

COOL MUSCLE™

INTEGRATED SERVO SYSTEMS



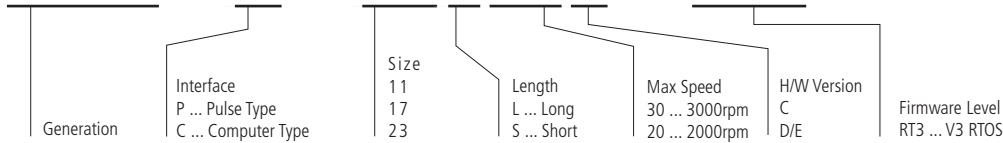
CREATING INNOVATION WITH MOTION CONTROL



CM1 SPECIFICATIONS

■ Model Name

CM1 - C - 11L30D - RT3



■ Specifications

MODEL	CM1-□-11L30	CM1-□-11S30	CM1-□-17L30	CM1-□-17S30	CM1-□-23L20	CM1-□-23S30
Mass lbs (kg)	2.4 (1.08)	1.2 (0.54)	1.05 (0.48)	0.7 (0.32)	0.65 (0.29)	0.5 (0.23)
Maximum Speed	3000rpm	3000rpm	3000rpm	3000rpm	2000rpm	3000rpm
Continuous Torque Nm(oz.in)	0.055 (7.78)	0.027 (3.8)	0.36 (50.98)	0.084 (11.89)	0.89 (126)	0.3 (42.48)
Peak Torque Nm(oz.in)	0.078 (11.1)	0.039 (5.5)	0.53 (75)	0.12 (16.56)	1.24 (175.6)	0.42 (65.14)
Load Inertia Allowance g-cm ² (oz-in-s ²)	180 (2.5 x 10 ³)	80 (1.1 x 10 ³)	760 (1.07 x 10 ³)	380 (5.38 x 10 ³)	4.6 x 10 ³ (6.5 x 10 ³)	1.4 x 10 ³ (1.9 x 10 ³)
Motor Inertia g-cm ² (oz-in-s ²)	18 (2.5 x 10 ⁻⁴)	8 (1.1 x 10 ⁻⁴)	74 (1.04 x 10 ⁻³)	36 (5.09 x 10 ⁻⁴)	3.6 x 10 ² (5.09 x 10 ⁻³)	1.0 x 10 ² (1.4 x 10 ⁻³)
Encoder	Incremental magnetic encoder (50,000 pulses per rotation)					
Control Method	Closed loop vector control					
Input Supply Voltage	DC24V±10%					
Input Supply Current Rated (Continuous Torque/Rated Peak Torque)	1.2A/1.5A	0.8A/1.0A	1.5A/1.8A	0.8A/1.0A	2.6A/3.4A	3.9A/5.1A
Resolution Pulse Rotation (Pulse/Rotation)	200, 400, 500, 1000(default), 2000, 2500, 5000, 10000, 25000,50000, Select by parameter					
Environmental Conditions Operating/Storage Temperature	between 0 °C and 40°C/ between -20°C and +60°C					
Operating Humidity	Less than 90% Relative Humidity					
Shock/Vibration	Less than 10G /Less than 1G					

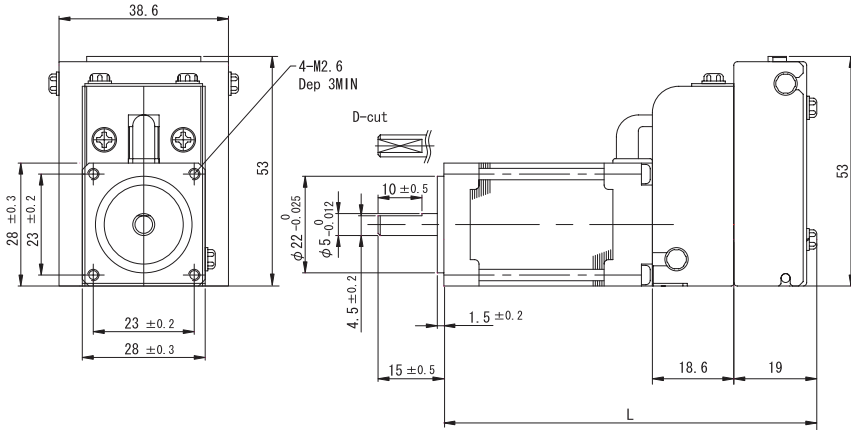
■ I/O Specifications

SIGNAL	Parameter	MIN.	MAX.	UNIT.	
Digital Input 1 & 2	Voltage Range	0	24	Vdc	
	<i>Photo-coupled</i>	Low Level	0	0.8	Vdc
	<i>Sinking/Sourcing</i>	High Level	2.4	24	Vdc
	Operating Current	7	15	mA	
	<i>f</i>		-	500	KHz
<i>UART 0 & 1 RX/TX</i>	Pulse Width	0.8	-	µs	
	Voltage Range	0	5	Vdc	
	Communications Speed	9600	512000	Kbps	
	Voltage Range	0	5	Vdc	
Digital Input 3 & 4	Voltage Range	0	5	Vdc	
	<i>Sourcing</i>	Low Level	0	0.8	Vdc
	High Level	2.4	5	Vdc	
	Pulse Width	120	-	µs	
<i>Analog Functions (IN4)</i>	Hardware A/D Resolution	-	10	bits	
	Software Oversampling	-	13	bits	
Output 1 & 2	Maximum Voltage	-	24	Vdc	
	Current - see note	-	20	mA	
5Vdc Output	Voltage Range	4.5	5	Vdc	
	Output Current - see note	-	50 *	mA	

