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Portescap

Athlonix™

High Power Density
DC Motors



24DCT - High torque for performance critical applications.

- ✓ High power density
- ✓ Increased battery life
- ✓ Cost effective motion solution
- ✓ Maximum efficiency

The search ends here! The 24DCT motor delivers high torque for performance critical applications with a low cost of ownership. With torque carrying capabilities reaching up to 14.96 mNm, the 24DCT provides higher performance with efficiency reaching up to 90% while maintaining a long life. Due to the inherent design of the 24DCT, it can deliver higher torque per ampere which leads to better battery life. This makes it ideal for battery driven applications such as medical and industrial pumps, drug delivery systems, robotic systems (biotic fingers), miniature industrial power tools, tattoo machines, mesotherapy guns, dental tools, watch winders and more.

OUTPUT AND PERFORMANCE

- Max continuous torque up to 14.96 mNm
- Efficiency up to 90%
- Output power up to 9W

KEY FEATURES

- High continuous torque enhances power density of the overall composite
- Higher battery life ensures lower cost of ownership for battery operated applications
- 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
- Option of having REE coil

Medical: Infusion pumps, imaging machines, collimators, bionic fingers, defibrillators



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

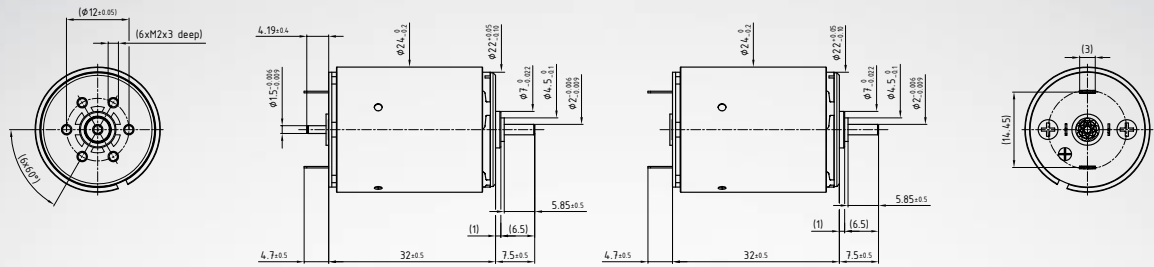


Robotics: Humanoid robotics



Others: Rotary tattoo machines, lab automation applications





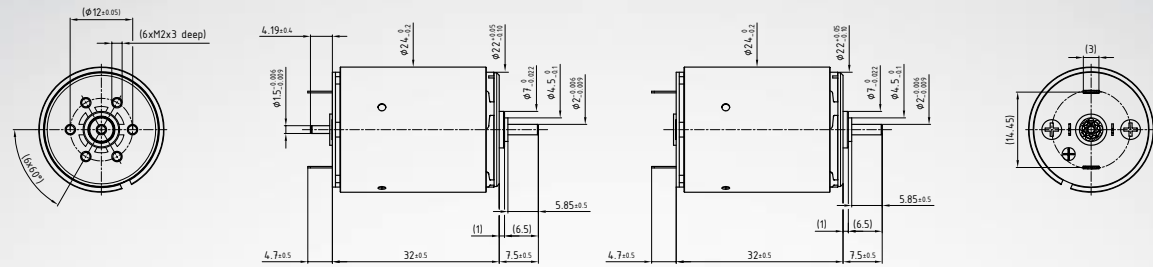
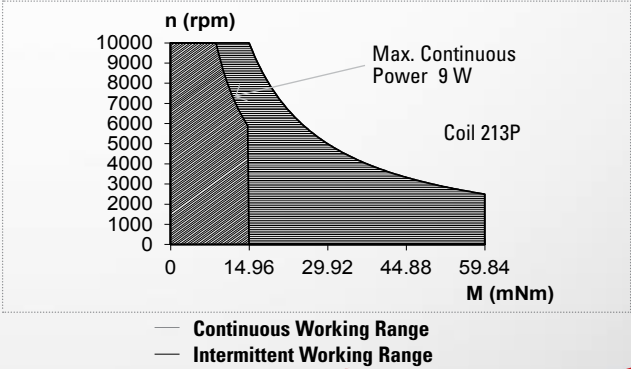
24DCT 32P1/P2 **** *

