

# Waymeter Pro

Installation Manual

ENGLISH

# Contents

## 1. e-Mobility: B2B Energy Services

### Waymeter Pro Kit by Gavazzi Installation Guidelines **3**

1.1. Introduction 3

1.2. Context 3

### 2. Waymeter Pro Kit by Gavazzi – Sales information **4**

2.1. General Information 4

2.2. Pre-Sales Checklist 5

2.3. Ordering Info 7

### 3. Waymeter Pro Kit by Gavazzi – Installation **8**

3.1. Pre-Installation Checklist 8

3.2. Wiring activities 9

### 4. Waymeter Pro Kit by Gavazzi – Software Configuration **14**

4.1. Requirements 14

4.2. Configure the gateway via UWP3 Tool 14

4.3. Configure the meter settings 20

4.4. Meter Data Management 23

4.5. Web platform and Enel X cloud connection 26

4.6. Closing Activity 28

### 5. Troubleshooting **29**

5.1. Gateway Factory Reset 29

### 6. Annex 1 – Meter comparison **30**

### 7. Annex 2 – Sensor comparison and compatibility **31**

### 8. Annex 3 – Ordering information **32**

### 9. Annex 4 – Meter configuration **33**

CONFIDENTIAL

*This document and any information disclosed in connection herewith (collectively, the "Information"), whether written or oral, is the property of Enel X Way S.r.l. The Information is intended only for the person or entity to which it is presented or addressed and may contain information that is privileged, confidential, or otherwise protected from disclosure. Distributing or copying the Information to anyone other than the intended recipient is strictly prohibited.*

# 1. e-Mobility: B2B Energy Services

## Waymeter Pro Kit by Gavazzi Installation Guidelines

### 1.1. Introduction

This document is built for internal or external use. The scope is to support pre-sales and installers to choose, wire and configure the Enel X Way Waymeter™ by Gavazzi and provide a guideline to troubleshoot problems.

This document must be considered as addition to all the official materials provided by Gavazzi (digital or printed).

### 1.2. Context

When customer plans to migrate its fleet to electrical vehicle, it needs to install multiple charging stations to charge different EVs at the same time. Charging stations are high power electrical infrastructure and if the customer wants to avoid any costly upgrade on electrical system and avoid high electricity bill, it need a smart way to charge multiple EVs.

With Enel X “Load Optimization Pro” addon, vehicles are charged respecting the residual available power at customer’s site, balancing the charging power over multiple charging stations. Furthermore, if one vehicle requires less power, the “unused” is allocated to the other vehicles, maximizing the site power connection.

The residual available power is computed take in consideration real-time building metering, retrieved thank to a metering kit, called Enel X Way Waymeter™ Pro.

## 2. Waymeter Pro Kit by Gavazzi – Sales information

### 2.1. General Information

Enel X Way Waymeter™ Pro Kit is a metering kit provided by Gavazzi, that can monitor building load (C&I grade) and is required to activate Load Optimization Pro.

It consists of 4 mains components + options:

- > **1.** Gateway/data logger: collect the data from the meter and send to the Enel X Cloud systems. Is connected to internet via Ethernet port
- > **2.** Power Supply: an AC/DC adapter to power the Gateway and, possibly, the Cellular Interface
- > **3.** Meter: different energy meters, compatible with difference voltages and installation scenarios (see Annex 1 – Meter comparison)
- > **4.** Sensors: current transformers or Rogowski coils to read the instant current for each line (see Annex 2 – Sensor comparison and compatibility)

Options:

- > **a.** Cellular Interface: to connect the gateway to the cloud via a cellular modem
- > **b.** Cellular Modem: an LTE grade cellular model
  - > Cellular modem is provided also with Enel X SIM card with connectivity cost included
- > **c.** Wi-Fi Access Point: to connect the gateway to the cloud via Wi-Fi connection

For the technical specification, please refer to Enel X Way Waymeter™ Pro datasheets and manufacturer's documentation.

## 2.2. Pre-Sales Checklist

This checklist will help to pick appropriate meter and sensor.

- > **1.** Verify meter installation location, max amperage and any constraints to pick appropriate meter (see Annex 1 – Meter comparison and Annex 2 – Sensor comparison)
  - > **a.** Mounting: all the meters can be installed on DIN rail. Some meter can also be installed on panel
  - > **b.** Distance Sensors → Meter: is important to keep in mind during site design about the distance between meter and sensors.
    - > In case of 5A sensors, distance can be limited. Please refer to Gavazzi calculation spreadsheet to calculate the max distance.
    - > In case of 333mV sensors, distance can be significantly high (up to 20/30 mt).
  - > **c.** In case of needs, meter can be also installed far away from the other kit components (gateway, modem, etc...). Since communication between meter and gateway is done via RS485, those 2 components can be also far away (up to 1 km).
- > **2.** Verify connectivity mode
  - > **a.** Is it possible to bring an ethernet cable from router/switch to the gateway?
    - > Yes → Just use embedded Ethernet connectivity on the gateway
    - > No → Wi-Fi present → Add Wi-Fi option
    - > No → Cellular → Add cellular option (modem adapter + modem) and Enel MVNO sim card
  - > **b.** If ETH or Wi-fi → Verify firewall policy on customer's site (interfacing with site IT department and/or facility manager). Port used by Waymeter Pro Kit are listed below and are all mandatory.
  - > **c.** If cellular → verify cellular coverage

DESCRIPTION	ENDPOINT	PORT	ENVIRONMENT	NOTE
<b>Temporary credentials</b>	c33s04psko2pez.credentials.iot.eu-central-1.amazonaws.com	HTTPS+MQTT: 443, 8443, 8883, 1883	NO-PROD	
<b>IoT Broker</b>	ax3v62h9b8tp2-ats.iot.eu-central-1.amazonaws.com	HTTPS+MQTT: 443, 8443, 8883, 1883	NO-PROD	
<b>Temporary credentials</b>	c3kcoqjjz8hok.credentials.iot.eu-central-1.amazonaws.com	HTTPS+MQTT: 443, 8443, 8883, 1883	PROD	
<b>IoT Broker</b>	a3869psk1nkr1c-ats.iot.eu-central-1.amazonaws.com	HTTPS+MQTT: 443, 8443, 8883, 1883	PROD	
<b>S3</b>	s3.eu-central-1.amazonaws.com	HTTP+HTTPS: 80, 443	NO-PROD/PROD	
<b>S3</b>	s3.dualstack.eu-central-1.amazonaws.com	HTTP+HTTPS: 80, 443	NO-PROD/PROD	
<b>VPN GAVAZZI</b>	pairing.maiacconnect.com	TCP: 443		
<b>VPN GAVAZZI</b>	remote.pairing.maiacconnect.com	TCP: 443		
<b>VPN GAVAZZI</b>	vpn.maiacconnect.com	UDP: 1194		
<b>UWP 3 tool</b>	The IP of the UWP 3 gateway (cfr. Setup Network and Connectivity)	TCP: 10000,10001, 52326		Only in case of Ethernet or Wi-Fi
<b>UCS Bridge</b>	The IP of the UWP 3 gateway (cfr. Setup Network and Connectivity)	TCP: 41214		Only in case of Ethernet or Wi-Fi
<b>NTP Server</b>	ntp1.inrim.it	UDP: 123		
<b>NTP Server</b>	ntp2.inrim.it	UDP: 123		

- > **3.** Switch board DIN space availability →
  - > **a.** Gateway: 2 DIN modules
  - > **b.** Power Supply: 3 DIN modules
  - > **c.** Meter: please refer to Annex 1 – Meter comparison for DIN requirements
  - > **d.** Cellular Interface: 2 DIN modules that need to be connected directly to left side of the gateway using special connector
  - > **e.** Cellular Modem
    - > UWP-MODEM-KIT-4G-E02 (that use Teltonika TRM240) is DIN mountable with the provided accessory. Since its width is 74,5, please consider 5 DIN spaces
    - > UWP-MODEM-KIT-4G-U01 (that use Multitech MTCM-LNA3-B03) is a USB key format and is plugged directly on top of the Modem Interface
  - > **f.** Wi-Fi Access Point:
    - > UWP-WIFI-KIT-02 and UWP-WIFI-KIT-03 (that both use Teltonika RUTX10) size are 115 x 32.2 x 95.2 mm
    - > Please note that it requires some space on the top to install the Wi-Fi antenna. Please refer to the manufacturer's documentation for the detailed technical

## 2.3. Ordering Info

Please refer to Annex 3 – Ordering information.

# 3. Waymeter Pro Kit by Gavazzi – Installation

## 3.1. Pre-Installation Checklist

- > **1.** If the Waymeter Pro Kit is part of installation of Charging Stations, we suggest installing Waymeter Pro Kit, when the circuit breaker installation is performed. This will minimize time and effort.
- > **2.** You need the configuration mail, with all the instructions to perform meter SW configuration after the wiring, that is send by Enel X Control Room or technical sales representative
- > **3.** You need a PC with ethernet port and Windows 10 or above, .net framework 4.7 or above and at least 8GB of RAM
- > **4.** You need to install Gavazzi UWP 3 Tool on your pc (see download instruction here).
  - > Please download latest version on the link above.
  - > In case you connect to an UWP 3 Gateway with a newer version of UWP 3 tool compared to the one used for the previous configuration, you need to update gateway firmware (cfr. Firmware Update)
  - > Be aware that UWP3 tools version can coexist on the same PC.
- > **5.** You need to install Gavazzi UCS Tool on your pc (download here)
- > **6.** An ethernet cable
- > **7.** All the manufacturer devices' manuals, that are integral part of this manual.



