

## Features

- Capacities 50Nm – 5000Nm.
- Linearity  $\pm 0.03\%$  RO.
- IP67 rating.

## Applications

- Test machines.
- Process control.



## Description

The TQ-TRX is a flange mount static torque transducer designed to perform torque measurements in clockwise and anti-clockwise directions with high precision. The unit is produced from stainless steel and sealed to IP67.

Laser welded ensuring measurement stability even in hard and wet environments. The monolithic body, made entirely of stainless steel, guarantees high resistance to dynamic stresses which can occur in both directions of measurement. The TRX is made in three specific structures to be able to cover a very large range up to 5000Nm.

The main sectors of application vary from industrial such as test benches and material testing machines, to metrological sectors as a reference standard for testing and calibration laboratories, research institutions, etc. The TRX can also be used as a transfer sample to evaluate the uncertainty of torque transducers with direct weights or, for comparison with the various national reference institutes.

As standard the TRX is a Class 0.05 device according to the EURAMET cg-14 guide with annual drift of less than 0.003%.

**NOTE:** Torque transducers are supplied calibrated in a single direction as standard, either clockwise or anti-clockwise. If calibration in both directions is required, please specify this on enquiring.

## Typical Specification

PARAMETER	VALUE (CLASS 0.05)	UNITS
Capacities Range	50, 100, 200, 500, 1000, 2000, 3000, 5000	Nm
Rated Output	1	mV/V
Sensitivity Tolerance	0.1	$\pm\%$ of Rated Output
Linearity & Hysteresis	0.03	$\pm\%$ of Rated Output
Relative Error REPEATABILITY 0°-120°-240° (b)	0.050 <sup>(1)</sup>	SEE NOTE <sup>(1)</sup>
Relative Error INTERPOLATION (fa)	0.025 <sup>(1)</sup>	SEE NOTE <sup>(1)</sup>
Relative Error HYSTERESIS (h)	0.063 <sup>(1)</sup>	SEE NOTE <sup>(1)</sup>
Relative Error ZERO (fo)	0.012	$\pm\%$ of Rated Output
Temperature Effect ON ZERO	0.02	$\pm\%$ of Rated Output/°C
Temperature Effect ON OUTPUT	0.01	$\pm\%$ of Rated Output/°C
Input Resistance NOMINAL LOAD	700 $\pm$ 2	$\Omega$
Output Resistance NOMINAL LOAD	705 $\pm$ 2	$\Omega$
Insulation Resistance	>5	G $\Omega$
Zero Balance	$\leq 0.5$	$\pm\%$ of Rated Output
Excitation RECOMMENDED	10	Volts AC or DC
Excitation NOMINAL SUPPLY RANGE	1-15	Volts AC or DC
Excitation MAXIMUM SUPPLY	18	Volts AC or DC
Mechanical Limit SERVICE LOAD	120	% of Rated Output
Mechanical Limit SAFE OVERLOAD	150	% of Rated Output
Mechanical Limit ULTIMATE OVERLOAD	>300	% of Rated Output
Mechanical Limit SAFE TRANSVERSE LOAD	50	% of Rated Output

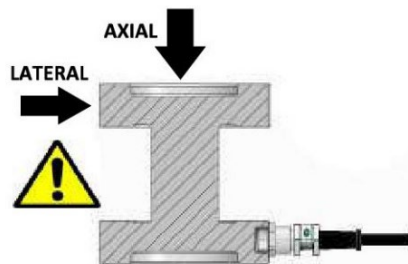
PARAMETER	VALUE (CLASS 0.05)	UNITS
Mechanical Limit SAFE DYNAMIC LOAD	75	% of Rated Output
Temperature Range NOMINAL RANGE	0 to 60	°C
Temperature Range OPERATING	-10 to +70	°C
Temperature Range STORAGE	-20 to +80	°C
Environmental Sealing	IP67	-
Construction Material	Stainless Steel	-
Cable	5	m

(1) Percentual errors referred to reading min. 1/10 of the nominal load.

