



# TLS - In-line Rotary Torque Transducers

## Product Overview

The TLS Torque Transducer provides accurate torque measurement at speeds of up to 15,000rpm with integral signal conditioning providing a  $\pm 5V$  analogue output, with an option for  $\pm 10V$ .

The accuracy class is 0.1% with a 0.2% option for sizes 01 to 1000Nm only. Speed and Angle measurement is also an option for sizes up to 1000. Above this size the option for speed is 60 pulses/rev. The TLS is also available as a foot-mounted version, the TLSM, with the same capacities and options as the TLS.

### System Specifications:

|                             |                          |                    |                          |
|-----------------------------|--------------------------|--------------------|--------------------------|
| Accuracy Class:             | 0.1%                     | Operating Temp:    | 0 to +60°C               |
| Optional Accuracy Class:    | 0.2% (upto 1kNm)         | Zero Shift:        | $< \pm 0.01\%/^{\circ}C$ |
| Full scale Analogue Output: | 0 $\pm$ 5V               | Supply Voltage:    | 12 to 28VDC              |
| Analogue Output Option:     | 0 $\pm$ 10V              | Supply Current:    | <60mA                    |
| Repeatability (class 0.1):  | $\pm 0.02\%$ fs          | Overload Capacity: | 150% fs                  |
| Repeatability (class 0.2):  | $\pm 0.04\%$ fs          | Protection:        | IP50                     |
| Span Shift:                 | $< \pm 0.01\%/^{\circ}C$ |                    |                          |

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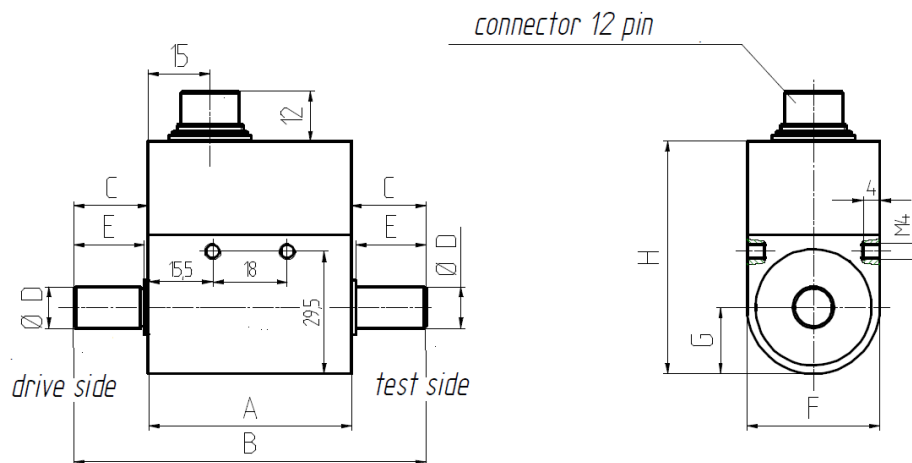
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| Model Size | Rated Torque (Nm) | Max Speed | Springrate (Nm/rad) | Model Size | Rated Torque (Nm) | Max Speed | Springrate (Nm/rad) |
|------------|-------------------|-----------|---------------------|------------|-------------------|-----------|---------------------|
| 01         | 0.1               | 15000     | 1.8 x 10*1          | 50         | 50                | 15000     | 8.5 x 10*3          |
| 02         | 0.2               | 15000     | 1.8 x 10*1          | 100        | 100               | 12000     | 8.5 x 10*3          |
| 05         | 0.5               | 15000     | 1.2 x 10*2          | 200        | 200               | 10000     | 6.7 x 10*4          |
| 1          | 1.0               | 15000     | 1.2 x 10*2          | 500        | 500               | 10000     | 7.1 x 10*4          |
| 2          | 2.0               | 15000     | 3.6 x 10*2          | 1000       | 1000              | 8000      | 3.1 x 10*5          |
| 5          | 5.0               | 15000     | 4.0 x 10*2          | 2000       | 2000              | 5500      | 7.2 x 10*5          |
| 10         | 10                | 15000     | 9.3 x 10*2          | 5000       | 5000              | 5500      | 8.0 x 10*5          |
| 15         | 15                | 15000     | 9.3 x 10*2          | 10000      | 10000             | 5000      | 3.1 x 10*6          |
| 20         | 20                | 15000     | 4.5 x 10*3          | 20000      | 20000             | 5000      | 3.7 x 10*6          |
| 30         | 30                | 15000     | 4.5 x 10*3          |            |                   |           |                     |

