

CD1110 Dynamic Rotary Torque Sensor



- Keyed Shaft couplings
- ± 0.05 to ± 2 Nm (± 0.04 to ± 1.6 Lbf-ft)
- Integrated Mechanical Stops
- Aluminum
- Cable Gland or Connector Output
- Built In Amplifier per Request

DESCRIPTION

The CD1110 series of dynamic torque sensors have extremely low operating ranges protected by mechanical stops permitting an overload of 10 times the F.S. measurement range. The rugged design provides accurate bidirectional torque measurements of rotating components up to 2000 rpm. Optionally the CD1110 can receive an on-board amplifier for high level voltage output. Signal amplification is accomplished before transmission via the slip ring assembly, thus eliminating the noise generated by the contacts. It is also possible to eliminate the contact residual drag torque by placing the transducer sensing element directly in contact with the torque to be measured.

With many years of experience as a designer and manufacturer of sensors, Measurement Specialties often works with customers to design or customize sensors for specific uses and testing environments.

To meet your needs we also offer complete turnkey systems. The matched components (sensor, power, amplifier and digital display) are formatted, calibrated and ready for immediate use.

FEATURES

- • Ranges from ± 0.05 to ± 2 Nm (± 0.04 to ± 1.6 Lbf-ft)
- • Integrated Mechanical Stops
- • Keyed shaft mechanical connection
- • High Level Output Model with Integrated Amplifier
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APPLICATIONS

- Low range dynamic applications
- Process control equipment
- Test and Measurement
- Robotics and effectors
- Laboratory and Research

STANDARD RANGES

F.S range in Nm	0.05	0.3	0.5	1	2
F.S range in Lbf-ft	0.04	0.22	0.4	0.8	1.6
Rotation in rpm	2000	2000	2000	2000	2000

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PERFORMANCE SPECIFICATIONS

Ambient Temperature: 20±1°C (unless otherwise specified)

PARAMETERS

Operating Temperature Range (OTR)	-20 to 80°C (-4 to 176°F)
Compensated Temperature Range (CTR)	0 to 60°C (32 to 140°F)
Zero Shift in CTR	<0.5% F.S./50°C (100°F)
Sensitivity Shift in CTR	<2.10 ⁻⁴ /°C of reading [$<1.10^{-4}$ / °F of reading]
Range (F.S.)	±0.05 Nm to ±2Nm [4 lbf-ft to 1.6 lbf-ft]
Velocity of Rotation	≤2000 RPM ; Bidirectional operation
Over-Range	
Without Damage	10 x F.S. or 10Nm [max. 8lb-ft]
Accuracy	
Combined Non-Linearity & Hysteresis	±0.25%F.S.

