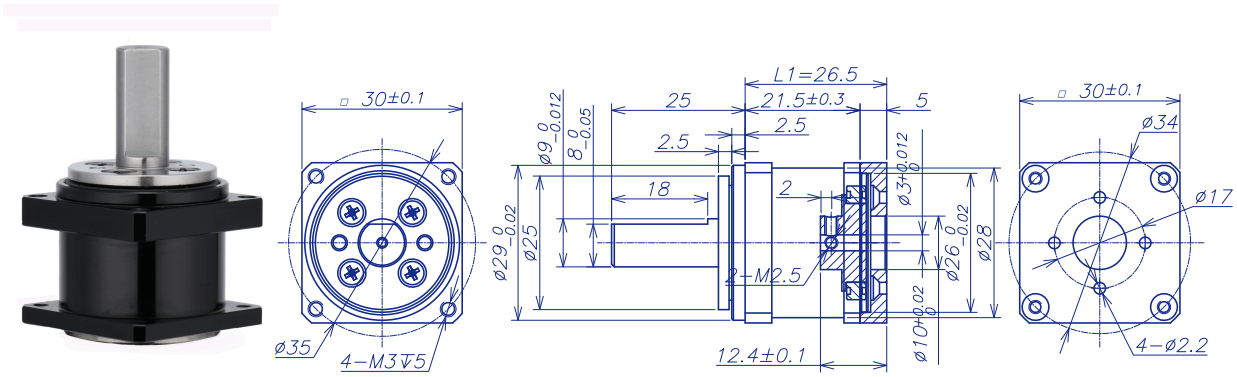
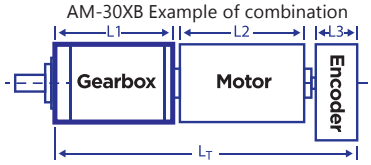
AM-30XB(CSF-08) Series



PARAMETER				
Reduction ratio	30	50	80	100
Nominal torque at input speed 2000r/min(N.m)	0.9	1.8	2.2	2.4
Peak torque at start-stop(N.m)	1.8	3.3	4.3	4.8
Maximum of average load torque(N.m)	1.4	2.3	2.9	3.3
Max intermittent torque(N.m)	3.3	6.6	8	9
Backlash(Arcses)	≤20	≤20	≤10	≤10
Maximum input speed(r/min)	8500			
Average input speed(r/min)	3500			
Inertia(1/4GD)(g.cm^2)	3.2x10^{-3}			
Weight (g)	≤0.07kg			
Designed life	7000			
Efficiency in nominal torque(25℃)	62%	65%	60%	60%
Harmonic drive gearbox model	AM-30XBC-30	AM-30XBC-50	AM-30XBC-80	AM-30XBC-100

AM-30XB Example of combination



Recommend Motor:
Coreless Motor (w/E)
AM-CL25**
AM-CL28**

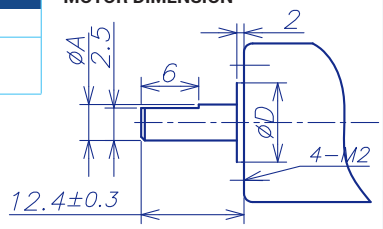
Brushless Motor (w/E)
AM-BL24**
AM-BL28**

Recommend Encoder:
Suitable for Coreless Motor
Encoder S:
AM-EN1611S***
Encoder T:
-

Suitable for Brushless Motor
Encoder S:
AM-EN1611S***
Encoder T:
AM-EN1612T***

INPUT GEARBOX DATA	
Max gear hole "A"	ϕ 3h7
With 2-M2.5x4 GB/T77-2000 hexagon flat-end set screws	

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"	
Gear motor length L_T	90.2
Harmonic length L_1	26.5
Motor length L_2	53
Encoder length L_3	10.7

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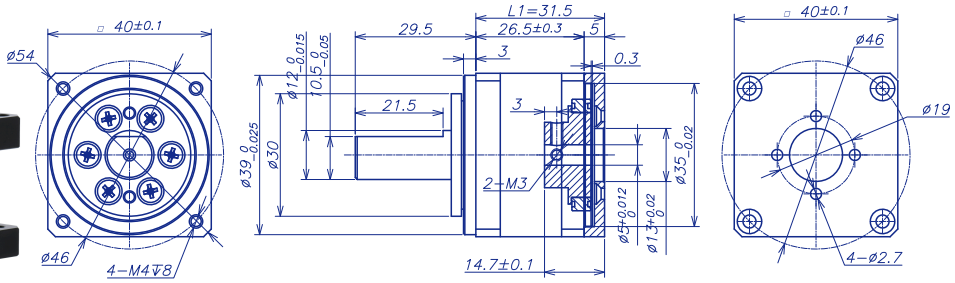
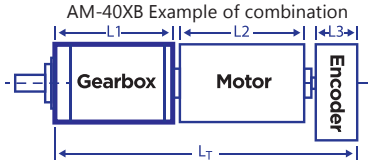
AM-40XB(CSF-11) Series



PARAMETER

Reduction ratio	30	50	80	100
Nominal torque at input speed 2000r/min(N.m)	2.1	3.5	4.5	5
Peak torque at start-stop(N.m)	4.1	8.3	10.2	11
Maximum of average load torque(N.m)	3.1	5.5	8.5	8.9
Max intermittent torque(N.m)	8.2	17	22	25
Backlash(Arcses)	≤20	≤20	≤20	≤10
Maximum input speed(r/min)	8500			
Average input speed(r/min)	3500			
Inertia(1/4GD)(g.cm^2)	$1.4x10^{-2}$			
Weight (g)	≤0.14kg			
Designed life	7000			
Efficiency in nominal torque(25℃)	62%	65%	60%	60%
Harmonic drive gearbox model	AM-40XBC-30	AM-40XBC-50	AM-40XBC-80	AM-40XBC-100

AM-40XB Example of combination



Recommend Motor:
Coreless Motor (w/E)
AM-CL35**
AM-CL40**

Brushless Motor (w/E)
AM-BL36**
AM-BL40**

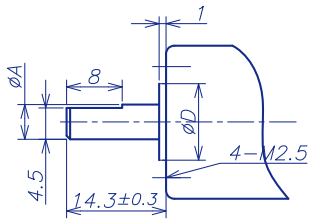
Recommend Encoder:
Suitable for Coreless Motor
Encoder S:
AM-EN2211S***
Encoder T:
AM-EN2412T***

Suitable for Brushless Motor
Encoder S:
AM-EN2211S***
Encoder T:
AM-EN2412T***

INPUT GEARBOX DATA

Max gear hole "A"	ϕ 5 h7
With 2-M3x4 GB/T77-2000 hexagon flat-end set screws	

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"

Gear motor length L_T	112.7
Harmonic length L_1	31.5
Motor length L_2	70.5
Encoder length L_3	10.7

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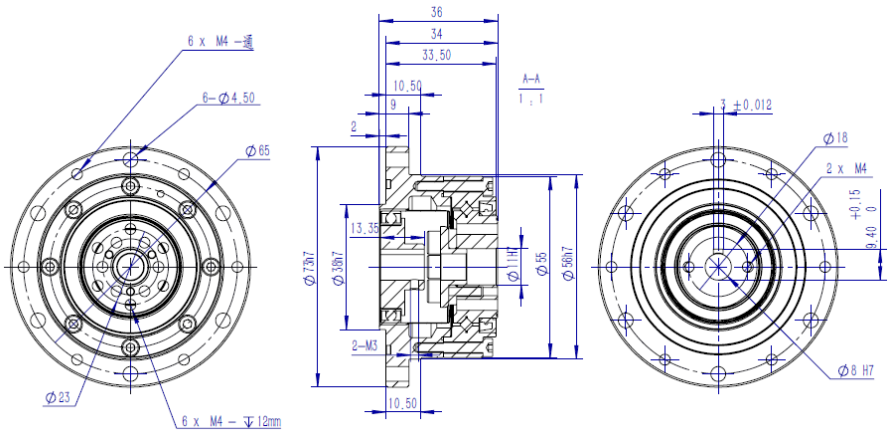
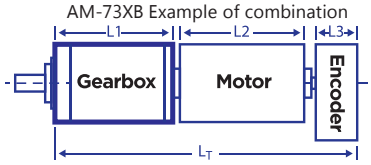
AM-73XB(CSF-14) Series



PARAMETER				
Reduction ratio	30	50	80	100
Nominal torque at input speed 2000r/min(N.m)	4	5.4	7.8	7.8
Peak torque at start-stop(N.m)	9	18	23	28
Maximum of average load torque(N.m)	6.8	6.9	11	11
Max intermittent torque(N.m)	17	35	47	54
Backlash(Arcses)	≤20	≤20	≤20	≤10
Maximum input speed(r/min)	8000			
Average input speed(r/min)	3500			
Inertia(1/4GD)(g.cm^2)	1.4x10^{-2}			
Weight (g)	≤0.49kg			
Designed life	7000			
Efficiency in nominal torque(25℃)	62%	65%	60%	60%
Harmonic drive gearbox model	AM-73XBC-30	AM-73XBC-50	AM-73XBC-80	AM-73XBC-100

AM-73XB Example of combination



Recommend Motor:
Coreless Motor (w/E)
AM-CL50**

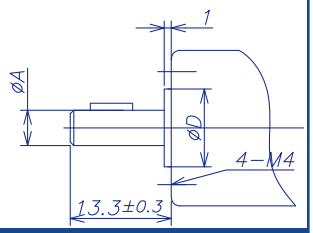
Brushless Motor (w/E)
AM-BL45**

Recommend Encoder:
Suitable for Coreless Motor
Encoder S:
AM-EN2211S***
Encoder T:
AM-EN2412T***

Suitable for Brushless Motor
Encoder S:
AM-EN2211S***
Encoder T:
AM-EN3612T***

INPUT GEARBOX DATA	
Max gear hole "A"	ϕ 8 h7
With 2-M3x4 GB/T77-2000 hexagon flat-end set screws	

MOTOR DIMENSION



GEARBOX MOTOR LENGTH "LT"	
Gear motor length L_T	150.2
Harmonic length L_1	39.5
Motor length L_2	100
Encoder length L_3	10.7

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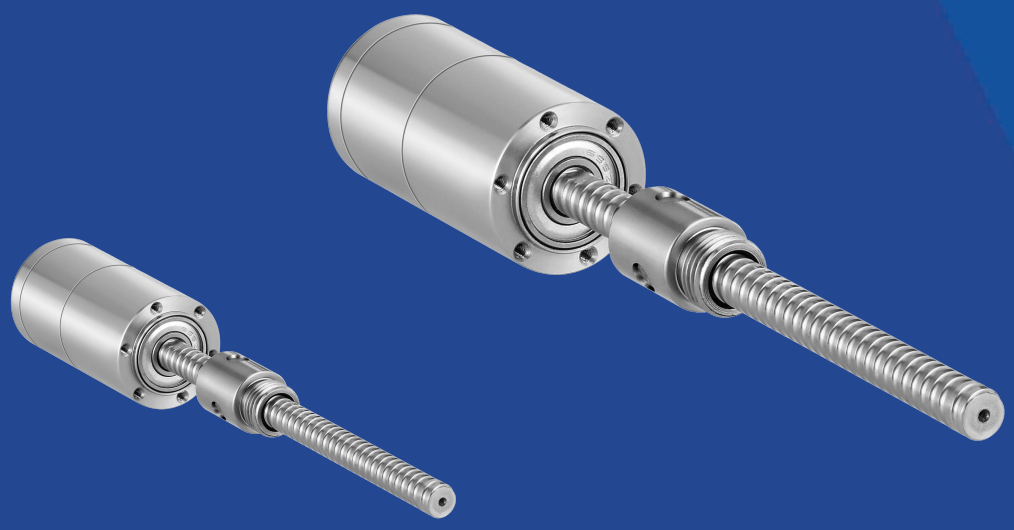
PLANETARY GEARBOX

SCREW PRECISION SERIES

The precision planetary gearbox with Assun screw adopts the most advanced production technology to achieve efficient conversion of torque and thrust.With diameters from 10mm to 52mm， screw precision gearbox meet the different application needs of customers.



AM-BS0303-56-10GP	AM-BS0602-151-22GP	AM-BS1505-251-45GP
AM-BS0402-81-12GP	AM-BS0802-151-28GP	AM-BS2005-301-52GP
AM-BS0502-102-16GP	AM-BS1002-201-32GP	
AM-BS0602-151-19GP	AM-BS1204-201-36GP	

AM-BS 20 05-301-52 GP A-180

- Company Name Abbreviation
- Screw type
  - BS:Ball screw
  - TS:Trapezoidal lead screw
  - MS:Screw
- Screw diameter
- Lead
- Length
- Overall dimensions
- Gearbox Type
  - P:Regular
  - GP:Precisions
  - HP:High Performance
- Gearbox Stage
  - A: One Stage
  - B: Two Stage
  - C: Three Stage
  - D: Four Stage
  - E: Five Stage
- Reduction ratio

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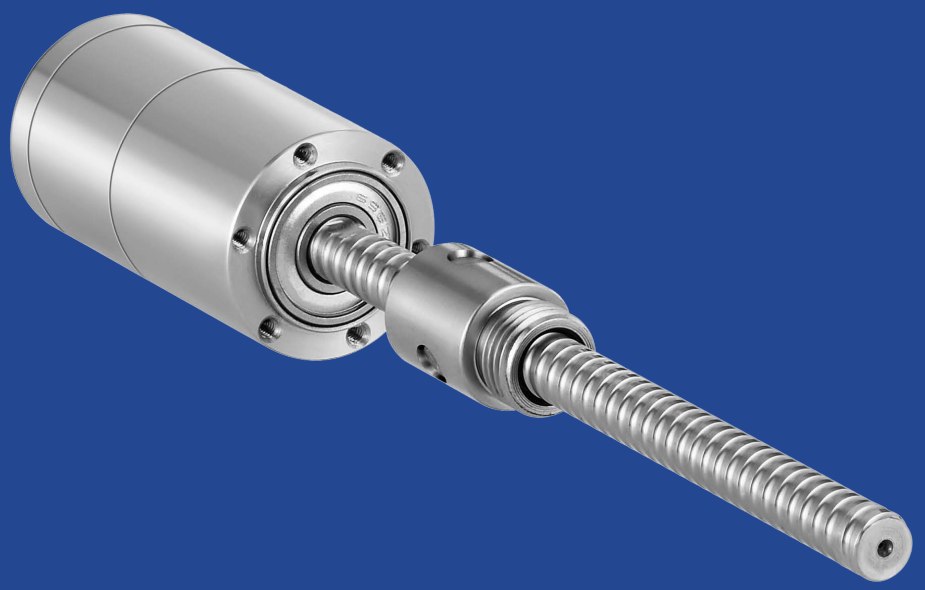
BALL SCREW GEARBOX

SCREW PRECISION SERIES

Assun ball screw precision planetary gearbox uses balls to reduce friction, with high efficiency, high precision, and high load. The diameter ranges from 10mm to 52mm, and the ball screw precision gearbox meets the application needs of customers in precision control.



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SCREW PLANETARY GEARBOX

BALL SCREW

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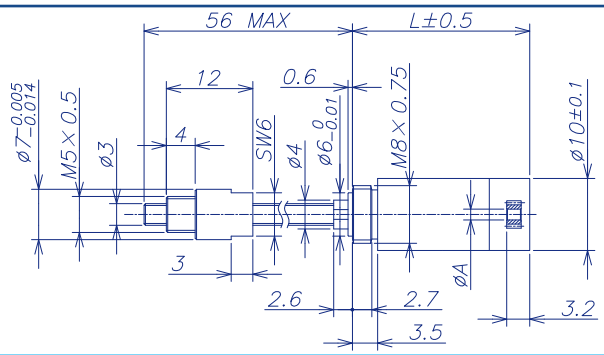
AM-BS0301-56-10GP Series



SCREW CHARACTER			
Screw(Diameter*Lead)	ϕ 3*1，S55C,hardened	Radial play (5mm from flange)	＜ 0.1mm
Standard length	56mm	Axial play	preloaded
Special length（5mm steps）	Max.120mm	Max.countinuous input speed	12000rpm
Nut （standard）	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC
Material	15CrMo，hardended	Max.axial load(static)	100N
Axial play	＜0.005mm	Number of stages	1 2 3 4 5
Planetary	straight teeth	Max. radial load: （5mm from flange）	10N 15N 17N 17N 17N
Bearing	ball bearing/thrust ball bearing		

SCREW DRIVE DATA								
Reduction	1:1	4:1	16:1	64:1	256:1	1024:1		
Absolute reduction	1/1	4/1	16/1	64/1	256/1	1024/1		
Max.feed velocity (mm/s)	150	50	12.5	3.1	0.78	0.19		
Max.feed force (continous) (N)	6	10	15	25	40	63		
Max.feed force (intermittent) (N)	12	20	30	50	80	100		
Max. Gear Hole "A"	1.5	1.5	1.5	1.5	1.5	1.5		
Reduction								
Absolute reduction								
Max.feed velocity (mm/s)								
Max.feed force (continous) (N)								
Max.feed force (intermittent) (N)								
Max. Gear Hole "A"								
Reduction								
Absolute reduction								
Max.feed velocity (mm/s)								
Max.feed force (continous) (N)								
Max.feed force (intermittent) (N)								
Max. Gear Hole "A"								
Reduction								
Absolute reduction								
Max.feed velocity (mm/s)								
Max.feed force (continous) (N)								
Max.feed force (intermittent) (N)								
Max. Gear Hole "A"								
Reduction								
Absolute reduction								
Max.feed velocity (mm/s)								
Max.feed force (continous) (N)								
Max.feed force (intermittent) (N)								
Max. Gear Hole "A"								
Number of stages	0	1	2	3	4	5		
Max.efficiency gearhead incl.screw (%)	93	84	75	68	61	55		
Weight (g)	35	35	40	45	50	55		
Average backlash no load (°)	1.1°	1.3°	1.5°	1.6°	1.6°	1.6°		
Mechanical positioning accuracy (mm)	0.038	0.039	0.041	0.042	0.042	0.042		
Mass inertia gearhead incl.screw (g.cm²)	0.55	0.05	0.01	0.01	0.01	0.01		
Gearhead length L1 (mm)	25	25	28.2	31.4	34.6	37.8		

1/ based on screw length 56mm (standard length) 2/ for reduction 1:1=4500rpm For the recommended combination specs，visit AM-10GP.

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BALL SCREW

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SCREW PLANETARY GEARBOX

BALL SCREW

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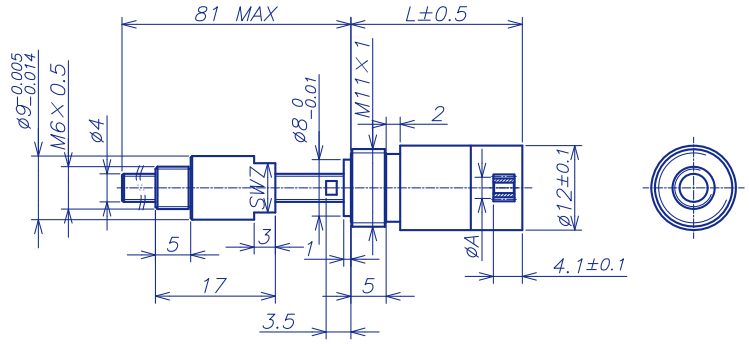
AM-BS0402-81-12GP Series



SCREW CHARACTER								
Screw(Diameter*Lead)	ϕ 4*2，S55C，hardened	Radial play (5mm from flange)	＜ 0.1mm					
Standard length	81mm	Axial play	preloaded					
Special length（5mm steps）	Max.150mm	Max.countinuous input speed	12000rpm					
Nut （standard）	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC					
Material	15CrMo，hardended	Max.axial load(static)	300N					
Axial play	＜0.005mm	Number of stages	0	1	2	3	4	
Planetary	straight teeth	Max. radial load: （5mm from flange)	45N	50N	50N	50N	50N	
Bearing	ball bearing/thrust ball bearing							

SCREW DRIVE DATA								
Reduction	1:1	4:1	16:1	64:1	256:1			
Absolute reduction	1/1	4/1	16/1	64/1	256/1			
Max.feed velocity (mm/s)	150	100	25	6.3	1.6			
Max.feed force (continous) (N)	20	29	46	73	116			
Max.feed force (intermittent) (N)	40	58	92	146	232			
Max. Gear Hole "A"	1.5	1.5	1.5	1.5	1.5			
Reduction		5.3:1	21:1	85:1	341:1			
Absolute reduction		16/3	64/3	256/3	1024/3			
Max.feed velocity (mm/s)		75	18.8	4.7	1.2			
Max.feed force (continous) (N)		32	51	80	127			
Max.feed force (intermittent) (N)		64	102	160	254			
Max. Gear Hole "A"		1.2	1.5	1.5	1.5			
Reduction			28:1	114:1	455:1			
Absolute reduction			256/9	1024/9	4096/9			
Max.feed velocity (mm/s)			14	3.5	0.9			
Max.feed force (continous) (N)			56	88	140			
Max.feed force (intermittent) (N)			112	176	280			
Max. Gear Hole "A"			1.2	1.5	1.5			
Reduction				152:1	607:1			
Absolute reduction				4096/27	16384/27			
Max.feed velocity (mm/s)				2.6	0.7			
Max.feed force (continous) (N)				97	154			
Max.feed force (intermittent) (N)				194	300			
Max. Gear Hole "A"				1.2	1.5			
Reduction					809:1			
Absolute reduction					65536/81			
Max.feed velocity (mm/s)					0.5			
Max.feed force (continous) (N)					170			
Max.feed force (intermittent) (N)					300			
Max. Gear Hole "A"					1.2			
Number of stages	0	1	2	3	4			
Max.efficiency gearhead incl.screw (%)	93	84	75	68	61			
Weight (g)	35	30	30	35	40			
Average backlash no load (°)	1.1°	1.3°	1.5°	1.6°	1.6°			
Mechanical positioning accuracy (mm)	0.038	0.039	0.041	0.042	0.042			
Mass inertia gearhead incl.screw (g.cm²)	0.78	0.05	0.01	0.01	0.01			
Gearhead length L1 (mm)	24.6	24.6	29.3	34.0	48.7			

1/ based on screw length 80mm (standard length) 2/ for reduction 1:1=4500rpm For the recommended combination specs，visit AM-12GP.

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SCREW PLANETARY GEARBOX

BALL SCREW

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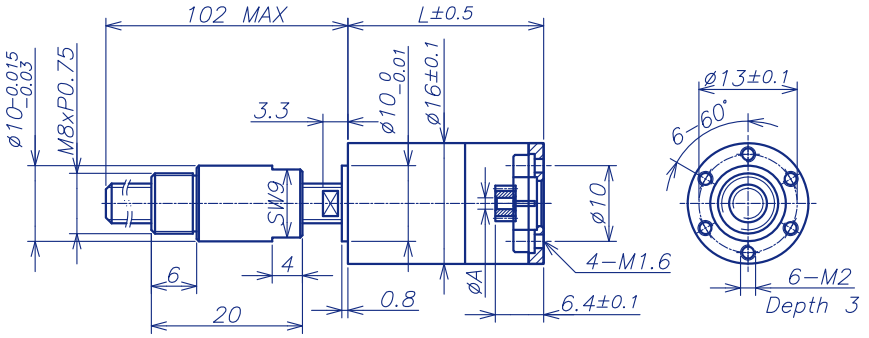
AM-BS0502-102-16GP Series



SCREW CHARACTER							
Screw(Diameter*Lead)	ϕ5*2, S55C, hardened	Radial play (5mm from flange)	< 0.05mm				
Standard length	102mm	Axial play	preloaded				
Special length (5mm steps)	Max.200mm	Max.countinuous input speed	12000rpm				
Nut (standard)	thread nut	Recommended Temperature Range	-15°C ~ +80°C				
Material	15CrMo, hardended	Max.axial load(static)	400N				
Axial play	<0.01mm	Number of stages	0	1	2	3	4
Planetary	straight teeth	Max. radial load: (6mm from flange)	20N	40N	60N	80N	80N
Bearing	ball bearing/thrust ball bearing						

SCREW DRIVE DATA								
Reduction	1:1	3.8:1	14:1	29:1	53:1	89:1	198:1	455:1
Absolute reduction	1/1	15/4	225/16	729/25	3375/64	4617/52	50625/256	5000211/10985
Max.feed velocity (mm/s)	150	106.7	28.4	13.7	7.6	4.5	2	0.9
Max.feed force (continous) (N)	54	61	94	120	146	174	227	300
Max.feed force (intermittent) (N)	149	168	256	331	400	400	400	400
Max. Gear Hole "A"	1.5	2	2	1.5	2	2	2	2
Reduction		4.4:1	16:1		62:1	104:1	231:1	561:1
Absolute reduction		57/13	855/52		12825/208	87723/845	192375/832	236852/4225
Max.feed velocity (mm/s)		91.2	24.3		6.5	3.9	1.7	0.7
Max.feed force (continous) (N)		64	99		154	183	239	321
Max.feed force (intermittent) (N)		177	273		400	400	400	400
Max. Gear Hole "A"		2	2		2	2	2	2
Reduction		5.4:1	19:1		72:1	109:1	270:1	690:1
Absolute reduction		27/5	3249/169		48735/676	2187/20	731025/2704	1121931/1625
Max.feed velocity (mm/s)		74.1	20.8		5.5	3.7	1.5	0.6
Max.feed force (continous) (N)		68	104		162	186	252	345
Max.feed force (intermittent) (N)		188	287		400	400	400	400
Max. Gear Hole "A"		1.5	2		2	2	2	2
Reduction			20:1		76:1	128:1	316:1	850:1
Absolute reduction			81/4		1215/16	41553/325	2777895/8788	531441/625
Max.feed velocity (mm/s)			19.8		5.3	3.1	1.3	0.5
Max.feed force (continous) (N)			106		165	196	266	369
Max.feed force (intermittent) (N)			292		400	400	400	400
Max. Gear Hole "A"			2		2	2	2	1.5
Reduction			24:1		84:1	157:1	370:1	
Absolute reduction			1539/65		185193/2197	19683/125	10556001/28561	
Max.feed velocity (mm/s)			16.9		4.7	2.5	1.1	
Max.feed force (continous) (N)			112		171	211	280	
Max.feed force (intermittent) (N)			309		400	400	400	
Max. Gear Hole "A"			2		2	1.5	2	
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	71	84	75	75	68	68	61	61
Weight (g)	55	50	55	55	60	60	65	65
Average backlash no load (°)	1.1°	1.3°	1.6°	1.6°	1.6°	1.6°	1.6°	1.6°
Mechanical positioning accuracy (mm)	.,.19	.,.4	.,.42	.,.42	.,.42	.,.42	.,.42	.,.42
Mass inertia gearhead incl.screw (g.cm²)	1.48	0.1	0.01	0.01	0.01	0.01	0.01	0.01
Gearhead length L1 (mm)	27.9	27.9	31.6	31.6	35.3	35.3	39.0	39.0

1/ based on screw length 102mm (standard length) 2/ for reduction 1:1=4500rpm For the recommended combination specs, visit AM-16GP.

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SCREW PLANETARY GEARBOX

BALL SCREW

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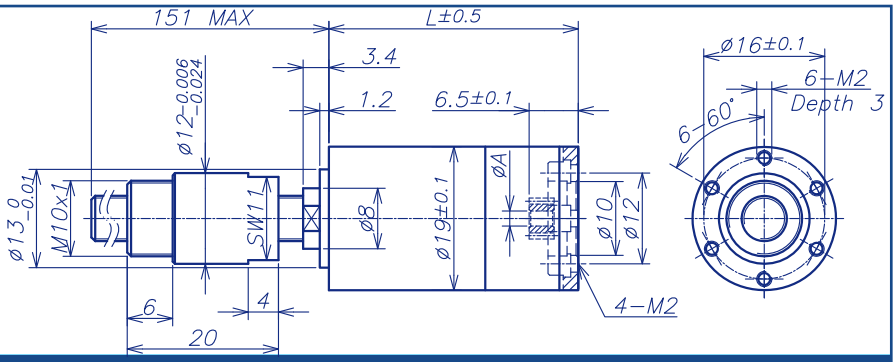
AM-BS0602-151-19GP Series



SCREW CHARACTER								
Screw(Diameter*Lead)	ϕ6*2，S55C，hardened	Radial play (5mm from flange)	＜0.05mm					
Standard length	151mm	Axial play	preloaded					
Special length（5mm steps）	Max.300mm	Max.countinuous input speed	8000rpm					
Nut （standard）	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC					
Material	15CrMo，hardended	Max.axial load(static)	500N					
Axial play	0	Number of stages	0	1	2	3	4	
Planetary	straight teeth	Max. radial load: （15mm from flange）	90N	115N	120N	120N	120N	
Bearing	ball bearing/thrust ball bearing							

SCREW DRIVE DATA								
Reduction	1:1	3.8:1	14:1	29:1	53:1	67:1	198:1	455:1
Absolute reduction	1/1	15/4	225/16	729/25	3375/64	24/5/30	50625/256	5000211/10985
Max.feed velocity (mm/s)	150	71.1	19.0	9.1	5.1	1,.	1.3	0.6
Max.feed force (continous) (N)	77	99	154	197	239	063	372	491
Max.feed force (intermittent) (N)	155	198	308	393	479	500	500	500
Max. Gear Hole "A"	3	3	3	2	3	3	3	2
Reduction		4.4:1	16:1		62:1	/ .2:1	231:1	561:1
Absolute reduction		57/13	855/52		12825/208	65501/623	192375/832	2368521/4225
Max.feed velocity (mm/s)		60.8	16.2		4.3	0,4	1.2	0.5
Max.feed force (continous) (N)		105	162		252	1. .	392	500
Max.feed force (intermittent) (N)		209	325		500	500	500	500
Max. Gear Hole "A"		3	3		3	0	3	2
Reduction		5.4:1	19:1		72:1	109:1	270:1	690:1
Absolute reduction		27/5	3249/169		48735/676	2187/20	731025/2704	1121931/1625
Max.feed velocity (mm/s)		49.4	13.9		3.7	2.4	1.0	0.4
Max.feed force (continous) (N)		112	171		266	305	123	500
Max.feed force (intermittent) (N)		224	342		500	500	500	500
Max. Gear Hole "A"		2	2		3	3	3	2
Reduction			20:1		76:1	128:1	316:1	850:1
Absolute reduction			81/4		1215/16	41553/325	2777895/8788	531441/625
Max.feed velocity (mm/s)			13.2		3.5	2.1	0.8	0.3
Max.feed force (continous) (N)			174		270	322	435	500
Max.feed force (intermittent) (N)			348		500	500	500	500
Max. Gear Hole "A"			3		3	2	3	2
Reduction			24:1		84:1	157:1	370:1	
Absolute reduction			1539/65		185193/2197	19683/125	10556001/28561	
Max.feed velocity (mm/s)			11.3		3.2	1.7	0.7	
Max.feed force (continous) (N)			183		280	345	458	
Max.feed force (intermittent) (N)			367		500	500	500	
Max. Gear Hole "A"			2		2	2	2	
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	71	84	75	75	68	68	61	61
Weight (g)	100	100	110	110	120	120	130	130
Average backlash no load (°)	1ß	1.2ß	1.5ß	1.5ß	1.5ß	1.5ß	1.5ß	1.5ß
Mechanical positioning accuracy (mm)	.,.16	.,.4	.,.41	.,.41	.,.41	.,.41	.,.41	.,.41
Mass inertia gearhead incl.screw (g.cm²)	3.44	0.25	0.04	0.04	0.04	0.04	0.04	0.04
Gearhead length L1 (mm)	32.8	32.8	37.6	37.6	42.4	42.4	47.2	47.2

1/ based on screw length 151 mm (standard length) 2/ for reduction 1:1=4500rpm For the recommended combination specs，visit AM-19GP.

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SCREW PLANETARY GEARBOX

BALL SCREW

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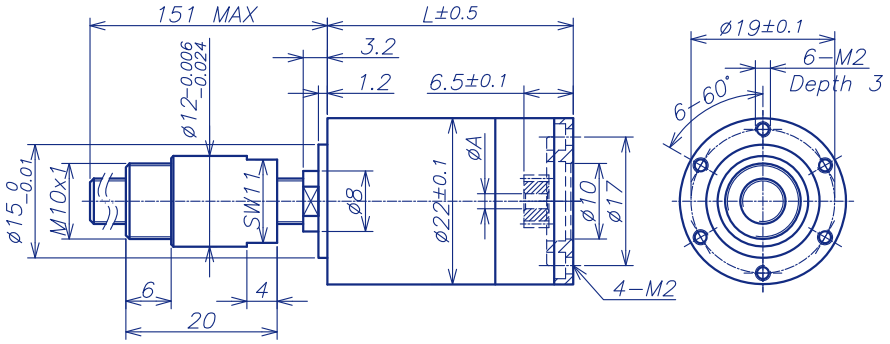
AM-BS0602-151-22GP Series



SCREW CHARACTER								
Screw(Diameter*Lead)	ϕ6*2，S55C，hardened	Radial play (5mm from flange)	＜0.05mm					
Standard length	151mm	Axial play	preloaded					
Special length（5mm steps）	300mm	Max.countinuous input speed	8000rpm					
Nut （standard）	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC					
Material	15CrMo，hardended	Max.axial load(static)	500N					
Axial play	0	Number of stages	0	1	2	3	4	
Planetary	straight teeth	Max. radial load: （15mm from flange）	120N	140N	200N	200N	200N	
Bearing	ball bearing/thrust ball bearing							

SCREW DRIVE DATA								
Reduction	1:1	3.1:1	10:1	36:1	31:1	75:1	201:1	384:1
Absolute reduction	1/1	22/7	484/49	36/1	10648/343	528/7	1408/7	384/1
Max.feed velocity (mm/s)	150	86	26	7.4	8.6	3.5	1.3	0.7
Max.feed force (continous) (N)	77	93	137	210	200	269	374	464
Max.feed force (intermittent) (N)	154	186	274	420	400	500	500	500
Max. Gear Hole "A"	3	3	3	2	3	3	3	3
Reduction		4:1	13:1		40:1	96:1	237:1	453:1
Absolute reduction		4/1	88/7		1936/49	96/1	11616/49	3168/7
Max.feed velocity (mm/s)		66	20		6.6	2.7	1.1	0.6
Max.feed force (continous) (N)		101	150		218	292	395	490
Max.feed force (intermittent) (N)		202	300		436	500	500	500
Max. Gear Hole "A"		3	3		3	3	3	3
Reduction		6:1	16:1		50:1	113:1	256:1	576:1
Absolute reduction		6/1	16/1		352/7	792/7	256/1	576/1
Max.feed velocity (mm/s)		44	17		5.3	2.3	1.0	0.4
Max.feed force (continous) (N)		116	161		235	308	405	500
Max.feed force (intermittent) (N)		232	322		470	500	500	500
Max. Gear Hole "A"		2	3		3	3	3	3
Reduction			19:1		59:1	144:1	302:1	679:1
Absolute reduction			132/7		2904/49	144/1	2112/7	4752/7
Max.feed velocity (mm/s)			14		4.5	1.9	0.8	0.4
Max.feed force (continous) (N)			170		248	334	428	500
Max.feed force (intermittent) (N)			340		496	500	500	500
Max. Gear Hole "A"			3		3	3	3	3
Reduction			24:1		64:1	216:1	356:1	864:1
Absolute reduction			24/1		64/1	216/1	17424/49	864/1
Max.feed velocity (mm/s)			11		4.2	1.2	0.7	0.3
Max.feed force (continous) (N)			184		255	383	452	500
Max.feed force (intermittent) (N)			368		500	500	500	500
Max. Gear Hole "A"			3		3	2	3	3
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	71	84	75	75	68	68	61	61
Weight (g)	//3	//3	/23	/23	140	140	150	150
Average backlash no load (°)	.,68	1.18	1.38	1.38	1.38	1.38	1.38	1.38
Mechanical positioning accuracy (mm)	.,.16	.,.19	.,.4	.,.4	.,.4	.,.4	.,.4	.,.4
Mass inertia gearhead incl.screw (g.cm²)	4,65	0.73	0.14	0.14	0.13	0.13	0.13	0.13
Gearhead length L1 (mm)	36.5	36.5	41.3	41.3	46.1	46.1	50.9	50.9

1/ based on screw length 151 mm (standard length) 2/ for reduction 1:1=4500rpm For the recommended combination specs，visit AM-22GP.

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BALL SCREW

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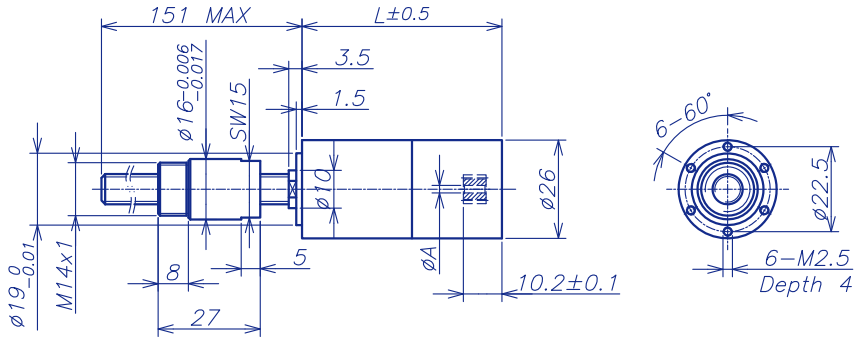

SCREW CHARACTER			
Screw(Diameter*Lead)	ϕ 8*2，S55C，hardened	Radial play (5mm from flange)	＜ 0.05mm
Standard length	151mm	Axial play	preloaded
Special length（5mm steps）	Max.300mm	Max.countinuous input speed	8000rpm
Nut （standard）	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC
Material	15CrMo，hardended	Max.axial load(static)	1500N
Axial play	＜0.01mm	Number of stages	0 1 2 3 4
Planetary	straight teeth	Max. radial load: （15mm from flange）	150N 170N 200N 200N 200N
Bearing	ball bearing/thrust ball bearing		

SCREW DRIVE DATA								
Reduction	1:1	3.7:1	13:1	36:1	49:1	113:1	252:1	572:1
Absolute reduction	1/1	11/3	121/9	36/1	1331/27	338/3	20449/81	572/1
Max.feed velocity (mm/s)	150	72	19.8	7.4	5.4	2.3	1.0	0.46
Max.feed force (continous) (N)	203	258	397	552	613	808	1057	1389
Max.feed force (intermittent) (N)	507	645	994	1381	1500	1500	1500	1500
Max. Gear Hole "A"	4	4	4	2	4	4	4	4
Reduction		4.3:1	16:1		58:1	132:1	298:1	676:1
Absolute reduction		13/3	143/9		1573/27	132/1	24167/81	676/1
Max.feed velocity (mm/s)		61	16.7		4.5	2.0	0.89	0.39
Max.feed force (continous) (N)		272	420		648	852	1118	1468
Max.feed force (intermittent) (N)		682	1051		1500	1500	1500	1500
Max. Gear Hole "A"		4	4		4	4	4	4
Reduction		6:1	19:1		69:1	156:1	353:1	792:1
Absolute reduction		6/1	169/9		1859/27	156/1	28561/81	792/1
Max.feed velocity (mm/s)		44	14.2		3.8	1.7	0.75	0.33
Max.feed force (continous) (N)		304	444		685	900	1182	1500
Max.feed force (intermittent) (N)		760	1111		1500	1500	1500	1500
Max. Gear Hole "A"		2	4		4	4	4	2
Reduction			22:1		81:1	216:1	413:1	936:1
Absolute reduction			22/1		2197/27	216/1	3718/9	936/1
Max.feed velocity (mm/s)			12.1		3.2	1.2	0.64	0.28
Max.feed force (continous) (N)			468		725	1004	1246	1500
Max.feed force (intermittent) (N)			1172		1500	1500	1500	1500
Max. Gear Hole "A"			4		4	2	4	2
Reduction			26:1		95:1		488:1	1296:1
Absolute reduction			26/1		286/3		4394/9	1296/1
Max.feed velocity (mm/s)			10.2		2.7		0.54	0.2
Max.feed force (continous) (N)			495		764		1317	1500
Max.feed force (intermittent) (N)			1239		1500		1500	1500
Max. Gear Hole "A"			4		4		4	2
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	93	84	75	75	68	68	61	61
Weight (g)	215	215	240	240	270	270	300	300
Average backlash no load (°)	1°	1.2°	1.4°	1.4°	1.5°	1.5°	1.5°	1.5°
Mechanical positioning accuracy (mm)	0.037	0.038	0.039	0.039	0.039	0.039	0.039	0.039
Mass inertia gearhead incl.screw (g.cm²)	18.14	1.34	0.29	0.29	0.28	0.28	0.28	0.28
Gearhead length L1 (mm)	44.7	44.7	53.2	53.2	61.7	61.7	70.2	70.2

1/ based on screw length 151 mm (standard length) 2/ for reduction 1:1=4500rpm For the recommended combination specs，visit AM-26GP.