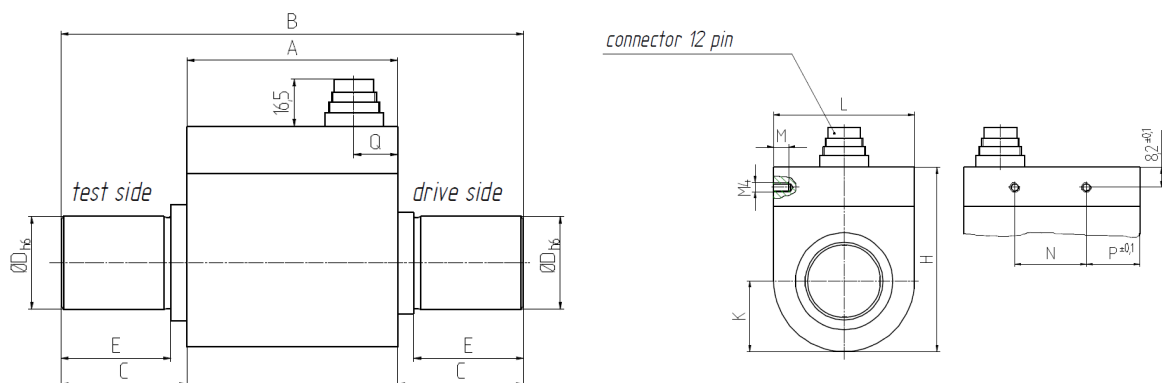
## Dimensions

TLS Dimensions 0.1 - 15 - Optional metric keyways are to BS4235 and DIN6885/1



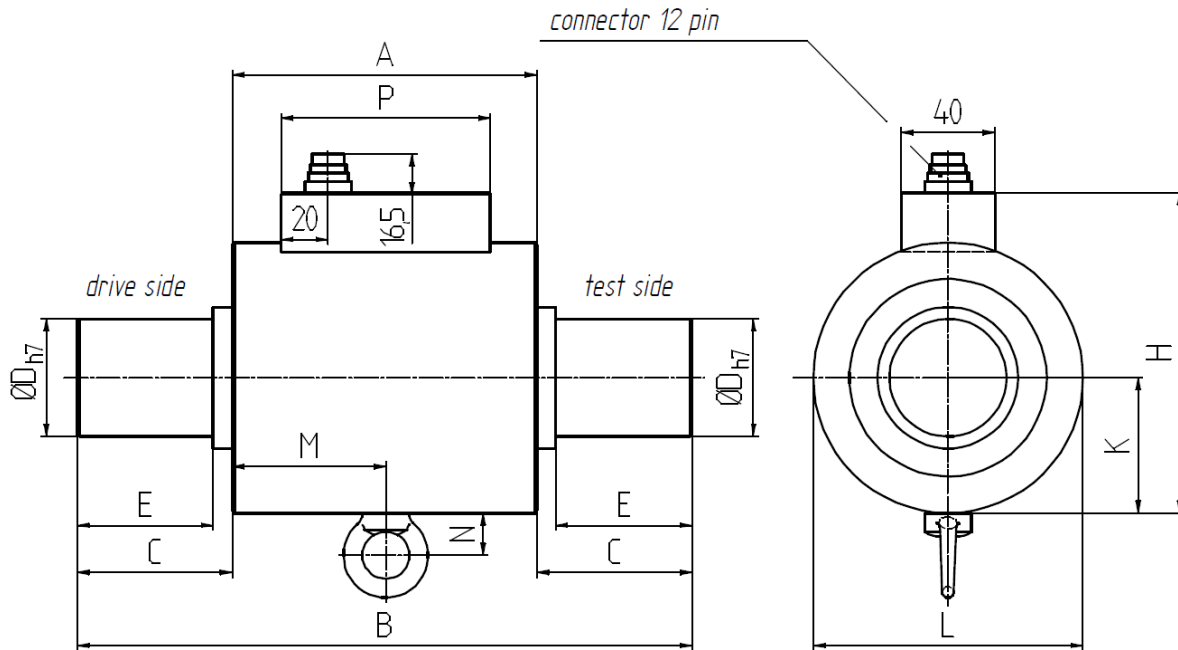
| Model Size        | A  | B  | C  | D     | E  | F  | G  | H  |
|-------------------|----|----|----|-------|----|----|----|----|
| 0.1/0.2/0.5/1/2/5 | 49 | 85 | 18 | 8 g6  | 17 | 32 | 16 | 56 |
| 10/15             | 49 | 85 | 18 | 10 g6 | 17 | 32 | 16 | 56 |

