-CPRT Series

Rotating torque transducer

Ref : FP 3508
Rev :

DESCRIPTION

The CPRT torque transducer was designed to measure static and dynamic torque on rotating machines, test benches and automatic tightening systems.

The CPRT torque transducer measures CLOCKWISE torque with a POSITIVE voltage output or the ANTICLOCKWISE torque with NEGATIVE voltage output.

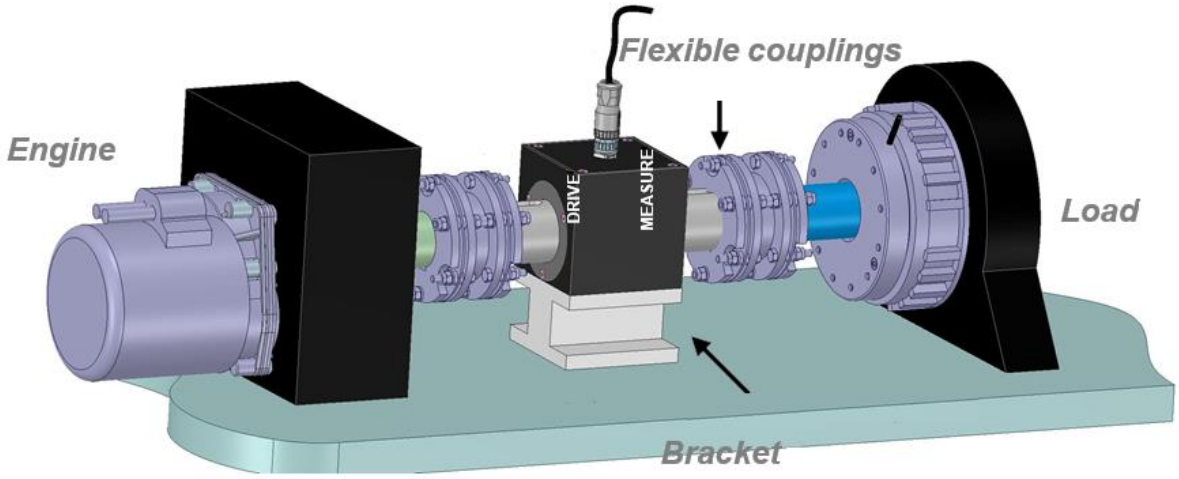
For correct operation and accuracy of the measurements it is necessary to prepare:

- 2 SHAFT COUPLINGS (cylindrical or square coupling) with bellow or disc pack according to nominal torque and rotation speed (max 4000 rpm)
- 1 ADJUSTABLE SUPPORT that allows, during installation phase, to align the sensor with the two connection shafts (tolerance ± 0.1 mm).

Assembly of couplings to torque transducer must be done while disconnected from the machine (system) with the torque transducer connected to the display, thus checking in real time that unwanted torque, bending and tension are not generated with possible overloading of torque meter.

Mount torque transducer with couplings on support, align the system along its own axis and connect system. Even in this phase, make sure that the measure showed by display does not exceed nominal torque of the sensor.

