

C16 Series Connected Coil Performance Specification

General and 6 Lead Motor Specifications	UNITS	Dash #	1	2	3	4
Force Constant	lb _f /A		1.3	2.7	4.0	5.3
	N/A		5.9	11.9	17.8	23.8
Max Operating Temperature	°C		130	130	130	130
Maximum Temp. Rise	°C		110	110	110	110
Coil Resistance (6 lead @ 25°C)	Ω		4.1	8.3	12.4	16.5
Coil Resistance (6 lead @ Max. °C)	Ω		5.9	11.9	17.8	23.7
Inductance @ 1kHz	mH		0.5	1.0	1.4	1.9
Thermal Resistance (Bracket Side Mount)	°C/W		1.60	0.80	0.53	0.40
Continuous Power Top Mount (Max. °C)	W		69	138	206	275
Thermal Resistance, Top mount (SP85,SP86)	°C/W		1.60	0.80	0.53	0.40
Continuous Power using threaded hole Top Mount (Max. °C)	W		69	138	206	275
Continuous Power, top mount to plate**(Max. °C)	W		38.3	63.8	87.4	110.2
Motor Constant	lb _f /sqrt(W)		0.5	0.7	0.8	1.0
	N/sqrt(W)		2.15	3.04	3.73	4.30
Peak Power (Max. °C, 10% Duty)	W		688	1375	2063	2750
Back EMF Constant	V/inch/s		0.15	0.30	0.45	0.60
	V/m/s		5.9	11.9	17.8	23.8
Electrical Time Constant (@ 25°C)	ms		0.12	0.12	0.12	0.12
(@ 130°C)	ms		0.08	0.08	0.08	0.08
Maximum Line to Line Voltage	Vrms & DC		300	300	300	300
Coil Weight	Pounds		0.07	0.15	0.23	0.31
	Kilograms		0.03	0.06	0.10	0.13
Coil length (inside magnet track)	inch		2.41	4.81	7.21	9.61
	mm		61.2	122.2	183.1	244.1
Delta Connected Specifications	UNITS	Dash #	1	2	3	4
Force Constant	lb _f /A		1.3	2.7	4.0	5.3
	N/A		5.9	11.9	17.8	23.8
Phase Resistance (Δ @ 25°C)	Ω		2.76	5.51	8.27	11.03
Phase Resistance (Δ @ Max. °C)	Ω		3.95	7.90	11.86	15.81
Inductance @ 1kHz	mH		0.3	0.6	1.0	1.3
Continuous Force	lb _f		4.0	8.0	12.0	16.0
	N		17.8	35.7	53.5	71.4
Continuous Current	A		3.00	3.00	3.00	3.00
Peak Force*	lb _f		8.0	16.0	24.1	32.1
	N		36	71	107	143
Peak Current*	A		6.00	6.00	6.00	6.00
Continuous Force, aluminum plate heat sink** (see below)	lb _f		4.2	7.6	10.9	14.1
	N		18.5	33.8	48.4	62.8
Back EMF Constant	V/inch/s		0.2	0.3	0.5	0.6
	V/m/s		5.9	11.9	17.8	23.8
WYE connected Specifications	UNITS	Dash #	1	2	3	4
Force Constant	lb _f /A		2.3	4.6	6.9	9.3
	N/A		10.3	20.6	30.9	41.2
Phase Resistance (Ψ @ 25°C)	Ω		8.27	16.54	24.81	33.09
Phase Resistance (Ψ @ Max. °C)	Ω		11.86	23.71	35.57	47.43
Inductance @ 1kHz	mH		1.0	1.9	2.9	3.8
Continuous Force	lb _f		5.6	11.2	16.7	22.3
	N		24.8	49.6	74.4	99.2
Continuous Current	A		2.41	2.41	2.41	2.41
Peak Force*	lb _f		13.9	27.8	41.7	55.6
	N		62	124	185	247
Peak Current*	A		6.00	6.00	6.00	6.00
Continuous Force, aluminum plate heat sink** (see below)	lb _f		4.2	7.6	10.9	14.1
	N		18.5	33.8	48.4	62.8
Back EMF Constant	V/inch/s		0.3	0.5	0.8	1.0
	V/m/s		10.3	20.6	30.9	41.2

*** Notes:**

Specifications based on heat sink maintained within 10°C of ambient temperature at motor bracket interface.

On time of "Peak Power" (duration) less than 1 second.

Back EMF plus IR drop must not exceed "Maximum Terminal Voltage" listed.

Electrical cycle length is 1.2 inch (30.5mm).

Resistance specifications do not include the cable resistance.

Do not exceed 3A continuous or 6A peak (cable limit)

Cable adds 0.5Ω/m to Wye and Delta phase resistance. Cable adds 0.25Ω/m to the bracket ground resistance.

** Heat Sink is a 12" wide, 1/2" thick aluminum plate, extending 2" beyond each end of the coil bracket, in 25°C free air.

Magnet Track weight is 3.8kg/m (2.6 pounds/foot).