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SCREW PLANETARY GEARBOX

BALL SCREW

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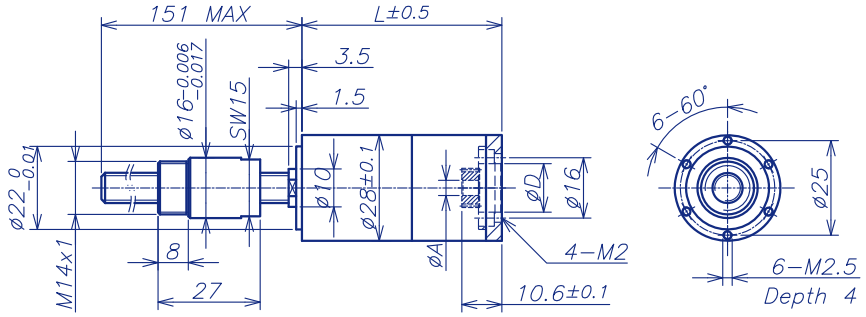
AM-BS0802-151-28GP Series



SCREW CHARACTER							
Screw(Diameter*Lead)	ϕ 8*2，S55C，hardened	Radial play (5mm from flange)	＜ 0.05mm				
Standard length	151mm	Axial play	preloaded				
Special length（5mm steps）	Max.300mm	Max.countinuous input speed	8000rpm				
Nut （standard）	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC				
Material	15CrMo，hardended	Max.axial load(static)	1500N				
Axial play	＜0.01mm	Number of stages	0	1	2	3	4
Planetary	straight teeth	Max. radial load: （15mm from flange）	200N	200N	350N	400N	400N
Bearing	ball bearing/thrust ball bearing						

SCREW DRIVE DATA								
Reduction	1:1	3.4:1	11:1	33:1	38:1	81:1	244:1	465:1
Absolute reduction	1/1	27/8	729/64	529/16	19683/512	5175/64	15625/64	119025/256
Max.feed velocity (mm/s)	150	79	23.4	8.1	6.9	3.3	1.1	0.6
Max.feed force (continous) (N)	203	251	377	537	565	724	1046	1297
Max.feed force (intermittent) (N)	507	628	941	1343	1412	1500	1500	1500
Max. Gear Hole "A"	4	4	4	3	4	4	4	4
Reduction		4.2:1	14:1		47:1	100:1	301:1	574:1
Absolute reduction		25/6	225/16		6075/128	14375/144	390625/1296	3302625/576
Max.feed velocity (mm/s)		64	19		5.6	2.7	0.9	0.5
Max.feed force (continous) (N)		269	404		606	776	1122	1391
Max.feed force (intermittent) (N)		673	1010		1500	1500	1500	1500
Max. Gear Hole "A"		4	4		4	4	4	4
Reduction		5.8:1	17:1		59:1	112:1	337:1	642:1
Absolute reduction		23/4	625/36		1875/32	14283/128	43125/128	328509/512
Max.feed velocity (mm/s)		46.4	15.4		4.6	2.4	0.8	0.4
Max.feed force (continous) (N)		300	433		650	806	1165	1443
Max.feed force (intermittent) (N)		750	1083		1500	1500	1500	1500
Max. Gear Hole "A"		3	4		4	4	4	4
Reduction			19:1		65:1	138:1	377:1	792:1
Absolute reduction			621/32		16767/256	13225/96	385641/1024	304175/384
Max.feed velocity (mm/s)			13.7		4.1	1.9	0.7	0.3
Max.feed force (continous) (N)			450		675	864	1209	1500
Max.feed force (intermittent) (N)			1124		1500	1500	1500	1500
Max. Gear Hole "A"			4		4	4	4	4
Reduction			24:1		72:1	190:1	416:1	1093:1
Absolute reduction			575/24		15625/216	12167/64	359375/864	279841/256
Max.feed velocity (mm/s)			11.1		3.7	1.4	0.6	0.2
Max.feed force (continous) (N)			482		697	962	1249	1500
Max.feed force (intermittent) (N)			1206		1500	1500	1500	1500
Max. Gear Hole "A"			4		4	3	4	3
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	71	84	75	75	68	68	61	61
Weight (g)	240	240	265	265	295	295	325	325
Average backlash no load (°)	0.7ß	0.9ß	1ß	1ß	1.1ß	1.1ß	1.1ß	1.1ß
Mechanical positioning accuracy (mm)	.,.17	0.038	.,.39	.,.39	.,.39	.,.39	.,.39	.,.39
Mass inertia gearhead incl.screw (g.cm²)	25.07	2.28	0.4	0.4	0.39	0.39	0.39	0.39
Gearhead length L1 (mm)	48.6	48.6	55.8	55.8	63.0	63.0	70.2	70.2

1/ based on screw length 151 mm (standard length) 2/ for reduction 1:1=4500rpm For the recommended combination specs，visit AM-28GP.

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SCREW PLANETARY GEARBOX

BALL SCREW

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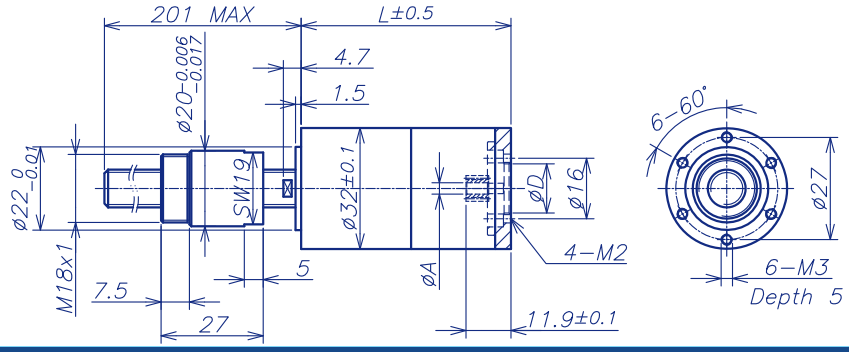
AM-BS1002-201-32GP Series



SCREW CHARACTER			
Screw(Diameter*Lead)	ϕ 10*2，S55C，hardened	Radial play (5mm from flange)	＜ 0.05mm
Standard length	201mm	Axial play	preloaded
Special length（5mm steps）	Max.600mm	Max.countinuous input speed	8000rpm
Nut （standard）	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC
Material	GCr15，hardended	Max.axial load(static)	2700N
Axial play	＜0.01mm	Number of stages	0 1 2 3 4
Planetary	straight teeth	Max. radial load: （15mm from flange）	200N 200N 350N 400N 400N
Bearing	ball bearing/thrust ball bearing		

SCREW DRIVE DATA								
Reduction	1:1	3.4:1	11:1	33:1	38:1	81:1	244:1	465:1
Absolute reduction	1/1	27/8	729/64	529/16	19683/512	5175/64	15625/64	119025/256
Max.feed velocity (mm/s)	133	78	24	8.1	7.0	3.3	1.1	0.6
Max.feed force (continous) (N)	380	453	670	966	1013	1303	1882	2334
Max.feed force (intermittent) (N)	1007	1200	1776	2560	2684	2700	2700	2700
Max. Gear Hole "A"	3	4	4	3	4	4	4	4
Reduction		4.2:1	14:1		47:1	100:1	301:1	574:1
Absolute reduction		25/6	225/16		6075/128	14375/144	390625/1296	3302625/576
Max.feed velocity (mm/s)		63	19		5.7	2.7	0.9	0.5
Max.feed force (continous) (N)		486	726		1087	1398	1019	2504
Max.feed force (intermittent) (N)		1288	1924		2700	2700	2700	2700
Max. Gear Hole "A"		4	4		4	4	4	4
Reduction		5.8:1	17:1		59:1	112:1	337:1	642:1
Absolute reduction		23/4	625/36		1875/32	14283/128	43125/128	328509/512
Max.feed velocity (mm/s)		46	16		4.5	2.4	0.8	0.4
Max.feed force (continous) (N)		541	775		1173	1452	2096	2599
Max.feed force (intermittent) (N)		1434	2054		2700	2700	2700	2700
Max. Gear Hole "A"		3	4		4	4	4	4
Reduction			19:1		65:1	138:1	377:1	792:1
Absolute reduction			621/32		16767/256	13225/96	385641/1024	304175/384
Max.feed velocity (mm/s)			14		4.1	1.9	0.7	0.3
Max.feed force (continous) (N)			804		1211	1557	2176	2700
Max.feed force (intermittent) (N)			2131		2700	2700	2700	2700
Max. Gear Hole "A"			4		4	4	4	4
Reduction			24:1		72:1	190:1	416:1	1093:1
Absolute reduction			575/24		15625/216	12167/64	359375/864	279841/256
Max.feed velocity (mm/s)			11		3.7	1.4	0.6	0.2
Max.feed force (continous) (N)			869		1253	1732	2249	2700
Max.feed force (intermittent) (N)			2303		2700	2700	2700	2700
Max. Gear Hole "A"			4		4	3	4	3
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	71	84	75	75	68	68	61	61
Weight (g)	365	365	410	410	455	455	500	500
Average backlash no load (°)	0.6ß	0.8ß	1ß	1ß	1ß	1ß	1ß	1ß
Mechanical positioning accuracy (mm)	.,.16	0.038	.,.38	.,.38	.,.39	.,.39	.,.39	.,.39
Mass inertia gearhead incl.screw (g.cm²)	42.91	4.03	0.86	0.86	0.84	0.84	0.84	0.84
Gearhead length L1 (mm)	49.9	49.9	58.4	58.4	66.9	66.9	75.4	75.4

1/ based on screw length 201 mm (standard length) 2/ for reduction 1:1=4000rpm For the recommended combination specs，visit AM-32GP.

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SCREW PLANETARY GEARBOX

BALL SCREW

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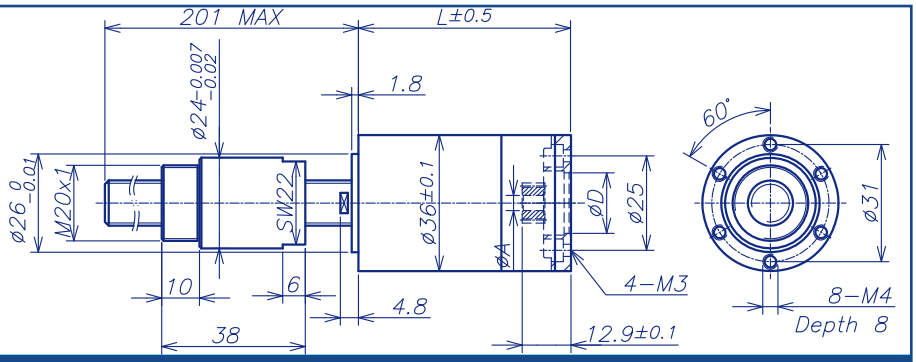
AM-BS1204-201-36GP Series



SCREW CHARACTER			
Screw(Diameter*Lead)	ϕ 12*4，S55C，hardened	Radial play (5mm from flange)	＜ 0.05mm
Standard length	201mm	Axial play	preloaded
Special length（5mm steps）	Max.600mm	Max.countinuous input speed	8000rpm
Nut （standard）	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC
Material	15CrMo，hardended	Max.axial load(static)	5700N
Axial play	＜0.01mm	Number of stages	0 1 2 3 4
Planetary	straight teeth	Max. radial load: （15mm from flange）	360N 440N 660N 700N 700N
Bearing	ball bearing/thrust ball bearing		

SCREW DRIVE DATA								
Reduction	1:1	3.5:1	12:1	36:1	43:1	91:1	285:1	546:1
Absolute reduction	1/1	7/2	49/4	36/1	343/8	91/1	15379/54	546/1
Max.feed velocity (mm/s)	266.7	152.4	43.5	14.8	12.4	5.9	1.9	1
Max.feed force (continous) (N)	487	538	816	1170	1240	1593	2331	2896
Max.feed force (intermittent) (N)	1219	1346	2042	2925	3100	3984	5700	5700
Max. Gear Hole "A"	6	6	6	4	6	6	6	6
Reduction		4.3:1	15:1		53:1	113:1	353:1	676:1
Absolute reduction		13/3	91/6		637/12	338/3	28561/81	676/1
Max.feed velocity (mm/s)		123.1	35.2		10	4.7	1.54	0.8
Max.feed force (continous) (N)		577	877		1331	1711	2503	3109
Max.feed force (intermittent) (N)		1444	2192		3329	4278	5700	5700
Max. Gear Hole "A"		6	6		6	4	6	6
Reduction		6:1	19:1		66:1	126:1	394:1	756:1
Absolute reduction		6/1	169/9		1183/18	126/1	1183/3	756/1
Max.feed velocity (mm/s)		88.9	28.4		8.1	4.2	1.4	0.7
Max.feed force (continous) (N)		643	941		1430	1776	2598	3228
Max.feed force (intermittent) (N)		1609	2354		3575	4441	5700	5700
Max. Gear Hole "A"		4	6		6	6	6	6
Reduction			21:1		74:1	156:1	441:1	936:1
Absolute reduction			21/1		147/2	156/1	441/1	936/1
Max.feed velocity (mm/s)			25.4		7.3	3.4	1.2	0.6
Max.feed force (continous) (N)			977		1484	1907	2697	3466
Max.feed force (intermittent) (N)			1955		3710	4768	5700	5700
Max. Gear Hole "A"			6		6	6	6	6
Reduction			26:1		81:1	216:1	488:1	1296:1
Absolute reduction			26/1		2197/27	216/1	4394/9	1296/1
Max.feed velocity (mm/s)			20.5		6.6	2.5	1.1	0.4
Max.feed force (continous) (N)			1049		1535	2126	2790	3863
Max.feed force (intermittent) (N)			2624		3838	5315	5700	5700
Max. Gear Hole "A"			6		6	4	6	4
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	93	84	75	75	68	68	61	61
Weight (g)	515	530	590	590	655	655	720	720
Average backlash no load (°)	0.5°	0.7°	0.8°	0.8°	0.8°	0.8°	0.8°	0.8°
Mechanical positioning accuracy (mm)	0.039	0.04	0.042	0.042	0.042	0.042	0.042	0.042
Mass inertia gearhead incl.screw (g.cm²)	113.24	9.92	1.47	0.47	1.41	1.41	1.41	1.41
Gearhead length L1 (mm)	59.9	59.9	68.9	68.9	77.9	77.9	86.9	86.9

1/ based on screw length 201 mm (standard length) 2/ for reduction 1:1=4000rpm For the recommended combination specs，visit AM-36GP.

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SCREW PLANETARY GEARBOX

BALL SCREW

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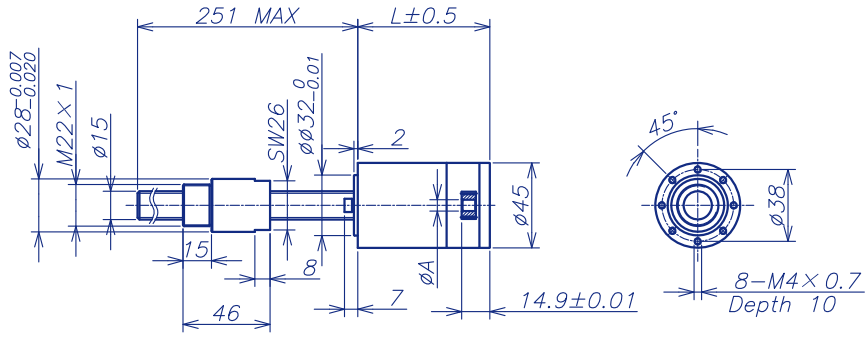
AM-BS1505-251-45GP Series



SCREW CHARACTER			
Screw(Diameter*Lead)	ϕ 15*5, S55C, hardened	Radial play (5mm from flange)	< 0.05mm
Standard length	251mm	Axial play	preloaded
Special length (5mm steps)	Max.600mm	Max.countinuous input speed	8000rpm
Nut (standard)	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC
Material	15CrMo, hardended	Max.axial load(static)	9000N
Axial play	<0.01mm	Number of stages	0 1 2 3 4
Planetary	straight teeth	Max. radial load: (15mm from flange)	360N 440N 660N 700N 700N
Bearing	ball bearing/thrust ball bearing		

SCREW DRIVE DATA								
Reduction	1:1	3.3:1	11:1	27:1	37:1	69:1	213:1	361:1
Absolute reduction	1/1	10/3	100/9	676/25	1000/27	208/3	640/3	5408/15
Max.feed velocity (mm/s)	333.3	200	60	24.7	18	9.6	3.1	1.8
Max.feed force (continous) (N)	705	836	1248	1680	1865	2299	3344	3983
Max.feed force (intermittent) (N)	1764	2092	3122	4199	4663	5747	8360	9000
Max. Gear Hole "A"	8	8	8	6	8	8	8	6
Reduction		4:1	13:1		44:1	83:1	256:1	433:1
Absolute reduction		4/1	40/3		400/9	416/5	256/1	10816/25
Max.feed velocity (mm/s)		166.7	50		15	8	2.6	1.5
Max.feed force (continous) (N)		912	1327		1982	2443	3553	4232
Max.feed force (intermittent) (N)		2281	3317		4956	6108	8883	9000
Max. Gear Hole "A"		8	8		8	8	8	8
Reduction		5.2:1	16:1		53:1	90:1	277:1	469:1
Absolute reduction		26/5	16/1		160/3	1352/15	832/3	35152/75
Max.feed velocity (mm/s)		128.2	41.7		12.5	7.4	2.4	1.4
Max.feed force (continous) (N)		969	1410		2106	2509	3649	4347
Max.feed force (intermittent) (N)		2424	3525		5266	6273	9000	9000
Max. Gear Hole "A"		6	8		8	8	8	6
Reduction			17:1		58:1	108:1	300:1	562:1
Absolute reduction			52/3		520/9	2704/25	2704/9	70304/125
Max.feed velocity (mm/s)			38.5		11.5	6.2	2.2	1.2
Max.feed force (continous) (N)			1448		2163	2666	3748	4619
Max.feed force (intermittent) (N)			3620		5408	6666	9000	9000
Max. Gear Hole "A"			8		8	8	8	8
Reduction			21:1		64:1	141:1	333:1	731:1
Absolute reduction			104/5		64/1	17576/125	1664/9	456976/625
Max.feed velocity (mm/s)			32.1		10.4	4.7	2	0.9
Max.feed force (continous) (N)			1359		2238	2910	3878	5041
Max.feed force (intermittent) (N)			3847		5596	7275	9000	9000
Max. Gear Hole "A"			8		8	6	8	6
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	93	84	75	75	68	68	61	61
Weight (g)	915	1085	1210	1210	1335	1335	1460	1460
Average backlash no load (°)	0.5°	0.7°	0.8°	0.8°	0.8°	0.8°	0.8°	0.8°
Mechanical positioning accuracy (mm)	0.046	0.047	0.048	0.048	0.048	0.048	0.048	0.048
Mass inertia gearhead incl.screw (g.cm²)	279.97	37.38	15.56	15.56	13.59	13.59	13.41	13.41
Gearhead length L1 (mm)	69.9	69.9	81.9	81.9	93.9	93.9	105.9	105.9

1/ based on screw length 251 mm (standard length) 2/ for reduction 1:1=4000rpm For the recommended combination specs, visit AM-45GP.

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SCREW PLANETARY GEARBOX

BALL SCREW

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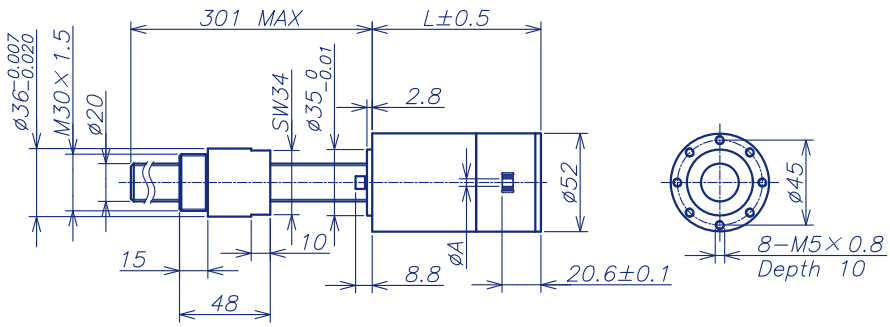
AM-BS2005-301-52GP Series



SCREW CHARACTER			
Screw(Diameter*Lead)	ϕ 20*5，S55C，hardened	Radial play (5mm from flange)	＜ 0.05mm
Standard length	301mm	Axial play	preloaded
Special length（5mm steps）	Max.800mm	Max.countinuous input speed	6000rpm
Nut （standard）	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC
Material	15CrMo，hardended	Max.axial load(static)	12000N
Axial play	＜0.01mm	Number of stages	0 1 2 3 4
Planetary	straight teeth	Max. radial load: （15mm from flange）	360N 440N 660N 700N 700N
Bearing	ball bearing/thrust ball bearing		

SCREW DRIVE DATA								
Reduction	1:1	3.5:1	12:1	19:1	43:1	81:1	186:1	353:1
Absolute reduction	1/1	7/2	49/4	169/9	343/8	2197/27	4459/24	28561/81
Max.feed velocity (mm/s)	250	142.9	40.8	26.6	11.7	6.1	2.7	1.4
Max.feed force (continous) (N)	1035	1248	1894	2184	2876	3561	4690	5807
Max.feed force (intermittent) (N)	2589	3120	4737	5461	7192	8904	11725	12000
Max. Gear Hole "A"	10	10	10	8	10	8	10	8
Reduction		4.3:1	15:1	26:1	53:1	91:1	257:1	488:1
Absolute reduction		13/3	91/6	26/1	637/12	91/1	1029/4	4394/9
Max.feed velocity (mm/s)		115.4	33	19.2	9.4	5.5	1.9	1
Max.feed force (continous) (N)		1340	2034	2435	3089	3697	5227	6472
Max.feed force (intermittent) (N)		3350	5086	6087	7722	9243	12000	12000
Max. Gear Hole "A"		8	10	8	10	8	10	8
Reduction			21:1		66:1	113:1	319:1	546:1
Absolute reduction			21/1		1183/18	338/3	637/2	546/1
Max.feed velocity (mm/s)			23.8		7.6	4.4	1.6	0.9
Max.feed force (continous) (N)			2267		3317	3970	5613	6718
Max.feed force (intermittent) (N)			5669		8292	9925	12000	12000
Max. Gear Hole "A"			10		10	8	10	8
Reduction					74:1	156:1	441:1	676:1
Absolute reduction					147/2	156/1	441/1	676/1
Max.feed velocity (mm/s)					6.8	3.2	1.1	0.7
Max.feed force (continous) (N)					3443	4424	6256	7214
Max.feed force (intermittent) (N)					8607	11062	12000	12000
Max. Gear Hole "A"					10	8	10	8
Reduction					126:1		756:1	936:1
Absolute reduction					126/1		756/1	936/1
Max.feed velocity (mm/s)					4		0.6	0.5
Max.feed force (continous) (N)					4120		7488	8040
Max.feed force (intermittent) (N)					10302		12000	12000
Max. Gear Hole "A"					10		10	8
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	93	84	75	75	68	68	61	61
Weight (g)	2090	2090	2310	2310	2520	2520	2730	2730
Average backlash no load (°)	0.5°	0.6°	0.7°	0.7°	0.7°	0.7°	0.7°	0.7°
Mechanical positioning accuracy (mm)	0.045	0.046	0.047	0.047	0.047	0.047	0.047	0.047
Mass inertia gearhead incl.screw (g.cm²)	617.89	68.8	25.13	25.13	21.38	21.38	21.09	21.09
Gearhead length L1 (mm)	89.3	89.3	105.8	105.8	122.3	122.3	138.8	138.8

1/ based on screw length 301 mm (standard length) 2/ for reduction 1:1=3000rpm For the recommended combination specs，visit AM-52GP.

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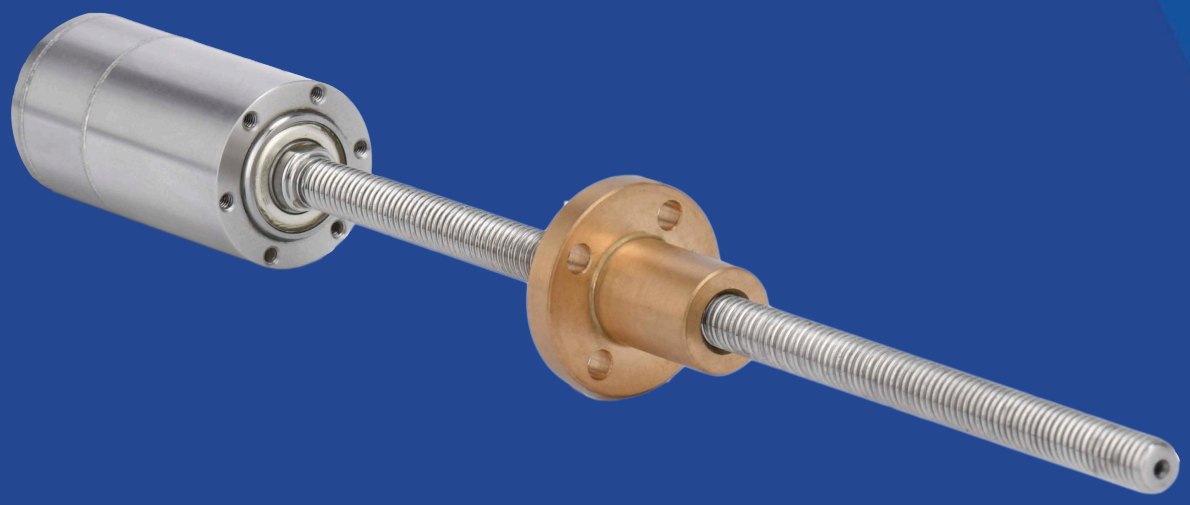
TRAPEZOIDAL SCREW GEARBOX

SCREW PRECISION SERIES

The precision planetary gearbox ball screw of Assun trapezoidal screw has a simple structure, long service life, and stable performance. High torque and power Higher characteristics. The trapezoidal screw precision gearbox with diameters ranging from 10mm to 52mm meets the application needs of customers under high loads.



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SCREW PLANETARY GEARBOX

TRAPEZOIDAL SCREW

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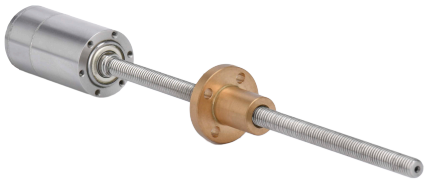
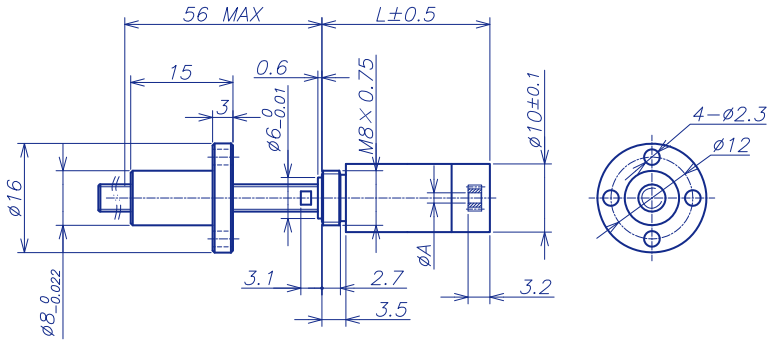
AM-TS0402-56-10GP Series





SCREW CHARACTER			
Screw(Diameter*Lead)	Tr4*2, SUS304	Radial play (5mm from flange)	＜0.1mm
Standard length	56mm	Axial play	preloaded
Special length (5mm steps)	Max.120mm	Max.countinuous input speed	8000rpm
Nut (standard)	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC
Material	copper	Max.axial load(static)	50N
Axial play	＜0.13mm	Number of stages	0 1 2 3 4 5
Planetary	straight teeth	Max. radial load: (5mm from flange)	10N 10N 15N 17N 17N 17N
Bearing	ball bearing/thrust ball bearing		

SCREW DRIVE DATA								
Reduction	1:1	4:1	16:1	64:1	256:1	1024:1		
Absolute reduction	1/1	4/1	16/1	64/1	256/1	1024/1		
Max.feed velocity (mm/s)	100	66.7	16.6	4.1	1.0	0.26		
Max.feed force (continous) (N)	5	8	12	20	32	50		
Max.feed force (intermittent) (N)	10	16	24	40	50	50		
Max. Gear Hole "A"	1.5	1.5	1.5	1.5	1.5	1.5		
Reduction								
Absolute reduction								
Max.feed velocity (mm/s)								
Max.feed force (continous) (N)								
Max.feed force (intermittent) (N)								
Max. Gear Hole "A"								
Reduction								
Absolute reduction								
Max.feed velocity (mm/s)								
Max.feed force (continous) (N)								
Max.feed force (intermittent) (N)								
Max. Gear Hole "A"								
Reduction								
Absolute reduction								
Max.feed velocity (mm/s)								
Max.feed force (continous) (N)								
Max.feed force (intermittent) (N)								
Max. Gear Hole "A"								
Reduction								
Absolute reduction								
Max.feed velocity (mm/s)								
Max.feed force (continous) (N)								
Max.feed force (intermittent) (N)								
Max. Gear Hole "A"								
Number of stages	0	1	2	3	4	5		
Max.efficiency gearhead incl.screw (%)	45.6	41	36.9	33.2	29.9	26.9		
Weight (g)	35	35	40	45	50	55		
Average backlash no load (°)	1.2°	1.3°	1.5°	1.6°	1.6°	1.6°		
Mechanical positioning accuracy (mm)	0.166	0.167	0.168	0.171	0.171	0.171		
Mass inertia gearhead incl.screw (g.cm²)	0.28	0.05	0.01	0.01	0.01	0.01		
Gearhead length L1 (mm)	25	25	28.2	31.4	34.6	37.8		

1/ based on screw length 56mm (standard length) 2/ for reduction 1:1=3000rpm For the recommended combination specs, visit AM-10GP.

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TRAPEZOIDAL SCREW

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SCREW PLANETARY GEARBOX

TRAPEZOIDAL SCREW

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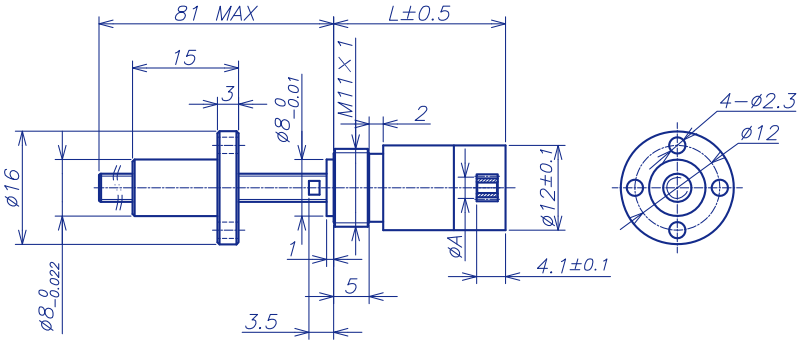
AM-TS0402-81-12GP Series



SCREW CHARACTER							
Screw(Diameter*Lead)	Tr4*2, SUS304	Radial play (5mm from flange)	< 0.1mm				
Standard length	81mm	Axial play	preloaded				
Special length (5mm steps)	Max.150mm	Max.countinuous input speed	8000rpm				
Nut (standard)	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC				
Material	copper	Max.axial load(static)	75N				
Axial play	<0.13mm	Number of stages	0	1	2	3	4
Planetary	straight teeth	Max. radial load: (5mm from flange)	25N	30N	45N	60N	60N
Bearing	ball bearing/thrust ball bearing						

SCREW DRIVE DATA								
Reduction	1:1	4:1	16:1	64:1	256:1			
Absolute reduction	1/1	4/1	16/1	64/1	256/1			
Max.feed velocity (mm/s)	100	66.7	16.6	4.1	1.0			
Max.feed force (continous) (N)	7	13	16	32	52			
Max.feed force (intermittent) (N)	14	26	32	65	75			
Max. Gear Hole "A"	1.5	1.5	1.5	1.5	1.5			
Reduction		5.3:1	21:1	85:1	341:1			
Absolute reduction		16/3	64/3	256/3	1024/3			
Max.feed velocity (mm/s)		50	12.5	3.1	0.78			
Max.feed force (continous) (N)		15	22	36	57			
Max.feed force (intermittent) (N)		30	45	72	75			
Max. Gear Hole "A"		1.2	1.5	1.5	1.5			
Reduction			28:1	114:1	455:1			
Absolute reduction			256/9	1024/9	4096/9			
Max.feed velocity (mm/s)			9.3	2.3	0.58			
Max.feed force (continous) (N)			25	39	63			
Max.feed force (intermittent) (N)			50	75	75			
Max. Gear Hole "A"			1.2	1.5	1.5			
Reduction				152:1	607:1			
Absolute reduction				4096/27	16384/27			
Max.feed velocity (mm/s)				1.7	0.43			
Max.feed force (continous) (N)				43	69			
Max.feed force (intermittent) (N)				75	75			
Max. Gear Hole "A"				1.2	1.5			
Reduction					809:1			
Absolute reduction					65536/81			
Max.feed velocity (mm/s)					0.32			
Max.feed force (continous) (N)					75			
Max.feed force (intermittent) (N)					75			
Max. Gear Hole "A"					1.2			
Number of stages	0	1	2	3	4			
Max.efficiency gearhead incl.screw (%)	45.6	41	36.9	33.2	29.9			
Weight (g)	35	30	30	35	40			
Average backlash no load (°)	1.1°	1.3°	1.5°	1.6°	1.6°			
Mechanical positioning accuracy (mm)	0.167	0.168	0.170	0.170	0.170			
Mass inertia gearhead incl.screw (g.cm²)	0.78	0.05	0.01	0.01	0.01			
Gearhead length L1 (mm)	24.6	24.6	29.3	34.0	48.7			

1/ based on screw length 80mm (standard length) 2/ for reduction 1:1=3000rpm For the recommended combination specs, visit AM-12GP.

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SCREW PLANETARY GEARBOX

TRAPEZOIDAL SCREW

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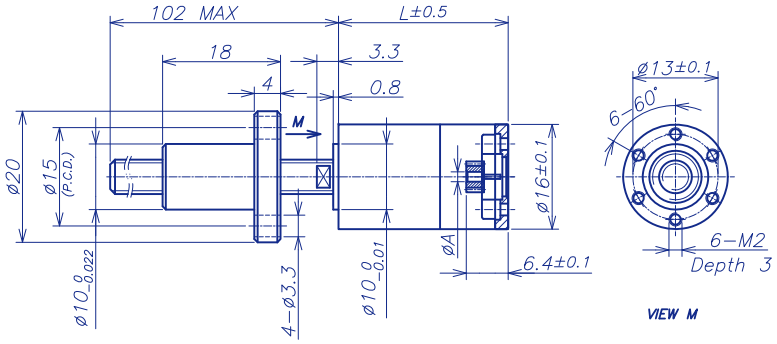
AM-TS0502-102-16GP Series



SCREW CHARACTER							
Screw(Diameter*Lead)	Tr5*2, SUS304	Radial play (5mm from flange)	< 0.05mm				
Standard length	102mm	Axial play	preloaded				
Special length (5mm steps)	Max.200mm	Max.countinuous input speed	8000rpm				
Nut (standard)	thread nut	Recommended Temperature Range	-15°C ~ +80°C				
Material	copper	Max.axial load(static)	240N				
Axial play	<0.15mm	Number of stages	0	1	2	3	4
Planetary	straight teeth	Max. radial load: (6mm from flange)	20N	40N	60N	80N	80N
Bearing	ball bearing/thrust ball bearing						

SCREW DRIVE DATA								
Reduction	1:1	3.8:1	14:1	29:1	53:1	89:1	198:1	455:1
Absolute reduction	1/1	15/4	225/16	729/25	3375/64	4617/52	50625/256	5000211/10985
Max.feed velocity (mm/s)	100	71.1	18.9	9.1	5.0	3.0	1.3	0.58
Max.feed force (continous) (N)	20	30	55	70	85	102	132	175
Max.feed force (intermittent) (N)	40	60	110	140	171	203	240	240
Max. Gear Hole "A"	2	2	2	1.5	2	2	2	2
Reduction		4.4:1	16:1		62:1	104:1	231:1	561:1
Absolute reduction		57/13	855/52		12825/208	87723/845	192375/832	236852/4225
Max.feed velocity (mm/s)		60.8	16.2		4.3	2.5	1.1	0.47
Max.feed force (continous) (N)		36	58		90	107	139	188
Max.feed force (intermittent) (N)		72	116		180	214	240	240
Max. Gear Hole "A"		2	2		2	2	2	2
Reduction		5.4:1	19:1		72:1	109:1	270:1	690:1
Absolute reduction		27/5	3249/169		48735/676	2187/20	731025/2704	1121931/1625
Max.feed velocity (mm/s)		49.3	13.8		3.7	2.4	0.98	0.38
Max.feed force (continous) (N)		40	61		94	109	147	201
Max.feed force (intermittent) (N)		80	122		189	218	240	240
Max. Gear Hole "A"		1.5	2		2	2	2	2
Reduction			20:1		76:1	128:1	316:1	850:1
Absolute reduction			81/4		1215/16	41553/325	2777895/8788	531441/625
Max.feed velocity (mm/s)			13.1		3.5	2.0	0.84	0.31
Max.feed force (continous) (N)			62		96	114	115	216
Max.feed force (intermittent) (N)			124		193	229	240	240
Max. Gear Hole "A"			2		2	2	2	1.5
Reduction			24:1		84:1	157:1	370:1	
Absolute reduction			1539/65		185193/2197	19683/125	10556001/28561	
Max.feed velocity (mm/s)			11.2		3.1	1.7	0.72	
Max.feed force (continous) (N)			65		100	123	263	
Max.feed force (intermittent) (N)			131		200	240	240	
Max. Gear Hole "A"			2		2	1.5	2	
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	39.8	35.8	32.2	32.2	29	29	26.1	26.1
Weight (g)	50	50	55	55	60	60	65	65
Average backlash no load (°)	1.1ß	1.3ß	1.6ß	1.6ß	1.6ß	1.6ß	1.6ß	1.6ß
Mechanical positioning accuracy (mm)	0.167	0.168	0.170	0.170	0.170	0.170	0.170	0.170
Mass inertia gearhead incl.screw (g.cm²)	1.48	0.1	0.01	0.01	0.01	0.01	0.01	0.01
Gearhead length L1 (mm)	27.9	27.9	31.6	31.6	35.3	35.3	39.0	39.0

1/ based on screw length 102mm (standard length) 2/ for reduction 1:1=3000rpm For the recommended combination specs, visit AM-16GP.

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SCREW PLANETARY GEARBOX

TRAPEZOIDAL SCREW

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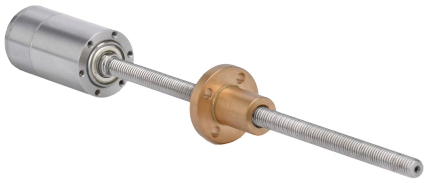
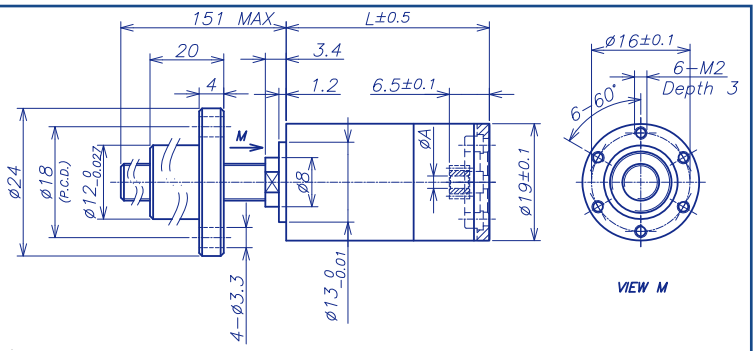
AM-TS0602-151-19GP Series





SCREW CHARACTER						
Screw(Diameter*Lead)	Tr6*2, SUS304	Radial play (5mm from flange)	＜ 0.05mm			
Standard length	151mm	Axial play	preloaded			
Special length (5mm steps)	Max.300mm	Max.countinuous input speed	6000rpm			
Nut (standard)	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC			
Material	copper	Max.axial load(static)	350N			
Axial play	≤0.15mm	Number of stages	1	2	3	4
Planetary	straight teeth	Max. radial load: (15mm from flange)	115N	120N	120N	120N
Bearing	ball bearing/thrust ball bearing					

SCREW DRIVE DATA								
Reduction	1:1	3.8:1	14:1	29:1	53:1	67:1	198:1	455:1
Absolute reduction	1/1	15/4	225/16	729/25	3375/64	24/5/30	50625/256	5000211/10985
Max.feed velocity (mm/s)	100	71.1	18.9	9.1	5.0	1,.	1.3	0.58
Max.feed force (continous) (N)	30	38	93	118	144	171	224	296
Max.feed force (intermittent) (N)	60	76	186	237	289	343	350	350
Max. Gear Hole "A"	3	3	3	2	3	3	3	2
Reduction		4.4:1	16:1		62:1	/ . 2:1	231:1	561:1
Absolute reduction		57/13	855/52		12825/208	65501/623	192375/832	2368521/4225
Max.feed velocity (mm/s)		60.8	16.2		4.3	2.5	1.1	0.47
Max.feed force (continous) (N)		46	98		152	181	236	317
Max.feed force (intermittent) (N)		92	196		304	350	350	350
Max. Gear Hole "A"		3	3		3	0	3	2
Reduction		5.4:1	19:1		72:1	109:1	270:1	690:1
Absolute reduction		27/5	3249/169		48735/676	2187/20	731025/2704	1121931/1625
Max.feed velocity (mm/s)		49.3	13.9		3.7	2.4	0.98	0.38
Max.feed force (continous) (N)		60	103		160	184	249	340
Max.feed force (intermittent) (N)		120	206		320	350	350	350
Max. Gear Hole "A"		2	2		3	3	3	2
Reduction			20:1		76:1	128:1	316:1	850:1
Absolute reduction			81/4		1215/16	41553/325	2777895/8788	531441/625
Max.feed velocity (mm/s)			13.1		3.5	2.0	0.84	0.31
Max.feed force (continous) (N)			105		163	194	262	350
Max.feed force (intermittent) (N)			210		326	350	350	350
Max. Gear Hole "A"			3		3	2	3	2
Reduction			24:1		84:1	157:1	370:1	
Absolute reduction			1539/65		185193/2197	19683/125	10556001/28561	
Max.feed velocity (mm/s)			11.2		3.1	1.7	0.72	
Max.feed force (continous) (N)			110		169	208	276	
Max.feed force (intermittent) (N)			221		338	350	350	
Max. Gear Hole "A"			2		2	2	2	
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	35.3	31.7	28.5	28.5	25.7	25.7	23.1	23.1
Weight (g)	100	100	110	110	120	120	130	130
Average backlash no load (°)	1ß	1.2ß	1.5ß	1.5ß	1.5ß	1.5ß	1.5ß	1.5ß
Mechanical positioning accuracy (mm)	0.165	0.168	0.170	0.170	0.0170	0.170	0.170	0.170
Mass inertia gearhead incl.screw (g.cm²)	3.44	0.25	0.04	0.04	0.04	0.04	0.04	0.04
Gearhead length L1 (mm)	32.8	32.8	37.6	37.6	42.4	42.4	47.2	47.2

1/ based on screw length 151 mm (standard length) 2/ for reduction 1:1=3000rpm For the recommended combination specs, visit AM-19GP.

