STATIC TORQUE TRANSDUCER

TORQUE

Reference class 0.05 or 0.1 to EURAMET cg-14 · 50 N·m to 5 kN·m

- ACCURACY CLASS 0.05 OR 0.1
- LASER WELDED, IP67
- ANNUAL DRIFT < 0.003 %

CE RoHS COMPLIANT REACH COMPLIANCE IP67 ISO 17025 ACCREDITED LABORATORY Fully Laser Welded Dynamic Measurement

NOMINAL TORQUE (FS)

Nominal torque	Code class 0.05	Code class 0.1	Weight (kg)	Fixing screws	Tightening torque (N·m)	Inertia (g m²)
50 N·m	MTRX50NM005	MTRX50NM01	~ 1.5	M8	40	1.04
100 N·m	MTRX100NM005	MTRX100NM01	~ 1.5	M8	40	6.39
200 N·m	MTRX200NM005	MTRX200NM01	~ 3	M12	140	6.41
500 N·m	MTRX500NM005	MTRX500NM01	~ 3	M12	140	6.45
1 kN·m	MTRX1KNM005	MTRX1KNM01	~ 3	M12	140	6.52
2 kN·m	MTRX2KNM005	MTRX2KNM01	~ 3	M12	140	12.88
3 kN·m	MTRX3KNM005 (1)	MTRX3KNM01 (1)	~ 4.5	M16	368	12.98
5 kN·m	MTRX5KNM005 (1)	MTRX5KNM01 (1)	~ 4.5	M16	368	12.98

(1) For 3 kN·m and 5 kN·m the ACCREDIA calibration cannot be carried out by LAT laboratory no. 93; on request it can be ordered from another accredited laboratory. Fixing screws of resistance class 12.9. Inertia without screws and cables; the source gives one value for 3 and 5 kN·m together — 12.88 and 12.98 belong to 2 kN·m and to 3 and 5 kN·m respectively.

TECHNICAL DATA

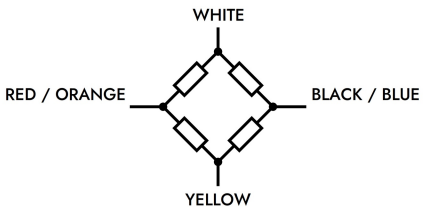
RELATIVE ERROR · CLASS 0.05 · CLASS 0.1

Repeatability 0°-120°-240° (b)	±0.050 % · ±0.100 %
Interpolation (fa)	±0.025 % · ±0.050 %
Hysteresis (h)	±0.063 % · ±0.125 %
Zero (fo)	±0.012 %FS · ±0.025 %FS
Linearity	±0.03 %FS
Hysteresis	±0.03 %FS
Temperature effect on zero (10 °C)	±0.020 %FS
Temperature effect on sensitivity (10 °C)	±0.010 %FS
Annual drift	< 0.003 %

MECHANICAL PROPERTIES

Material	Stainless steel, monolithic body
Sealing	Completely laser welded
Protection class	IP67 · EN 60529
Reference temperature	+23 °C
Nominal temperature range	0...+60 °C
Service temperature range	-10...+70 °C
Storage temperature range	-20...+80 °C

WIRING



1 mV/V bridge · 5 m cable

FIELD OF USE — Test benches, materials testing machines and reference transducers for test and calibration laboratories; also used as a transfer standard. Measures clockwise and anticlockwise.

ELECTRICAL PROPERTIES

Rated output	1 mV/V
Sensitivity tolerance	±0.1 %FS
Recommended supply voltage	10 V
Nominal supply voltage range	1...15 V
Maximum supply voltage	18 V
Input resistance	700 Ω ±2
Output resistance	705 Ω ±2
Insulation resistance	> 5 GΩ
Zero balance	±0.5 %FS

ELECTRICAL CONNECTION

Signal	Cable	MIL7M
+ EXCITATION	RED	C
+ SENSE	ORANGE	F
+ OUTPUT	WHITE	A
– EXCITATION	BLACK	B
– SENSE	BLUE	G
– OUTPUT	YELLOW	D
Shield, connected to the body	–	E
5 m shielded PVC cable, 6 × 0.25 mm²		

