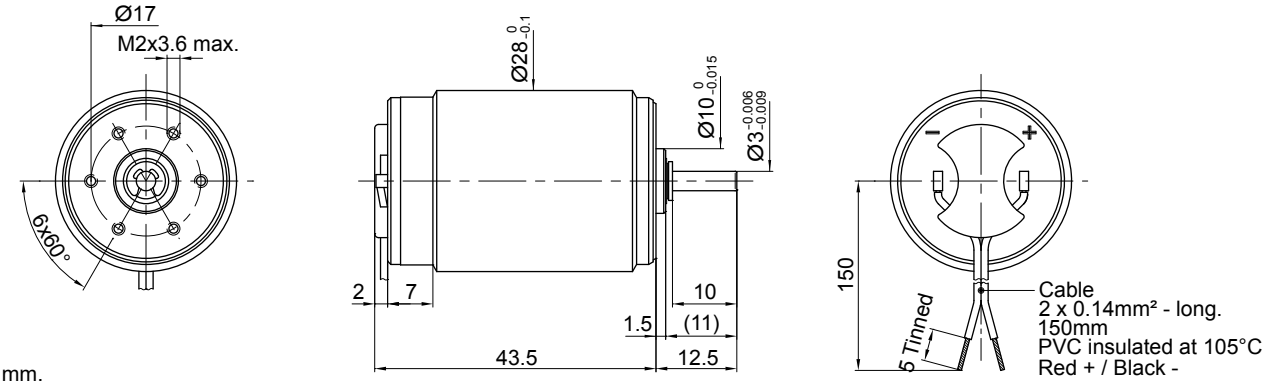
28L28

Ø 28 mm • Precious metal commutation • 21 mNm



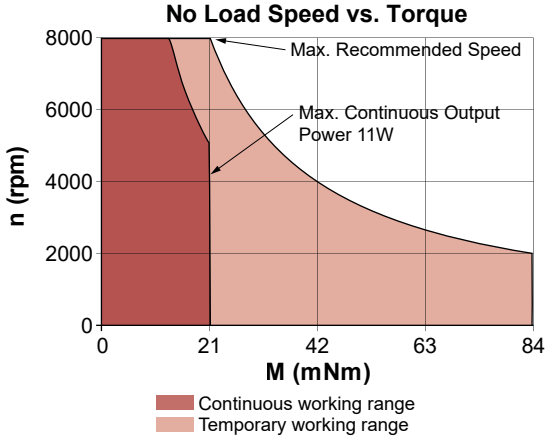
Dimensions in mm.

Electrical Data	Symbol	28L28 •••• .49 219	416E	413E	410E	Unit
1 Nominal Voltage	V	12	24	28	36	Volt
2 No-Load Speed	n_0	5,300	5,590	5,325	5,000	rpm
3 No-Load Current	I_0	22.0	11.0	9.0	6.6	mA
4 Terminal Resistance	R	6.0	19.5	33.0	71.0	Ω
5 Output Power	$P_{2max.}$	9.6	10.0	9.3	9.0	W
6 Stall Torque	mNm	43 (6.09)	50 (7.09)	32 (4.54)	34 (4.82)	mNm (oz-in)
7 Efficiency	$h_{max.}$	80	82	80	78	%
8 Max Continuous Speed	$n_{e\ max.}$	8,000	8,000	8,000	8,000	rpm
9 Max Continuous Torque	$M_{e\ max.}$	19.9 (2.98)	21 (2.98)	19.4 (2.75)	18.5 (2.62)	mNm (oz-in)
10 Max Continuous Current	$I_{e\ max.}$	0.95	0.53	0.40	0.28	A
11 Back-EMF Constant	k_E	2.24	4.26	5.20	7.10	mV/rpm
12 Torque Constant	k_M	21.40	40.70	49.70	67.80	mNm/A
13 Motor Regulation	R/k^2	13.0	12.0	13.2	15.20	10^3/Nms
14 Friction Torque	T_F	0.47 (0.07)	0.45 (0.07)	0.45 (0.07)	0.45 (0.07)	mNm (oz-in)
15 Rotor Inductance	L	0.50	2.40	3.20	5.20	mH
16 Mechanical Time Constant	τ_m	13.5	21.0	17.8	16.7	ms
17 Rotor Inertia	J	10.40	17.50	13.50	11.00	g-cm²

General Data			
18 Thermal Resistance (rotor/body)	R_{th1}/R_{th2}	5/12	°C/W
19 Thermal Time Constant (rotor/stator)	t_{W1}/t_{W2}	13/760	S
20 Operating Temperature Range:	motor rotor	-30°C to 85°C (-22°F to 185°F) 100°C (212°F)	°C (°F) °C (°F)
21 Shaft Load Max.: (5 mm. from bearing)	 -radial -axial	With sleeve bearings 6.0 (21.6) 250 (899.2)	 N (oz) N (oz)
22 Shaft Play:	-radial -axial	<0.18 (0.0007) 0.15 (0.0059)	mm (inch) mm (inch)
23 Weight	g	125 (4.41)	g (oz)
24 Commutation Segment	-	9	segment

Execution Table

Gearbox	Single Shaft	Double Shaft for E9
R22	164	317
R32	49	315



▶ Motor shaft rotates CW when seen from motor front face when +ve and -ve supply is given to respective terminals.