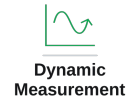


ROTATING TORQUE TRANSDUCER



- NOMINAL TORQUE 5 ... 5000 N·m
- DIGITAL OUTPUT USB 2.0
- ANGLE AND SPEED (OPTION)
- UP TO 4000 rpm



VERSIONS

Nominal torque	Shaft Ø	Key (UNI 6604)	Weight
5 N·m	Ø 16 h6	form A 5 × 5	~ 0.65 ... 1 kg
10 N·m	Ø 16 h6	form A 5 × 5	~ 0.65 ... 1 kg
25 N·m	Ø 16 h6	form A 5 × 5	~ 0.65 ... 1 kg
50 N·m	Ø 16 h6	form A 5 × 5	~ 0.65 ... 1 kg
100 N·m	Ø 25 h6	form A 8 × 7	~ 0.65 ... 1 kg
250 N·m	Ø 25 h6	form A 8 × 7	~ 0.65 ... 1 kg
500 N·m	Ø 25 h6	form A 8 × 7	~ 0.65 ... 1 kg
1000 N·m	Ø 50 h6	form A 14 × 9	~ 6 kg
3000 N·m	Ø 50 h6	form A 14 × 9	~ 6 kg
5000 N·m	Ø 50 h6	form A 14 × 9	~ 6 kg

Square coupling up to 250 N·m, 3/4" for 500 N·m, angle and speed and tablet PC as options. Manufacturer type: RT2-USB.



OVERVIEW

Rotating torque transducer with built-in amplifier – torque directly on the PC via USB, static and dynamic.

The transducer is fitted between drive and load with two flexible couplings and supported on an adjustable bracket. Signal transmission is via contacts; supply and readings run via USB. It measures clockwise torque as positive and anticlockwise torque as negative. The supplied software shows torque in real time, stores peak values and records as a data logger. Mount the couplings outside the machine with the display connected; keep the cable away from high-voltage cables, inverters, generators and solenoid valves.

5 ... 5000 nominal torques in N·m	≤ ±0.20 % linearity and hysteresis	4800 /s readings up to	4000 rpm nominal speed
---	--	--	--

APPLICATIONS
■ Rotating machines and drives
■ Test benches
■ Automatic tightening systems

EQUIPMENT
■ Built-in amplifier, supply via USB
■ Peak, first peak with release threshold, data logger
■ Software and USB cable included
■ Options: angle and speed, square coupling, tablet PC



TECHNICAL DATA

MEASUREMENT

Nominal torque	5 · 10 · 25 · 50 · 100 · 250 · 500 · 1000 · 3000 · 5000 N·m
Linearity and hysteresis	≤ ±0.20 %
Internal resolution	24 bit
Readings per second	5 · 20 · 120 · 600 · 1200 · 2400 · 4800
Programmable resolution	0.01 N·m · 1, 2, 5, 10, 20, 50, 100
Zero function	50 %
Digital filter	moving average over 1 · 2 · 4 · 8 · 16 · 32 points
Torque units	N·m, N·mm, kN·m, kg·m, kg·mm, g·cm, lbf·in, lbf·ft
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
Case material	aluminium
Process coupling	cylindrical shaft with keyway (square as an option)
Signal transmission	via contacts
Nominal speed	4000 rpm
Weight	up to 500 N·m ~ 0.65 ... 1 kg, from 1000 N·m 6 kg
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.
Nominal speed	4000 rpm	Highest permitted speed of rotation.

ELECTRICAL CONNECTION (M12 MALE · USB CABLE)

Pin 1	VBUS (5 V DC)	red
Pin 2	D-	white
Pin 3	D+	green
Pin 4	GND	black
Pin 5	earth	—

ELECTRICAL PROPERTIES

Output	digital, USB 2.0
Power supply	5 V DC via USB port
Electrical connection	M12x1 male connector, 5 poles

