

## FEATURES

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

## APPLICATIONS

- Process control equipment
- Torque calibration benches
- Laboratory and Research
- Robotics and effectors

# CS1120 Reaction Torquemeter

## SPECIFICATIONS

- Range from  $\pm 5$  to  $\pm 2,500$  Nm ( $\pm 4$  to  $\pm 2,000$  lbf.ft)
- Keyed Shaft Mechanical Connection
- Stainless Steel
- Cable Gland or Connector Output
- Accuracy  $\leq 0.25\%$  F.S.

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.

Another version with male square interfaces is available under the reference **CS1060**.

With a long standing experience as a designer and manufacturer of sensors, TE CONNECTIVITY often works with customers to design or customize sensors for specific uses and testing environments.

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

On request, Instruction documents can be provided to ease the selection and use of our sensors and provide helpful tips.

**STANDARD RANGES**

<b>Range in Nm (FS)</b>	5 to 20	21 to 100	101 to 300	301 to 800	801 to 2.5k
<b>Range in lbf.ft (FS)</b>	4 to 16	17 to 80	81 to 240	241 to 640	641 to 2k
<b>Stiffness in Nm/rad</b>	2x10 <sup>2</sup> to 1.2x10 <sup>3</sup>	1.2x10 <sup>3</sup> to 1x10 <sup>4</sup>	1x10 <sup>4</sup> to 4.1x10 <sup>4</sup>	4.1x10 <sup>4</sup> to 1.2x10 <sup>5</sup>	1.2x10 <sup>5</sup> to 6x10 <sup>5</sup>
<b>Stiffness in lbf.ft/rad</b>	0.1x10 <sup>2</sup> to 0.8x10 <sup>2</sup>	0.8x10 <sup>2</sup> to 6.9x10 <sup>2</sup>	6.9x10 <sup>2</sup> to 2.7x10 <sup>3</sup>	2.7x10 <sup>3</sup> to 8.2x10 <sup>3</sup>	8.2x10 <sup>3</sup> to 4.1x10 <sup>4</sup>

**PERFORMANCE SPECIFICATIONS (typical values at temperature 23±3°C)**

<b>Parameters</b>	
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]
<b>Over-Range</b>	
Without Damage	1.5 x F.S.
Without destruction	3 x F.S.
<b>Accuracy</b>	
Combined Non-Linearity & Hysteresis	±0.25% F.S.

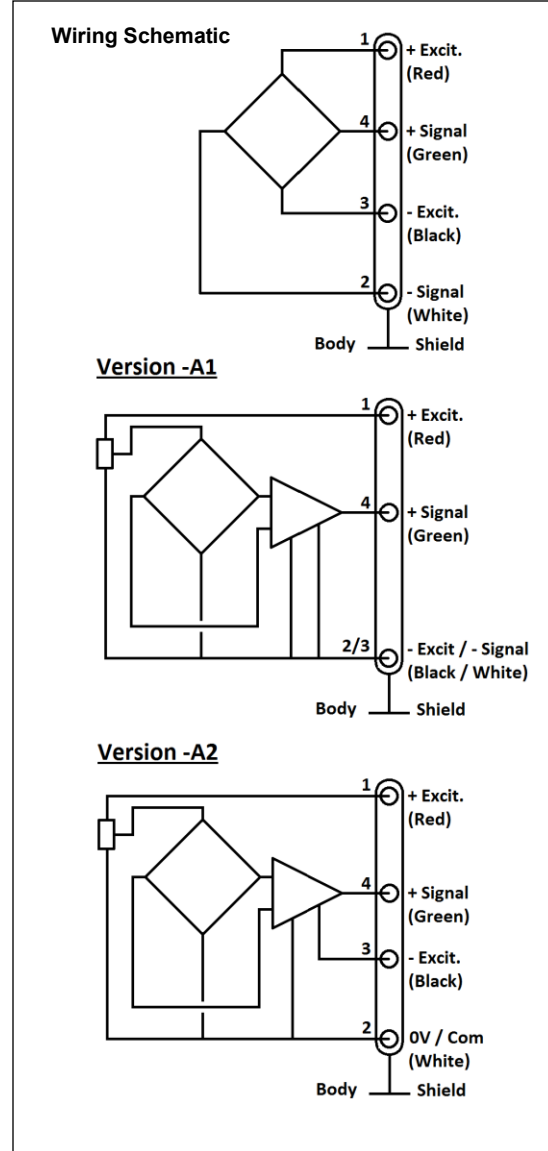
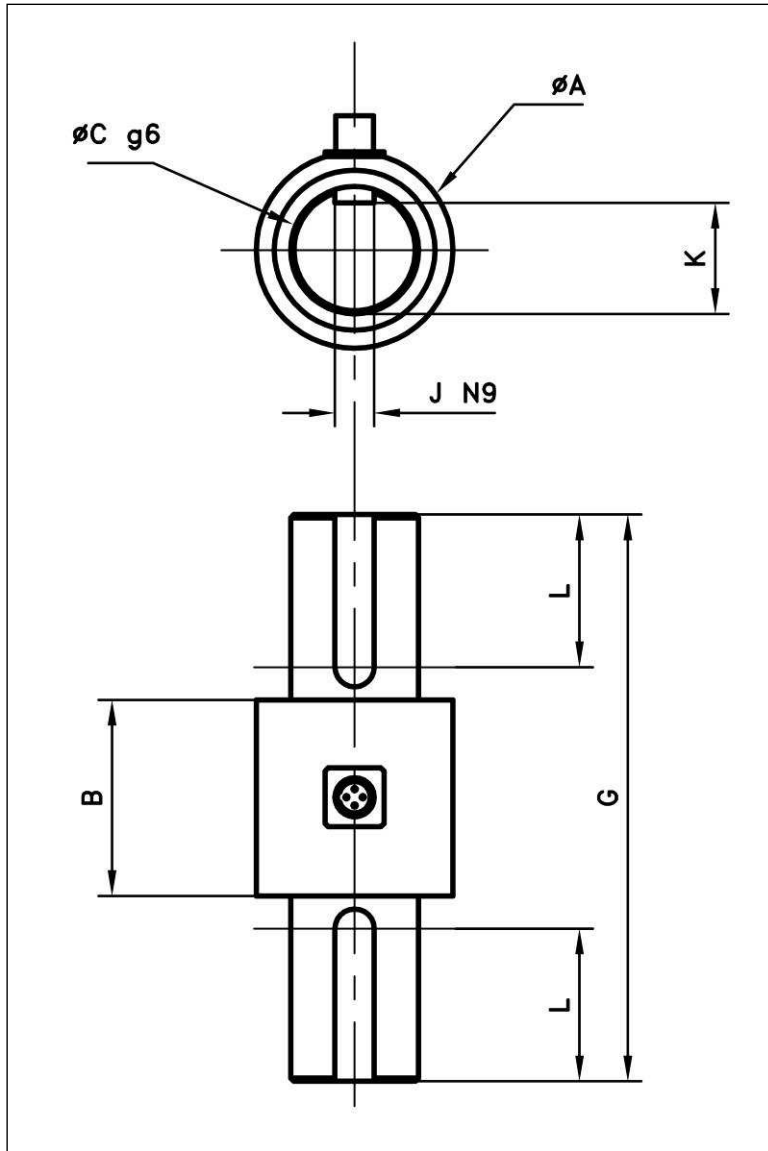
**Electrical Characteristics**

