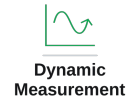


STATIC TORQUE TRANSDUCER



- NOMINAL TORQUE 0.5 ... 1000 N·m
- SQUARE 1/4" ... 3/4" ISO 1174-1
- LIN. + HYST. $\leq \pm 0.20 \%$
- 17-4 PH STEEL · CABLE 5 m



VERSIONS

Nominal torque	Square ISO 1174-1	Rated output	Body Ø x length (mm)
0.5 N·m	1/4"	1 mV/V	45 x 44
2.5 N·m	1/4"	2 mV/V	45 x 44
5 N·m	1/4"	2 mV/V	45 x 44
10 N·m	1/4"	2 mV/V	45 x 44
25 N·m	3/8"	2 mV/V	45 x 44
50 N·m	3/8"	2 mV/V	45 x 44
100 N·m	1/2"	2 mV/V	45 x 44
250 N·m	1/2"	2 mV/V	45 x 44
500 N·m	3/4"	2 mV/V	51 x 53.5
1000 N·m	3/4"	2 mV/V	51 x 53.5

Linearity and hysteresis $\leq \pm 0.10 \%$ as an option. Manufacturer type: TRS.



OVERVIEW

Compact static torque transducer with male and female square – from 0.5 to 1000 N·m in one design.

The cylindrical transducer has a male square on one side and a female square on the other according to ISO 1174-1 and is fitted directly between drive and tool. It measures clockwise and anticlockwise, is designed for dynamic stress and has a fixed shielded cable of 5 m. Axial and transverse forces and bending moments should be absent – the permissible values are on page 2.

0.5 ... 1000 nominal torques in N·m	≤ ±0.20 % linearity and hysteresis	2 mV/V rated output (0.5 N·m: 1 mV/V)	150 % max. permissible torque FS
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APPLICATIONS
■ Static torque measurement clockwise and anticlockwise
■ Testing of torque wrenches and screwdrivers with square drive
■ Test benches with little installation space

EQUIPMENT
■ Male and female square 1/4", 3/8", 1/2" or 3/4"
■ Stainless steel 17-4 PH sensor
■ Shielded PVC cable 5 m, 4 cores
■ Option: linearity and hysteresis ≤ ±0.10 %



TECHNICAL DATA

MEASUREMENT

Static nominal torque	0.5 · 2.5 · 5 · 10 · 25 · 50 · 100 · 250 · 500 · 1000 N·m
Linearity and hysteresis	≤ ±0.20 % (option ≤ ±0.10 %)
Direction	clockwise and anticlockwise
Temperature effect on zero	≤ ±0.02 % / °C
Temperature effect on sensitivity	≤ ±0.02 % / °C
Reference temperature	+23 °C
Working temperature	-10 ... +70 °C
Storage temperature	-20 ... +80 °C

MECHANICAL PROPERTIES

Sensor material	stainless steel 17-4 PH
Process coupling	square ISO 1174-1: ¼" (0.5 ... 10 N·m), ⅜" (25 · 50), ½" (100 · 250), ¾" (500 · 1000)
Protection class	IP40 · EN 60529

MECHANICAL LIMITS

Service torque	100 %FS	May be applied continuously without leaving the specification.
Max. permissible torque	150 %FS	May be applied without permanent change of the characteristics.
Breaking torque	> 300 %FS	Torque at which mechanical failure may occur.
Highly dynamic torque	70 %FS	Amplitude permitted for alternating load.

ELECTRICAL CONNECTION (CORE COLOURS)

