



POWERED BY INNOVATION

C12 Series Connected Coil Performance Specification (Version 3.4 (Ref coil dwg 52439))

General and 6 Lead Motor Specifications	UNITS	Dash #	1	2	3	4
Force Constant	lbf/A		0.77	1.53	2.30	3.07
	N/A		3.41	6.82	10.23	13.64
Max Operating Temperature	°C		130.00	130.00	130.00	130.00
Maximum Temp. Rise	°C		110.00	110.00	110.00	110.00
Coil Resistance (6 lead @ 25°C)	Ω		4.24	8.48	12.71	16.95
Coil Resistance (6 lead @ Max. °C)	Ω		6.07	12.15	18.22	24.30
Inductance @ 1kHz	mH		0.83	1.67	2.50	3.33
Thermal Resistance	°C/W		2.00	1.00	0.67	0.50
Continuous Power (Max. °C)	W		55.00	110.00	165.00	220.00
Continuous Power, mounted to plate**(Max. °C)	W		33.65	57.19	79.00	100.20
Motor Constant	lbf/sqrt(W)		0.31	0.44	0.54	0.62
	N/sqrt(W)		1.38	1.95	2.39	2.76
Peak Power (Max. °C, 10% Duty) ***	W		550.00	1100.00	1650.00	2200.00
Back EMF Constant	V/inch/s		0.09	0.17	0.26	0.35
	V/m/s		3.41	6.82	10.23	13.64
Electrical Time Constant (@ 25°C)	ms		0.20	0.20	0.20	0.20
(@ 130°C)	ms		0.14	0.14	0.14	0.14
Maximum Line to Line Voltage	Vrms & DC		250.00	250.00	250.00	250.00
Coil Weight	Pounds		0.06	0.13	0.19	0.26
	Kilograms		0.03	0.06	0.09	0.12
Coil length (inside magnet track)	inch		2.41	4.81	7.21	9.61
	mm		61.21	122.17	183.13	244.09
Delta Connected Specifications	UNITS	Dash #	1	2	3	4
Force Constant	lbf/A		0.8	1.5	2.3	3.1
	N/A		3.4	6.8	10.2	13.6
Phase Resistance (D @ 25°C)	Ω		2.8	5.65	8.5	11.3
Phase Resistance (D @ Max. °C)	Ω		4.0	8.1	12.1	16.2
Inductance @ 1kHz	mH		0.6	1.1	1.7	2.2
Continuous Force	lbf		2.3	4.6	6.9	9.2
	N		10.2	20.5	30.7	40.9
Continuous Current	A		3.00	3.00	3.00	3.00
Peak Force*	lbf		4.6	9.2	13.8	18.4
	N		20	41	61	82
Peak Current*	A		6.00	6.00	6.00	6.00
Continuous Force, aluminum plate heat sink** (see below)	lbf		2.2	4.1	5.9	7.6
	N		9.8	18.1	26.1	33.9
Back EMF Constant	V/inch/s		0.1	0.2	0.3	0.3
	V/m/s		3.4	6.82	10.2	13.6
WYE connected Specifications	UNITS	Dash #	1	2	3	4
Force Constant	lbf/A		1.3	2.7	4.0	5.3
	N/A		5.9	11.8	17.7	23.6
Phase Resistance (Y @ 25°C)	Ω		8.5	17.0	25.4	33.9
Phase Resistance (Y @ Max. °C)	Ω		12.1	24.3	36.4	48.6
Inductance @ 1kHz	mH		1.7	3.3	5.0	6.7
Continuous Force	lbf		2.8	5.7	8.5	11.3
	N		12.6	25.1	37.7	50.3
Continuous Current	A		2.13	2.13	2.13	2.13
Peak Force*	lbf		8.0	15.9	23.9	31.9
	N		35	71	106	142
Peak Current*	A		6.00	6.00	6.00	6.00
Continuous Force, aluminum plate heat sink** (see below)	lbf		2.2	4.1	5.9	7.6
	N		9.8	18.1	26.1	33.9
Back EMF Constant	V/inch/s		0.1	0.3	0.4	0.6
	V/m/s		5.9	11.8	17.7	23.6

* 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 0.250Ωm 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 258C free air.
- *** Theoretical - limited by cable capability.
- Magnet Track weight is 1.94kg/m (1.3 pounds/foot).