



Shown with optional assembly.

## DC026C Series

The DC026C Series Brush Commutated DC Motor is a 26 mm diameter, high performance unit offered in 3 lengths with continuous output torques of 0.0134 to 0.0226 Nm.

**DC Brush Commutated Motors** For applications that require reliability and performance with basic control. Yields high efficiencies by consuming less electricity.

### Motor Characteristics

Motor Data	Units	Part No.		
		DC026C-1	DC026C-2	DC026C-3
Max DC Terminal Voltage $V_T$	V	48		
Max Speed (Mechanical) $\omega_{MAX}$	rpm	10000		
Continuous Stall Torque <sup>1</sup> $T_{CS}$	Nm	0.014	0.017	0.022
	oz-in	1.9	2.4	3.2
Peak Torque (Maximum) <sup>1</sup> $T_{pk}$	Nm	0.059	0.084	0.13
	oz-in	8.3	12	19
Coulomb Friction Torque $T_f$	Nm	0.0021	0.0021	0.0021
	oz-in	0.30	0.30	0.30
Viscous Damping Factor $D$	Nm/(rad/s)	1.2E-06	1.3E-06	1.5E-06
	oz-in/krpm	0.018	0.020	0.022
Thermal Time Constant $\tau_{th}$	min	13	13	12
Thermal Resistance $R_{th}$	°C/W	19	18	16
Max. Winding Temperature $\theta_{MAX}$	°C	130	130	130
Rotor Inertia $J_r$	kg-m <sup>2</sup>	9.9E-07	1.2E-06	1.6E-06
	oz-in-s <sup>2</sup>	1.4E-04	1.7E-04	2.3E-04
Motor Weight $W_m$	g	76	86	110
	oz	2.7	3.1	3.7

<sup>1</sup>Recorded at maximum winding temperature at 25°C ambient and without heatsink. \*\*For PBL4850E to operate a brush motor, an encoder is required.

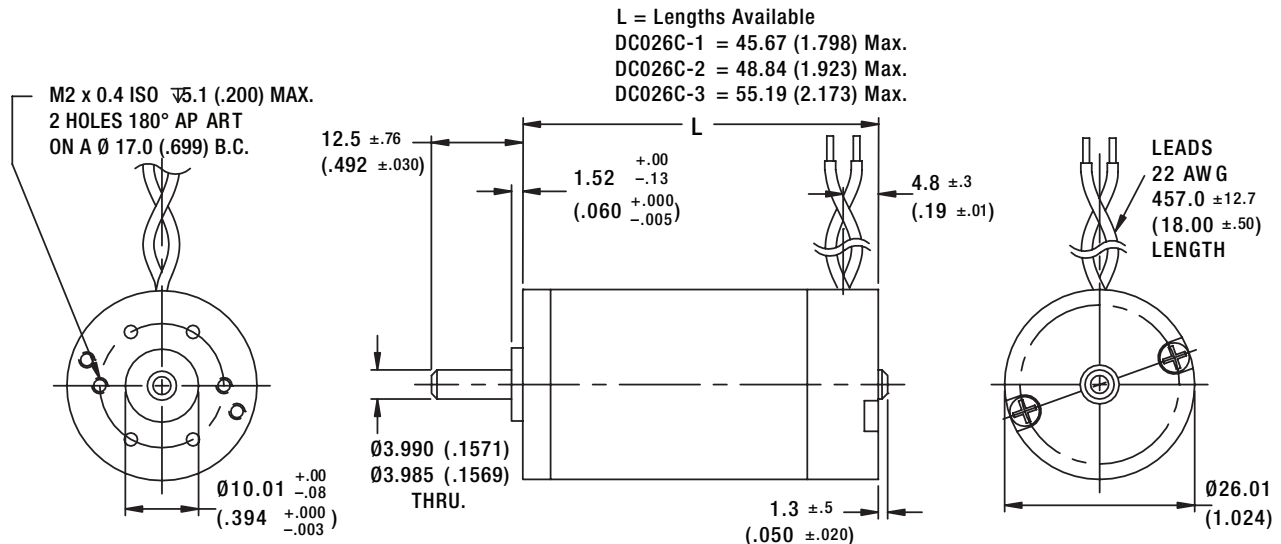
### Benefits

- Speeds up to 10,000 RPM possible
- DC bus voltage up to 48 VDC
- Eight standard windings, special windings available
- 2 pole stator with neodymium magnets
- 7 slot skewed armature cogging reduction
- Ball bearings
- Copper graphite brushes, RFI suppression available