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SCREW PLANETARY GEARBOX

TRAPEZOIDAL SCREW

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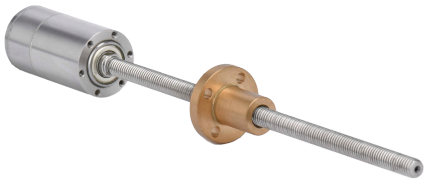
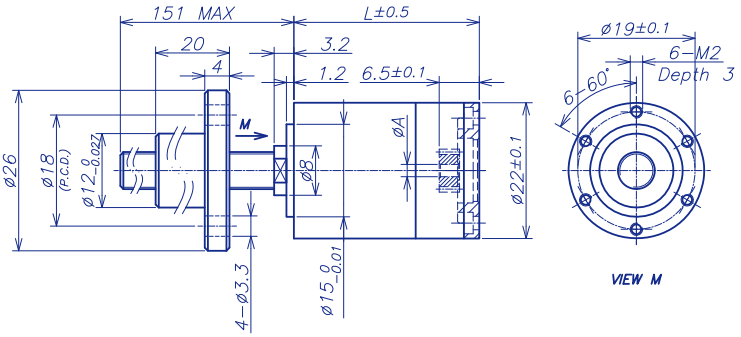
AM-TS0602-151-22GP Series





SCREW CHARACTER							
Screw(Diameter*Lead)	Tr6*2, SUS304	Radial play (5mm from flange)	< 0.05mm				
Standard length	151mm	Axial play	preloaded				
Special length (5mm steps)	300mm	Max.countinuous input speed	8000rpm				
Nut (standard)	thread nut	Recommended Temperature Range	-15°C ~ +80°C				
Material	copper	Max.axial load(static)	350N				
Axial play	≤0.13mm	Number of stages	0	1	2	3	4
Planetary	straight teeth	Max. radial load: (15mm from flange)	120N	140N	200N	200N	200N
Bearing	ball bearing/thrust ball bearing						

SCREW DRIVE DATA								
Reduction	1:1	3.1:1	10:1	36:1	31:1	75:1	201:1	384:1
Absolute reduction	1/1	22/7	484/49	36/1	10648/343	528/7	1408/7	384/1
Max.feed velocity (mm/s)	100	84.8	27	7.4	8.6	3.5	1.3	0.69
Max.feed force (continous) (N)	30	32	82	126	120	161	223	277
Max.feed force (intermittent) (N)	60	64	164	252	240	322	350	350
Max. Gear Hole "A"	3	3	3	2	3	3	3	3
Reduction		4:1	13:1		40:1	96:1	237:1	453:1
Absolute reduction		4/1	88/7		1936/49	96/1	11616/49	3168/7
Max.feed velocity (mm/s)		66.6	21.2		6.7	2.7	1.1	0.59
Max.feed force (continous) (N)		43	88		130	175	236	293
Max.feed force (intermittent) (N)		86	177		260	350	350	350
Max. Gear Hole "A"		3	3		3	3	3	3
Reduction		6:1	16:1		50:1	113:1	256:1	576:1
Absolute reduction		6/1	16/1		352/7	792/7	256/1	576/1
Max.feed velocity (mm/s)		44.4	16.6		5.3	2.3	1.0	0.46
Max.feed force (continous) (N)		69	96		141	184	242	317
Max.feed force (intermittent) (N)		138	192		282	350	350	350
Max. Gear Hole "A"		2	3		3	3	3	3
Reduction			19:1		59:1	144:1	302:1	679:1
Absolute reduction			132/7		2904/49	144/1	2112/7	4752/7
Max.feed velocity (mm/s)			14.1		4.5	1.8	0.88	0.39
Max.feed force (continous) (N)			101		149	200	256	335
Max.feed force (intermittent) (N)			203		298	350	350	350
Max. Gear Hole "A"			3		3	3	3	3
Reduction			24:1		64:1	216:1	356:1	864:1
Absolute reduction			24/1		64/1	216/1	17424/49	864/1
Max.feed velocity (mm/s)			11.1		4.1	1.2	0.75	0.3
Max.feed force (continous) (N)			110		152	229	270	350
Max.feed force (intermittent) (N)			220		305	350	350	350
Max. Gear Hole "A"			3		3	2	3	3
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	35.3	31.7	28.5	28.5	25.7	25.7	23.1	23.1
Weight (g)	//3	//3	/23	/23	140	140	150	150
Average backlash no load (°)	.,6ß	1.1ß	1.3ß	1.3ß	1.3ß	1.3ß	1.3ß	1.3ß
Mechanical positioning accuracy (mm)	0.164	0.167	0.168	0.168	0.168	0.168	0.168	0.168
Mass inertia gearhead incl.screw (g.cm²)	4,65	0.73	0.14	0.14	0.13	0.13	0.13	0.13
Gearhead length L1 (mm)	36.5	36.5	41.3	41.3	46.1	46.1	50.9	50.9

1/ based on screw length 151 mm (standard length) 2/ for reduction 1:1=3000rpm For the recommended combination specs, visit AM-22GP.

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SCREW PLANETARY GEARBOX

TRAPEZOIDAL SCREW

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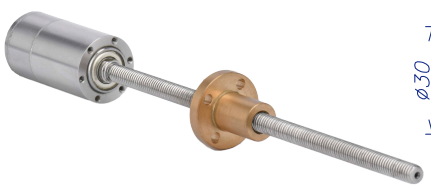
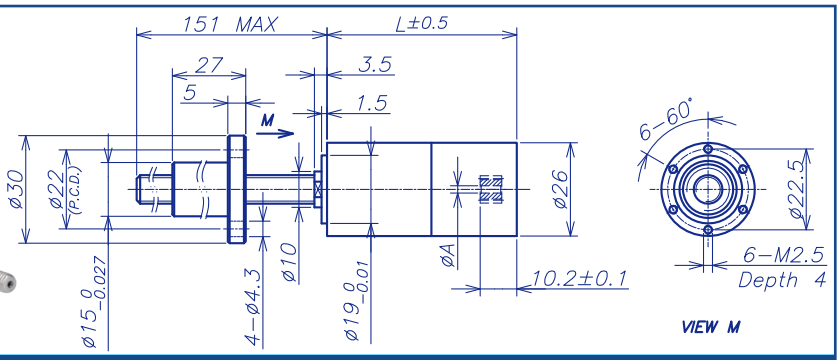
AM-TS0802-151-26GP Series





SCREW CHARACTER								
Screw(Diameter*Lead)	Tr8*2, SUS304	Radial play (5mm from flange)	< 0.05mm					
Standard length	151mm	Axial play	preloaded					
Special length (5mm steps)	Max.300mm	Max.countinuous input speed	8000rpm					
Nut (standard)	thread nut	Recommended Temperature Range	-15°C ~ +80°C					
Material	copper	Max.axial load(static)	1000N					
Axial play	<0.13mm	Number of stages	0	1	2	3	4	
Planetary	straight teeth	Max. radial load: (15mm from flange)	150N	170N	200N	200N	200N	
Bearing	ball bearing/thrust ball bearing							

SCREW DRIVE DATA								
Reduction	1:1	3.7:1	13:1	36:1	49:1	113:1	252:1	572:1
Absolute reduction	1/1	11/3	121/9	36/1	1331/27	338/3	20449/81	572/1
Max.feed velocity (mm/s)	150	72	19.8	7.4	5.4	2.3	1.0	0.46
Max.feed force (continous) (N)	203	77	277	386	428	564	739	970
Max.feed force (intermittent) (N)	507	154	554	772	857	1000	1000	1000
Max. Gear Hole "A"	4	4	4	2	4	4	4	4
Reduction		4.3:1	16:1		58:1	132:1	298:1	676:1
Absolute reduction		13/3	143/9		1573/27	132/1	24167/81	676/1
Max.feed velocity (mm/s)		61	16.7		4.5	2.0	0.89	0.39
Max.feed force (continous) (N)		61	294		453	595	781	1000
Max.feed force (intermittent) (N)		92	588		906	1000	1000	1000
Max. Gear Hole "A"		4	4		4	4	4	4
Reduction		6:1	19:1		69:1	156:1	353:1	792:1
Absolute reduction		6/1	169/9		1859/27	156/1	28561/81	792/1
Max.feed velocity (mm/s)		44	14.2		3.8	1.7	0.75	0.33
Max.feed force (continous) (N)		136	310		479	629	826	1000
Max.feed force (intermittent) (N)		272	620		958	1000	1000	1000
Max. Gear Hole "A"		2	4		4	4	4	2
Reduction			22:1		81:1	216:1	413:1	936:1
Absolute reduction			22/1		2197/27	216/1	3718/9	936/1
Max.feed velocity (mm/s)			12.1		3.2	1.2	0.64	0.28
Max.feed force (continous) (N)			327		506	701	870	1000
Max.feed force (intermittent) (N)			655		1000	1000	1000	1000
Max. Gear Hole "A"			4		4	2	4	2
Reduction			26:1		95:1		488:1	1296:1
Absolute reduction			26/1		286/3		4394/9	1296/1
Max.feed velocity (mm/s)			10.2		2.7		0.54	0.2
Max.feed force (continous) (N)			346		534		920	1000
Max.feed force (intermittent) (N)			692		1000		1000	1000
Max. Gear Hole "A"			4		4		4	2
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	28.7	25.8	23.2	23.2	20.9	20.9	18.8	18.8
Weight (g)	215	215	240	240	270	270	300	300
Average backlash no load (°)	1°	1.2°	1.4°	1.4°	1.5°	1.5°	1.5°	1.5°
Mechanical positioning accuracy (mm)	0.167	0.168	0.170	0.170	0.171	0.171	0.171	0.171
Mass inertia gearhead incl.screw (g.cm²)	18.14	1.34	0.29	0.29	0.28	0.28	0.28	0.28
Gearhead length L1 (mm)	44.7	44.7	53.2	53.2	61.7	61.7	70.2	70.2

1/ based on screw length 151 mm (standard length) 2/ for reduction 1:1=3000rpm For the recommended combination specs, visit AM-26GP.

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SCREW PLANETARY GEARBOX

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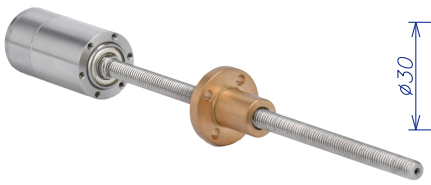
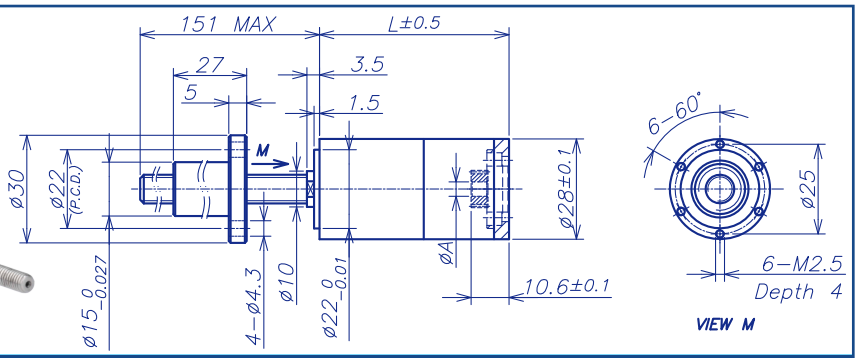
AM-TS0802-151-28GP Series





SCREW CHARACTER							
Screw(Diameter*Lead)	Tr8*2, SUS304	Radial play (5mm from flange)	< 0.05mm				
Standard length	151mm	Axial play	preloaded				
Special length (5mm steps)	Max.300mm	Max.countinuous input speed	8000rpm				
Nut (standard)	thread nut	Recommended Temperature Range	-15°C ~ +80°C				
Material	copper	Max.axial load(static)	1000N				
Axial play	<0.13mm	Number of stages	0	1	2	3	4
Planetary	straight teeth	Max. radial load: (15mm from flange)	200N	200N	350N	400N	400N
Bearing	ball bearing/thrust ball bearing						

SCREW DRIVE DATA								
Reduction	1:1	3.4:1	11:1	33:1	38:1	81:1	244:1	465:1
Absolute reduction	1/1	27/8	729/64	529/16	19683/512	5175/64	15625/64	119025/256
Max.feed velocity (mm/s)	100	79	23.4	8.0	6.9	3.3	1.1	0.57
Max.feed force (continous) (N)	55	75	263	375	395	506	731	906
Max.feed force (intermittent) (N)	90	150	526	751	792	1000	1000	1000
Max. Gear Hole "A"	4	4	4	3	4	4	4	4
Reduction		4.2:1	14:1		47:1	100:1	301:1	574:1
Absolute reduction		25/6	225/16		6075/128	14375/144	390625/1296	3302625/576
Max.feed velocity (mm/s)		64	18.9		5.6	2.6	0.88	0.46
Max.feed force (continous) (N)		92	282		423	542	784	972
Max.feed force (intermittent) (N)		184	565		847	1000	1000	1000
Max. Gear Hole "A"		4	4		4	4	4	4
Reduction		5.8:1	17:1		59:1	112:1	337:1	642:1
Absolute reduction		23/4	625/36		1875/32	14283/128	43125/128	328509/512
Max.feed velocity (mm/s)		46.3	15.3		4.5	2.3	0.79	0.41
Max.feed force (continous) (N)		135	303		454	563	814	1000
Max.feed force (intermittent) (N)		270	606		909	1000	1000	1000
Max. Gear Hole "A"		3	4		4	4	4	4
Reduction			19:1		65:1	138:1	377:1	792:1
Absolute reduction			621/32		16767/256	13225/96	385641/1024	304175/384
Max.feed velocity (mm/s)			13.7		4.0	1.9	0.7	0.33
Max.feed force (continous) (N)			314		471	604	845	1000
Max.feed force (intermittent) (N)			629		943	1000	1000	1000
Max. Gear Hole "A"			4		4	4	4	4
Reduction			24:1		72:1	190:1	416:1	1093:1
Absolute reduction			575/24		15625/216	12167/64	359375/864	279841/256
Max.feed velocity (mm/s)			11.1		3.6	1.4	0.64	0.24
Max.feed force (continous) (N)			337		487	673	873	1000
Max.feed force (intermittent) (N)			674		975	1000	1000	1000
Max. Gear Hole "A"			4		4	3	4	3
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	28.7	25.8	23.2	23.2	20.9	20.9	18.8	18.8
Weight (g)	240	240	265	265	295	295	325	325
Average backlash no load (°)	0.6ß	0.9ß	1ß	1ß	1.1ß	1.1ß	1.1ß	1.1ß
Mechanical positioning accuracy (mm)	0.164	0.166	0.167	0.167	0.168	0.168	0.168	0.168
Mass inertia gearhead incl.screw (g.cm²)	25.07	2.28	0.4	0.4	0.39	0.39	0.39	0.39
Gearhead length L1 (mm)	48.6	48.6	55.8	55.8	63.0	63.0	70.2	70.2

1/ based on screw length 151 mm (standard length) 2/ for reduction 1:1=3000rpm For the recommended combination specs, visit AM-28GP.

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SCREW PLANETARY GEARBOX

TRAPEZOIDAL SCREW

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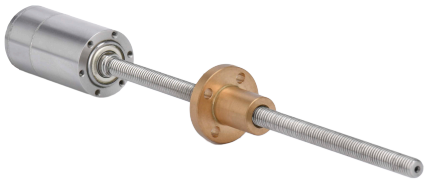

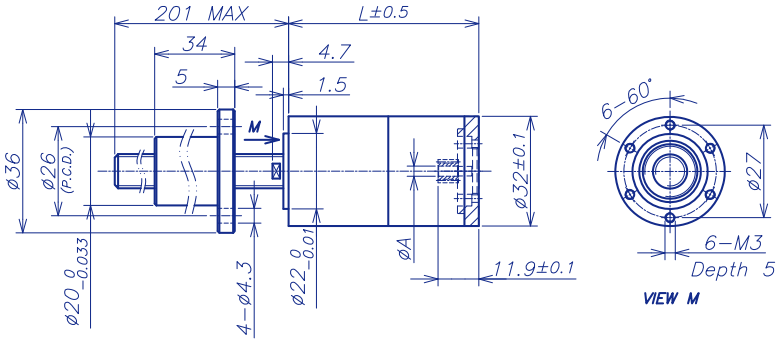

SCREW CHARACTER			
Screw(Diameter*Lead)	Tr10*2, SUS304	Radial play (5mm from flange)	< 0.05mm
Standard length	201mm	Axial play	preloaded
Special length (5mm steps)	Max.600mm	Max.countinuous input speed	8000rpm
Nut (standard)	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC
Material	Copper	Max.axial load(static)	1530N
Axial play	<0.15mm	Number of stages	0 1 2 3 4
Planetary	straight teeth	Max. radial load: (15mm from flange)	200N 350N 400N 400N 400N
Bearing	ball bearing/thrust ball bearing		

SCREW DRIVE DATA

Reduction	1:1	3.4:1	11:1	33:1	38:1	81:1	244:1	465:1
Absolute reduction	1/1	27/8	729/64	529/16	19683/512	5175/64	15625/64	119025/256
Max.feed velocity (mm/s)	100	79	23.4	8.0	6.9	3.3	1.1	0.57
Max.feed force (continous) (N)	82	82	288	600	631	809	1169	1450
Max.feed force (intermittent) (N)	164	164	576	1201	1263	1530	1530	1530
Max. Gear Hole "A"	3	4	4	3	4	4	4	4
Reduction		4.2:1	14:1		47:1	100:1	301:1	574:1
Absolute reduction		25/6	225/16		6075/128	14375/144	390625/1296	3302625/576
Max.feed velocity (mm/s)		64	18.9		5.6	2.6	0.88	0.46
Max.feed force (continous) (N)		103	398		677	868	1254	1530
Max.feed force (intermittent) (N)		206	796		1355	1530	1530	1530
Max. Gear Hole "A"		4	4		4	4	4	4
Reduction		5.8:1	17:1		59:1	112:1	337:1	642:1
Absolute reduction		23/4	625/36		1875/32	14283/128	43125/128	328509/512
Max.feed velocity (mm/s)		46.3	15.3		4.5	2.3	0.79	0.41
Max.feed force (continous) (N)		135	451		727	901	1302	1530
Max.feed force (intermittent) (N)		270	902		1454	1530	1530	1530
Max. Gear Hole "A"		3	4		4	4	4	4
Reduction			19:1		65:1	138:1	377:1	792:1
Absolute reduction			621/32		16767/256	13225/96	385641/1024	304175/384
Max.feed velocity (mm/s)			13.7		4.0	1.9	0.7	0.33
Max.feed force (continous) (N)			503		754	966	1351	1530
Max.feed force (intermittent) (N)			1006		1509	1530	1530	1530
Max. Gear Hole "A"			4		4	4	4	4
Reduction			24:1		72:1	190:1	416:1	1093:1
Absolute reduction			575/24		15625/216	12167/64	359375/864	279841/256
Max.feed velocity (mm/s)			11.1		3.6	1.4	0.64	0.24
Max.feed force (continous) (N)			539		779	1076	1397	1530
Max.feed force (intermittent) (N)			1079		1530	1530	1530	1530
Max. Gear Hole "A"			4		4	3	4	3
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	24	21.6	19.4	19.4	17.5	17.5	15.7	15.7
Weight (g)	365	365	410	410	455	455	500	500
Average backlash no load (°)	0.6[illegible]	0.8[illegible]	1[illegible]	1[illegible]	1[illegible]	1[illegible]	1[illegible]	1[illegible]
Mechanical positioning accuracy (mm)	0.164	0.166	0.167	0.167	0.167	0.167	0.167	0.167
Mass inertia gearhead incl.screw (g.cm²)	42.91	4.03	0.86	0.86	0.84	0.84	0.84	0.84
Gearhead length L1 (mm)	49.9	49.9	58.4	58.4	66.9	66.9	75.4	75.4

1/ based on screw length 201 mm (standard length) 2/ for reduction 1:1=3000rpm For the recommended combination specs, visit AM-32GP.

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SCREW PLANETARY GEARBOX

TRAPEZOIDAL SCREW

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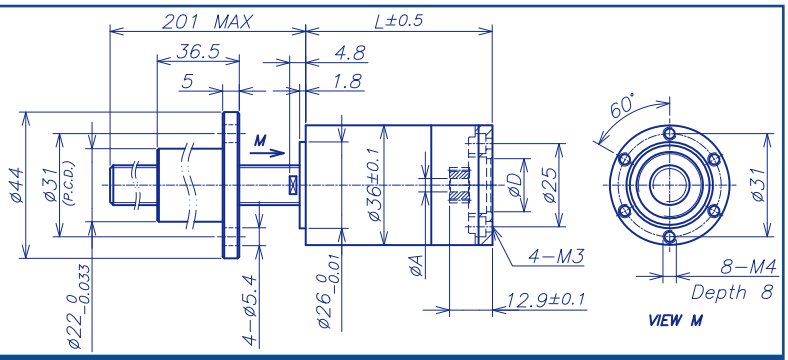
AM-TS1204-201-36GP Series



SCREW CHARACTER								
Screw(Diameter*Lead)	Tr12*4，SUS304	Radial play (5mm from flange)	＜0.05mm					
Standard length	201mm	Axial play	preloaded					
Special length（5mm steps）	Max.600mm	Max.countinuous input speed	8000rpm					
Nut （standard）	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC					
Material	Copper	Max.axial load(static)	2300N					
Axial play	＜0.13mm	Number of stages	0	1	2	3	4	
Planetary	straight teeth	Max. radial load: （20mm from flange）	360N	440N	660N	700N	700N	
Bearing	ball bearing/thrust ball bearing							

SCREW DRIVE DATA								
Reduction	1:1	3.5:1	12:1	36:1	43:1	91:1	285:1	546:1
Absolute reduction	1/1	7/2	49/4	36/1	343/8	91/1	15379/54	546/1
Max.feed velocity (mm/s)	200	152.3	43.5	14.8	12.4	5.8	1.8	0.9
Max.feed force (continous) (N)	80	112	485	872	924	1187	1737	2158
Max.feed force (intermittent) (N)	160	224	970	1744	1848	2300	2300	2300
Max. Gear Hole "A"	6	6	6	4	6	6	6	6
Reduction		4.3:1	15:1		53:1	113:1	353:1	676:1
Absolute reduction		13/3	91/6		637/12	338/3	28561/81	676/1
Max.feed velocity (mm/s)		123.0	35.1		10	4.7	1.5	0.8
Max.feed force (continous) (N)		145	582		992	1275	1865	2300
Max.feed force (intermittent) (N)		290	1164		1985	2300	2300	2300
Max. Gear Hole "A"		6	6		6	4	6	6
Reduction		6:1	19:1		66:1	126:1	394:1	756:1
Absolute reduction		6/1	169/9		1183/18	126/1	1183/3	756/1
Max.feed velocity (mm/s)		88.8	28.4		8.1	4.2	1.3	0.7
Max.feed force (continous) (N)		208	702		1065	1324	1936	2300
Max.feed force (intermittent) (N)		416	1404		2131	2300	2300	2300
Max. Gear Hole "A"		4	6		6	6	6	6
Reduction			21:1		74:1	156:1	441:1	936:1
Absolute reduction			21/1		147/2	156/1	441/1	936/1
Max.feed velocity (mm/s)			25.3		7.2	3.4	1.2	0.5
Max.feed force (continous) (N)			728		1106	1421	2010	2300
Max.feed force (intermittent) (N)			1457		2212	2300	2300	2300
Max. Gear Hole "A"			6		6	6	6	6
Reduction			26:1		81:1	216:1	488:1	1296:1
Absolute reduction			26/1		2197/27	216/1	4394/9	1296/1
Max.feed velocity (mm/s)			20.5		6.5	2.4	1.1	0.4
Max.feed force (continous) (N)			782		1144	1584	2079	2300
Max.feed force (intermittent) (N)			1564		2288	2300	2300	2300
Max. Gear Hole "A"			6		6	4	6	4
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	84	84	75	75	68	68	61	61
Weight (g)	518	530	590	590	655	655	720	720
Average backlash no load (°)	0.5°	0.7°	0.8°	0.8°	0.8°	0.8°	0.8°	0.8°
Mechanical positioning accuracy (mm)	0.164	0.164	0.166	0.167	0.167	0.167	0.167	0.167
Mass inertia gearhead incl.screw (g.cm²)	113.24	9.92	1.47	0.47	1.41	1.41	1.41	1.41
Gearhead length L1 (mm)	59.9	59.9	68.9	68.9	77.9	77.9	86.9	86.9

1/ based on screw length 201 mm (standard length) 2/ for reduction 1:1=3000rpm For the recommended combination specs，visit AM-36GP.

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SCREW PLANETARY GEARBOX

TRAPEZOIDAL SCREW

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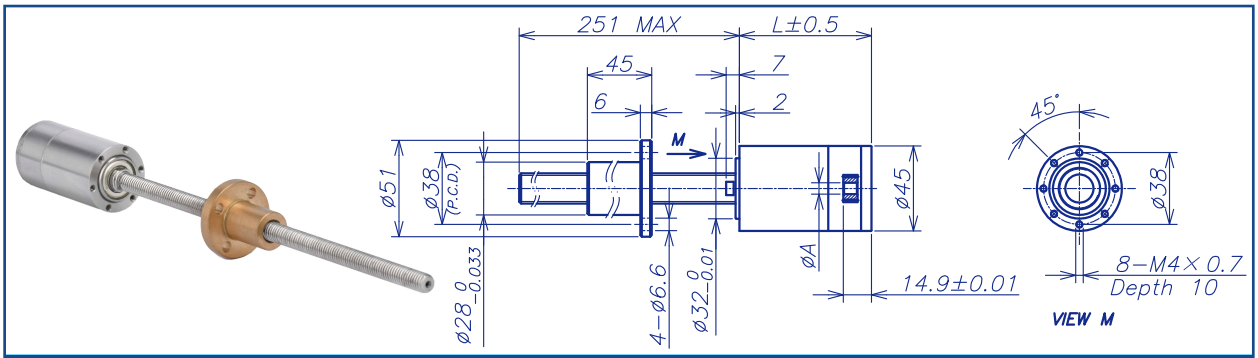
AM-TS1605-251-45GP Series



SCREW CHARACTER							
Screw(Diameter*Lead)	Ts16*5, SUS304	Radial play (5mm from flange)	< 0.05mm				
Standard length	251mm	Axial play	preloaded				
Special length (5mm steps)	Max.600mm	Max.countinuous input speed	8000rpm				
Nut (standard)	thread nut	Recommended Temperature Range	-15°C ~ +80°C				
Material	Copper	Max.axial load(static)	5000N				
Axial play	<0.13mm	Number of stages	0	1	2	3	4
Planetary	straight teeth	Max. radial load: (15mm from flange)	440N	660N	700N	700N	700N
Bearing	ball bearing/thrust ball bearing						

SCREW DRIVE DATA								
Reduction	1:1	3.3:1	11:1	27:1	37:1	69:1	213:1	361:1
Absolute reduction	1/1	10/3	100/9	676/25	1000/27	208/3	640/3	5408/15
Max.feed velocity (mm/s)	250	200	60	24.6	18	9.6	3.1	1.8
Max.feed force (continous) (N)	110	188	561	1118	1241	1530	2225	2651
Max.feed force (intermittent) (N)	220	376	1122	2236	2483	3060	4451	5000
Max. Gear Hole "A"	8	8	8	6	8	8	8	6
Reduction		4:1	13:1		44:1	83:1	256:1	433:1
Absolute reduction		4/1	40/3		400/9	416/5	256/1	10816/25
Max.feed velocity (mm/s)		166.7	50		15	8	2.6	1.5
Max.feed force (continous) (N)		231	646		1319	1626	2365	2817
Max.feed force (intermittent) (N)		2281	1292		2638	3252	4730	5000
Max. Gear Hole "A"		8	8		8	8	8	8
Reduction		5.2:1	16:1		53:1	90:1	277:1	469:1
Absolute reduction		26/5	16/1		160/3	1352/15	832/3	35152/75
Max.feed velocity (mm/s)		128.2	41.6		12.5	7.3	2.4	1.4
Max.feed force (continous) (N)		272	835		1402	1670	2429	2893
Max.feed force (intermittent) (N)		544	1670		2804	3340	4858	5000
Max. Gear Hole "A"		6	8		8	8	8	6
Reduction			17:1		58:1	108:1	300:1	562:1
Absolute reduction			52/3		520/9	2704/25	2704/9	70304/125
Max.feed velocity (mm/s)			38.4		11.5	6.1	2.2	1.1
Max.feed force (continous) (N)			964		1440	1774	2494	3074
Max.feed force (intermittent) (N)			1928		2880	3549	4989	5000
Max. Gear Hole "A"			8		8	8	8	8
Reduction			21:1		64:1	141:1	333:1	731:1
Absolute reduction			104/5		64/1	17576/125	1664/9	456976/625
Max.feed velocity (mm/s)			32.0		10.4	4.7	2	0.9
Max.feed force (continous) (N)			1024		1489	1936	2581	3355
Max.feed force (intermittent) (N)			2048		2979	3873	5000	5000
Max. Gear Hole "A"			8		8	6	8	6
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	36	32	29	29	26	26	23	23
Weight (g)	1085	1085	1210	1210	1335	1335	1460	1460
Average backlash no load (°)	0.5°	0.7°	0.8°	0.8°	0.8°	0.8°	0.8°	0.8°
Mechanical positioning accuracy (mm)	0.167	0.167	0.168	0.168	0.168	0.168	0.168	0.168
Mass inertia gearhead incl.screw (g.cm²)	279.97	37.38	15.56	15.56	13.59	13.59	13.41	13.41
Gearhead length L1 (mm)	69.9	69.9	81.9	81.9	93.9	93.9	105.9	105.9

1/ based on screw length 251 mm (standard length) 2/ for reduction 1:1=3000rpm For the recommended combination specs, visit AM-45GP.

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SCREW PLANETARY GEARBOX

TRAPEZOIDAL SCREW

ASSUN
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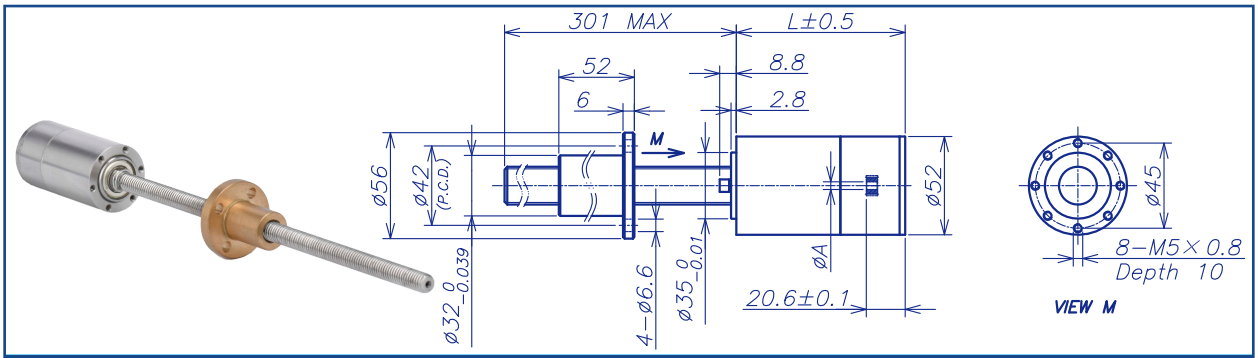
AM-TS2005-301-52GP Series



SCREW CHARACTER								
Screw(Diameter*Lead)	Tr20*5，SUS304	Radial play (5mm from flange)	＜0.05mm					
Standard length	301mm	Axial play	preloaded					
Special length（5mm steps）	Max.800mm	Max.countinuous input speed	8000rpm					
Nut （standard）	thread nut	Recommended Temperature Range	-15ºC ~ +80ºC					
Material	Copper	Max.axial load(static)	7000N					
Axial play	＜0.13mm	Number of stages	0	1	2	3	4	
Planetary	straight teeth	Max. radial load: （20mm from flange）	440N	660N	700N	700N	700N	
Bearing	ball bearing/thrust ball bearing							

SCREW DRIVE DATA								
Reduction	1:1	3.5:1	12:1	19:1	43:1	81:1	186:1	353:1
Absolute reduction	1/1	7/2	49/4	169/9	343/8	2197/27	4459/24	28561/81
Max.feed velocity (mm/s)	250	190.4	54.4	35.5	15.5	8.1	3.5	1.8
Max.feed force (continous) (N)	150	198	670	1138	1912	2368	3118	3860
Max.feed force (intermittent) (N)	300	396	1340	2276	3825	4736	6236	7000
Max. Gear Hole "A"	10	10	10	8	10	8	10	8
Reduction		4.3:1	15:1	26:1	53:1	91:1	257:1	488:1
Absolute reduction		13/3	91/6	26/1	637/12	91/1	1029/4	4394/9
Max.feed velocity (mm/s)		153.8	43.9	25.6	12.5	7.3	2.5	1.3
Max.feed force (continous) (N)		271	851	1619	2053	2458	3475	4303
Max.feed force (intermittent) (N)		542	1702	3238	4107	4916	6951	7000
Max. Gear Hole "A"		8	10	8	10	8	10	8
Reduction			21:1		66:1	113:1	319:1	546:1
Absolute reduction			21/1		1183/18	338/3	637/2	546/1
Max.feed velocity (mm/s)			31.7		10.1	5.9	2.0	1.2
Max.feed force (continous) (N)			1338		2205	2639	3732	4466
Max.feed force (intermittent) (N)			2676		4410	5278	7000	7000
Max. Gear Hole "A"			10		10	8	10	8
Reduction					74:1	156:1	441:1	676:1
Absolute reduction					147/2	156/1	441/1	676/1
Max.feed velocity (mm/s)					9.0	4.2	1.5	1.0
Max.feed force (continous) (N)					2289	2941	4159	4796
Max.feed force (intermittent) (N)					4578	5883	7000	7000
Max. Gear Hole "A"					10	8	10	8
Reduction					126:1		756:1	936:1
Absolute reduction					126/1		756/1	936/1
Max.feed velocity (mm/s)					5.2		0.9	0.7
Max.feed force (continous) (N)					2739		4978	5345
Max.feed force (intermittent) (N)					5479		7000	7000
Max. Gear Hole "A"					10		10	8
Number of stages	0	1	2	2	3	3	4	4
Max.efficiency gearhead incl.screw (%)	31	28	25	25	22	22	20	20
Weight (g)	2090	2090	2310	2310	2520	2520	2730	2730
Average backlash no load (°)	0.5°	0.6°	0.7°	0.7°	0.7°	0.7°	0.7°	0.7°
Mechanical positioning accuracy (mm)	0.164	0.166	0.167	0.167	0.167	0.167	0.167	0.167
Mass inertia gearhead incl.screw (g.cm²)	617.89	68.8	25.13	25.13	21.38	21.38	21.09	21.09
Gearhead length L1 (mm)	89.3	89.3	105.8	105.8	122.3	122.3	138.8	138.8

1/ based on screw length 301 mm (standard length) 2/ for reduction 1:1=3000rpm For the recommended combination specs，visit AM-52GP.

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ASSUN
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CONTROLLER

Assun controllers include speed drivers and servo controllers. The speed drivers are usually used to drive the motor with several simple control functions, and servo controllers are used to achieve accurate speed, torque and position control.

Assun Servo Controllers are compact and efficient, customer may choose Can Open, Ether Cat and RS485 communication protocols based on their needs.

AM-CDN-0305-LAAS AM-CDN-0815-LAAS AM-CDN-1525-NAAS AM-CDR-1224-NAAS

Traditional Controller CAN Bus Controller EtherCAT Bus Controller

AM - CDN 1525 NAAS

Company Name Abbreviation

Feedback Type
A - Feedback support: Incremental encoder (differential or single end), SSI absolute encoder, RS 485 absolute encoder, Hall Sensor

Installation
S - Standard Installation

Controller Type
CD - Speed Driver
SO - Servo Controller

Current Level
15 - Rated Current (A)
25 Maximum Current (A)

Voltage Level
L - 5V-24V
M - 9V-70V
N - 12V-48V

Communication Protocols
D - CAN Bus Control (RS422, RS485, CAN, USB Commissioning)
E - (Direction+pulse, AB Pulse, Analogue Input Control, USB Commissioning)
C - EtherCat Bus Control (Include USB Commissioning)
N - No Communication (Speed Driver)
R - RS 485 Communication ((Speed Driver))

Operation Temperature
A -40°C - 85°C
B -40°C - 105°C
C -40°C - 125°C

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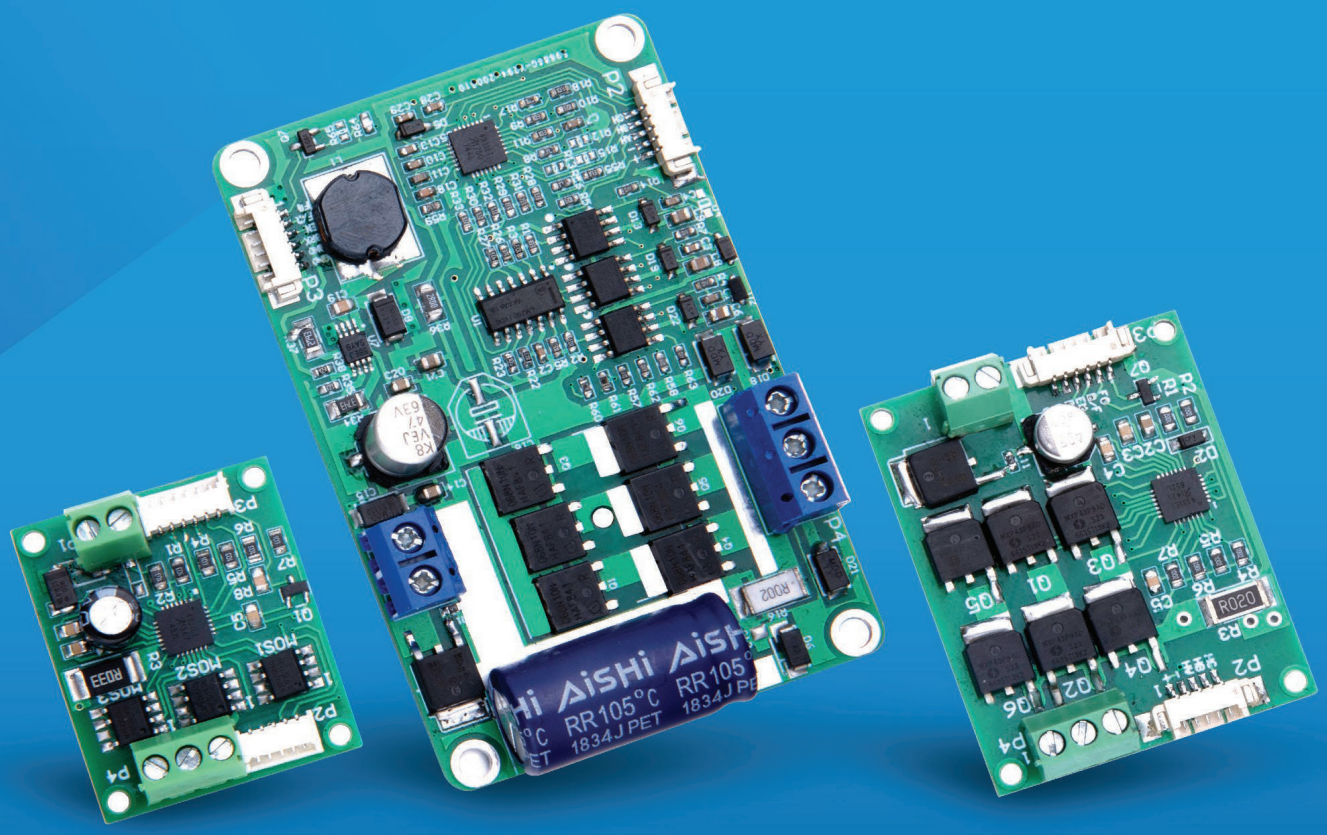
ASSUN
DRIVING THE FUTURE

CONT ROLLER

SPEED DRIVER

Assun Speed Drivers are made to drive the brushless DC motors with several potential control functions like speed control, rotation direction control and speed feedback. Customer can choose different models based on the specific current rating.