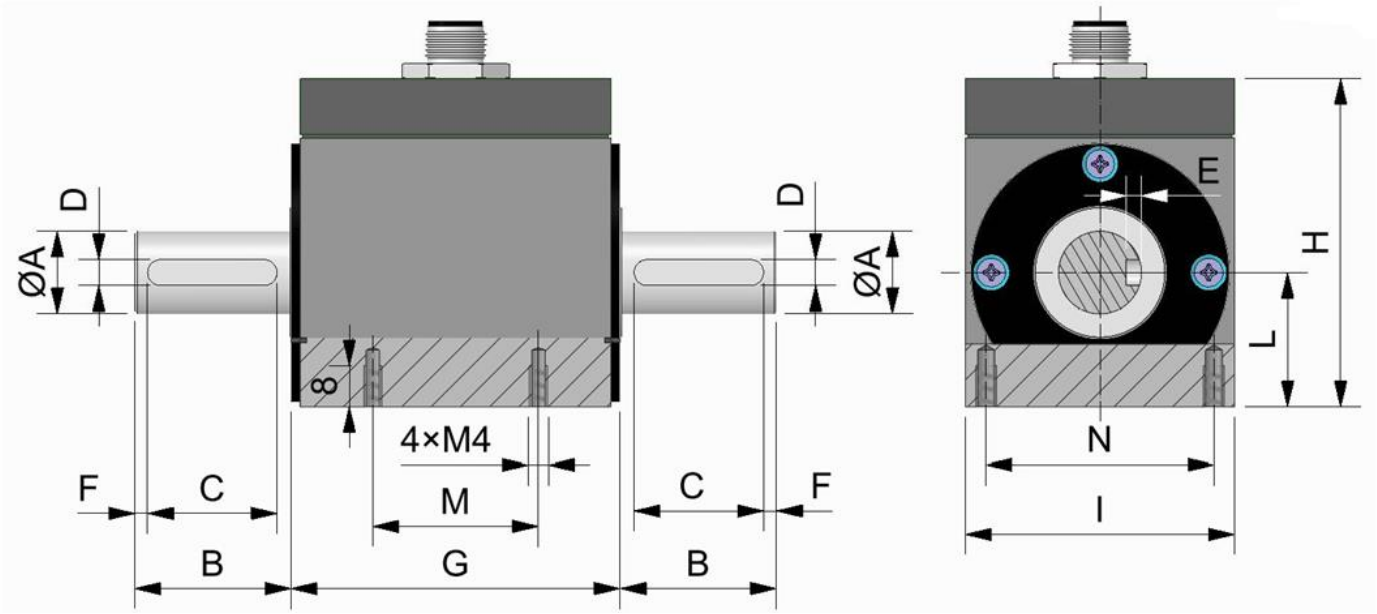
APPLICATION



TECHNICAL DATA

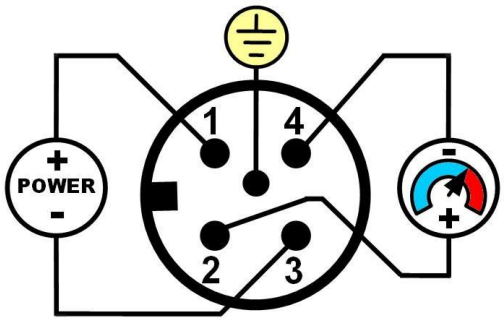
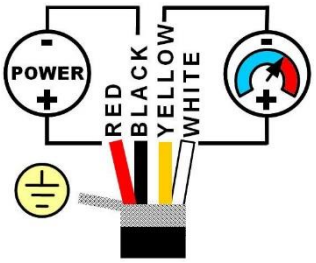
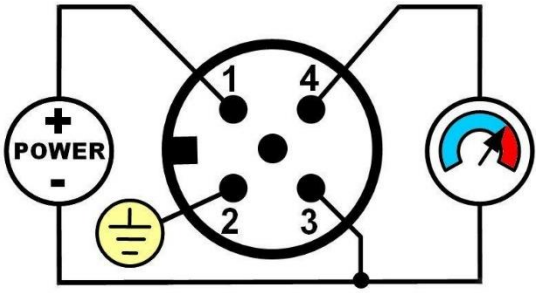
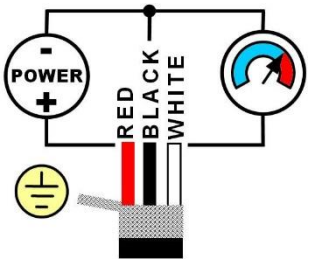
TYPE	Model 1		Model 2
NOMINAL TORQUE	0.5 Nm	2.5 - 5 - 10 25 - 50 - 100 250 - 500 1000 – 3000 5000 Nm	0.5 - 2.5 - 5 - 10 25 - 50 – 100 250 – 500 1000 – 3000 5000 Nm
LINEARITY and HYSTERESIS	≤ ± 0.2 %		
TEMPERATURE EFFECT (1°C): a) on zero b) on sensitivity	 ≤ ± 0.02 % ≤ ± 0.02 %		
NOMINAL SENSITIVITY SENSIVITY TOLERANCE	1mV/V ≤±0.2 %	2mV/V ≤±0.2 %	± 10V ≤±0.2 %
NOMINAL POWER SUPPLY MAX. POWER SUPPLY INPUT RESISTANCE OUTPUT RESISTANCE	1-15V 18V 800 ± 20Ω 700 ± 5Ω		
NOMINAL POWER SUPPLY MAX. POWER SUPPLY MAX. ABSORPTION LOADING RESISTANCE RESPONSE FREQUENCY			15-24V 28V 30mA min. 3KΩ From 1 to 5kHz
INSULATION RESISTANCE ZERO BALANCE	>2 GΩ ≤ ± 0.5 %		
LIMIT MECHANICAL VALUES: a) service torque b) max. permissible torque c) breaking torque d) highly dynamic torque e) nominal speed	 100 % 150 % >300 % 70 % 4000 rpm		
REFERENCE TEMPERATURE WORKING TEMPERATURE RANGE STORAGE TEMPERATURE RANGE	+23 °C -10 / +70 °C -20 / +80 °C		
PROTECTION CLASS (EN60529) SENSOR EXECUTION MATERIAL CASE EXECUTION MATERIAL PROCESS COUPLING	IP40 Stainless Steel Aluminium cylindrical		
ELECTRICAL CONNECTION	Connection: M12X1 Male 5 poles 3 m cable with molded M12		
POIDS	from 0.65 to ~1 kg		~ 6 kg

DIMENSIONS



Couple	ØA	B	C	D	E		F	G	H	I	L	M	N
0.5 N•m 2.5 N•m 5 N•m 10 N•m 25 N•m 50 N•m	16h6	30	25	5	3	Keyslot UNI 6604 form A 5×5	2.5	64	63.5	52	26	32	44
100 N•m 250 N•m 500 N•m	25h6	40	35	8	4	Keyslot UNI 6604 form A 8×7							
1000 N•m 3000 N•m 5000 N•m	50h6	100	80	14	5.5	Keyslot UNI 6604 form A 14×9	5	100	100	100	41	80	80