## 3.2. Wiring activities

### SAFETY WARNINGS: INSTALLATION MUST BE PERFORMED ACCORDING TO APPLICABLE REGULATION AND LAWS

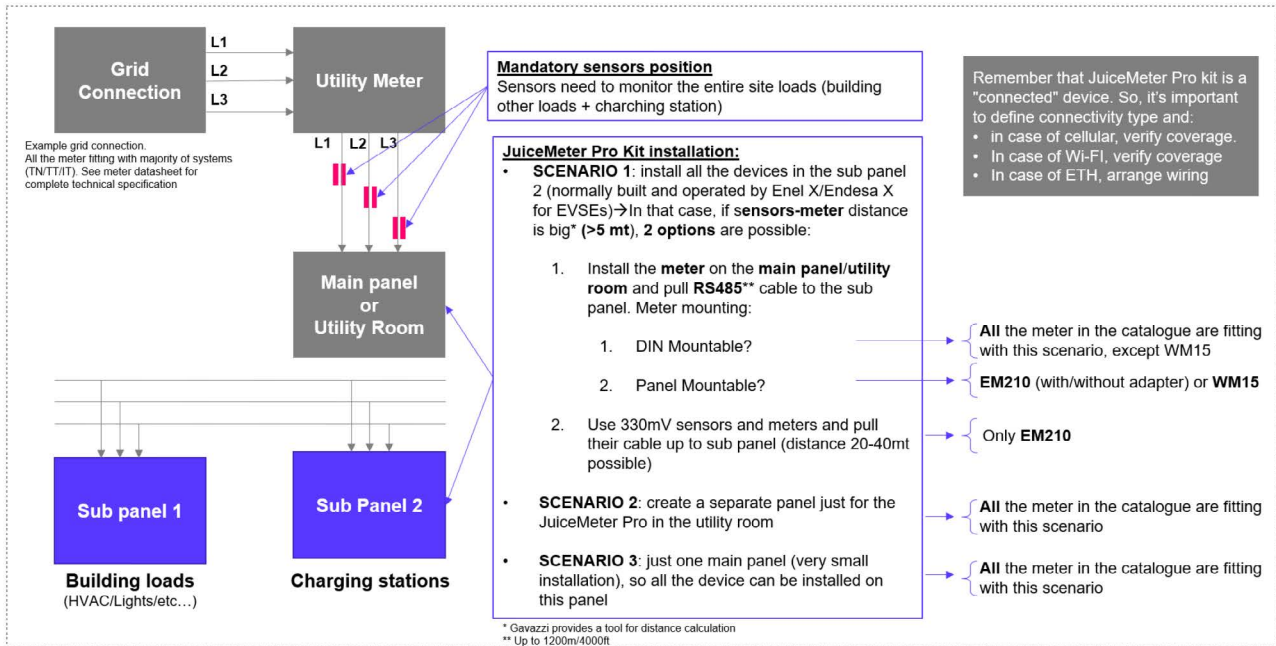
#### WIRING SCHEMAS

Wire the device, according to the specific wiring schema and manufacturer's documentation

#### GENERAL GUIDELINES FOR WIRING

- > Meter and its sensors must be connected to read all the site loads, ideally sooner after utility meter, before main panel.
  - > In case of Solar Panel, a second meter must be installed to monitor solar production.
  - > This meter need to be wired to COM2, while the main meter to COM1
- > Waymeter Pro Kit by Gavazzi devices can be installed wherever is possible (main panel or subpanel), depending on installation scenario.
- > All the necessary wiring (CTs, Ethernet, etc) need to be setup accordingly. In case you need to extend CT cable, please refer to datasheet for the correct cable type.
- > In case of direct insertion meter, the meter need to be installed soon after the main circuit braker.
- > Pay attention to respect correct direction of the sensor (an arrow shows the correct direction of current).

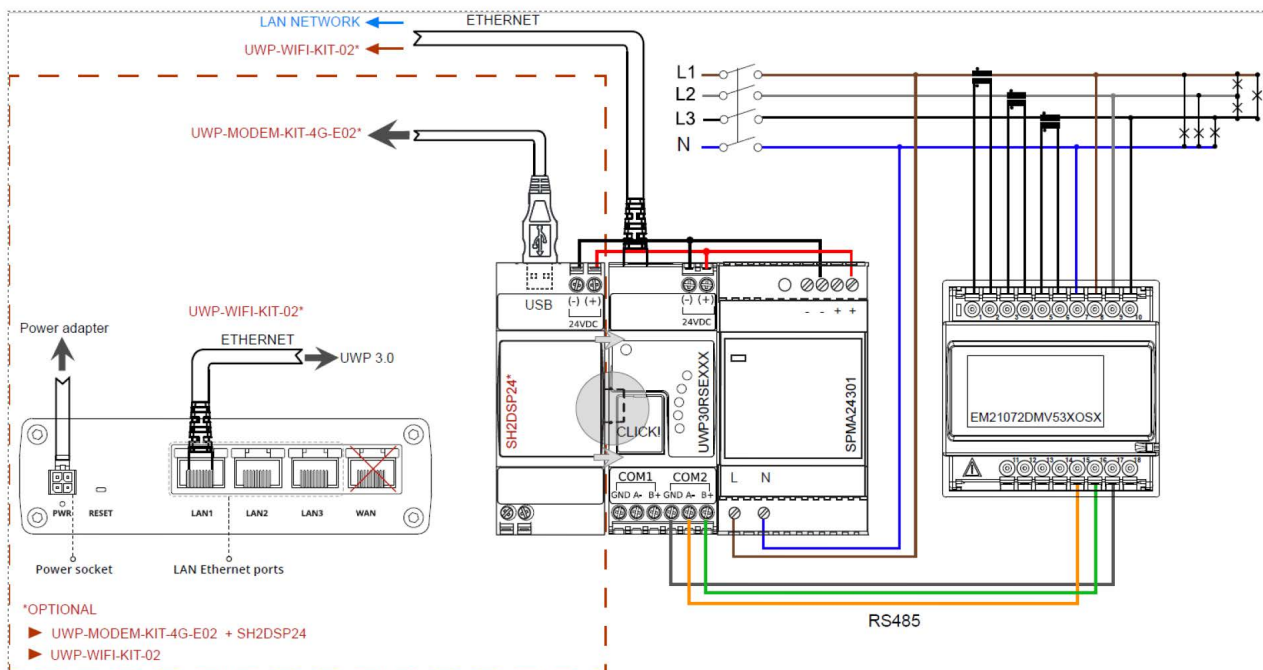
See next image, for more details about wiring.



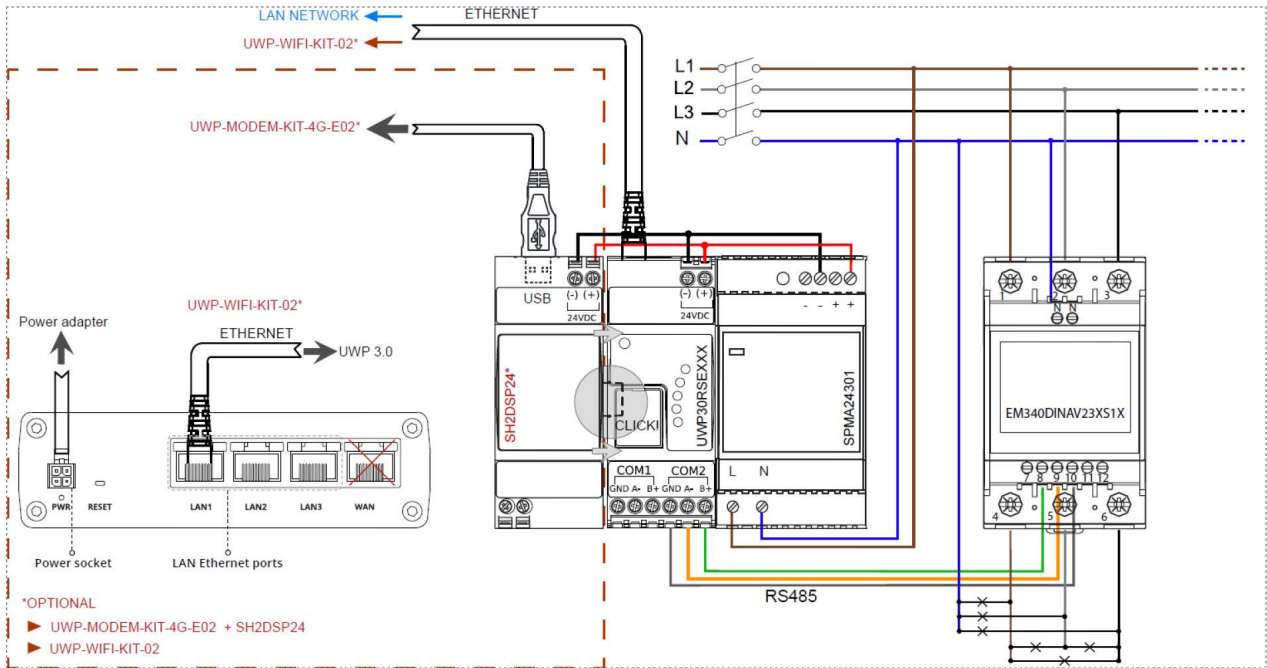
## WIRING SCHEMA EXAMPLE

Following, some examples of wiring are shown as example. Please refer to meter installation manual for the correct wiring, depending on model and grid configuration.