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CONTROLLER

SPEED DRIVER

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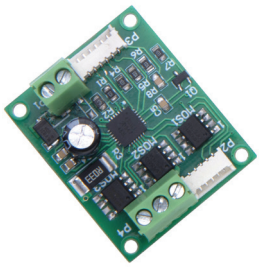
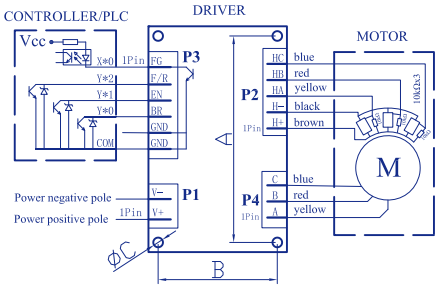
AM-CDN-0305-LAAS (3 Amps)





SYSTEM CHARACTERISTICS:	INFORMATION:	INSTALLATION NOTES:
Input Voltage: 12~28V DC	Dimension: Length: 34mm. width: 28mm	a) Please install in dry and ventilated place
Continuous Current: 3A	Hole Size: A: 30.0mm; B: 24.0mm; C: 2.1mm	b) Avoid vibration and collision
Temperature - Operation: 0 ~+45°C	Cooling Method: Natural Cooling	c) Do not lt metal dust and iron cut falling on controller
Temperature - Storage: -20 ~+85°C	Protective Function: Current limit, Undervoltage	d) Fix installation is needed
Humidity: ≤85% (non-condensing)	Weight: 8.5g	e) Use qualify connection cables

INTERFACE & CONTROL SIGNALS

P1: Electric Connections

Number	Name	Note
1	M+	Power Vcc
2	M-(GND)	Power GND

P2: Motor Sensor Connections

Number	Name	Note
1	H+	Hall sensor power supply Vcc
2	H-	Hall sensor power supply GND
3	HA	Hall Sensor Phase A
4	HB	Hall Sensor Phase B
5	HC	Hall Sensor Phase C

P3: Control Signal Connections

Number	Name	Note (Low: 0~0.8VDC; High:2.2~5.0VDC; Null: Not Connect)
1	FG	Motor Speed Signal Output (3 puls/turn)
2	F/R	Direction port (Low-CW; High/Null-CCW); Direction defined when looking from motor front.
3	EN	Enable port (Low-Motor rotate; Hight/Null-motor stop). This port can be used as PWM control (PWM requirement: 20KHz, the lower the duty cycle, the higher the speed).
4	BR	Brake port (Low-Brake; High/Null-Release)
5	GND	Control GND
6	GND	Control GND

P4: Motor Electric Connection

Number	Name	Note
1	A	Motor Winding A (U)
2	B	Motor Winding B (V)
3	C	Motor Winding C (W)

NOTE ON USAGE

- Controller should be installed with 20mm space for cooling. The environment should be ventilated
- When using the braking function, please calculate the braking speed. Ensure that the motor speed is lower than the braking speed to avoid high back EMF which will damage the components
- Change direction only when motor stoped completely to prevent damage of electronic components.
- The controller is a two-quadrant operation mode, it cannot be use when speed change is rapid.
- Please read this instruction carefully before installation. Whenever there is problem, please stop the current immediately.

REMARKS

Data Tested at 25˚.
Operation exceeds continuous limits of operating range will compromise the life of the device.

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CONTROLLER

SPEED DRIVER

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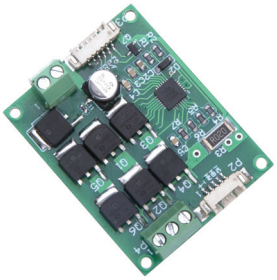
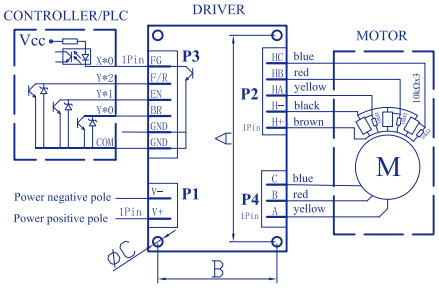
AM-CDN-0815-LAAS (8 Amps w/ optional signal or manual control.)





SYSTEM CHARACTERISTICS:	INFORMATION:	INSTALLATION NOTES:
Input Voltage: 12~48V DC	Dimension: Length: 50mm. width: 35mm	a) Please install in dry and ventilated place
Max. Continuous Current: 8A	Installation Hole Diameter: 2.5mm	b) Avoid vibration and collision
Recommended Operation Temp: -20~+45°C	Cooling Method: Natural Cooling	c) Do not lt metal dust and iron cut falling on controller
Recommended Storage Temp: -20 ~+85°C	Protective Function: Current limit, Undervoltage	d) Fix installation is needed
Humidity: ≤85% (non-condensing)	Weight: 25g	e) Use qualify connection cables

INTERFACE & CONTROL SIGNALS

P1: Electric Connections

Number	Name	Note
1	M+	Power Vcc
2	M-(GND)	Power GND

P2: Motor Sensor Connections

Number	Name	Note
1	H+	Hall sensor power supply Vcc
2	H-	Hall sensor power supply GND
3	HA	Hall Sensor Phase A
4	HB	Hall Sensor Phase B
5	HC	Hall Sensor Phase C

P3: Control Signal Connections

Number	Name	Note (Low: 0~0.8VDC; High:2.2~5.0VDC; Null: Not Connect)
1	FG	Motor Speed Signal Output (1 pulse/turn)
2	F/R	Direction port (Low-CW; High/Null-CCW); Direction defined when looking from motor front.
3	EN	PWM speed control signal input (PWM requirement: 30KHz, the higher the duty cycle, the higher the speed).
4	BR	Brake port (Low-Brake; High/Null-Release)
5	GND	Control GND

P4: Motor Connections

Number	Name	Note
1	A	Motor Winding A (U)
2	B	Motor Winding B (V)
3	C	Motor Winding C (W)

P5: Manual Controls

Number	Name	Note
1	Potential Meter Knob	Rotate to control speed Manually.
2	Direction Button	Default in CCW; Switch direction for each click of button.

Note:
Manual control knob and buttons will be connected to the board by lead wire;
User must select Signal Control or Manual Control upon order. Choosing one mode will dis-able the other mode.
****Only one model available with end users.***

NOTE ON USAGE

- Controller should be installed with 20mm space for cooling. The environment should be ventilated
- When using the braking function, please calculate the braking speed. Ensure that the motor speed is lower than the braking speed to avoid high back EMF which will damage the components
- Change direction only when motor stoped completely to prevent damage of electronic components.
- The controller is a two-quadrant operation mode, it cannot be use when speed change is rapid.
- Please read this instruction carefully before installation. Whenever there is problem, please stop the current immediately.

REMARKS

Data Tested at 25°.
Operation exceeds continuous limits of operating range will compromise the life of the device.

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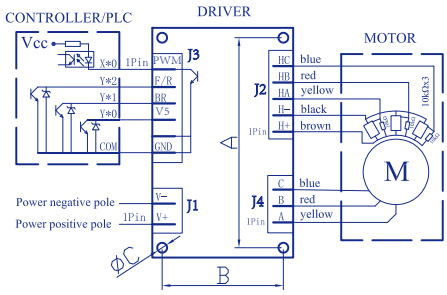
CONTROLLER

SPEED DRIVER

AM-CDN-1525-NAAS (15 Amps, w/ signal & manual controls.)



SYSTEM CHARACTERISTICS:	INFORMATION:	INSTALLATION NOTES:
Input Voltage: 12~48V DC	Dimension: Length: 60mm. width: 50mm	a) Please install in dry and ventilated place
Max. Continuous Current: 15A	Installation Hole Diameter: 3.4mm	b) Avoid vibration and collision
Recommended Operation Temp: -20~+45°C	Cooling Method: Natural Cooling	c) Do not lt metal dust and iron cut falling on controller
Recommended Storage Temp: -20 ~+85°C	Control: Manual Control/Signal Control	d) Fix installation is needed
Humidity: ≤85% (non-condensing)	Weight: 40g	e) Use qualify connection cables

INTERFACE & CONTROL SIGNALS

P1: Electric Connections

Number	Name	Note
1	V+	Power Vcc
2	GND	Power GND

P2: Motor Sensor Connections

Number	Name	Note
1	H+	Hall sensor power supply Vcc
2	H-	Hall sensor power supply GND
3	HA	Hall Sensor Phase A
4	HB	Hall Sensor Phase B
5	HC	Hall Sensor Phase C

P3: Control Signal Connections

Number	Name	Note (Low: 0~0.8VDC; High:2.2~5.0VDC; Null: Not Connect)
1	PWM	PWM speed control signal input (PWM requirement: 30KHz, the higher the duty cycle, the higher the speed).
2	F/R	Direction port (Low-CW; High/Null-CCW); Direction defined when looking from motor front.
3	BR	Brake port (Low-Brake; High/Null-Release)
4	V5	Control GND
5	GND	Power Vcc 5V

P4: Motor Electric Connection

Number	Name	Note
1	A	Motor Winding A (U)
2	B	Motor Winding B (V)
3	C	Motor Winding C (W)

P5: Manual Controls

Number	Name	Note
1	Potential Meter Knob	Rotate to control speed Manually.
2	Direction Button	Default in CCW; change direction after pushing to the other side.

Note:
User could use the driver either with manual control or with PWM and analogue signal control;
Both control models available with end users.

NOTE ON USAGE

- Controller should be installed with 20mm space for cooling. The environment should be ventilated
- When using the braking function, please calculate the braking speed. Ensure that the motor speed is lower than the braking speed to avoid high back EMF which will damage the components
- Change direction only when motor stoped completely to prevent damage of electronic components.
- The controller is a two-quadrant operation mode, it cannot be use when speed change is rapid.
- Please read this instruction carefully before installation. Whenever there is problem, please stop the current immediately.

REMARKS

Data Tested at 25˚.
Operation exceeds continuous limits of operating range will compromise the life of the device.

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ASSUN
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SERVO CONT ROLLER

SERVO CON TOLLER

Assun Servo Controllers are produced for close-loop speed, torque and position control of DC brushed and brushless motors. High precision character of the controller is favored by many applications with DC drive control. Models of Traditional Control (without communication) and Bus Control (with communication) have been provided for customer to choose the suitable type. Can Open, Ether Cat and RS485/422 communication protocols are provided for bus control systems.

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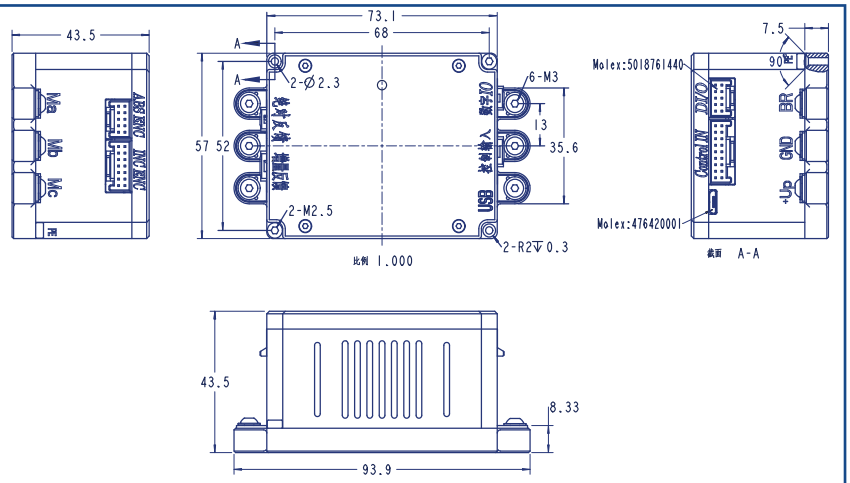
Traditional Controller



Model		Servo Controller (Traditional Control)				
		AM-SOE-0103-MAAS	AM-SOE-0206-MAAS	AM-SOE-0510-MAAS	AM-SOE-1020-MAAS	AM-SOE-1530-MAAS
Dimension (mm)		73.1*57*43.5				
Weight (g)		225				
Fundamental Specs	Output Rated Current (Coninuous, RMS)	1 A	2 A	5 A	10	15 A
	Output Max. Current (Intermittent, RMS)	3 A	6 A	10 A	20	30 A
	Input Power Supply Voltage Range	12 VDC~48 VDC (Usually according to Motor Rated Voltage)				
	Overload Recognition Time	3 s				
	Overload Trip Reset Delay	30 s				
	Temperature Raise	(Under Rated Current) 30min≤40K				
	Working Frequency	6khz ~ 34khz				
Rated Electric Insulation		Under DC voltage 1000V from input/output to housing, current leakage smaller than 3mA				
Total Electric Resistance		≥1MΩ（Temp. 40℃, RH 95%, no condensing water）				
Mean Time Before Failure (MTBF)		≥8000 Hrs				
Power Control		For BLDC & Servo Motor: SVPWM, Square Wave For Brushed Motor: Bipolar PWM				
IP Level		IP20				
Cooling Type		Natural Air Cool				
Connection Portal Info	Analog Voltage Input Portal	2 Channel (±10V)				
	Digital IO Input Portal	4 Channel (5VDC~24VDC), hardware default in high voltage level when not connected. Detail control functions can be set and adjusted by changing parameters.				
	Digital IO Output Portal	4 Channel (All four channels are open collector output, highest voltage at 30V; First three channels have max. continuous current of 0.25A, and last channel has max. continuous current of 2A)				
	Direction + Pulse	1 set of Direction + Pulse (Differential & Non-differential)				
	Feedback Type	Electromagnetic/Optical Incremental Encoder; SSI Absolute Encoder; RS 485 Absolute Encoder				

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ASSUN
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Traditional Controller

Model			Servo Controller (Traditional Control)
Basic Function	Application Mode		Position Closed-loop Control / Speed Closed-loop Control / Torque Closed-loop Control
	Preparation Time		Power on and no malfunction, controller ready in 3 seconds
	Hardware Protection Threshold	Under Voltage	9.5 V
		Over Voltage	75 V
		Over Current	Over Current Protection
		Overheat	85℃ Automate Alarm and Shut Down
		Power Switch	Equipped power switch to turn on or off the motor.
	Software Protection	Malfunction Lock	Automate slow down and stop when detect malfunction, and lock the malfunction for inspection.
		Over Load	When current is continuously over Max. continuous current for 10 seconds, default to alarm for malfunction.
		Over Current	Monitor real time current value, immediate cut off motor outpu when current over the pre-set value.
		Differential Protection	Current or speed setting and feedback differential protection
	Digital IO	Input	Multiplex the following functions by adjusting parameters: Servo start, zero-speed position clamp, emergency shut down, origin point signal, positive position limit, negative position limit.
		Output	Multiplex the following functions by adjusting parameters: Power supply under voltage, position abnormal, hall feedback abnormal, over current, over load, driver overheat, current differentiate, speed differentiate, power supply over voltage, servo ready, servo operation, zero speed arrival, targeted speed arrival,targeted position arrival, brake output, origin point recover finish, error alarm, negative stall, positive stall, negative indicate.
	Communication Portal	USB	Usually for Commissioning (also support host computer control)
		CAN	N/A
		RS422/485	N/A
		Transmission Distance	Based on the hardware connection
Torque Control	Stop Response		Rise time≤1.5ms；Over tune≤5%；Shock ≤2 times
	Current Closed Loop Control		≥1KHz
	Speed Limitation		Parameter Limits
Speed Control	Speed Feedback		Based on Encoder
	Encoder Power Supply		+5V±2%/500mA
	Speed Ratio		≥3000 : 1
	Step Response		Rise time≤40ms；Overtune≤15%；Shock≤2.5 times
	Sinusoidal Band Response		≥500Hz
	Static Error Rate		≤0.4%（In speed 1000RPM, rated torque load）
	Speed Fluctuation Rate		≤0.6%
	Linearity		≤0.45%
Postition Close-Loop Control	Highest input pulse frequency		Digital Insulation 500K (1 meter cable)
	Pulse commande mode		AB Pulse; Direction + Pulse
	Command control mode		Outer Pulse control, anaglogue input
	Electronic gear ratio		Electronic Gear N/M, N: 1～65535, M: 1～65535 (parameter setting)
	Torque Limit		(Parameter Setting)
Environmental Requirements	Operation Temp.		-30°C+60°C
	Storage Temp.		-30°C+65°C
	Relative Humidity		0%～90%RH （No condensing）
	Vibration Requirements		Frequency 5Hz to 25Hz, amplitude with 1.6mm; Frequency 25Hz to 200Hz, Acceleration within 1.2g, time 30min.

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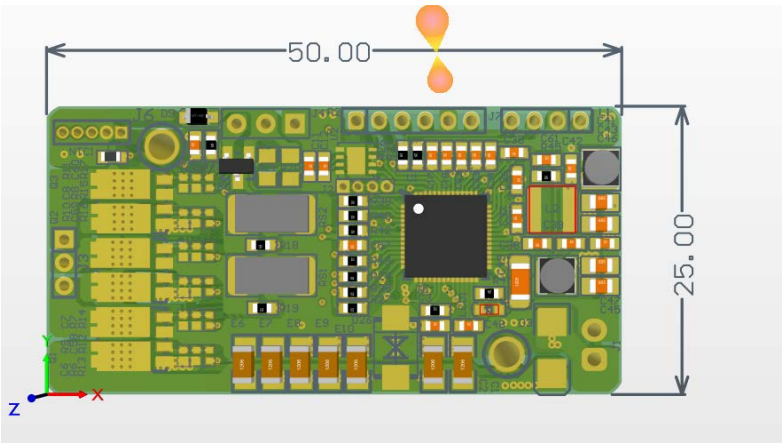
Traditional Controller +RS-485



Model		Servo Controller (Traditional Control+RS-485) AM-CDR0306-NAAS
Dimension (mm)		50*25*2
Weight (g)		20
Fundamental Specs	Output Rated Current (Coninuous, RMS)	3 A
	Output Max. Current (Intermittent, RMS)	6 A
	Input Power Supply Voltage Range	12 VDC~48 VDC (Usually according to Motor Rated Voltage)
	Overload Recognition Time	3 s
	Overload Trip Reset Delay	60 s
	Temperature Raise	(Under Rated Current) 30min≤40K
	Working Frequency	16khz
Rated Electric Insulation		Under DC voltage 1000V from input/output to housing, current leakage smaller than 3mA
Total Electric Resistance		≥1MΩ（Temp. 40℃, RH 95%, no condensing water）
Mean Time Before Failure (MTBF)		≥8000 Hrs
Power Control		Brushless DC motor, brushless DC motor
Power control mode		SVPWM
IP Level		IP20
Cooling Type		Natural cooling (if the continuous output exceeds the rated current, auxiliary heat dissipation is required)
Connection Portal Info	Analog Voltage Input Portal	Optional ≤ 4 channels(±5V)
	Digital IO Input Portal	Optional ≤ 4 channels(±5V)
	Digital IO Output Portal	Optional ≤ 4 channels(±5V)
	Direction + Pulse	Non-differential)
	Feedback Type	Magnetic electric/photoelectric incremental encoder; RS485 absolute value encoder

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Traditional Controller +RS-485

Model			Servo Controller (Traditional Control+RS-485)
Basic Function	Application Mode		Position Closed-loop Control / Speed Closed-loop Control / Torque Closed-loop Control
	Preparation Time		Power on and no malfunction, controller ready in 3 seconds
	Hardware Protection Threshold	Under Voltage	9 V
		Over Voltage	48 V
		Over Current	Over Current Protection
		Overheat	85℃ Automate Alarm and Shut Down
		Power Switch	Equipped power switch to turn on or off the motor.
	Software Protection	Malfunction Lock	Automate slow down and stop when detect malfunction, and lock the malfunction for inspection.
		Over Load	Detect whether the current continuously exceeds the maximum current setting in real time, and the fault alarm will be given after 3S by default
		Over Current	Monitor real time current value, immediate cut off motor outpu when current over the pre-set value.
		Differential Protection	Current or speed setting and feedback differential protection
	Digital IO≤4	Input	Multiplex the following functions by adjusting parameters: Servo start, zero-speed position clamp, emergency shut down, origin point signal, positive position limit, negative position limit.
		Output	Multiplex the following functions by adjusting parameters: Power supply under voltage, position abnormal, hall feedback abnormal, over current, over load, driver overheat, current differentiate, speed differentiate, power supply over voltage, servo ready, servo operation, zero speed arrival, targeted speed arrival,targeted position arrival, brake output, origin point recover finish, error alarm, negative stall, positive stall, negative indicate.
	Communication Portal	USB	N/A
		CAN	N/A
		RS422/485	RS485 communication
		Transmission Distance	Based on the hardware connection
Torque Control	Step Response		Rise time≤1.5ms；Over tune≤5%；Shock ≤2 times
	Current Closed Loop Control		≥1KHz
	Speed Limitation		Parameter Limits
Speed Control	Speed Feedback		Hall feedback Incremental encoder feedback (differential / non differential)
	Encoder Power Supply		+5V±2%/50mA
	Speed Ratio		≥3000 : 1
	Step Response		Rise time≤40ms；Overtune≤15%；Shock≤2.5 times
	Sinusoidal Band Response		≥500Hz
	Static Error Rate		≤0.4%（In speed 1000RPM, rated torque load）
	Speed Fluctuation Rate		≤0.6%
	Linearity		≤0.45%
Postition Close-Loop Control	Highest input pulse frequency		Digital Insulation 60KHz (1 meter cable)
	Pulse commande mode		AB Pulse; Direction + Pulse
	Command control mode		External pulse control, analog input, duty cycle input
	Electronic gear ratio		Electronic Gear N/M, N: 1～65535, M: 1～65535 (parameter setting)
	Torque Limit		(Parameter Setting)
Environmental Requirements	Operation Temp.		-30°C+80°C
	Storage Temp.		-30°C+80°C
	Relative Humidity		0%～90%RH （No condensing）
	Vibration Requirements		Frequency 5Hz to 25Hz, amplitude with 1.6mm; Frequency 25Hz to 200Hz, Acceleration within 1.2g, time 30min.

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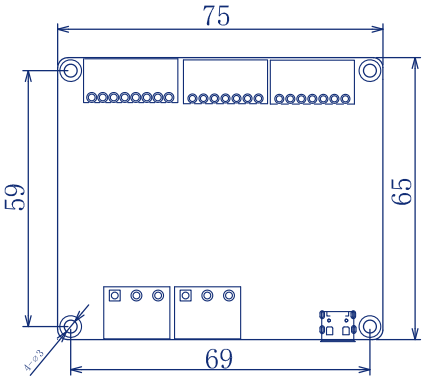
Traditional Controller +RS-485



Model		Servo Controller (Traditional Control+RS-485) AM-COF-05-10-OBDS
Dimension (mm)		75*65*25
Weight (g)		70
Fundamental Specs	Output Rated Current (Coninuous, RMS)	5 A
	Output Max. Current (Intermittent, RMS)	12 A
	Input Power Supply Voltage Range	12 VDC~48 VDC (Usually according to Motor Rated Voltage)
	Overload Recognition Time	3 s
	Overload Trip Reset Delay	60 s
	Temperature Raise	(Under Rated Current) 30min≤40K
	Working Frequency	16khz
Rated Electric Insulation		Under DC voltage 1000V from input/output to housing, current leakage smaller than 3mA
Total Electric Resistance		≥1MΩ（Temp. 40℃, RH 95%, no condensing water）
Mean Time Before Failure (MTBF)		≥8000 Hrs
Power Control		Brushless DC motor, brushless DC motor
Power control mode		SVPWM
IP Level		IP20
Cooling Type		Natural cooling (if the continuous output exceeds the rated current, auxiliary heat dissipation is required)
Connection Portal Info	Analog Voltage Input Portal	1 Channel (±10V)
	Digital IO Input Portal	3 Channel (3.3VDC~24VDC), the hardware defaults to low level , and the effective level control state can be modified through parameters
	Digital IO Output Portal	1 Channel (open collector output, maximum withstand voltage 30V, maximum continuous current 0.22a)
	Direction + Pulse	1 set of Direction + Pulse (Differential & Non-differential)
	Feedback Type	Hall feedback ; Incremental encoder feedback (differential / non differential)

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Traditional Controller +RS-485

Model			Servo Controller (Traditional Control+RS-485)
Basic Function	Application Mode		Position Closed-loop Control / Speed Closed-loop Control / Torque Closed-loop Control
	Preparation Time		Power on and no malfunction, controller ready in 3 seconds
	Hardware Protection Threshold	Under Voltage	9 V
		Over Voltage	65 V
		Over Current	Over Current Protection
		Overheat	85℃ Automate Alarm and Shut Down
		Power Switch	Equipped power switch to turn on or off the motor.
	Software Protection	Malfunction Lock	Automate slow down and stop when detect malfunction, and lock the malfunction for inspection.
		Over Load	Detect whether the current continuously exceeds the maximum current setting in real time, and the fault alarm will be given after 3S by default
		Over Current	Monitor real time current value, immediate cut off motor outpu when current over the pre-set value.
		Differential Protection	Current or speed setting and feedback differential protection
	Digital IO	Input	Multiplex the following functions by adjusting parameters: Servo start, zero-speed position clamp, emergency shut down, origin point signal, positive position limit, negative position limit.
		Output	Multiplex the following functions by adjusting parameters: Power supply under voltage, position abnormal, hall feedback abnormal, over current, over load, driver overheat, current differentiate, speed differentiate, power supply over voltage, servo ready, servo operation, zero speed arrival, targeted speed arrival,targeted position arrival, brake output, origin point recover finish, error alarm, negative stall, positive stall, negative indicate.
	Communication Portal	USB	Usually for Commissioning (also support host computer control)
		CAN	N/A
		RS422/485	RS485 communication
		Transmission Distance	Based on the hardware connection
Torque Control	Step Response		Rise time≤1.5ms；Over tune≤5%；Shock ≤2 times
	Current Closed Loop Control		≥1KHz
	Speed Limitation		Parameter Limits
Speed Control	Speed Feedback		Hall feedback Incremental encoder feedback (differential / non differential)
	Encoder Power Supply		+5V±2%/50mA
	Speed Ratio		≥3000 : 1
	Step Response		Rise time≤40ms；Overtune≤15%；Shock≤2.5 times
	Sinusoidal Band Response		≥500Hz
	Static Error Rate		≤0.4%（In speed 1000RPM, rated torque load）
	Speed Fluctuation Rate		≤0.6%
	Linearity		≤0.45%
Postition Close-Loop Control	Highest input pulse frequency		Digital Insulation 60KHz (1 meter cable)
	Pulse commande mode		AB Pulse; Direction + Pulse
	Command control mode		External pulse control, analog input, duty cycle input
	Electronic gear ratio		Electronic Gear N/M, N: 1～65535, M: 1～65535 (parameter setting)
	Torque Limit		(Parameter Setting)
Environmental Requirements	Operation Temp.		-30°C+60°C
	Storage Temp.		-30°C+65°C
	Relative Humidity		0%～90%RH （No condensing）
	Vibration Requirements		Frequency 5Hz to 25Hz, amplitude with 1.6mm; Frequency 25Hz to 200Hz, Acceleration within 1.2g, time 30min.

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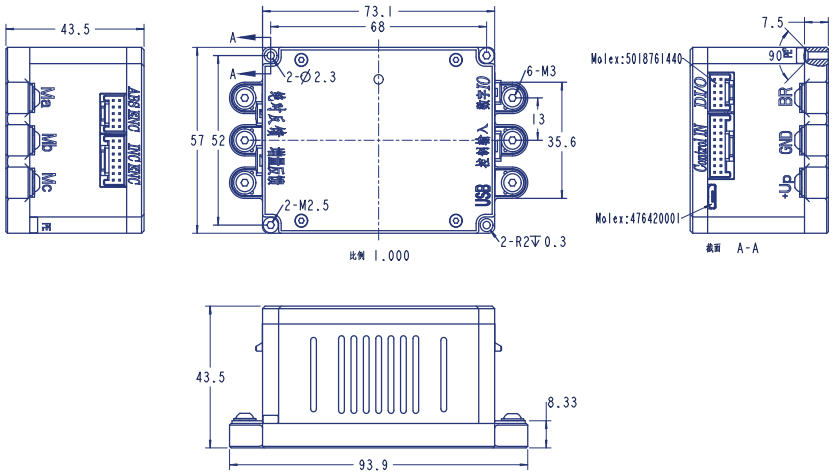
CAN BUS CONTROLLER



Model		Servo Controller (CAN Bus Control)				
		AM-SOD-0103-MAAS	AM-SOD-0206-MAAS	AM-SOD-0510-MAAS	AM-SOD-1020-MAAS	AM-SOD-1530-MAAS
Dimension (mm)		73.1*57*43.5				
Weight (g)		225				
Fundamental Specs	Output Rated Current (Coninuous, RMS)	1 A	2 A	5 A	10	15 A
	Output Max. Current (Intermittent, RMS)	3 A	6 A	10 A	20	30 A
	Input Power Supply Voltage Range	12 VDC~48 VDC (Usually according to Motor Rated Voltage)				
	Overload Recognition Time	3 s				
	Overload Trip Reset Delay	30 s				
	Temperature Raise	(Under Rated Current) 30min≤40K				
	Working Frequency	6khz ~ 34khz				
Rated Electric Insulation		Under DC voltage 1000V from input/output to housing, current leakage smaller than 3mA				
Total Electric Resistance		≥1MΩ（Temp. 40℃, RH 95%, no condensing water）				
Mean Time Before Failure (MTBF)		≥8000 Hrs				
Power Control		For BLDC & Servo Motor: SVPWM, Square Wave For Brushed Motor: Bipolar PWM				
IP Level		IP20				
Cooling Type		Natural Air Cool				
Connection Portal Info	Analog Voltage Input Portal	N/A				
	Digital IO Input Portal	4 Channel (5VDC~24VDC), hardware default in high voltage level when not connected. Detail control functions can be set and adjusted by changing parameters.				
	Digital IO Output Portal	4 Channel (All four channels are open collector output, highest voltage at 30V; First three channels have max. continuous current of 0.25A, and last channel has max. continuous current of 2A)				
	Direction + Pulse	N/A				
	Feedback Type	Electromagnetic/Optical Incremental Encoder; SSI Absolute Encoder; RS 485 Absolute Encoder				

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CAN BUS CONTROLLER

Model			Servo Controller (Bus Control)
Basic Function	Application Mode		Position Closed-loop Control / Speed Closed-loop Control / Torque Closed-loop Control
	Preparation Time		Power on and no malfunction, controller ready in 3 seconds.
	Hardware Protection Threshold	Under Voltage	9.5 V
		Over Voltage	75 V
		Over Current	Over Current Protection
		Overheat	85 Automate Alarm and Shut Down
		Power Switch	Equipped power switch to turn on or off the motor.
	Software Protection	Malfunction Lock	Automate slow down and stop when detect malfunction, and lock the malfunction for inspection.
		Over Load	When current is continuously over Max. continuous current for 10 seconds, default to alarm for malfunction.
		Over Current	Monitor real time current value, immediate cut off motor outpu when current over the pre-set value.
		Differential Protection	Current or speed setting and feedback differential protection
	Digital IO	Input	Multiplex the following functions by adjusting parameters: Servo start, zero-speed position clamp, emergency shut down, origin point signal, positive position limit, negative position limit.
		Output	Multiplex the following functions by adjusting parameters: Power supply under voltage, position abnormal, hall feedback abnormal, over current, over load, driver overheat, current differentiate, speed differentiate, power supply over voltage, servo ready, servo operation, zero speed arrival, targeted speed arrival,targeted position arrival, brake output, origin point recover finish, error alarm, negative stall, positive stall, negative indicate.
	Communication Portal	USB	Usually for Commissioning (also support host computer control)
		CAN	CANOPEN 301 + DS402(Default node id: 0x08,500kbps)
		RS422/485	MODBUS RS422/485(ASCII/RTU) (Default node id: 0x08,57600bps,8,1,N,N,)
		Transmission Distance	≥100 Meters
Torque Control	Stop Response		Rise time≤1.5ms；Over tune≤5%；Shock ≤2 times
	Current Closed Loop Control		≥1KHz
	Speed Limitation		Parameter Limits
Speed Control	Speed Feedback		Based on Encoder
	Encoder Power Supply		+5V±2%/500mA
	Speed Ratio		≥3000 : 1
	Step Response		Rise time≤40ms；Overtune≤15%；Shock≤2.5 times
	Sinusoidal Band Response		≥500Hz
	Static Error Rate		≤0.4%（In speed 1000RPM, rated torque load）
	Speed Fluctuation Rate		≤0.6%
	Linearity		≤0.45%
Postition Close-Loop Control	Highest input pulse frequency		N/A
	Pulse commande mode		N/A
	Command control mode		RS422/485 Modbus Communication; CAN Bus Control
	Electronic gear ratio		Electronic Gear N/M, N: 1～65535, M: 1～65535 (parameter setting)
	Torque Limit		(Parameter Setting)
Environmental Requirements	Operation Temp.		-30°C+60°C
	Storage Temp.		-30°C+65°C
	Relative Humidity		0%～90%RH （No condensing）
	Vibration Requirements		Frequency 5Hz to 25Hz, amplitude with 1.6mm; Frequency 25Hz to 200Hz, Acceleration within 1.2g, time 30min.

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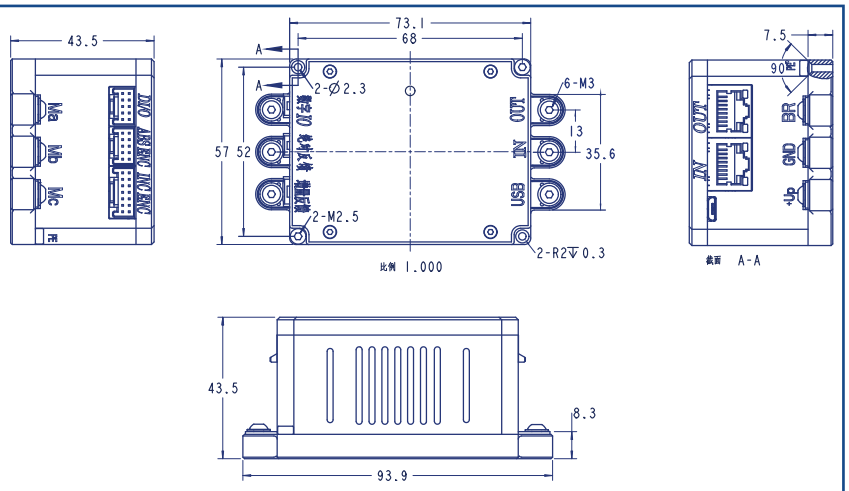
ETHERCAT BUS CONTROLLER



Model		Servo Controller (EtherCAT Bus Control)				
		AM-SOC0103-MAAS	AM-SOC0206-MAAS	AM-SOC0510-MAAS	AM-SOC1020-MAAS	AM-SOC1530-MAAS
Dimension (mm)		93.9*57*43.5				
Weight (g)		225				
Fundamental Specs	Output Rated Current (Coninuous, RMS)	1 A	2 A	5 A	10 A	15 A
	Output Max. Current (Intermittent, RMS)	3 A	6 A	10 A	20 A	30 A
	Input Power Supply Voltage Range	12 VDC~48 VDC (Usually according to Motor Rated Voltage)				
	Overload Recognition Time	3 s				
	Overload Trip Reset Delay	30 s				
	Temperature Raise	(Under Rated Current) 30min≤40K				
	Working Frequency	6khz ~ 34khz				
Rated Electric Insulation		Under DC voltage 1000V from input/output to housing, current leakage smaller than 3mA				
Total Electric Resistance		≥1MΩ（Temp. 40℃, RH 95%, no condensing water）				
Mean Time Before Failure (MTBF)		≥8000 Hrs				
Power Control		For BLDC & Servo Motor: SVPWM, Square Wave For Brushed Motor: Bipolar PWM				
IP Level		IP20				
Cooling Type		Natural Air Cool				
Connection Portal Info						
	Digital IO Input Portal	4 Channel (5VDC~24VDC), hardware default in high voltage level when not connected. Detail control functions can be set and adjusted by changing parameters.				
	Digital IO Output Portal	4 Channel (All four channels are open collector output, highest voltage at 30V; First three channels have max. continuous current of 0.25A, and last channel has max. continuous current of 2A)				
	Feedback Type	Electromagnetic/Optical Incremental Encoder; SSI Absolute Encoder; RS 485 Absolute Encoder				

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ETHERCAT BUS CONTROLLER

Model			Servo Controller (Traditional Control)
Basic Function	Application Mode		Position Closed-loop Control / Speed Closed-loop Control / Torque Closed-loop Control
	Preparation Time		Power on and no malfunction, controller ready in 3 seconds
	Hardware Protection Threshold	Under Voltage	9.5v
		Over Voltage	75v
		Over Current	Over Current Protection
		Overheat	85℃ Automate Alarm and Shut Down
		Power Switch	Equipped power switch to turn on or off the motor.
	Software Protection	Malfunction Lock	Automate slow down and stop when detect malfunction, and lock the malfunction for inspection.
		Over Load	When current is continuously over Max. continuous current for 10 seconds, default to alarm for malfunction.
		Over Current	Monitor real time current value, immediate cut off motor outpu when current over the pre-set value.
		Differential Protection	Current or speed setting and feedback differential protection
	Digital IO	Input	Multiplex the following functions by adjusting parameters: Servo start, zero-speed position clamp, emergency shut down, origin point signal, positive position limit, negative position limit.
		Output	Multiplex the following functions by adjusting parameters: Power supply under voltage, position abnormal, hall feedback abnormal, over current, over load, driver overheat, current differentiate, speed differentiate, power supply over voltage, servo ready, servo operation, zero speed arrival, targeted speed arrival,targeted position arrival, brake output, origin point recover finish, error alarm, negative stall, positive stall, negative indicate.
	Communication Portal	USB	Usually for Commissioning (also support host computer control)
		EtherCAT	1 set of in and out ports
Torque Control	Step Response		Rise time≤1.5ms；Over tune≤5%；Shock ≤2 times
	Current Closed Loop Control		≥1KHz
	Speed Limitation		Parameter Limits
Speed Control	Speed Feedback		Based on Encoder
	Encoder Power Supply		+5V±2%/500mA
	Speed Ratio		≥3000 : 1
	Step Response		Rise time≤40ms；Overtune≤15%；Shock≤2.5 times
	Sinusoidal Band Response		≥500Hz
	Static Error Rate		≤0.4%（In speed 1000RPM, rated torque load）
	Speed Fluctuation Rate		≤0.6%
	Linearity		≤0.45%
Postition Close-Loop Control			
	Command control mode		EtherCAT Bus Control
	Electronic gear ratio		Electronic Gear N/M, N: 1～65535, M: 1～65535 (parameter setting)
	Torque Limit		(Parameter Setting)
Environmental Requirements	Operation Temp.		-30°C+60°C
	Storage Temp.		-30°C+65°C
	Relative Humidity		0%～90%RH （No condensing）
	Vibration Requirements		Frequency 5Hz to 25Hz, amplitude with 1.6mm; Frequency 25Hz to 200Hz, Acceleration within 1.2g, time 30min.

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ASSUN
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ENCODER

Assun Encoders include incremental and absolute types. For incremental controller, there are models of electromagnetic and optical, and both offers wide ranges of resolution choices. For absolute encoder, customer can choose for single or multi turns and also different resolutions.

High precision (resolution) and high reliability encoders by Assun are perfect for precision DC drive feedback and play an important role in the precision control system.

AM-EN1008S103	AM-EN2211S103	AM-EN2412T003	AM-EN3612T103
AM-EN1611S003	AM-EN1612T003	AM-EN2412T103	AM-EN1611S113
AM-EN1611S103	AM-EN1612T103	AM-EN3612T003	AM-EN2211S113
AM-EN2211S003			

AM - EN 1612 T103 - 4096

- **AM** — Company Name Abbreviation
- **EN** — Encoder Code
- **1612** — Encoder Dimension
  - 16 - Diameter (mm)
  - 12 - Thickness (mm)
- **T** — Function Principle
  - S - Electromagnetic Encoder
  - T - Optical Encoder
- **103** — Encoder Type
  - 002 - Incremental Two Channel Encoder
  - 003 - Incremental Three Channel Encoder
  - 103 - Incremental Cable Drive Three Channel Encoder
  - 113 Absolute Cable Drive Three Channel Encoder
- **4096** — Resolution
  - Incremental Encoder - Pules per Revolve
  - Absolute Encoder 40: Revolve bits; 96: Angular bits

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ENCODER

INCREMENTAL ENCODER

Incremental encoders by Assun are used for providing feedback information of motion to controllers and resolutions can be from 32 ppr/turn to 4096 ppr/turn. Cable drive and differential types of encoders can be chosen based on actual needs.

