



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

<b>F.S range in Nm</b>	5 to 20	21 to 100	101 to 300	301 to 800	801 to 2.5k
<b>F.S range in lbf.ft</b>	4 to 16	17 to 80	81 to 240	241 to 640	641 to 2k
<b>Stiffness in Nm/rad</b>	$2 \times 10^2$ to $1.2 \times 10^3$	$1.2 \times 10^3$ to $1 \times 10^4$	$1 \times 10^4$ to $4.1 \times 10^4$	$4.1 \times 10^4$ to $1.2 \times 10^5$	$1.2 \times 10^5$ to $6 \times 10^5$
<b>Stiffness in lbf.ft/rad</b>	$0.1 \times 10^2$ to $0.8 \times 10^2$	$0.8 \times 10^2$ to $6.9 \times 10^2$	$6.9 \times 10^2$ to $2.7 \times 10^3$	$2.7 \times 10^3$ to $8.2 \times 10^3$	$8.2 \times 10^3$ to $4.1 \times 10^4$

# CS1120 Reaction Torque Sensor

## PERFORMANCE SPECIFICATIONS

All values are typical at temperature 20±1° C

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]
<b>Over-Range</b>	
Without Damage	1.5 x F.S.
<b>Accuracy</b>	
Combined Non-Linearity & Hysteresis	±0.25% F.S.

### Electrical Characteristics

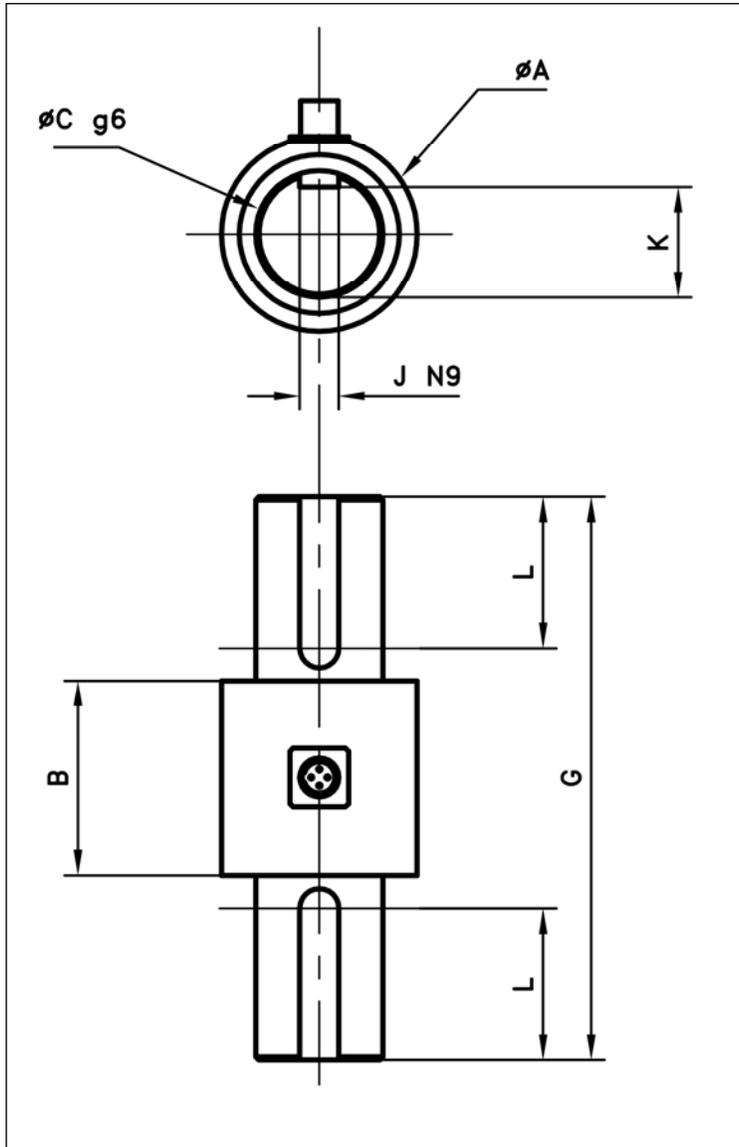
Model	CS1120	CS1120-A1	CS1120-A2
Supply Voltage	10Vdc	10 – 30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output <sup>4</sup>	±2mV/V	±2V ±5%	±5V ±5%
Zero Offset <sup>4</sup>	<±5% F.S.	2.5V ±5% F.S.	0V ±5% F.S.
Input Impedance/Consumption	350 to 700Ω	<30mA	<30mA
Output Impedance	350 to 700Ω	1 kΩ <sup>5</sup>	1 kΩ <sup>5</sup>
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