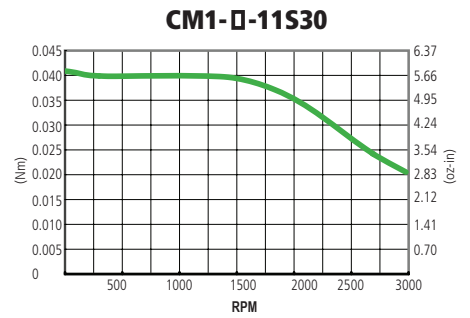
*Note: Combined current draw of O1, O2, IN3, IN4 and 5Vdc source should not exceed 200mA. O1 & O2 should not exceed 50mA each.

CM1 DRAWINGS

■ CM1 - □ - 11S30/11L30 DIMENSIONS (UNIT:mm)

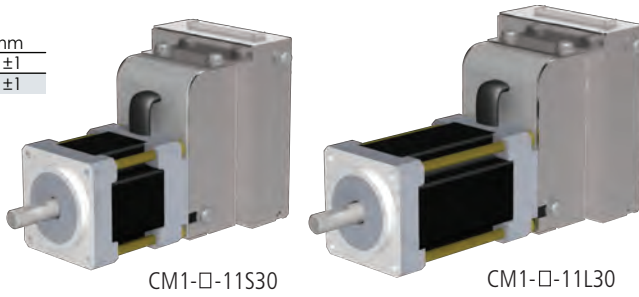


■ Torque Curve

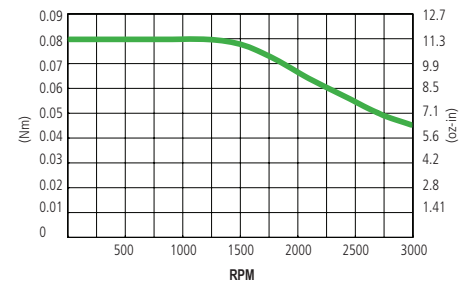


■ Motor Length

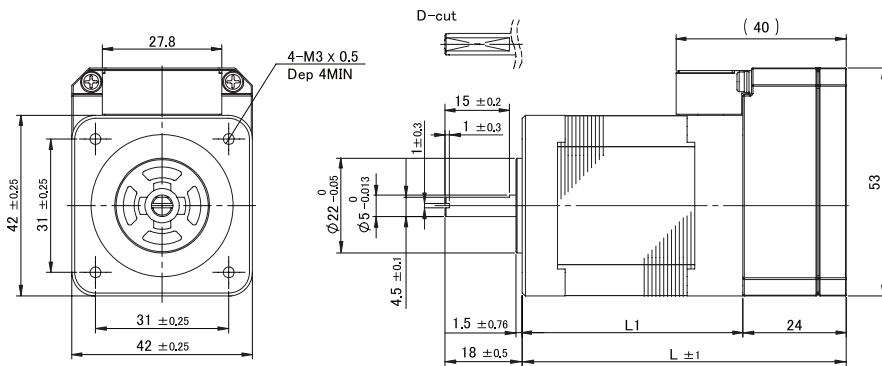
MODEL	L mm
CM-□-11L30	85 ± 1
CM-□-11S30	71 ± 1



CM1-□-11L30

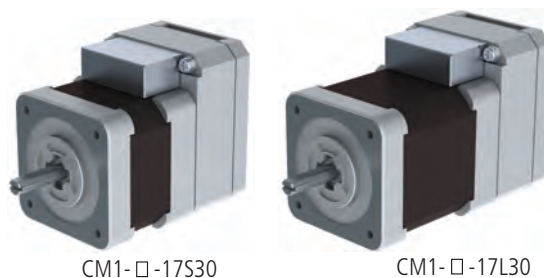


■ CM1 - □ - 17S30/17L30 DIMENSIONS (UNIT:mm)

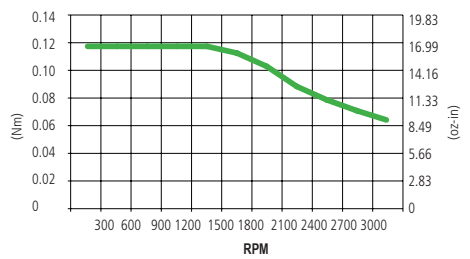


■ Motor Length

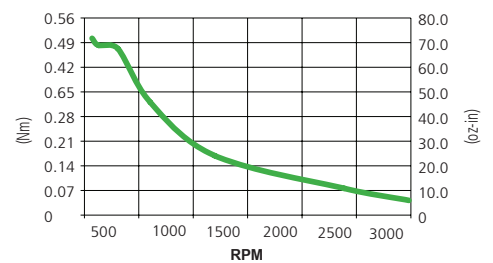
MODEL	L inch(mm)
CM-□-17L30	3 (76.5)
CM-□-17S30	2.38 (60.5)



