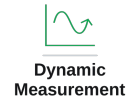


STATIC TORQUE TRANSDUCER



- NOMINAL TORQUE 100 ... 1000 N·m
- FEMALE SQUARE $\frac{1}{2}''$ · $\frac{3}{4}''$
- LIN. + HYST. $\leq \pm 0.20 \%$
- M12 CONNECTOR · 1 mV/V



VERSIONS

Nominal torque	Female square ISO 1174-1	Dimension A (mm)	Dimension C (mm)
100 N·m	$\frac{1}{2}''$	16	60
250 N·m	$\frac{1}{2}''$	16	60
500 N·m	$\frac{3}{4}''$	24	70
1000 N·m	$\frac{3}{4}''$	24	70

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



OVERVIEW

Static torque transducer with flange and female square – the measuring point for test and calibration stations for screwdrivers.

The transducer is fixed by its flange with four screws; the tool engages in the female square according to ISO 1174-1. It measures clockwise and anticlockwise and is designed for dynamic stress. Together with a torque indicator it forms a calibration system for screwdrivers; joint simulator and mounting bracket are available as accessories.

100 ... 1000 nominal torques in N·m	≤ ±0.20 % linearity and hysteresis	1 mV/V rated output	150 % max. permissible torque FS
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APPLICATIONS	EQUIPMENT
■ Calibration of screwdrivers with a torque indicator	■ Flange Ø 132 mm, 4 holes Ø 12.5 mm on bolt circle Ø 100 mm
■ Test stations with joint simulator	■ Female square ½" or ¾" according to ISO 1174-1
■ Static torque measurement clockwise and anticlockwise	■ 5-pole M12 connector, stainless steel sensor
	■ Option: linearity and hysteresis ≤ ±0.10 %



TECHNICAL DATA

MEASUREMENT

Static nominal torque	100 · 250 · 500 · 1000 N·m
Linearity and hysteresis	$\leq \pm 0.20 \%$ (option $\leq \pm 0.10 \%$)
Direction	clockwise and anticlockwise
Temperature effect on zero	$\leq \pm 0.02 \%$ / °C
Temperature effect on sensitivity	$\leq \pm 0.02 \%$ / °C
Reference temperature	+23 °C
Working temperature	-10 ... +70 °C
Storage temperature	-20 ... +80 °C

MECHANICAL PROPERTIES

Sensor material	stainless steel
Process coupling	female square ISO 1174-1: ½" (100 · 250 N·m), ¾" (500 · 1000 N·m)
Fixing	flange Ø 132 mm, 4 × Ø 12.5 mm on bolt circle Ø 100 mm
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 (M12 MALE · CORE COLOURS OF THE CONNECTION CABLE)

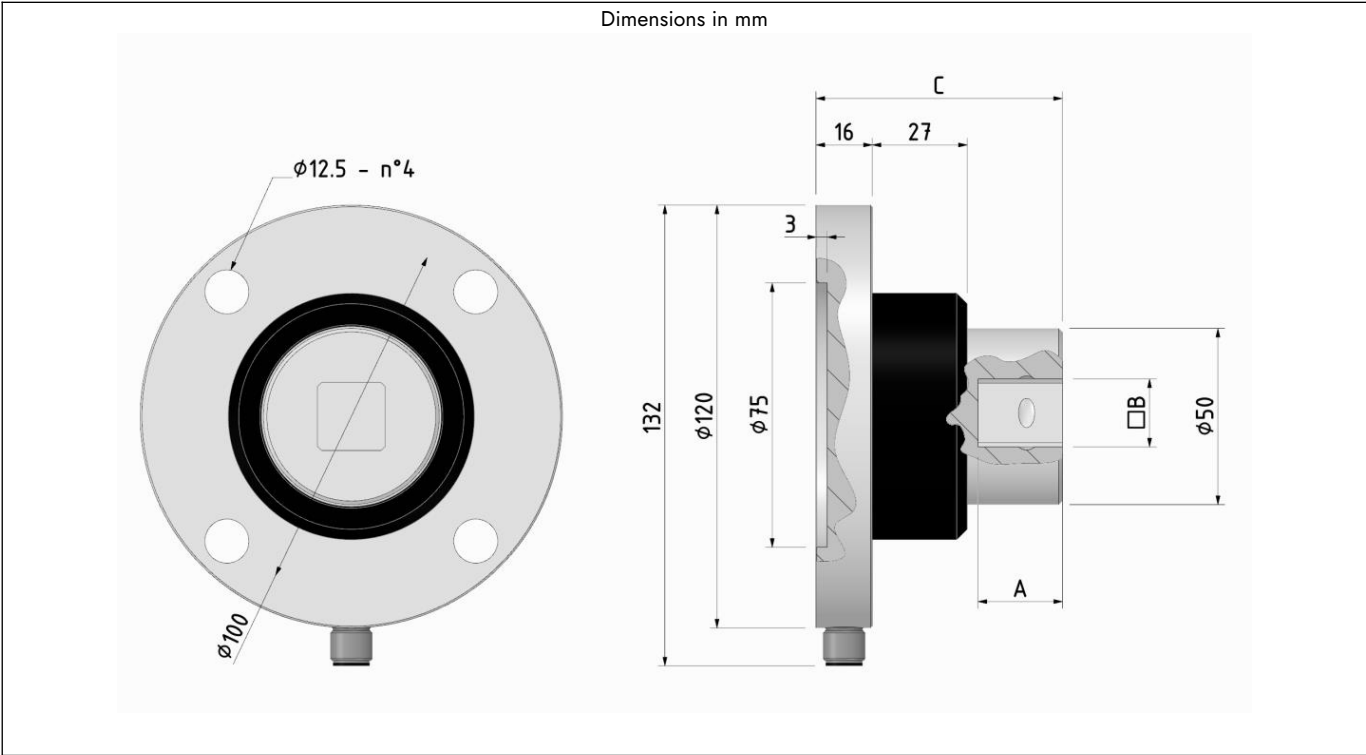
Pin 1	+ Excitation	red
Pin 2	+ Signal	white
Pin 3	- Excitation	black
Pin 4	- Signal	yellow
Shield	connected to the body	—

ELECTRICAL PROPERTIES

Rated output	1 mV/V
Sensitivity tolerance	$\leq \pm 0.5 \%$
Input resistance	$825 \pm 50 \Omega$
Output resistance	$700 \pm 2 \Omega$
Nominal power supply	1 ... 15 V
Max. power supply	18 V
Insulation resistance	> 2 GΩ
Zero balance	$\leq \pm 1 \%$
Electrical connection	5-pole M12 male connector



DIMENSIONS (mm)



DIMENSIONS PER NOMINAL TORQUE			
Nominal torque	A (mm)	□ B	C (mm)
100 N·m	16	1/2"	60
250 N·m	16	1/2"	60
500 N·m	24	3/4"	70
1000 N·m	24	3/4"	70

ACCESSORIES AND OPTIONS	
Item	Design
Mounting bracket	for vertical mounting of the transducer (sold separately)
Joint simulator	for 100 · 250 · 500 · 1000 N·m (sold separately)
Connection cable	moulded for M12x1, PVC 105 °C, Ø 5.2 mm, 4 tinned 0.35 mm² cores, shielded
Option	linearity and hysteresis $\leq \pm 0.10 \%$

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

