

CS1120 Reaction Torque Sensor



- Keyed Shaft Mechanical Connection
- Range from ± 5 to $\pm 2,500$ Nm (± 4 to $\pm 2,000$ 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

- For Static Applications
- Keyed Shaft Mechanical Connection
- High Level Output Model with Integrated Amplifier

APPLICATIONS

- Process control equipment
- Torque calibration benches
- 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

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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	<1% of reading / 50° C [100° F]
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

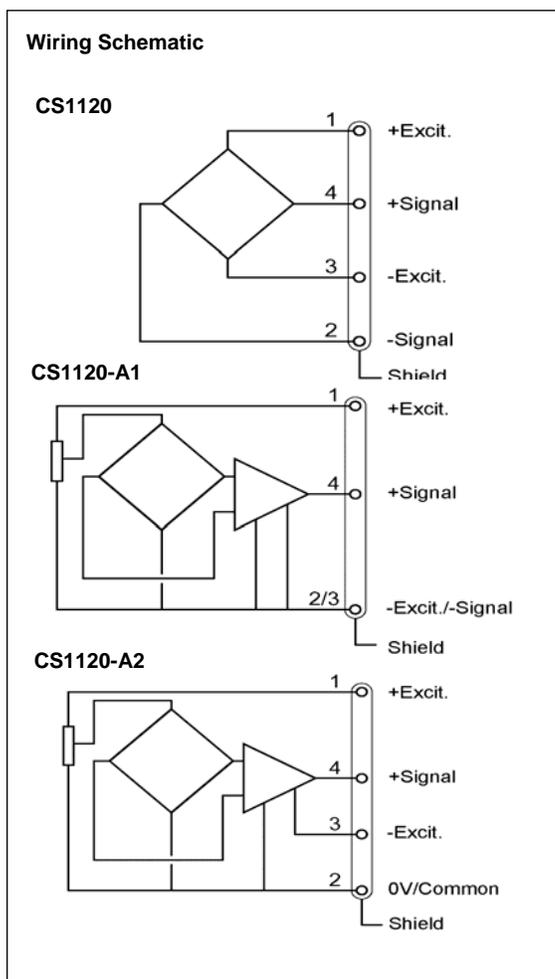
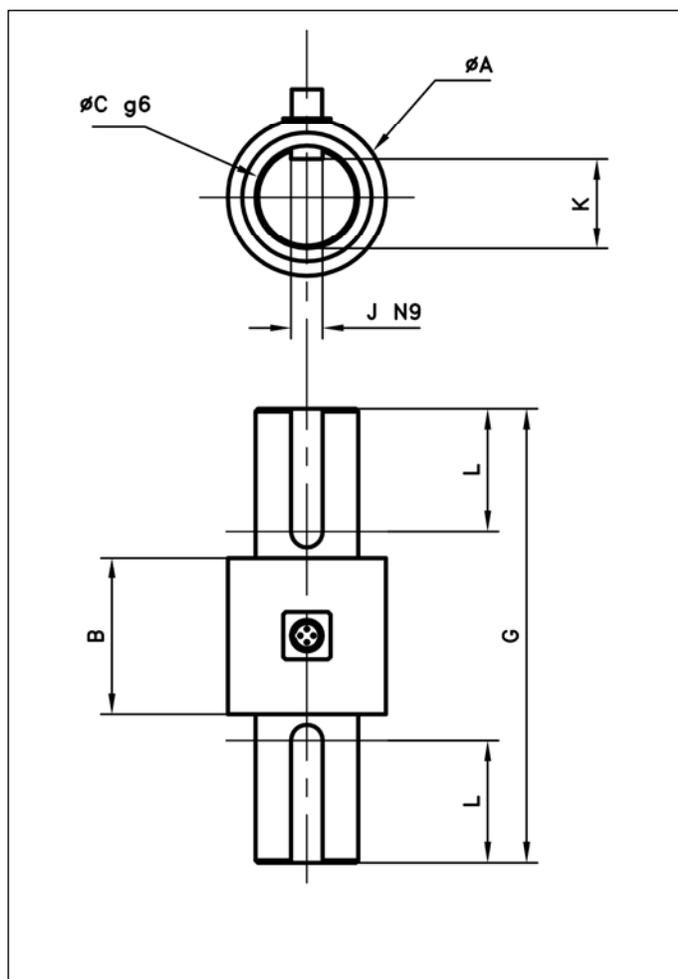
Model	CS1120	CS1120-A1	CS1120-A2
Supply Outage	10Vdc	10 – 30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output	±2mV/V	±2V ±5% F.S.	±5V ±5% F.S.
Zero Offset	<±5% F.S.	2.5V ±5% F.S.	0V ±5% F.S.
Input Impedance/Consumption	350 to 700Ω	<30mA	<30mA
Output Impedance	350 to 700Ω	<10Ω	<10Ω
Insulation under 50Vdc	≥100MΩ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