ELECTRICAL CONNECTIONS

	Connector M12X1 Male	Cable
Model 1		
Model 2		

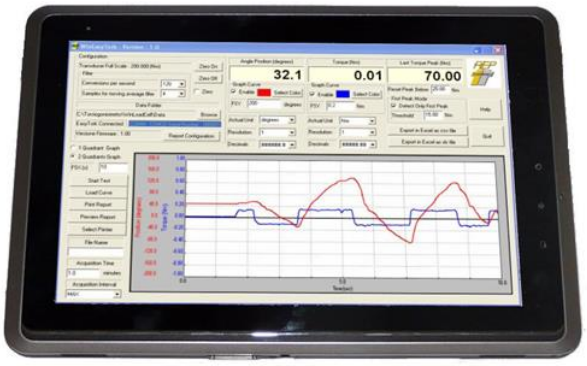
OPTIONAL ACCESSORY

USB 2.0

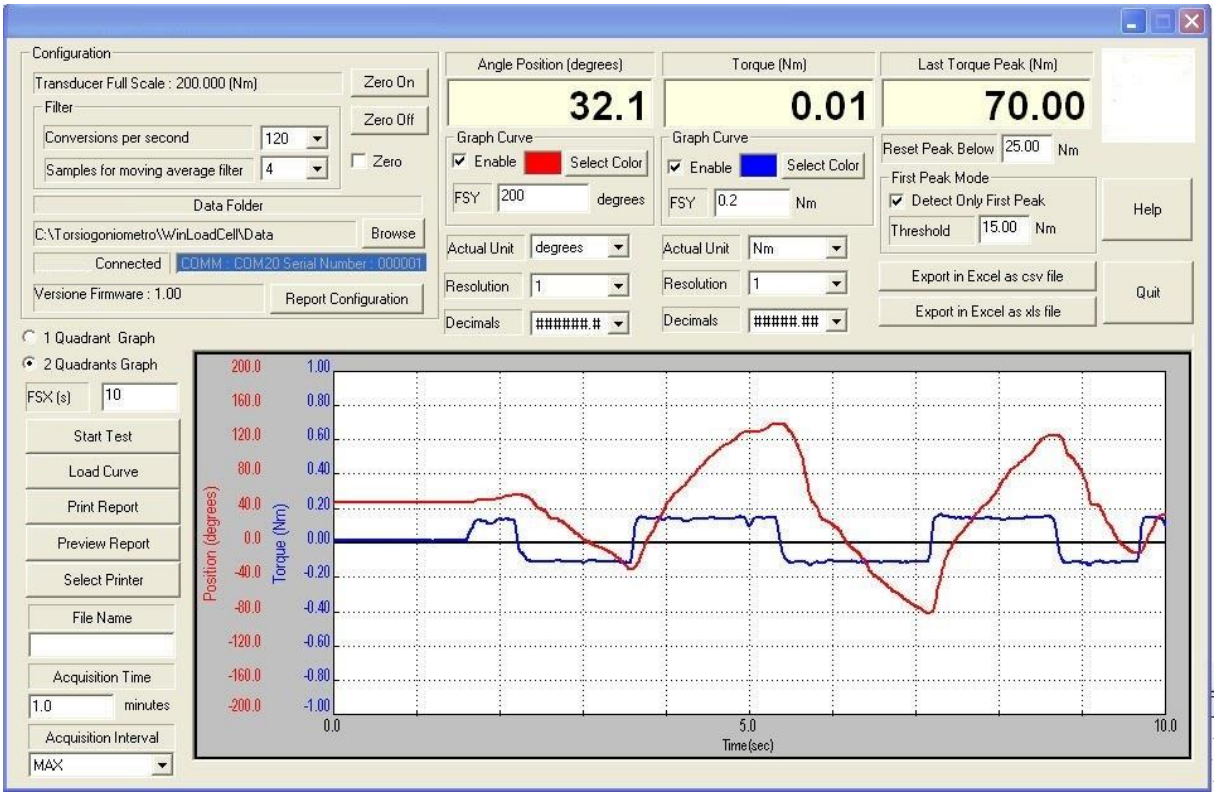
Portable Tablet PC:

PC with 10-inch touch screen for measurements and recording directly in the field.

USB cable with 4-pole straight M12x1 connector, length 2m.



Software :



The software allows the user to directly manage the torque, displaying real-time measurement of torque and angle or alternatively the speed of rotation (in Hz or rpm).
Various functions can be customized from the PC panel such as: acquisition speed (up to **4800 Hz**), digital filter, zero function both for angle and torque. The torque can be displayed in different engineering units.
The software allows to work in two different ways: Data Logger mode or Peak mode.

- PEAK mode can be set to detect peaks continuously or simply by storing the first peak and setting the threshold of release.
- In DATA LOGGER mode, the program records in real time both torque and the angle/speed on a graph. Graphs can then be saved, printed and eventually converted to ASCII or Excel format for later analysis .

Through the HELP button you can see the software manual and the torque manual. The manual is complete with all details on the communication protocol.

CONTACT

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