



P310

Electrical Data	P310 158 170 09 (series)	P310 158 170 09 (parallel)	P310 158 005 09 (series)	P310 158 005 09 (parallel)	
1 Resistance per Phase, typ	332.0	83.0	10.5	2.6	Ohms
2 Inductance per Phase, typ	184.0	46.0	6.4	1.6	mH
3 Nominal Phase Current (2 ph. On)	0.06	0.12	0.36	0.72	A
4 Nominal Phase Current (1 ph. On)	0.09	0.17	0.51	1.00	A
5 Back EMF amplitude	18.00	9.00	3.20	1.60	V/kstep/s
Coil independent parameters					
6 Holding Torque, nominal current	14 (2)	14 (2)	14 (2)	14 (2)	mNm (oz-in)
7 Holding Torque, 1.5x nominal current (1)	28 (4)	28 (4)	28 (4)	28 (4)	mNm (oz-in)
8 Detent Torque	2.5 (0.4)	2.5 (0.4)	2.5 (0.4)	2.5 (0.4)	mNm (oz-in)
9 Rotor Inertia	0.860	0.860	0.860	0.860	kgm ² x 10 ⁻⁷
10 Step Angle	6	6	6	6	Degree
11 Absolute accuracy 2 ph. On, Full step mode	+/- 5%	+/- 5%	+/- 5%	+/- 5%	% Full Step
12 Steps Per Revolution	60	60	60	60	
13 Ambient Temperature Range (operating)	-20 to 50 (-4 to 122)	-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)	130 (266)	°C (°F)
15 Thermal Resistance Coil-ambient (2)	25	25	25	25	°C/W
16 Natural Resonance Frequency (nominal current)	230	230	230	230	Hz
17 Electrical Time Constant	0.60	0.60	0.60	0.60	ms
18 Angular Acceleration (nominal current)	140,000	140,000	140,000	140,000	rad/s ²
19 Bearing Type	Sleeve or Ball	Sleeve or Ball	Sleeve or Ball	Sleeve or Ball	
20 Dielectric Withstanding Voltage	500 VRMS for 5 seconds (35@5N / 15@1N)				VAC
21 Radial Shaft Play	35@5N / 15@1N				µm
22 Axial Shaft Play	100@5N / 10@1N				µm
23 Maximum Radial Shaft Load	1 / 101 (3.6 / 36)				N (oz)
24 Maximum Axial Shaft Load (3)	0.5 / 20 (1.8 / 72)				N (oz)
25 Weight	40 (1.4)				g (oz)
26 Power Rate (nominal current)	1.7				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