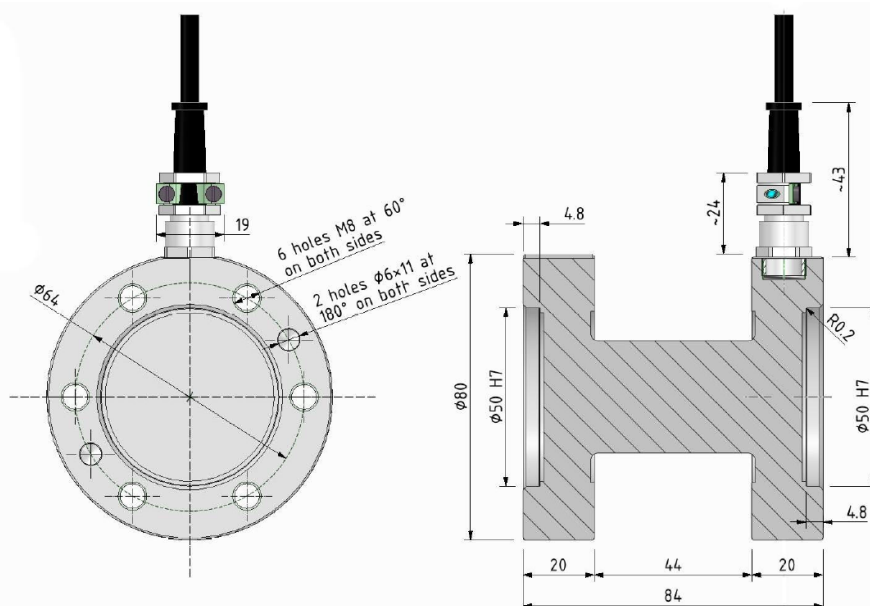
PARAMETER	VALUE			UNITS
Capacity	50, 100	200, 500, 1000, 2000	3000, 5000	Nm
Weight	~1.5	~3	~4.5	KG
Fixing Screw DIAMETER	M8	M12	M16	-
Fixing Screw RESISTANCE CLASS	12.9	12.9	12.9	-
Fixing Screw TIGHTENING TORQUE	40	140	368	Nm

	50Nm	100Nm	200Nm	500Nm	1000Nm	2000Nm	3000Nm	5000Nm
Maximum Axial Permissible Load	19kN	19kN	31kN	56kN	83kN	124kN	124kN	124kN
Maximum Lateral Permissible Load	1.8kN	1.8kN	4kN	8kN	15kN	20kN	20kN	20kN

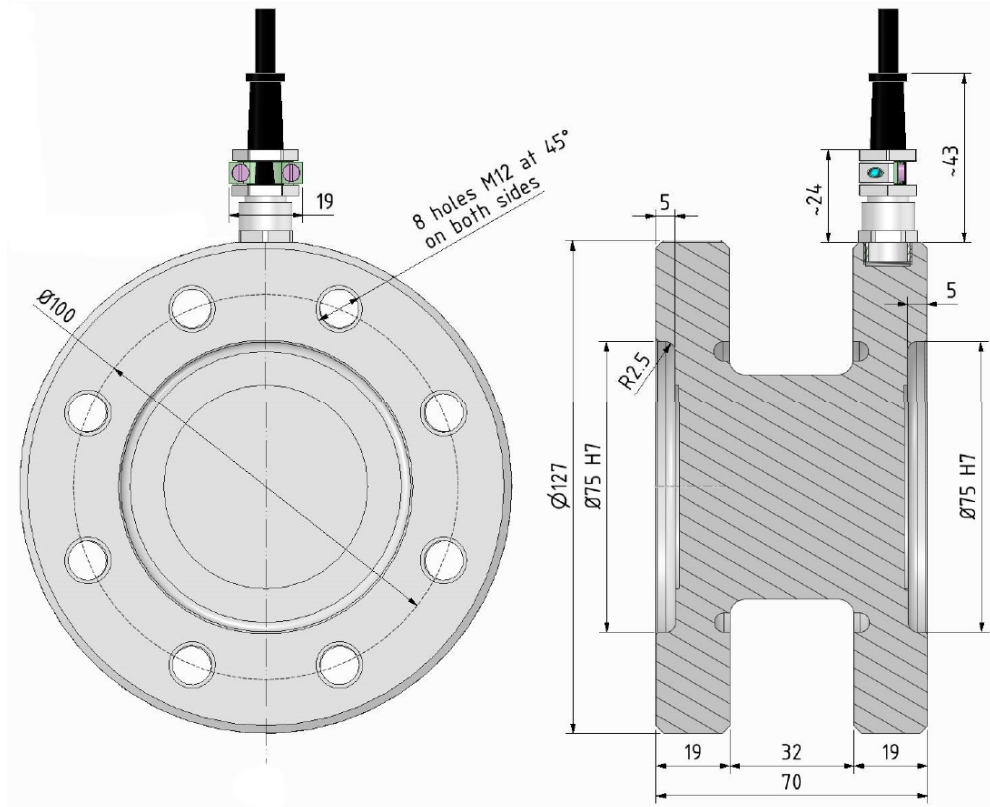
**NOTE:** For correct measurement, both axial and transverse forces and bending moment should be absent. In case they are present, they must not exceed the indicated values, to be reduced in the simultaneous presence of multiple stresses.



