



## CM1-E Integrated EtherCAT® Servo System

The intelligence and efficiency of the Cool Muscle servos, combined with an EtherCAT interface.

The CM1-E motor is fully EtherCAT compliant, and includes rotary ID selectors (Explicit Device ID) as an option for systems requiring manual addressing using either the legacy or current ID standard. The CM1-E retains all the capabilities of the standard CM1, including the advanced H Infinity controller, programmable functions, and a highly responsive vector drive. Also unique to the CM1-E is a 4 pin 24Vdc input, allowing separate power inputs for the drive and controls. Functional safety can now be handled by dropping power to the drive without losing position or communications on the EtherCAT network.

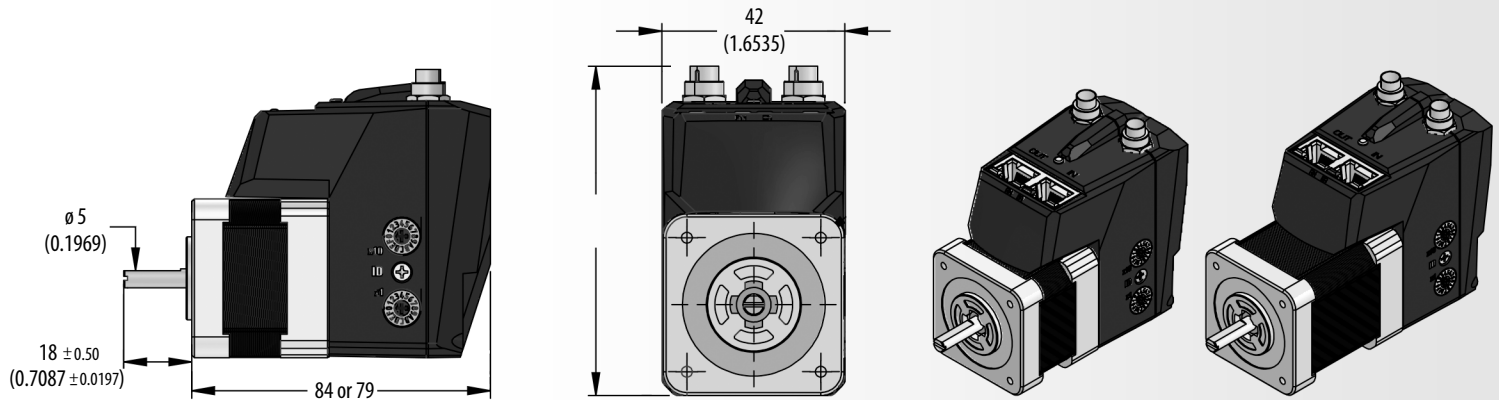
**COOL MUSCLE™**  
INTEGRATED SERVO SYSTEMS

**EtherCAT®**

# CM1-E-17S30/17L30

## CM1 - E - 17 L 30 D

GENERATION	INTERFACE	SIZE	LENGTH	MAX. SPEED	H/W VERSION
E	EtherCAT CiA 402	17 or 23	L - Long S - Short	30 - 3000rpm 20 - 2000rpm	Cor D