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DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



Dimensions in mm [inch]

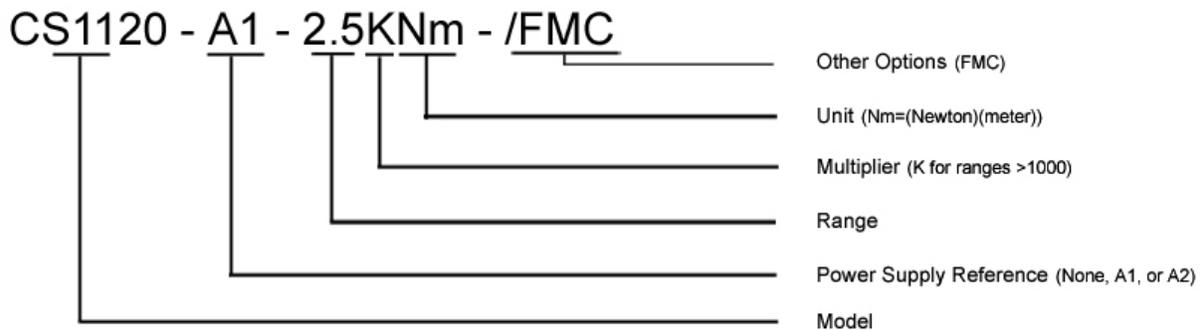
F.S. in N.m [lbf.ft]	5 to 20 [4 to 16]		21 to 100 [17 to 80]		101 to 300 [81 to 240]		301 to 800 [241 to 640]		801 to 2,5k [641 to 2k]	
A	35	[1.38]	35	[1.38]	40	[1.57]	50	[1.97]	65	[2.56]
B	35	[1.38]	35	[1.38]	40	[1.57]	45	[1.77]	55	[2.17]
C	14	[0.55]	19	[0.75]	28	[1.10]	39	[1.54]	54	[2.13]
G	75	[2.95]	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]

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OPTIONS

A1 : Unipolar Tension
A2 : Bipolar Tension
FMC : Mating connector fitting with 2 m [6.6 ft] cable

ORDERING INFO



NORTH AMERICA

Measurement Specialties Inc.
1000 Lucas Way
Hampton, VA 23666
USA
Tel: 1-757-766-1500
Fax: 1-757-766-4297
Sales: pvg.cs.amer@meas-spec.com

EUROPE

Measurement Specialties
(Europe), Ltd.
26 Rue des Dames
78340 Les Clayes-Sous-Bois,
France
Tel: +33 (0) 130 79 33 00
Fax: +33 (0) 134 81 03 59
Sales: pfg.cs.emea@meas-spec.com

ASIA

北京赛斯维测控技术有限公司
北京市朝阳区望京西路48号
金隅国际C1002
电话 : +86 010 8477 5646
传真 : +86 010 5894 9029
邮箱 : sales@sensorway.cn
<http://www.sensorway.cn>

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