

**Stainless Steel  
Combined Torque And Axial Force**

**DBBSS/TSF**

# AXIAL TORSION SENSOR



- Capacities from 1kN/10Nm to 250kN/2500Nm
- Sealed to IP65
- Low Profile and Very Compact
- Low Deflection
- Minimal crosstalk
- Robust Construction
- 3 YEAR WARRANTY

**Options Available**

Non-Standard ranges available on request

Dual 4-core screened cable, one for each axis

| CHARACTERISTICS                      | DBBSS/TSF  | UNITS                         |
|--------------------------------------|--|-------------------------------|
| <b>Rated Capacities:</b>             | 1/10; 2.5/25; 5/50; 10/100; 25/250; 25/500; 50/500; 100/1000; 250/2500                           | <b>KN/Nm</b>                  |
| <b>Sensitivity Range:</b>            | 1.5mV/V to 3.0mV/V (see note below)  | <b>mV/V</b>                   |
| <b>Non-Linearity:</b>                | Axial Force <0.05 Torsional Force <0.10  | <b>±% of Rated Output</b>     |
| <b>Repeatability:</b>                | Axial Force <0.03 Torsional Force <0.05  | <b>±% of Rated Output</b>     |
| <b>Zero Balance:</b>                 | 1  | <b>±% of Rated Output</b>     |
| <b>Temperature Range Operating:</b>  | -20 to +80   | <b>°C</b>                     |
| <b>Compensated:</b>                  | 0 to +70   | <b>°C</b>                     |
| <b>Temperature Effect On Output:</b> | <0.005   | <b>±% of Applied Load/ °C</b> |
| <b>On Zero:</b>                      | <0.030   | <b>±% of Rated Output/ °C</b> |
| <b>Safe Overload:</b>                | 150  | <b>% of Rated Capacity</b>    |
| <b>Ultimate Overload:</b>            | 400  | <b>% of Rated Capacity</b>    |
| <b>Excitation Recommended:</b>       | 10   | <b>Volts AC or DC</b>         |
| <b>Maximum:</b>                      | 15   | <b>Volts AC or DC</b>         |
| <b>Input Impedance:</b>              | 400 nominal  | <b>Ohms</b>                   |
| <b>Output Impedance:</b>             | 350 nominal  | <b>Ohms</b>                   |
| <b>Insulation Impedance:</b>         | >500   | <b>Megaohms</b>               |
| <b>Construction:</b>                 | Stainless Steel  |                               |
| <b>Environmental Protection:</b>     | IP65   |                               |
| <b>Electrical Connection:</b>        | 6-pin bayonet lock connector + mating connector with two cable options from the mating connector |                               |

Transducer Specialists...

