## EMM.220-MID

EMM.220 is an advanced mono phase energy meter with direct connection up to 100A. The configuration of the meter is done via the two push buttons and the LCD display. The bi-directional meter (import and export) is suitable for both active and reactive power measurement. The reading of the consumption values can be done via the display or via the connected web server. In addition to an RS485 connection, the module also has 2 pulse outputs, 1 of which is configurable.

1. Connect:
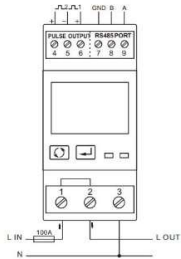
Nutrition:
- L1 in on Terminal 1
- L1 out on Terminal 2
- N in/out on Terminal 4

Modbus: Connecting G, B and A

2. Configuration on the display:

This module is partly pre-configured, normally only a **UNIQUE** Modbus address needs to be provided, number between 1... 247 and possibly **bring baud rate to 9600**, but also check the other Modbus parameters.

How to get into SETUP:

Keep **pressing the right button (enter) until PAS 0000** appears, enter default password PAS 1000 by pressing the left button (scroll) until 1 appears, short **press enter for next number or long press** enter to go to next setting. Go through the set values via scroll. After waiting a few seconds, you will automatically exit the menu.
The pre-set Modbus parameters: 9600 8N1

- Modbus address : Id001.. Id247 (default 1)
- Baud rate: b 9600 (default 9600)
- 8 bit
- Parity: Prty n (parity none) (default n)
- Stopbit 1(default 1)

So if there are multiple meters in the installation, you have to set a unique Modbus address via this display (Id001.. Id247 (default 1)) for each meter.

The list of all Modbus registers for linking to a Modbus reading system is available on our website

3. Configuration in the web server

In the webserver go to Level3 (installer level), click on the button "EDIT GROUP-CHANNELS" enter the word 'Level3' and press the button 'CANCEL', you will now see 'Level3' at the top left. In this installers Level3 you can add meters.

- Click on the "EDIT GROUP-CHANNELS" button The 'ADD CHANNEL x(Y)' button in the pop-up window creates a new channel. Unless you enter

'Y' in 'Channel Nr', the channel small 'x' will be created. Large (Y) is an unused channel in the ascending sequence of channel numbers
- Choose type 'EMM220-630' as module and select the mode 'ENERGY' (both are already selected by default)
- Enter the unique Modbus address of the module: E.g. 25 (NOT **025!!**)
- Enter Modbus sub-address : **'0'**= IMPORT, **'1'**= EXPORT
- Give a name to the meter: E.g. EMM.220 F1 and press "SAVE", confirm OK and the log channel is created
- You can also make a 2nd channel to measure the injection (=export).
- Use the 'ADD CHANNEL x(Y) button to create an additional new channel.
- Now, to the right of the "LOAD" button, enter the channel number of the previous configuration and press the "LOAD" button to take a copy.
- Change sub-address to '1' to measure the export and change the name to e.g. 'F1 export'
- Press "SAVE" to upload your configuration to the web server.
- With the "TEST RX" button you can test the communication between MEMo3 and the meter. In case of error: Check Modbus settings and cabling,...

MEMo3b: See also Memo3b manual point 9. Above is an example with CH0=phase 1+import, CH1=export. So: module=EMM220-630, mode= Energy, Modbus address and sub-address, name and then 'SAVE'. Mono-phase or 3 phase meter are configured in the same way. With a 3 phase meter you can create a 3rd channel with subaddress 2 for phase 3.

ReMI: Configuration as Modbus master: Channel Type "Modbus", device id will be 'Master EMM220' or 'Master EMM630' for the 3 phase meters. Para1 shows the Modbus address of the meter, para 2 shows '0' for import and '1' for export. 'Name' and 'Save' with password 'adminREMI'. Example:

Channel Type		Device Id		Para1	Para2	Units		EPC		Name	Peak
CH12	Modbus	Master EMM220		5	0	kWh		☐	○	import	☐
CH13	Modbus	Master EMM220		5	1	kWh		☐	○	export	☐

4. Reading values on the display

By briefly pressing the **scroll** push button each time, you can read all measured values and Modbus parameters:

Total kWh→ Import kWh→ Export kWh→ Total kvarh→ Import kVarh→ Export kVarh→ Max. Power Demand→Voltage → Current→W→ Var →VA→ Power Factor → Frequency → Pulse Constant→ Modbus Address→ Baud Rate

5. What values are logged.

MEMo logs every 60 seconds:

- Meter reading import in kWh
- Meter reading Export in kWh
- Voltage in Volts
- Current in Amperes
- Power in Watts
- Power factor
- Reactive power Var

6. General remark:

- The current meter readings import and export can be read in the web server (light green values) by pressing 'AUTO REFRESH'.
- In the MEMo3 you can add groups and sort channels at "EDIT GROUP-CHANNELS" and with the "SORT" button, see manual MEMo3
- Since the web server cannot show negative graphs, the solar panel E-meter must be connected according to the direction of the current.
- With the help of the RG.016 module, this meter can be read wirelessly via Memo and MiLo
- The comprehensive manual with all technical specifications, detailed configuration, Modbus registers is available via our website www.2-wire.net

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7. Installation instructions

Installation must be carried out by a certified installer and in accordance with the regulations in force. The module must be built into a fireproof fuse box. During installation, the following must be taken into account (non-exhaustive list):
- the applicable laws, standards and regulations.
- the state of the art at the time of installation.
- This manual, which only mentions general provisions and should be read in the context of each specific installation.
- the rules of good workmanship.
- the specified specs in this manual, otherwise there is a risk of damage to the module.

This manual must be attached to the electrical installation file. On the 2-Wire website you can always find the most recent manual of the product.

8. Support

Would you like to have the product repaired in case of a possible defect? Please contact your supplier or order "inspection module" online.

9. Warranty provisions

The warranty period is two years from the date of delivery. The delivery date is the invoice date of purchase of the product by the consumer. If no invoice is 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 after discovery. 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 a defect or damage resulting from incorrect installation, improper or negligent use, incorrect operation, transformation of the product, maintenance in violation of the maintenance instructions or an external cause such as moisture damage or damage due to overvoltage. 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.

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