



- Measurement range up to 800Nm bidirectional
- Accuracy of $\pm 1\%$ with solid shaft
- High signal bandwidth of 3.0 kHz
- Analogue output signal
- Extrem low current consumption
- Easy mounting

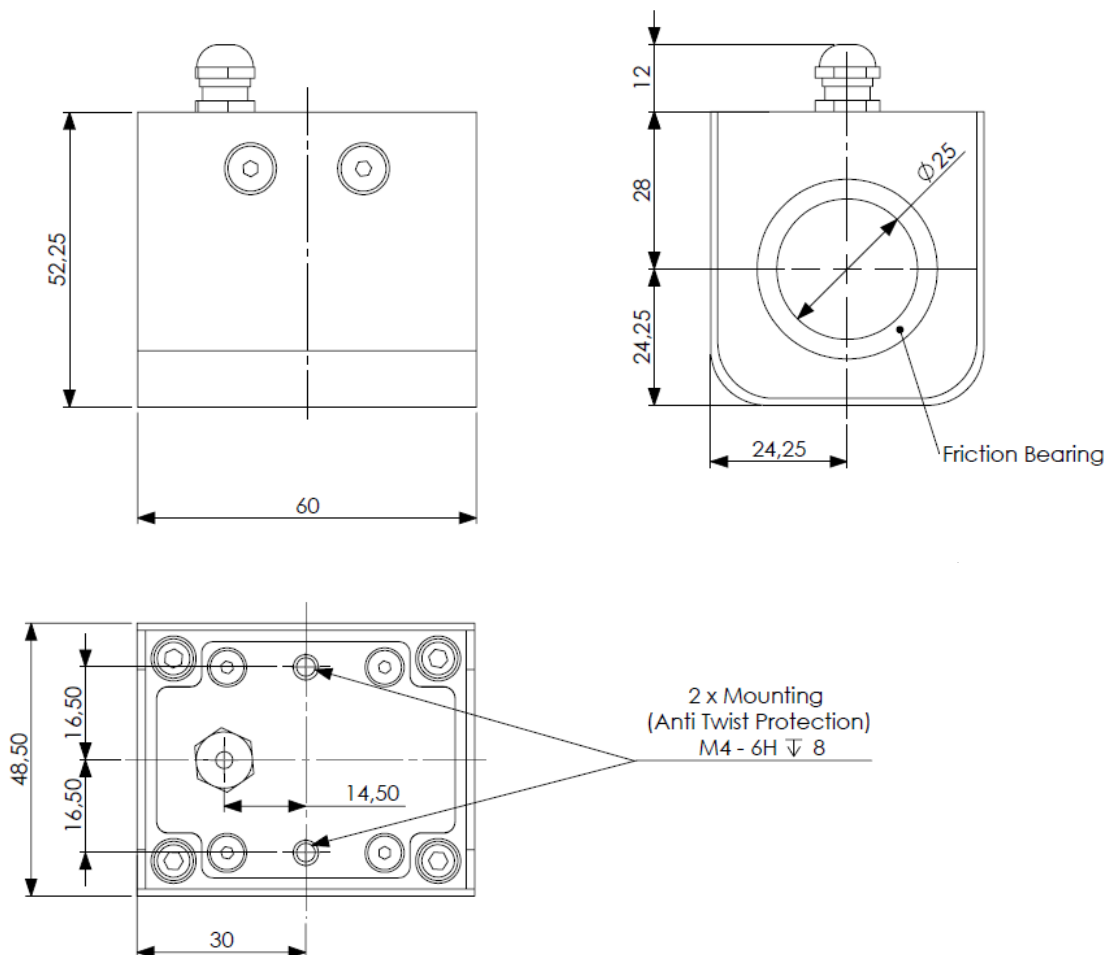
1. Short description

This torque sensor system is especially designed for the requirements of the Formula Student series. It already includes the whole signal conditioning for an analogue signal. Besides a low current consumption the sensor features a robust design and is designed for fast and easy mounting and dismantling.

