

| SM34165D | |
|-------------------------------------|--|
| Continuous Torque | 9.67 in-lb |
| | 155 oz-in |
| | 1.09 N-m |
| Peak Torque | 14.12 in-lb |
| | 226 oz-in |
| | 1.60 N-m |
| Nominal Continuous Power | 235 Watt |
| No Load Speed | 3,100 RPM |
| Max. Continuous Current* @ 2400 RPM | 6.02 Amps |
| Peak Power @ 1900 RPM | 265 Watts |
| Voltage Constant | 14.98 V/kRPM |
| Inductance | 1.72 mH |
| Encoder Resolution | 8,000 Counts/Rev |
| Rotor Inertia | 0.014 oz-in-sec ² |
| | 9.890 10 ⁻⁵ Kg-m ² |
| Weight | 5.0 lb |
| | 2.27 kg |
| Shaft Diameter | 0.375 in |
| | 9.53 mm |
| Shaft, Radial Load | 15 lb |
| | 6.80 kg |
| Shaft, Axial Thrust Load | 3 lb |
| | 1.36 kg |
| DeviceNet Available | Yes |
| PROFIBUS Available | Yes |
| CANopen Available | Yes |

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



Operating temperature range: 0°C–85°C

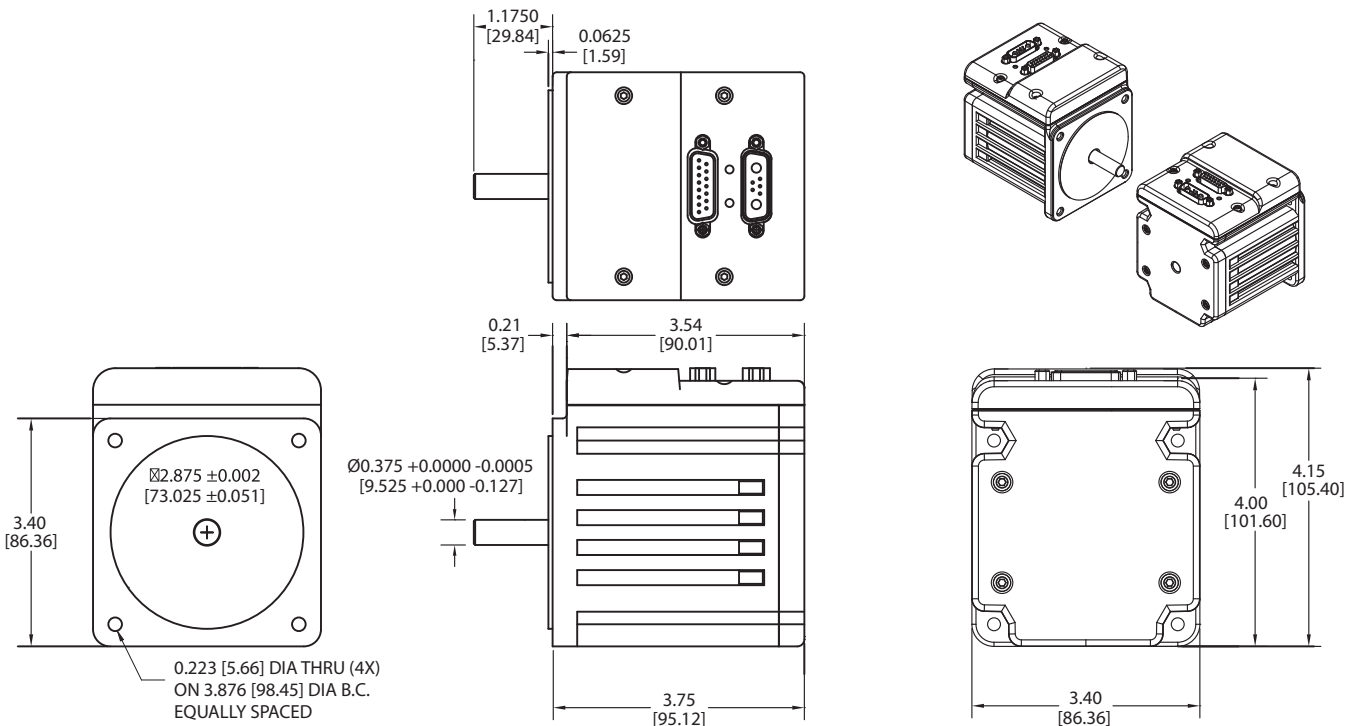
Storage temperature range: -10°C–85°C, noncondensing