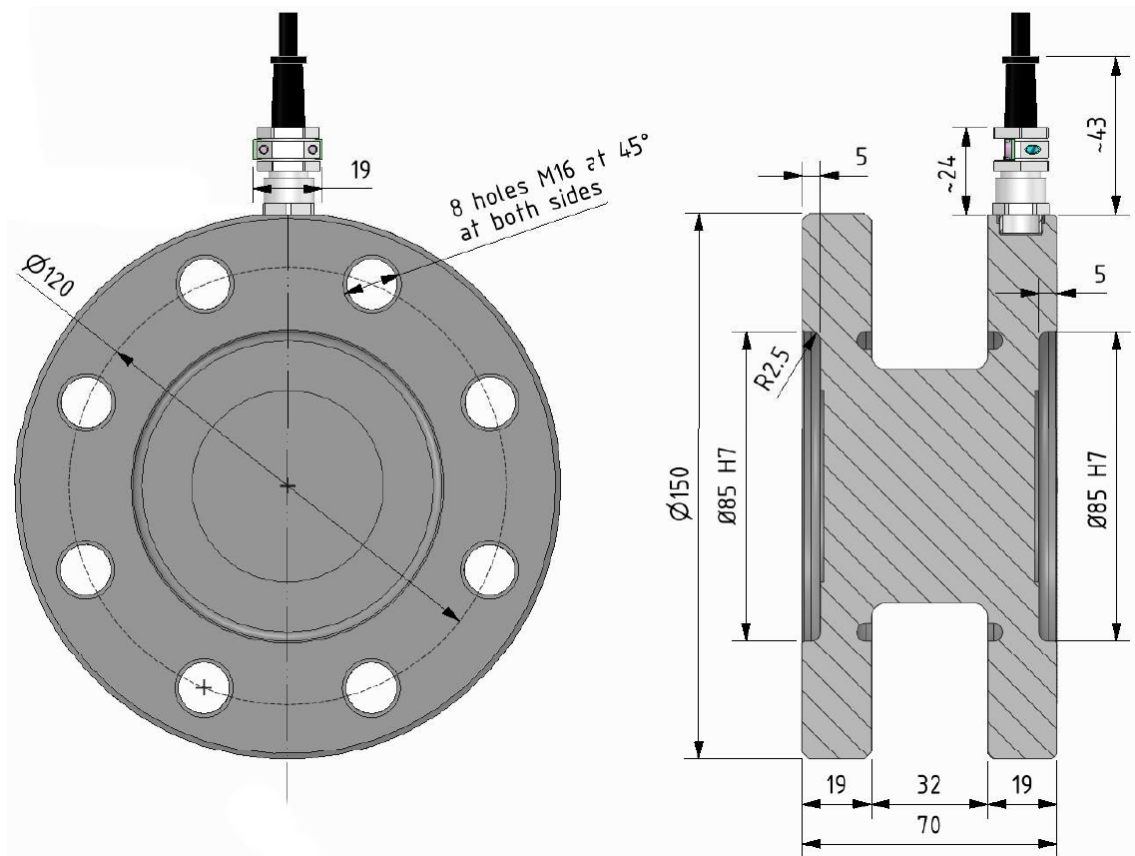
## Outline Dimensions in millimetres



### 50Nm and 100Nm



**200Nm, 500Nm, 1000Nm and 2000Nm**

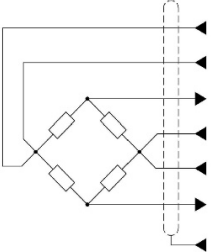


**3000Nm and 5000Nm**

## Ordering Codes

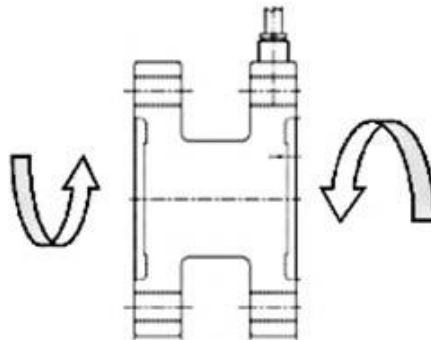
RATING (Nm)	CLASS 0.05 STANDARD
50	MTRX50NM005
100	MTRX100NM005
200	MTRX200NM005
500	MTRX500NM005
1000	MTRX1KNM005
2000	MTRX2KNM005
3000	MTRX3KNM005
5000	MTRX5KNM005

## Wiring Details

	OUTPUT	CABLE <sup>(2)</sup>	MIL7M OPTION
	EXCITATION+	RED	C
	SENSE+	ORANGE	F
	OUTPUT+	WHITE	A
	EXCITATION-	BLACK	B
	SENSE-	BLUE	G
	OUTPUT-	YELLOW	D
	-----	SHIELD <sup>(3)</sup>	E

<sup>(2)</sup> PVC 80°C shielded cable, 5.2mm Ø with 6 tinned 0.25mm<sup>2</sup> Ø conductors. <sup>(3)</sup> Connected to the body of the torque transducer.

## Loading Mode



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