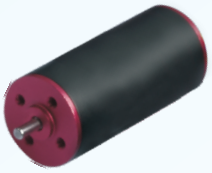
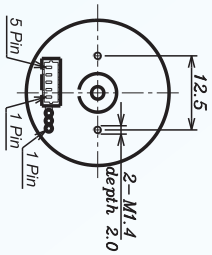


DC Brushless Motor
AM-BL2453A/B-4P Series

ASSUN MOTOR

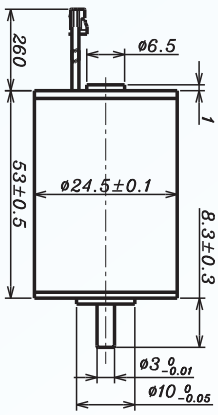
2015 edition. Specifications are subject to change without notice.

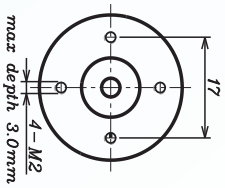


BRUSHLESS MOTOR

BALL BEARING

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	mN.m	46.48	51.17	54.16	53.76	46.48	56.16
	rpm	10799	8037	10769	7818	10631	7979
	A	5.20	4.40	4.00	3.00	2.60	2.4
	W	52.56	43.07	61.08	44.02	51.75	46.93
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 PHASE TO PHASE ±12%	Ω	0.22	0.34	0.44	0.76	1.01	1.31
MECHANICAL TIME CONSTANT	ms [2]	2.38	2.18	2.12	2.06	2.73	2.10
MOMENT OF INERTIA	gcm²	9.97	9.97	9.97	9.97	9.97	9.97
TORQUE CONTANT	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



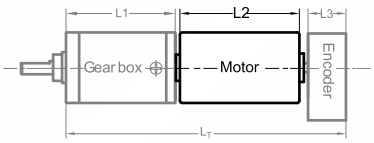


ADDITIONAL INFORMATION

MAXIMUM ROLLING BEARING LOADS

AXIAL (DYNAMIX)	2.5 N	RADIAL (5MM FROM HEAD FACE)	16.0 N
PRESS-FIT FORCE	50N	L: MAX ALLOWABLE SCREW DEPTH INTO FLANGE	3.0 mm
MAXIMUM RADIAL PLAY	≤0.02mm	AXIAL PLAY:	0 (<4.0N)
MAXIMUM WINDING TEMPERATURE	155°C	AMBIENT TEMPERATURE RANGE:	-30 to 65°C

AM-BL2453A/B COMBINATION SCHEME



Recommend Gearbox:
Planetary Gearbox:
AM-22P
AM-26P

Recommend Encoder:
Encoder S: AM-EN16-S***
2~3 Channels
Encoder T: AM-EN24-T***
2~3 Channels

For more gearbox specs, see Assun Motor website.

CONNECTION (AWG26#)	TOTAL LENGTH (GEARBOX AND MOTOR): $L_T=L_1+L_2+L_3$				
	L1:22P	L1:28P	L2:BL24	L3:EN16-S	L3:EN24-T
CABLE 1: WINDING A	22.4	28.4	53.0	10.7	10.0
CABLE 2: WINDING B	32.5	34.7			12.0
CABLE 3: WINDING C	25.2	41.0			
PLUG DEFINATION MOLEX: 51021 - 0500	37.5	47.3			
PLUG 1 HALL V_{CC}	42.6				
PLUG 2 HALL GND					
PLUG 3 HALL A					
PLUG 4 HALL B					
PLUG 5 HALL C					

REMARKS

Clients can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

Motor Data Tested at 25°.
Motor Operation exceeds continuous limits of operating range will compromise the life of the device.