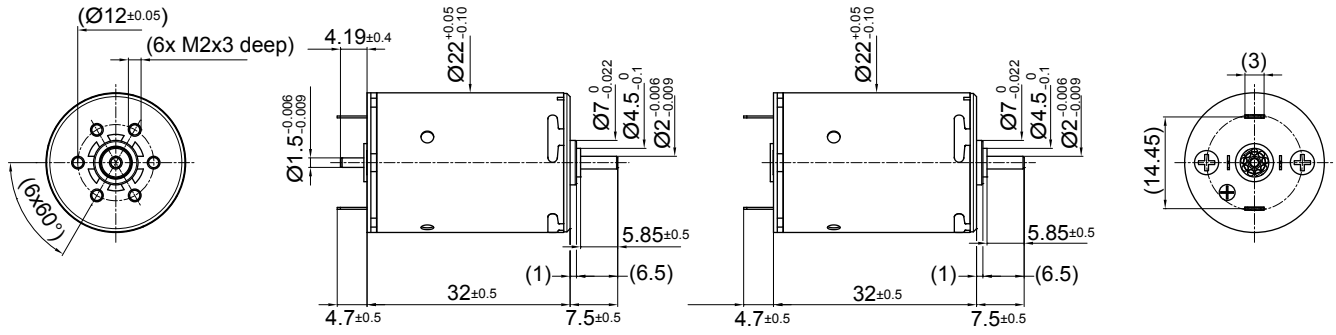
22DCT Athlonix™

Ø 22 mm • Precious metal commutation • 13.28 mNm



22DCT 32P2 •••• .2 | 22DCT 32P2 •••• .14

Dimensions in mm.

Electrical Data	Symbol	22DCT 32P2 •••• .* 135P	225P	228E	226E	224E	220E	Unit
1 Nominal Voltage	V	3	6	6	9	12	12	Volt
2 No-Load Speed	n_0	5525	8525	5887	7071	8131	6040	rpm
3 No-Load Current	I_0	42.7	32.8	22.7	18.2	15.7	11.6	mA
4 Terminal Resistance	R	0.4	0.5	1.1	1.6	2.1	4.0	Ω
5 Output Power	$P_{2max.}$	4.7	9.6	5.9	7.9	9.4	6.3	W
6 Stall Torque	mNm	37.59 (5.33)	77.71 (11.01)	51.68 (7.32)	68.82 (9.75)	79.56 (11.27)	56.48 (8)	mNm (oz-in)
7 Efficiency	$h_{max.}$	85	90	87	89	90	88	%
8 Max Continuous Speed	$n_{e\ max.}$	10000	10000	10000	10000	10000	10000	rpm
9 Max Continuous Torque	$M_{e\ max.}$	11.04 (1.57)	12.81 (1.82)	12.57 (1.79)	13.25 (1.88)	13.28 (1.89)	12.98 (1.84)	mNm (oz-in)
10 Max Continuous Current	$I_{e\ max.}$	2.19	1.95	1.32	1.11	0.96	0.70	A
11 Back-EMF Constant	k_E	0.54	0.70	1.01	1.27	1.47	1.98	mV/rpm
12 Torque Constant	k_M	5.16	6.70	9.69	12.12	14.05	18.90	mNm/A
13 Motor Regulation	R/k^2	15.00	11.49	11.93	10.76	10.70	11.20	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	7.54	7.25	7.27	7.07	6.95	6.79	ms
16 Rotor Inertia	J	4.90	6.32	6.09	6.57	6.49	6.06	g-cm²

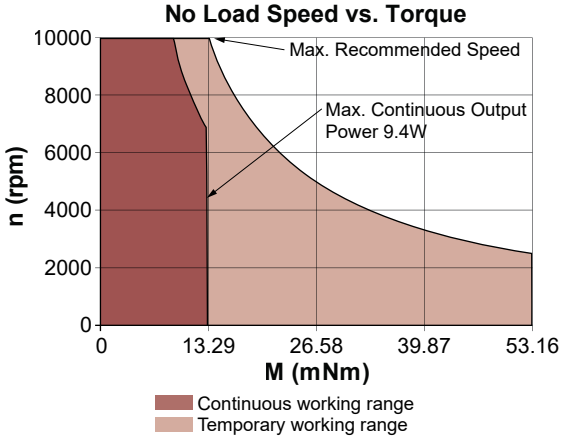
General Data			
17 Thermal Resistance (rotor/body)	R_{th1}/R_{th2}	6/22	°C/W
18 Thermal Time Constant (rotor/stator)	t_{W1}/t_{W2}	9/550	S
19 Operating Temperature Range:	motor	-30°C to 85°C (-22°F to 185°F)	°C (°F)
	rotor	100°C (212°F)	°C (°F)
20 Shaft Load Max.:		With sleeve bearings	
(5 mm. from bearing)	-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	65 (2.3)	g (oz)
23 Commutation Segment	-	9	segment