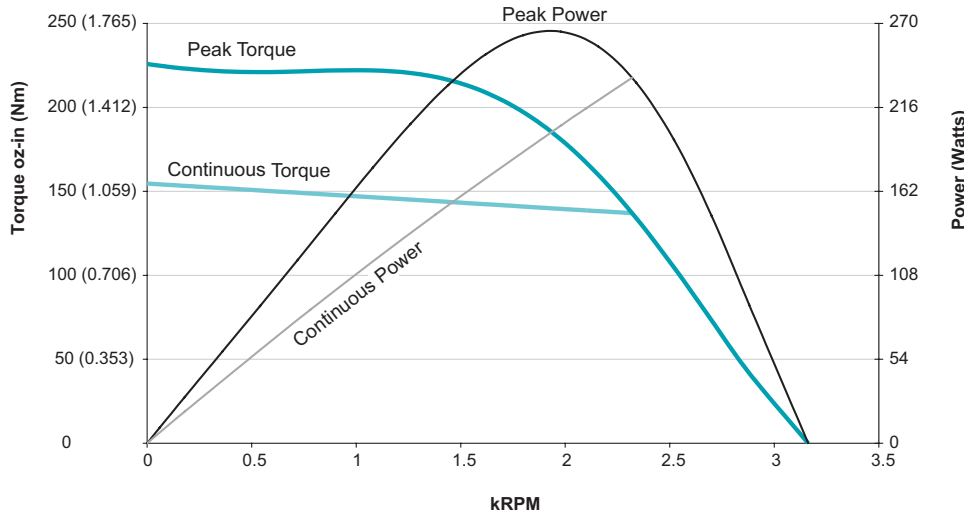
NOTE: Motor specifications are subject to changes without notice. Consult website and factory for latest data.



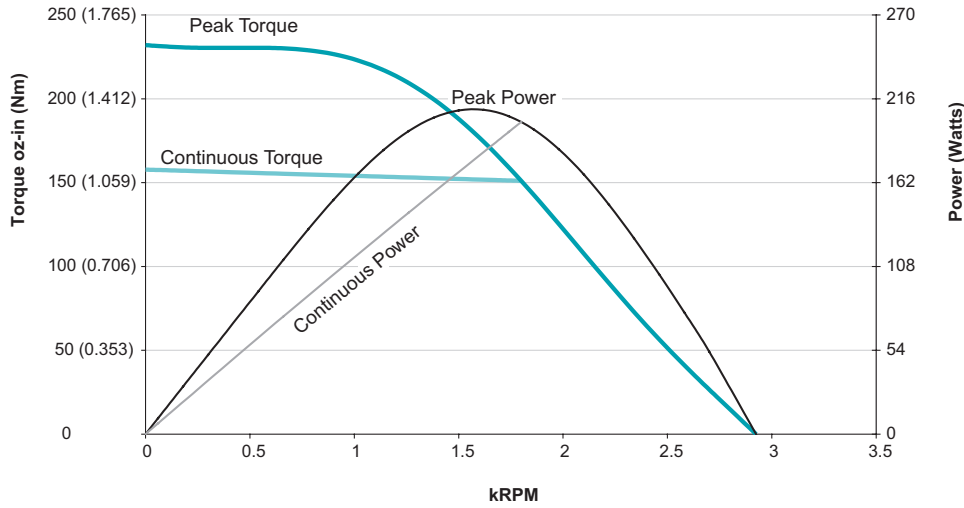
Moog Animatics SmartMotor™ SM34165D (No Options) CAD Drawing

in [mm]

