

## FEATURES

- ◆ Slip ring measurement peaking
- ◆ High Stiffness
- ◆ Other square size available on custom design
- ◆ High Level Output Model with Integrated Amplifier

## APPLICATIONS

- ◆ Dynamic applications
- ◆ Process control equipment
- ◆ Test and Measurement
- ◆ Robotics and effectors
- ◆ Laboratory and Research

## CD1050

### Dynamic Torquemeter

## SPECIFICATIONS

- ◆ Range from  $\pm 5$  to  $\pm 7,000$  Nm ( $\pm 4$  to  $\pm 5,600$  lbf.ft)
- ◆ Square Male Couplings
- ◆ Stainless Steel
- ◆ Cable Gland or Connector Output

The **CD1050** Series has been developed to be mounted on rotating shafts for rotary torque measurements. Constructed in stainless steel, the sensor is suitable for use in many hostile environments.

Fitted with metallic strain gauges in a Wheatstone bridge circuit, the **CD1050** is providing excellent temperature stability. For high-level output a model with integrated amplifier is available.

Another version with key-shafted interface exists under the reference **CD1095**.

With many years of 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.

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

**STANDARD RANGES (FS)**

<b>F.S range in Nm</b>	5 - 10 - 20 - 50 - 100	150 - 200 - 300	500 - 750	1k – 2k – 3k	4k – 5k – 7k
<b>F.S range in lbf-ft</b>	4 - 8 - 16 - 40 - 80	120 - 160 - 240	400 - 600	800 – 1,6k – 2,4k	3,2k – 4k – 5,6k
<b>Stiffness in Nm/rad</b>	$1,4 \cdot 10^2$ to $7,5 \cdot 10^3$	$7,5 \cdot 10^3$ to $3 \cdot 10^4$	$3 \cdot 10^4$ to $1 \cdot 10^5$	$1 \cdot 10^5$ to $4,5 \cdot 10^5$	$4,5 \cdot 10^5$ to $1,3 \cdot 10^6$
<b>Stiffness in lbf.ft/rad</b>	$0,1 \cdot 10^2$ to $5,1 \cdot 10^2$	$5,1 \cdot 10^2$ to $2,1 \cdot 10^3$	$2,1 \cdot 10^3$ to $6,9 \cdot 10^3$	$6,9 \cdot 10^3$ to $3,1 \cdot 10^4$	$3,1 \cdot 10^4$ to $8,9 \cdot 10^4$
<b>Rotation in rpm</b>	3000	2200	1750	1250	1000

**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]
Range (F.S.)	±5 Nm to ±7 kNm [4 lbf-ft to 5,6 klbf-ft]
Velocity of Rotation	Up to 3000 RPM ; Bidirectional operation
<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

