Torque Sensor
Read Out Unit

Quick Start Guide
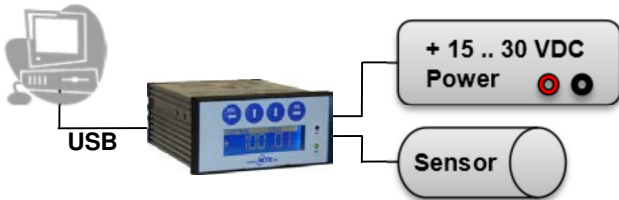
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www.ncte.de

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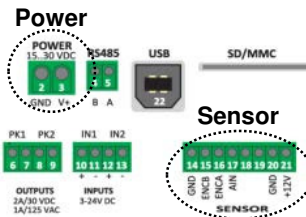5. **Setting up data acquisition (PC)**

1. Short description

This document is a short guide for connecting and using the read out unit together with standard NCTE torque sensor families.

2. Basic connection diagram

+ 15 .. 30 VDC Power

USB

Sensor

• On Windows the read out unit is installed as HID and does not require special drivers.
• The MG-ME1 PC Software runs as is and needs no further installation. It can be downloaded at www.ncte.com.

	Read Out Unit		DC Power Supply
	Pin	Label	Description
Power	3	V+	Supply Voltage + (+15 .. 30 VDC)
	2	GND	Supply Voltage – (GND)

Power

POWER 15..30 VDC RS485 USB SD/MMC
GND V+   B A   22

PK1 PK2   IN1 IN2
6 7 8 9   10 11 12 13
OUTPUTS   INPUTS
2A/30 VDC   3-24V DC
1A/125 VAC

Sensor
14 15 16 17 18 19 20 21
GND ENCB ENCA AIN GND +12V
SENSOR

	Read Out Unit		Sensor Series 2000 (Connector: Binder Series 712)			Sensor Series 3000 / 4000 (Connector: Binder Series 423/723/425)			Sensor Series 7000 (Connector: Binder Series M16 Connector IP67)		
	Pin	Label	Pin	Color	Description	Pin	Color	Description	Pin	Color	Description
Sensor	14	a. GND	-	-	-	D	Yellow	Analog GND	E	Grey	Analog GND
	15	ENCB	-	-	-	H	Red	Angle Ch B	D	Yellow	Angle Channel B
	16	ENCA	-	-	-	F	Pink	Angle Ch A	C	Green	Angle Channel A
	17	AIN	2	Brown	Signal Output V_{out}	C	Green	Analog Out	F	Pink	Analog voltage signal output
	20	GND	3	Black	Ground	B	Brown	Ground GND	G	Blue	Ground GND
	21	+12V	1	White	Supply voltage V_{CC}	S	White	Supply voltage V_{CC}	H	Red	Supply voltage V_{CC}

3. Basic configuration (using MG-ME1 PC Software)

Torque Input:
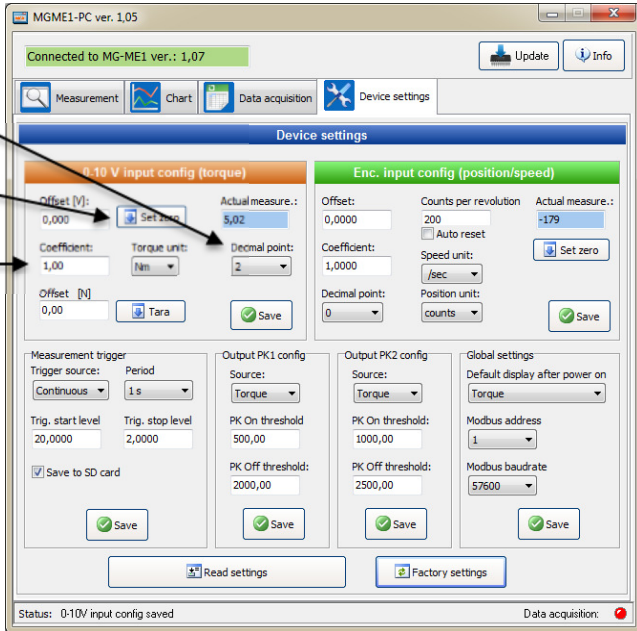
1. Select decimal precision for torque display and data recording and press the **[Save]** button.
2. While sensor is unloaded (zero torque) press the **[Set zero]** button. This determines the zero point of the analog Signal (usually ≈ 2.5 V or ≈ 5 V)
3. Input Coefficient and press the **[Save]** button. The coefficient can be calculated using the slope value of the calibration certificate as follows:
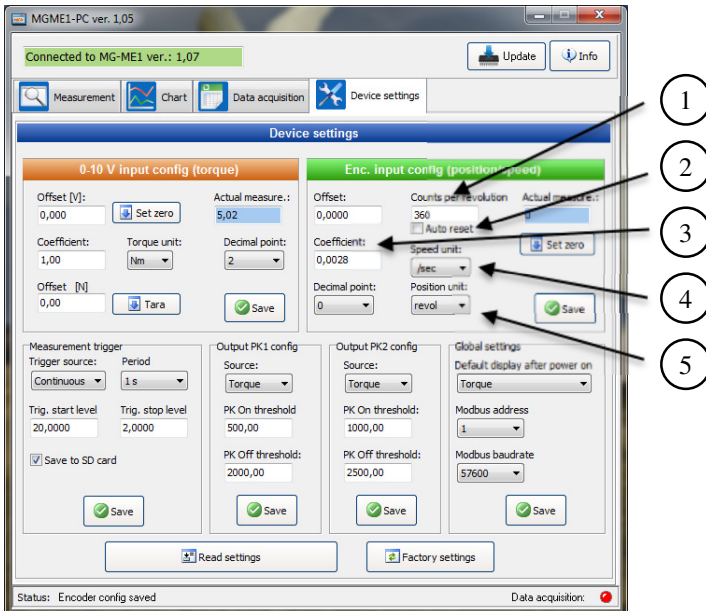
Calibration Certificate
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Messdaten / Measurement data	
Steigung Slope	40,02 mV/Nm
Achsenabschnitt Offset	5,279 V
max. erlaubte	