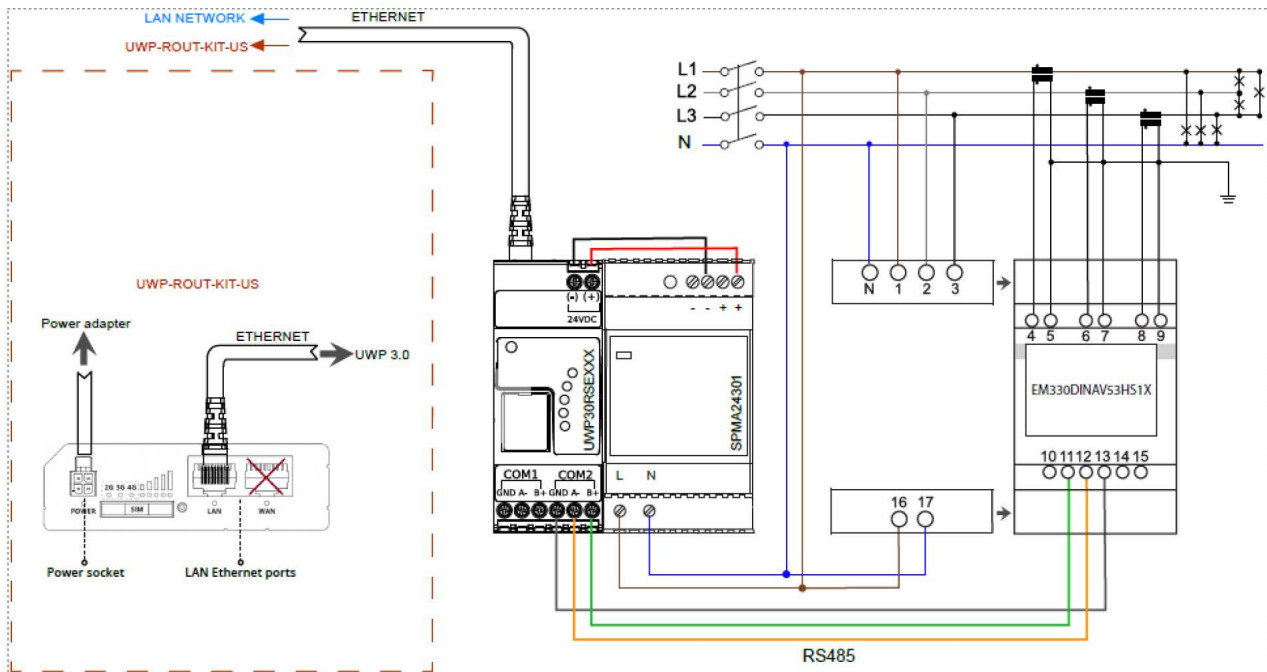
## WIRING EXAMPLE – METER: EM210 – EU



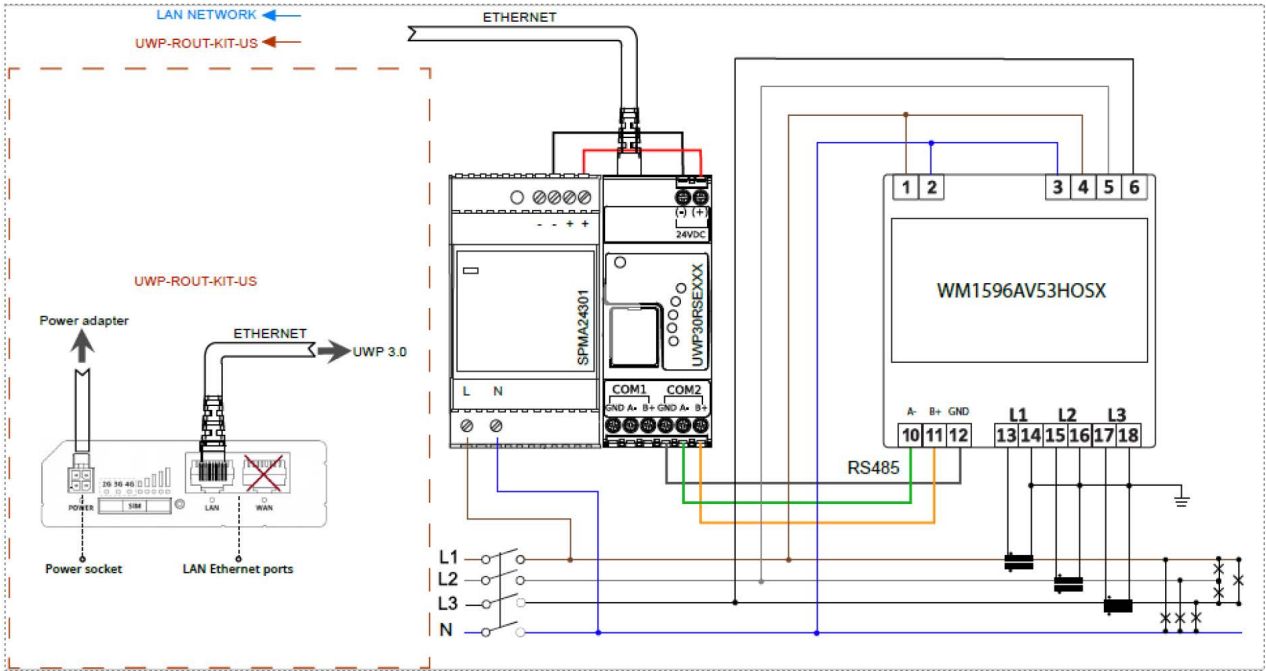
## WIRING EXAMPLE – METER: EM340 – EU



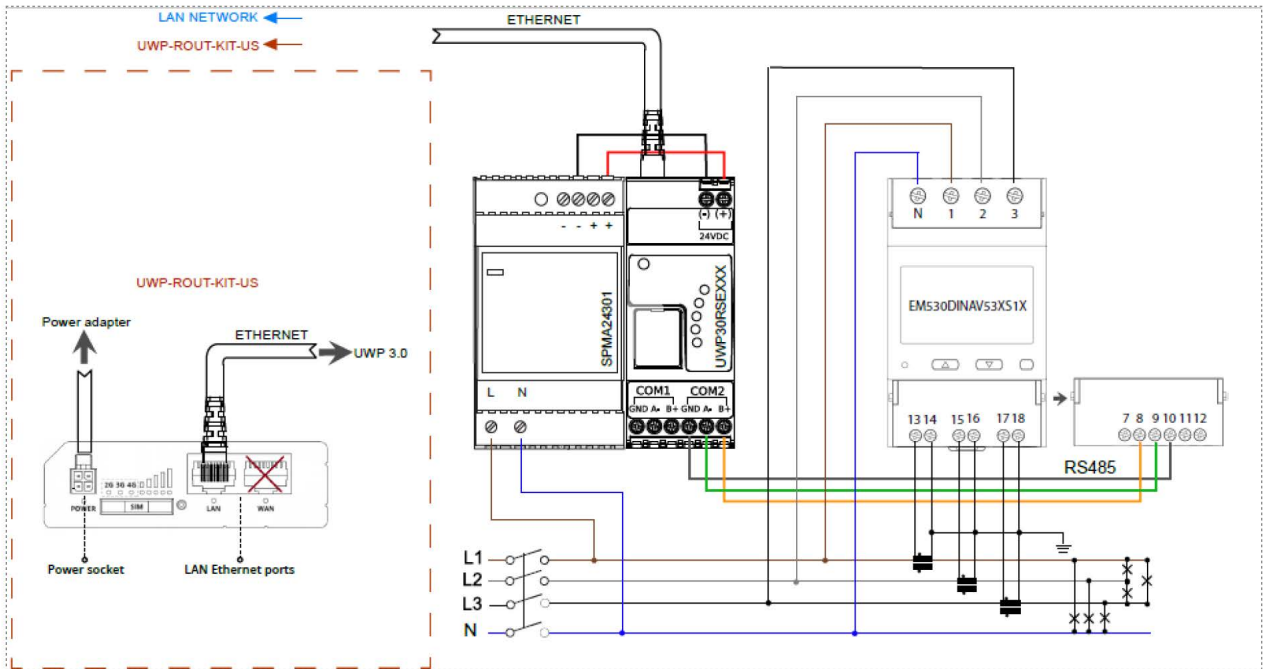
## WIRING EXAMPLE – METER: EM330 – UL



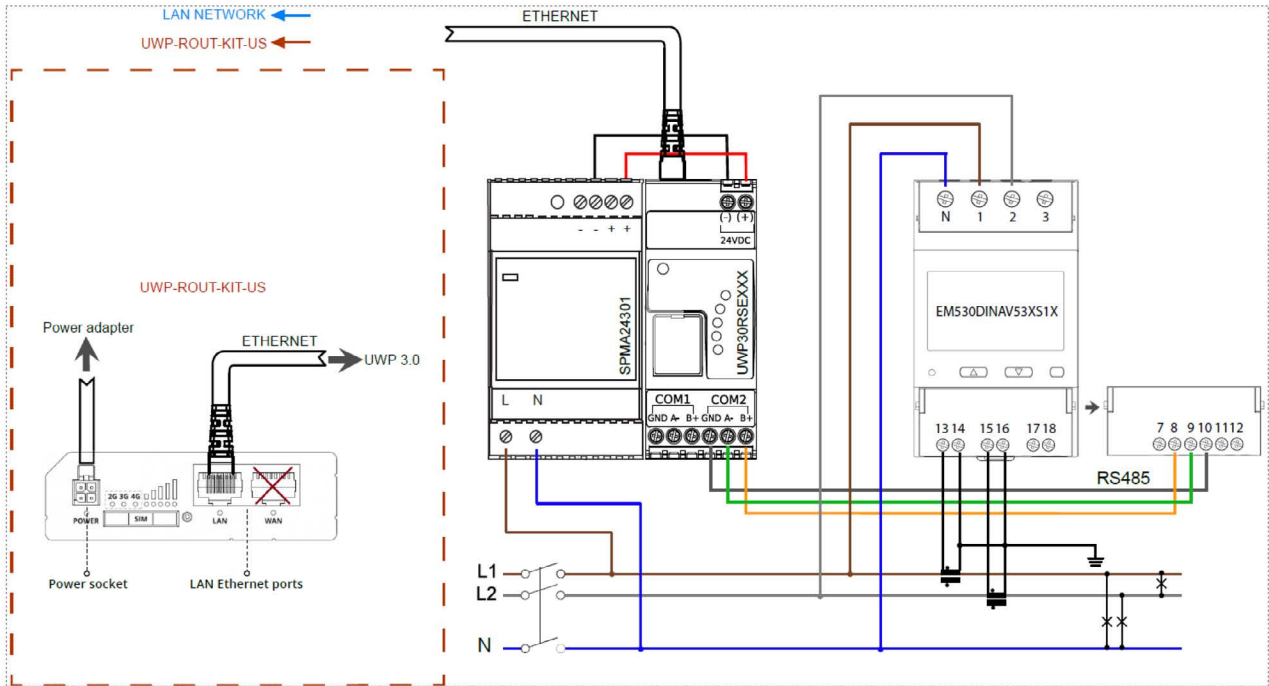
## WIRING EXAMPLE – METER: WM15 – UL



## WIRING EXAMPLE – METER: EM530 (3P+N) – UL



# WIRING EXAMPLE – METER: EM530 (2P+N) – UL



## 4. Waymeter Pro Kit by Gavazzi – Software Configuration

### 4.1. Requirements

- > **1.** You need a PC with ethernet port and Windows 10 or above, .net framework 4.7 or above and at least 8GB ofRAM
- > **2.** You need to install UWP 3 tool on your pc (see download instruction here).
- > **3.** An ethernet cable
- > **4.** You need to install Gavazzi UWP 3 Tool on your pc (see download instruction here).
  - > Please download latest version on the link above.
  - > In case you connect to an UWP 3 Gateway with a newer version of UWP 3 tool compared to the one used for the previous configuration, you need to update gateway firmware (cfr. Firmware Update)
  - > Be aware that UWP3 tools version can coexist on the same PC.
- > **5.** You need to install Gavazzi UCS Tool on your pc (download here)
- > **6.** IP policy for the gateway (static IP or DHCP) in case of Ethernet or Wi-Fi connectivity), that must be provided by customer's facility manager or its IT department
- > **7.** Configuration Mail, sent by Enel X Control Room or technical sales representative

### 4.2. Configure the gateway via UWP3 Tool

#### PC SETUP FOR UWP CONFIGURATION

Different ways of proceeding depending on the how the gateway is configured:

##### STATIC IP MODE AND FIRST INSTALLATION:

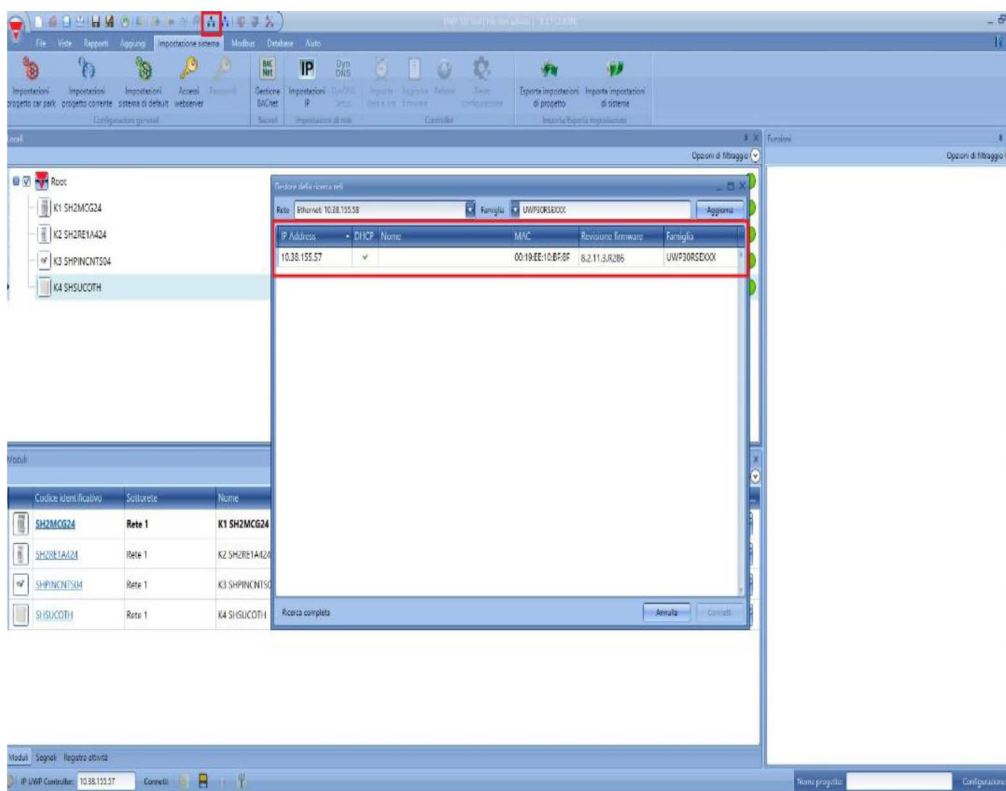