Electrical Characteristics

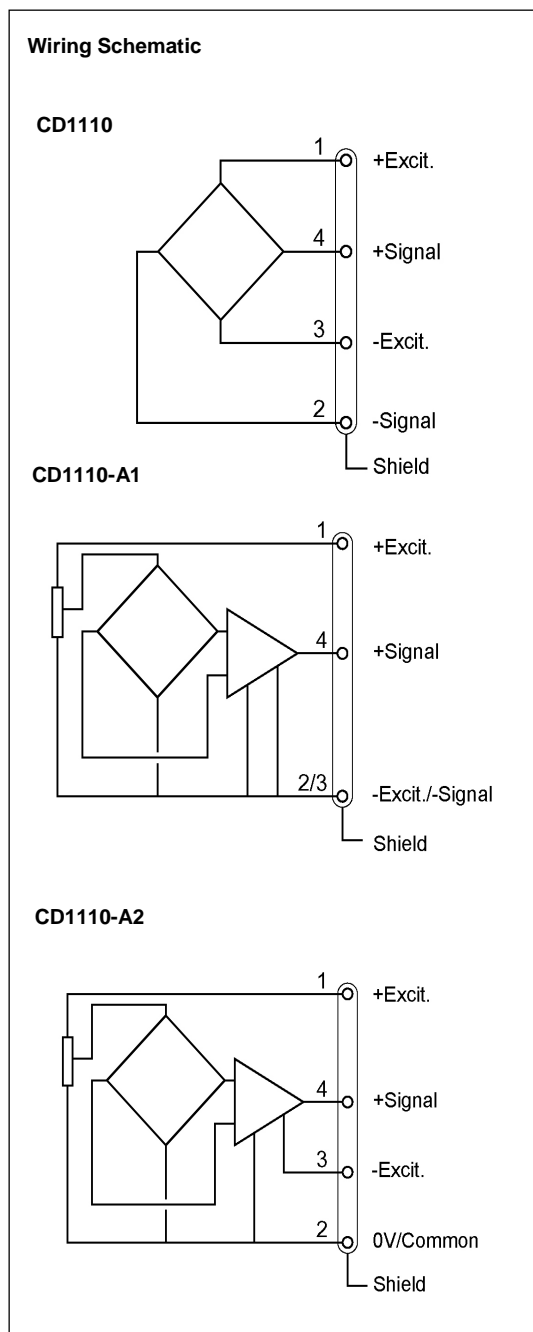
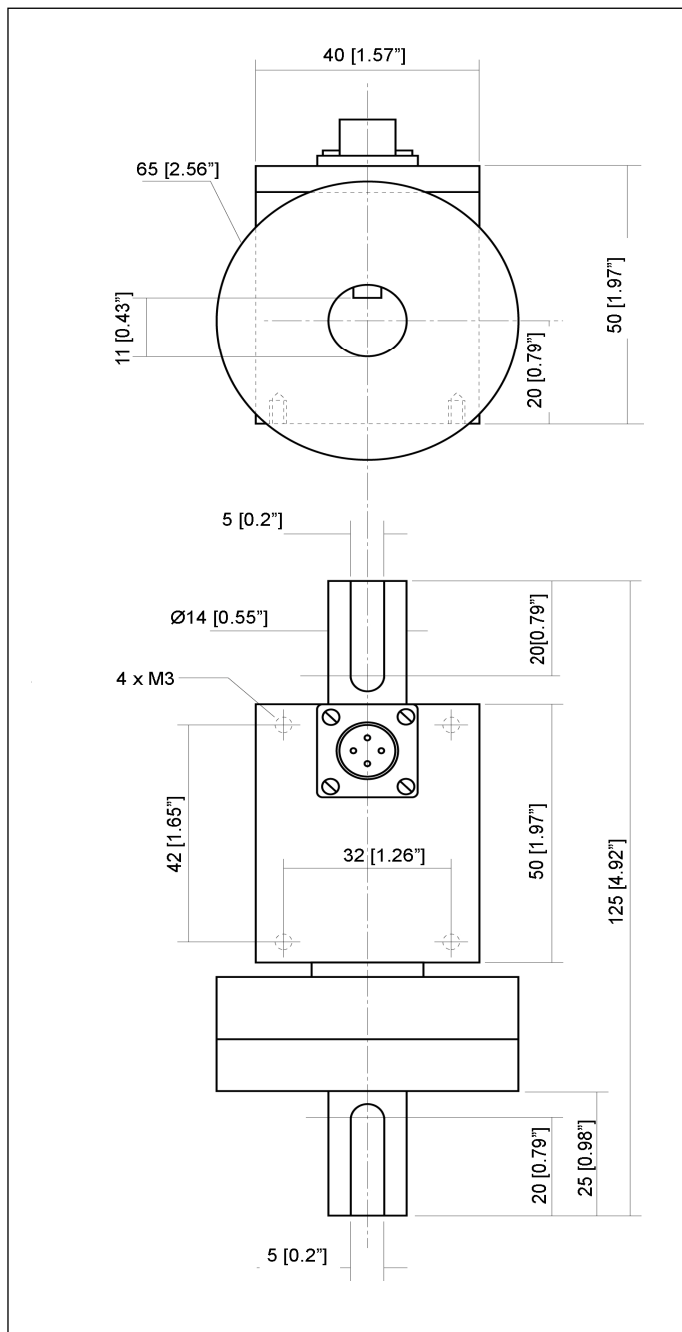
Model	CD1110	CD1110-A1	CD1110-A2
Supply Outage	10Vdc	10 – 30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output	2mV/V	0.5 to 4.5Vdc	±5V
Zero Offset	<±5% F.S.	2.5V ±5% F.S.	0V ±5% F.S.
Input Impedance/Consumption	700Ω	<30mA	<30mA
Output Impedance	700Ω	<10Ω	<10Ω
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

Notes

1. Electrical Termination: Connector output including mate
2. Material: Body and housing in aluminum alloy
3. Connection : Keyed shaft standard, other connection types on request (smooth shaft, cotter pin, etc)

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DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)

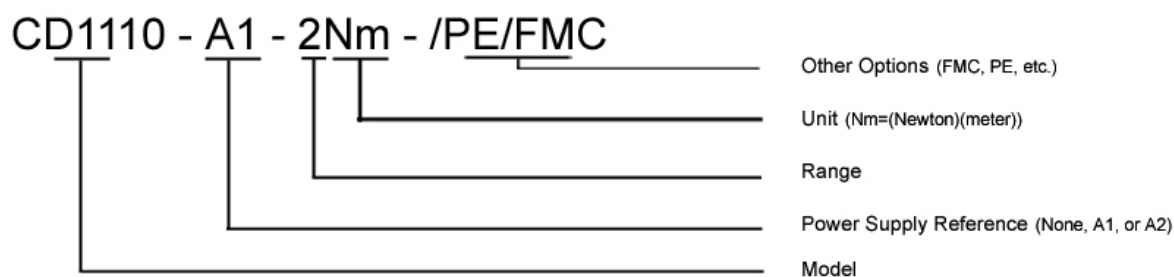


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OPTIONS

A1 : Unipolar Tension
A2 : Bipolar Tension (ex.±15Vdc)
FMC : Mating connector fitting with 2 m [6.6 ft] cable
PE : Cable Gland Termination with 2 m [6.6 ft] cable

ORDERING INFO



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