

Key Features

- Industry Standard CiA 402 Motion Profile support
 - PP, PV, HM, TQ, CSP, CSV, and CST modes
- Dual Port Ethernet switch onboard
 - Simplifies wiring, reduces cost
- Dynamic Mapping of Process Data Objects (Cyclic Data Exchanges)
- Real time coordinated control using Distributed Clock (DC)
- USB interface for programming, configuration and live diagnostics
- RS-485 Half Duplex communications port
 - Modbus Remote Terminal Unit (RTU) Slave
- Full access to SmartMotor™ programmable autonomous control features while in slave mode allowing special user-programmed functions
 - Adaptable distributed control
 - High speed registration
 - Flexible homing abilities
 - Local cam execution
 - Local EtherCAT™ error reporting and diagnostics
- Key local/standalone capabilities (see manual for full list)
 - Floating-point math and trigonometric functions with 32-bit precision results
 - Dual trajectory generators enabling relative/absolute position/velocity moves on top of gearing or camming
 - Advanced gearing supports preset traverse and take-up winding parameters
 - Advanced camming with cubic spline interpolation and dynamic frequency/amplitude changes
 - Highly configurable local I/O for motion control and general-purpose use in user programs:
 - Drive enable input, fault output, travel limits, registration and position capture
 - External encoder input supporting A-quad-B or Step-and-Direction
 - Total of 7 configurable inputs
 - High-current outputs with external brake-control function



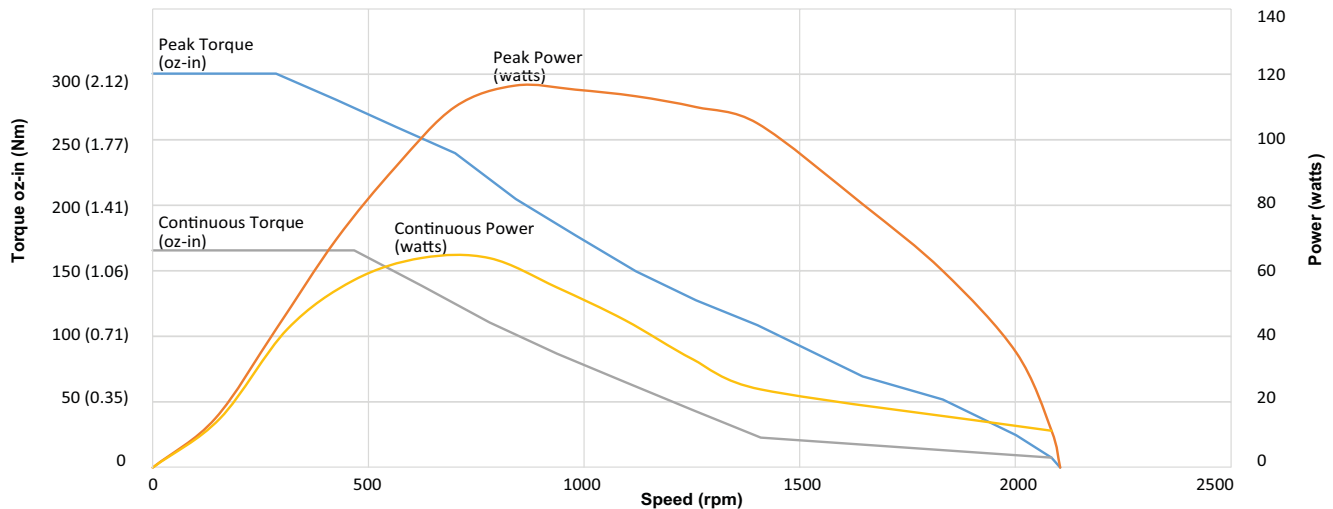
Specifications at 25°C

SmartMotor™ Series	SM23216MH-EEC	
Continuous Torque at 48 volts	165	oz-in
	1.17	N-m
Peak Torque	300	oz-in
	2.12	N-m
Nominal Continuous Power	60	watts
Nominal Peak Power	115	watts
No Load Speed	2,250	rpm
Encoder Resolution	4,000	counts/rev
Weight	1.70	lb
	0.77	kg
Shaft Diameter	0.394	in
	10.00	mm
Shaft, Radial Load	15.00	lb
	6.80	kg
Shaft, Axial Thrust Load	3.00	lb
	1.36	kg

Maximum temperature: 85°C at electronics, 130°C at windings
 Recommended ambient temperature range: 0°C – 50°C
 Storage temperature range: -10°C – 85°C
 Relative humidity: maximum 90%, noncondensing