Electrical Data		****	226P	221P	216P	215P	213P	212P	
1	Nominal Voltage	V	3	6	9	12	15	18	Volt
2	No-Load Speed	n _o	5718	7365	6444	7641	7368	7370	rpm
3	No-Load Current	I _o	44.1	28.4	16.6	14.7	11.4	8.6	mA
4	Terminal Resistance	R	0.4	0.7	2.0	2.5	4.1	5.9	Ω
5	Output Power	P _{2max}	5.3	8.5	7.5	9.4	9.1	9.1	W
6	Stall Torque	mNm	40.6 (5.75)	63.07 (8.94)	60.34 (8.55)	71.54 (10.14)	70.38 (9.97)	70.35 (9.97)	mNm (oz-in)
7	Efficiency	η _{max}	86	89	88	89	89	90	%
8	Max Continuous Speed	n _{e max}	10000	10000	10000	10000	10000	10000	rpm
9	Max Continuous Torque	M _{e max}	12.86 (1.83)	14.15 (2.01)	14.81 (2.1)	14.81 (2.1)	14.96 (2.12)	14.97 (2.13)	mNm (oz-in)
10	Max Continuous Current	I _{e max}	2.62	1.85	1.13	1.00	0.78	0.65	A
11	Back-EMF Constant	k _E	0.52	0.81	1.39	1.57	2.03	2.44	mV/rpm
12	Torque Constant	k _M	4.98	7.75	13.29	14.95	19.38	23.26	mNm/A
13	Motor Regulation	R/k ²	14.75	12.23	11.18	11.18	10.96	10.97	10 ³ /Nms
14	Friction Torque	T _F	0.22 (0.04)	0.22 (0.04)	0.22 (0.04)	0.22 (0.04)	0.22 (0.04)	0.22 (0.04)	mNm (oz-in)
15	Mechanical Time Constant	τ _m	6.97	5.87	5.34	5.28	5.20	5.16	ms
16	Rotor Inertia	J	4.73	4.80	4.78	4.72	4.74	4.70	g.cm ²
17	Thermal Resistance (rotor/body)	R _{th1} / R _{th2}	6/22	6/22	6/22	6/22	6/22	6/22	°C/W

General Data				
18	Thermal Time Constant (rotor/stator)	τ _{w1} /τ _{w2}	9/550	S
19	Operating Temperature Range:	τ _{w1} /τ _{w2}	-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 (10.79)	N (oz)
		-axial	100 (359.6)	N (oz)
21	Shaft Play:	-radial	0.03 (0.0012)	mm (inch)
		-axial	0.15 (0.0059)	mm (inch)
22	Weight	g	72 (2.54)	g (oz)

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

Note:
P1 : standard commutation
P2 : special commutation for double shaft version



24DCT 31P1/P2 **** *

Electrical Data		****	215E	214E	213E	212E	210E	
1	Nominal Voltage	V	21	24	30	36	48	Volt
2	No-Load Speed	n _o	6980	7076	7837	7837	7631	rpm
3	No-Load Current	I _o	7.7	6.8	6.0	5.0	3.7	mA
4	Terminal Resistance	R	9.9	12.8	16.2	23.4	46.1	Ω
5	Output Power	P _{2max}	8.0	8.0	9.2	9.2	8.6	W
6	Stall Torque	mNm	60.64 (8.59)	60.51 (8.57)	67.38 (9.55)	66.95 (9.49)	62.1 (8.8)	mNm (oz-in)
7	Efficiency	η _{max}	88	88	89	89	88	%
8	Max Continuous Speed	n _{e max}	10000	10000	10000	10000	10000	rpm
9	Max Continuous Torque	M _{e max}	14.25 (2.02)	14.14 (2.01)	14.18 (2.01)	14.13 (2.01)	13.79 (1.96)	mNm (oz-in)
10	Max Continuous Current	I _{e max}	0.50	0.44	0.39	0.32	0.23	A
11	Back-EMF Constant	k _E	3.00	3.38	3.82	4.58	6.27	mV/rpm
12	Torque Constant	k _M	28.63	32.27	36.44	43.72	59.86	mNm/A
13	Motor Regulation	R/k ²	12.05	12.24	12.18	12.26	12.87	10 ³ /Nms
14	Friction Torque	T _F	0.22 (0.04)	0.22 (0.04)	0.22 (0.04)	0.22 (0.04)	0.22 (0.04)	mNm (oz-in)
15	Mechanical Time Constant	τ _m	5.80	5.78	5.77	5.76	5.75	ms
16	Rotor Inertia	J	4.81	4.72	4.74	4.70	4.47	g.cm ²
17	Thermal Resistance (rotor/body)	R _{th1} / R _{th2}	6/22	6/22	6/22	6/22	6/22	°C/W

General Data				
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