



P520

Electrical Data	P520 254 013 60	P520 254 004 60	P520 254 0.7 60	
1 Resistance per Phase, typ	13.5	4.4	0.7	Ohms
2 Inductance per Phase, typ	27.0	8.0	1.3	mH
3 Nominal Phase Current (2 ph. On)	0.50	0.90	2.30	A
4 Nominal Phase Current (1 ph. On)	0.75	1.30	3.30	A
5 Back EMF amplitude	9.80	5.50	2.10	V/kstep/s
Coil independent parameters				
6 Holding Torque, nominal current	120 (17)	120 (17)	120 (17)	mNm (oz-in)
7 Holding Torque, 1.5x nominal current (1)	205 (29)	205 (29)	205 (29)	mNm (oz-in)
8 Detent Torque	10 (1.4)	10 (1.4)	10 (1.4)	mNm (oz-in)
9 Rotor Inertia	12.000	12.000	12.000	kgm ² x 10 ⁻⁷
10 Step Angle	4	3.6	3.6	Degree
11 Absolute accuracy 2 ph. On, Full step mode	+/- 5%	+/- 5%	+/- 5%	% Full Step
12 Steps Per Revolution	100	100	100	
13 Ambient Temperature Range (operating)	-20 to 50 (-4 to 122)	-20 to 50 (-4 to 122)	-20 to 50 (-4 to 122)	°C (°F)
14 Maximum Coil Temperature	130 (266)	130 (266)	130 (266)	°C (°F)
15 Thermal Resistance Coil-ambient (2)	10	9.5	9.5	°C/W
16 Natural Resonance Frequency (nominal current)	250	250	250	Hz
17 Electrical Time Constant	1.80	1.80	1.80	ms
18 Angular Acceleration (nominal current)	100,000	100,000	100,000	rad/s ²
19 Bearing Type	Ball	Ball	Ball	
20 Dielectric Withstanding Voltage	500 VRMS for 5 seconds (15@5N)			VAC
21 Radial Shaft Play	15@5N			µm
22 Axial Shaft Play	10@5N			µm
23 Maximum Radial Shaft Load	20 (72)			N (oz)
24 Maximum Axial Shaft Load (3)	30 (108)			N (oz)
25 Weight	180 (6.3)			g (oz)
26 Power Rate (nominal current)	12.0			kW/s

- (1) Measured with 1 phase ON. The max coil temperature must be respected
- (2) Motor unmounted
- (3) Shaft must be supported when press-fitting a pulley or