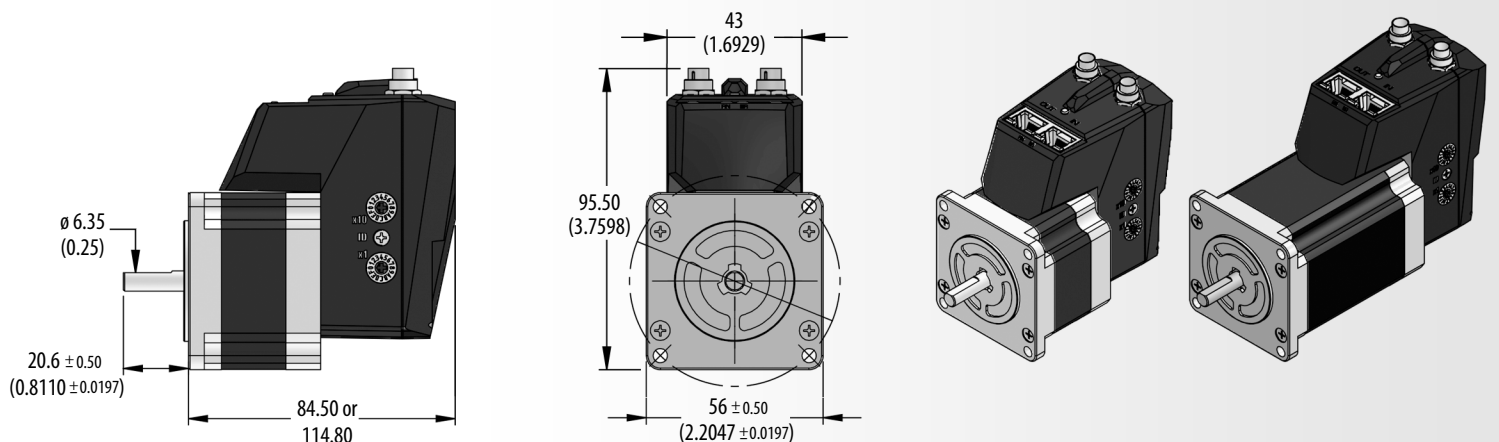


### MOTOR FEATURES

- Integrated motor, drive, 50kppr encoder, I/O, and EtherCAT slave controller
- Closed loop servo control with Vector Drive and H Infinity controller
- NEMA 17 and NEMA 23 sizes
- Separate 24V drive and control power
- Energy efficient and cool running

### EtherCAT FEATURES

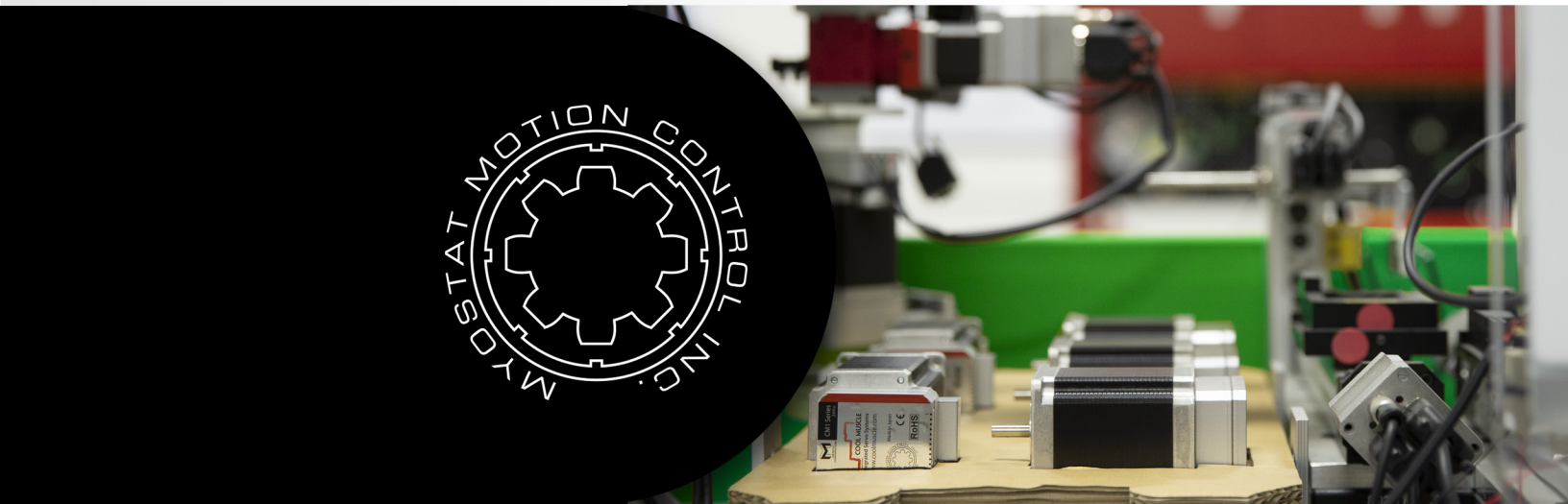
- Implements CiA402 drive profile
- CSP, CSV, PV, PP and HM modes available
- Integrated IO mapped to PDO objects
- 1ms PDO timing for accurate synchronized motion
- Explicit Device ID implemented for enhanced device identification



