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Further information such as data sheets and an operating manual can be found at www.ncte.com or at <http://www.ncte.com/service/downloads/>.

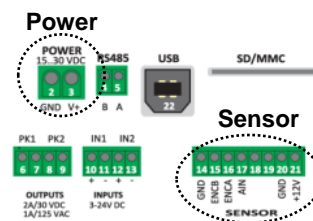
Summary

This is a quick start guide for operating the readout unit and connecting to the NCTE standard sensors.

Overview of basic connections

- On Windows, the read-out unit installs
- The MG-ME1 software for PC works without further installation. This can be downloaded for free at <http://www.ncte.com/service/downloads/>.

Power	Read-out unit		DC Power supply
	Pin	Labeling	Description
	3	V+	Supply voltage + (+15 ... 30 VDC)
	2	GND	Supply voltage – (GND)





Read-out unit		Series 2000			Series 2300		
Pin	Description	Pin	Color	Description	Pin	Color	Description
14	a. GND	-	-	-	5	Grey	Analog GND
15	ENCB	-	-	-	4	Yellow	Angle channel B
16	ENCA	-	-	-	3	Green	Angle channel A
17	AIN	2	Brown	Output V_{out}	6	Pink	Output analog
20	GND	3	Black	Bulk	7	Blue	Supply voltage GND
21	+12V	1	White	Supply voltage V_{CC}	8	Red	Supply voltage V_{CC}

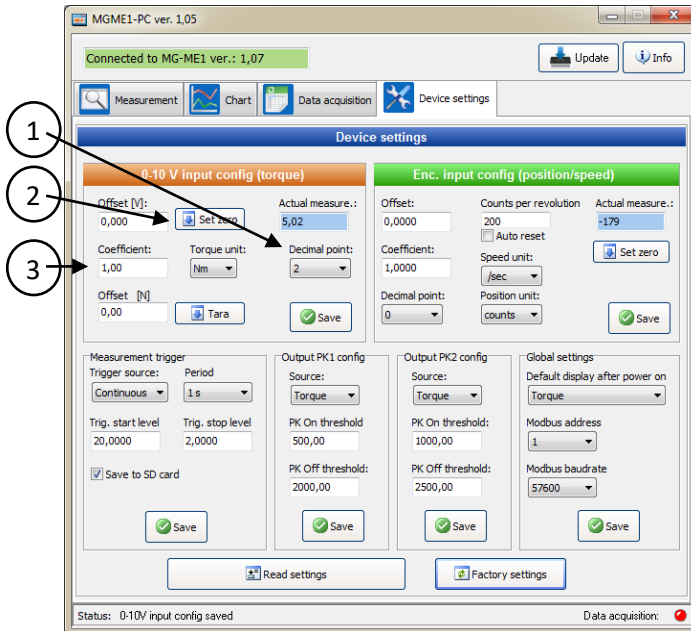


Read-out unit		Series 3000/Series 4000			Series 5000/Series 7000/Series 7500		
Pin	Description	Pin	Color	Description	Pin	Color	Description
14	a. GND	D	Yellow	Analog mass	E	Grey	Analog mass
15	ENCB	H	Red	Angle channel B	D	Yellow	Angle channel B
16	ENCA	F	Pink	Angle channel A	C	Green	Angle channel A
17	AIN	C	Green	Analog output	F	Pink	Voltage output, analog
20	GND	B	Brown	Bulk GND	G	Blue	Bulk GND
21	+12V	S	White	Supply voltage V_{CC}	H	Red	Supply voltage V_{CC}

Basic setting (Using the MG-ME1 PC software)

Torque input at voltage output:

1. Select the decimals and torque unit for data logging and click **[Save]**.
2. During the sensor relief (Display 0 torque), click **[Set zero]**. This sets the zero point of the analog signal (usually ≈ 2.5 V or ≈ 5 V).
3. Enter the guideline number and click **[Save]**. The guideline value is calculated by using slope value (→ in the calibration certificate) according to the following example:



Calibration certificate
Page 2

Messdaten / Measurement data	
Steigung Slope	40,02 mV/Nm
Achsenabschnitt Offset	5,279 V
max. erlaubte	

$$\text{Coefficient} = \frac{1}{\text{Slope}} * 1000$$

Example:

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

Torque input at current output



Use a precision resistor with 350 ohms ($\pm 0,01\%$) between A-GND and A-In.

