

Portescap

Athlonix™

High Power Density DC Motors



22DCP - Ideal for a broad spectrum of applications with an optimized price/performance ratio.

- ✓ Excellent price/performance ratio
- ✓ High torque
- ✓ High power density
- ✓ Compact size

There is no need to make any compromises with the new generation 22mm Athlonix brush DC motors. The 22mm Athlonix DCP miniature motors offer more price/performance options with a maximum continuous torque up to 6.5 mNm and a high stall torque. Athlonix 22DCP motors are ideally suited for use in wide range of applications such as medical & industrial pumps, gas analyzers, security & access and power tools.

OUTPUT AND PERFORMANCE

- Max continuous torque up to 6.5 mNm
- Output power up to 4.4 watts

KEY FEATURES

- High continuous torque enhances power density of the overall composite
- Component standardization and design modularity ensures quick customization capability for samples across various applications
- Graphite commutation also available, with a unique constant force spring design ensuring consistent performance throughout the life of the motor
- REE coil option available

Medical: Insulin & implantable pumps, imaging machines, collimators, bionic fingers, defibrillators



Security & Access: Door locks, cameras, alarm systems, zoom lens and spy cameras

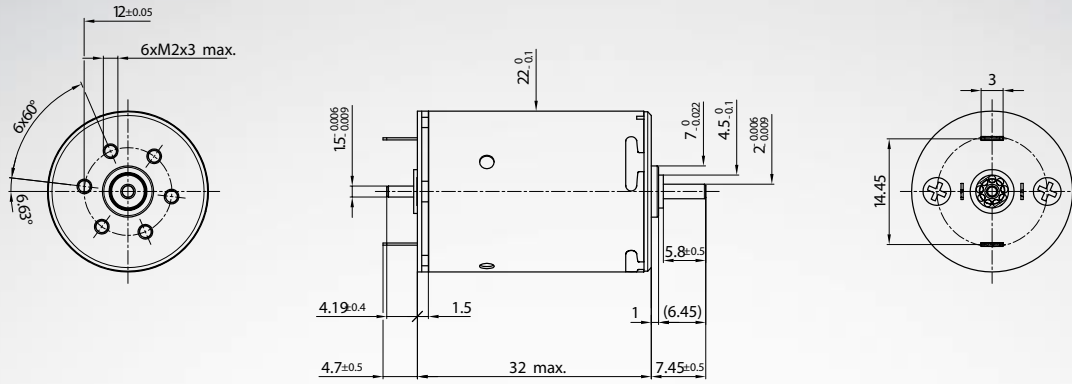


Robotics: Humanoid robotics



Others: Rotary tattoo machines

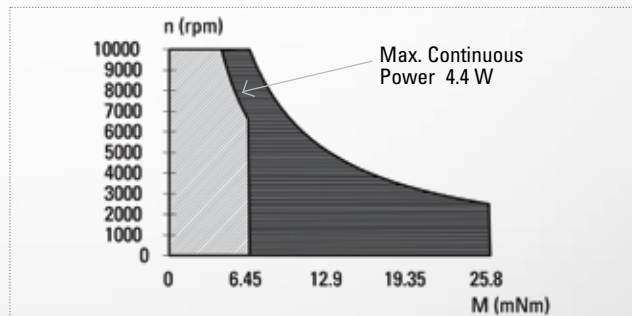




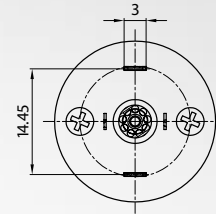
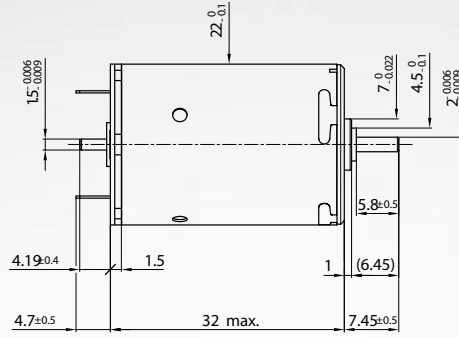
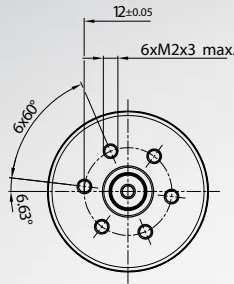
22DCP 32P2 ** .2**