# CM1-E-23S30/23L20

# SPECIFICATIONS

MODEL	CM1-E-17L30D	CM1-E-17S30D	CM1-E-23L20D	CM1-E-23S30D
Mass (kg)	0.54	0.4	1.18	0.6
Maximum Speed	3000rpm	3000rpm	2000rpm	3000rpm
Continuous Torque Nm(oz.in)	0.36 (50.98)	0.084 (11.89)	0.89 (126)	0.3 (42.48)
Peak Torque Nm(oz.in)	0.53 (75)	0.12 (16.56)	1.24 (175.6)	0.42 (65.14)
Load Inertia Allowance g-cm <sup>2</sup> (oz-in-s <sup>2</sup> )	760 (1.07 x 10 <sup>-2</sup> )	380 (5.38 x 10 <sup>-3</sup> )	4.6 x 10 <sup>3</sup> (6.5 x 10 <sup>-2</sup> )	1.4 x 10 <sup>3</sup> (1.9 x 10 <sup>-2</sup> )
Motor Inertia g-cm <sup>2</sup> (oz-in-s <sup>2</sup> )	74 (1.04 x 10 <sup>-3</sup> )	3.6 (5.09 x 10 <sup>-4</sup> )	3.6 x 10 <sup>2</sup> (5.09 x 10 <sup>-3</sup> )	1.0 x 10 <sup>2</sup> (1.4 x 10 <sup>-3</sup> )
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)	1.5A/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 <i>Select by parameter</i>			
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			



## POWER CONNECTOR

CONNECTOR	PART #	SUPPLIER
Motor Connector	09 0081 20 04	Binder
Female cable side mating connector	99 0080 102 04	Binder
4m power cable	CM1M9-4F-4000	Myostat

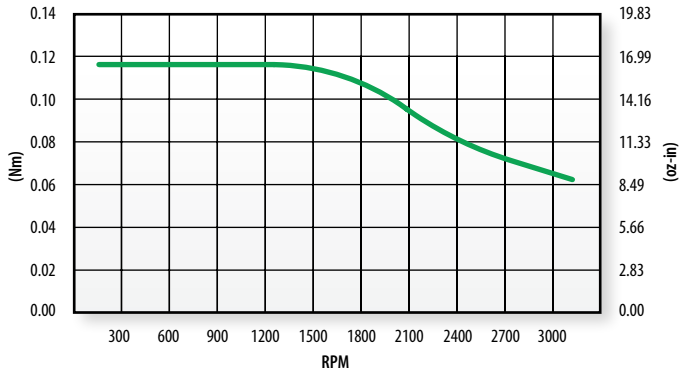
## I/O CONNECTOR

CONNECTOR	PART #	SUPPLIER
Motor Connector	09 0481 22 08	Binder
Female cable side mating connector	99 0480 102 08	Binder
4m I/O cable	CM1M9-8F-4000	Myostat

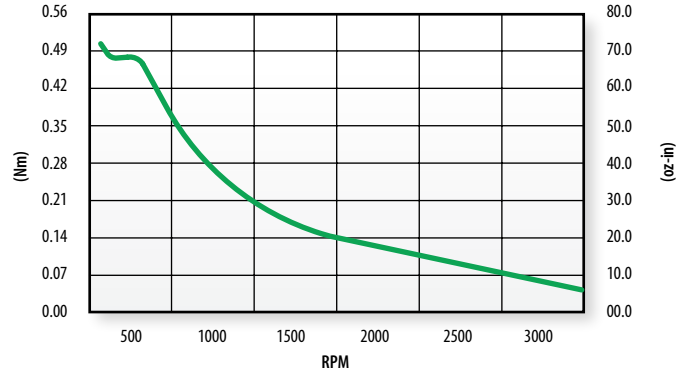
Click here to view [User Guide](#)

