

## EMM.120 MID en EMM120 CT



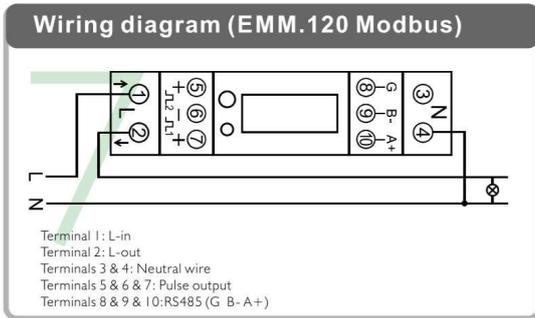
EMM.120 and EMM.120 CT are advanced mono-phase energy meters with Modbus RTU connection. The readout of the consumption values can be done via the display or on the linked web server. The module is packed in a 1 module wide DIN rail housing with either direct flow passage up to 45A (EMM.120-MID) or a connection for a **100mVolt** current-transformer

for indirect flow measurement. (EMM.120 CT). The coil (100mVolt) should be optionally re ordered, see 2-Wire price list.. The flush flow setting at EMM.120CT is pre-set either at 50A or 100A, this setting can be read out but not changed via display only by our support service.

Ditto for the Modbus address, this is printed on the packaging and/or housing or can be read out (and not modified) via the LCD display. In addition to an RS485 connection, the two modules also have 2 pulse outputs.

### 1.Connecting:

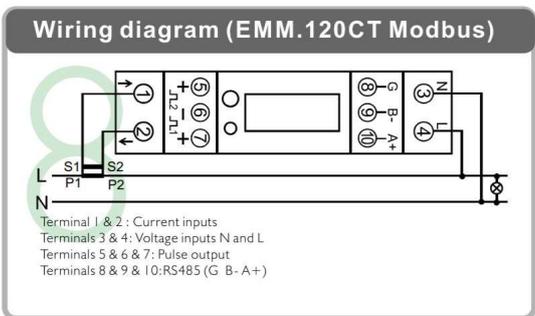
#### EMM.120



Let op: different from EMM.120CT!!

- **Power supply:** L1-in on Clamp 1, L1-out on Clip 2, N in/out Clamp 4
- **Modbus:** G,, A and B connect

#### EMM.120 CT JUST 100mVolt coil



Let op: different from EMM.120!!

- **Rinse:** on Clip 1 and Clamp 2
- **Power supply:** L1 on Clip 1, N on Clip 3
- **Modbus:** G,, A and B connect

**Attention 1:** to avoid tension surge: first connect coil guides, only then rinse around current drains cliffs!! Stream coil only places by skilled electrical installer!!! Wear goggles with the coils every time you act!!!  
**Attention 2:** Via display key always check **polarity** on display, if negative power (Watt) or negative PF then rinse open and turn over!  
**Attention3:** When mono-phase measurement in a more-phase installation, measure voltage and current at the **same** stage:  
 $P(\text{power}) = U1(\text{voltage phase1}) \times I1(\text{current phase1}) \times \cos \phi$ , otherwise the measurement is NOT correct!!

### 2. Configuration on the display:

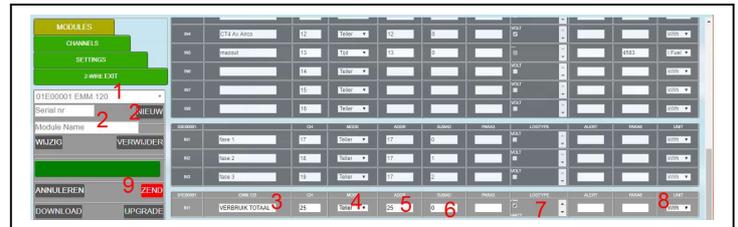
Both modules are-pre-configured, the Modbus address is printed on the module or you can read in the display. The modbus parameters set: 9600 8N1

- Modbus address : Id001... Id247
- Baud rate: 9600 baud
- Data: 8 bit
- Parity: Prty n (parity none)
- Stop bit 1
- Extra for EMM.120CT: Current coil : Ct0100 ( is pre-set on 100A coil or on 50A coil)

**Note:** The pre-set values can only be changed to SET mode via a PC software and a USB to Modbus interface.

### 3. Configuration in the web server

In the web server go to: /configuration/modules:



1. Enter a **unique fictitious** serial number starting with **01E** followed by a unique number with 5 digits: Vb. **01E00001**
2. Name the meter: E.g. **EMM.120** and press **"NEW"** and a fill-in table appears
3. Give a recognizable name to the exit: E.g. **CONSUMPTION TOTAL**
4. Choose **MODE COUNTER (automatic)**
5. Enter the Modbus address of the module: E.g. **25** (AND NOT **025!!**)
6. Enter Modbus sub-address : **always 0**
7. Log type: Only if you're working on charging data to a central server indicate the parameters you want to be uploaded
8. Choose unit kWh(**automatic**)
9. Press **"ZEND"** when "Module OK" appears the programming is fine otherwise : Modbus address error, cabling check,...