Electrical Data	****	221P	216P	213P	211P	210P	209P	
1 Nominal Voltage	V	3	6	9	12	15	18	Volt
2 No-Load Speed	n_o	8321	9739	10022	9741	9741	9348	rpm
3 No-Load Current	I_o	58.9	34.4	23.6	17.2	13.8	11.0	mA
4 Terminal Resistance	R	0.73	1.97	4.12	7.75	12.10	18.62	Ω
5 Output Power	P_{2max}	2.9	4.1	4.4	4.2	4.2	4.0	W
6 Stall Torque	mNm	13.65 (1.94)	17.47 (2.48)	18.34 (2.6)	17.81 (2.53)	17.83 (2.53)	17.37 (2.46)	mNm (oz-in)
7 Efficiency	η_{max}	77	80	80	80	80	80	%
8 Max Continuous Speed	$n_{e,max}$	10000	10000	10000	10000	10000	10000	rpm
9 Max Continuous Torque	$M_{e,max}$	6.09 (0.91)	6.38 (0.91)	6.45 (0.92)	6.44 (0.92)	6.45 (0.92)	6.5 (0.93)	mNm (oz-in)
10 Max Continuous Current	$I_{e,max}$	1.85	1.13	0.78	0.57	0.46	0.37	A
11 Back-EMF Constant	k_E	0.36	0.61	0.89	1.22	1.52	1.90	mV/rpm
12 Torque Constant	k_M	3.39	5.82	8.48	11.63	4.54	18.18	mNm/A
13 Motor Regulation	R/k^2	64	58	57	57	57	56	10 ³ /Nms
14 Friction Torque	T_F	0.2 (0.03)	0.2 (0.03)	0.2 (0.03)	0.2 (0.03)	0.2 (0.03)	0.2 (0.03)	mNm (oz-in)
15 Mechanical Time Constant	τ_m	30.63	27.87	27.12	26.81	26.68	26.60	ms
16 Rotor Inertia	J	4.80	4.78	4.74	4.68	4.66	4.72	g.cm ²
17 Thermal Resistance (rotor/body)	R_{th1} / R_{th2}	6/22	6/22	6/22	6/22	6/22	6/22	$^{\circ}C/W$
18 Thermal Time Constant (rotor/stator)	τ_{w1} / τ_{w2}	9/550	9/550	9/550	9/550	9/550	9/550	S
19 Operating Temperature Range:	motor	-30°C to 85°C (-22°F to 185°F)						$^{\circ}C (^{\circ}F)$
	rotor	100°C (212°F)						$^{\circ}C (^{\circ}F)$
20 Shaft Load Max:		With sleeve bearings						
(5mm from bearing)	-radial	3 (5.4)						N (oz)
Static Force For Press-fit	-axial	100 (359.6)						N (oz)
21 Shaft Play: At Bearing	-radial	<0.03 (0.0012)						mm (inch)
	-axial	0.15 (0.0059)						mm (inch)
22 Weight	g	58 (2.05)						g (oz)

Execution			
Gearbox	Single Shaft	MR2	E9
	22DCP	22DCP	22DCP
R22	4	5	6
M22	1	2	3
K24	7	8	9
K27	1	2	3



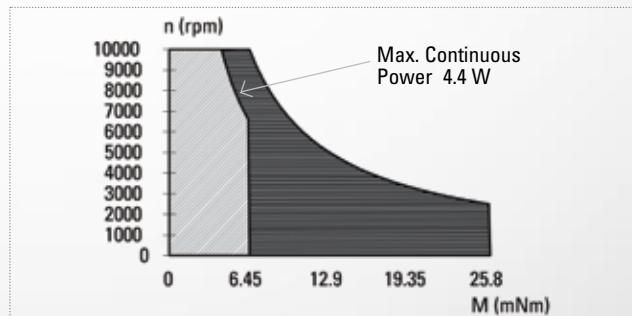
— Continuous Working Range
 — Intermittent Working Range



22DCP 32P2 ** .2**

Electrical Data		****	212E	211E	210E	209E	208E	
1	Nominal Voltage	V	21	24	30	36	48	Volt
2	No-Load Speed	n_o	10357	10465	10806	10281	11049	rpm
3	No-Load Current	I_o	10.5	9.2	7.6	6.1	4.9	mA
4	Terminal Resistance	R	23.4	30.4	46.1	71.7	112.6	Ω
5	Output Power	P_{2max}	4.23	4.25	4.35	4.09	4.51	W
6	Stall Torque	mNm	16.95 (2.41)	16.89 (2.4)	16.85 (2.39)	16.39 (2.33)	17.28 (2.45)	mNm (oz-in)
7	Efficiency	η_{max}	80	80	80	79	80	%
8	Max Continuous Speed	$n_{e,max}$	10000	10000	10000	10000	10000	rpm
9	Max Continuous Torque	$M_{e,max}$	6.08 (0.86)	6.04 (0.86)	5.93 (0.84)	6 (0.85)	5.94 (0.85)	mNm (oz-in)
10	Max Continuous Current	$I_{e,max}$	0.33	0.29	0.23	0.19	0.15	A
11	Back-EMF Constant	k_E	2.00	2.27	2.74	3.46	4.29	mV/rpm
12	Torque Constant	k_M	19.14	21.64	26.20	33.03	41.01	mNm/A
13	Motor Regulation	R/k^2	64	65	67	66	67	10 ³ /Nms
14	Friction Torque	T_F	0.2 (0.03)	0.2 (0.03)	0.2 (0.03)	0.2 (0.03)	0.2 (0.03)	mNm (oz-in)
15	Mechanical Time Constant	τ_m	30.08	30.05	30.01	29.99	29.97	ms
16	Rotor Inertia	J	4.70	4.63	4.47	4.56	4.48	g.cm ²
17	Thermal Resistance (rotor/body)	R_{th1} / R_{th2}	6/22	6/22	6/22	6/22	6/22	°C/W
18	Thermal Time Constant (rotor/stator)	τ_{w1} / τ_{w2}	9/550	9/550	9/550	9/550	9/550	S
19	Operating Temperature Range:	motor	-30°C to 85°C (-22°F to 185°F)					°C (°F)
		rotor	100°C (212°F)					°C (°F)
20	Shaft Load Max:		With sleeve bearings					
	(5mm from bearing)	-radial	3 (5.4)					N (oz)
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AthlonixTM

Learn More.

Visit us at www.athlonix.com