- > **1.** Connect your PC Ethernet port directly to Ethernet port on the UWP 3 gateway using an Ethernet cable;
- > **2.** Set the network port of your PC to an address of the same class with respect to the IP of the UWP (ex: UWP address = 192.168.1.1 Mask 255.255.255.0 -> address to be set on pc = 192.168.1.2 Mask 255.255.255.0)
- > **3.** For first installation or in any other case, a secondary IP address: it is always available a secondary IP address = 192.168.253.254 to be used for a point-to-point connection to

the Ethernet port, just in case the primary IP address is not known anymore (in that case, the address to be set on pc = 192.168.253.2 Mask 255.255.255.0)

- > **4.** To change your PC IP address:
  - > Open network connection or you can easily go on Start\Run and put "ncpa.cpl" and press run.
  - > Select your ethernet connection, press right-click, than "Proprieties"
  - > Pick from the list "Internet Protocol version 4" and then click "Proprieties"
  - > Click on "Use the following IP address" and fill with the correct IP information (see previous point)
  - > Save the address and proceed to the following points of the procedure

### DHCP MODE (DEFAULT MODE ON UWP 3):

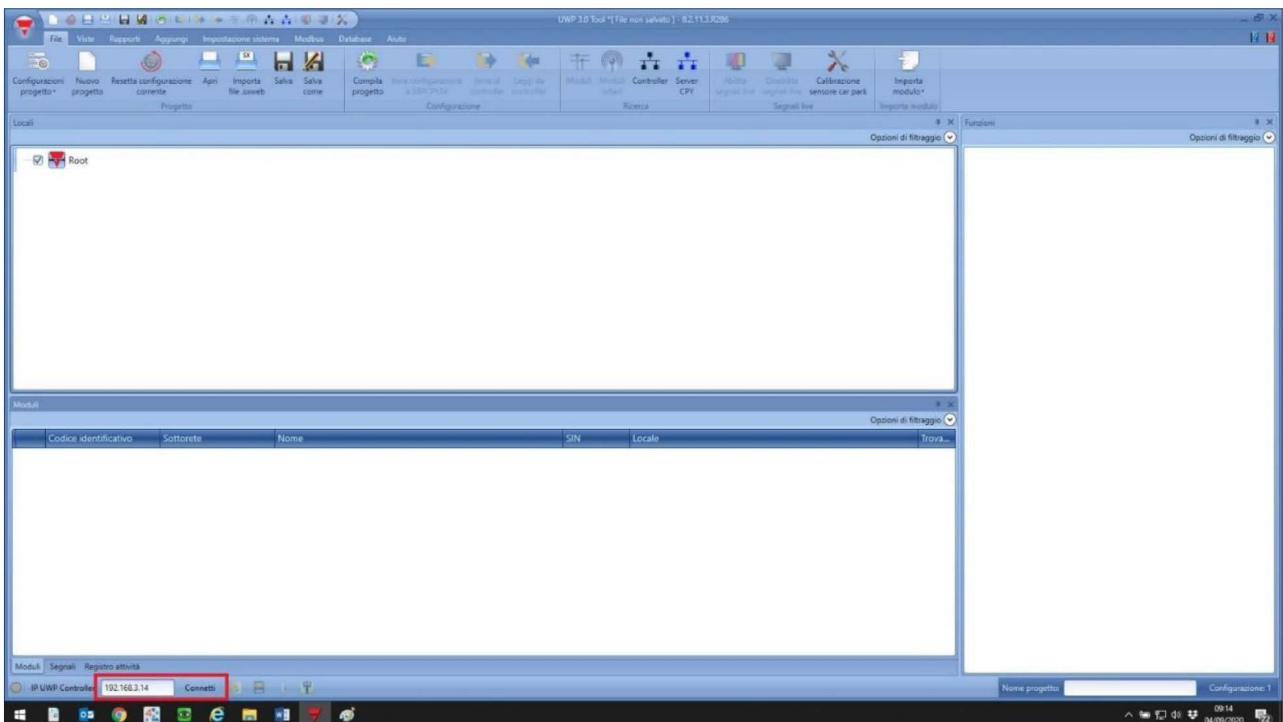
- > **1.** Connect your PC to the same network switch\router as the gateway;
- > **2.** Using an IP address discovery software (e.g. advanced IP scanner) locate the address of the UWP instrument or follow the procedure written below
- > It is also possible to perform a network discovery to search for devices on your IP address class, using the appropriate "controller" button, present in the quick command bar, as shown in the following figure:



- > **3.** Confirmation of connection with the instrument will be indicated by the green LED next to the address of the instrument in the lower left part of the screen (“PRG”)
- > **4.** Save the address and proceed to the following steps of the procedure.

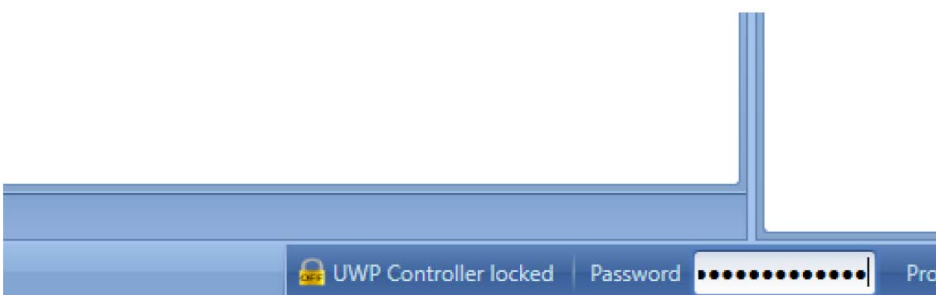
## SOFTWARE CONNECTION

When starting the software, in the lower left section of the window you can find the string where to enter the address of the instrument and make the connection using the “connect” button, as shown in the figure below:



## PASSWORD UNLOCK

If the Gateway is password protected (not during first installation) you need to insert the password in the bottom right corner and click on “UWP Controller locked” to unlock.





## PROJECT DETECTION FROM THE DEVICE



**NOTE:** Note: this operation is not necessary for the first configuration of UWP 3

It is recommended, in order to preserve the integrity of the software on the device, that every time you connect to an instrument, carry out the “reading from the controller” (appropriate button on the bar functions as image below) and save the project as a backup on your pc.



## FIRMWARE UPDATE

When connected, the controller will check the alignment between your own firmware and the pc, and in case of difference, it will identify the update of the same through a red button indicating an exclamation point “!”. This indication will be shown next to the string for entering the IP address of the instrument, as well as in the “system settings” section, under the appropriate “update firmware” button.

In case of need for updating:

- > **1.** Be sure that you detect the project from the device, downloading it (not for first installation)
- > **2.** Press the appropriate update button to upgrade the firmware (bottom-left corner)
- > **3.** Select the file relating to the new firmware on your PC (file .bin image UWP, the folder containing the file will open automatically)
- > **4.** Launch the update and wait for the device to reboot
- > **5.** Upload the configuration to the gateway

## SETTING THE TIME AND NTP SERVER

The next step includes the setting the time on the controller:

- > **1.** In the “system setting” section, select “set date and time”;
- > **2.** Click on the Green check icon to enable field
- > **3.** In the first window “Set date and time”, flag the item “synchronize with pc” and then press “send to UWP controller”;
- > **4.** In the window “update date and time from internet” it is necessary to indicate the reference NTP server for the real time update of the device; the possible solutions vary according to the connection of the device under the customer LAN network or via Enel SIM:
  - > NTP with customer network (or sim with a public operator): ntp1.inrim.it, ntp2.inrim.it
  - > NTP with Enel SIM card network: tempo.enel [10.124.232.150, 10.124.232.114, 10.124.233.89]
  - > Enter the server address in the appropriate string and press the “add” button, then press the “save the settings in the UWP controller” button
- > **5.** Finish the procedure with “Confirm”

## GENERAL NOTES

**IMPORTANT:** the changes made to the project and saved **are NOT sent to the controller** until when the specific **“SEND TO CONTROLLER”** command is triggered. Remember to always send the changes to the device.



## SETUP NETWORK AND CONNECTIVITY

### INTERNET CONNECTION VIA ETHERNET PORT

You need to define the network parameters:

- > **1.** In "system setup", select "IP settings";
- > **2.** Depending on the architecture chosen, it will be possible to define the choice of DHCP or static address; in this second case it is necessary to define the standard parameters provided by the ip network manager (IP address, mask, gateway and possibly DNS if present on the internal network, alternatively enter DNS 8.8.8.8);

### INTERNET CONNECTION VIA WI-FI

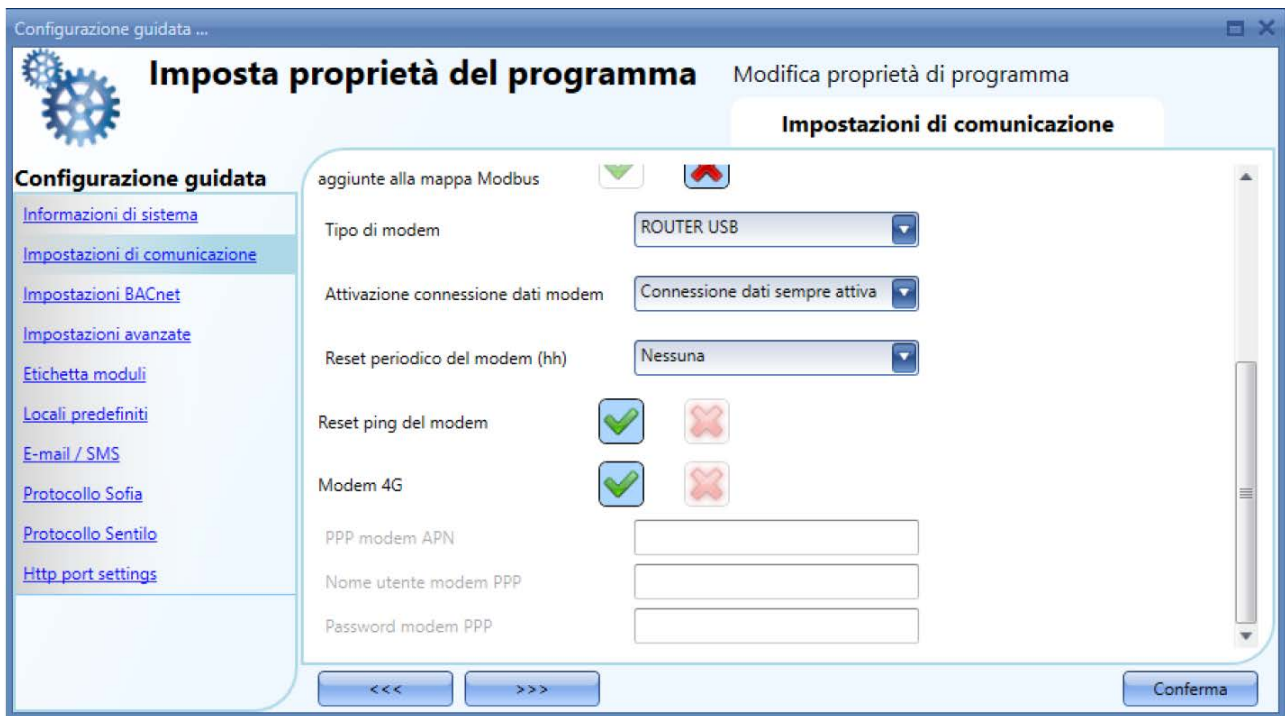
Follow the instructions of the Wi-Fi gateway to set up the instrument. Once configured, connect it to the UWP 3 ethernet port.

### INTERNET CONNECTION VIA CELLULAR MODEM

The Waymeter Pro Kit can include the use of cellular modem, which can be set with the following steps:

- > **1.** In the "system setup" section, select "current project settings";
- > **2.** From the setup wizard popup select "communication settings";
- > **3.** In the last lines of the window, fill-in the parameters for the router connection, in particular:
  - > Modem type = "USB" (Pay attention to select not "Router USB" or any other element, **but just "USB"**)
  - > Activation of modem data connection = data connection always active;
  - > Periodic modem reset = none;
  - > 4G modem = V (Yes)
  - > Modem ping reset = V (YES)
  - > Modem ping reset host
    - > In case Enel Sim Card: 10.14.234.143
    - > In case of other Sim Card: 8.8.8.8l draws
  - > APN, User and Password are provided directly from control room via the configuration mail.