FUNCTIONS

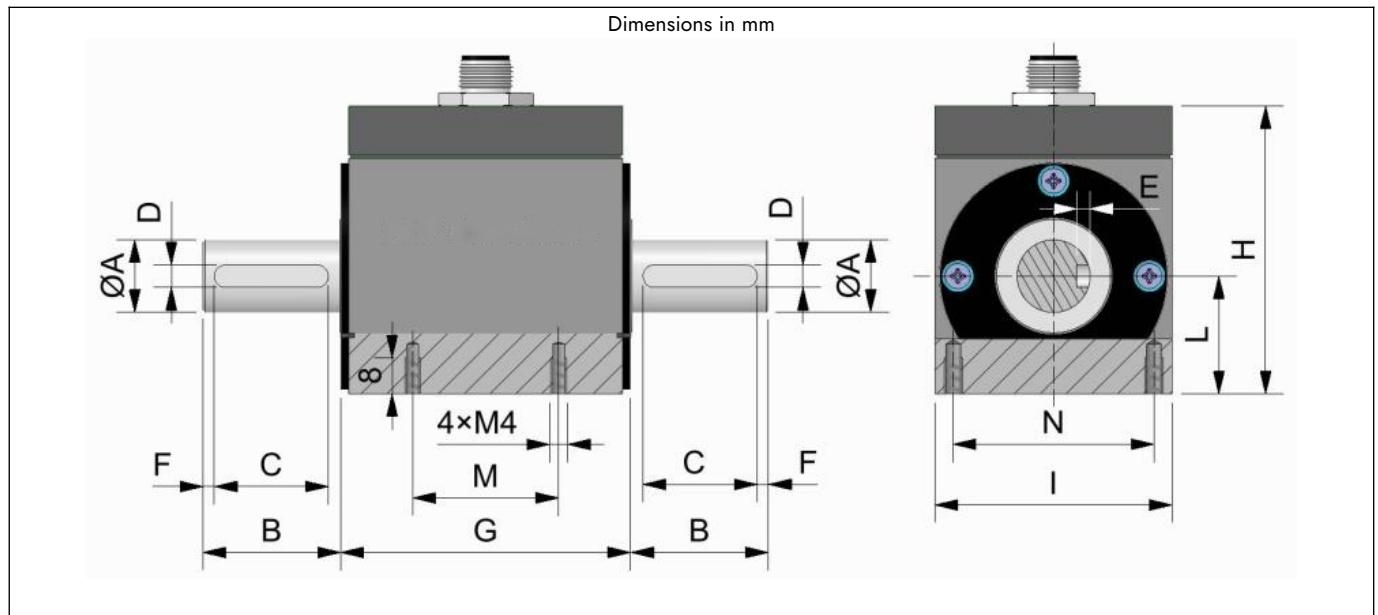
Peak function	clockwise (+) and anticlockwise (-)
First peak function	release threshold programmable
Release peak function	release threshold programmable
Software	peak and data logger mode, export to ASCII and Excel

ANGLE AND SPEED (OPTION)

Internal resolution	3520 div. / rotation
Angle resolution	0.1°
Speed indication	rpm or Hz
Direction indication	clockwise (+) or anticlockwise (-)



DIMENSIONS (mm)



SHAFT PER NOMINAL TORQUE (mm)

Nominal torque	Ø A	B	C	D	E	Keyslot UNI 6604
5 ... 50 N·m	16 h6	30	25	5	3	form A 5 × 5
100 ... 500 N·m	25 h6	40	35	8	4	form A 8 × 7
1000 ... 5000 N·m	50 h6	90	80	14	5.5	form A 14 × 9

HOUSING (mm)

Nominal torque	F	G	H	I	L	M	N
5 ... 500 N·m	2.5	64	63.5	52	26	32	44
1000 ... 5000 N·m	5	100	106	100	43	80	60

SQUARE COUPLING (OPTION) ACCORDING TO ISO 1174-1 (mm)

Nominal torque	Male P	LP	Female Q	LQ	S
5 · 10 N·m	¼"	7.5	¼"	8	86
25 · 50 N·m	⅜"	10.5	⅜"	11	89
100 · 250 N·m	½"	15	½"	16	94
500 N·m	¾" both sides	22.5	¾" both sides	22.5	119

STIFFNESS AND INERTIA

Nominal torque	Torsional stiffness (kN·m/rad)	Torsional angle (°)	Inertia (kg·mm²)
5 N·m	0.78	0.37	28
10 N·m	0.78	0.73	28
25 N·m	4.4	0.32	28
50 N·m	4.4	0.65	28
100 N·m	14	0.4	47
250 N·m	31	0.46	50
500 N·m	44	0.65	53
1000 N·m	181	0.32	1295
3000 N·m	332	0.52	1370
5000 N·m	377	0.76	1475

SCOPE OF DELIVERY AND ACCESSORIES

Item	Design
Included	transducer, PC software, USB cable
USB cable	4-pole straight M12x1 female connector, length 2 m
Tablet PC (option)	10" touch screen for measurements and recording in the field
Mounting	2 shaft couplings (bellows or disk pack) and an adjustable support; alignment ±0.1 mm



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 on request	
Certifications (on request)		Accredited calibration certificate (ISO/IEC 17025), clockwise and anticlockwise