### Optional Assemblies

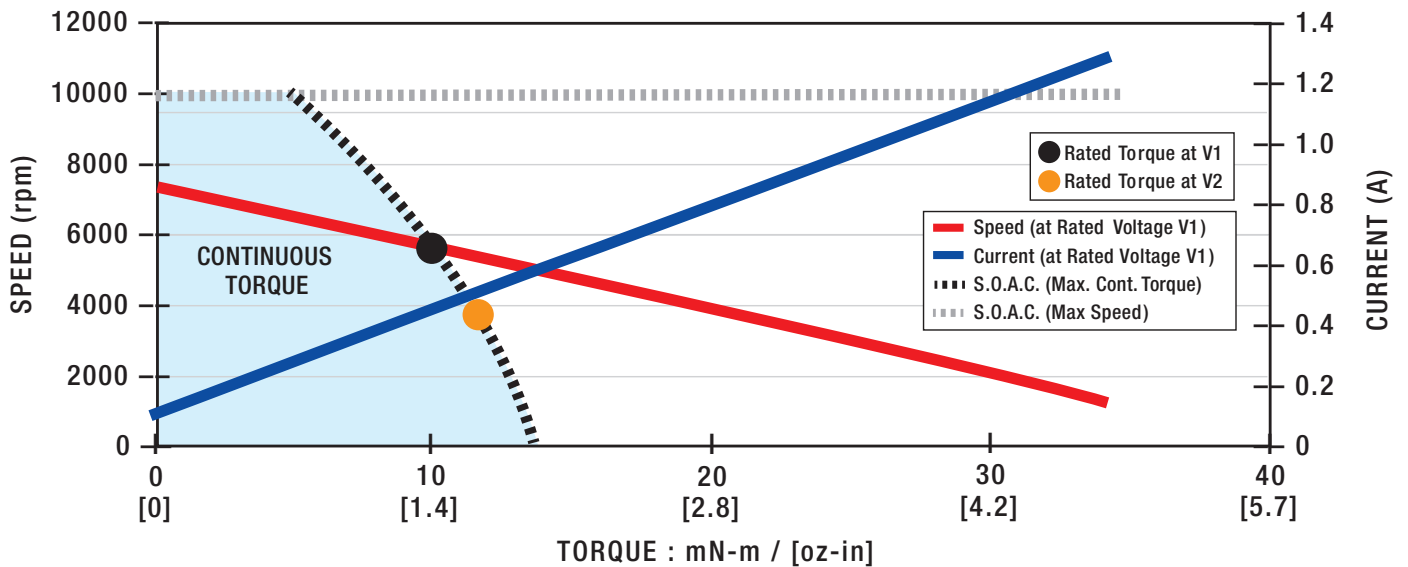
- Encoders: E21C/D, E30C/D
- Gearboxes: G30A, G35A, PLG24
- Brake: B30A
- Programmable Drive: PBL4850E\*\*

