

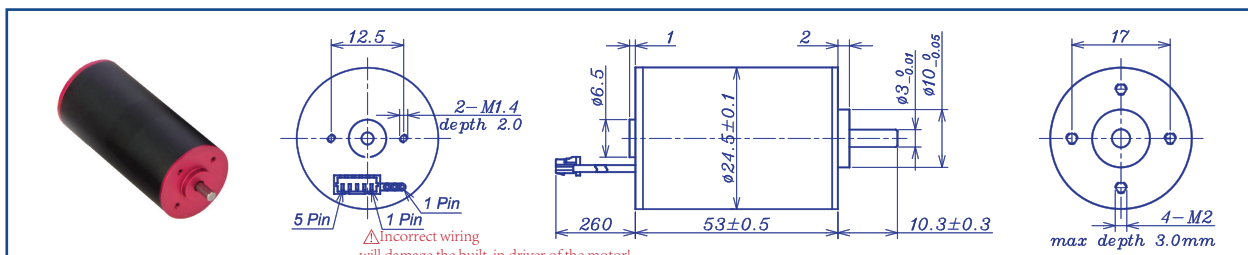
# DC BRUSHLESS MOTOR

## SPEED DRIVER INTEGRATED SERIES

# ASSUN

DRIVING THE FUTURE

### AM-BD2453AN Series



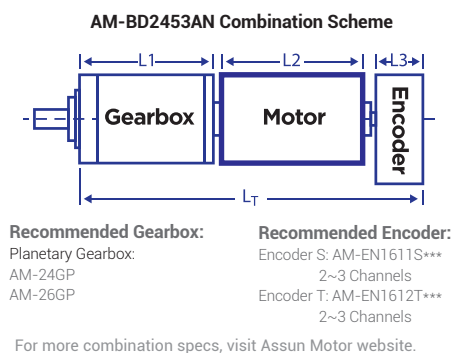
		Brushless Motor			Ball Bearings	
Motor Model		1213	1210	1813	2414	2410
Nominal voltage	V	12	12	18	24	24
No load speed $\pm 12\%$	rpm	13010	10460	12920	13625	9770
No load current Max 150%	mA	180	140	115	100	75
Recommend limit for continuous operating	Max cont. torque	mN.m	17.6	18.7	18.3	21.5
	Rated Speed	rpm	11818	9188	11495	12429
	Rated Current	mA	2200	1860	1500	1200
	Rated Power	W	21.8	18.0	22.0	23.9
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 <sup>2</sup>	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):	$\leq 0.02$ mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	85°C	Ambient temperature range:	-30 to 65°C
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 22#)	Total Length: $L_T = L_1 + L_2 + L_3$				
	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.



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>

Visit Our Website and Online Shop at <https://assunmotor.com> Contact: [info@assunmotor.com](mailto:info@assunmotor.com)