**SPECIFICATIONS**

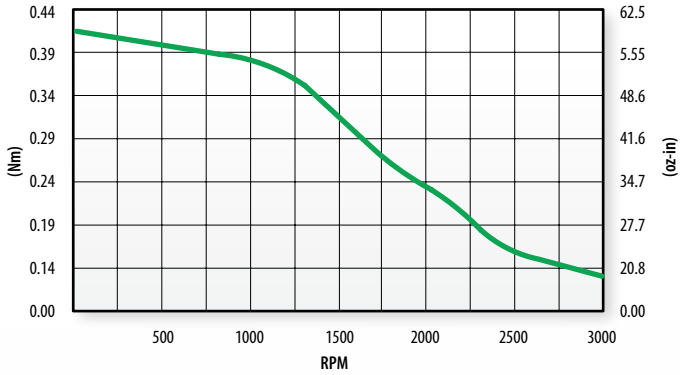
17S30D



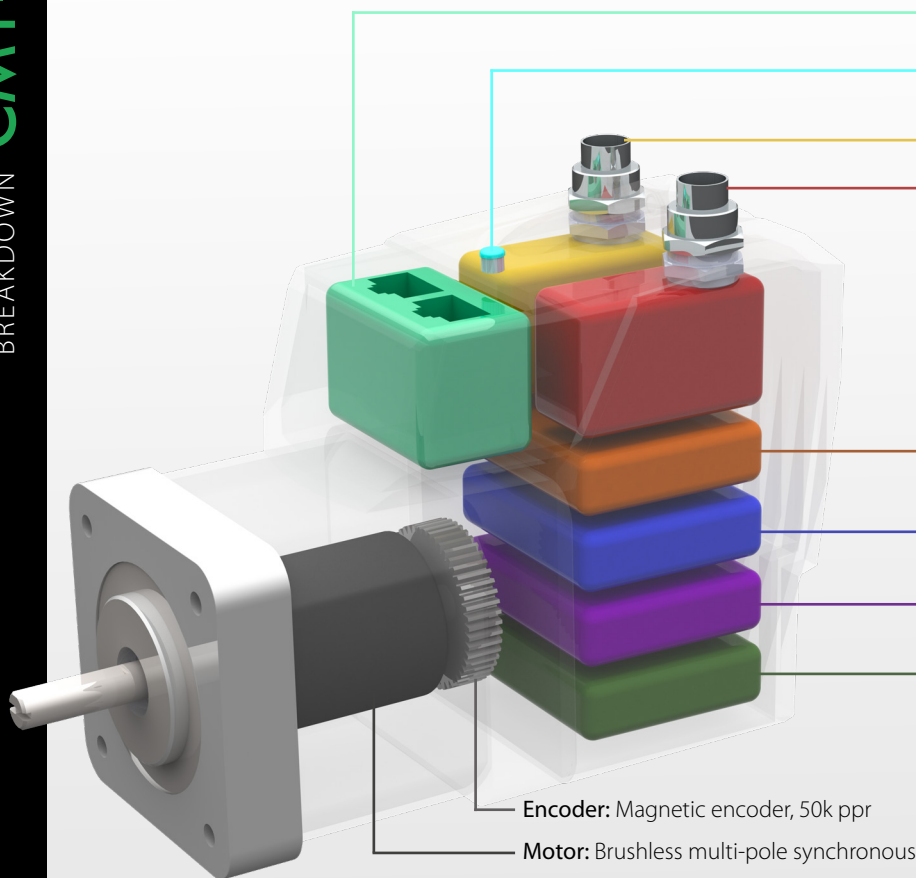
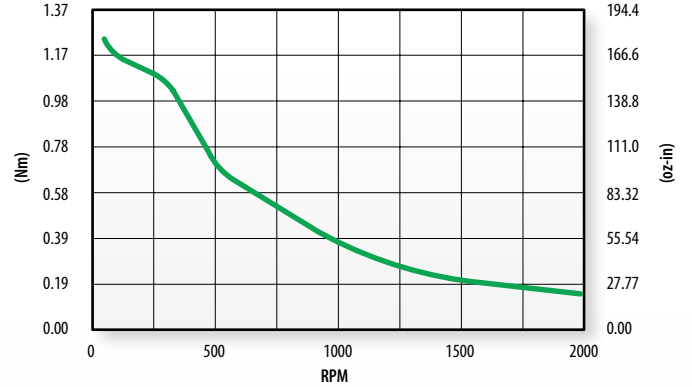
17L30D



23S30D



23L20D



**Interface:** EtherCAT CiA 402, 2 port RJ45 hub

**Status LED:** Full EtherCAT status LEDs plus system, and motor status indicator

**Power:** 24VDC, separate Drive and Controller power

**I/O:** Digital Inputs, 1 Analog Input 2 Digital Outputs

**USB:** Micro USB connector for software updates

**Controller:** Real-time OS kernel with H Infinity

**Drive:** Closed Loop Position and Closed Loop Current Vector drive

**Programmability:** Adjustable pre-defined functions and parameter settings

**Encoder:** Magnetic encoder, 50k ppr

**Motor:** Brushless multi-pole synchronous