

## CS1060 SERIES

Reaction Torque Sensor

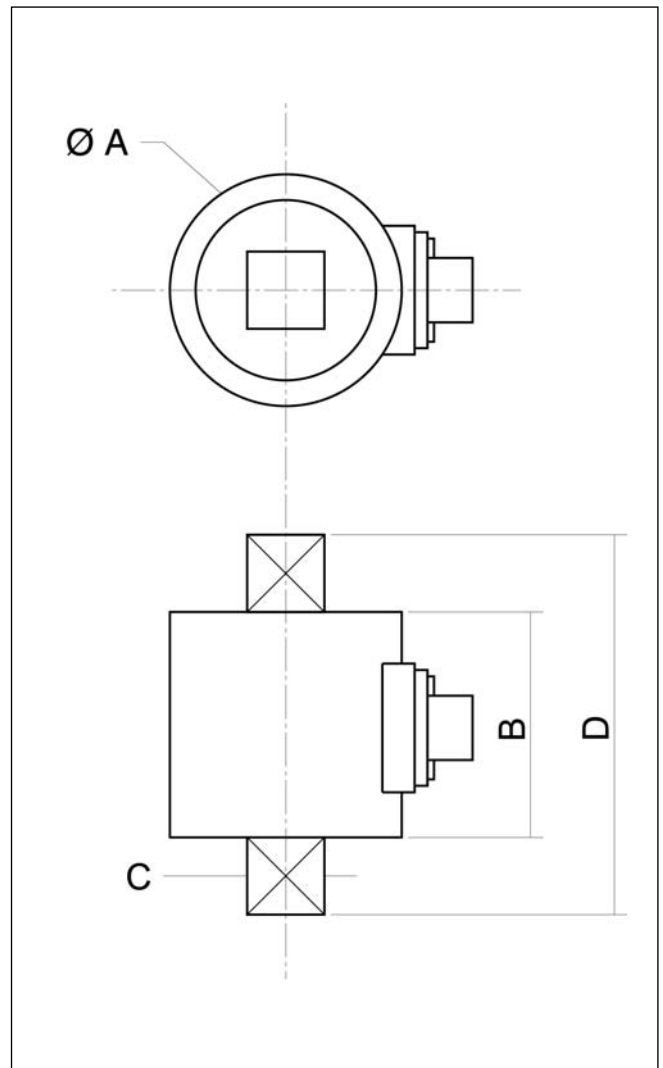


- Ranges from  $\pm 5$  to  $\pm 7,000$  Nm [ $\pm 4$  to  $\pm 5,600$  lb-ft]
- Suited for static applications
- Square male coupling
- High Level Output Model with Integrated Amplifier

The CS1060 has been designed to measure reaction torque. Its sensing element is based on thin layer strain gauges in a Wheatstone bridge configuration providing excellent temperature stability. Optionally the torque sensor can receive an on-board amplifier for high level output. Intermediate ranges are available at no extra cost.

With many years of experience as a designer and manufacturer of sensors, FGP Sensors 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.



### Mechanical Dimensions in mm [inch]

F.S. in N.m [lb-ft]	5 to 100 [4 to 80]	101 to 300 [81 to 240]	301 to 800 [241 to 640]	801 to 3000 [641 to 2400]	3001 to 7000 [2401 to 5600]
<b>A</b>	35 [1.38]	40 [1.57]	50 [1.97]	65 [2.56]	85 [3.35]
<b>B</b>	35 [1.38]	40 [1.57]	45 [1.77]	55 [2.17]	60 [2.36]
<b>C</b>	12.7 [1/2"]	19 [3/4"]	25.4 [1"]	38.1 [1 1/2"]	50.8 [2"]
<b>D</b>	59 [2.32]	80 [3.15]	95 [3.74]	135 [5.31]	160 [6.30]
<b>Stiffness in lb-ft</b>	$1.4 \cdot 10^1$ to $6.9 \cdot 10^2$	$6.9 \cdot 10^2$ to $2.7 \cdot 10^3$	$2.7 \cdot 10^3$ to $8.2 \cdot 10^3$	$8.2 \cdot 10^3$ to $4.1 \cdot 10^4$	$4.1 \cdot 10^4$ to $1.2 \cdot 10^5$

## Technical Specifications

### Range (F. S.)

From  $\pm 5$  Nm to  $\pm 7,000$  Nm [ $\pm 4$  lb-ft to  $\pm 5,600$  lb-ft]

### Over-range

Without Damage : 1.5 x F.S.

### Accuracy

Combined Non Linearity & Hysteresis :  $\pm 0.25\%$  F.S.

### Temperature Range

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. /  $108$  °F  
 Sensitivity Shift in CTR :  $<1.10^{-4}$  / °F of reading

### Electrical Characteristics

Model	CS1060	CS1060-A1	CS1060-A2
Supply Voltage	10 Vdc	10 to 30 Vdc	$\pm 15$ Vdc ( $\pm 12$ to $\pm 18$ Vdc)
F.S. Output	2 mV/V	0.5 to 4.5 V	$\pm 5$ V
Zero Offset	$<\pm 5\%$ F.S.	2.5 V $\pm 5\%$ F.S.	0 V $\pm 5\%$ F.S.
Input Impedance/Consumption	350 to 700 $\Omega$	$<50$ mA	$<50$ mA
Output Impedance	350 to 700 $\Omega$	$<10$ $\Omega$	$<10$ $\Omega$
Insulation under 50 Vdc	$\geq 100$ M $\Omega$	$\geq 100$ M $\Omega$	$\geq 100$ M $\Omega$

### Electrical Termination

Connector output including mate

### Mechanical Characteristics

Material : Body in stainless steel, aluminium alloy housing  
 Connection : Square male couplings standard depending on F.S. (see table on reverse side)  
 Other connection types on request (smooth shaft, cotter pin, etc.)

### Product References

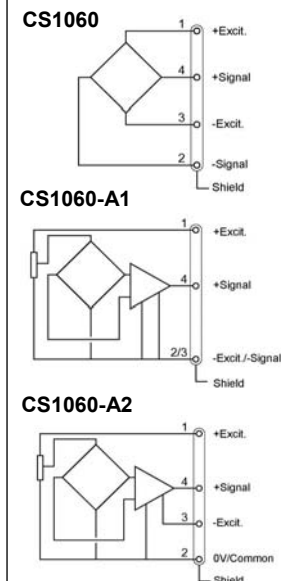
#### Low Level Output Sensor

Model	Full Scale Range (F.S.) In lb-ft	Option(s)
CS1060	80	ET1 : CTR -20 to 100 °C [ $-4$ to $212$ °F] OTR=CTR PE : Cable Gland Termination with 2 m [6.5 ft] cable

#### High Level Output Sensor

Model	Power Supply Reference	Full Scale Range (F.S.) In lb-ft	Option(s)
CS1060	A1 : Unipolar-tension A2 : Bipolar-tension	80	ET1 : CTR -20 to 100 °C [ $-4$ to $212$ °F] OTR=CTR PE : Cable Gland Termination with 2 m [6.5 ft] cable

### Wiring Schematic



Performance specifications nominal and subject to change without notice. Current specifications see web-site. June 15, 2005

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