*Also available with ball bearing

Execution Table

Gearbox	Single Shaft	MR2	E9
R22	4	5	6
K24	7	8	9
K27	1	2	3
R22HT	20	21	22

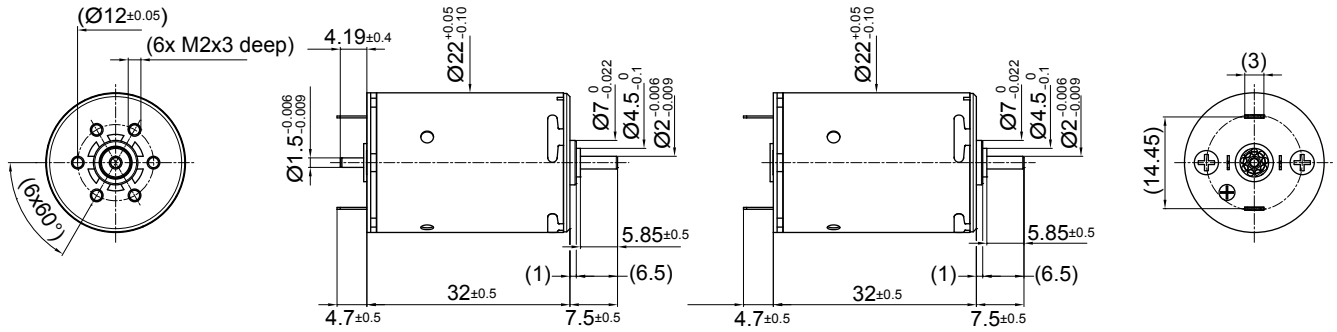
Note:
P1: standard commutation
P2: special commutation for double shaft version



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

22DCT Athlonix™

Ø 22 mm • Precious metal commutation • 13.28 mNm



22DCT 32P2 •••• .2

22DCT 32P2 •••• .14

Dimensions in mm.

Electrical Data	Symbol	22DCT 32P2 •••• .* 216E	215E	212E	211E	209E	Unit
1 Nominal Voltage	V	18	24	24	36	48	Volt
2 No-Load Speed	n_0	6666	8569	5600	7437	6493	rpm
3 No-Load Current	I_0	8.6	8.3	5.4	4.8	3.1	mA
4 Terminal Resistance	R	8.4	9.9	23.4	30.4	71.7	Ω
5 Output Power	$P_{2max.}$	6.6	8.6	4.9	7.0	5.9	W
6 Stall Torque	mNm	54.94 (7.79)	64.54 (9.15)	41.47 (5.88)	54.31 (7.7)	46.82 (6.64)	mNm (oz-in)
7 Efficiency	$h_{max.}$	88	89	86	88	87	%
8 Max Continuous Speed	$n_{e\ max.}$	10000	10000	10000	10000	10000	rpm
9 Max Continuous Torque	$M_{e\ max.}$	12.17 (1.73)	11.63 (1.65)	11.53 (1.64)	11.44 (1.63)	11.37 (1.62)	mNm (oz-in)
10 Max Continuous Current	$I_{e\ max.}$	0.48	0.44	0.29	0.25	0.17	A
11 Back-EMF Constant	k_E	2.69	2.79	4.26	4.82	7.36	mV/rpm
12 Torque Constant	k_M	25.68	26.65	40.71	46.04	70.27	mNm/A
13 Motor Regulation	R/k^2	12.70	13.90	14.14	14.34	14.52	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	6.70	6.69	6.65	6.64	6.63	ms
16 Rotor Inertia	J	5.27	4.81	4.70	4.63	4.56	g-cm²

General Data			
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18 Thermal Time Constant (rotor/stator)	t_{W1}/t_{W2}	9/550	S
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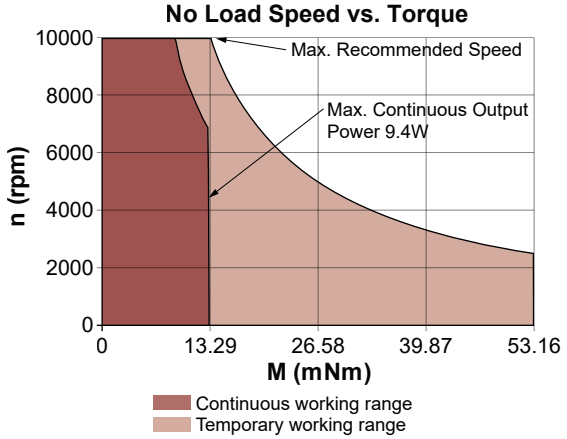
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No Load Speed vs. Torque



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