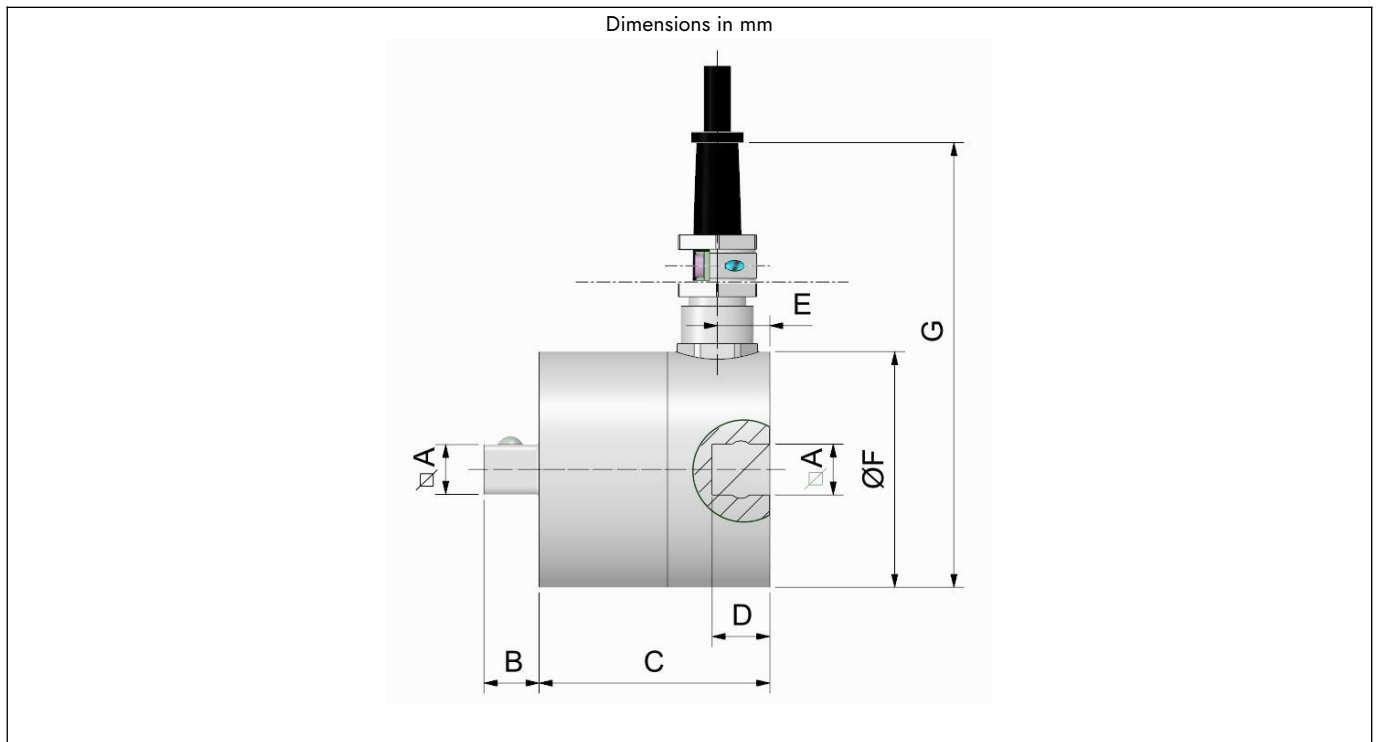
red	+ Excitation
black	- Excitation
white	+ Signal
yellow	- Signal
Shield	connected to the body

ELECTRICAL PROPERTIES

Rated output	2 mV/V (0.5 N·m: 1 mV/V)
Sensitivity tolerance	≤ ±0.5 %
Input resistance	825 ± 50 Ω
Output resistance	700 ± 2 Ω
Nominal power supply	1 ... 15 V
Max. power supply	18 V
Insulation resistance	> 2 GΩ
Zero balance	≤ ±1 %
Electrical connection	cable 5 m, PVC 105 °C, Ø 5.2 mm, 4 × 0.35 mm², shielded



DIMENSIONS (mm)



DIMENSIONS PER NOMINAL TORQUE (mm)

Nominal torque	■ A	B	C	D	E	Ø F	G
0.5 N·m	1/4"	7.5	44	8	10	45	85
2.5 N·m	1/4"	7.5	44	8	10	45	85
5 N·m	1/4"	7.5	44	8	10	45	85
10 N·m	1/4"	7.5	44	8	10	45	85
25 N·m	3/8"	10.5	44	11	10	45	85
50 N·m	3/8"	10.5	44	11	10	45	85
100 N·m	1/2"	15.0	44	16	10	45	85
250 N·m	1/2"	15.0	44	16	10	45	85
500 N·m	3/4"	22.5	53.5	24	17.5	51	91
1000 N·m	3/4"	22.5	53.5	24	17.5	51	91

PERMISSIBLE PARASITIC LOADS

Nominal torque	Axial load (kN)	Lateral load (N)	Bending moment (N·m)
0.5 N·m	0.38	15	1
2.5 N·m	0.38	15	1
5 N·m	0.5	15	1.5
10 N·m	0.9	30	3.5
25 N·m	2.2	30	4.5
50 N·m	3.5	80	15
100 N·m	6	150	20
250 N·m	9.5	180	42
500 N·m	18	250	65
1000 N·m	28	400	170

For a correct measurement, axial and transverse forces and bending moments should be absent. If present, they must not exceed the values in the table and have to be reduced when several act together.



COMPLIANCE AND CERTIFICATION

Protection Rating	IP40 according to EN 60529	
Compliance	CE, RoHS, REACH · EN 61326-1 (2013), EN 61010-1 (2013)	
Calibration	Calibration report clockwise and anticlockwise on request	
Certifications (on request)		Accredited calibration certificate (ISO/IEC 17025), clockwise and anticlockwise – for 0.5 and 2.5 N·m via another accredited laboratory

