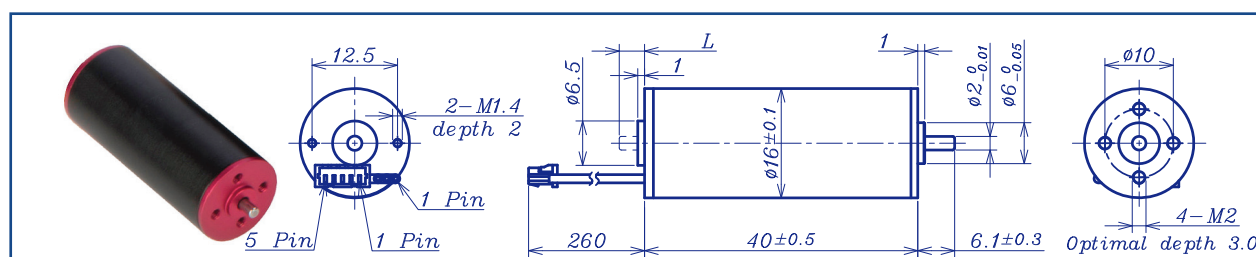


AM-BL1640AE Series

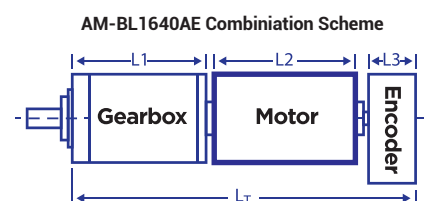


		Brushless Motor			Ball Bearings					
Motor Model			1234	1221	1216	1836	1821	1816	2419	2413
Nominal voltage		V	12	12	12	18	18	18	24	24
No load speed ±12%		rpm	34200	21000	16400	36300	20900	16160	19400	12600
No load current Max 150%		mA	200	120	80	150	75	60	50	40
Recommend limit for continuous operating	Max cont. torque	mN.m	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	0.017	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		gcm²	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:	125°C	Ambient temperature range:	-30 to 65°C
Standard rear shaft diameter:	2 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Standard Red: Standard Motor		Standard Blue: Standard Motor				
Connection (AWG 26#)		Total Length: $L_T = L_1 + L_2 + L_3$				
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	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					



Recommended Gearbox:	Recommended Encoder:
Planetary Gearbox:	Encoder S: AM-EN1611S***
AM-16GP	2~3 Channels
AM-19GP	Encoder T: AM-EN1612T***
	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.

Download datasheet: <https://assunmotor.com/documents-download>

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