Below is the screenshot of a USB router configuration:



Now, send the configuration to the controller by clicking on “Send to controller” button on the toolbar on top of the screen. It’s important to send the configuration now, since the gateway has no configuration onboard and the following step will be not accessible.

## 4.3. Configure the meter settings

### ENABLE UWP SECURE BRIDGE

**Enabling UWP Secure bridge is mandatory also if the meter setting are setup via local display.**

From any web browser, type the instrument IP address or the default address if not previously set, logging in with credentials (can be different, if changed):

- > User: admin
- > Password: admin

Below is a brief description of the configuration steps to be carried out:

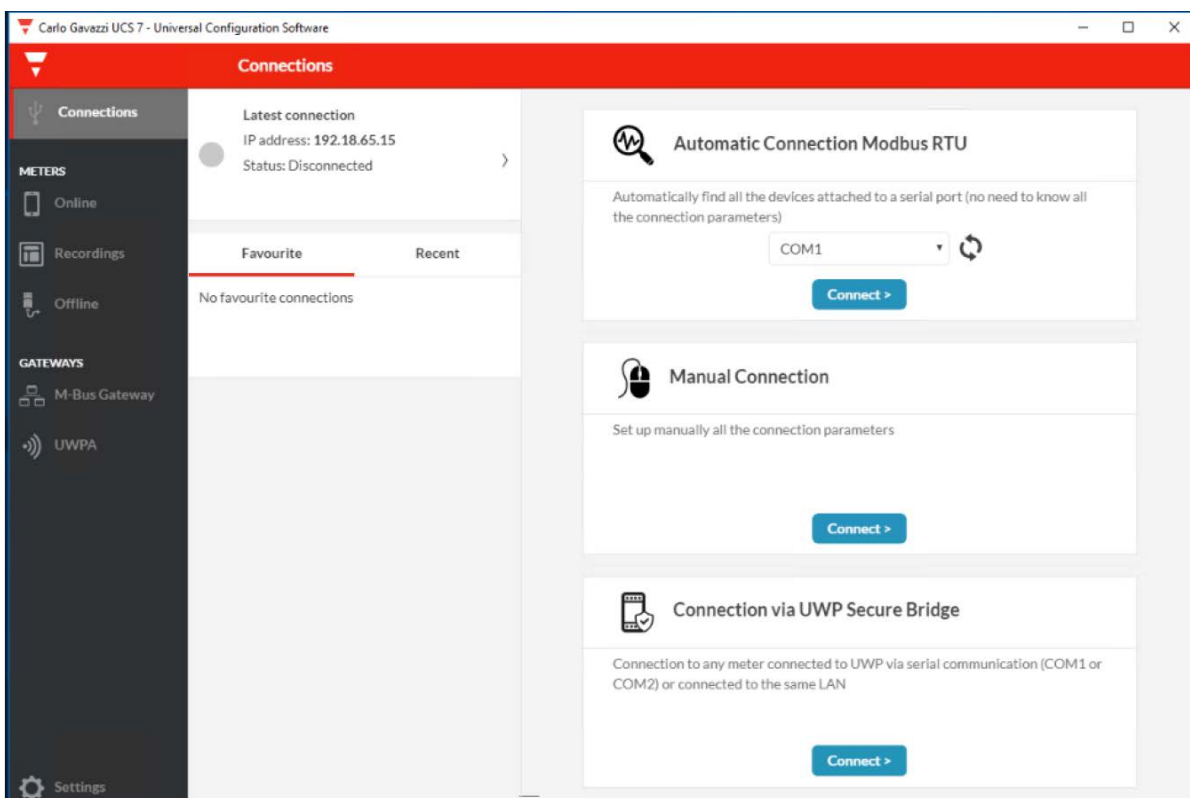
- > **1.** From the menu at the top left select “Service” and then “CG Secure Bridge”
- > **2.** Enable “Secure Communication” and change the password as indicated in the configuration file
- > **3.** Change “Service” to “Enable”
- > **4.** Click on Save icon (pink icon on the bottom right corner)



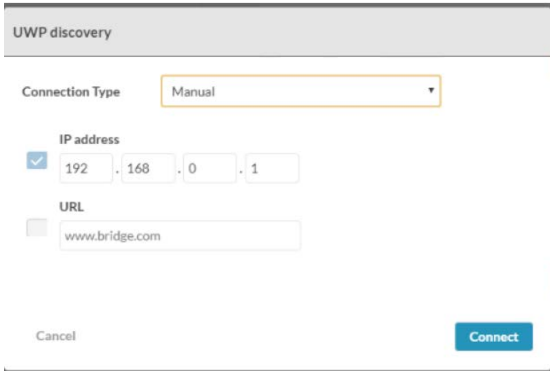
## CONFIGURE THE METER VIA UCS TOOL OR LOCAL DISPLAY

### OPTION 1 (PREFERRED) – USING UCS TOOL

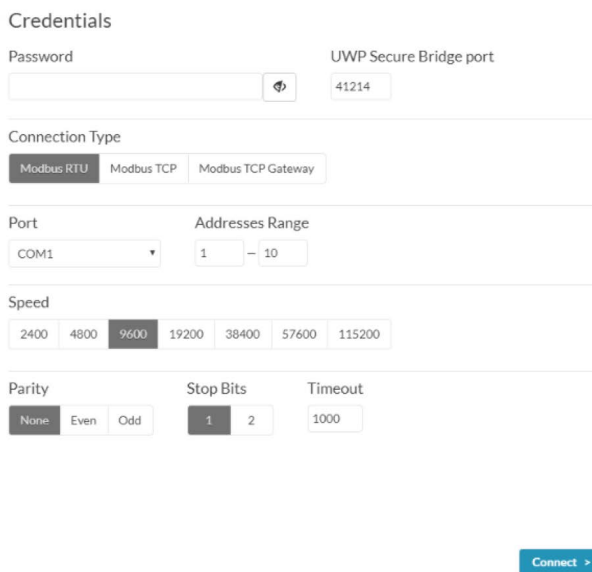
- > **1.** Open UCS tool on your PC
- > **2.** Go to Connections\Connection via UWP Secure Bridge and click on “Connect”



- > **3.** Select “Manual” and insert the IP address of the UWP3 controller and click “Connect”



- > **4.** Fill the information in the window:



- > **a.** If UWP Secure bridge service (cfr. Enable UWP Secure Bridge) is password protected, insert the password
  - > **b.** Port: please select the right COM port (RS485) of the UWP3 where the meter is connected to
  - > **c.** Address Range: 1 – 1
  - > **d.** Click on “Connect”
- > **4.** Select the meter
  - > **6.** Click on “Settings” and set the right parameters and their value based on Annex 4 – Meter configuration

For solar panel, you need to install a second meter and configure it repeating the previous

## OPTION 2 – USING METER DISPLAY

- > **1.** When the meter boot-up, enter in the settings menu and setup the correct meter configuration
  - > It depends on meter model, so please refer to Meter’s installation manual to check how to enter in the setting and how to change settings:
- > **2.** Set the right parameters and their value based on Annex 4 – Meter configuration

## 4.4. Meter Data Management

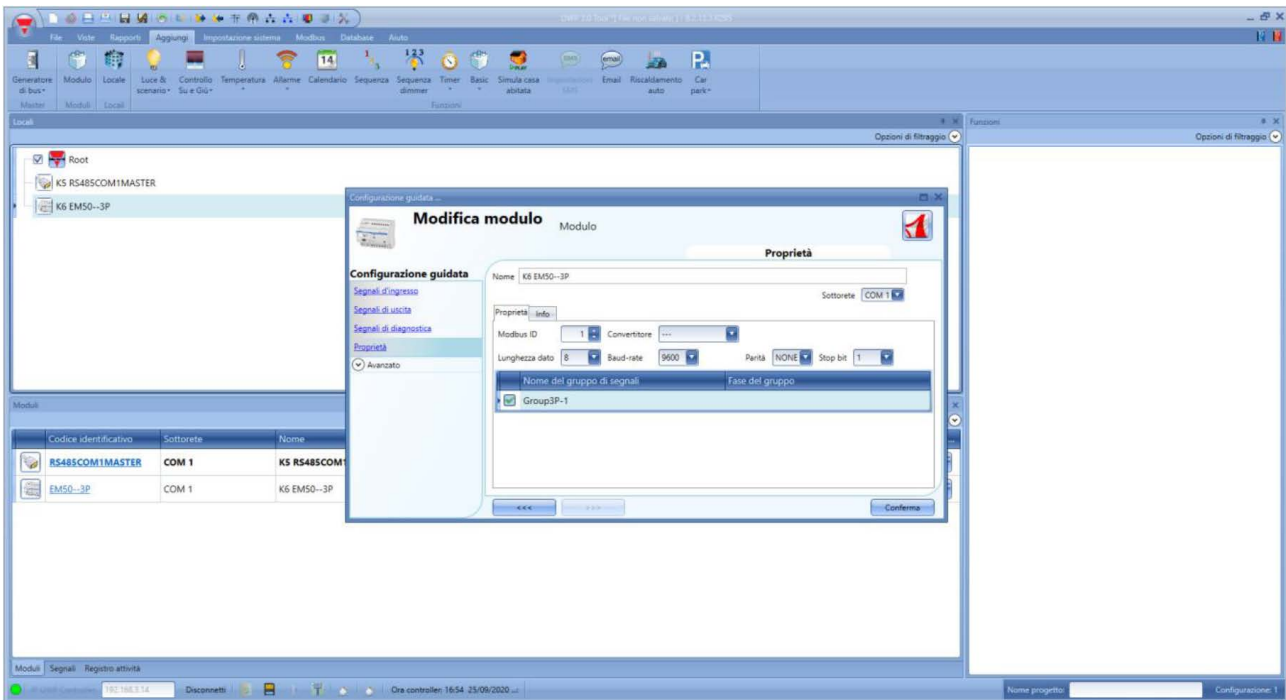
### ACQUISITION OF MODBUS DEVICES

The interfacing of modules or devices via Modbus to the UWP controller is carried out using the drivers present in the internal Gavazzi software library; the software is equipped with all the drivers referring to Carlo Gavazzi instruments and provides the possibility of creating special drivers for the connection of third-party instruments (not needed for Waymeter Pro Kit).