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INCREMENTAL ENCODER

ELECTROMAGNETIC TYPE

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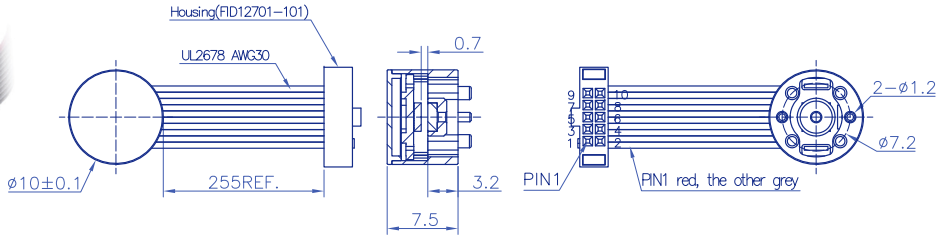
AM-EN1008S003(CL) SERIES



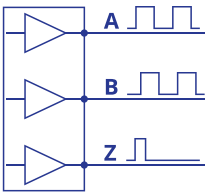
ELECTROMAGNETRIC ENCODER

1) Parameters

Parameters/Models	AM-EN1008 S003-0032	AM-EN1008 S003-0064	AM-EN1008 S003-0128	AM-EN1008 S003-0256	AM-EN1008 S003-0512	AM-EN1008 S003-1024
Diameter	10	10	10	10	10	10
PPR/TURN	32	64	128	256	512	1024
Max Channels	3	3	3	3	3	3
Max Working Freq.(KHz)	20	40	100	180	360	512
Direction Signal	no	no	no	no	no	no
Drive (Differential Output)	no	no	no	no	no	no

2) Information

Technical Parameter		Suitable for motor size		Pin definition		Connection Diagram (CW)
Power Vcc	5V±5%	Suitable for shaft diameter	1.0; 1.5	1. V+ Motor	2. Vcc	
Vcc=5.0V Signal	TTL	Suitable for shaft length	2.2~5.0	3. GND	4. A+	
Operating Temperature	-40~125℃	Suitable for boss diameter	10.0~14.0	5. NC	6.B+	
Inertia (max)	0.012 g.cm^2	Suitable for boss thickness	Maximum 0.8	7. NC	8. Z+	
Output Current, each channel	1.5mA(max)	Code wheel spacing	0.7~1.0	9. NC	10. V- Motor	
Weight	2.0 g	Other fixed size	Drawing			

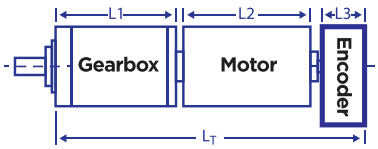


3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=8mm)

L1:10GP	L1:12GP	L2:CL10			
6.8	15.4	25.2			
10	19.6				
13.2	23.8				
16.4	28				
19.6	32.2				

AM-EN1008S* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-10GP

Recommended Motor:
Coreless Motor:
AM-CL10**

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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ENCODER

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INCREMENTAL ENCODER

ELECTROMAGNETIC TYPE

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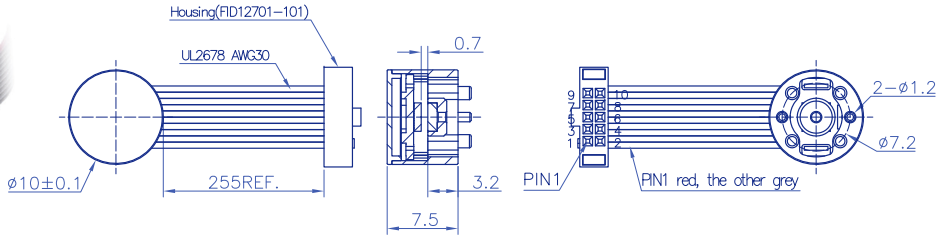
AM-EN1008S103(CL) SERIES



ELECTROMAGNETRIC ENCODER

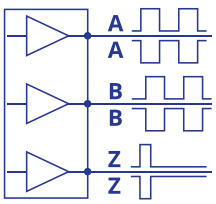
1) Parameters

Parameters/Models	AM-EN1008 S103-0032	AM-EN1008 S103-0064	AM-EN1008 S103-0128	AM-EN1008 S103-0256	AM-EN1008 S103-0512	AM-EN1008 S103-1024
Diameter	10	10	10	10	10	10
PPR/TURN	32	64	128	256	512	1024
Max Channels	3	3	3	3	3	3
Max Working Freq.(KHz)	20	40	100	180	360	512
Direction Signal	no	no	no	no	no	no
Drive (Differential Output)	yes	yes	yes	yes	yes	yes

2) Information

Technical Parameter		Suitable for motor size		Pin definition	
Power Vcc	5V±5%	Suitable for shaft diameter	1.0; 1.5	1. V+	2. Vcc
Vcc=5.0V Signal	TTL	Suitable for shaft length	2.2~5.0	3. GND	4. A+
Operating Temperature	-40~125℃	Suitable for boss diameter	10.0~14.0	5. A-	6.B+
Inertia (max)	0.012 g.cm^2	Suitable for boss thickness	Maximum 0.8	7. B-	8. Z+
Output Current, each channel	1.5mA(max)	Code wheel spacing	0.7~1.0	9. Z-	10. V-
Weight	2.0 g	Other fixed size	Drawing		

Connection Diagram (CW)

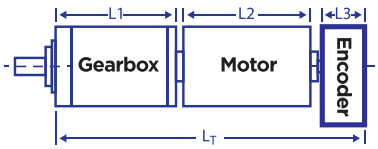


3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=8mm)

L1:10GP	L1:12GP	L2:CL10			
6.8	15.4	25.2			
10	19.6				
13.2	23.8				
16.4	28				
19.6	32.2				

AM-EN1008S* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-10GP

Recommended Motor:
Coreless Motor:
AM-CL10**

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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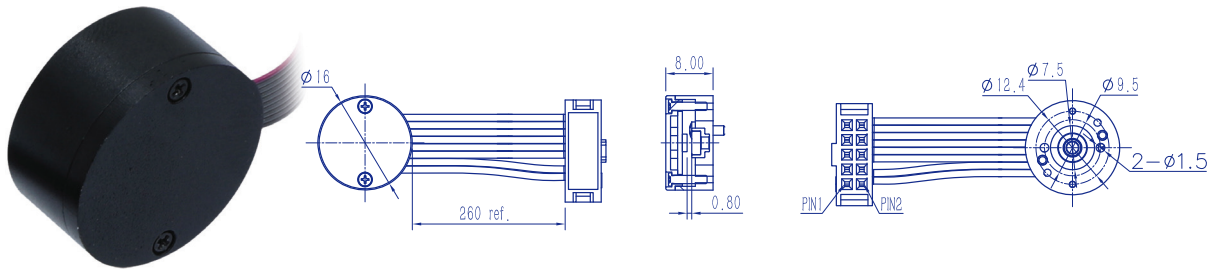
AM-EN1608S103-RS422(CL) SERIES



ELECTROMAGNETRIC ENCODER

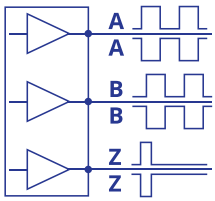
1) Parameters

Parameters/Models	AM-EN1611 S103-0032	AM-EN1611 S103-0064	AM-EN1611 S103-0128	AM-EN1611 S103-0256	AM-EN1611 S103-0512	AM-EN1611 S103-1024
Diameter	16	16	16	16	16	16
PPR/TURN	32	64	128	256	512	1024
Max Channels	3	3	3	3	3	3
Max Working Freq.(KHz)	20	40	100	180	360	512
Direction Signal	no	no	no	no	no	no
Drive (Differential Output)	yes	yes	yes	yes	yes	yes

2) Information

Technical Parameter		Suitable for motor size		Pin definition	
Power Vcc	5V±5%	Suitable for shaft diameter	1.5; 2.0;3.0	1. NC	2. Vcc
Vcc=5.0V Signal	ISL32179	Suitable for shaft length	2.1	3. GND	4. NC
Operating Temperature	-40~125℃	Suitable for boss diameter	6.45~6.5	5. A-	6. A+
Inertia (max)	0.015 g.cm^2	Suitable for boss thickness	Maximum 1.0	7. B-	8. B+
Output Current, each channel	1.5mA(max)	Code wheel spacing	0.7~1.0	9. Z-	10. Z+
Weight	5 g	Other fixed size	Drawing		

Connection Diagram (CW)

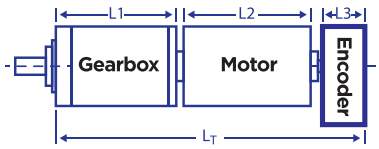


3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=8mm)

L1:16GP	L1:19GP	L2:CL19	L1: 24GP	L1: 28GP	L2:CL25
15.9	18.8	35.0	24	26.1	32.0
23.3	23.6		34.3	33.3	45.3
27	28.4		42.8	40.5	
L1:28GP	**L1:32GP**	**L2:CL28**			
26.1	27.4	31.0			
33.3	35.9	45.0			
40.5	44.4				

AM-EN1608S* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-16GP AM-28GP
AM-19GP AM-32GP
AM-24GP

Recommended Motor:
Coreless Motor:
AM-CL16** AM-CL19**
AM-CL25** AM-CL22**
AM-CL28**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

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INCREMENTAL ENCODER

ELECTROMAGNETIC TYPE

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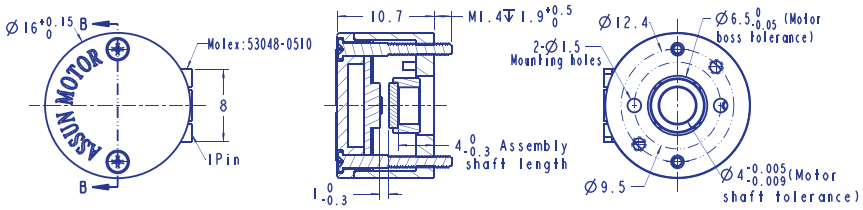
AM-EN1611S003(BL) SERIES



ELECTROMAGNETRIC ENCODER

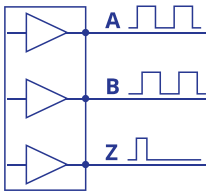
1) Parameters

Parameters/Models	AM-EN1611 S003-0032	AM-EN1611 S003-0064	AM-EN1611 S003-0128	AM-EN1611 S003-0256	AM-EN1611 S003-0512	AM-EN1611 S003-1024
Diameter	16	16	16	16	16	16
PPR/TURN	32	64	128	256	512	1024
Max Channels	3	3	3	3	3	3
Max Working Freq.(KHz)	20	40	100	180	360	512
Direction Signal	no	no	no	no	no	no
Drive (Differential Output)	no	no	no	no	no	no

2) Information

Technical Parameter		Suitable for motor size		Pin definition
Power Vcc	5V±5%	Suitable for shaft diameter	2.0; 3.0; 4.0	1. Vcc
Vcc=5.0V Signal	TTL compatible	Suitable for shaft length	3.7~4.0	2. GND
Operating Temperature	-25~85℃	Suitable for boss diameter	6.45~6.5	3. Channel A
Inertia (max)	0.015 g.cm^2	Suitable for boss thickness	Maximum 1.0	4. Channel B
Output Current, each channel	1.5mA(max)	Code wheel spacing	0.7~1.0	5. Channel Z (1/4 T)
Weight	4.5 g	Other fixed size	Drawing	

Connection Diagram (CW)



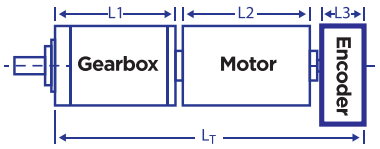
3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=10.7mm)

L1:16GP	L1:19GP	L2:BL16	L1: 19GP	L1: 24GP	L2:BL20
15.9	18.8	40.0	18.8	24	40.0
23.3	23.6		23.6	34.3	
27	28.4		28.4	42.8	

L1:24GP	L1:28GP	L2:BL24	L1: 28GP	L1: 32GP	L2:BL28
24	26.1	53.0	26.1	27.4	45.0
34.3	33.3		33.3	35.9	
42.8	40.5		40.5	44.4	

AM-EN1611S* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-16GP AM-28GP
AM-19GP AM-32GP
AM-24GP

Recommended Motor:
Brushless Motor:
AM-BL16** AM-BL20**
AM-BL/D24**
AM-BL/D28***

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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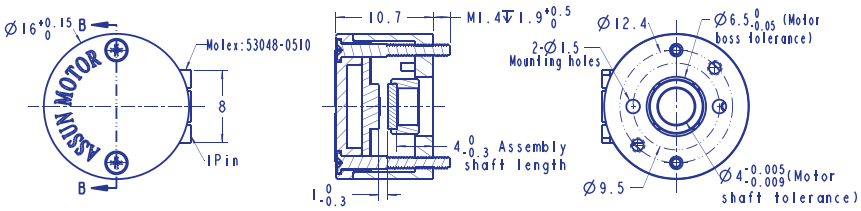
AM-EN1611S003(CL) SERIES



ELECTROMAGNETRIC ENCODER

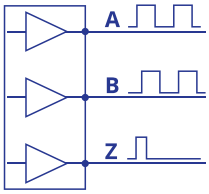
1) Parameters

Parameters/Models	AM-EN1611 S003-0032	AM-EN1611 S003-0064	AM-EN1611 S003-0128	AM-EN1611 S003-0256	AM-EN1611 S003-0512	AM-EN1611 S003-1024
Diameter	16	16	16	16	16	16
PPR/TURN	32	64	128	256	512	1024
Max Channels	3	3	3	3	3	3
Max Working Freq.(KHz)	20	40	100	180	360	512
Direction Signal	no	no	no	no	no	no
Drive (Differential Output)	no	no	no	no	no	no

2) Information

Technical Parameter		Suitable for motor size		Pin definition
Power Vcc	5V±5%	Suitable for shaft diameter	1.5; 2.0	1. Vcc
Vcc=5.0V Signal	TTL compatible	Suitable for shaft length	3.7~4.0	2. GND
Operating Temperature	-25~85℃	Suitable for boss diameter	6.45~6.5	3. Channel A
Inertia (max)	0.015 g.cm^2	Suitable for boss thickness	Maximum 1.0	4. Channel B
Output Current, each channel	1.5mA(max)	Code wheel spacing	0.7~1.0	5. Channel Z (1/4 T)
Weight	5.0 g	Other fixed size	Drawing	

Connection Diagram (CW)

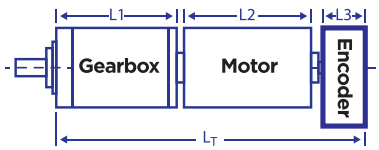


3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=10.7mm)

L1:16GP	L1:19GP	L2:CL16	L1: 24GP	L1: 28GP	L2:CL25
15.9	18.8	33.0	24	26.1	32.0
23.3	23.6	43.0	34.3	33.3	45.3
27	28.4		42.8	40.5	
L1:28GP	**L1:32GP**	**L2:CL28**			
26.1	27.4	31.0			
33.3	35.9	45.0			
40.5	44.4				

AM-EN1611S* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-16GP AM-28GP
AM-19GP AM-32GP
AM-24GP

Recommended Motor:
Coreless Motor:
AM-CL16**
AM-CL25**
AM-CL28**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

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INCREMENTAL ENCODER

ELECTROMAGNETIC TYPE

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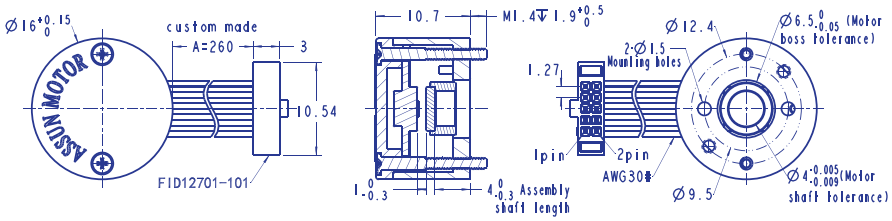
AM-EN1611S103(BL) SERIES



ELECTROMAGNETRIC ENCODER

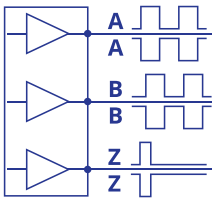
1) Parameters

Parameters/Models	AM-EN1611 S103-0032	AM-EN1611 S103-0064	AM-EN1611 S103-0128	AM-EN1611 S103-0256	AM-EN1611 S103-0512	AM-EN1611 S103-1024
Diameter	16	16	16	16	16	16
PPR/TURN	32	64	128	256	512	1024
Max Channels	3	3	3	3	3	3
Max Working Freq.(KHz)	20	40	100	180	360	512
Direction Signal	no	no	no	no	no	no
Drive (Differential Output)	yes	yes	yes	yes	yes	yes

2) Information

Technical Parameter		Suitable for motor size		Pin definition	
Power Vcc	5V±5%	Suitable for shaft diameter	2.0; 3.0; 4.0	1. NC	2. Vcc
Vcc=5.0V Signal	ISL32179	Suitable for shaft length	3.7~4.0	3. GND	4. NC
Operating Temperature	-40~125℃	Suitable for boss diameter	6.45~6.5	5. A-	6. A+
Inertia (max)	0.015 g.cm^2	Suitable for boss thickness	Maximum 1.0	7. B-	8. B+
Output Current, each channel	1.5mA(max)	Code wheel spacing	0.7~1.0	9. Z-	10. Z+
Weight	6.5 g	Other fixed size	Drawing		

Connection Diagram (CW)

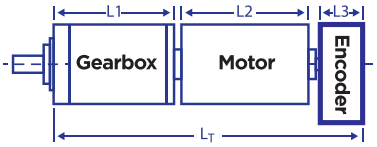


3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=10.7mm)

L1:16GP	L1:19GP	L2:BL16	L1: 19GP	L1: 24GP	L2:BL20
15.9	18.8	40.0	18.8	24	40.0
23.3	23.6		23.6	34.3	
27	28.4		28.4	42.8	
L1:24GP	**L1:28GP**	**L2:BL24**	**L1: 28GP**	**L1: 32GP**	**L2:BL28**
24	26.1	53.0	25.9	27.4	45.0
34.3	33.3		33.1	35.9	
42.8	40.5		40.3	44.4	

AM-EN1611S* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-16GP AM-28GP
AM-19GP AM-32GP
AM-24GP

Recommended Motor:
Brushless Motor:
AM-BL16** AM-BL20**
AM-BL/D24**
AM-BL/D28***

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

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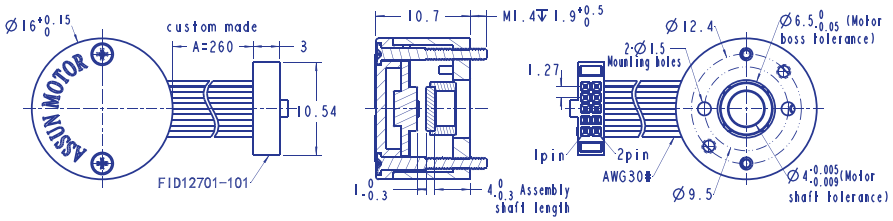
AM-EN1611S103(CL) SERIES



ELECTROMAGNETRIC ENCODER

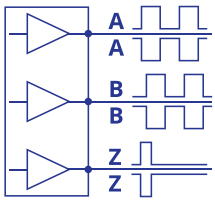
1) Parameters

Parameters/Models	AM-EN1611 S103-0032	AM-EN1611 S103-0064	AM-EN1611 S103-0128	AM-EN1611 S103-0256	AM-EN1611 S103-0512	AM-EN1611 S103-1024
Diameter	16	16	16	16	16	16
PPR/TURN	32	64	128	256	512	1024
Max Channels	3	3	3	3	3	3
Max Working Freq.(KHz)	20	40	100	180	360	512
Direction Signal	no	no	no	no	no	no
Drive (Differential Output)	yes	yes	yes	yes	yes	yes

2) Information

Technical Parameter		Suitable for motor size		Pin definition	
Power Vcc	5V±5%	Suitable for shaft diameter	1.5; 2.0	1. NC	2. Vcc
Vcc=5.0V Signal	ISL32179	Suitable for shaft length	3.7~4.0	3. GND	4. NC
Operating Temperature	-40~125℃	Suitable for boss diameter	6.45~6.5	5. A-	6. A+
Inertia (max)	0.015 g.cm^2	Suitable for boss thickness	Maximum 1.0	7. B-	8. B+
Output Current, each channel	1.5mA(max)	Code wheel spacing	0.7~1.0	9. Z-	10. Z+
Weight	6.5 g	Other fixed size	Drawing		

Connection Diagram (CW)

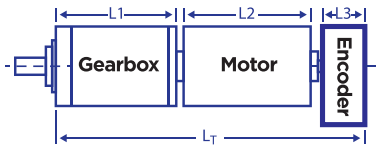


3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=10.7mm)

L1:16GP	L1:19GP	L2:CL16	L1: 24GP	L1: 28GP	L2:CL25
15.9	18.8	33.0	24	26.1	32.0
23.3	23.6	43.0	34.3	33.3	45.3
27	28.4		42.8	40.5	
L1:28GP	**L1:32GP**	**L2:CL28**			
26.1	27.4	31.0			
33.3	35.9	45.0			
40.5	44.4				

AM-EN1611S* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-16GP AM-28GP
AM-19GP AM-32GP
AM-24GP

Recommended Motor:
Coreless Motor:
AM-CL16**
AM-CL25**
AM-CL28**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

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INCREMENTAL ENCODER

ELECTROMAGNETIC TYPE

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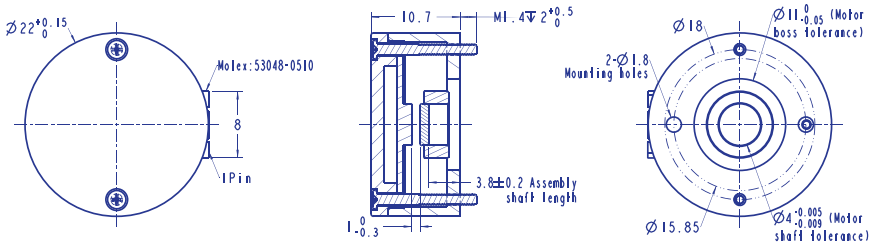
AM-EN2211S003(BL) SERIES



ELECTROMAGNETRIC ENCODER

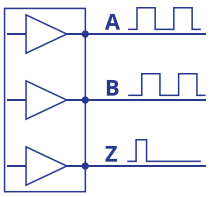
1) Parameters

Parameters/Models	AM-EN2211 S003-0032	AM-EN2211 S003-0064	AM-EN2211 S003-0128	AM-EN2211 S003-0256	AM-EN2211 S003-0512	AM-EN2211 S003-1024
Diameter	22	22	22	22	22	22
PPR/TURN	32	64	128	256	512	1024
Max Channels	3	3	3	3	3	3
Max Working Freq.(KHz)	20	40	100	180	360	512
Direction Signal	no	no	no	no	no	no
Drive (Differential Output)	no	no	no	no	no	no

2) Information

Technical Parameter		Suitable for motor size		Pin definition
Power Vcc	5V±5%	Suitable for shaft diameter	4.0; 5.0; 8.0	1. Vcc
Vcc=5.0V Signal	TTL compatible	Suitable for shaft length	3.7~4.0	2. GND
Operating Temperature	-25~85℃	Suitable for boss diameter	10.95~11.0	3. Channel A
Inertia (max)	0.015 g.cm^2	Suitable for boss thickness	Maximum 1.0	4. Channel B
Output Current, each channel	1.5mA(max)	Code wheel spacing	0.7~1.0	5. Channel Z (1/4 T)
Weight	7.0 g	Other fixed size	Drawing	

Connection Diagram (CW)



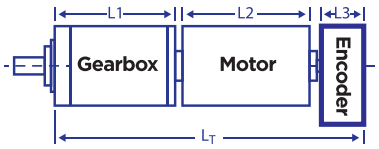
3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=10.7mm)

L1:32GP	L1:36GP	L1: BL32	L1: 36GP	L1: 40GP	L2:BL36
27.4	39.6	60.0	39.6	46.8	60.5
35.9	48.6	70.0	48.6	58.3	
44.4	57.6		57.6	69.8	

L1:45GP	L1:52GP	L2:BL45	L1:52GP		L2:BL65
60.1	79.3	100.0	79.3		108.5
72.1					

AM-EN2211S* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-32GP AM-45GP
AM-36GP AM-52GP
AM-40GP

Recommended Motor:
BRUSH LESS Motor:
AM-BL/D32** AM-BL40**
AM-BL/D36**
AM-BL/D45***

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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ASSUN
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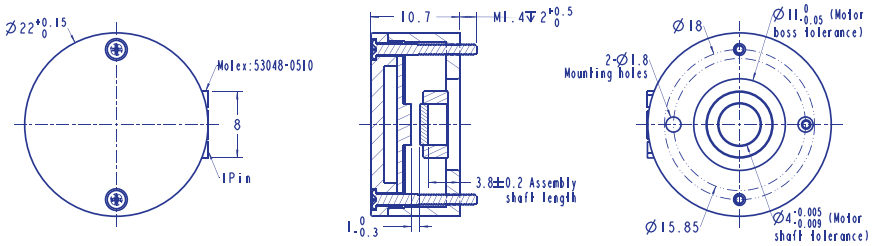
AM-EN2211S003(CL) SERIES



ELECTROMAGNETRIC ENCODER

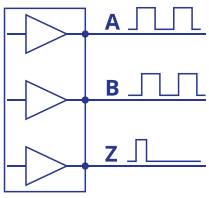
1) Parameters

Parameters/Models	AM-EN2211 S003-0032	AM-EN2211 S003-0064	AM-EN2211 S003-0128	AM-EN2211 S003-0256	AM-EN2211 S003-0512	AM-EN2211 S003-1024
Diameter	22	22	22	22	22	22
PPR/TURN	32	64	128	256	512	1024
Max Channels	3	3	3	3	3	3
Max Working Freq.(KHz)	20	40	100	180	360	512
Direction Signal	no	no	no	no	no	no
Drive (Differential Output)	no	no	no	no	no	no

2) Information

Technical Parameter		Suitable for motor size		Pin definition
Power Vcc	5V±5%	Suitable for shaft diameter	4.0; 5.0; 8.0	1. Vcc
Vcc=5.0V Signal	TTL compatible	Suitable for shaft length	3.7~4.0	2. GND
Operating Temperature	-25~85℃	Suitable for boss diameter	10.95~11.0	3. Channel A
Inertia (max)	0.015 g.cm^2	Suitable for boss thickness	Maximum 1.0	4. Channel B
Output Current, each channel	1.5mA(max)	Code wheel spacing	0.7~1.0	5. Channel Z (1/4 T)
Weight	7.0 g	Other fixed size	Drawing	

Connection Diagram (CW)

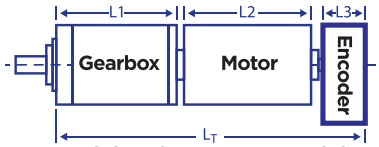


3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=10.7mm)

L1:19GP	L1:24GP	L2:CL22	L1:36GP	L1:40GP	L2:CL35
18.8	24	32.2	39.6	46.8	70.5
23.6	34.3	42.0	48.6	58.3	
28.4	42.8		57.6	69.8	
L1:45GP		**L2:CL35**			
60.1		70.5			
72.1					

AM-EN2211S* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-19GP AM-40GP
AM-24GP AM-45GP
AM-36GP

Recommended Motor:
Coreless Motor:
AM-CL22**
AM-CL35**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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INCREMENTAL ENCODER

ELECTROMAGNETIC TYPE

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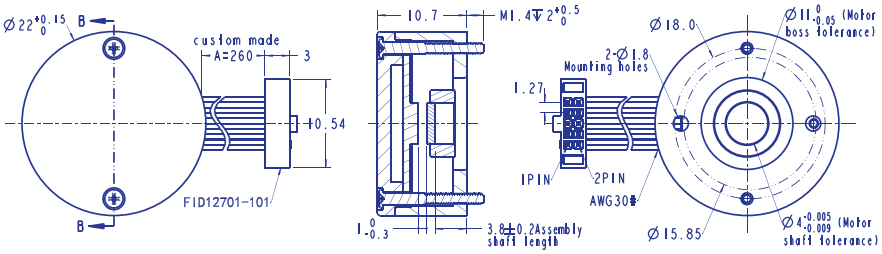
AM-EN2211S103(BL) SERIES



ELECTROMAGNETRIC ENCODER

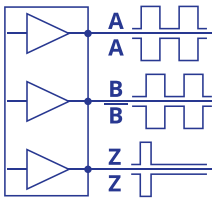
1) Parameters

Parameters/Models	AM-EN2211 S103-0032	AM-EN2211 S103-0064	AM-EN2211 S103-0128	AM-EN2211 S103-0256	AM-EN2211 S103-0512	AM-EN2211 S103-1024
Diameter	22	22	22	22	22	22
PPR/TURN	32	64	128	256	512	1024
Max Channels	3	3	3	3	3	3
Max Working Freq.(KHz)	20	40	100	180	360	512
Direction Signal	no	no	no	no	no	no
Drive (Differential Output)	yes	yes	yes	yes	yes	yes

2) Information

Technical Parameter		Suitable for motor size		Pin definition	
Power Vcc	5V±5%	Suitable for shaft diameter	4.0; 5.0; 8.0	1. NC	2. Vcc
Vcc=5.0V Signal	ISL32179	Suitable for shaft length	3.7~4.0	3. GND	4. NC
Operating Temperature	-40~125℃	Suitable for boss diameter	10.95~11.0	5. A-	6. A+
Inertia (max)	0.015 g.cm^2	Suitable for boss thickness	Maximum 1.0	7. B-	8. B+
Output Current, each channel	1.5mA(max)	Code wheel spacing	0.7~1.0	9. Z-	10. Z+
Weight	9.0 g	Other fixed size	Drawing		

Connection Diagram (CW)

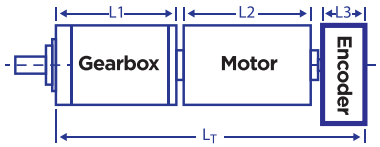


3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=10.7mm)

L1:32GP	L1:36GP	L2:BL32	L1: 36GP	L1: 40GP	L2:BL36
27.4	39.6	60.0	39.6	46.8	60.5
35.9	48.6	70.0	48.6	58.3	
44.4	57.6		57.6	69.8	
L1:45GP	**L1:52GP**	**L2:BL45**	**L1:52GP**		**L2:BL65**
60.1	79.3	100.0	79.3		108.5
72.1					

AM-EN2211S* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-32GP AM-45GP
AM-36GP AM-52GP
AM-40GP

Recommended Motor:
BRUSH LESS Motor:
AM-BL/D32** AM-BL40**
AM-BL/D36**
AM-BL/D45***

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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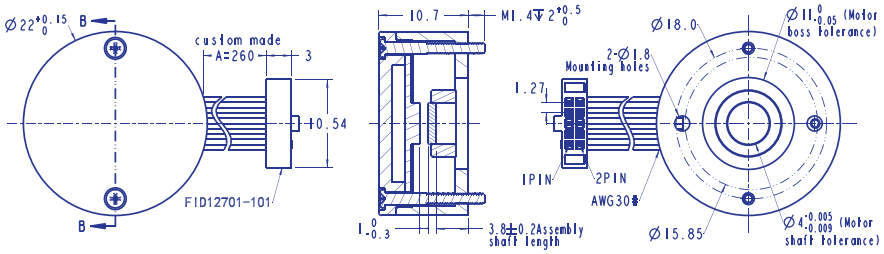
AM-EN2211S103(CL) SERIES

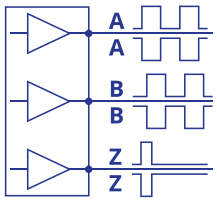


ELECTROMAGNETRIC ENCODER

1) Parameters

Parameters/Models	AM-EN2211 S103-0032	AM-EN2211 S103-0064	AM-EN2211 S103-0128	AM-EN2211 S103-0256	AM-EN2211 S103-0512	AM-EN2211 S103-1024
Diameter	22	22	22	22	22	22
PPR/TURN	32	64	128	256	512	1024
Max Channels	3	3	3	3	3	3
Max Working Freq.(KHz)	20	40	100	180	360	512
Direction Signal	no	no	no	no	no	no
Drive (Differential Output)	yes	yes	yes	yes	yes	yes

2) Information

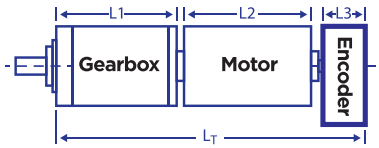
Technical Parameter		Suitable for motor size		Pin definition		Connection Diagram (CW)
Power Vcc	5V±5%	Suitable for shaft diameter	2.0; 4.0	1. NC	1. Vcc	
Vcc=5.0V Signal	ISL32179	Suitable for shaft length	3.7~4.0	3. GND	4. NC	
Operating Temperature	-40~125℃	Suitable for boss diameter	10.95~11.0	5. A-	6. A+	
Inertia (max)	0.015 g.cm^2	Suitable for boss thickness	Maximum 1.0	7. B-	8. B+	
Output Current, each channel	1.5mA(max)	Code wheel spacing	0.7~1.0	9. Z-	10. Z+	
Weight	9.0 g	Other fixed size	Drawing			

3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=10.7mm)

L1:19GP	L1:24GP	L2:CL22	L2: 36GP	L1:40GP	L2:CL35
18.8	24	32.2	39.6	46.8	70.5
23.6	34.3	42.0	48.6	58.3	
28.4	42.8		57.6	69.8	
L1:45GP		**L2:CL35**			
60.1		70.5			
72.1					

AM-EN2211S* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-19GP AM-40GP
AM-24GP AM-45GP
AM-36GP

Recommended Motor:
Coreless Motor:
AM-CL22**
AM-CL35**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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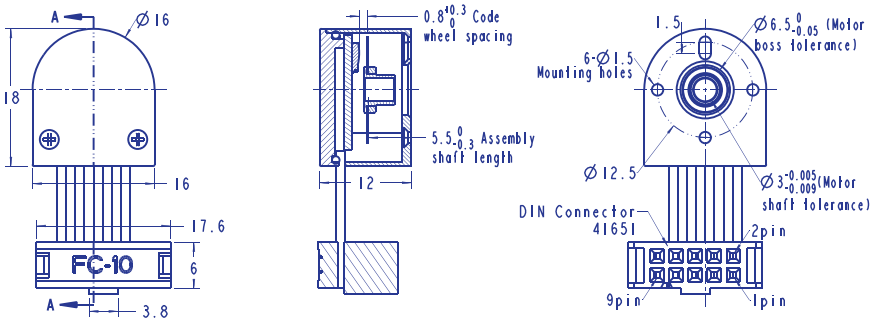
AM-EN1612T003 SERIES



OPTICAL ENCODER

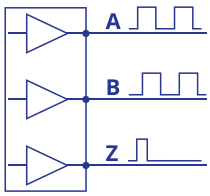
1) Parameters

Parameters/Models	AM-EN1612 T003-360	AM-EN1612 T003-720	AM-EN1612 T003-1440			
Diameter	16	16	16			
PPR/TURN	360	720	1440			
Max Channels	3	3	3			
Max Working Freq.(KHz)	55~220	55~220	55~220			
Direction Signal	no	no	no			
Drive (Differential Output)	no	no	no			

2) Information

Technical Parameter		Suitable for motor size		Pin definition	
Power Vcc	5V±5%	Suitable for shaft diameter	2.0; 3.0	1. NC	2.Vcc
Vcc=5.0V Signal	TTL compatible	Suitable for shaft length	5.2~5.5	3. A	4. B
Operating Temperature	-25~80 ℃	Suitable for boss diameter	6.45~6.5	5. GND	6. NC
Inertia (max)	0.06 g.cm^2	Suitable for boss thickness	Maximum 1.0	7. Z	8. NC
Output Current, each channel	1.5mA(max)	Code wheel spacing	0.8~1.1	9. NC	10. NC
Weight	11.0 g	Other fixed size	Drawing		

Connection Diagram (CW)

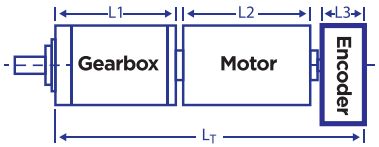


3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=12.0mm)

L1:19GP	L1:24GP	L2:BL20	L1:16GP	L1:19GP	L2:BL16
18.8	24	40.0	15.9	18.8	40.0
23.6	34.3		23.3	23.6	
28.4	42.8		27.0	28.4	

AM-EN1612T* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-16GP
AM-19GP
AM-24GP

Recommended Motor:
BRUSH LESS Motor:
AM-BL16**
AM-BL20**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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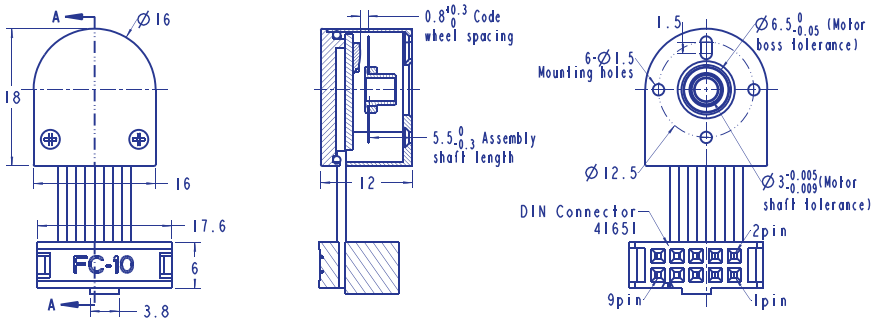
AM-EN1612T103 SERIES



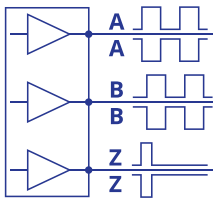
OPTICAL ENCODER

1) Parameters

Parameters/Models	AM-EN1612 T103-360	AM-EN1612 T103-720	AM-EN1612 T103-1440			
Diameter	16	16	16			
PPR/TURN	360	720	1440			
Max Channels	3	3	3			
Max Working Freq.(KHz)	55~220	55~220	55~220			
Direction Signal	no	no	no			
Drive (Differential Output)	yes	yes	yes			

2) Information

Technical Parameter		Suitable for motor size		Pin definition		Connection Diagram (CW)
Power Vcc	5V±5%	Suitable for shaft diameter	2.0; 3.0	1. NC	2.Vcc	
Vcc=5.0V Signal	ISL32179	Suitable for shaft length	5.2~5.5	3. GND	4. NC	
Operating Temperature	-25~80 ℃	Suitable for boss diameter	6.45~6.5	5. A-	6. A+	
Inertia (max)	0.06 g.cm^2	Suitable for boss thickness	Maximum 1.0	7. B-	8. B+	
Output Current, each channel	20mA(max)	Code wheel spacing	0.8~1.1	9. Z-	10. Z+	
Weight	11.0 g	Other fixed size	Drawing			

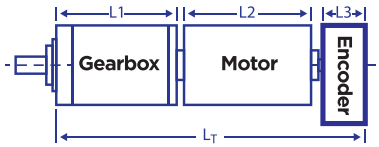


3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=12.0mm)

L1:19GP	L1:24GP	L2:BL20	L1:16GP	L1:19GP	L2:BL16
18.8	24	40.0	15.9	18.8	40.0
23.6	34.3		23.3	23.6	
28.4	42.8		27.0	28.4	

AM-EN1612T* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-16GP
AM-19GP
AM-24GP

Recommended Motor:
BRUSH LESS Motor:
AM-BL16**
AM-BL20**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

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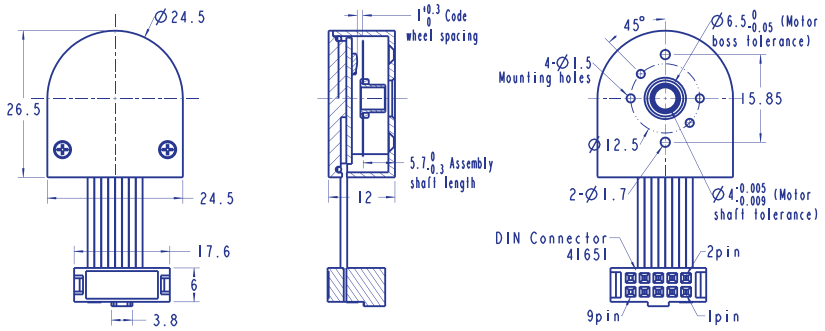
AM-EN2412T003 SERIES



