SM17165D		
Continuous Torque	1.56	in-lb
	25	oz-in
	0.17	N-m
Peak Torque	3.0	in-lb
	48	oz-in
	0.34	N-m
Nominal Continuous Power	85	Watt
No Load Speed	6,637	RPM
Max. Continuous Current* @ 6000 RPM	3.81	Amps
Peak Power @ 4200 RPM	120	Watts
Voltage Constant	7.046	V/kRPM
Inductance	0.90	mH
Encoder Resolution	4,000	Counts/Rev
Rotor Inertia	0.00052	oz-in-sec^2
	3.744	10^{-7} Kg-m^2
Weight	1.2	lb
	0.55	kg
Shaft Diameter	0.197	in
	5.00	mm
Shaft, Radial Load	7	lb
	3.18	kg
Shaft, Axial Thrust Load	3	lb
	1.36	kg
DeviceNet Available	Yes	
PROFIBUS Available		
CANopen Available	Yes	

*Default voltage is 48V. See graphs for additional voltages.

Operating temperature range: 0°C–85°C

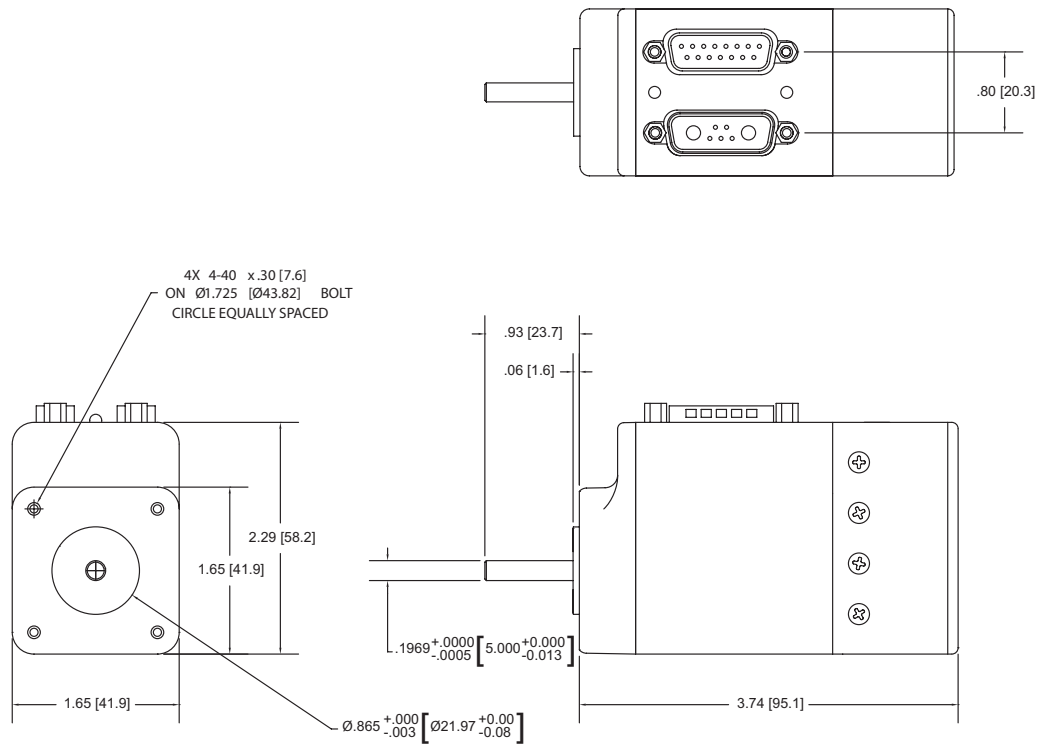
Storage temperature range: -10°C–85°C, noncondensing

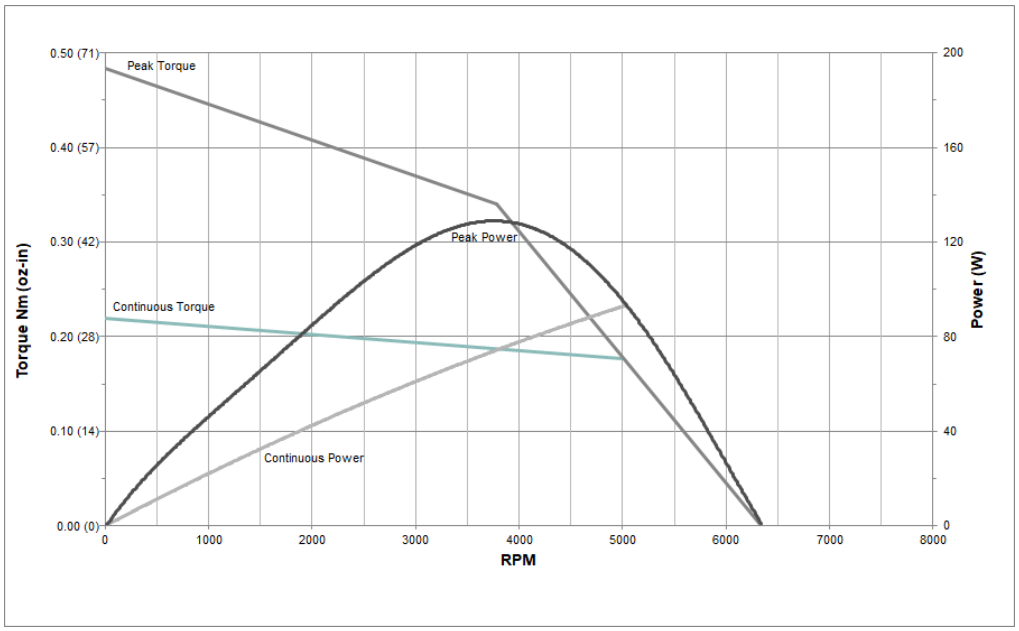
NOTE: Motor specifications are subject to changes without notice. Consult website and factory for latest data.