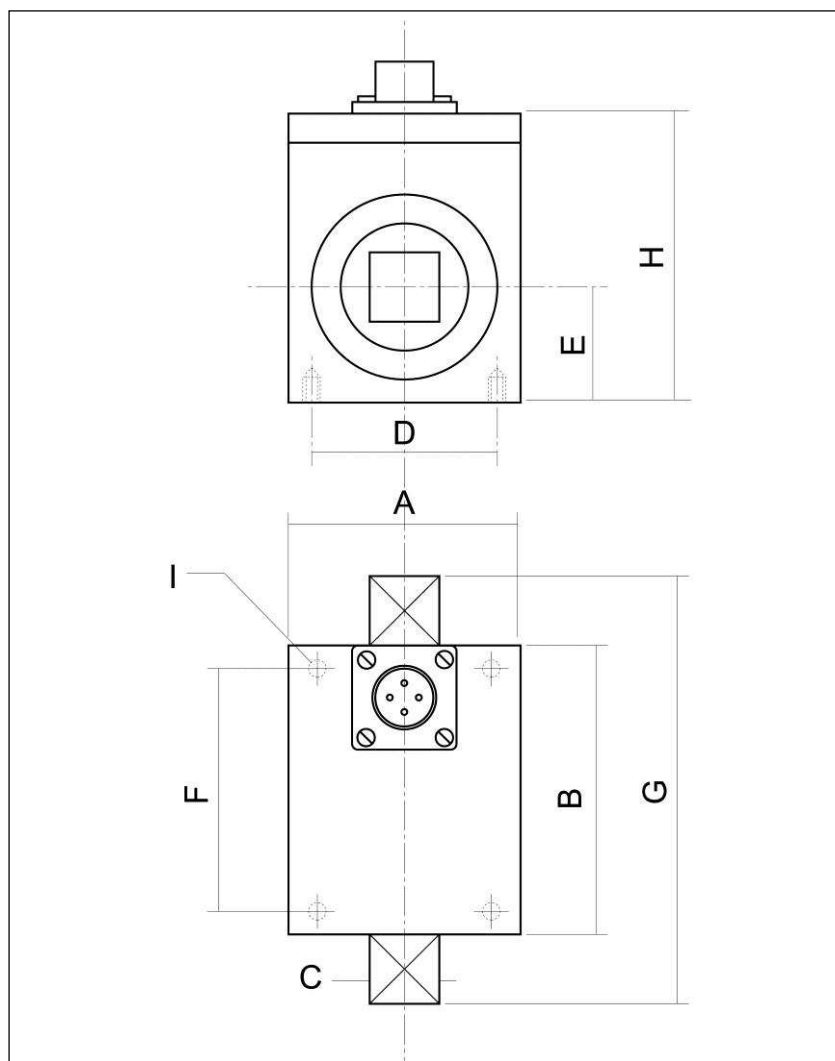
**Electrical Characteristics**

<b>Model</b>	<b>CD1050 <sup>1</sup></b>	<b>CD1050-A1</b>	<b>CD1050-A2</b>
Supply Voltage	1 to 10Vdc regulated	10 – 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	<50mA	<50mA
Output Impedance	350 to 700Ω	1 kΩ <sup>6</sup>	1 kΩ <sup>6</sup>
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

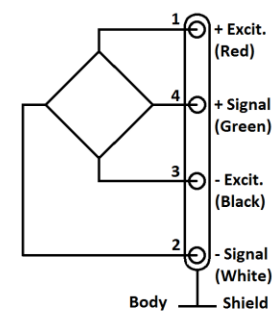
**Notes**

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 mating plug
4. Material: Body in stainless steel ; aluminum alloy housing.
5. 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

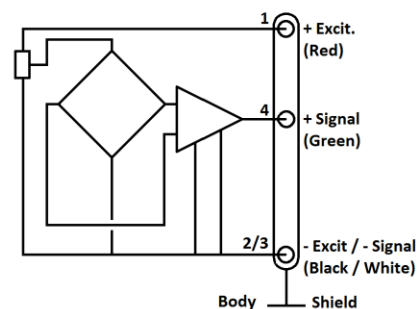
## DIMENSIONS &amp; WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



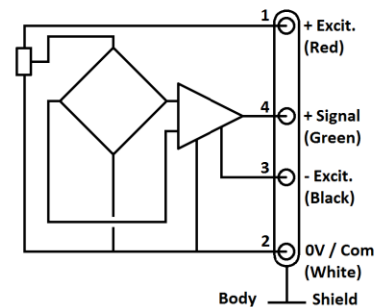
## Wiring Schematic



## Version -A1



## Version -A2



Dimensions in mm [inch]

F.S. in Nm [lbf.ft]	5 - 10 - 20 - 50 - 100 [4 - 8 - 16 - 40 - 80]		150 - 200 - 300 [120 - 160 - 240]		500 - 750 [400 - 600]		1k - 2k - 3k [800 - 1,6k - 2,4k]		4k - 5k - 7k [3,2k - 4k - 5,6k]	
A	40	[1.57]	50	[1.97]	60	[2.36]	80	[3.15]	105	[4.13]
B	50	[1.97]	55	[2.17]	60	[2.36]	75	[2.95]	80	[3.15]
C	12.7	[0.50]	19	[0.75]	25.4	[1.00]	38.1	[1.50]	50.8	[2.00]
D	32	[1.26]	40	[1.57]	50	[1.97]	70	[2.76]	95	[3.74]
E	20	[0.79]	25	[0.98]	30	[1.18]	40	[1.57]	52.5	[2.07]
F	42	[1.65]	45	[1.77]	50	[1.97]	65	[2.56]	70	[2.76]
G	80	[3.15]	105	[4.13]	120	[4.72]	160	[6.30]	190	[7.48]
H	50	[1.97]	60	[2.36]	70	[2.76]	90	[3.54]	115	[4.53]
I	4 x M3		4 x M3		4 x M4		4 x M4		4 x M4	

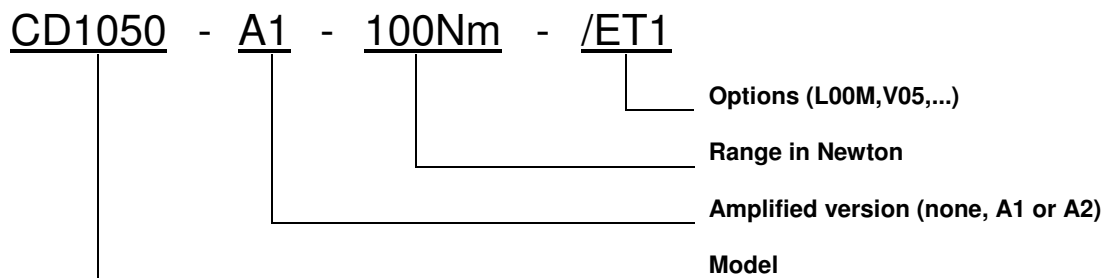
## CD1050

Dynamic Torquemeter

### OPTIONS

<b>A1</b> : Amplified Tension output with unipolar power supply
<b>A2</b> : Amplified Tension output with bipolar power supply
<b>V00</b> : Non-standard power supply calibration, replace "00" with value in Volt (standard 10Vdc, unamplified sensor only)
<b>PE</b> : Cable Gland Termination with 2 m [6.6 ft] cable

### ORDERING INFO



### SUPPLIED ACCESSOIRES

**EFMX-4M** : mating plug Jaeger 530-801-006 with clamp 530-841-006