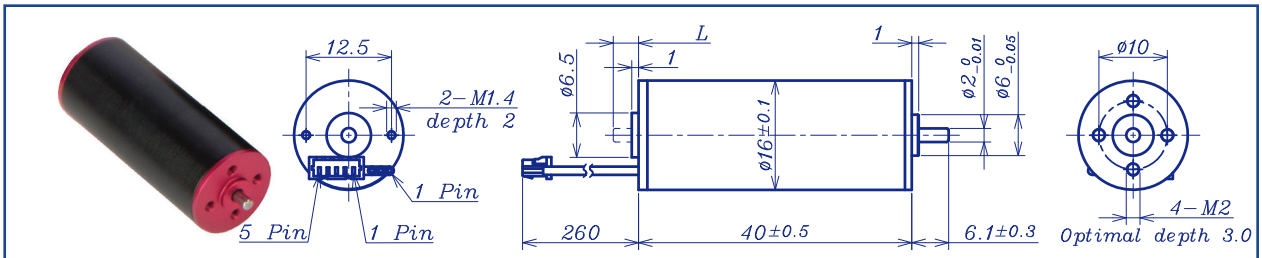
DC BRUSHLESS MOTOR

HIGH TEMPERATURE SERIES

ASSUN
DRIVING THE FUTURE

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

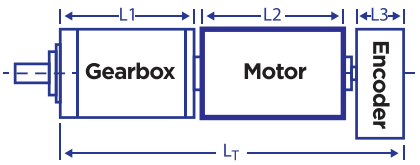
ADDITIONAL INFORMATION

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.

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

Visit Our Website and Online Shop at https://assunmotor.com Contact: info@assunmotor.com

2024-A Edition. Specifications are subject to change without notice. Copyright Assun Motor Pte Ltd. All Rights Reserved.