### Dimensional Drawings: DC026C-1 • DC026C-2 • DC026C-3



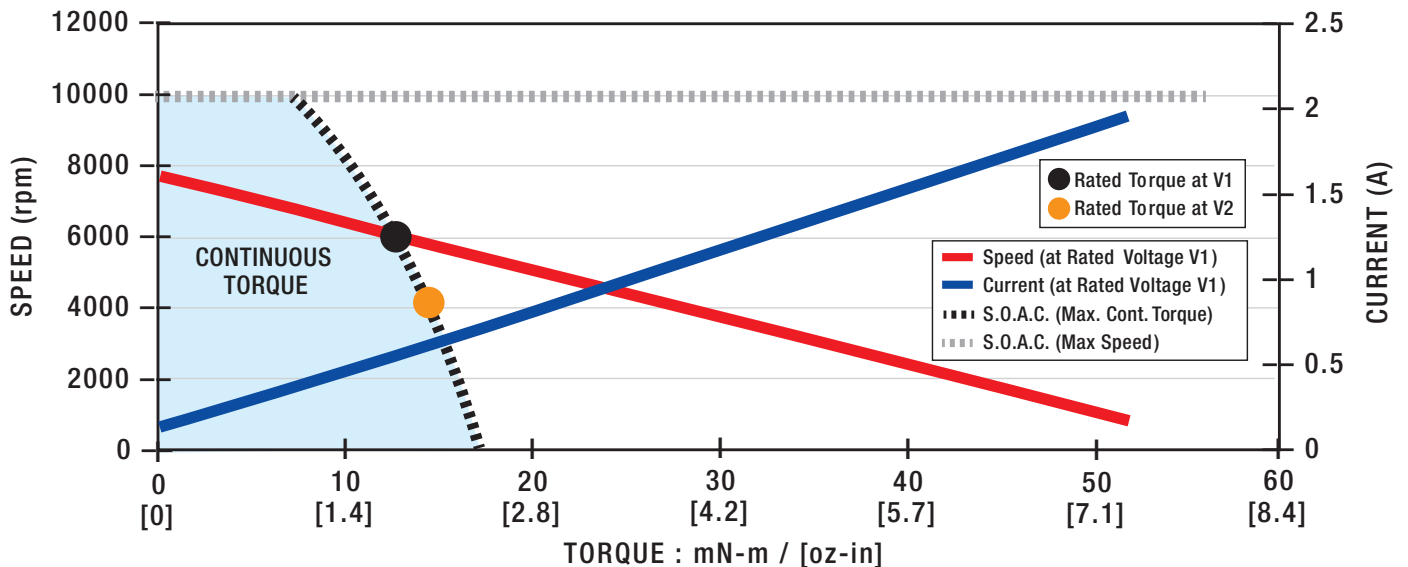
Motor Data		Units								
Rated Voltage <b>V1</b>	$V_r$	V	6.00	7.58	9.55	12.0	15.2	19.1	24.0	30.3
Rated Torque <sup>1</sup> •	$T_r$	Nm	0.011	0.011	0.010	0.010	0.010	0.010	0.010	0.010
		oz-in	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4
Rated Speed <sup>1</sup>	$\omega_r$	rpm	5080	5250	5350	5450	5610	5570	5530	5580
Rated Current <sup>1</sup>	$I_r$	A	1.9	1.5	1.1	0.92	0.73	0.57	0.45	0.36
Rated Power <sup>1</sup>	$P_r$	W	5.7	5.8	5.7	5.8	5.9	5.8	5.8	5.8
No Load Speed	$\omega_{nl}$	rpm	6970	6990	6910	7000	7100	7030	6970	7010
No Load Current	$I_{nl}$	A	0.40	0.32	0.25	0.20	0.16	0.13	0.098	0.079
Rated Voltage <b>V2</b>	$V_r$	V	4.78	6.00	7.58	9.55	12.0	15.2	19.1	24.0
Rated Torque <sup>1</sup> •	$T_r$	Nm	0.012	0.012	0.012	0.012	0.011	0.011	0.011	0.011
		oz-in	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6
Rated Speed <sup>1</sup>	$\omega_r$	rpm	3260	3380	3520	3620	3690	3730	3700	3700
Rated Current <sup>1</sup>	$I_r$	A	2.0	1.6	1.2	1.0	0.79	0.62	0.49	0.39
Rated Power <sup>1</sup>	$P_r$	W	4.1	4.2	4.3	4.4	4.4	4.5	4.4	4.4
No Load Speed	$\omega_{nl}$	rpm	5500	5480	5430	5520	5560	5550	5500	5510
No Load Current	$I_{nl}$	A	0.37	0.30	0.23	0.19	0.15	0.12	0.092	0.074
Motor Constant	$K_M$	Nm/ $\sqrt{W}$	0.0085	0.0088	0.0090	0.0090	0.0090	0.0091	0.0092	0.0091
		oz-in/ $\sqrt{W}$	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3
Torque Constant	$K_T$	Nm/A	0.00763	0.00964	0.0123	0.0153	0.0191	0.0243	0.0307	0.0386
		oz-in/A	1.08	1.37	1.74	2.16	2.70	3.43	4.35	5.46
Voltage Constant	$K_E$	V/(rad/s)	0.00763	0.00964	0.0123	0.0153	0.0191	0.0243	0.0307	0.0386
		V/krpm	0.799	1.01	1.29	1.60	2.00	2.54	3.22	4.04
Terminal Resistance	$R_{mt}$	$\Omega$	0.800	1.22	1.87	2.89	4.47	7.08	11.3	17.8
Inductance	L	mH	0.41	0.66	1.1	1.6	2.6	4.1	6.6	10
Peak Current	$I_{pk}$	A	7.5	6.2	5.1	4.2	3.4	2.7	2.1	1.7
Electrical Time Constant	$\tau_e$	ms	0.51	0.54	0.56	0.56	0.57	0.58	0.58	0.58
Mechanical Time Constant	$\tau_m$	ms	14	13	12	12	12	12	12	12

