

CS1120 Reaction Torque Sensor



- **Keyed Shaft Mechanical Connection**
- **±5 to ±2,500 Nm (±4 to ±2,000 Lbf-ft)**
- **Stainless Steel**
- **Cable Gland or Connector Output**
- **Built In Amplifier per Request**

DESCRIPTION

The CS1120 Series has been designed to measure torque from in static applications. Fitted with metallic strain gauges in a Wheatstone bridge circuit, the CS1120 is providing excellent temperature stability. For high-level output a model with integrated amplifier is available.

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 ±5 to ±2,500 N.m (±4 to ±2,000 Lbf-ft)
- For Static Applications
- Keyed Shaft Mechanical Connection
- High Level Output Model with Integrated Amplifier

APPLICATIONS

- Process control equipment
- Weighing calibration tool
- Robotics and effectors
- Laboratory and Research

STANDARD RANGES

F.S range in Nm	5 to 20	21 to 100	101 to 300	301 to 800	801 to 2.5K
F.S range in Lbf-ft	4 to 16	17 to 80	81 to 240	241 to 640	641 to 2K
Stiffness in Nm/rad	2×10^2 to 1.2×10^3	1.2×10^3 to 1×10^4	1×10^4 to 4.1×10^4	4.1×10^4 to 1.2×10^5	1.2×10^5 to 6×10^5
Stiffness in Lbf-ft/rad	0.1×10^2 to 0.8×10^2	0.8×10^2 to 6.9×10^2	6.9×10^2 to 2.7×10^3	2.7×10^3 to 8.2×10^3	8.2×10^3 to 4.1×10^4

CS1120 Reaction Torque Sensor

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.)	±5 Nm to ±2.5kNm [±4 lbf-ft to ±2 klbf-ft]
Over-Range	
Without Damage	1.5 x F.S.
Accuracy	
Combined Non-Linearity & Hysteresis	±0.25%F.S.

Electrical Characteristics

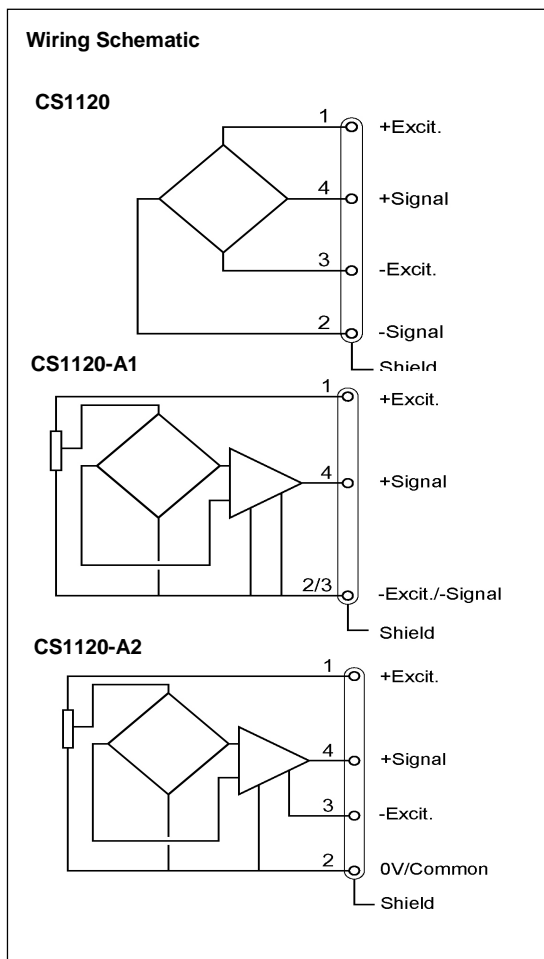
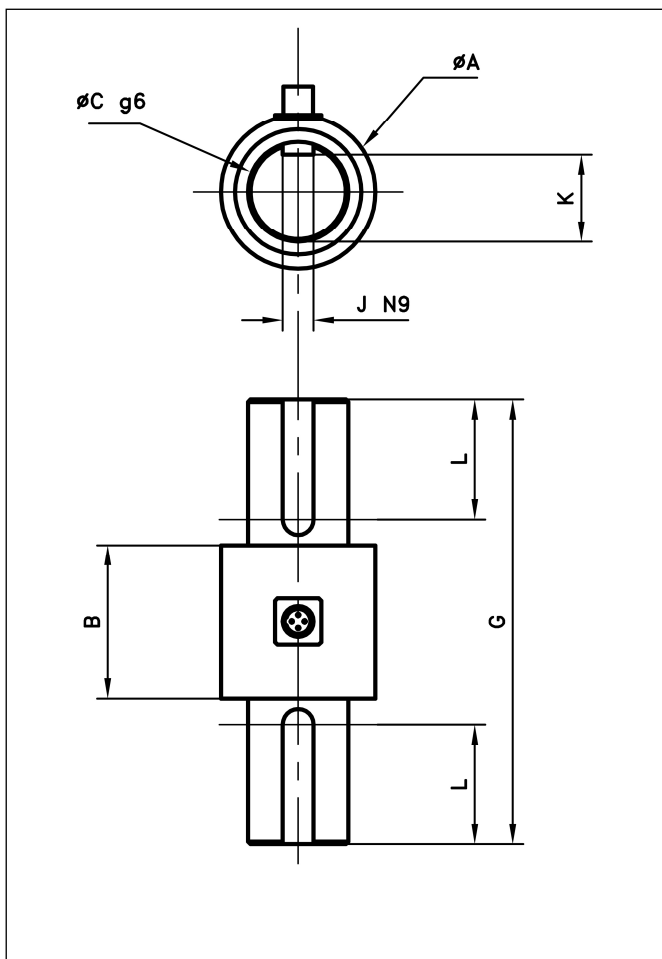
Model	CS1120	CS1120-A1	CS1120-A2
Supply Outage	10Vdc	10 – 30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output	2mV/V	0.5 to 4.5Vdc	±5V
Zero Offset	<±5% F.S.	2.5V ±5% F.S.	0V ±5% F.S.
Input Impedance/Consumption	350 to 700Ω	<30mA	<30mA
Output Impedance	350 to 700Ω	<10Ω	<10Ω
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

