

SmartMotor™ Series	SM34165MT	
Continuous Torque @ 48V	12.58	in-lb
	201	oz-in
	1.42	N-m
Peak Torque	34.88	in-lb
	558	oz-in
	3.94	N-m
Nominal Continuous Power	472	Watt
No Load Speed	4,900	RPM
Max. Continuous Current* @ 4500 RPM	13	Amps
Peak Power @ 3300 RPM	1,120	Watts
Voltage Constant	9.8	V/kRPM
Inductance	0.315	mH
Encoder Resolution	8,000	Counts/Rev
Rotor Inertia	0.0142	oz-in-sec ²
	10.031	10 ⁻⁵ Kg-m ²
Weight	6.0	lb
	2.72	kg
Shaft Diameter	0.500	in
	12.70	mm
Shaft, Radial Load	30	lb
	13.61	kg
Shaft, Axial Thrust Load	3	lb
	1.36	kg
DeviceNet Available	Firmware Option	
PROFIBUS Available		
CANopen Available	Standard	



Operating temperature range: 0°C–85°C

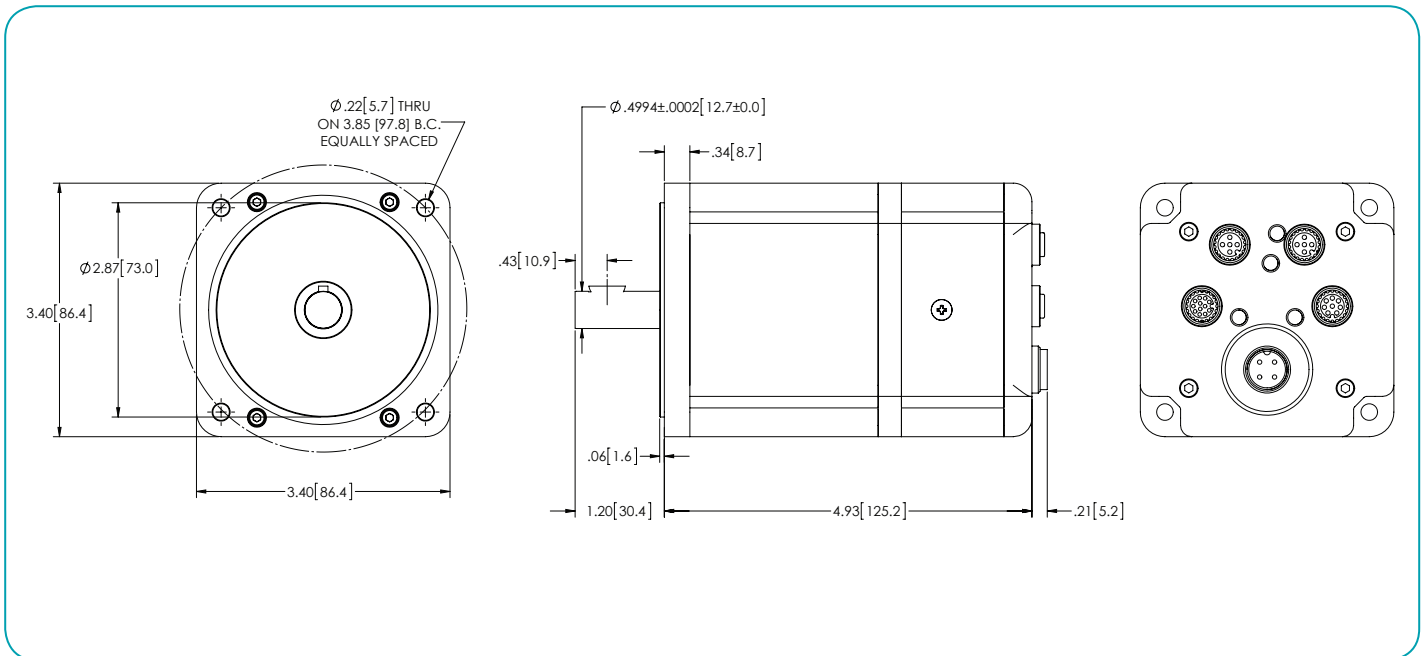
Storage temperature range: -10°C–85°C, noncondensing

IP rating depends on motor options. IP rating may affect motor performance.