OPTICAL ENCODER

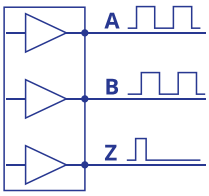
1) Parameters

Parameters/Models	AM-EN2412 T003-500	AM-EN2412 T003-512	AM-EN2412 T003-1000	AM-EN2412 T003-1024	AM-EN2412 T003-2000	AM-EN2412 T003-2048
Diameter	24.5	24.5	24.5	24.5	24.5	24.5
PPR/TURN	500	512	1000	1024	2000	2048
Max Channels	3	3	3	3	3	3
Max Working Freq.(KHz)	55~220	55~220	55~220	55~220	55~220	55~220
Direction Signal	no	no	no	no	no	no
Drive (Differential Output)	no	no	no	no	no	no

2) Information

Technical Parameter		Suitable for motor size		Pin definition	
Power Vcc	5V±5%	Suitable for shaft diameter	3.0; 4.0	1. NC	.Vcc
Vcc=5.0V Signal	TTL compatible	Suitable for shaft length	5.2~5.5	3. A	4. B
Operating Temperature	-25~80 ℃	Suitable for boss diameter	6.45~6.5	5. GND	6. NC
Inertia (max)	0.23 g.cm^2	Suitable for boss thickness	Maximum 1.0	7. Z	8. NC
Output Current, each channel	1.5mA(max)	Code wheel spacing	0.8~1.1	9. NC	10. NC
Weight	17.0 g	Other fixed size	Drawing		

Connection Diagram (CW)

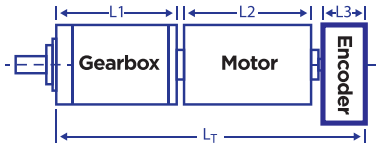


3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=12.0mm)

L1:24GP	L1:28GP	L2:BL24	L1:28GP	L1:32GP	L2:BL28
24	26.1	53.0	26.1	27.4	45.0
34.3	33.3		33.3	35.9	
42.8	40.5		40.5	44.4	
L1:32GP	**L1:36GP**	**L2:BL32**			
27.4	39.6	60.0			
35.9	48.6	70.0			
44.4	57.6				

AM-EN2412T* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-24GP
AM-28GP
AM-32GP
AM-36GP

Recommended Motor:
BRUSH LESS Motor:
AM-BL/D24**
AM-BL/D28**
AM-BL/D32**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

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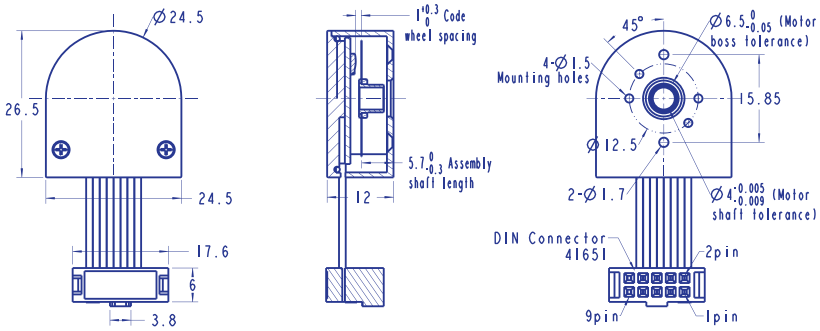
AM-EN2412T103 SERIES



OPTICAL ENCODER

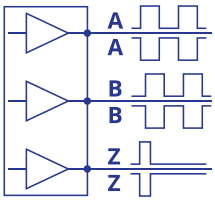
1) Parameters

Parameters/Models	AM-EN2412 T103-500	AM-EN2412 T103-512	AM-EN2412 T103-1000	AM-EN2412 T103-1024	AM-EN2412 T103-2000	AM-EN2412 T103-2048
Diameter	24.5	24.5	24.5	24.5	24.5	24.5
PPR/TURN	500	512	1000	1024	2000	2048
Max Channels	3	3	3	3	3	3
Max Working Freq.(KHz)	55~220	55~220	55~220	55~220	55~220	55~220
Direction Signal	no	no	no	no	no	no
Drive (Differential Output)	yes	yes	yes	yes	yes	yes

2) Information

Technical Parameter		Suitable for motor size		Pin definition	
Power Vcc	5V±5%	Suitable for shaft diameter	3.0; 4.0	1. NC	2.Vcc
Vcc=5.0V Signal	ISL 32179	Suitable for shaft length	5.2~5.5	3. GND	4. NC
Operating Temperature	-25~80 ℃	Suitable for boss diameter	6.45~6.5	5. A-	6. A+
Inertia (max)	0.23 g.cm^2	Suitable for boss thickness	Maximum 1.0	7. B-	8. B+
Output Current, each channel	20mA(max)	Code wheel spacing	0.8~1.1	9. Z-	10. Z+
Weight	17.0 g	Other fixed size	Drawing		

Connection Diagram (CW)

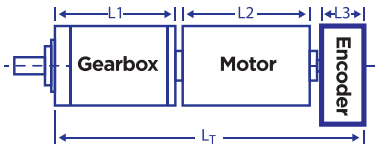


3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=12.0mm)

L1:24GP	L1:28GP	L2:BL24	L1:28GP	L1:32GP	L2:BL28
24	26.1	53.0	26.1	27.4	45.0
34.3	33.3		33.3	35.9	
42.8	40.5		40.5	44.4	
L1:32GP	**L1:36GP**	**L2:BL32**			
27.4	39.6	60.0			
35.9	48.6	70.0			
44.4	57.6				

AM-EN2412T* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-24GP
AM-28GP
AM-32GP
AM-36GP

Recommended Motor:
BRUSH LESS Motor:
AM-BL/D24**
AM-BL/D28**
AM-BL/D32**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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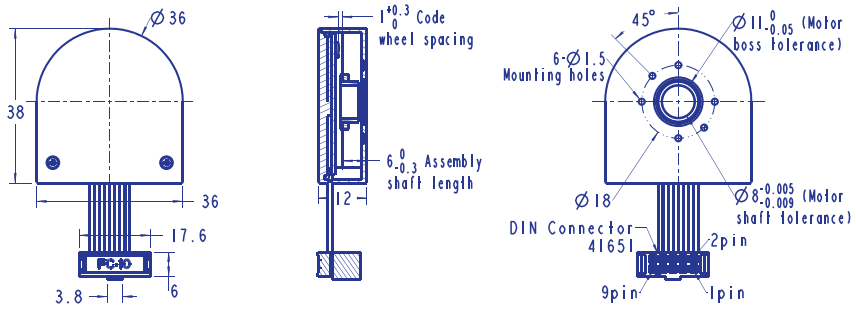
AM-EN3612T003 SERIES



OPTICAL ENCODER

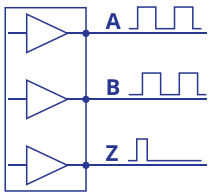
1) Parameters

Parameters/Models	AM-EN3612 T003-1000	AM-EN3612 T003-1024	AM-EN3612 T003-2000	AM-EN3612 T003-2048	AM-EN3612 T003-4000	AM-EN3612 T003-4096
Diameter	36.0	36.0	36.0	36.0	36.0	36.0
PPR/TURN	1000	1024	2000	2048	4000	4096
Max Channels	3	3	3	3	3	3
Max Working Freq.(KHz)	55~220	55~220	55~220	55~220	55~220	55~220
Direction Signal	no	no	no	no	no	no
Drive (Differential Output)	no	no	no	no	no	no

2) Information

Technical Parameter		Suitable for motor size		Pin definition	
Power Vcc	5V±5%	Suitable for shaft diameter	5.0; 8.0	1. NC	2.Vcc
Vcc=5.0V Signal	TTL compatible	Suitable for shaft length	5.2~5.5	3. A	4. B
Operating Temperature	-25~80 ℃	Suitable for boss diameter	10.95~11.0	5. GND	6. NC
Inertia (max)	1.18 g.cm^2	Suitable for boss thickness	Maximum 1.0	7. Z	8. NC
Output Current, each channel	1.5mA(max)	Code wheel spacing	0.8~1.1	9. NC	10. NC
Weight	29.0 g	Other fixed size	Drawing		

Connection Diagram (CW)

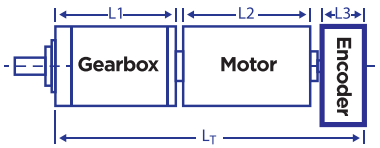


3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=12.0mm)

L1:45GP	L1:52GP	L2:BL45	L1:36GP	L1:40GP	L2: BL36
48.1	79.3	100.0	39.6	46.8	60.5
60.1			48.6	58.3	
72.1			57.6	69.8	
L1:40GP	**L1:45GP**	**L2:BL40**	**L1:52GP**		**L2: BL65**
46.8	48.1	60.0	79.3		108.5
58.3	60.1				
69.8	72.1				

AM-EN3612T* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-36GP
AM-40GP
AM-45GP
AM-52GP

Recommended Motor:
Brushless Motor:
AM-BL/D36**
AM-BL/D45**
AM-BL40**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

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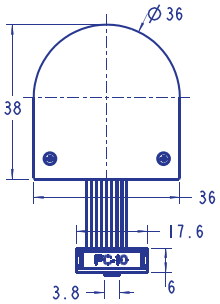
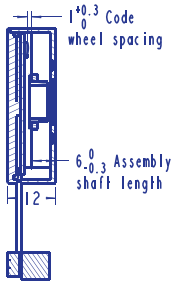
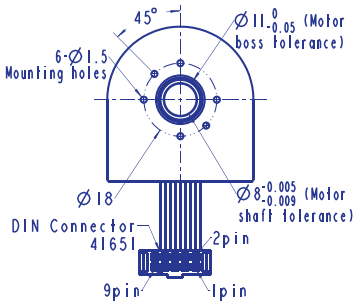
AM-EN3612T103 SERIES







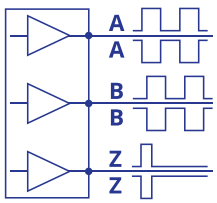
OPTICAL ENCODER

1) Parameters

Parameters/Models	AM-EN3612 T103-1000	AM-EN3612 T103-1024	AM-EN3612 T103-2000	AM-EN3612 T103-2048	AM-EN3612 T103-4000	AM-EN3612 T103-4096
Diameter	36.0	36.0	36.0	36.0	36.0	36.0
PPR/TURN	1000	1024	2000	2048	4000	4096
Max Channels	3	3	3	3	3	3
Max Working Freq.(KHz)	55~220	55~220	55~220	55~220	55~220	55~220
Direction Signal	no	no	no	no	no	no
Drive (Differential Output)	yes	yes	yes	yes	yes	yes

2) Information

Technical Parameter		Suitable for motor size		Pin definition		Connection Diagram (CW)
Power Vcc	5V±5%	Suitable for shaft diameter	5.0; 8.0	1. NC	2.Vcc	
Vcc=5.0V Signal	ISL 32179	Suitable for shaft length	5.2~5.5	3. GND	4. NC	
Operating Temperature	-25~80 ℃	Suitable for boss diameter	10.95~11.0	5. A-	6. A+	
Inertia (max)	1.18 g.cm^2	Suitable for boss thickness	Maximum 1.0	7. B-	8. B+	
Output Current, each channel	20mA(max)	Code wheel spacing	0.8~1.1	9. Z-	10. Z+	
Weight	29.0 g	Other fixed size	Drawing			

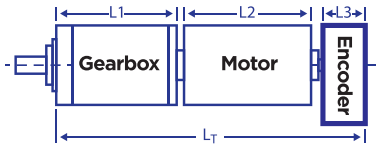


3) Recommend Combination

Total Length of Geared Motor System :L_T=L1+L2+(L3=12.0mm)

L1:45GP	L1:52GP	L2:BL45	L1:36GP	L1: 40GP	L2: BL36
48.1	79.3	100.0	39.6	46.8	60.5
60.1			48.6	58.3	
72.1			57.6	69.8	
L1:40GP	**L1:45GP**	**L2:BL40**	**L1:52GP**		**L2: BL65**
46.8	48.1	60.0	79.3		108.5
58.3	60.1				140.0
69.8	72.1				

AM-EN3612T* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-36GP
AM-40GP
AM-45GP
AM-52GP

Recommended Motor:
Brushless Motor:
AM-BL/D36**
AM-BL/D45**
AM-BL40**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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ENCODER

ABSOLUTE ENCODER

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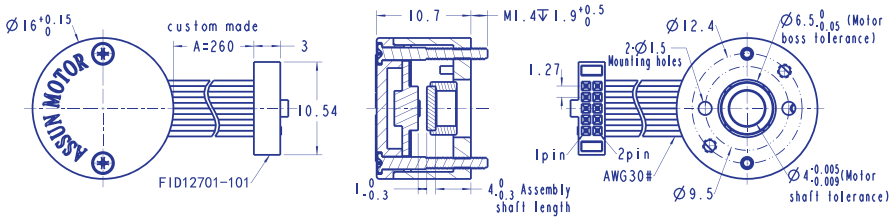
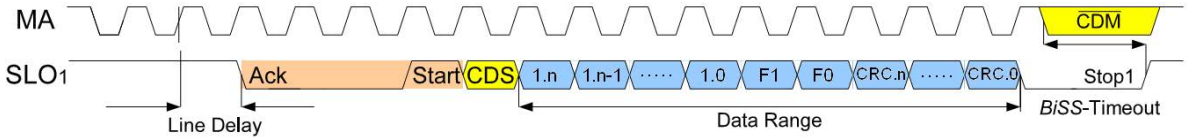
AM-EN1611S112-21Bit-BiSS-C SERIES



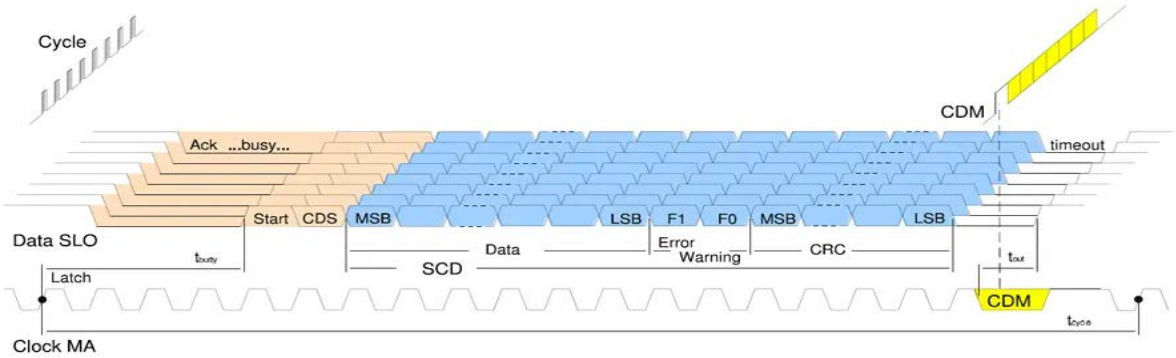
Electromagnetic Encoder

1) Basic parameters		2) Specification		3) Suitable for motor size		4) Pin definition	
Encoder type	absolute	Power Vcc	5V±5%	Suitable for shaft diameter	2.0;3.0;4.0	1. Vcc	2.Vcc
Multiple circles/bits	One lap	Transmission rate	<10MHz	Suitable for shaft length	3.7~4.0	3. GND	4. GND
Angle/bit	21Bit	Start-up time	< 10ms	Suitable for boss diameter	6.45~6.5	5. CLOCK+	6. CLOCK-
protocol	BiSS-C	Data refresh time	20ns	Suitable for boss thickness	Max 1.0	7. DATA+	8. DATA-
Differential signal	Bus difference	Power dissipation	≤ 0.1W	Code wheel spacing	0.7~1.0		
EMC anti-interference	EN 61000-6-2	Operating Temperature	-40~125℃	Other fixed size	Drawing		

5) BiSS Communication Frame:



6) BiSS Protocol Frame Structure:

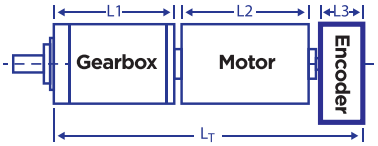


7) Recommended Combination

Total Length of Geared Motor System: L_T=L1+L2+L3(=10.7mm)

L1:16GP	L1:19GP	L2:BL16	L1:19GP	L1:24GP	L2:BL20
15.9	18.8	40.0	18.8	24	40.0
23.3	23.6		23.6	34.3	
27	28.4		28.4	42.8	
L1:24GP	**L1:28GP**	**L2:BL24**	**L1:28GP**	**L1: 32GP**	**L2:BL 28**
24	26.1	53.0	26.1	27.4	45.0
34.3	33.3		33.3	35.9	
42.8	40.5		40.5	44.4	

AM-EN1611S* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-16GP AM-28GP
AM-19GP AM-32GP
AM-24GP

Recommended Motor:
AM-BL16** AM-BL20***
AM-BL/D24**
AM-BL/D28**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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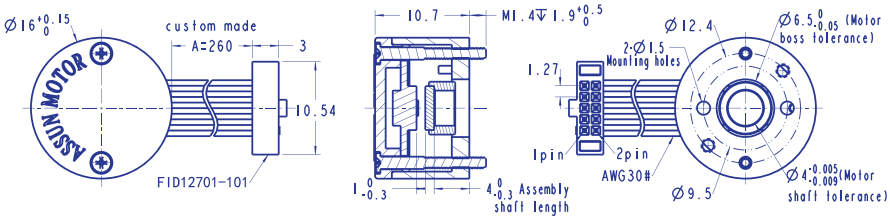
AM-EN1611S113 SERIES



Electromagnetic Encoder

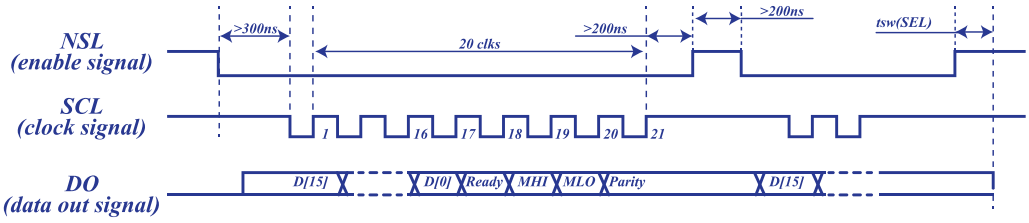
1) Basic parameters		2) Specification		3) Suitable for motor size		4) Pin definition	
Encoder type	absolute	Power Vcc	5V±5%	Suitable for shaft diameter	2.0;3.0;4.0	1. NC	2.Vcc
Multiple circles/bits	NC	Highest clock rate	10MHz	Suitable for shaft length	3.7~4.0	3. GND	4. NC
Angle/bit	16	Operating Temperature	-40~125℃	Suitable for boss diameter	6.45~6.5	5. SCL +	6. SCL -
protocol	SSI	Inertia	0.015g.cm²	Suitable for boss thickness	Max 1.0	7. NSL +	8. NSL -
Number of channels	3	Output Current, each channel	20mA(max)	Code wheel spacing	0.7~1.0	9. DO +	10. DO -
Differential signal	Yes	Weight	6.5 g	Other fixed size	Drawing		

5) SSI READ Data Format:

	19 … 4	3 … 1	0
16-b	16–b data	3–b status	1–b parity

6) Timing diagram annotation:

NSL must held high for at least 3 ms after power up. NSL = 1 means it is in load mode and is used to obtain the position of the magnet, NSL = 0 is shift mode of the registers and with the SCL (clock) pin, the register will be clocked.



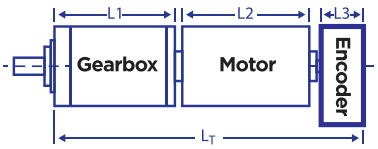
7) Recommended Combination

Total Length of Geared Motor System: L_T=L1+L2+L3(=10.7mm)

L1:16GP	L1:19GP	L2:BL16	L1:19GP	L1:24GP	L2:BL20
15.9	18.8	40.0	18.8	24	40.0
23.3	23.6		23.6	34.3	
27	28.4		28.4	42.8	

L1:24GP	L1:28GP	L2:BL24	L1:28GP	L1:32GP	L2:BL28
24	26.1	53.0	26.1	27.4	45.0
34.3	33.3		33.3	35.9	
42.8	40.5		40.5	44.4	

AM-EN1611S* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-16GP AM-28GP
AM-19GP AM-32GP
AM-24GP

Recommended Motor:
AM-BL16** AM-BL20***
AM-BL/D24**
AM-BL/D28**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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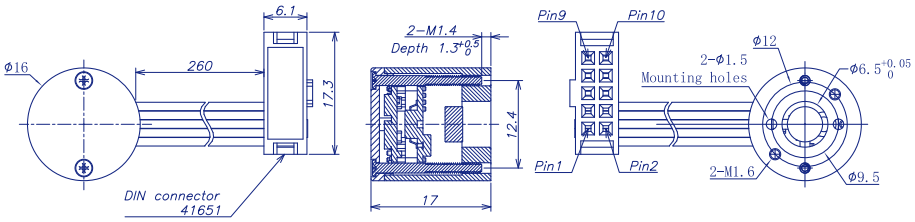
AM-EN1617S111 SERIES



Electromagnetic Multiturn Absolute Encoder

1) Basic parameters		2) Specification		3) Suitable for motor size		4) Pin definition	
Encoder type	absolute	Power Vcc	5V±5%	Suitable for shaft diameter	2.0;3.0;4.0	1. Vcc	2.Vbat
Multiple circles/bits	22	Highest clock rate	2.5MHz	Suitable for shaft length	3.7~4.0	3. 485A	4. 485B
Angle/bit	15	Operating Temperature	-40~125℃	Suitable for boss diameter	6.5~6.55	5. GND	6. NC
protocol	RS485	Inertia	0.015g.cm^2	Suitable for boss thickness	Max 1.0	7. NC	8. NC
Number of channels	1	Output Current, each channel	20mA(max)	Code wheel spacing	0.7~1.0	9.NC	10. NC
Differential signal	Yes	Weight	9.0 g	Other fixed size	Drawing		

5) SSI READ Data Format:

See the description of RS485 servo communication mode

6) Timing diagram annotation:

See the description of RS485 servo communication mode

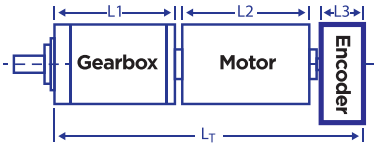
7) Recommended Combination

Total Length of Geared Motor System: L_T=L1+L2+L3(=17mm)

L1:16GP	L1:19GP	L2:BL16	L1:19GP	L1:24GP	L2:BL20
15.9	18.8	40.0	18.8	24	40.0
23.3	23.6		23.6	34.3	
27	28.4		28.4	42.8	

L1:24GP	L1:28GP	L2:BL24	L1:28GP	L1:32GP	L2:BL28
24	26.1	53.0	26.1	27.4	45.0
34.3	33.3		33.3	35.9	
42.8	40.5		40.5	44.4	

AM-EN1617S111 Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-16GP AM-28GP
AM-19GP AM-32GP
AM-24GP

Recommended Motor:
AM-BL16** AM-BL20***
AM-BL/D24**
AM-BL/D28**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

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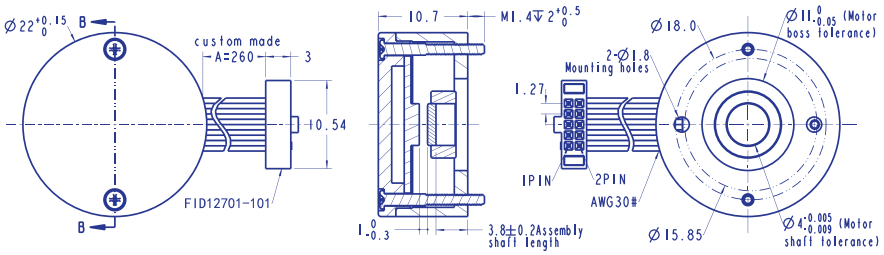
AM-EN2211S113 SERIES



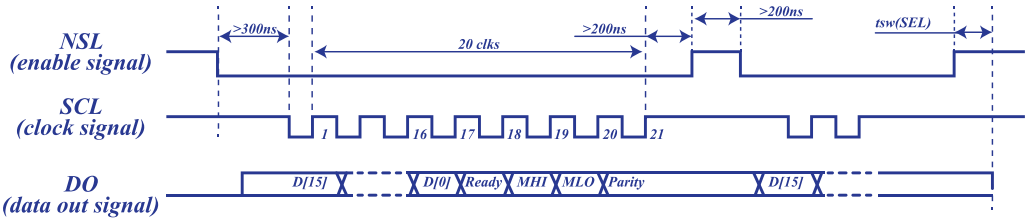
Electromagnetic Encoder

1) Basic parameters		2) Specification		3) Suitable for motor size		4) Pin definition	
Encoder type	absolute	Power Vcc	5V±5%	Suitable for shaftdiameter	4.0;5.0;8.0	1. NC	2.Vcc
Multiple circles/bits	NC	Highest clock rate	10MHz	Suitable for shaft length	3.7~4.0	3. GND	4. NC
Angle/bit	16	Operating Temperature	-40~125℃	Suitable for boss diameter	10.95~11.0	5. SCL +	6. SCL -
protocol	SSI	Inertia	0.015g.cm^2	Suitable for boss thickness	Max 1.0	7. NSL +	8. NSL -
Number of channels	3	Output Current, each channel	20mA(max)	Code wheel spacing	0.7~1.0	9. DO +	10. DO -
Differential signal	Yes			Other fixed size	Drawing		

4) SSI READ Data Format:

5) Timing diagram annotation:

NSL must held high for at least 3 ms after power up. NSL = 1 means it is in load mode and is used to obtain the position of the magnet, NSL = 0 is shift mode of the registers and with the SCL (clock) pin, the register will be clocked.

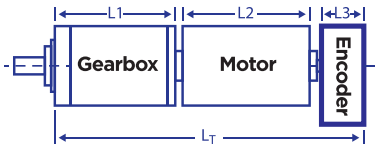


6) Recommended Combination

Total Length of Geared Motor System: L_T=L1+L2+L3(L3=10.7mm)

L1:32GP	L1:36GP	L2:BL32	L1:36GP	L1:40GP	L2:BL36
27.4	39.6	60.0	39.6	46.8	60.5
35.9	48.6	70.0	48.6	58.3	
44.4	57.6		57.6	69.8	
L1:45GP	L1:52GP	L2:BL45	L1:52GP		L2:BL65
60.1	79.3	100.0	79.3		108.5
72.1					

AM-EN2211S* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-32GP AM-45GP
AM-36GP AM-52GP
AM-40GP

Recommended Motor:
AM-BL/D32** AM-BL/D45***
AM-BL/D36** AM-BL65***
AM-BL40**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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ABSOLUTE ENCODER

ELECTROMAGNETIC TYPE

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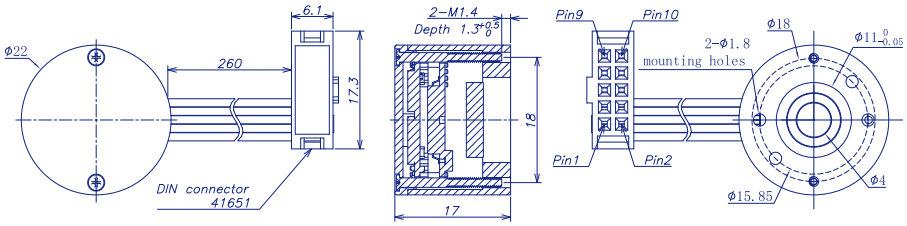
AM-EN2217S111 SERIES



Electromagnetic Multiturn Absolute Encoder

1) Basic parameters		2) Specification		3) Suitable for motor size		4) Pin definition	
Encoder type	absolute	Power Vcc	5V±5%	Suitable for shaftdiameter	2.0;3.0;4.0	1. Vcc	2.Vbat
Multiple circles/bits	22	Highest clock rate	2.5MHz	Suitable for shaft length	3.7~4.0	3. 485A	4. 485B
Angle/bit	15	Operating Temperature	-40~125℃	Suitable for boss diameter	6.5~6.55	5. GND	6. NC
protocol	RS485	Inertia	0.015g.cm^2	Suitable for boss thickness	Max 1.0	7. NC	8. NC
Number of channels	1	Output Current, each channel	20mA(max)	Code wheel spacing	0.7~1.0	9.NC	10. NC
Differential signal	Yes	Weight	13.5 g	Other fixed size	Drawing		

4) **SSI READ Data Format:**

See the description of RS485 servo communication mode

5) **Timing diagram annotation:**

See the description of RS485 servo communication mode

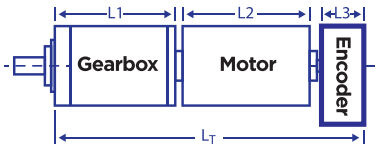
6) Recommended Combination

Total Length of Geared Motor System: L_T=L1+L2+L3(L3=17mm)

L1:32GP	L1:36GP	L2:BL32	L1:36GP	L1:40GP	L2:BL36
27.4	39.6	60.0	39.6	46.8	60.5
35.9	48.6	70.0	48.6	58.3	
44.4	57.6		57.6	69.8	

L1:45GP	L1:52GP	L2:BL45	L1:52GP		L2:BL 65
60.1	79.3	100.0	79.3		108.5
72.1					

AM-EN2217S111 Combiniation Scheme



Recommended Gearbox:
Planetary Gearbox:
AM-32GP AM-45GP
AM-36GP AM-52GP
AM-40GP

Recommended Motor:
AM-BL/D32** AM-BL/D45***
AM-BL/D36** AM-BL65***
AM-BL40**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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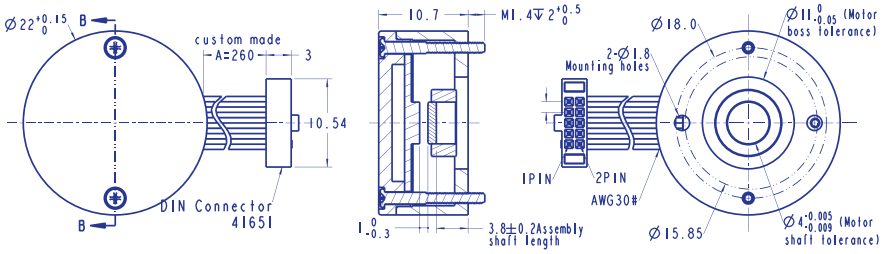
AM-EN2211S112-14Bit SERIES



Electromagnetic Encoder

1) Basic parameters		2) Specification		3) Suitable for motor size		4) Pin definition	
Encoder type	absolute	Power Vcc	5V±5%	Suitable for shaft diameter	4.0;5.0;8.0	1. Vcc	2.GND
Multiple circles/bits	One lap	Transmission rate	2.5Mbps	Suitable for shaft length	3.7~4.0	3. B-	4. A+
Angle/bit	14Bit	Start-up time	< 100ms	Suitable for boss diameter	10.95~11.0		
protocol	RS-485	Data refresh time	<100us	Suitable for boss thickness	Max 1.0		
Differential signal	Bus difference	Power dissipation	≤ 0.1W	Code wheel spacing	0.7~1.0		
EMC anti-interference	EN 61000-6-2	Operating Temperature	-40~125℃	Other fixed size	Drawing		

5)Encoder single turn data request command:

Command frame sent by main control end: send data (HEX): 0x02

6)The main control end receives the data frame from the encoder:

Receive data(HEX): 0x02 0x20 0x03 0x02 0x01 0x22 among:

0x02: Return same command CF

0x20: Status Byte SF

0x03 0x02 0x01: Single turn data value DF(Low order first) = 0x010203 = 66051

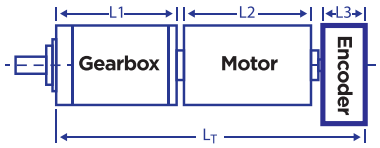
0x16: CRC check(Preforms an XOR operation on all the preceding bytes)

7) Recommended Combination

Total Length of Geared Motor System: L_T=L1+L2+L3(=10.7mm)

L1:32GP	L1:36GP	L2:BL32	L1:36GP	L1:40GP	L2:BL36
27.4	39.6	60.0	39.6	46.8	60.5
35.9	48.6	70.0	48.6	58.3	
44.4	57.6		57.6	69.8	
L1:45GP	L1:52GP	L2:BL45	L1:52GP		L2:BL65
60.1	79.3	100.0	79.3		108.5
72.1					

AM-EN2211S* Combiniation Scheme**



Recommended Gearbox:
AM-32GP AM-45GP
AM-36GP AM-52GP
AM-40GP

Recommended Motor:
AM-BL/D32** AM-BL/D45***
AM-BL/D36** AM-BL65***
AM-BL40**

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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ABSOLUTE ENCODER

ELECTROMAGNETIC TYPE

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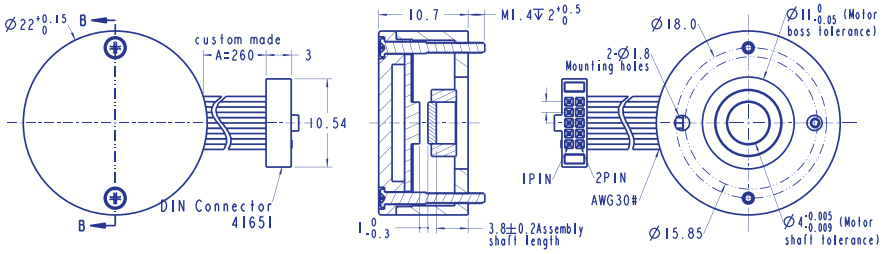
AM-EN2211S112-21Bit SERIES



Electromagnetic Encoder

1) Basic parameters		2) Specification		3) Suitable for motor size		4) Pin definition	
Encoder type	absolute	Power Vcc	5V±5%	Suitable for shaft diameter	4.0;5.0;8.0	1. Vcc	2.GND
Multiple circles/bits	One lap	Transmission rate	2.5Mbps	Suitable for shaft length	3.7~4.0	3. B-	4. A+
Angle/bit	21Bit	Start-up time	< 100ms	Suitable for boss diameter	10.95~11.0		
protocol	RS-485	Data refresh time	<100us	Suitable for boss thickness	Max 1.0		
Differential signal	Bus difference	Power dissipation	≤ 0.1W	Code wheel spacing	0.7~1.0		
EMC anti-interference	EN 61000-6-2	Operating Temperature	-40~125℃	Other fixed size	Drawing		

5)Encoder single turn data request command:

Command frame sent by main control end: send data (HEX): 0x02

6)The main control end receives the data frame from the encoder:

Receive data(HEX): 0x02 0x20 0x03 0x02 0x01 0x22 among:

0x02: Return same command CF

0x20: Status Byte SF

0x03 0x02 0x01: Single turn data value DF(Low order first) = 0x010203 = 66051

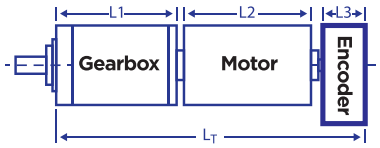
0x16: CRC check(Preforms an XOR operation on all the preceding bytes)

7) Recommended Combination

Total Length of Geared Motor System: L_T=L1+L2+L3(=10.7mm)

L1:32GP	L1:36GP	L2:BL32	L1:36GP	L1:40GP	L2:BL36
27.4	39.6	60.0	39.6	46.8	60.5
35.9	48.6	70.0	48.6	58.3	
44.4	57.6		57.6	69.8	
L1:45GP	L1:52GP	L2:BL45	L1:52GP		L2:BL65
60.1	79.3	100.0	79.3		108.5
72.1					

AM-EN2211S* Combiniation Scheme**



Recommended Gearbox:
AM-32GP AM-45GP
AM-36GP AM-52GP
AM-40GP

Recommended Motor:
AM-BL/D32** AM-BL/D45***
AM-BL/D36** AM-BL65***
AM-BL40**

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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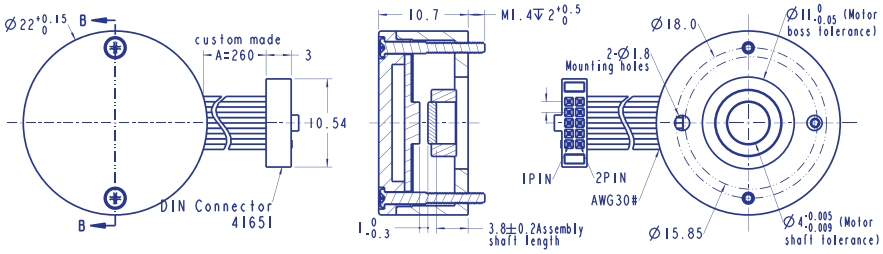
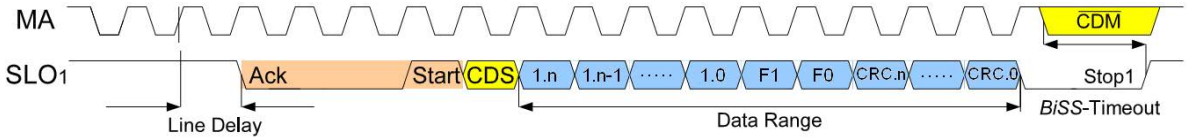
AM-EN2211S112-21Bit-BiSS-C SERIES



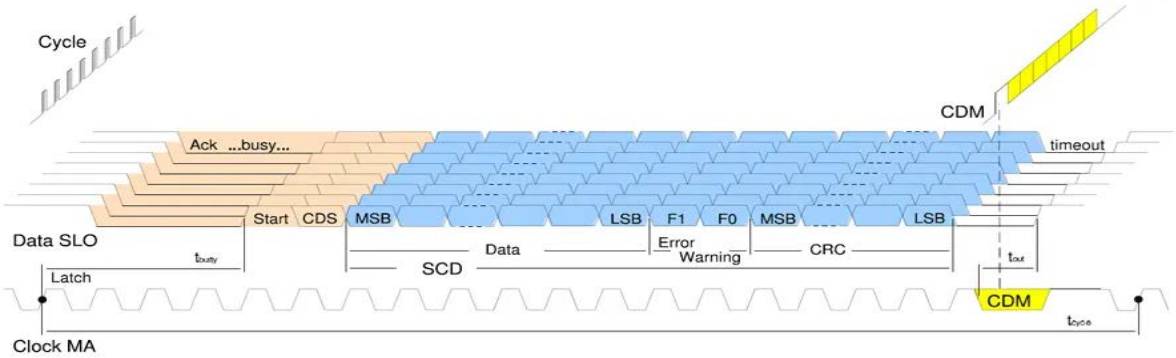
Electromagnetic Encoder

1) Basic parameters		2) Specification		3) Suitable for motor size		4) Pin definition	
Encoder type	absolute	Power Vcc	5V±5%	Suitable for shaft diameter	4.0;5.0;8.0	1. Vcc	2.Vcc
Multiple circles/bits	One lap	Transmission rate	<10MHz	Suitable for shaft length	3.7~4.0	3. GND	4. GND
Angle/bit	21Bit	Start-up time	< 10ms	Suitable for boss diameter	10.95~11.0	5. CLOCK+	6. CLOCK-
protocol	BiSS-C	Data refresh time	20ns	Suitable for boss thickness	Max 1.0	7. DATA+	8. DATA-
Differential signal	Bus difference	Power dissipation	≤ 0.1W	Code wheel spacing	0.7~1.0		
EMC anti-interference	EN 61000-6-2	Operating Temperature	-40~125℃	Other fixed size	Drawing		

5) BiSS Communication Frame:



6) BiSS Protocol Frame Structure:

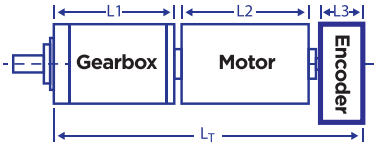


7) Recommended Combination

Total Length of Geared Motor System: L_T=L1+L2+L3(=10.7mm)

L1:32GP	L1:36GP	L2:BL32	L1:36GP	L1:40GP	L2:BL36
27.4	39.6	60.0	39.6	46.8	60.5
35.9	48.6	70.0	48.6	58.3	
44.4	57.6		57.6	69.8	
L1:45GP	**L1:52GP**	**L2:BL45**	**L1:52GP**		**L2:BL65**
60.1	79.3	100.0	79.3		108.5
72.1					

AM-EN2211S* Combiniation Scheme**



Recommended Gearbox:
Planetary Gearbox:
AM-32GP AM-45GP
AM-36GP AM-52GP
AM-40GP

Recommended Motor:
AM-BL/D32** AM-BL/D45***
AM-BL/D36** AM-BL65***
AM-BL40**

For more combination specs, visit Assun Motor website.