Here are the steps for inserting a new Modbus device into acquisition in the controller (in this case, we just need to connect to a single meter):

- > **1.** Be sure that you are still connected with the UWP 3 to the UWP 3 controller
- > **2.** Under the “add” section, insert a new “Bus generator”, selecting the RS485 COM1 or COM2 depending on where the device is connected (see wiring schema of UWP 3 and Meter);
  - > If the site has solar panel, a second meter must be installed and connected to COM2, while main meter is connected to COM1 (this is to avoid the Modbus port remapping, since all the meter are by default on ID=1)
- > **3.** Still in the “add” section, select the “module” button and from the “guided configuration” window, under the “list of drivers” item, select the instrument to be acquired (in the screenshot below is “EM24”);
- > **4.** Indicate the device number of the selected type and press the “add” button; at the end of the addition, press the “Confirm” button.

Below is the screenshot of the configuration of the parameters referring to the Modbus of a device: procedure to configure it



The procedure for adding a new device under the COM port is terminated after confirming the popup, however it is now necessary to upload the project created so far to the device. It is therefore necessary, after verifying that the UWP controller is connected via the green LED on the lower left side, to press the “send to controller” button to finish installing the project on the device.



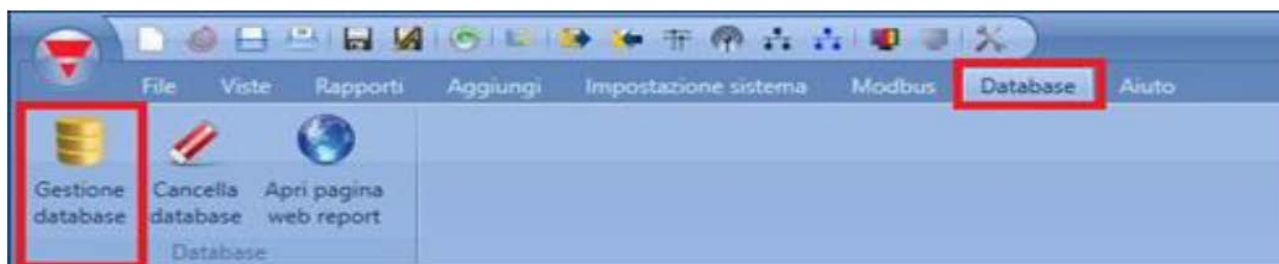
For the second meter (solar) you need to repeat all the previous procedure.

## HISTORICAL DATABASE CONFIGURATION AND ON-FIELD READINGS VERIFICATION

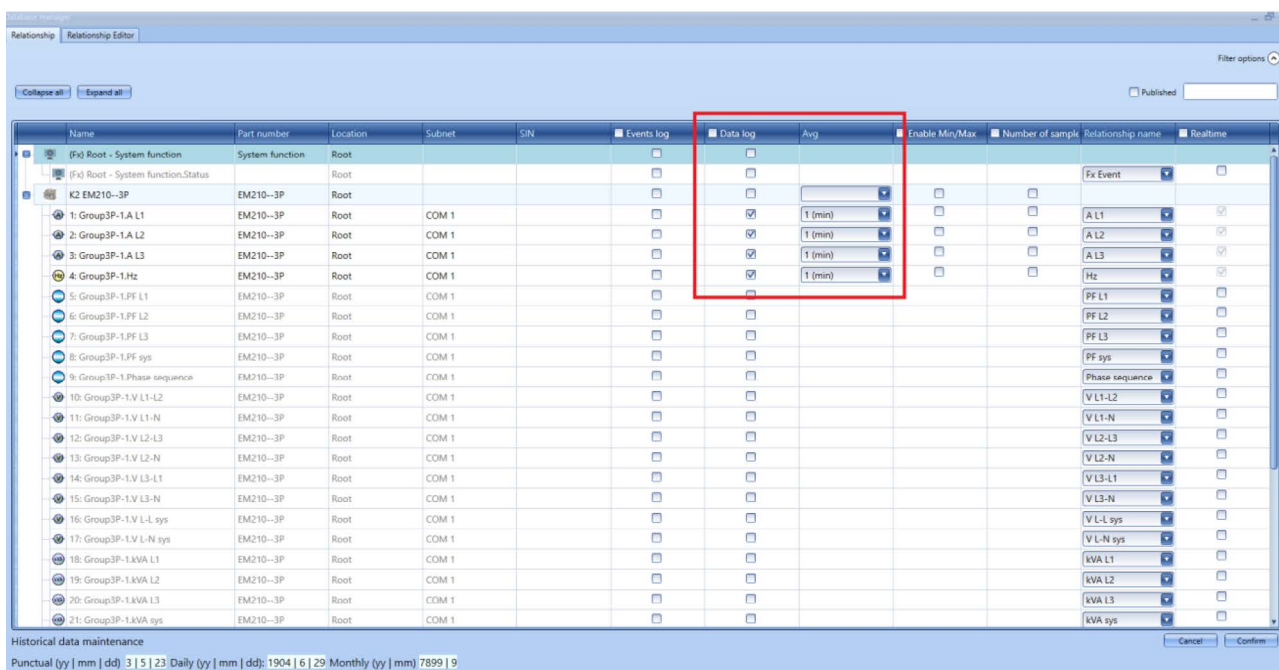
At the end of the creation of all the devices, it will be necessary to enable the device to display and log the desired values by following the steps below:

- > **1.** In the “database” section, select “database management”

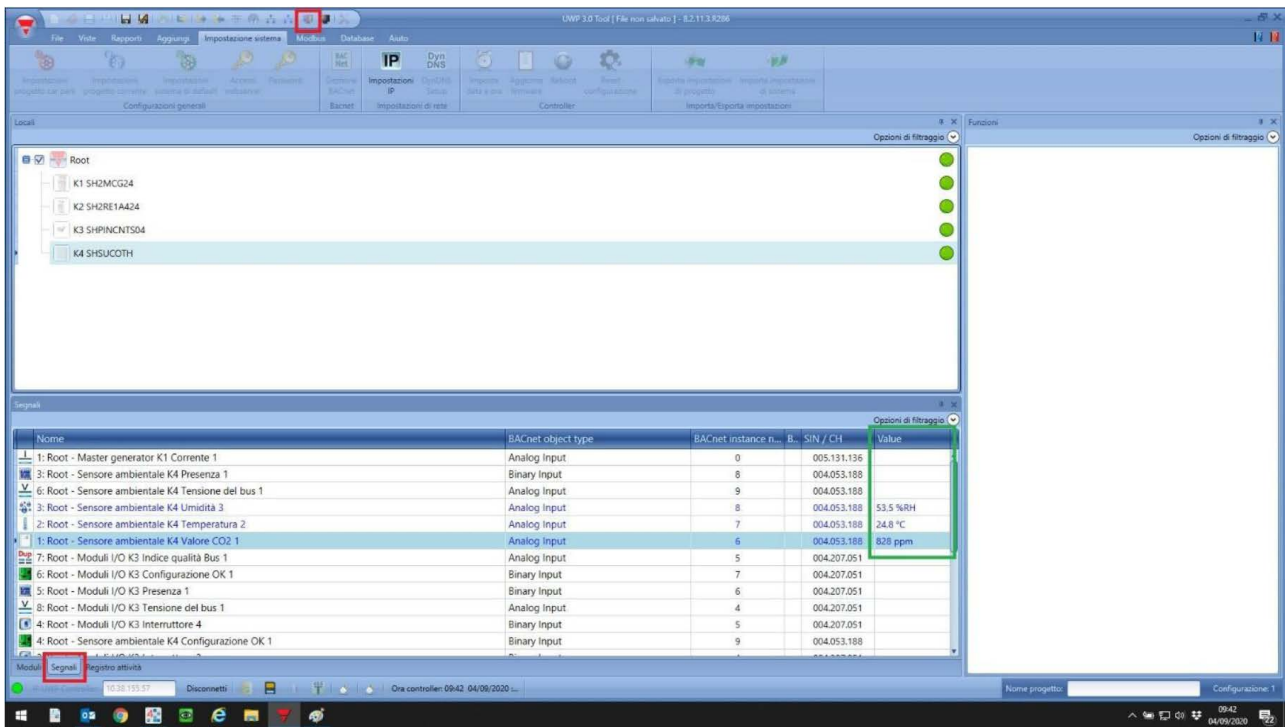




- > **2.** From the “database manager” window it will be possible to flag the datapoints to be selected indicated in the configuration mail that was provided by country control room or technical sales. For each data point (“Name” column), the historical mode (“Data log”) must be selected and the “AVG” field set to “1 min”.



