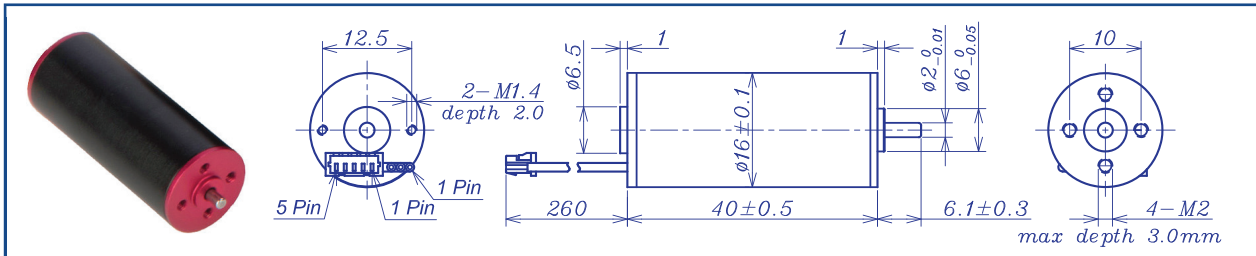


AM-BL1640AN Series

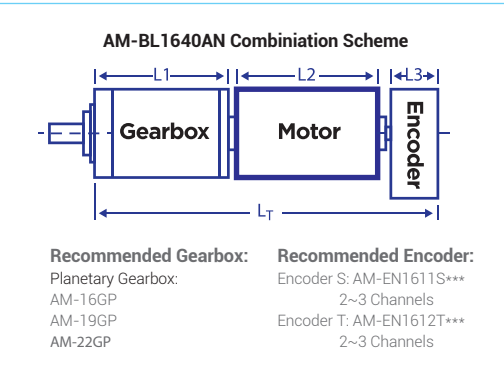


		Brushless Motor				Ball Bearings			
Motor Model		1234	1221	1216	1836	1821	1816	2419	2413
Nominal voltage	V	12	12	12	18	18	18	24	24
No load speed ±12%	rpm	34200	21000	16400	36300	20900	16160	19400	12600
No load current Max150%	mA	200	120	80	150	75	60	50	40
Recommend limit for continuous operating	Max cont. torque	mN.m	4.6	5.8	6.3	3.5	5.7	6.2	6.4
	Rated Speed	rpm	31782	17888	13242	34513	17874	13027	16136
	Rated Current	mA	1600	1200	1000	900	780	650	580
	Rated Power	W	15.5	10.9	8.8	12.7	10.7	8.4	10.4
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 <sub>2</sub> )	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 <sup>2</sup>	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:	85°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

Connection (AWG 26#)	Total Length: L <sub>T</sub> =L <sub>1</sub> +L <sub>2</sub> +L <sub>3</sub>				
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					



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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