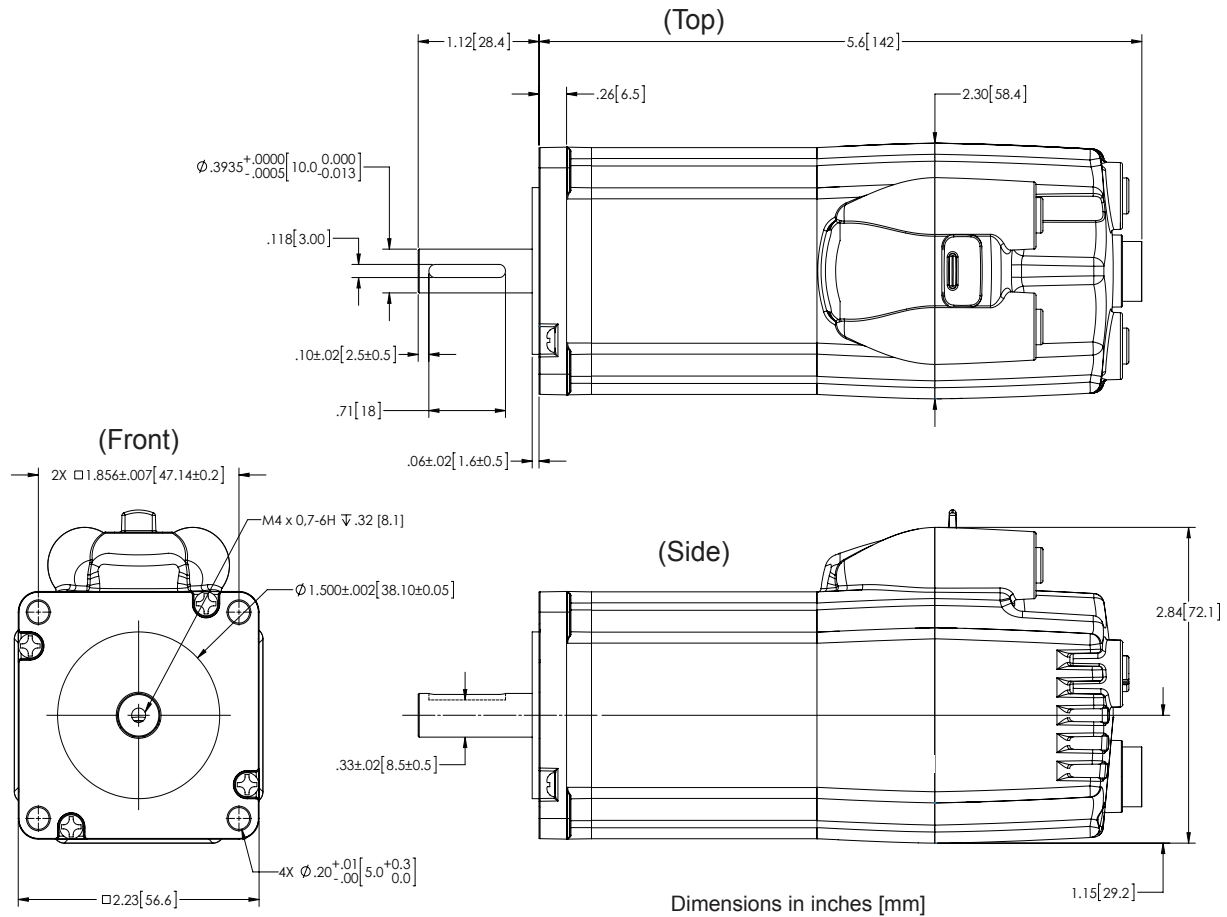
Power Chart

SM23216MH-EEC motor Torque vs. Speed, 48 volts, MDC commutation, 25°C ambient (curves are derated at higher ambient)



Continuous rating based on 25°C ambient temperature, motor mounted to a 6x6x¼ inch aluminum heat sink, and electronics/windings below maximum temperature. Peak torque is available for 3 seconds at a 10% duty cycle.

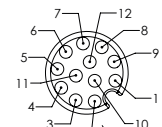
Dimensional Information



Connections

I/Os

PIN	FUNCTION	INPUT OR OUTPUT	POSSIBLE (SELECTABLE) FUNCTIONS	DEFAULT OPERATION
1	IND	INPUT ONLY, DISCRETE OR ANALOG	GENERAL PURPOSE	GENERAL PURPOSE
2	IN1	INPUT ONLY, DISCRETE OR ANALOG	GENERAL PURPOSE	GENERAL PURPOSE
3	IN2/POSLIMIT	INPUT ONLY	POSITIVE LIMIT, OR GENERAL PURPOSE	POSITIVE LIMIT
4	IN3/POSLIMIT	INPUT ONLY	NEGATIVE LIMIT, OR GENERAL PURPOSE	NEGATIVE LIMIT
5	IN4	INPUT ONLY	GENERAL PURPOSE, OR INDEX CAPTURE FOR EXTERNAL ENCODER	GENERAL PURPOSE
6	IN5	INPUT ONLY	GENERAL PURPOSE, OR INDEX CAPTURE FOR INTERNAL ENCODER	GENERAL PURPOSE
7	IN6	INPUT ONLY	GENERAL PURPOSE, G COMMAND, OR HOMING INPUT	GENERAL PURPOSE
8	IN7-DRVEN	INPUT ONLY	DRIVE ENABLE	DRIVE ENABLE
9	OUT8/BRAKE	OUTPUT ONLY	BRAKE OUTPUT OR GENERAL-PURPOSE OUTPUT	BRAKE OUTPUT
10	OUT9-NO FAULT	OUTPUT ONLY	NOT FAULT	NOT FAULT
11	24VDC	N/A	N/A	CONTROL I/O POWER
12	GND	N/A	N/A	MOTOR'S COMMON GROUND



(Back)

ETHERCAT

PIN	FUNCTION
1	+TX
2	+RX
3	-TX
4	-RX

COMMUNICATION

PIN	FUNCTION
1	GND-COMMON
2	R3485B CH0
3	R3485A CH0
4	ENC A+ IN
5	ENC B- IN
6	ENC A- IN
7	5VDC OUT
8	ENC B+ IN

POWER INPUT

PIN	FUNCTION	DESCRIPTION
1	24 VDC	CONTROL/I/O POWER
2	EARTH	CHASSIS GROUND
3	GND	MOTOR'S COMMON GROUND
4	48VDC	MOTOR POWER

NOTE: Motor specifications are subject to changes without notice. Consult website and factory for latest data.