$$Coefficient = \frac{1}{Slope} \times 1000$$

Example:

$$Coefficient = \frac{1}{40.02 \frac{mV}{Nm}} \times 1000 = 24.9875 \frac{Nm}{V}$$

Encoder Input:

1. Input the encoders no. of pulses per revolution and press the **[Save]** button.
2. Activate the "Auto reset" Check Box and press the **[Save]** button. When active the position value is reset to 0 after a full revolution.
3. Input the coefficient for speed and position calculation and press the **[Save]** button. The coefficient can be calculated as follows:

$$Coefficient = \frac{1}{Counts\_per\_revolution}$$

Example:

$$Coefficient = \frac{1}{360} \approx 2.7777777777e-3$$

4. Select the time unit for the speed display and press the **[Save]** button.
5. Set the position unit to "Revol" (=revolution) and press the **[Save]** button.

Revision B
Sept. 30, 2013

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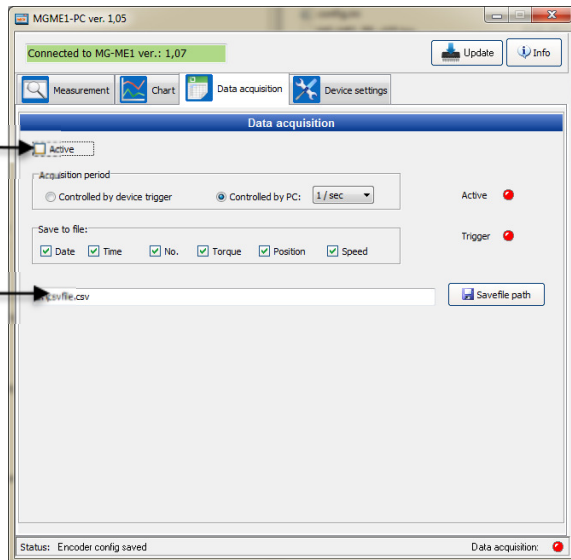
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4. Measurement data displays

The PC Software has two tabs which can display live measurement data
- "Measurement" tab: numerical displays
- "Chart" tab: data plot with various editable properties, print option and image export.
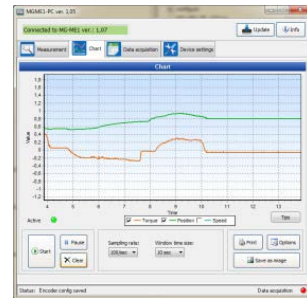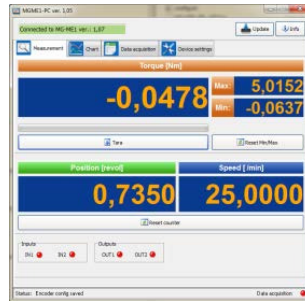
5. Setting up data acquisition (PC)

1. Press **[Save file path]** and select both path and name for the csv-file.
2. Check the check box in order to start the aqusition. *If the file already exists, new data will be appended at the end of the file.*

6. Contact

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PC Software

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