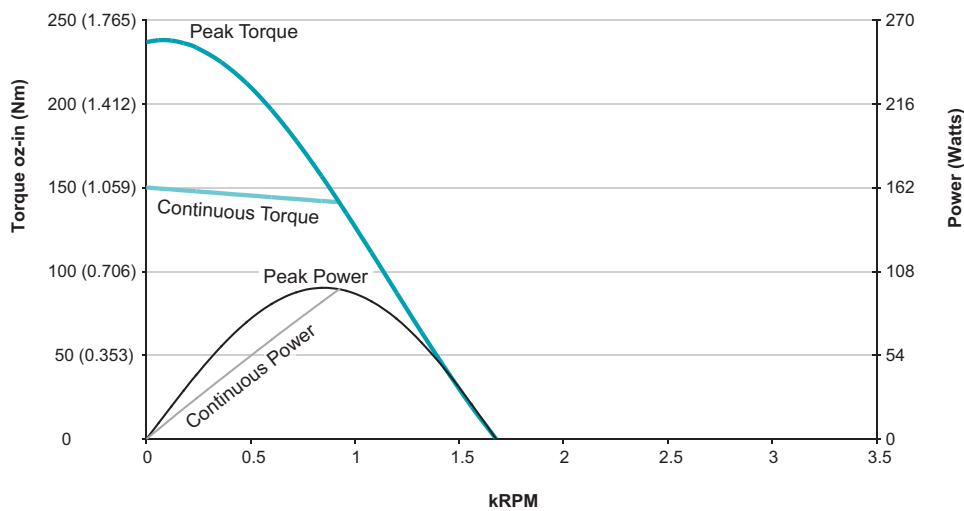




SM34165D
at 48 VDC
at rise to 85°C



SM34165D
at 42 VDC
at rise to 85°C



SM34165D
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.

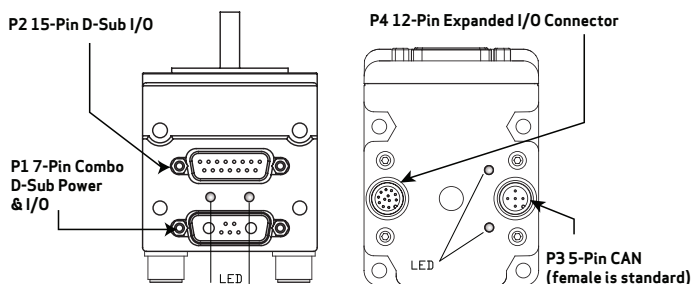
Class 5 D-Style Connector Pinouts

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 | <p>7W2 Combo D-Sub Connector</p> |
| 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 | <p>P2 DB-15 D-Sub Connector</p> |
| 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 | | | |
| 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) | | | | |
| PIN | CAN bus | Connection: | Notes: | P3 |
| 1 | NC | NC | | <p>M12 5-Pin Female</p> |
| 2 | +V | NC except DeviceNet | Input current < 10 mA | |
| 3 | -V (ground, not common) | CAN Ground | Isolated | |
| 4 | CAN-H | 1 MBaud Max | | |
| 5 | CAN-L | 1 MBaud Max | | |
| PIN | Isolated 24 VDC I/O Connector | Max Load (sourcing) | Notes: | P4 |
| 1 | I/O - 16 GP | 150 mAmps | These I/O ports also support analog input | <p>M12 12-Pin Female End View</p> |
| 2 | I/O - 17 GP | | | |
| 3 | I/O - 18 GP | | | |
| 4 | I/O - 19 GP | | | |
| 5 | I/O - 20 GP | 300 mAmps | | |
| 6 | I/O - 21 GP | | | |
| 7 | I/O - 22 GP | | | |
| 8 | I/O - 23 GP | | | |
| 9 | I/O - 24 GP | | | |
| 10 | I/O - 25 GP | | | |
| 11 | +24 Volts Input | 18-32 VDC | | |
| 12 | Ground-I/O (not common) | | Isolated | |

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.

CAUTION: Connectors P3 and P4 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.