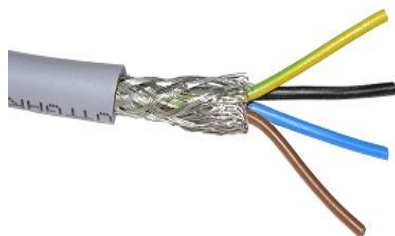
2. Technical specification

Type		Driveshaft - 25mm diameter
Basic data		
Measurement / Calibration range	Nm	800 Nm bidirectional
Maximum rotational speed	1/rpm	1400
Weight (without shaft)	g	265
Rotating mass	g	0
Shaft measurement region diameter	mm	25
Operation temperature	°C	(-20) - (+85)
IP rating according to EN 60529	-	IP 67
Output signal		
Analogue signal	V	0.3... 4.7
Signal at torque = zero	V	2.5
Signal slope	mV/Nm	please view the calibration certificate
Signal bandwidth (-3dB)	Hz	2500
Offset drift over the operation temperature area	mV	3 - 15
Long-term drift over 48 h	mV	-
Signal output series resistor	Ω	62
Power supply		
Voltage supply	VDC	9.0... 16 (typical 12)
Startup current consumption	mA	65
Maximum current consumption	mA	25
Power consumption	W	< 0.2

3. Dimension



4. Pin assignment



Supply & signal: 4-pin - screened		
Cable type:		Unitronic 100 CY, 4 x 0,14mm ²
Cable end:		Prepared wires
Colour	Short	Description
Brown	Vcc	Supply +
Blue	GND	Supply ground
Yellow	A ₀	Signal +
Black	A _{0ref}	Signal ground

5. Handling Instruction / Assembly

Transportation

During sensor handling, storage and transportation it is to avoid that the sensor get close to high magnetic fields (e.g. magnets, electric motors). Furthermore static or dynamic loads must not be applied to the sensor especially the shaft.

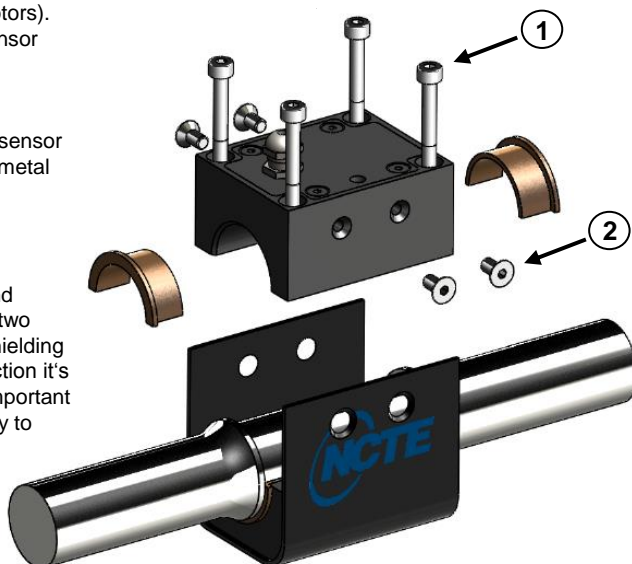
Handling

As the shaft is encoded and calibrated and therefore a part of the sensor system the coded region on the shaft must not get in contact with metal parts. In addition any load which leads to a plastic deformation is forbidden.

Assembly

As shown in the illustration on the right the sensor will mounted and dismantled with aid of 8 screws. The screws marked as (1) fix the two sensor housing half-shells, the screws marked as (2) attach the shielding to the sensor housing. Due to the shielding have an magnetic function it's not recommended to use the sensor without it. Furthermore it is important to check the positions of the friction bearing shells during assembly to avoid additional load to the shaft and the bearings itself.

Attention: Due to the specified protection class it is not allowed to open the screws of the cover and the cable connection.



6. Contact

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