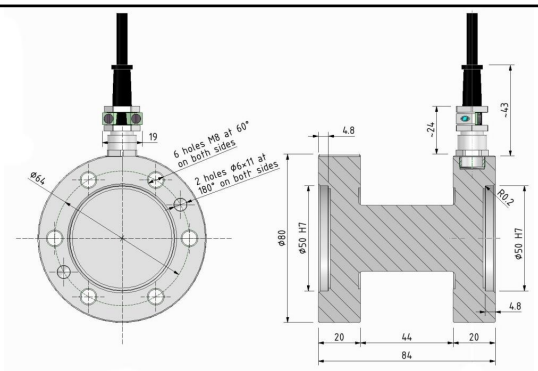
MECHANICAL LIMITS

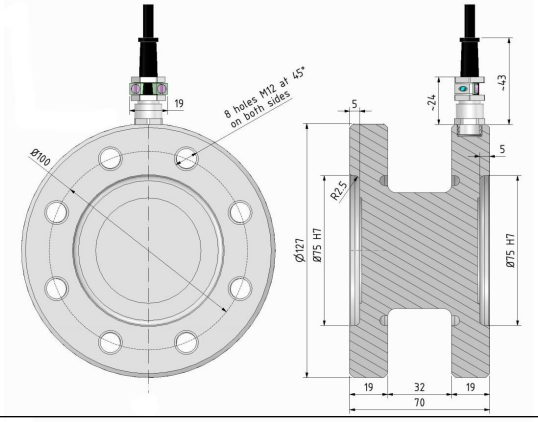
Service load	120 %FS	Torque that may be applied continuously without leaving the specification.
Max. permissible load	150 %FS	Torque that may be applied without permanent change of the characteristics.
Breaking load	> 300 %FS	Torque at which mechanical failure may occur.
Max. transverse load	50 %FS	Transverse force permitted; to be reduced when several loads act together.
Max. permissible dynamic load	75 %FS	Amplitude permitted for alternating load over the service life.

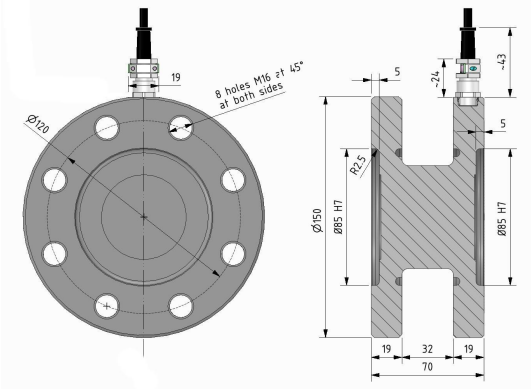
DIMENSIONS (mm)

DIMENSIONS PER FRAME SIZE (mm)

Nominal torque	Flange Ø	Bolt circle	Fixing holes	Bore	Height	Web
50 · 100 N·m	Ø 80	Ø 64	6 × M8 at 60° · 2 × Ø 6×11 at 180°, both sides	Ø 50 H7	84	44
200 N·m … 2 kN·m	Ø 127	Ø 100	8 × M12 at 45°, both sides	Ø 75 H7	70	32
3 · 5 kN·m	Ø 150	Ø 120	8 × M16 at 45°, both sides	Ø 85 H7	70	32







Flange thickness 4.8 mm for the smallest size and 5 mm for the two larger ones; cable gland approx. 43 mm over the axis, 19 mm wide, 24 mm high. All values read from the drawings above.

COMPLIANCE AND CERTIFICATION

Protection rating	IP67 according to EN 60529 · completely laser welded
Accuracy class	0.05 or 0.1 according to EURAMET cg-14
Compliance	CE, RoHS, REACH
Applied standards	EN 61326-1 (2013) · EN 61010-1 (2013)
Directives and regulations	2014/30/EU · 2014/35/EU · 2011/65/EU (RoHS) · 2012/19/EU (WEEE) · 1907/2006 (REACH)
Quality system	Certified according to EN ISO 9001
Declaration of conformity	Issued by the manufacturer on 01/04/2016, covering all options listed in the sales catalogue
On request	Calibration report, clockwise and anticlockwise
On request	ACCREDIA calibration certificate (ISO/IEC 17025), clockwise and anticlockwise — see note (1) on page 1
On request	MIL7M connector instead of the open cable end

OPTIONS AND ACCESSORIES

Item	Availability	Data
MIL7M connector	On request	Fitted to the cable end instead of open leads; pin assignment in the table on page 2
Calibration report	On request	Clockwise and anticlockwise
ACCREDIA calibration certificate	On request	ISO/IEC 17025, clockwise and anticlockwise — not from LAT laboratory no. 93 for 3 and 5 kN·m, see note (1) on page 1
Fixing screws	Not supplied	M8, M12 or M16 of resistance class 12.9 depending on the size; tightening torques in the table on page 1
Shaft couplings, encoder, square coupling	—	Not applicable. The TRX is a static transducer bolted between two flanges; those options belong to the rotating models RT2 (MDAA) and RT8 (MDAB)

For a correct measurement, axial forces, transverse forces and bending moments should be absent. If they are present they must not exceed the values in the table below, and have to be reduced when several of them act at the same time.

PERMISSIBLE PARASITIC LOADS

Nominal torque	50 N·m	100 N·m	200 N·m	500 N·m	1 kN·m	2 kN·m	3 · 5 kN·m
Max. axial load (kN)	19	19	31	56	83	124	124
Max. lateral load (kN)	1.8	1.8	4	8	15	20	20