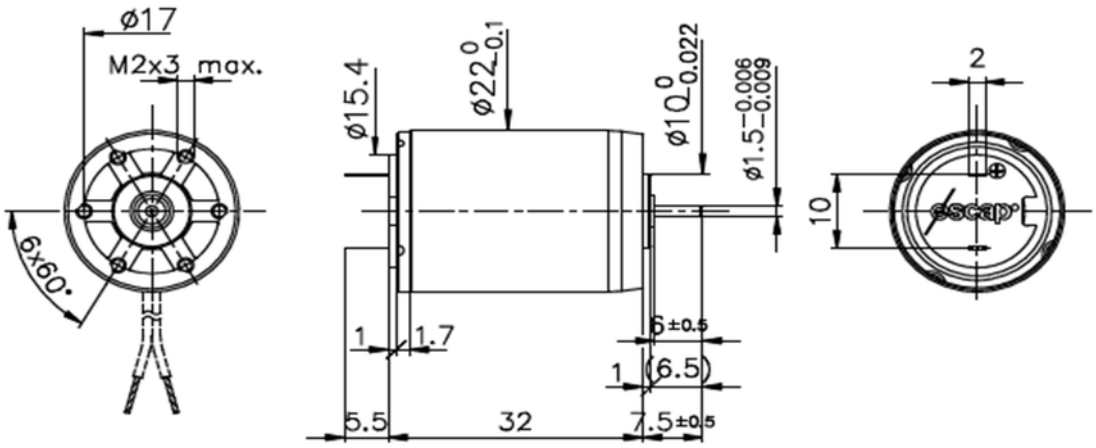
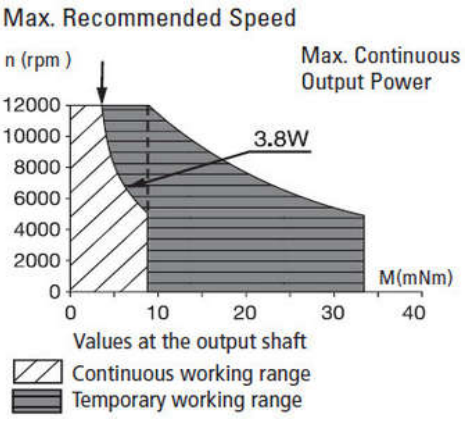
22N28 Precious metal commutation Ø22mm 8.8 mNm



22N28 **** .286

Electrical Data	****	216P	216E	213E	210E	208E	105	
1 Nominal Voltage	V	3	6	9	12	18	18	Volt
2 No-Load Speed	n_0	5,275	5,580	7,000	5,880	6,300	3,580	rpm
3 No-Load Current	I_0	12.6	7.0	6.0	4.5	3.5	1.4	mA
4 Terminal Resistance	R	1.5	5.8	10.3	27.0	59.0	200.0	Ω
5 Output Power	$P_{2max.}$	4.3	4.2	3.8	3.7	3.5	3.3	W
6 Stall Torque	mNm	10.9 (1.55)	10.5 (1.49)	10.7 (1.52)	8.6 (1.22)	8.2 (1.17)	4.3 (0.61)	mNm (oz-in)
7 Efficiency	$\eta_{max.}$	85	84	84	81	80	77	%
8 Max continuous speed	$n_{e\ max.}$	12,000	12,000	12,000	12,000	12,000	12,000	rpm
9 Max continuous torque	$M_{e\ max.}$	8.8 (1.19)	8.4 (1.19)	7.5 (1.07)	7.3 (1.04)	6.9 (0.98)	6.5 (0.93)	mNm (oz-in)
10 Max continuous current	$I_{e\ max.}$	1.63	0.83	0.62	0.38	0.26	0.14	A
11 Back-EMF Constant	k_E	0.57	1.07	1.28	2.02	2.83	4.95	mV/rpm
12 Torque Constant	k_M	5.40	10.20	12.20	19.30	27.00	47.30	mNm/A
13 Motor Regulation	R/k^2	51.4	55.7	69.2	72.49	80.93	89.39	10^3/Nms
14 Friction Torque	T_F	0.07 (0.01)	0.07 (0.01)	0.07 (0.01)	0.07 (0.01)	0.07 (0.01)	0.07 (0.01)	mNm (oz-in)
15 Rotor Inductance	L	0.10	0.35	0.50	1.20	2.30	7.00	mH
16 Mechanical Time Constant	τ_m	18.0	19.5	19.4	21.7	23.5	17.9	ms
17 Rotor Inertia	J	3.50	3.50	2.80	3.00	2.90	2.00	$g.cm^2$
18 Thermal Resistance (rotor/body)	R_{th1} / R_{th2}	5/20	5/20	5/20	5/20	5/20	5/20	°C/W
19 Thermal Time Constant (rotor/stator)	τ_{w1}/t_{w2}	5/550	5/550	5/550	5/550	5/550	5/550	°C/W
20 Operating Temperature Range:	motor	-30°C to 85°C (-22°F to 185°F)						°C (°F)
	rotor	100°C (212°F)						°C (°F)
21 Shaft Load max.:		With sleeve bearings						
at 3,000 rpm (5mm from bearing)	-radial	3.0 (10.8)						N (oz)
at 3,000 rpm	-axial	150 (539.5)						N (oz)
22 Shaft play:	-radial	<0.03 (0.0012)						mm (inch)
	-axial	0.15 (0.0059)						mm (inch)
23 Weight	g	53 (1.87)						g (oz)

Execution				
Gearbox	**Single Shaft**	**F16**	**E9**	**MR2**
	22N28	**22N28**	**22N48**	**22N48**
R22	286	286	309	Contact Us
M22	286	286	308	483
K24	286	286	308	Contact Us
K27	286	286	308	Contact Us



(C) 2013. Portescap. Specifications subject to change without notice.