### Notes

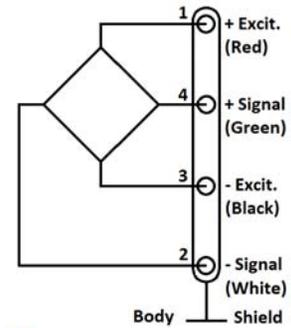
1. Electrical Termination: Connector output including mate
2. Material: Body in stainless steel ; housing in aluminum alloy
3. Connection : Keyed shaft standard, other connection types on request (smooth shaft, cotter pin, etc)
4. Other signal output on request
5. Output impedance < 100Ω on request
6. CE conformance according to EN 61010-1, EN 50081-1, EN 50082-1

# CS1120 Reaction Torque Sensor

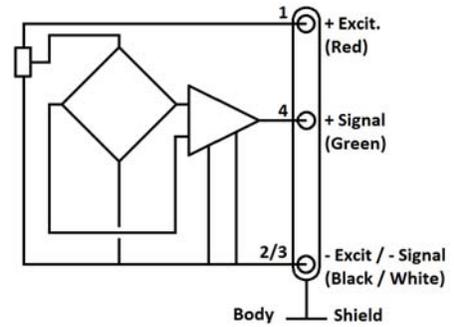
## DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



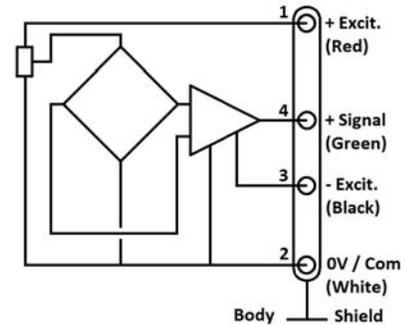
### Wiring Schematic



### Version -A1



### Version -A2



### Dimensions in mm [inch]

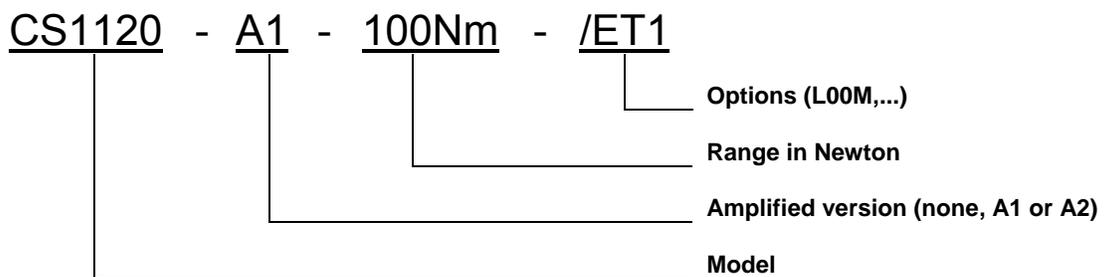
F.S. in N.m [lbf.ft]	5 to 20 [4 to 16]		21 to 100 [17 to 80]		101 to 300 [81 to 240]		301 to 800 [241 to 640]		801 to 2,5k [641 to 2k]	
A	35	[1.38]	35	[1.38]	40	[1.57]	50	[1.97]	65	[2.56]
B	35	[1.38]	35	[1.38]	40	[1.57]	45	[1.77]	55	[2.17]
C	14	[0.55]	19	[0.75]	28	[1.10]	39	[1.54]	54	[2.13]
G	75	[2.95]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

<b>A1</b> : Amplified Tension output with unipolar power supply
<b>A2</b> : Amplified Tension output with bipolar power supply
<b>FMC</b> : Mating connector fitting with 2 m [6.6 ft] cable

## ORDERING INFO



## 联系方式



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