RoHS COMPLIANT

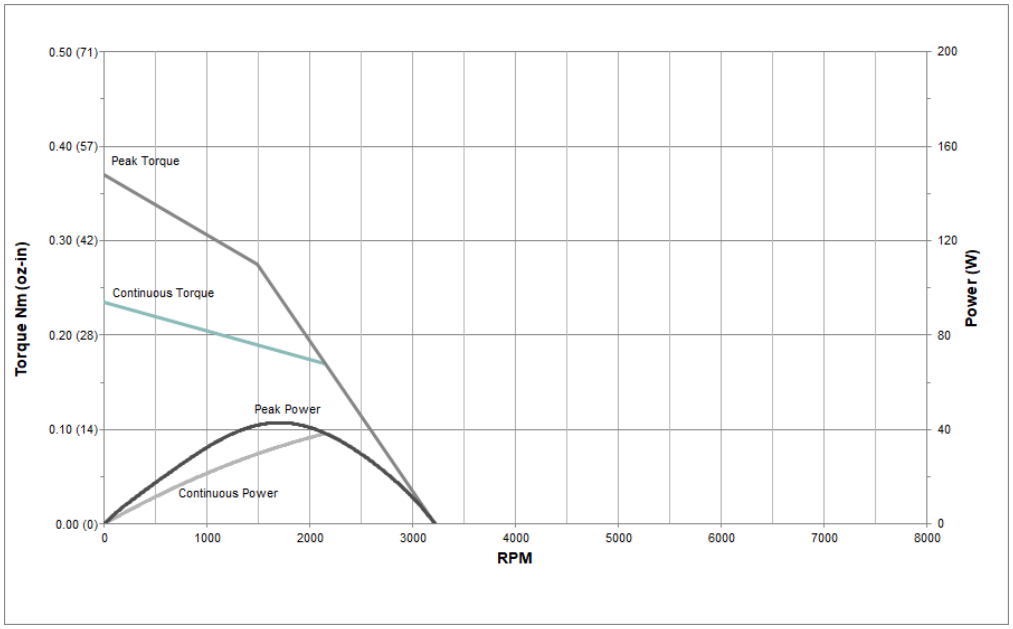
Moog Animatics SmartMotor™ SM17165D (-BRK Options) CAD Drawing

in [mm]





SM17165D at 48 VDC at rise to 85°C



SM17165D at 24 VDC at rise to 85°C

All torque curves based on 25°C ambient.

Motors were operated using MDT (Trapezoidal Drive Mode) Commutation.

For ambient temperatures above 25°C, Continuous Torque must be linearly derated to 0% at 85°C.

Class 5 D-Style Connector Pinouts

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

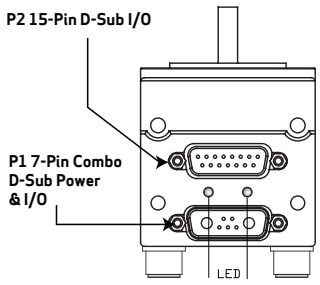
PIN	MAIN POWER	Specifications:	Notes:	P1
1	**I/O – 6 GP, Index Input or "G" Command**; For -CDS7, CAN-L only	25 mAmp Sink or Source 10 Bit 0-5 VDC A/D	Redundant connection on I/O connector	**7W2 Combo D-Sub Connector**
2	**+5 VDC Out**; For -CDS7, CAN-H only	50 mAmps Max (total)		
3	RS-232 Transmit	Com ch. 0	115.2 KBaud Max	
4	RS-232 Receive			
5	Common Ground (typ. SIG Ground)			
A1	Main Power	+24-48 VDC	See NOTE	
A2	Common Ground (req'd. POWER Ground)		Must be Main Power Ground	

PIN	I/O CONNECTOR (5V TTL I/O)	Specifications:	Notes:	P2
1	I/O – 0 GP or Encoder A or Step Input	25 mAmp Sink or Source 10 Bit 0-5 VDC A/D	1.5 MHz Max as Encoder or Step Input	
2	I/O – 1 GP or Encoder B or Direction Input		1.5 MHz Max as Encoder or Direction Input	
3	I/O – 2 Positive Over Travel or GP			
4	I/O – 3 Negative Over Travel or GP			**P2 DB-15 D-Sub Connector**
5	I/O – 4 GP, IIC (SDA) or RS-485 A (Com ch. 1)		115.2 KBaud Max	
6	I/O – 5 GP, IIC (SCL) or RS-485 B (Com ch.1)			
7	I/O – 6 GP, Index Input or "G" Command		Redundant connection on Main Power Connector	
8	Phase A Encoder Output	24 mAmp Sink or Source		
9	Phase B Encoder Output			
10	RS-232 Transmit; For -CDS/7, CAN-L only	Com ch. 0	115.2 KBaud Max	
11	RS-232 Receive; For -CDS/7, CAN-H only			
12	+5 VDC Out	50 mAmp Max (total)		
13	Common Ground (typ. SIG Ground)			
14	Common Ground			
15	Main Power: +20-48 VDC	If DE Option, Control Power separate from Main Power		

NOTE: I/O ports input impedance = 5 kohm (5 kohm pull-up resistor)

NOTE: These motors can operate on power down to +20 VDC, but it is not recommended due to greatly reduced performance — optimum performance is achieved at 48 VDC.

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



CAUTION: Pins 14 and 15 are intended for use with DE series motors for control power only. Attempting to power a non-DE motor through those pins, as main servo-drive power, may result in immediate damage to the electronics, which will void the warranty.