The appropriate precision resistance can be purchased via NCTE.

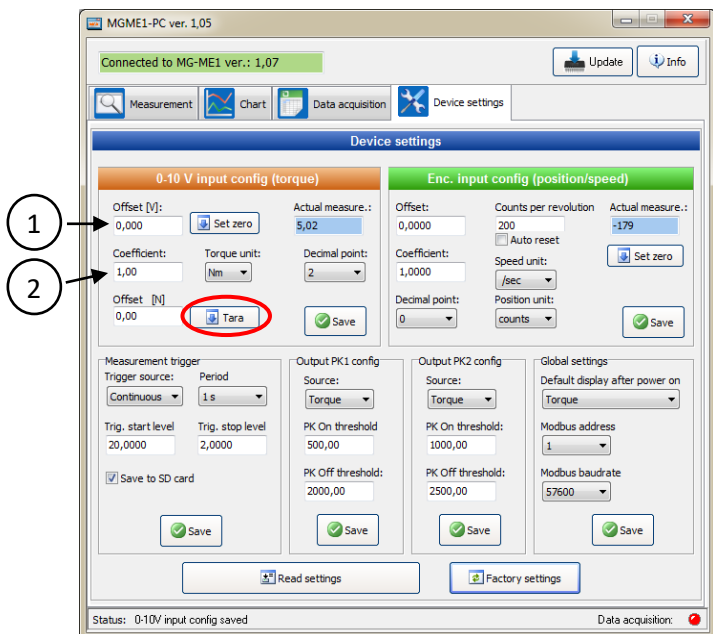
1. Determine offset by pressing the „Tara“ button on the software interface. The value is automatically taken over.

Alternatively, it is possible to calculate the value based on the values from the calibration certificate of the sensor. For this:

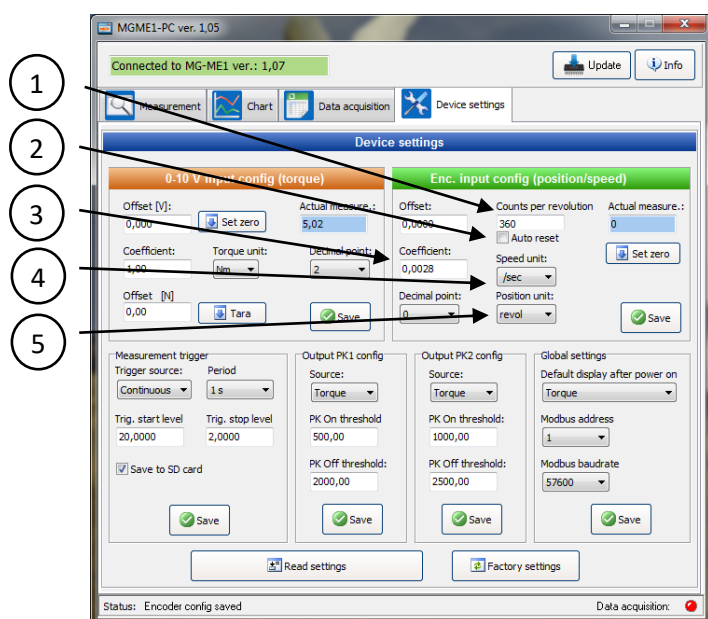
$$\text{Offset (MGME1 Software)} = \text{Offset} * 0,35$$

2. Calculate and enter the coefficient:

$$\text{Coefficient} = \frac{\text{Slope} \frac{\text{Nm}}{\text{mA}}}{0,35}$$



Angle measurement input:



1. Enter the number of angle measurement and pulses per revolution and click [Save].
2. Activate "Auto reset" with \checkmark and click [Save]. The value should be set to 0 after one full turn
3. Enter the calculated speed and position guideline number and click [Save]. The guideline number is calculated according to the following formula:

$$\text{Guideline_number} = \frac{1}{\text{number_per_turn}}$$

Example:

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

4. Select the unit of time for revolution speed and click [Save].
5. Set the position unit to "revol" (revolution) and click [Save].

