Portescap

Athlonix™

High Power Density DC Motors

17DCT - High torque for demanding applications

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

Our DCT family of Athlonix Brush DC mini motors introduces the new 17DCT high torque motor. 17DCT Athlonix Brush DC motors can reach a torque of 6.14mNm with 86% efficiency while maintaining long life, all while providing a low cost of ownership. Athlonix 17DCT miniature dc motors are available in 2 variations, precious metal commutation and graphite commutation with a Neodymium magnet inside. With these power packed features, our new Athlonix 17DCT motors are ideally suited for use in performance-critical applications in markets such as medical, power hand tools, robotics and others.

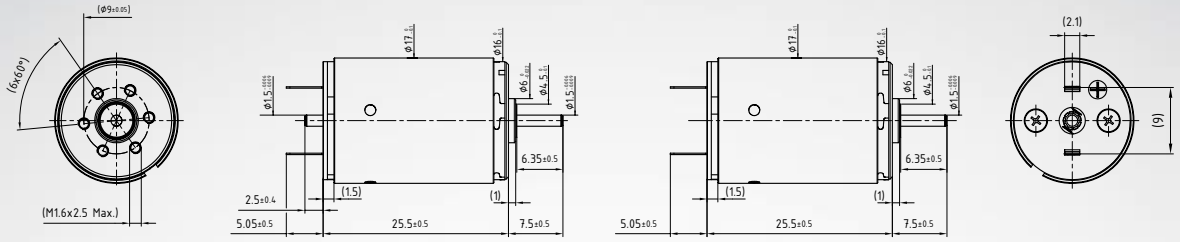
OUTPUT AND PERFORMANCE

- Max continuous torque up to 6.14 mNm
- Output power up to 4.8W
- Efficiency up to 86%

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, utilizing a unique constant force spring design ensuring consistent performance throughout the life of the motor
- Option of having REE coil which ensures extended life of the motor and provides an environment of intrinsic safety especially at high speed conditions

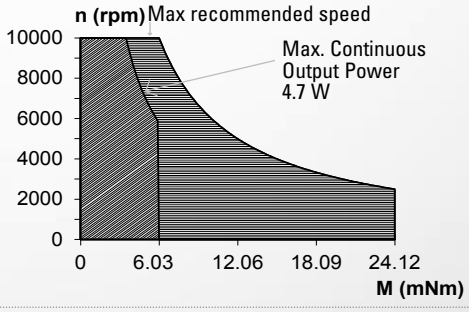
Medical: Infusion pumps, imaging machines, medical analyzers	**Robotics:** Humanoid robots	**Other:** Power hand tools	**Other:** Rotary tattoo machines
			



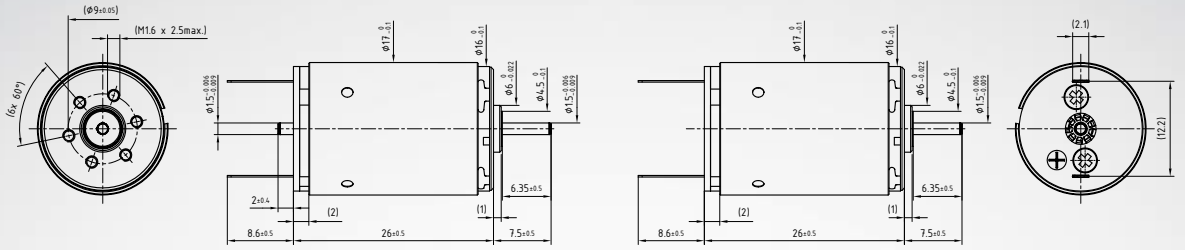
Dimensions in mm **17DCT 26P1/P2 **** .***