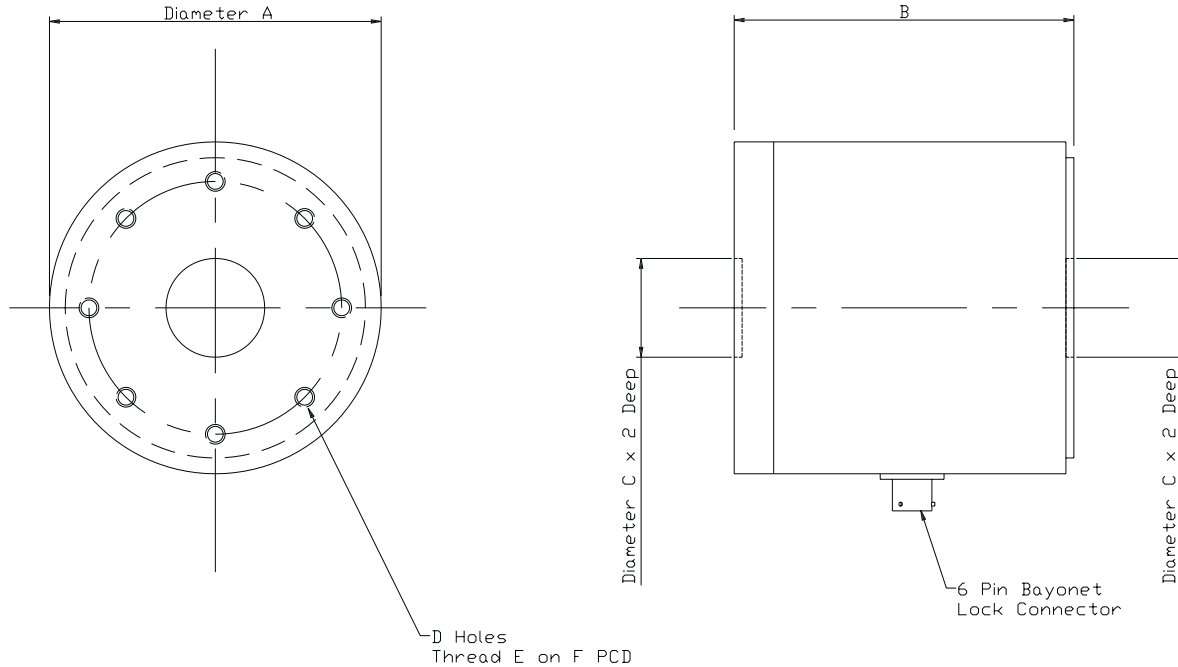
## APPLIED MEASUREMENTS LIMITED

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# SPECIFICATION



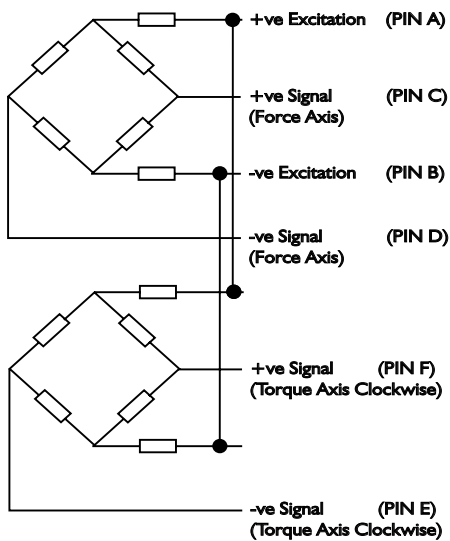
**All dimensions in mm**

**Note**

The sensitivity can vary between the limits stated depending upon the aspect ratio between the two axis. This is to limit the level of crosstalk between axis.

| Range (kN/Nm)          | ØA  | B   | ØC    | D  | E        | ØF  |
|------------------------|-----|-----|-------|----|----------|-----|
| 1/10, 2.5/25, 5/50     | 84  | 86  | 25/H7 | 8  | M5x7DP   | 64  |
| 10/100, 25/250, 25/500 | 86  | 120 | 25/H7 | 6  | M8x12DP  | 60  |
| 50/500, 100/1000       | 135 | 125 | 30/H7 | 12 | M10x15DP | 100 |
| 250/2500               | 230 | 200 | 35/H7 | 12 | M16x24DP | 190 |

**Wiring Schematic Diagram**



| Wiring Diagram – 6 Core Cable | Wiring Diagram – 2x 4 Core Cable |
|-------------------------------|----------------------------------|
| <i>Force/Torque Axes</i>      | <i>Force Axis</i>                |
| Red: + Excitation             | Red: + Excitation                |
| Blue: - Excitation            | Black: - Excitation              |
| Green: + Signal (Force Axis)  | Green: + Signal                  |
| Yellow: - Signal (Force Axis) | Yellow: - Signal                 |
| Black: + Signal (Torque Axis) |                                  |
| White: - Signal (Torque Axis) | <i>Torque Axis</i>               |
|                               | Red: + Excitation                |
|                               | Black: - Excitation              |
|                               | Green: + Signal                  |
|                               | Yellow: - Signal                 |