TLS Dimensions 20 - 500 - Optional metric keyways are to BS4235 and DIN6885/1



| Model Size | A    | B     | C    | D     | E  | H  | K  | L  | M | N    | P  | Q  |
|------------|------|-------|------|-------|----|----|----|----|---|------|----|----|
| 20/30      | 71.5 | 111.5 | 20   | 18 h6 | 18 | 59 | 20 | 40 | 5 | 41.5 | 15 | 12 |
| 50/100     | 71.5 | 147.5 | 38   | 18 h6 | 36 | 59 | 20 | 40 | 5 | 41.5 | 15 | 12 |
| 200/500    | 72.5 | 159.5 | 43.5 | 32 h6 | 38 | 76 | 29 | 58 | 6 | 29.5 | 22 | 15 |

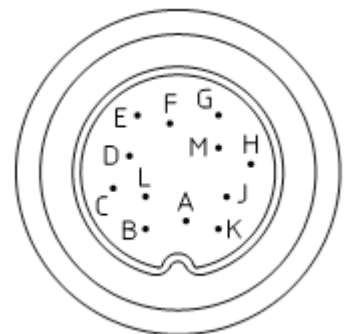
TLS Dimensions 1000 - 20000 - Optional metric keyways are to BS4235 and DIN6885/1



| Model Size    | A   | B   | C   | D      | E   | H   | K    | L   | M    | N  | P  |
|---------------|-----|-----|-----|--------|-----|-----|------|-----|------|----|----|
| 1000          | 130 | 262 | 66  | 50 h7  | 58  | 136 | 57.5 | 115 | 65.5 | 18 | 89 |
| 2000 / 5000   | 135 | 377 | 121 | 70 h7  | 110 | 161 | 69.5 | 139 | 67.5 | 18 | 89 |
| 10000 / 20000 | 190 | 470 | 140 | 110 h7 | 120 | 233 | 105  | 208 | 95   | 18 | 89 |

## Wiring Details

| PIN | Designation                                     |   |  |
|-----|---|---|--|
| A   | GND (Option)                                    | G | Angle (Option)                             |
| B   | Angle B TTL (Option)                            | H | Signal 2 (Option)                          |
| C   | Torque output $\pm 5V$ hi (Optional $\pm 10V$ ) | J | RS485 B                                    |
| D   | Torque output Com (0V)                          | K | Calibration - Off 0 to 2V<br>On 3.5 to 30V |
| E   | 0V PSU  | L | RS485 A                                    |
| F   | +24V dc (PSU)                                   | M | Cable Screen                               |



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# Providing custom torque solutions. Industrial Measurements Ltd.

**Founded in 1981, IML (Industrial Measurements Limited) have been providing comprehensive Torque measurement solutions and the design & manufacture of standard and bespoke Torque Transducers, for over 35 years.**

We pride ourselves on being able to provide a solution no matter what the challenge. As well our standard products such as Inline Rotary Torque Transducers & Static Torque Systems, we are devoted to designing and manufacturing completely bespoke Torque systems to suit our customers needs.

As well as offering one of the largest ranges of Torque Transducers in the world, IML makes special Torque Sensors, Torque Meters and Load Cells. IML also provides a fully accredited Torque calibration service, not just for our own products but for other manufacturers Torque products too.

Whilst IML's head office is based in the UK, we have customers from all over the world, in particular Western Europe and we are always looking to extend our customer base and offer support and technical advice to all current and future customers.

The knowledge and commitment of our dedicated employees has aided in building a quality customer base across the globe and we supply several industries including Marine & Offshore, Steel Plants, Automotive, Aerospace, Power Generation and much more.

Since 2009, IML has been a part of the Crane Group, alongside Crane Electronics Ltd, our sister company based in Hinckley, Leicestershire.



For more information about the TLS range or for a quote, call +44 (0) 1332 810 240 or email [sales@indmeas.co.uk](mailto:sales@indmeas.co.uk).

## IML, providing custom torque solutions

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