Notes

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

CS1120 Reaction Torque Sensor

DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



Mechanical Dimensions in mm [inch]

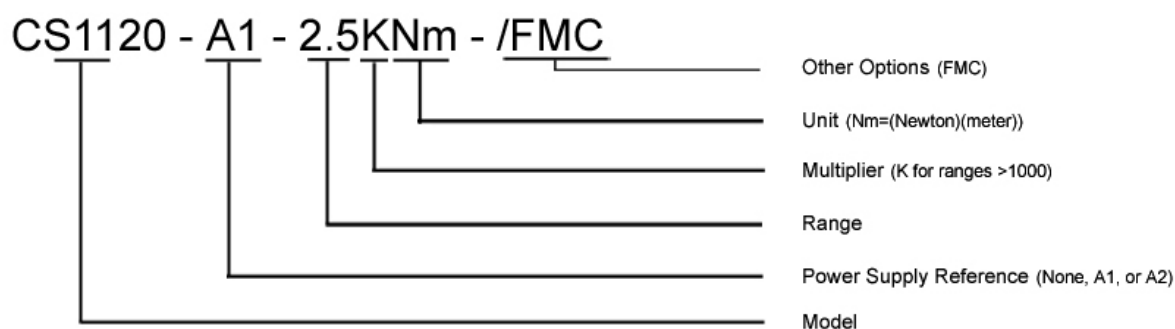
F.S. in N.m [Lbf-ft]	5 to 20 [4 to 16]	21 to 100 [17 to 80]	101 to 300 [81 to 240]	301 to 800 [241 to 640]	801 to 2,5K [641 to 2K]
A	35 [1.38]	35 [1.38]	40 [1.57]	50 [1.97]	65 [2.56]
B	35 [1.38]	35 [1.38]	40 [1.57]	45 [1.77]	55 [2.17]
C	14 [0.55]	19 [0.75]	28 [1.10]	39 [1.54]	54 [2.13]
G	75 [2.95]	95 [3.74]	135 [5.31]	165 [6.50]	240 [9.45]
J	5 [0.20]	6 [0.24]	8 [0.31]	12 [0.47]	16 [0.63]
K	11 [0.43]	15.5 [0.61]	24 [0.94]	34 [1.34]	48 [1.89]
L	15 [0.59]	25 [0.98]	40 [1.57]	50 [1.97]	80 [3.15]

CS1120 Reaction Torque Sensor

OPTIONS

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

ORDERING INFO



The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. Measurement Specialties, Inc. reserves the right to make changes without further notice to any product herein. Measurement Specialties, Inc. makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does Measurement Specialties, Inc. assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. Measurement Specialties, Inc. does not convey any license under its patent rights nor the rights of others.