CM1-□-17S30

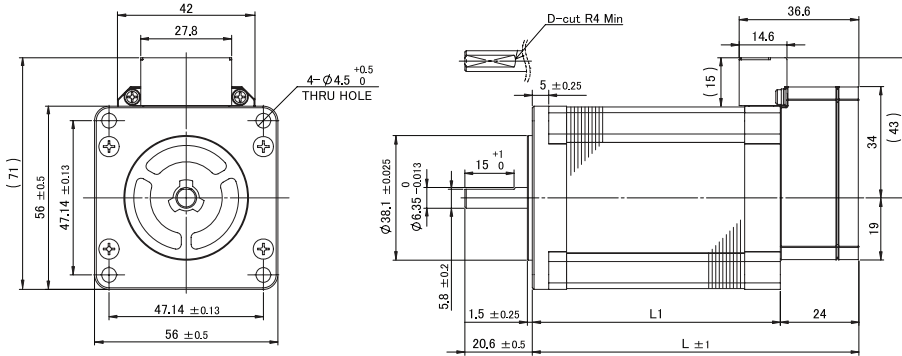


CM1-□-17L30

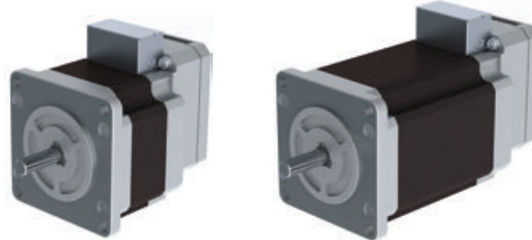


CM1 DRAWINGS

CM1 - □ - 23S30/23L20 DIMENSIONS (UNIT:mm)



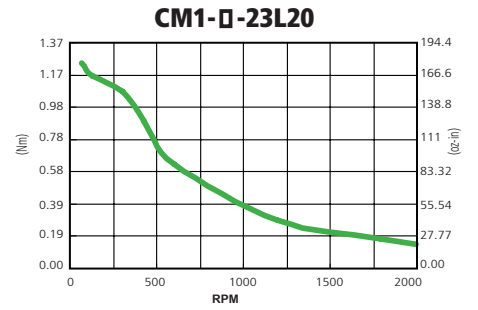
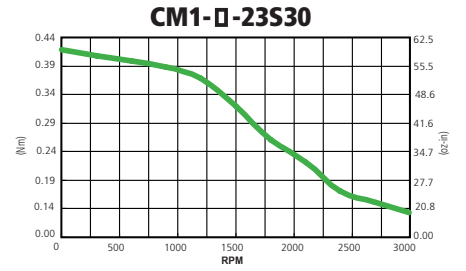
MODEL	L inch(mm)
CM-□-23S30	2.6 (66)
CM-□-23L20	3.93 (100)



CM1-□-23S30

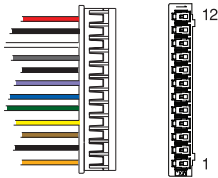
CM1-□-23L20

Torque Curve



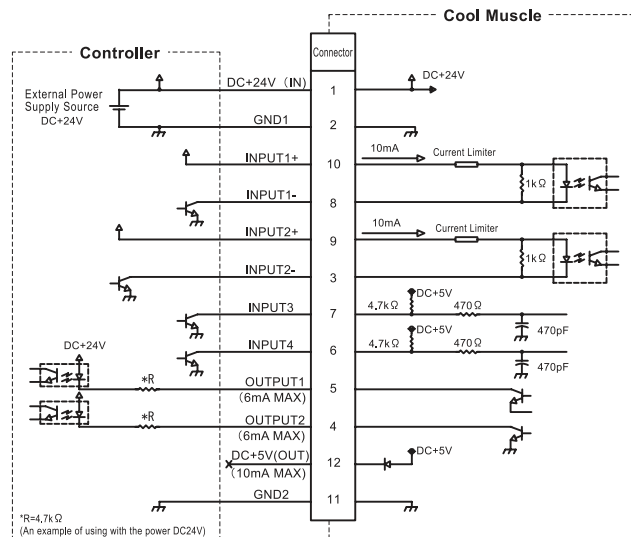
Connector Pin Configurations

CM1C1 Motor Cable Receptacle Housing 51065-1200 (Molex)



No	Wire Color	Function
1	Orange	+24Vdc
2	Black	Power Ground
3	Brown	Input 2-
4	Yellow	Output 2
5	Green	Output 1
6	Blue	Input 4
7	Violet	Input 3
8	Black	Input 1-
9	Grey	Input 2+
10	White	Input 1-
11	Black	Signal 5Vdc Ground
12	Red	+5Vdc Output

Connection Example





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