<sup>1</sup>Recorded at maximum winding temperature at 25°C ambient and without heatsink.



Motor Data		Units								
Rated Voltage V1	V <sub>r</sub>	V	7.58	9.55	12.0	15.2	19.1	24.0	30.3	38.2
Rated Torque <sup>1</sup> •	T <sub>r</sub>	Nm	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
		oz-in	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Rated Speed <sup>1</sup>	ω <sub>r</sub>	rpm	5720	5880	5900	6080	6130	6100	6100	6140
Rated Current <sup>1</sup>	I <sub>r</sub>	A	1.9	1.5	1.1	0.91	0.72	0.57	0.45	0.36
Rated Power <sup>1</sup>	P <sub>r</sub>	W	8.0	8.1	8.0	8.1	8.1	8.0	8.0	8.0
No Load Speed	ω <sub>nl</sub>	rpm	7320	7330	7270	7370	7410	7350	7350	7370
No Load Current	I <sub>nl</sub>	A	0.34	0.27	0.22	0.17	0.14	0.11	0.085	0.068
Rated Voltage V2	V <sub>r</sub>	V	6.00	7.58	9.55	12.0	15.2	19.1	24.0	30.3
Rated Torque <sup>1</sup> •	T <sub>r</sub>	Nm	0.015	0.015	0.015	0.014	0.014	0.014	0.014	0.014
		oz-in	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0
Rated Speed <sup>1</sup>	ω <sub>r</sub>	rpm	3820	4000	4050	4140	4240	4220	4190	4240
Rated Current <sup>1</sup>	I <sub>r</sub>	A	2.0	1.6	1.2	0.99	0.79	0.62	0.49	0.39
Rated Power <sup>1</sup>	P <sub>r</sub>	W	6.0	6.1	6.2	6.3	6.4	6.3	6.3	6.4
No Load Speed	ω <sub>nl</sub>	rpm	5750	5780	5750	5790	5860	5820	5790	5810
No Load Current	I <sub>nl</sub>	A	0.32	0.26	0.20	0.16	0.13	0.10	0.079	0.063
Motor Constant	K <sub>M</sub>	Nm/√W	0.010	0.010	0.010	0.011	0.011	0.011	0.011	0.011
		oz-in/√W	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Torque Constant	K <sub>T</sub>	Nm/A	0.00932	0.0117	0.0149	0.0186	0.0233	0.0295	0.0372	0.0469
		oz-in/A	1.32	1.66	2.11	2.64	3.30	4.18	5.27	6.64
Voltage Constant	K <sub>E</sub>	V/(rad/s)	0.00932	0.0117	0.0149	0.0186	0.0233	0.0295	0.0372	0.0469
		V/krpm	0.976	1.23	1.56	1.95	2.44	3.09	3.90	4.91
Terminal Resistance	R <sub>mt</sub>	Ω	0.860	1.30	2.02	3.10	4.84	7.67	12.2	19.2
Inductance	L	mH	0.47	0.76	1.2	1.9	3.0	4.8	7.6	12
Peak Current	I <sub>pk</sub>	A	8.8	7.3	5.9	4.9	3.9	3.1	2.5	2.0
Electrical Time Constant	τ <sub>e</sub>	ms	0.55	0.58	0.60	0.61	0.61	0.62	0.62	0.63
Mechanical Time Constant	τ <sub>m</sub>	ms	12	11	11	11	11	11	11	10