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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ABSOLUTE ENCODER

ELECTROMAGNETIC TYPE

ASSUN
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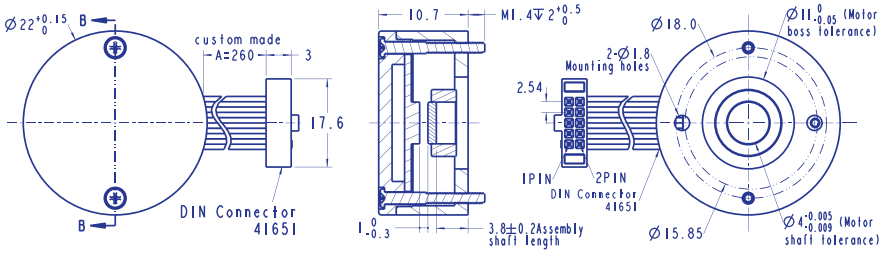
AM-EN2211S112-21Bit-RS422 SERIES



Electromagnetic Encoder

1) Basic parameters		2) Specification		3) Suitable for motor size		4) Pin definition	
Encoder type	absolute	Power Vcc	5V±5%	Suitable for shaft diameter	4.0;5.0;8.0	1. Vcc	2.Vcc
Multiple circles/bits	One lap	Transmission rate	2.5Mbps	Suitable for shaft length	3.7~4.0	3. GND	4. GND
Angle/bit	21Bit	Start-up time	< 100ms	Suitable for boss diameter	10.95~11.0	5. RX+	6. RX-
protocol	RS-422	Data refresh time	<100us	Suitable for boss thickness	Max 1.0	7. TX-	8. TX+
Differential signal	Bus difference	Power dissipation	≤ 0.1W	Code wheel spacing	0.7~1.0		
EMC anti-interference	EN 61000-6-2	Operating Temperature	-40~125℃	Other fixed size	Drawing		

5)Encoder single turn data request command:

Command frame sent by main control end: send data (HEX): 0x02

6)The main control end receives the data frame from the encoder:

Receive data(HEX): 0x02 0x20 0x03 0x02 0x01 0x22 among:

0x02: Return same command CF

0x20: Status Byte SF

0x03 0x02 0x01: Single turn data value DF(Low order first) = 0x010203 = 66051

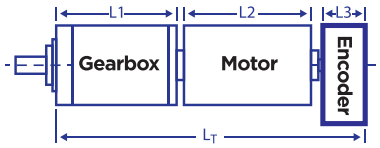
0x16: CRC check(Preforms an XOR operation on all the preceding bytes)

7) Recommended Combination

Total Length of Geared Motor System: L_T=L1+L2+L3(=10.7mm)

L1:32GP	L1:36GP	L2:BL32	L1:36GP	L1:40GP	L2:BL36
27.4	39.6	60.0	39.6	46.8	60.5
35.9	48.6	70.0	48.6	58.3	
44.4	57.6		57.6	69.8	
L1:45GP	L1:52GP	L2:BL45	L1:52GP		L2:BL65
60.1	79.3	100.0	79.3		108.5
72.1					

AM-EN2211S* Combiniation Scheme**



Recommended Gearbox:
AM-32GP AM-45GP
AM-36GP AM-52GP
AM-40GP

Recommended Motor:
AM-BL/D32** AM-BL/D45***
AM-BL/D36** AM-BL65***
AM-BL40**

Remarks: Clients can choose gearbox and motor to match with this encoder. Some combinations are listed here for reference.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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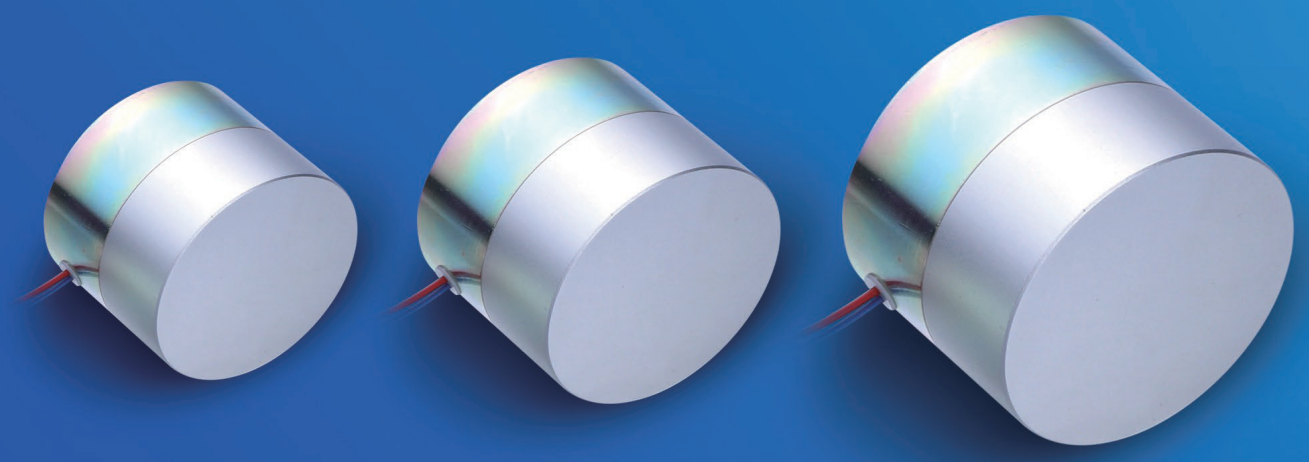
ASSUN
DRIVING THE FUTURE

BRAKES

Assun Brakes are regarded as the final compartments for total solution of DC drive. Brakes are used to clamp the motor shafts and hold it in fixed position when motors stop. Power-on and power-off types are provided to fit for different applications.



AM-BK2420GE	AM-BK3526GE	AM-BK4228GE	AM-BK5032GE
AM-BK2423LE	AM-BK3531LE	AM-BK4235LE	AM-BK5039LE

Company Name Abbreviation

AM - BK 4228 GE - 2410

Code Of Brake

Break Dimension
42 - Diameter
28 - Thickness

Break Type
G - Power-On Brake
L - Power-Off Brake

Temp.Level
N - 85°C
E - 120°C
F - 155°C
H - 180°C

Voltage & Torque
24 - Nominal Voltage (V)
10 - Static Braking Torque (x0.1Nm)

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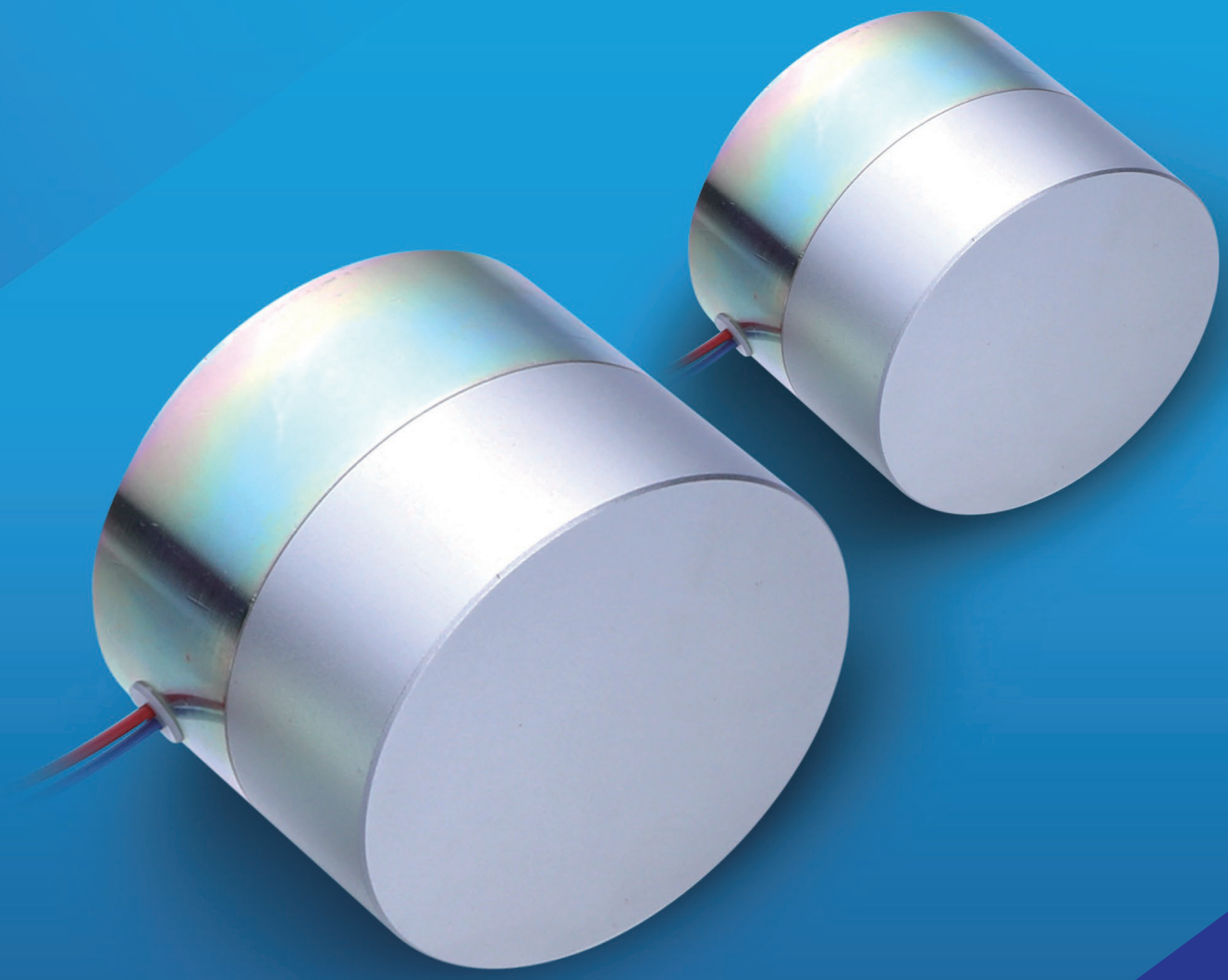
ASSUN
DRIVING THE FUTURE

BRAKES

POWER ON AND POWER OFF BRAKES

Power-On and Power-Off brakes by Assun have got diameters of 24mm, 35mm, 42mm and 50mm, static brake torque values of 0.2Nm, 0.5Nm, 1Nm and 1.5 Nm, to fit for different motors and applications.



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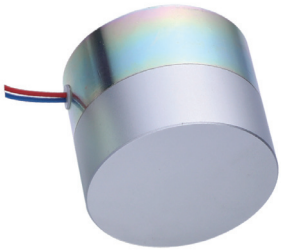
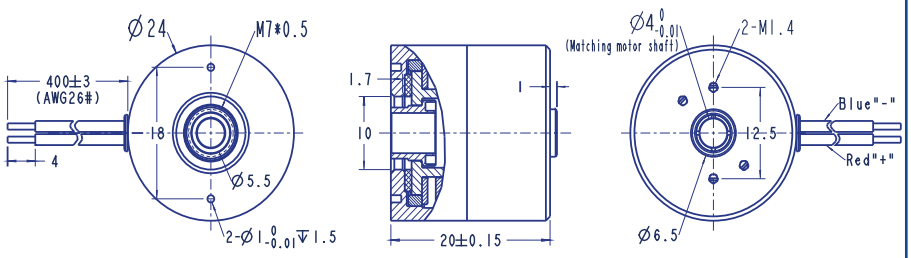
AM-BK2420GE Series





ELECTROMAGNETIC BRAKE

1) Parameters

Parameters/Models	Static friction torque	Rated Voltage	Power	Temperature Rating	Maximum Speed	Moment of inertia	Weight
AM-BK2420GE-2401	0.1 N.M	24 V	4.5 W	120 °C	10000 rpm	18.0 g.cm ²	62.0 g
AM-BK2420GE-1201	0.1 N.M	12 V	3.2 W	120 °C	10000 rpm	18.0 g.cm ²	62.0 g

Parameters/Models	Life time	Thermal Resistance	Thermal time Constant	Coil Inductance	Electrical Time Constant	Operating Environment Temperature
AM-BK2420GE-2401	100000 Times	30.0 K/W	830 s	86.3 mH	0.7 ms	-25~55 °C (Customizable)
AM-BK2420GE-1201	100000 Times	30.0 K/W	830 s	31.25 mH	0.7 ms	-25~55 °C (Customizable)

2) Special features

1. Fixed accuracy, no backlash
2. Small size and high torque
3. Low noise, high speed
4. Fast response and long life

3) Applications

1. Robotic brake
2. Z-axis brake
3. Servo motor static braking
4. General purpose motor

4) Precautions

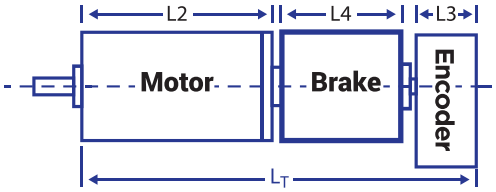
1. Avoid contact with oil or dust, these factors will reduce the torque of the product;
2. Please connect with the product with the correct voltage and polarity to avoid damage or abnormal work;
3. The initial torque may not reach the rated torque for the first time. Please rotate 50 to 60 times at 40 to 60 rpm in the braking state;
4. This product cannot be used as a high-speed dynamic brake.

5) Recommended Combination

Total Length of Geared Motor System: L_T=L2+L3+L4(=20mm)

L2:BL24	L3:EN16S	L3:EN24T	L2:BL28	L3:EN16S	L3:EN24T
53.0	10.7	12.0	45.0	10.7	12.0
L2:BL32	L3:EN22S	L3:EN24T			
60.0	10.7	12.0			
70.0					

AM-BK2420GE Combiniation Scheme



Recommended Motor:
Brush less Motor:
AM-BL/D24**
AM-BL28**
AM-BL32**

Recommended Encoder:
Encoder S: AM-EN1611S***
AM-EN2211S***
Encoder T: AM-EN2412T***

For more combination specs, visit Assun Motor website.

For more Motor and encoder specs, see Assun Motor website.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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POWER-ON BRAKE

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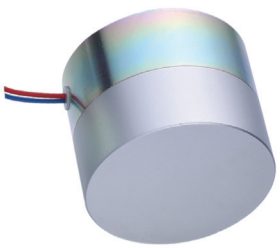
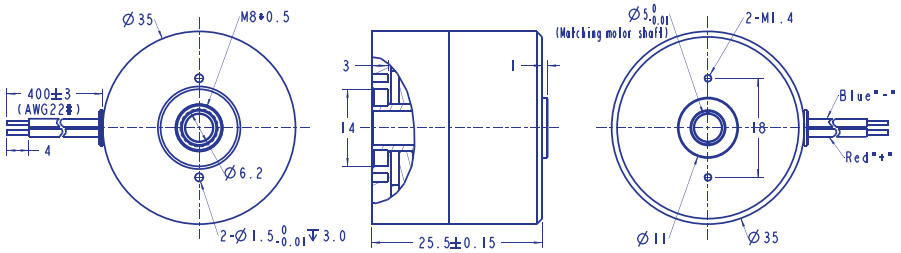
AM-BK3526GE Series





ELECTROMAGNETIC BRAKE

1) Parameters

Parameters/Models	Static friction torque	Rated voltage	Power	Temperature rating	Maximum speed	Moment of inertia	Weight
AM-BK3526GE-2405	0.5 N.M	24 V	7.7 W	120 °C	8000 rpm	28.44 g.cm²	106.4 g
AM-BK3526GE-1205	0.5 N.M	12 V	- W	120 °C	8000 rpm	28.44 g.cm²	106.4 g

Parameters/Models	Life time	Thermal resistance	Thermal time constant	Coil inductance	Electrical time constant	Operating Environment Temperature
AM-BK3526GE-2405	100000 Times	20.0 K/W	630 s	59.3 mH	0.8 ms	-25~55 °C (Customizable)
AM-BK3526GE-1205	100000 Times	20.0 K/W	630 s	31.25 mH	0.8 ms	-25~55 °C (Customizable)

2) Special features

1. Fixed accuracy, no backlash	2. Small size and high torque
3. Low noise, high speed	4. Fast response and long life

3) Applications

1. Robotic brake	2. Z-axis brake
3. Servo motor static braking	4. General purpose motor

4) Precautions

1. Avoid contact with oil or dust, these factors will reduce the torque of the product;
2. Please connect with the product with the correct voltage and polarity to avoid damage or abnormal work;
3. The initial torque may not reach the rated torque for the first time. Please rotate 50 to 60 times at 40 to 60 rpm in the braking state;
4. This product cannot be used as a high-speed dynamic brake.

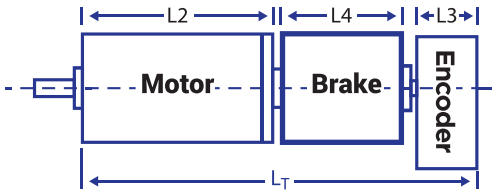
5) Recommended Combination

Total Length of Geared Motor System: L_T=L2+L3+L4(=25.5mm)

L2:BL36		L3:EN22S	L2:BL36		L3:EN36T
60.5		10.7	60.5		12.0
75.0			75.0		
90.0			90.0		

L2:BL40		L3:EN22S	L2:BL40		L3:EN36T
60.0		10.7	60.0		12.0

AM-BK3526GE Combiniation Scheme



Recommended Motor:
Brush less Motor:
AM-BL/D36**
AM-BL40**

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

For more Motor and encoder specs, see Assun Motor website.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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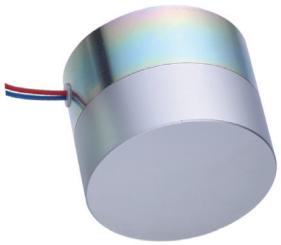
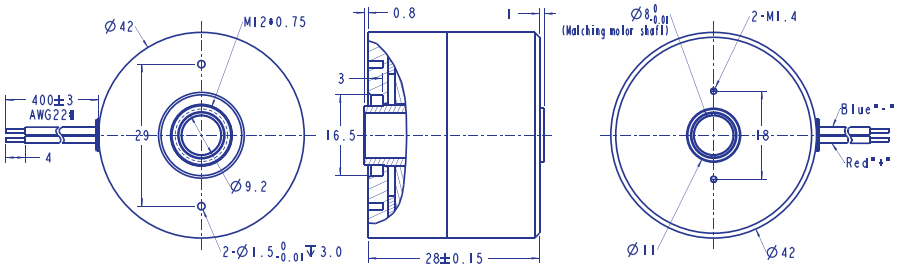
AM-BK4228GE Series





ELECTROMAGNETIC BRAKE

1) Parameters

Parameters/Models	Static friction torque	Rated voltage	Power	Temperature rating	Maximum speed	Moment of inertia	Weight
AM-BK4228GE-2410	1.0 N.M	24 V	10.7 W	120 ºC	8000 rpm	77.56 g.cm²	162 g

Parameters/Models	Life time	Thermal resistance	Thermal time constant	Coil inductance	Electrical time constant	Operating Environment Temperature
AM-BK4228GE-2410	100000 Times	13.2 K/W	789 s	50.2 mH	0.9 ms	-25~55 ºC (Customizable)

2) Special features

1. Fixed accuracy, no backlash	2. Small size and high torque
3. low noise, high speed	4. Fast response and long life

3) Applications

1. Robotic brake	2. Z-axis brake
3. Servo motor static braking	4. General purpose motor

4) Precautions

1. Avoid contact with oil or dust, these factors will reduce the torque of the product;
2. Please connect with the product with the correct voltage and polarity to avoid damage or abnormal work;
3. The initial torque may not reach the rated torque for the first time. Please rotate 50 to 60 times at 40 to 60 rpm in the braking state;
4. This product cannot be used as a high-speed dynamic brake.

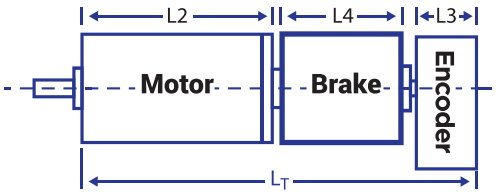
5) Recommended Combination

Total Length of Geared Motor System: L_T=L2+L3+L4(=28mm)

L2:BL45		L3:EN22S	L2:BL45		L3:EN36T
100.0		10.7	100.0		12.0

L2:BL65		L3:EN22S	L2:BL65		L3:EN36T
108.5		10.7	108.5		12.0
140.0			140.0		

AM-BK4228GE Combiniation Scheme



Recommended Motor:
Brush less Motor:
AM-BL/D45***
AM-BL65***

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

For more Motor and encoder specs, see Assun Motor website.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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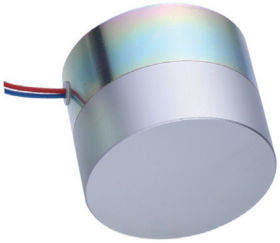
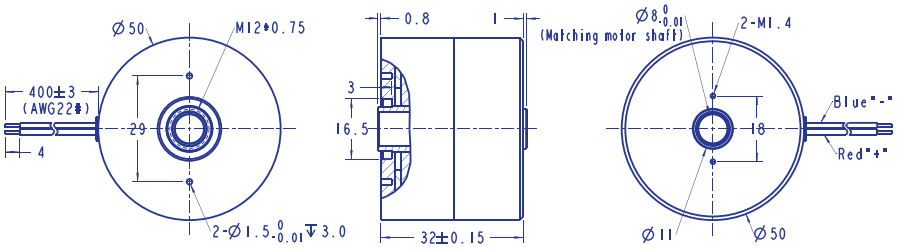
AM-BK5032GE Series





ELECTROMAGNETIC BRAKE

1) Parameters

Parameters/Models	Static friction torque	Rated voltage	Power	Temperature rating	Maximum speed	Moment of inertia	Weight
AM-BK5032GE-2415	1.5 N.M	24 V	18.6 W	120 °C	8000 rpm	154.8 g.cm²	275.2 g

Parameters/Models	Life time	Thermal resistance	Thermal time constant	Coil inductance	Electrical time constant	Operating Environment Temperature
AM-BK5032GE-2415	100000 Times	7.5 K/W	774 s	51.3 mH	1.7 ms	-25~55 °C (Customizable)

2) Special features

1. Fixed accuracy, no backlash	2. Small size and high torque
3. low noise, high speed	4. Fast response and long life

3) Applications

1. Robotic brake	2. Z-axis brake
3. Servo motor static braking	4. General purpose motor

4) Precautions

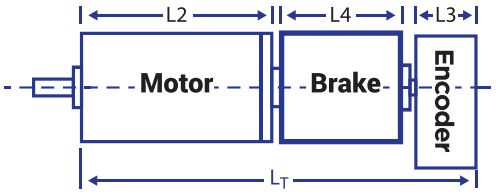
1. Avoid contact with oil or dust, these factors will reduce the torque of the product;
2. Please connect with the product with the correct voltage and polarity to avoid damage or abnormal work;
3. The initial torque may not reach the rated torque for the first time. Please rotate 50 to 60 times at 40 to 60 rpm in the braking state;
4. This product cannot be used as a high-speed dynamic brake.

5) Recommended Combination

Total Length of Geared Motor System: L_T=L2+L3+L4(=32mm)

L2:BL65		L3:EN36T	L2:BL65		L3:EN22S
108.5		12.0	108.5		10.7
140.0			140.0		

AM-BK5032GE Combiniation Scheme



Recommended Motor:
Brushless Motor:
AM-BL65***

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

For more Motor and encoder specs, see Assun Motor website.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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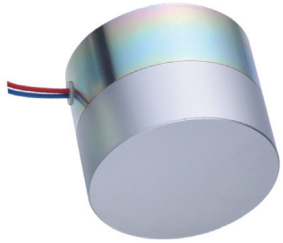
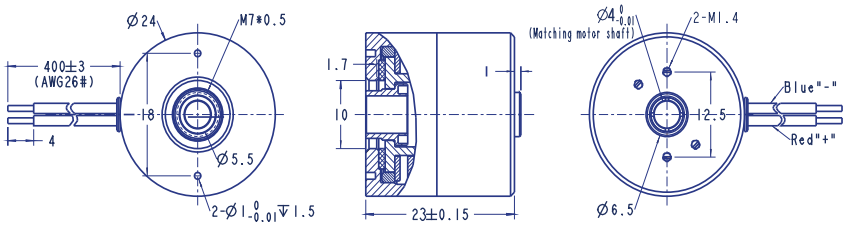
BRAKE

POWER-OFF BRAKE

AM-BK2423LE Series





ELECTROMAGNETIC BRAKE

1) Parameters

Parameters/Models	Static friction torque	Rated voltage	Power	Temperature Rating	Maximum speed	Moment of inertia	Weight
AM-BK2423LE-2401	0.1 N.M	24 V	4.0 W	120 °C	10000 rpm	18.0 g.cm ²	80.8 g
AM-BK2423LE-1201	0.1 N.M	12 V	2.1 W	120 °C	10000 rpm	18.0 g.cm ²	80.8 g

Parameters/Models	Life time	Thermal Resostamce	Thermal time constant	Coil Inductance	Electrical time constant	Operating Environment Temperature
AM-BK2423LE-2401	100000 Times	24.0 K/W	830 s	86.3 mH	0.9 ms	-25~55 °C (Customizable)
AM-BK2423LE-1201	100000 Times	24.0 K/W	830 s	30.9 mH	0.9 ms	-25~55 °C (Customizable)

2) Special features

1.Fixed accuracy, no backlash
2. Small size and high torque
3. Low noise, high speed
4. Fast response and long life

3) Applications

1. Robotic brake
2. Z-axis brake
3. Servo motor static braking
4. General purpose motor

4) Precautions

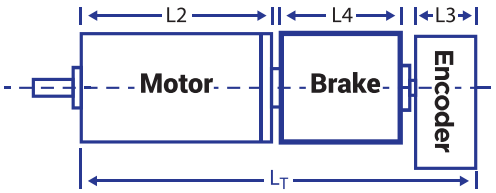
1. Avoid contact with oil or dust, these factors will reduce the torque of the product;
2. Please connect with the product with the correct voltage and polarity to avoid damage or abnormal work;
3. The initial torque may not reach the rated torque for the first time. Please rotate 50 to 60 times at 40 to 60 rpm in the braking state;
4. This product cannot be used as a high-speed dynamic brake.

5) Recommended Combination

Total Length of Geared Motor System: $L_T = L1+L3+L4$ ($L4 = 23mm$)

L2:BL24	L3:EN16S	L3:EN24T	L2:BL28	L3:EN16S	L3:EN24T
53.0	10.7	12.0	45.0	10.7	12.0
L2:BL32	L3:EN22S	L3:EN24T			
60.0	10.7	12.0			
70.0					

AM-BK2423LE Combiniation Scheme



Recommended Motor:
Brushless Motor:
AM-BL/D24**
AM-BL/D28**
AM-BL/D32**

Recommended Encoder:
Encoder S: AM-EN11S***
AM-EN2211S***
Encoder T: AM-EN2412T***

For more combination specs, visit Assun Motor website.

For more Motor and encoder specs, see Assun Motor website.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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POWER-OFF BRAKE

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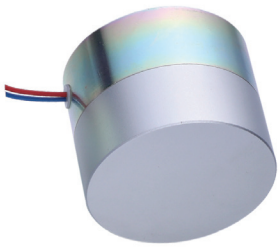
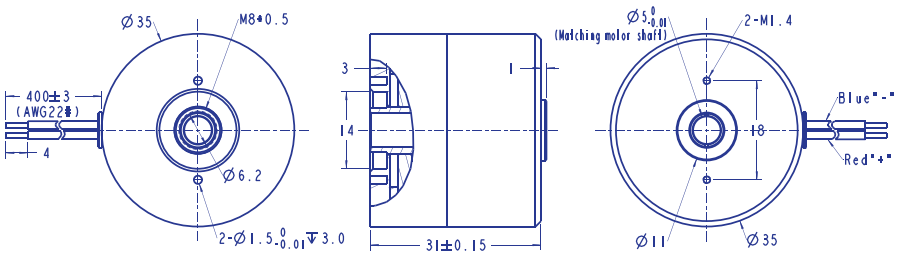
AM-BK3531LE Series





ELECTROMAGNETIC BRAKE

1) Parameters

Parameters/Models	Static friction torque	Rated voltage	Power	Temperature rating	Maximum speed	Moment of inertia	Weight
AM-BK3531LE-2405	0.5 N.M	24 V	5.0 W	120 °C	8000 rpm	28.44 g.cm²	132.8 g
AM-BK3531LE-1205	0.5 N.M	12 V	5.0W	120 °C	8000 rpm	28.44 g.cm²	132.8 g

Parameters/Models	Life time	Thermal resistance	Thermal time constant	Coil inductance	Electrical time constant	Operating Environment Temperature
AM-BK3531LE-2405	100000 Times	16.0 K/W	700 s	92.7 mH	1.2 ms	-25~55 °C (Customizable)
AM-BK3531LE-1205	100000 Times	16.0 K/W	700 s	30.9mH	1.2 ms	-25~55 °C (Customizable)

2) Special features

1. Fixed accuracy, no backlash
2. Small size and high torque
3. Low noise, high speed
4. Fast response and long life

3) Applications

1. Robotic brake
2. Z-axis brake
3. Servo motor static braking
4. General purpose motor

4) Precautions

1. Avoid contact with oil or dust, these factors will reduce the torque of the product;
2. Please connect with the product with the correct voltage and polarity to avoid damage or abnormal work;
3. The initial torque may not reach the rated torque for the first time. Please rotate 50 to 60 times at 40 to 60 rpm in the braking state;
4. This product cannot be used as a high-speed dynamic brake.

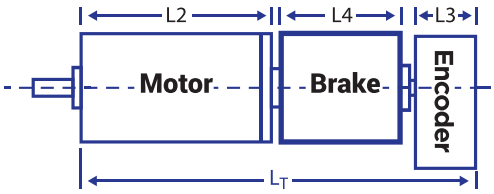
5) Recommended Combination

Total Length of Geared Motor System: L_T=L2+L3+L4(=31mm)

L2:BL36		L3:EN22S	L2:BL36		L3:EN36T
60.5		10.7	60.5		12.0
75.0			75.0		
90.0			90.0		

L2:BL40		L3:EN22S	L2:BL40		L3:EN36T
60.0		10.7	60.0		12.0

AM-BK3531LE Combiniation Scheme



Recommended Motor:
Brush less Motor:
AM-BL/D36**
AM-BL40**

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

For more Motor and encoder specs, see Assun Motor website.

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BRAKE

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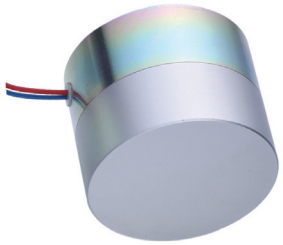
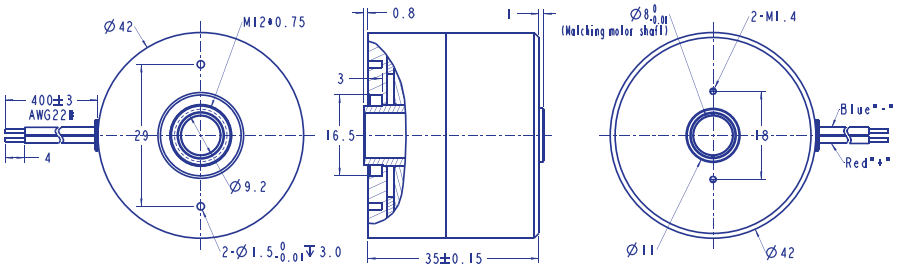
AM-BK4235LE Series





ELECTROMAGNETIC BRAKE

1) Parameters

Parameters/Models	Static friction torque	Rated voltage	Power	Temperature rating	Maximum speed	Moment of inertia	Weight
AM-BK4235LE-2410	1.0 N.M	24 V	7.5 W	120 °C	8000 rpm	77.56 g.cm²	211.2 g

Parameters/Models	Life time	Thermal resistance	Thermal time constant	Coil inductance	Electrical time constant	Operating Environment Temperature
AM-BK4235LE-2410	100000 Times	12.6 K/W	908 s	60.9 mH	1.1 ms	-25~55 °C (Customizable)

2) Special features

1. Fixed accuracy, no backlash	2. Small size and high torque
3. low noise, high speed	4. Fast response and long life

3) Applications

1. Robotic brake	2. Z-axis brake
3. Servo motor static braking	4. General purpose motor

4) Precautions

1. Avoid contact with oil or dust, these factors will reduce the torque of the product;
2. Please connect with the product with the correct voltage and polarity to avoid damage or abnormal work;
3. The initial torque may not reach the rated torque for the first time. Please rotate 50 to 60 times at 40 to 60 rpm in the braking state;
4. This product cannot be used as a high-speed dynamic brake.

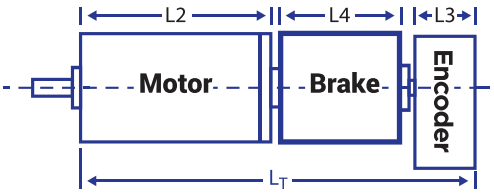
5) Recommended Combination

Total Length of Geared Motor System: L_T=L2+L3+L4(=35mm)

L2:BL45		L3:EN22S	L2:BL45		L3:EN36T
100.0		10.7	100.0		12.0

L2:BL65		L3:EN22S	L2:BL65		L3:EN36T
108.5		10.7	108.5		12.0
140.0			140.0		

AM-BK4235LE Combiniation Scheme



Recommended Motor:
Brush less Motor:
AM-BL/D45***
AM-BL65***

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

For more Motor and encoder specs, see Assun Motor website.

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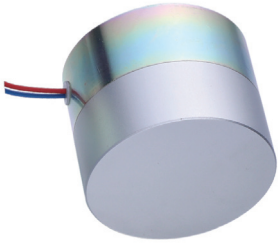
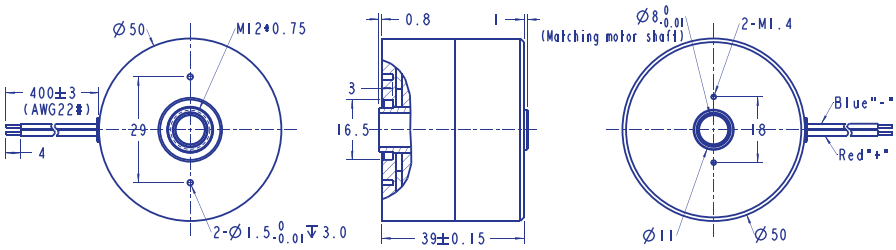
POWER-OFF BRAKE

AM-BK5039LE Series





ELECTROMAGNETIC BRAKE

1) Parameters

Parameters/Models	Static friction torque	Rated voltage	Power	Temperature rating	Maximum speed	Moment of inertia	Weight
AM-BK5039LE-2415	1.5 N.M	24 V	12.5 W	120 °C	8000 rpm	154.8 g.cm²	353 g

Parameters/Models	Life time	Thermal resistance	Thermal time constant	Coil inductance	Electrical time constant	Operating Environment Temperature
AM-BK5039LE-2415	100000 Times	8.1 K/W	1076 s	78.8 mH	2.5 ms	-25~55 °C (Customizable)

2) Special features

1. Fixed accuracy, no backlash	2. Small size and high torque
3. low noise, high speed	4. Fast response and long life

3) Applications

1. Robotic brake	2. Z-axis brake
3. Servo motor static braking	4. General purpose motor

4) Precautions

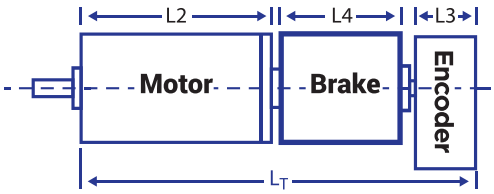
1. Avoid contact with oil or dust, these factors will reduce the torque of the product;
2. Please connect with the product with the correct voltage and polarity to avoid damage or abnormal work;
3. The initial torque may not reach the rated torque for the first time. Please rotate 50 to 60 times at 40 to 60 rpm in the braking state;
4. This product cannot be used as a high-speed dynamic brake.

5) Recommended Combination

Total Length of Geared Motor System: L_T=L2+L3+L4(=39mm)

L2:BL65		L3:EN36T	L2:BL65		L3:EN22S
108.5		12.0	108.5		10.7
140.0			140.0		

AM-BK5039LE Combiniation Scheme



Recommended Motor:
Brush less Motor:
AM-BL65***

Recommended Encoder:
Encoder S: AM-EN2211S***
2~3 Channels
Encoder T: AM-EN3612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

For more Motor and encoder specs, see Assun Motor website.

Please tell us if there is vibration in application. Client should pay attention to the integrity and reliability of the transmitted signal.

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COMBINATION PRODUCT

SERVO ACTUATOR

Assun Motor is developer, manufacturer and supplier of Servo Actuator, including the BLDC motor, gearbox and control system. For gearbox there is spur gear and planetary gear 2 versions in the actuator.

With 20 years of industry experience, we deliver mission-critical solutions that meet the highest standards of functional safety and reliability. We provide highly customization on both hardware and software.

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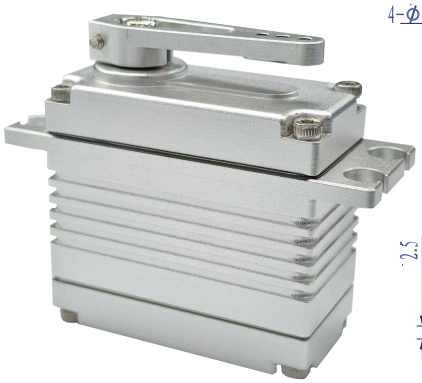
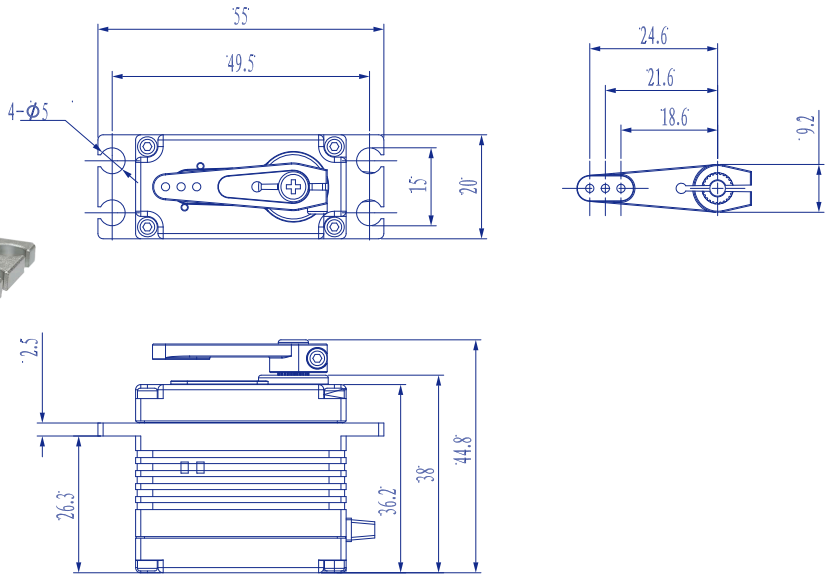
AM-4020SPI1617AE-298-0783 Series





SERVO ACTUATOR DATA	
Rated voltage	DC 7.4V
Voltage range	DC 6V-8.4V
Peak torque	30 Kg.cm@7.4V
Rated torque	9 Kg.cm@7.4V
No load rotation speed	500°/Sec@7.4V
Rated rotation speed	380°/Sec@7.4V
Peak current	＜6A
Rated current	1.5A 120%Max
Default angle	±50°
Operating temperature range	-20°C ~ +65°C
Shell material	6061 T6
Motor type	DC Brushless motor
Gear material	Steel
Position sensor	Non-contact sensor
Outline dimension	44.8mm*55mm*20mm
Weight	66g±10g

COMMAND SIGNAL	
PWM Command interface	
Signal voltage	HIGH:min.3.3V，max.5.0V LOW:min.0V，max.1.5V
Pulse lengths	900μs-2100μs
Pulse lengths for position	1000μs/1500μs/2000 μs -50°/0°/+50°
RS485 command interface and protocol specifications	
Baud-rate	57600±1.5% bits/s
Protocol(Documentation available)	10 Byte(incl.1byte check sum)
Number of data bits	8
Number of stop bits	1
Parity	None

Annotate:

(1) Tolerance±10%;
(2) Programming Tool for PWM-Versions required;
(3) -20°C...+65°C，Δt =85°C（- 4°F...+149°F，Δt =153°F）;
(4) Low Temperature Modification on request（-20°C/-4°F）。

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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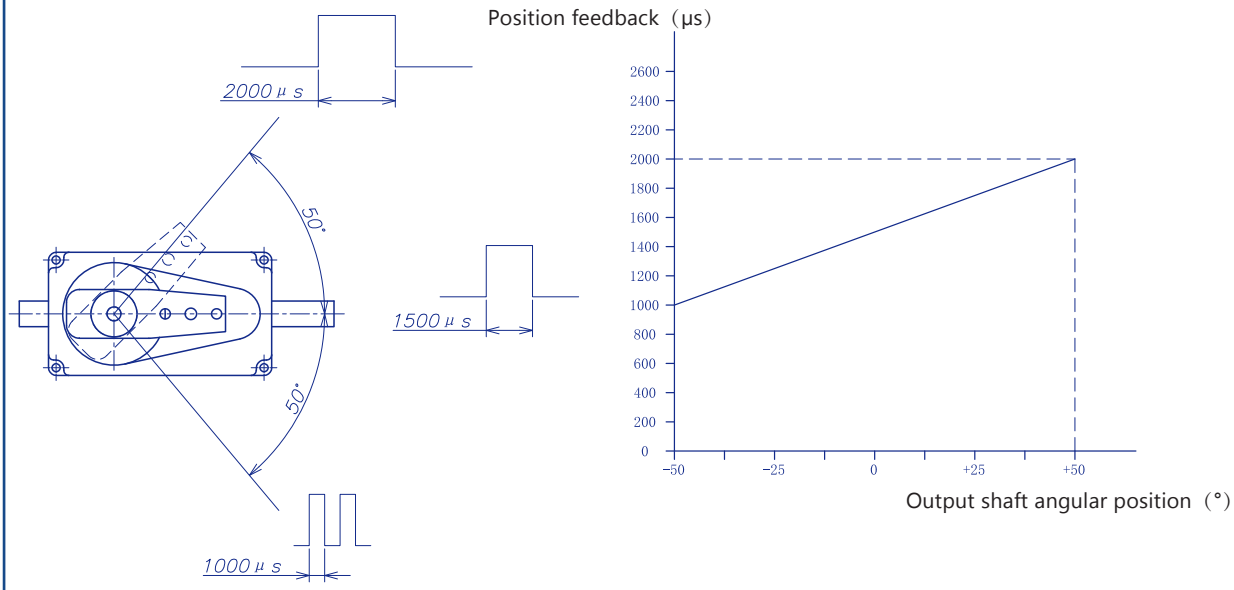
AM-4020SPI1617AE-298-0783 Series

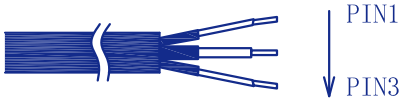
Position feedback signal

The position feedback signal is a square wave output signal that is directly related to the angular position of the output shaft.