RS485 communication parameters

- Default address: 1
- Default baudrate: **38400 b/s**
- Stop bits: **1**, Parity: **none**

MG-ME1 registers address table

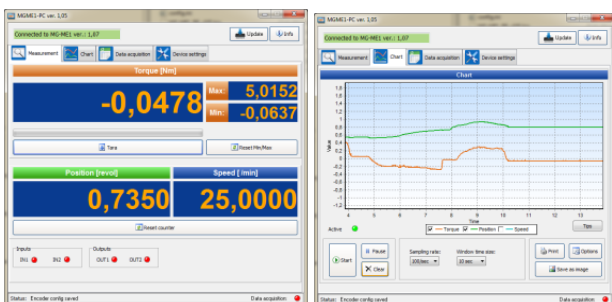
Address	Name	Datatype	Mode function number	Description
0	ADC (REAL)	REAL	R (0x03)	Analog data from 0-10 V input.
2	ENC (REAL)	REAL	R (0x03)	Position from encoder input.
6	ADC_MIN (REAL)	REAL	R (0x03)	Min value of analog data.
8	ADC_MAX (REAL)	REAL	R (0x03)	Max value of analog data.
10	ENC VEL (REAL)	REAL	R (0x03)	Velocity from encoder input.
20	ADC (DIN)	DINT	R (0x03)	Analog data from 0-10 V input
22	ENC (DIN)	DINT	R (0x03)	Position from encoder input.
26	ADC_MIN (DIN)	DINT	R (0x03)	Min value of analog data.
30	ADC_MAX (DIN)	DINT	R (0x03)	Max value of analog data.
38	ENC VEL (DIN)	DINT	R (0x03)	Velocity from encoder input.

R – read, W – write, REAL (4 bytes), DINT (4 bytes)

REAL – floating point data type

DINT – signed integer data type

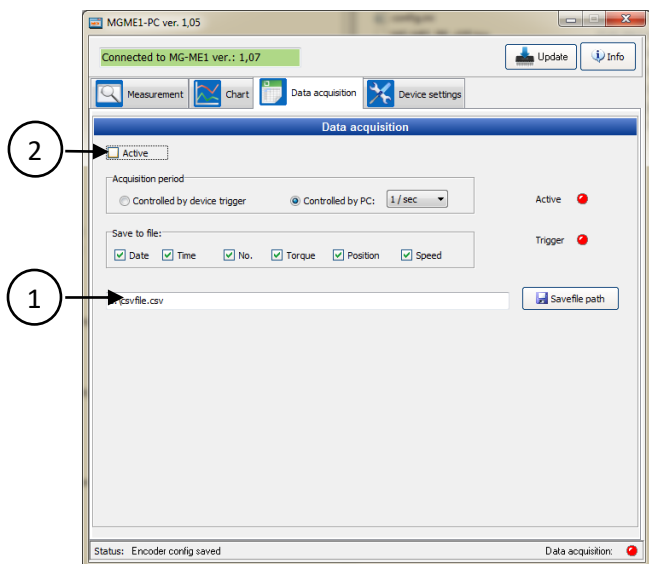
Display measurement results



The PC software has two tabs, which can display current measurement results:

- “Measurement”-tab: Numeric display
- “Chart”-tab: Data recording with various, editable properties, as well as print option and image export.

Data update on the PC



- 1) Click on **[Save file path]** and select the path and name for the csv. File.
- 2) Check the markers to start the transfer.
If the file already exists, the new data will be appended to the existing file end.

Made to order

The readout unit (item no. 400010-ATS001) comes with 5 green connectors, 1.8m USB cable and 4 GB SD card.

You are welcome to receive further information in a personal conversation with your sales manager for series products at tel.: +49 89 66 56 19 0 or by e-mail: sales@ncte.de.