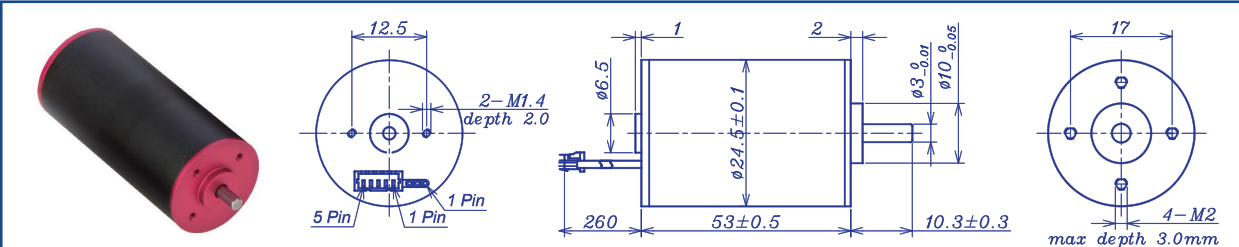


AM-BL2453BF Series

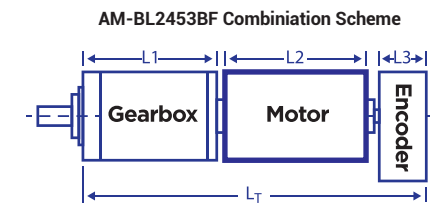


		Brushless Motor			Ball Bearings			
Motor Model		1212	1209	1812	1809	2412	2409	
Nominal voltage	V	12	12	18	18	24	24	
No load speed	±12% rpm	11937	9182	11937	8952	11937	9182	
No load current	Max 150% mA	358	300	239	200	179	150	
Recommend limit for continuous operating	Max cont. torque	mN.m	46.48	51.17	54.16	53.76	46.48	56.16
	Rated Speed	rpm	10799	8037	10769	7818	10631	7979
	Rated Current	mA	5200	4400	4000	3000	2600	2400
	Rated Power	W		43.07	61.08	44.02	51.75	46.932.56
Starting current	mA	54545	35294	40909	23684	23762	18321	
Stall torque	mN.m	524	440	589	455	209	457	
Maximum power output	W	163.6	105.9	174.1	106.6	142.6	109.9	
Maximum Efficiency	%	84	82	85	82	83	83	
Terminal resistance	±12% Ω	0.22	0.34	0.44	0.76	1.01	1.31	
Inductance (1KHz)	mH	2.38	2.18	2.12	2.06	2.73	2.10	
Mechanical time constant	ms	2.38	2.18	2.12	2.06	2.73	2.10	
Moment of inertia	gcm <sup>2</sup>	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	26.2	20.1	
Weight	g	180	180	180	180	180	180	

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:	155°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 <sub>T</sub> =L <sub>1</sub> +L <sub>2</sub> +L <sub>3</sub>				
Cable 1: Yellow Winding A	L1:24GP	L1:28GP	L2:BL24	L3:EN16S	L3:EN16T
Cable 2: Red Winding B	22.2	25.9	53.0	10.7	12.0
Cable 3: Blue Winding C	27.4	33.1			
Plug definition (AWG 28#) Molex: 51021-0500	32.6	40.3			
Plug 1: Red Hall 3~16V					
Plug 2: Black Hall GND					
Plug 3: Yellow Hall A					
Plug 4: Red Hall B					
Plug 5: Blue Hall C					

**AM-BL2453BF Combination 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

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>