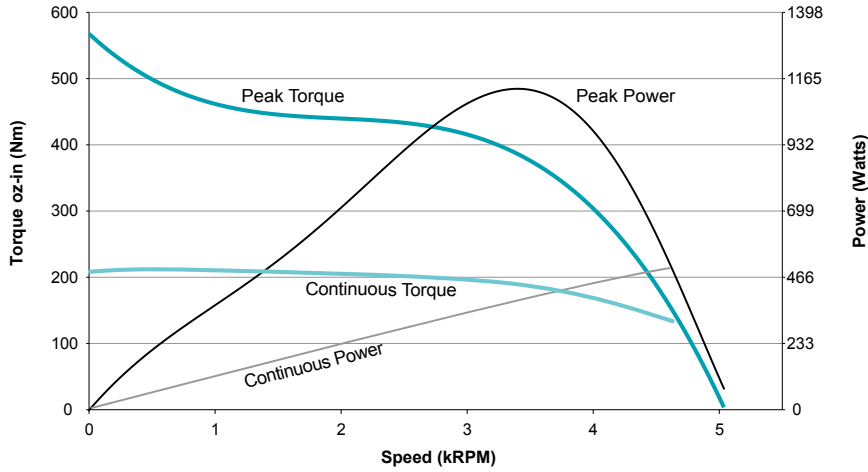
NOTE: Motor specifications are subject to changes without notice. Consult website and factory for latest data.



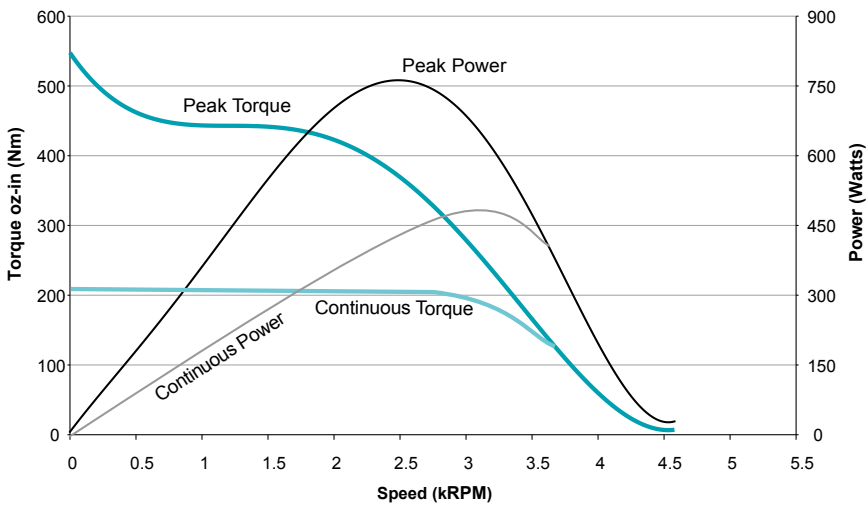
Moog Animatics SmartMotor SM34165MT (No Options) CAD Drawing



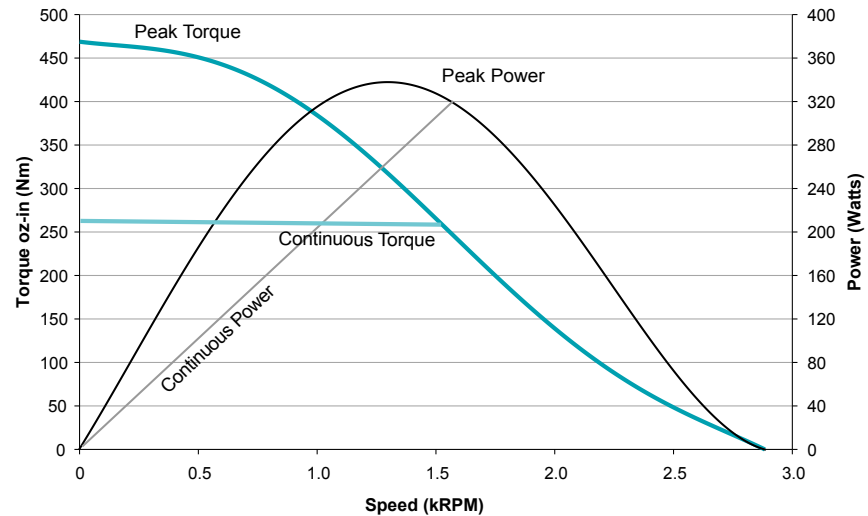
Drive Power and Control Power are Separate Inputs. Control Power is rated to a maximum range of 18 to 32VDC. Drive Power is from 18 to 48VDC max.