CONNECTOR

PIN FUNCTION DEFINITION



Pin	
1	SIG
2	DC+
3	DC-(GND)

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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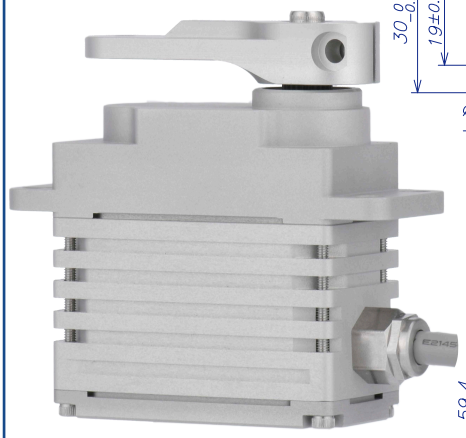
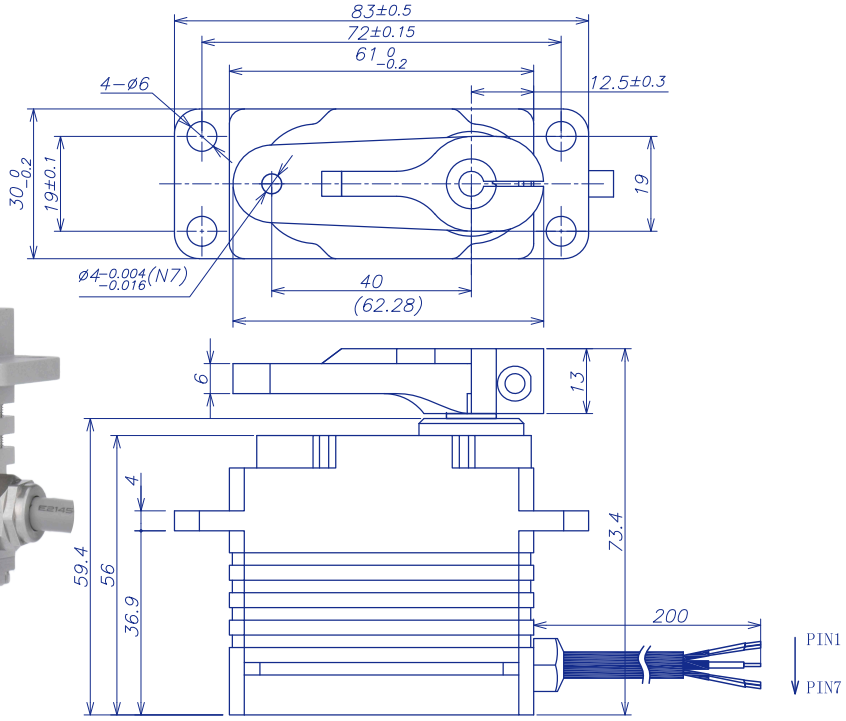
AM-6130SPC2435AE-245-2852EA Series





SERVO ACTUATOR DATA	
Rated voltage	DC 28V
Temperature range	-40°C ~ +65°C
Running direction	CW/CCW(adjustable)
Operating angle/stroke	±60°(±150°customizable)
Testing voltage	DC 28V
Idle running speed	0.19S/60°
Stall torque	100Kgf.cm
Rated torque	35Kgf.cm
Static current	0.05A
No-load current	0.6A
Stall current	5A/2.5A/2A
Motor type	Brushless
Potentiometer type	Magnetic encoding
Bearing type	Ball bearing
Gear material	Steel
Rocker arm locking type	Spline
Wire model	Power line0.5^2,Signal line0.2^2
Waterproof grade	IP67
External dimensions	61mm*30mm*59.4mm
Weight	330g

CONTROL FUNCTION DESCRIPTION	
CANOPEN DS 301+402	
Default node id	0x08,500kbps
MODBUS RS485(RTU)	
Default node id	0x08
Baud rate	57600bps,8,1,N,N

PIN FUNCTION DEFINITION	
PIN	Functional definition
1	Motor+
2	Motor-
3	CAN-H
4	CAN-L
5	GND
6	RS485-A
7	RS485-B

Annotate:

(1) Tolerance±10%;
(2) -40°C...+65°C, Δt =105°C (- 40°F...+149°F, Δt =189°F);
(3) Low Temperature Modification on request (-40°C/-40°F)。

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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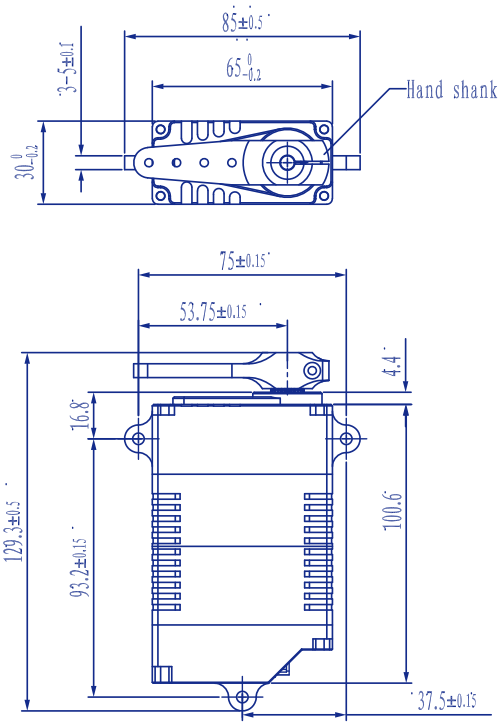
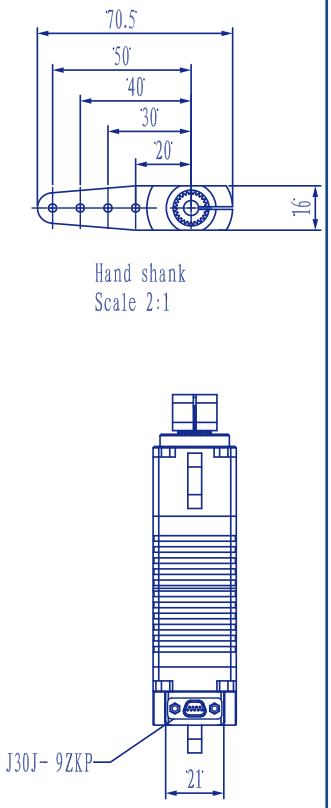
AM-6530SPC2448BF-218-3037EA Series





SERVO ACTUATOR DATA	
Rated voltage	DC 30V
Voltage range	DC 24V-32V
Peak torque	18 N.m@30V
Rated torque	9 N.m@30V
No load rotation speed	228°/Sec@30V
Rated rotation speed	192°/Sec@30V
Peak current	＜3.2A
Rated current	1.7A 120%Max
Default angle	±100°
Operating temperature range	-40°C ~ +65°C
Shell material	6061 T6
Motor type	DC Brushless motor
Gear material	Steel
Position sensor	Non-contact sensor
Outline dimension	129.5mm*85mm*30mm
Weight	460g Max

COMMAND SIGNAL	
PWM Command interface	
Signal voltage	HIGH:min.3.3V，max.5.0V LOW:min.0V，max.1.5V
Pulse lengths	500μs-2500μs
Pulse lengths for position	500μs/1500μs/2500μs -100°/0°/+100°
RS485 command interface and protocol specifications	
Baud-rate	57600±1.5% bits/s
Protocol(Documentation available)	10 Byte(incl.1byte check sum)
Number of data bits	8
Number of stop bits	1
Parity	None

Annotate:
(1) Tolerance±10%;
(2) Programming Tool for PWM-Versions required;
(3) -40°C...+65°C，Δt =105°C（-40°F...+149°F，Δt =189°F）;
(4) Low Temperature Modification on request（-40°C/-40°F）。

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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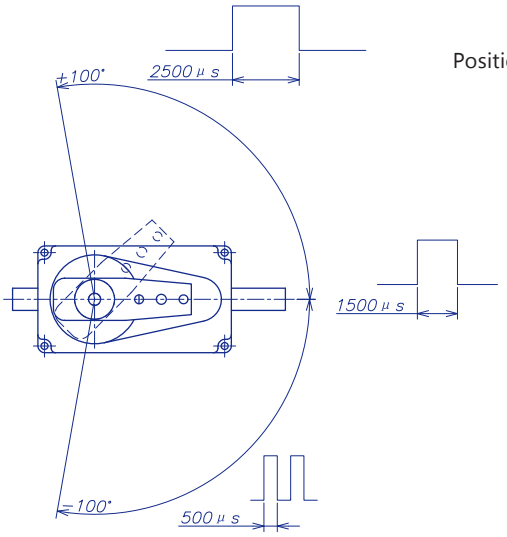
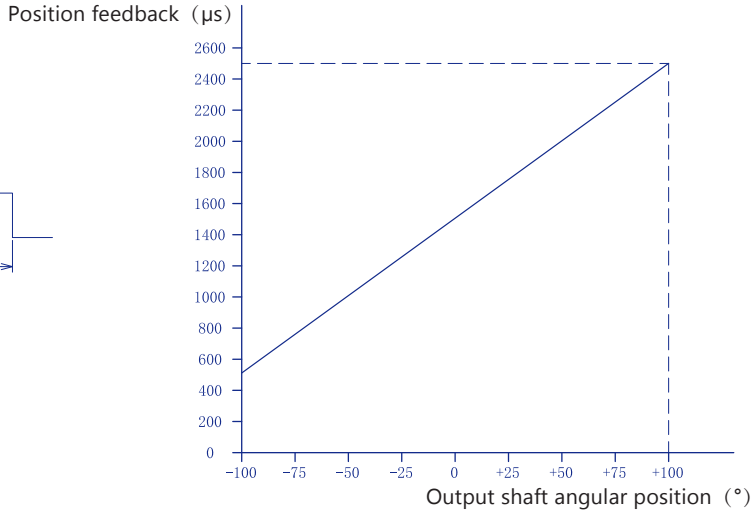
AM-6530SPC2448BF-218-3037EA Series

Position feedback signal

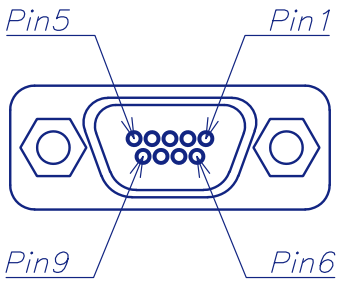
The position feedback signal is a square wave output signal that is directly related to the angular position of the output shaft.





CONNECTOR

Industrial standard J30J-15ZKP electrical connector



J30J-9ZKP	
1	GND
2	V+
3	GND
4	3V
5	PWM
6	CAN-H
7	CAN-L
8	485-B
9	485-A

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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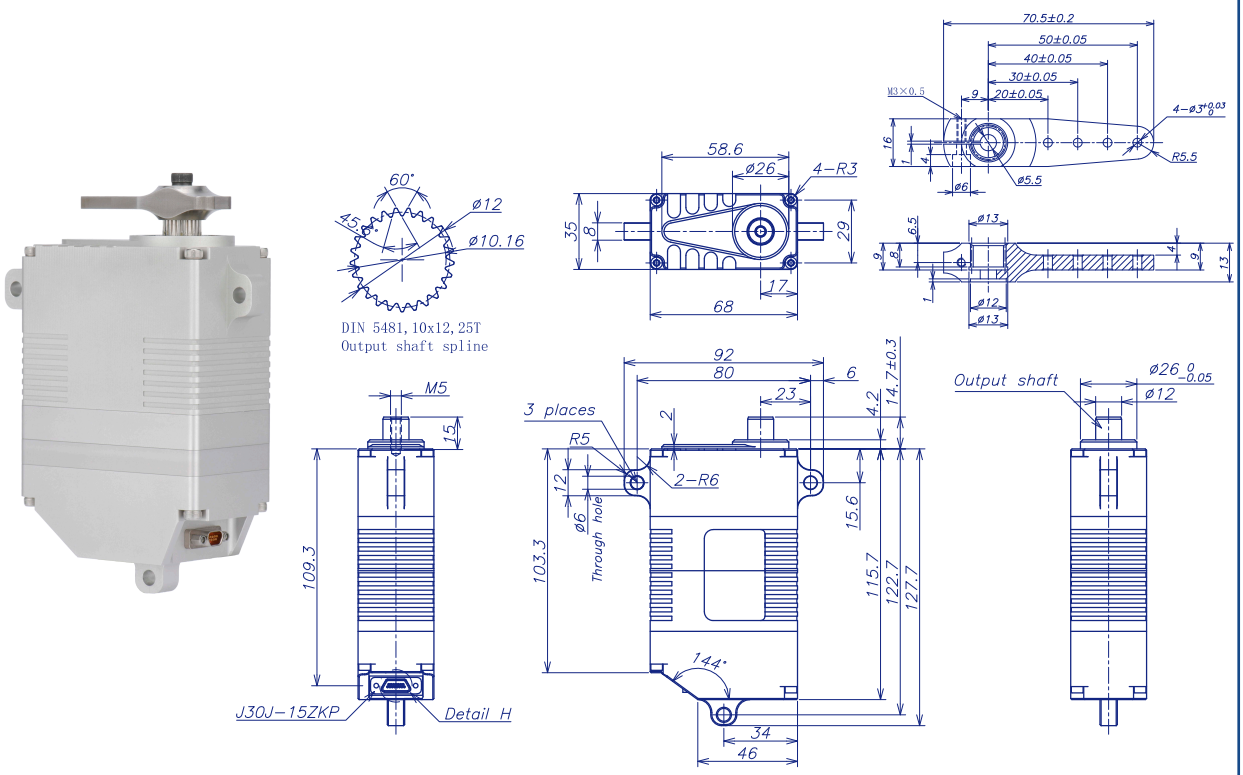
AM-6835SPI2845AE-200-3056EA Series



SERVO ACTUATOR DATA	
Rated voltage	DC 30V
Voltage range	DC 24V-32V
Peak torque	18 N.m@30V
Rated torque	9 N.m@30V
No load rotation speed	240°/Sec@30V
Rated rotation speed	160°/Sec@30V
Peak current	＜3A
Rated current	1.4A 120%Max
Default angle	±100°
Operating temperature range	-40°C ~ +65°C
Shell material	7075 T6
Motor type	DC Brushless motor
Gear material	Steel
Position sensor	Non-contact sensor
Outline dimension	92mm*122.7mm*35mm
Weight	600g Max

COMMAND SIGNAL	
PWM Command interface	
Signal voltage	HIGH:min.3.3V，max.5.0V LOW:min.0V，max.1.5V
Pulse lengths	500μs-2500μs
Pulse lengths for position	500μs/1500μs/2500μ s -100°/0°/+100°
RS485 command interface and protocol specifications	
Baud-rate	57600±1.5% bits/s
Protocol(Documentation available)	10 Byte(incl.1byte check sum)
Number of data bits	8
Number of stop bits	1
Parity	None

Annotate:
(1) Tolerance±10%;
(2) Programming Tool for PWM-Versions required;
(3) -40°C...+65°C，Δt =105°C（- 40°F...+149°F，Δt =189°F）;
(4) Low Temperature Modification on request（-40°C/-40°F）。

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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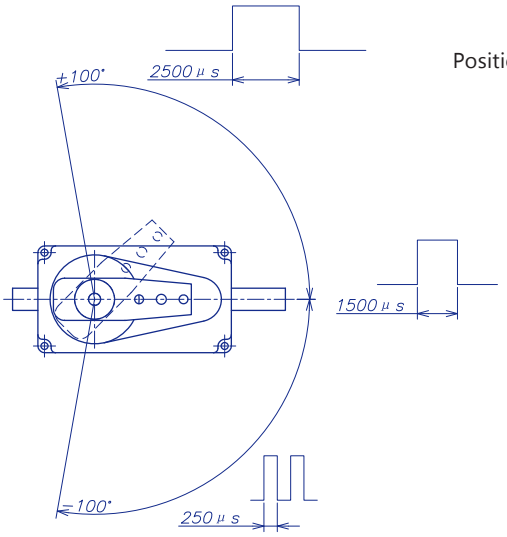
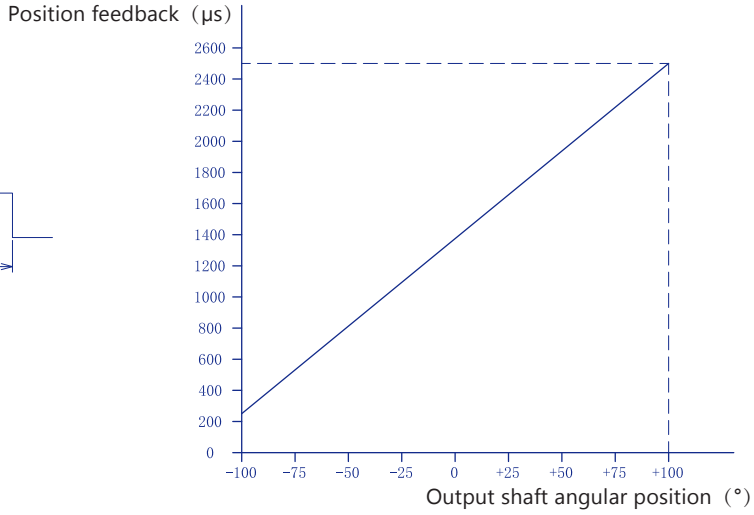
AM-6835SPI2845AE-200-3056EA Series

Position feedback signal

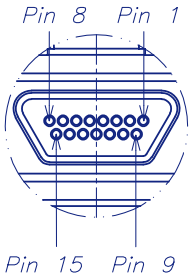
The position feedback signal is a square wave output signal that is directly related to the angular position of the output shaft.



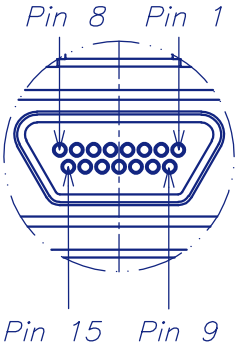


CONNECTOR

Industrial standard J30J-15ZKP electrical connector



J30J-15ZKP PWM+RS485	
1-4、12	DC + Supply voltage
9	NC Do not connect
5-8、13	DC- Supply ground
10-11	PWM Command signal
14	RS485-B
15	RS485-A



J30J-15ZKP PWM+RS485+CAN	
1-4	DC + Supply voltage
5-8	DC- Supply ground
9	NC Do not connect
10-11	PWM Command signal
12	CAN-H
13	CAN-L
14	RS485-B
15	RS485-A

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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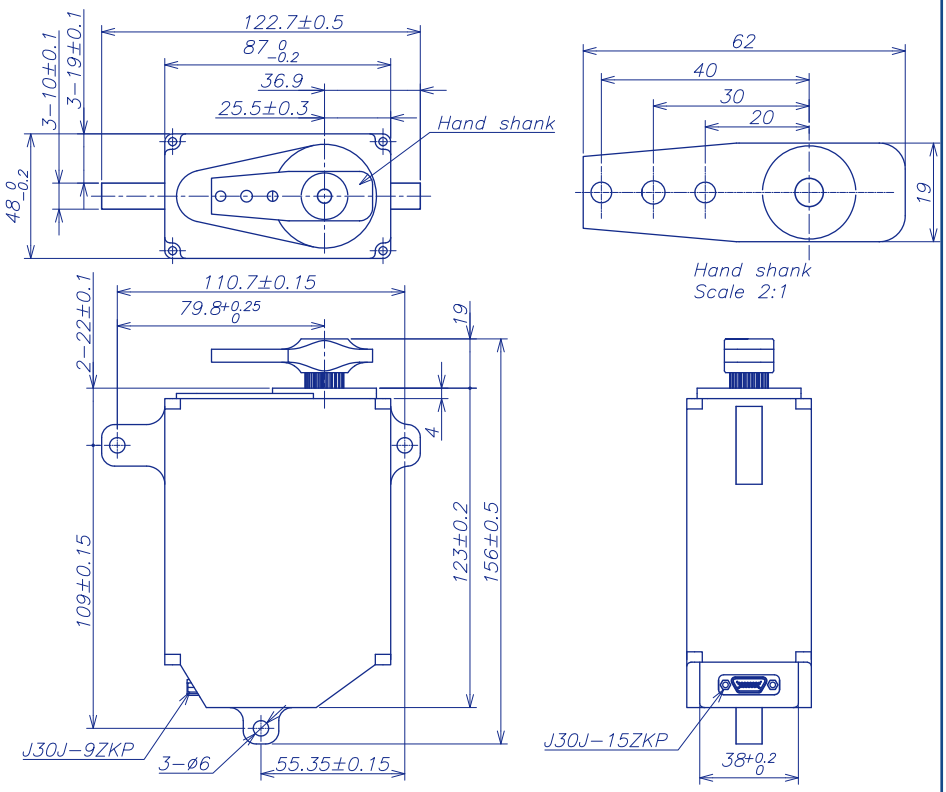
AM-8748HPP3260BF-286-2424EA Series



SERVO ACTUATOR DATA	
Rated voltage	DC 27V
Voltage range	DC 24V-32V
Peak torque	65 N.m@27V
Rated torque	20 N.m@27V
No load rotation speed	180°/Sec@27V
Rated rotation speed	135°/Sec@27V
Peak current	＜10A
Rated current	4A 120%Max
Default angle	±100°
Operating temperature range	-40°C ~ +65°C
Shell material	7075 T6
Motor type	DC Brushless motor
Gear material	Steel
Position sensor	Non-contact sensor
Outline dimension	156mm*122.7mm*48mm
Weight	1350g Max

COMMAND SIGNAL	
PWM Command interface	
Signal voltage	HIGH:min.3.3V，max.5.0V LOW:min.0V，max.1.5V
Pulse lengths	500μs-2500μs
Pulse lengths for position	500μs/1500μs/2500μs -100°/0°/+100°
RS485 command interface and protocol specifications	
Baud-rate	57600±1.5% bits/s
Protocol(Documentation available)	10 Byte(incl.1byte check sum)
Number of data bits	8
Number of stop bits	1
Parity	None

Annotate:
(1) Tolerance±10%;
(2) Programming Tool for PWM-Versions required;
(3) -40°C...+65°C，Δt =105°C（- 40°F...+149°F，Δt =189°F）;
(4) Low Temperature Modification on request（-40°C/-40°F）。

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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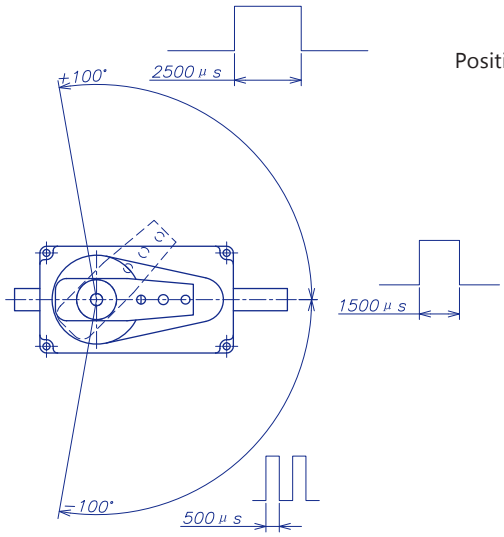
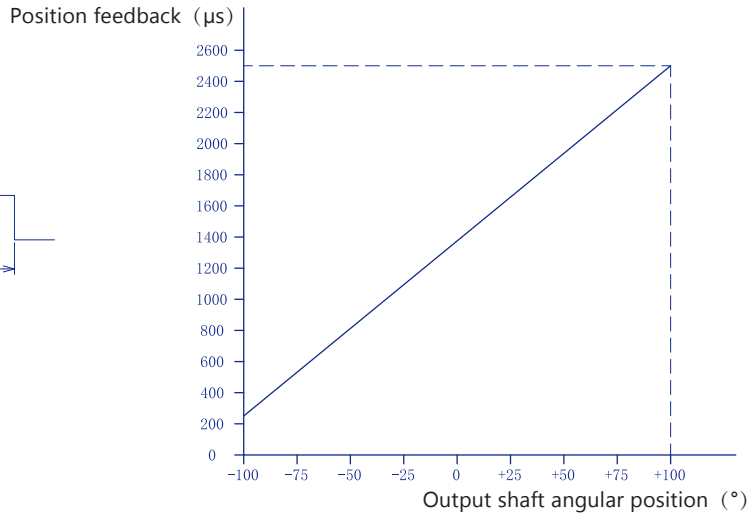
AM-8748HPP3260BF-286-2424EA Series

Position feedback signal

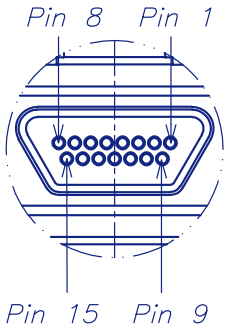
The position feedback signal is a square wave output signal that is directly related to the angular position of the output shaft.





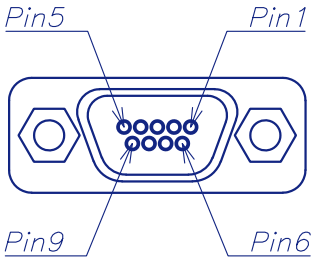
CONNECTOR

Industrial standard J30J-15ZKP electrical connector



J30J-15ZKP PWM	
1-4 12-13	DC + Supply voltage
9	NC Do not connect
5-8 14-15	DC- Supply ground
10 11	PWM Command signal

Industrial standard J30J-9ZKP electrical connector



J30J-9ZKP RS485	
1	RS-485A
2	SWCLK
3	SWDIO
4	GND
5	DIO(3.3~5V)
6	RS-485B
7	A+
8	B+
9	Z+

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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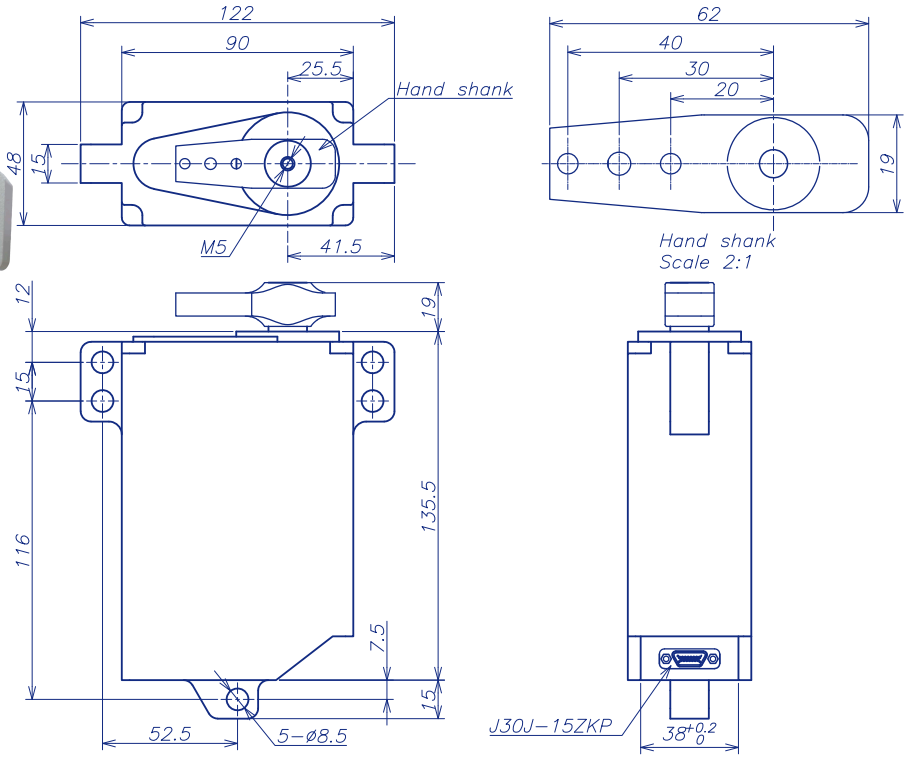
AM-9048HPP3675BF-286-3021ER Series



SERVO ACTUATOR DATA	
Rated voltage	DC 30V
Voltage range	DC 24V-32V
Peak torque	150 N.m@30V
Rated torque	60 N.m@30V
No load rotation speed	180°/Sec@30V
Rated rotation speed	130°/Sec@30V
Peak current	＜88.2A
Rated current	11A 120%Max
Default angle	±100°
Operating temperature range	-40°C ~ +65°C
Shell material	7075 T6
Motor type	DC Brushless motor
Gear material	Steel
Position sensor	Non-contact sensor
Outline dimension	169.5mm*122mm*48mm
Weight	1750g Max

COMMAND SIGNAL	
PWM Command interface	
Signal voltage	HIGH:min.3.3V，max.5.0V LOW:min.0V，max.1.5V
Pulse lengths	500μs-2500μs
Pulse lengths for position	500μs/1500μs/2500μs -100°/0°/+100°
RS485 command interface and protocol specifications	
Baud-rate	57600±1.5% bits/s
Protocol(Documentation available)	10 Byte(incl.1byte check sum)
Number of data bits	8
Number of stop bits	1
Parity	None

Annotate:
(1) Tolerance±10%;
(2) Programming Tool for PWM-Versions required;
(3) -40°C...+65°C，Δt =105°C（- 40°F...+149°F，Δt =189°F）;
(4) Low Temperature Modification on request（-40°C/-40°F）。

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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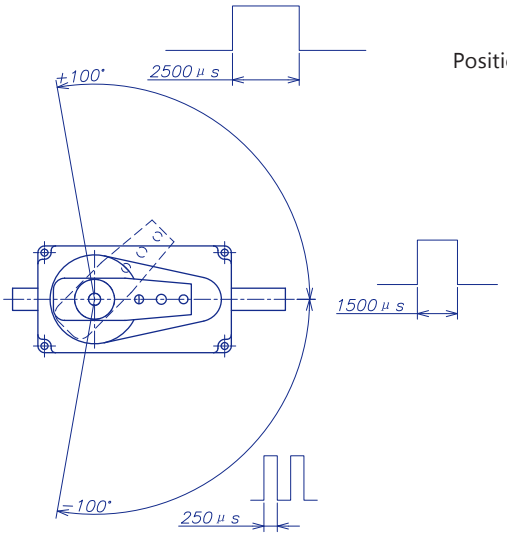
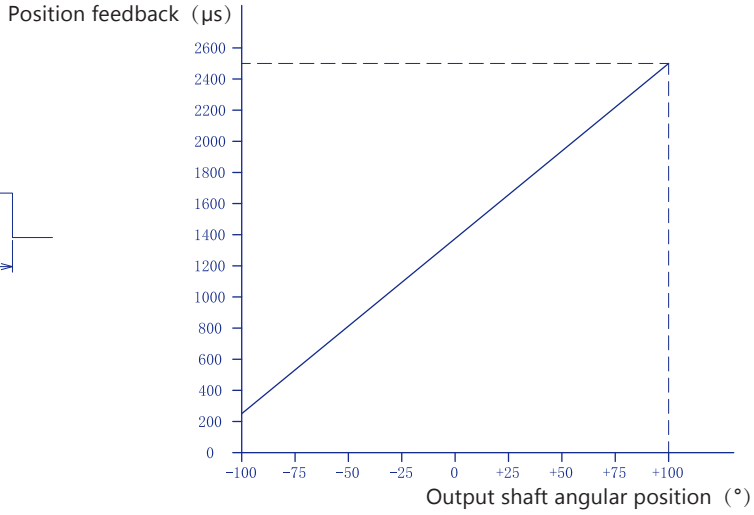
AM-9048HPP3675BF-286-3021ER Series

Position feedback signal

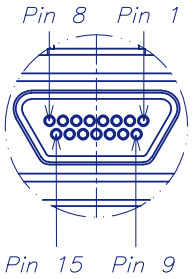
The position feedback signal is a square wave output signal that is directly related to the angular position of the output shaft.



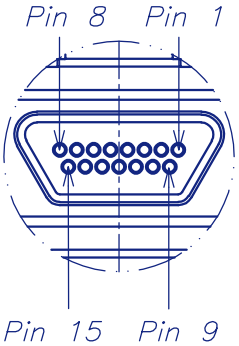


CONNECTOR

Industrial standard J30J-15ZKP electrical connector



J30J-15ZKP PWM+RS485	
1-4、12	DC + Supply voltage
9	NC Do not connect
5-8、13	DC- Supply ground
10-11	PWM Command signal
14	RS485-B
15	RS485-A



J30J-15ZKP PWM+RS485+CAN	
1-4	DC + Supply voltage
5-8	DC- Supply ground
9	NC Do not connect
10-11	PWM Command signal
12	CAN-H
13	CAN-L
14	RS485-B
15	RS485-A

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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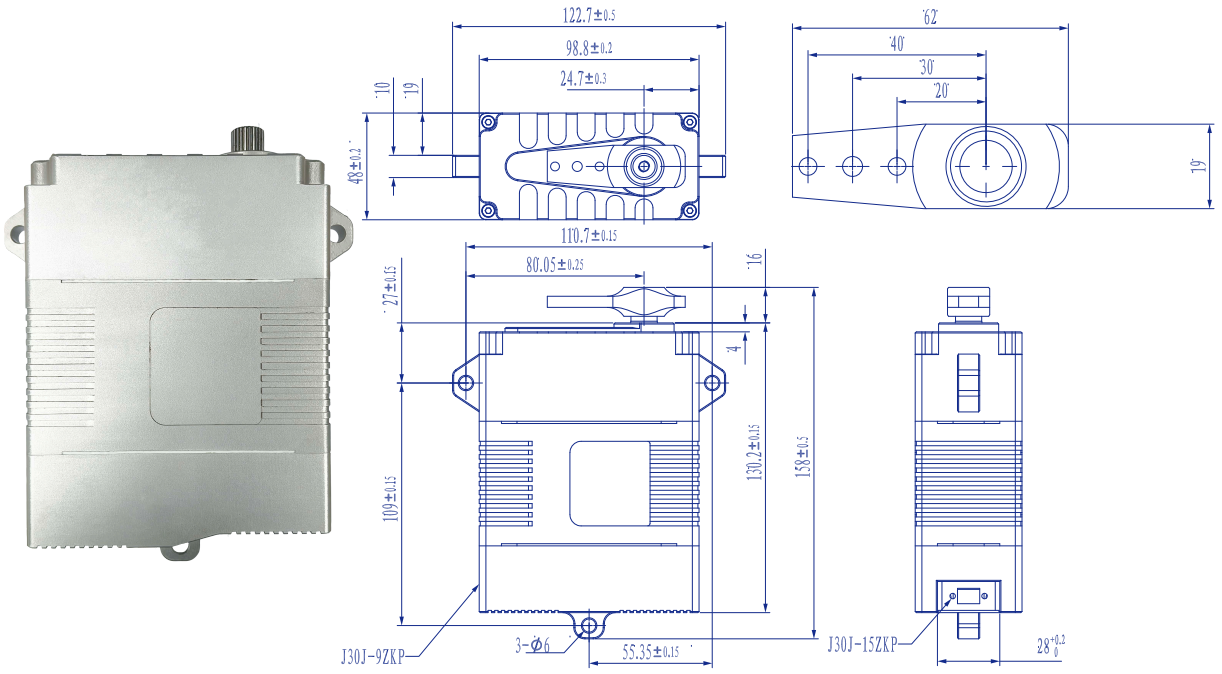
AM-9948SPI4060BF-200-2734EA Series



SERVO ACTUATOR DATA	
Rated voltage	DC 27V
Voltage range	DC 24V-32V
Peak torque	65 N.m@27V
Rated torque	20 N.m@27V
No load rotation speed	204°/Sec@27V
Rated rotation speed	193°/Sec@27V
Peak current	＜11.2A
Rated current	3.7A 120%Max
Default angle	±100°
Operating temperature range	-40°C ~ +65°C
Shell material	7075 T6
Motor type	DC Brushless motor
Gear material	Steel
Position sensor	Non-contact sensor
Outline dimension	158mm*122.7mm*48mm
Weight	1340g Max

COMMAND SIGNAL	
PWM Command interface	
Signal voltage	HIGH:min.3.3V，max.5.0V LOW:min.0V，max.1.5V
Pulse lengths	500μs-2500μs
Pulse lengths for position	500μs/1500μs/2500μs -100°/0°/+100°
RS485 command interface and protocol specifications	
Baud-rate	57600±1.5% bits/s
Protocol(Documentation available)	10 Byte(incl.1byte check sum)
Number of data bits	8
Number of stop bits	1
Parity	None

Annotate:
(1) Tolerance±10%;
(2) Programming Tool for PWM-Versions required;
(3) -40°C...+65°C，Δt =105°C（- 40°F...+149°F，Δt =189°F）;
(4) Low Temperature Modification on request（-40°C/-40°F）。

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

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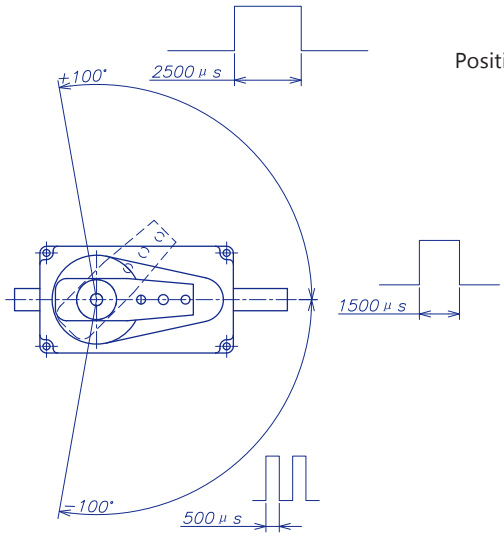
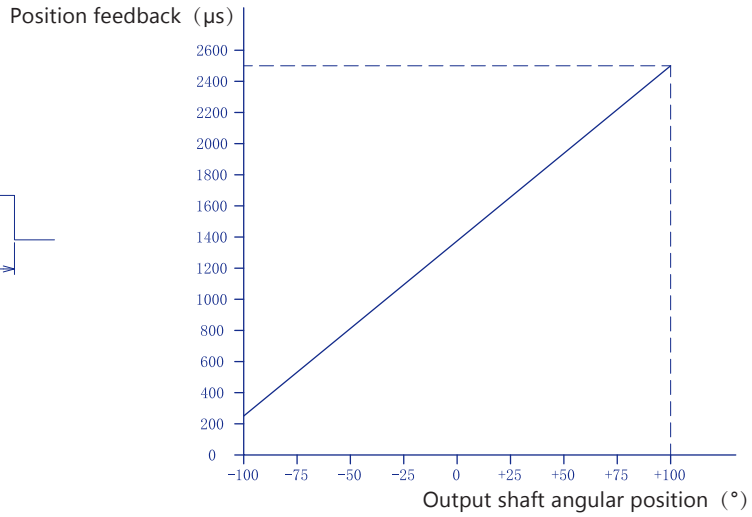
AM-9948SPI4060BF-200-2734EA Series

Position feedback signal

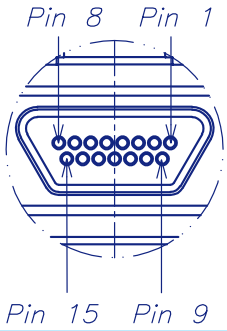
The position feedback signal is a square wave output signal that is directly related to the angular position of the output shaft.





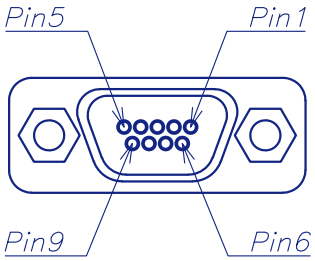
CONNECTOR

Industrial standard J30J-15ZKP electrical connector



J30J-15ZKP PWM	
1-4 12-13	DC + Supply voltage
9	NC Do not connect
5-8 14-15	DC- Supply ground
10 11	PWM Command signal

Industrial standard J30J-9ZKP electrical connector



J30J-9ZKP RS485	
1	RS-485A
2	SWCLK
3	SWDIO
4	GND
5	DIO(3.3~5V)
6	RS-485B
7	A+
8	B+
9	Z+

Motor data tested at 25ºC. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

Download datasheet: https://assunmotor.com/documents-download

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DRIVING THE FUTURE

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