

Winding types

[]	-119	-210P	-208P	-210E	-208E	-205E
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Measured values

1 Measuring voltage	V	3.0	6.0	7.5	12.0	15.0	24.0
2 No-load speed	rpm	7600	8900	9100	9600	9600	7900
3 Stall torque	mNm (oz-in)	7.4 (1.05)	8.0 (1.13)	6.9 (0.98)	7.9 (1.12)	6.3 (0.89)	4.9 (0.69)
4 Average no-load current	mA	23.8	12.6	9.1	7.7	6	2.8
5 Typical starting voltage	V	0.05	0.05	0.06	0.10	0.20	0.30

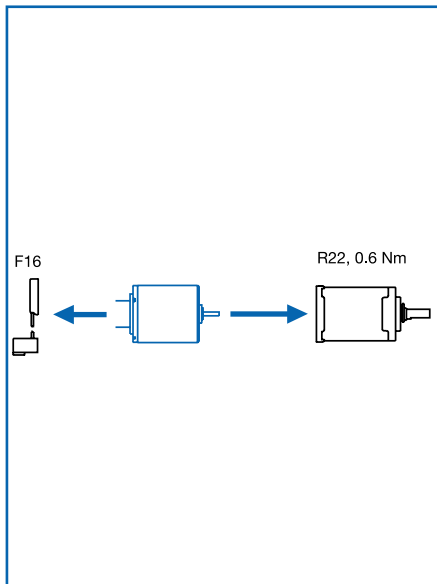
Max. recommended values

6 Max. continuous current	A	1.41	0.79	0.59	0.41	0.29	0.15
7 Max. continuous torque	mNm (oz-in)	5.2 (0.74)	5.0 (0.70)	4.5 (0.64)	4.7 (0.67)	4.1 (0.58)	4.1 (0.58)
8 Max. angular acceleration	10^3 rad/s^2	68	65	71	62	65	68

Intrinsic parameters

9 Back-EMF constant	V/1000 rpm	0.39	0.67	0.82	1.24	1.54	2.97
10 Torque constant	mNm/A (oz-in/A)	3.72 (0.53)	6.4 (0.91)	7.8 (1.11)	11.8 (1.68)	14.7 (2.08)	28.4 (4.01)
11 Terminal resistance	ohm	1.50	4.80	8.5	18.0	35.0	140.0
12 Motor regulation R/k^2	$10^3/\text{Nms}$	110	120	140	130	160	170
13 Rotor inductance	mH	0.06	0.20	0.23	0.60	0.92	3.60
14 Rotor inertia	$\text{kgm}^2 \cdot 10^{-7}$	1.90	1.90	1.60	1.90	1.60	1.50
15 Mechanical time constant	ms	21	23	22	25	26	26

Availability: see enclosed document at the end of the catalogue



- Thermal resistance:
rotor-body 5°C/W
body-ambient 30°C/W
- Thermal time constant - rotor / stator:
7 s / 480 s
- Max. rated coil temperature: 100°C (210°F)
- Recom. ambient temperature range:
 -30°C to $+65^\circ\text{C}$ (-22°F to $+150^\circ\text{F}$)
- Viscous damping constant:
 $0.04 \times 10^{-6} \text{ Nms}$
- Max. axial static force for press-fit: 100 N
- End play:
Radial play: $\leq 30 \mu\text{m}$
Shaft runout: $\leq 10 \mu\text{m}$
- Max. side load at 5 mm from mounting face:
- sleeve bearings 1.5 N
- ball bearings 3 N
- Motor fitted with sleeve bearings (ball bearings optional)

Max. recommended speed