SM34165MT MDE Mode at 48 VDC at rise to 85°C with PFC1500W-48V



SM34165MT MDE Mode at 42 VDC at rise to 85°C with PS42V20A



SM34165MT MDE Mode at 24 VDC at rise to 85°C with PS24V8AG-110

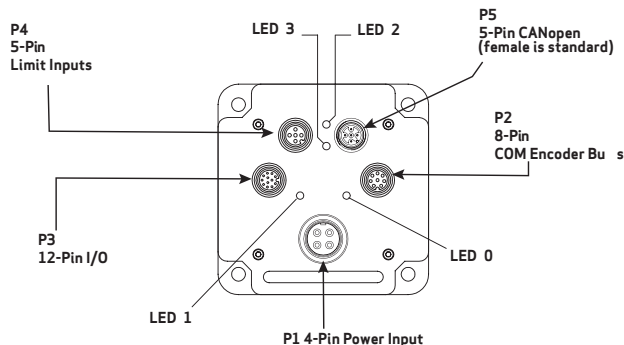
All torque curves based on 25°C ambient. Motors were operated using MDE (Enhanced Drive Mode) Commutation. For ambient temperatures above 25°C, Continuous Torque must be linearly derated to 0% at 85°C.

Class 5 M-Style Connector Pinouts

This table shows the pinouts for the connectors on the Class 5 M-style SmartMotors.

PIN	Main Power	Specifications:	Notes:	P1
1	Control Power In	+12.5V Min, 32V Max	Also Supplies I/O	
2	Chassis Ground	Chassis Ground Only	Not Connected to Common	
3	Control, Com, I/O and Amplifier Ground	Common Ground (Req'd. Ground)	Nonisolated	
4	Amplifier Power In	+12.5V Min, 48V Max	Powers Amplifier Only	
PIN	Communications Connector	Specifications:	Notes:	P2
1	Control, Com, I/O and Amp Ground	Common Ground	Nonisolated	
2	RS-485 B, Com ch. 0	115.2 Kbaud Max		
3	RS-485 A, Com ch. 0			
4	Encoder A+ Input/Output	1.5 MHz Max as Encoder or Step Input	Configurable as Encoder Output	
5	Encoder B- Input/Output	1.5 MHz Max as Encoder or Direction Input	Configurable as Encoder Output	
6	Encoder A- Input/Output	1.5 MHz Max as Encoder or Step Input	Configurable as Encoder Output	
7	+5V Out	250 mA Max		
8	Encoder B+ Input/Output	1.5 MHz Max as Encoder or Direction Input	Configurable as Encoder Output	
PIN	24V I/O Connector	Specifications:	Notes:	P3
1	I/O - 0 GP	150 mAmps Max	These I/O ports also support analog input	
2	I/O - 1 GP			
3	I/O - 4 GP			
4	I/O - 5 GP or Index			
5	I/O - 6 GP or "G" Command	300 mAmps Max		
6	I/O - 7 GP			
7	I/O - 8 GP or Brake Line Output	150 mAmps Max		
8	I/O - 9 GP			
9	Not Fault Out	12.5V Min, 28V Max		
10	Drive Enable Input			
11	+24 Volts Out	Common Ground	Nonisolated	
12	Ground Common			
NOTE: I/O ports input impedance > 10 kohms				
PIN	24V I/O Connector	Specifications:	Notes:	P4
1	+24 Volts Out	150 mAmps Max	From Control Pwr In	
2	I/O - 3 GP -Limit		Configurable (supports analog in)	
3	Ground	Common Ground	Nonisolated	
4	I/O - 2 GP +Limit	150 mAmps Max	Configurable (supports analog in)	
5	I/O - 10 GP			
Note: I/O ports input impedance > 10 kohms				
PIN	CAN Connector	Specifications:	Notes:	P5
1	NC	NC	Input current < 10 mA	
2	+V	NC except DeviceNet		
3	-V (ground)	Common Ground		
4	CAN-H	1 Mbaud Max		
5	CAN-L			

NOTE: All specifications are subject to change without notice. Consult the factory for the latest information.



CAUTION: Exceeding 32 VDC into control power on any of the +24V pins may cause immediate damage to the internal electronics. Exceeding a sustained voltage of 48V to pin 4 of the P1 Power Input may cause immediate damage to the internal electronics. Exceeding these voltage limits will void the warranty.

CAUTION: M-style connectors must be finger tightened only! DO NOT use a tool. Doing so can cause overtightening of the connection, which may damage the connector and will void the warranty.