<b>Model</b>	<b>CS1120<sup>1</sup></b>	<b>CS1120-A1</b>	<b>CS1120-A2</b>
Supply Voltage	1 to 10Vdc regulated	10 to 30Vdc	±15Vdc (±12 to ±18Vdc)
Sensitivity "FSO" <sup>2</sup>	±2mV/V	±2V ±0.2V	±5V ±0.2V
Zero Offset <sup>2</sup>	±1mV	2.5V ±0.2V	0V ±0.2V
Input Impedance/Consumption	350 to 700Ω	<30mA	<30mA
Output Impedance	350 to 700Ω	1 kΩ <sup>6</sup>	1 kΩ <sup>6</sup>
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

**Notes**

1. Sensors are calibrated with 10Vdc power supply as standard.
2. Signal goes positive in CW strain with standard wiring configuration. Other signal output on request
3. Electrical Termination: Connector output including mate
4. Material: Body in stainless steel ; housing in aluminum alloy
5. Connection : Keyed shaft standard, other connection types on request (smooth shaft, cotter pin, etc)
6. Output impedance < 100Ω on request
7. CE conformance according to EN 61010-1, EN 50081-1, EN 50082-1

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



Dimensions in mm [inch]

Range in N.m [in 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]

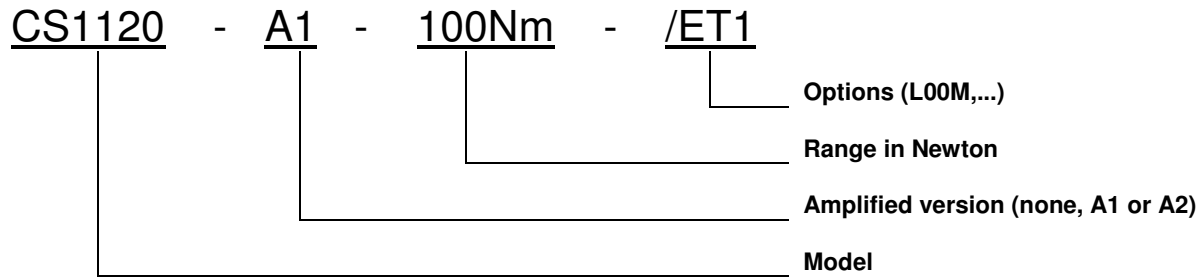
## CS1120

Reaction Torquemeter

### OPTIONS

<b>A1</b> : Amplified Tension output with unipolar power supply
<b>A2</b> : Amplified Tension output with bipolar power supply
<b>Z14</b> : CTR -20 to 100° C [-4 to 212° F] OTR=CTR
<b>V00</b> : Non-standard power supply calibration, replace "00" with value in Volt (standard 10Vdc, unamplified sensor only)
<b>FMC</b> : Mating connector fitting with 2 m [6.6 ft] cable

### ORDERING INFORMATION



### SUPPLIED ACCESSOIRES

<b>EFMX-4M</b> : mating plug Jaeger 530-801-006 with clamp 530-841-006
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