<sup>1</sup>Recorded at maximum winding temperature at 25°C ambient and without heatsink.



Motor Data		Units								
Rated Voltage V1	V <sub>r</sub>	V	9.55	12.0	15.2	19.1	24.0	30.3	38.2	48.0
Rated Torque <sup>1</sup> •	T <sub>r</sub>	Nm	0.017	0.016	0.016	0.015	0.015	0.015	0.015	0.015
		oz-in	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.1
Rated Speed <sup>1</sup>	ω <sub>r</sub>	rpm	7540	7760	7880	7900	7980	8110	8090	8030
Rated Current <sup>1</sup>	I <sub>r</sub>	A	2.2	1.7	1.3	1.0	0.82	0.65	0.51	0.41
Rated Power <sup>1</sup>	P <sub>r</sub>	W	13	13	13	13	13	13	13	13
No Load Speed	ω <sub>nl</sub>	rpm	8920	8950	8970	8910	8970	9080	9050	8970
No Load Current	I <sub>nl</sub>	A	0.36	0.29	0.23	0.18	0.15	0.12	0.092	0.072
Rated Voltage V2	V <sub>r</sub>	V	6.00	7.58	9.55	12.0	15.2	19.1	24.0	30.3
Rated Torque <sup>1</sup> •	T <sub>r</sub>	Nm	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
		oz-in	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Rated Speed <sup>1</sup>	ω <sub>r</sub>	rpm	3510	3740	3820	3860	3970	4010	3980	3990
Rated Current <sup>1</sup>	I <sub>r</sub>	A	2.5	2.0	1.6	1.2	0.98	0.79	0.62	0.49
Rated Power <sup>1</sup>	P <sub>r</sub>	W	7.4	7.8	7.9	7.9	8.1	8.2	8.2	8.2
No Load Speed	ω <sub>nl</sub>	rpm	5550	5600	5580	5550	5630	5680	5630	5610
No Load Current	I <sub>nl</sub>	A	0.31	0.25	0.20	0.16	0.13	0.099	0.078	0.062
Motor Constant	K <sub>M</sub>	Nm/√W	0.011	0.012	0.012	0.012	0.012	0.012	0.012	0.012
		oz-in/√W	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Torque Constant	K <sub>T</sub>	Nm/A	0.00974	0.0122	0.0155	0.0196	0.0244	0.0305	0.0386	0.0489
		oz-in/A	1.38	1.73	2.19	2.77	3.46	4.31	5.46	6.92
Voltage Constant	K <sub>E</sub>	V/(rad/s)	0.00974	0.0122	0.0155	0.0196	0.0244	0.0305	0.0386	0.0489
		V/krpm	1.02	1.28	1.62	2.05	2.56	3.19	4.04	5.12
Terminal Resistance	R <sub>mt</sub>	Ω	0.730	1.08	1.67	2.59	4.02	6.28	9.96	15.8
Inductance	L	mH	0.39	0.61	0.98	1.6	2.4	3.8	6.1	9.8
Peak Current	I <sub>pk</sub>	A	13	11	9.1	7.4	6.0	4.8	3.8	3.0
Electrical Time Constant	τ <sub>e</sub>	ms	0.53	0.56	0.59	0.60	0.61	0.61	0.61	0.62
Mechanical Time Constant	τ <sub>m</sub>	ms	12	12	11	11	11	11	11	11

<sup>1</sup>Recorded at maximum winding temperature at 25°C ambient and without heatsink.