Electrical Data	****	209E	205P	107P	205E	
1 **Nominal Voltage**	V	18	24	36	48	Volt
2 **No-Load Speed**	n_o	8030	7769	9800	8145	rpm
3 **No-Load Current**	I_o	4.2	3.1	2.6	1.6	mA
4 **Terminal Resistance**	R	30.7	51.4	76.0	208.1	Ω
5 **Output Power**	P_{2max}	4.5	4.8	4.7	4.6	W
6 **Stall Torque**	mNm	12.36 (1.76)	13.6 (1.93)	16.43 (2.33)	12.8 (1.82)	mNm (oz-in)
7 **Efficiency**	$\eta_{max.}$	84	84	86	84	%
8 **Max Continuous Speed**	$n_{e\,max.}$	10000	10000	10000	10000	rpm
9 **Max Continuous Torque**	$M_{e\,max.}$	5.75 (0.82)	6.14 (0.87)	6 (0.85)	5.8 (0.83)	mNm (oz-in)
10 **Max Continuous Current**	$I_{e\,max.}$	0.27	0.21	0.17	0.11	A
11 **Back-EMF Constant**	k_E	2.23	3.07	3.65	5.85	mV/rpm
12 **Torque Constant**	k_M	21.25	29.31	34.89	55.88	mNm/A
13 **Motor Regulation**	R/k^2	68.01	59.79	62.45	66.62	10^3/Nms
14 **Friction Torque**	T_F	0.08 (0.02)	0.08 (0.02)	0.08 (0.02)	0.08 (0.02)	mNm (oz-in)
15 **Mechanical Time Constant**	τ_m	7.06	6.23	6.22	7.04	ms
16 **Rotor Inertia**	J	1.04	1.04	1.00	1.01	g.cm²
General Data						
17 **Thermal Resistance (rotor/body)**	R_{th1} / R_{th2}	6/25				°C/W
18 **Thermal Time Constant (rotor/stator)**	τ_{w1}/τ_{w2}	12/250				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	1.5 (5.39)				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	27 (0.96)				g (oz)

Execution Table			
Gearbox	Single Shaft	MR2	M Sense B
R16	1	2	Upon Request
B16	3	4	Upon Request
BA16	3	4	Upon Request



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



Dimensions in mm **17DCT 26G1/G2 **** .***

	Electrical Data	****	209E	205P	107P	205E	
1	**Nominal Voltage**	V	18	24	36	48	Volt
2	**No-Load Speed**	n_o	7869	7628	9653	7988	rpm
3	**No-Load Current**	I_o	15.8	11.5	9.6	6.0	mA
4	**Terminal Resistance**	R	30.8	51.5	76.1	208.2	Ω
5	**Output Power**	P_{2max}	4.3	4.6	4.5	4.4	W
6	**Stall Torque**	mNm	12.07 (1.71)	13.33 (1.89)	16.16 (2.29)	12.55 (1.78)	mNm (oz-in)
7	**Efficiency**	$\eta_{max.}$	70	71	73	70	%
8	**Max Continuous Speed**	$n_{e\,max.}$	10000	10000	10000	10000	rpm
9	**Max Continuous Torque**	$M_{e\,max.}$	5.49 (0.78)	5.88 (0.84)	5.75 (0.82)	5.56 (0.79)	mNm (oz-in)
10	**Max Continuous Current**	$I_{e\,max.}$	5.49	5.88	5.75	5.56	A
11	**Back-EMF Constant**	k_E	2.23	3.07	3.65	5.85	mV/rpm
12	**Torque Constant**	k_M	21.25	29.31	34.89	55.88	mNm/A
13	**Motor Regulation**	R/k^2	68.23	59.91	62.53	66.65	10^3/Nms
14	**Friction Torque**	T_F	0.3 (0.05)	0.3 (0.05)	0.3 (0.05)	0.3 (0.05)	mNm (oz-in)
15	**Mechanical Time Constant**	τ_m	7.08	6.24	6.23	7.04	ms
16	**Rotor Inertia**	J	1.04	1.04	1.00	1.06	g.cm²
	General Data						
17	**Thermal Resistance (rotor/body)**	R_{th1} / R_{th2}	6/25				°C/W
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		rotor	100°C (212°F)				°C (°F)
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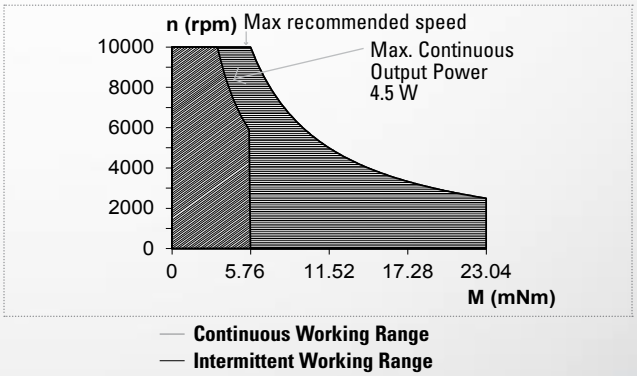

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Learn More.

Visit us at www.athlonix.com