### 4. Read values on the display

1	000478	Total active energy(kWh)
1-1	000245	Charging energy (kWh) (25-000001) = 000245
1-2	000232	Discharge energy(kWh) (25-000002) = 000232
2	2198	Energy (kWh)
3	2018	Consumption
4	22102	Active power (W)
5	5000	Frequency (Hz)
6	PF 100	Power factor (PF)
7	Id 001	Current (A) (CT) (Default: 100A)
8	b 2400	Current (A) (CT) (Default: 100A)
9	noRE	Active power (W) (Default: 1000)
10	Ct:0005	CT ratio (Default: 1000)

By pushing the push button for a short time, you can read all the measurements and Modbus parameters: (value CT flow coil (10) only in case EMM.120CT)

Total kWh→ Import kWh→ Export kWh→ Voltage → Current→ Power W→ Frequency →Power Factor → Modbus address→ Baudrate → Parity→ CT value

The preset Modbus parameters: 9600 8N1

The list of all Modbus registers for link to a Modbus reading system is available via our website

### 5. What values are logged.

MEMo logs every 60 seconds:

- Meter mode import in kWh
- Meter mode export in kWh
- Tension in Volt
- Power in Ampère
- Power in Watt
- Powerfactor
- Reactive power in VAR

### 6. General comments:

- If you want to see both import consumption and export consumption in the web server then use fictitious serial number starting with **02E00001** and Modbus **sub-address** 0 and 1in,

import consumption chart is then under sub-address 0 and export consumption chart is under sub-address 1.

DESIGN	EMR_ID	CH	MODE	ADDR	SUBAD	PARAM	VOLT	LOCTYPE	ALERT	PRIME	UNIT
M1	VERBRUK IMPORT	33	Teller	33	0		V	+			kWh
M2	VERBRUK EXPORT	34	Teller	33	1		V	+			kWh

- Visualization of channels for the customer : see at WS.502 Web server /configuration/channels
- Because the web server cannot show negative graphs, the E-meter for solar panels must be connected in the direction of the current.
- If power in the web server shows zero value then probably the polarity of the coil is wrong
- Using the RG.016 module, this meter can be read wirelessly via MEMo, MEMo2 and MiLo
- The flow coil may be extended by only a few metres with the same section.
- The comprehensive (English) manual with all technical specifications, detailed configuration, Modbus registers is available through our website [www.2-wire.net](http://www.2-wire.net)

## 7. Installation instructions

The installation must be carried out by an approved installer and in accordance with the rules in force.

- This device is only suitable for DIN rail assembly in accordance with EN 50022 and must be fitted in a closed distribution board.
- Make sure that a safety interruption of the device is possible. Turn off the module before installing it.
- Do not open the device – the warranty expires when the device is opened.

This manual must be attached to the file of the electrical installation. The 2-Wire website always has the latest manual of the product.

## 8. Support

Do you want to exchange the product in case of a possible defect? Please contact your wholesaler or the 2-wire support service. The contact details can be found on our website [www.2-wire.net/contact/](http://www.2-wire.net/contact/)

## 9. Guarantee conditions

The warranty period is two years from delivery date. The date of delivery is the invoice date of purchase of the product by the consumer. If there is no invoice available, the production date applies.

The consumer is obliged to inform Qonnex bvba in writing of the lack of conformity, and this at the latest within two months of adoption.

In the event of a lack of conformity, the consumer is only entitled to a free repair or replacement of the product, which is determined by Qonnex.

Qonnex is not responsible for any defect or damage caused by improper installation, improper or negligent use, improper operation, product transformation, maintenance in violation of maintenance regulations or an external cause such as moisture damage or damage from span.

The mandatory provisions in national legislation on the sale of consumer goods and the protection of consumers in countries where Qonnex sells directly or through distributors, agents or permanent representatives take precedence over the above provisions

Qonnex  
B-9310 Aalst  
Belgium  
[info@2-wire.be](mailto:info@2-wire.be)  
[www.2-wire.net](http://www.2-wire.net)