

Connections

hall sensors:

- 1 red Vcc
- 2 black GND
- 3 yellow S1
- 4 orange S2
- 5 white S3

motor:

- 6 blue phase A
- 7 brown phase B
- 8 violet phase C

dimensions in mm
mass : 23 g / 34 g / 45 g

B05.. - []

Motor type

		B0504		B0508		B0512	
Coil dependent parameters/Winding type	[]	050A	050B	050A	050B	050A	050B
1 Phase resistance	ohm	28.6	110.5	7.6	30.3	4.3	17.2
2 Phase inductance	mH	1.11	4.33	0.38	1.51	0.24	0.94
3 Back-EMF constant	V/1000 rpm	0.67	1.33	0.63	1.25	0.67	1.34
4 Torque constant	mNm/A (oz-in/A)	6.4 (0.91)	12.7 (1.8)	6 (0.85)	12 (1.7)	6.4 (0.91)	12.8 (1.81)
5 Max. continuous current	A	0.290	0.147	0.632	0.316	0.979	0.487
Coil independent parameters							
6 Friction torque	mNm (oz-in)		0.18 (0.03)		0.35 (0.05)		0.53 (0.08)
7 Viscous torque (losses)	mNm/1000 rpm		0.00015		0.00049		0.001
8 Max. continuous torque	mNm (oz-in)		1.9 (0.26)		3.8 (0.53)		6.2 (0.88)
9 Max. recommended speed	rpm		80000		80000		80000
Mechanical parameters							
10 Rotor inertia	kgm ² . 10 ⁻⁷		0.21		0.35		0.50
11 Mechanical time constant	ms		15		7		5
Dynamic performances with BL 5010							
12 Rated voltage	V		50		50		50
13 No load current	mA		55		35		125
14 No load speed	rpm		69000		33000		75000
15 Peak speed	rpm		71000		36000		76500
16 Peak torque	mNm (oz-in)		10.8 (1.5)		5.5 (0.78)		38 (5.3)
Length L1	mm		23.8		36.5		49.2
Thermal time constant	s		102		140		176
Thermal resistance rotor-ambient	°C/W		35.8		28.4		21
Axial play	µm		81		81		81
Radial play	µm		25		25		25
Axial load (static)	N		50		50		50
Radial load (static) @ 9.6 mm	N		30		30		30

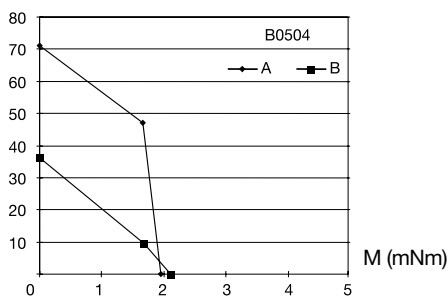
- Motor with preloaded ball bearings.
- Shaft must be supported for press-fitting a pulley or pinion.

- The B05 is a three phase motor with wye connections of the coils.
- Hall sensors: supply voltage 4.5 V to 24 Vdc. External pull-up resistor 4.7 kohm (typ.)

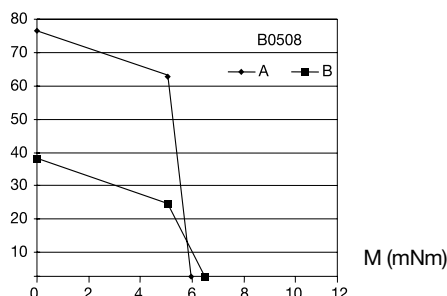
- Gearbox option: planetary RS05
- An autoclavable version of this motor series is also available

Curves with 50Vdc current source driver

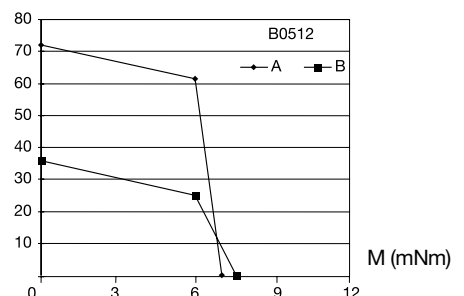
n (rpm) x 1000

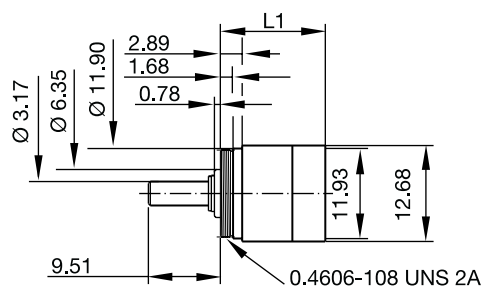


n (rpm) x 1000



n (rpm) x 1000





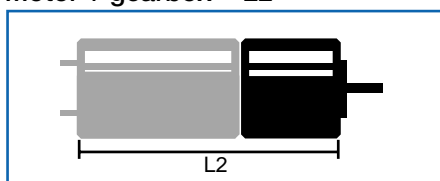
scale 1:1
dimensions in mm

RS05 • []

Ratio	[]	5	15	25
1 No. of gear stages		1	2	2
2 Dir. of rotation		=	=	=
3 Efficiency (%)		85-92	75-90	75-90
4 L1 (mm)		13.9	18.26	18.26
5 Mass (g)		8.8	11.9	11.9
6 Available with motor	L2- length with motor (mm)			
B0504		35.3	39.7	39.7
B0508		48	52.4	52.4
B0512		60.7	65.1	65.1

Availability: see enclosed document at the end of the catalogue

Motor + gearbox = L2



Characteristics

RS05

7 Bearing type		ball bearings
8 Max. static torque	Nm (oz-in)	0.8 (113.3)
9 Max. radial force at 8 mm from mounting face	N (lb)	14 (3.15)
10 Max. axial force	N (lb)	82 (18.45)
11 Force for press-fit	N (lb)	--
12 Average backlash at no-load		45'-60'
13 Average backlash at 0,1 Nm		--
14 Radial play	µm	7.5
15 Axial play	µm	12
16 Max. recom. input speed	rpm	50'000
17 Operating temperature range	°C (°F)	0...+155 (+32...+311)