- > **3.** At the end of the selection of the expected parameters, confirm with the appropriate button and, as per normal procedure, proceed to send the configuration to the device with the “send to controller” button.
- > **4.** At this point it will be possible to verify the correct functioning of the system:
- > **5.** In the lower window of the project, select the “signals” page, the system will highlight in blue the values measured in realtime, which are NOT acquired for the moment;
- > **6.** Enable the “Enable live signals” function in the function bar at the top of the screen as shown in the following image:



- > **7.** To end the display of the values, press the “disable live signals” button next to the button previously pressed.

## 4.5. Web platform and Enel X cloud connection

The last configuration step involves the connection with the Enel X cloud and the synchronization of the logs to the IoT platform. With reference to this section, it will be necessary to have the configuration mail.

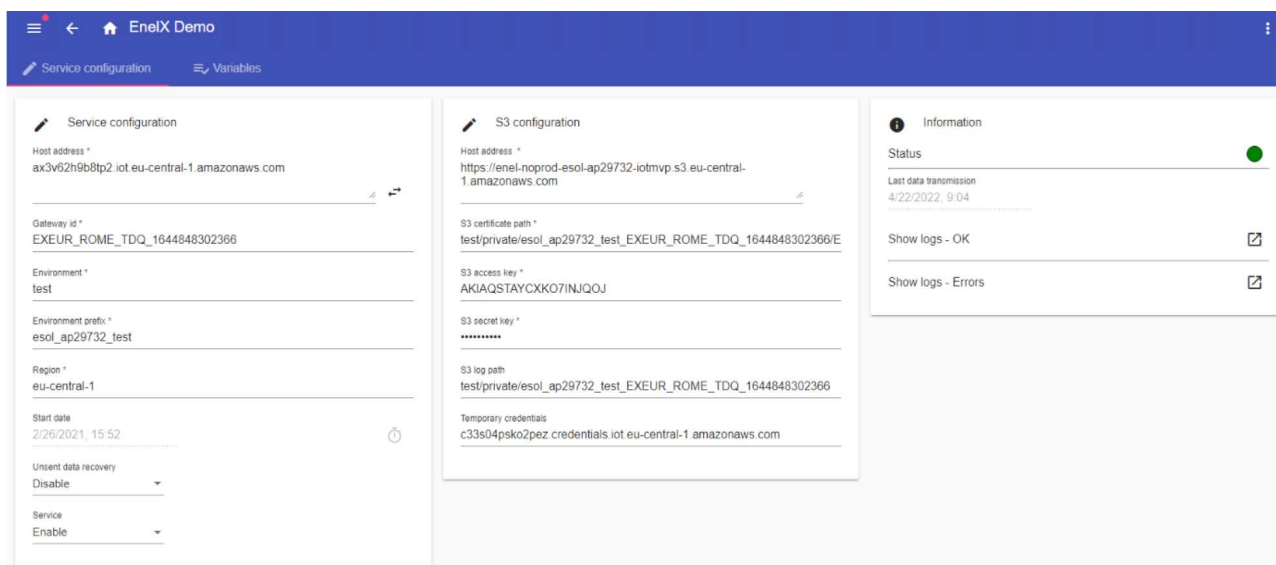
From any web browser, type the instrument IP address or the default address if not previously set, logging in with credentials (can be different, if changed):

- > User: admin
- > Password: admin

Below is a brief description of the configuration steps to be carried out:

- > **1.** From the menu at the top left select “system information”, and in the right panel check the connection status (green led);
  - > From the “system settings” section it is possible to check the network settings and, if necessary, to restart the device.

- > **2.** In the “services” menu, selecting “EnelX IoT service” you need to insert all the information for the configuration of the connection to the IoT cloud, as indicated in the configuration mail. To avoid mistake, it’s suggested to use copy/paste feature, paying attention that there is no blank/space at the end of the files after the paste action.



- > **3.** Set “Unsent data recovery” on “Disable”
- > **4.** At the end of parameters configuration, select the “Service” field and change to “Enable” and save (fuchsia button in the lower right corner of the window), making sure that the led was initially white, after a couple of minutes of process, it changes to green led. Other led colors:
  - > White (off): service not active
  - > Green: service active, gateway registered and working properly
  - > Yellow: service active, registration in progress. Please wait
  - > Red: connectivity problem and/or communication error (see log for details)
- > **5.** On the right side of the window there are two links to the logs
  - > Show logs – OK: that logs all the correct activities happened
  - > Show logs – Errors: that highlight any connection problems
- > **6.** After connecting the device, move to the “Variables” page, click on the pink icon and then edit
- > **7.** Here it will be possible to select all the variable (and please be sure to check all the one listed) and after enter the name of the thing and its TrendID, values that can be obtained from the configuration mail.

- > NOTE: the values shown on this page include all the datapoints flagged as “historical” in the “database management” page.
- > **8.** Once the entire data has been filled, it will be necessary to communicate the end of the activity to the Enel X country control room or technical sales, which will start the activation of the things through specific payloads directly from the IoT platform.
  - > The activation process takes few minutes.
- > **9.** The correct activation of each thing will be highlighted by the green led on the left of the string

Parametri		Variabili	
Q		Variabili selezionate	
v Root			
v K4 SHSUCOTH			
●	57. 1: Sensore ambientale K4 Valore CO2 1	KITAIRQUAL00_CO201	58901000
●	58. 2: Sensore ambientale K4 Temperatura 2	KITAIRQUAL00_TEMP01	4500000
●	59. 3: Sensore ambientale K4 Umidità 3	KITAIRQUAL00_UR01	51100000

## 4.6. Closing Activity

### REPORT UWP3 KEY TO ENEL CONTROL ROOM

- > **1.** From any web browser, type the instrument IP address or the default address if not previously set, logging in with credentials (can be different, if changed):
- > **2.** From the menu at the top left select “Service” and then “Remote Support VPN”
- > **3.** Check that the service is “Enabled” and the icon is Green
- > **4.** Click on the eye icon to show the “Activation Code” (the activation code is also provided in a closed envelope in the UWP3 Gateway package)
- > **5.** Copy the “Activation Code” and report to Enel Control Room (i.e. via mail, replying to configuration mail)

# 5. Troubleshooting

## 5.1. Gateway Factory Reset

Those operations must be done only if asked by Enel X

### FACTORY RESET THE GATEWAY

This operation will completely delete all the settings from the gateway and will delete the association with Enel X Cloud

- > **1.** Open UWP 3 Tool and connect to the gateway (cfr. Software connection)
- > **2.** Go to “Program Setup” and click on “Factory Reset”
- > **3.** After this operation, you need to repeat the full procedure to configure the entire kit previously set, logging in with credentials (can be different, if changed):



## 6. Annex 1 – Meter comparison

METER	EM111	EM340	EM210	EM330	EM530	WM15
<b>System (Phase)</b>	1	3	3	1, 2, 3	1, 2, 3	1, 2, 3
<b>Voltage</b>	230V	120 to 230 V L-N 208 to 400 V L-L	160 to 240 V L-N 277 to 415 V L-L OR 57.7 to 144 V L-N 100 to 230 V L-L	230 to 277 V L-N 400 to 480 V L-L	120 to 240 V 208 to 415 V	120 to 240 V L-N 208 to 415 V L-L OR 120 to 347 V L-N 208 to 600 V L-L
<b>Sensor</b>	CT 333mV	Direct insertion (up to 65A)	CT 333mV or Rogowski Coils	CT 5A	CT 5A	CT 5A
<b>Mounting</b>	DIN (1 modules)	DIN (3 modules)	DIN (4 modules) or Panel 72x72*	DIN (3 modules)	DIN (3 modules)	Panel 96x96
<b>Communication</b>	RS485 Modbus RTU	RS485 Modbus RTU	RS485 Modbus RTU	RS485 Modbus RTU	RS485 Modbus RTU	RS485 Modbus RTU
<b>Certification</b>	CE	CE	CE, UL	CE, UL	CE, UL	CE, UL
<b>Use case</b>	1P Installation	Small installation EU	Can cover all EU installation***	Installation in US	Installation in US	Cover all US Voltages

## 7. Annex 2 – Sensor comparison and compatibility

MODEL	CTD		CTA	CTV	ROG*
<b>Code</b>	CTD [x] <b>X</b> ...	CTD [x] <b>S</b> ...	CTA ...	CTV ...	ROG4...
<b>Core</b>	Solid	Split	Split	Split	N/A
<b>Mounting</b>	Busbar/ cable	Busbar	Cable	Cable	Busbar/cable
<b>Cabling</b>	To be wired	Already wired (cable length 1/2 mt)		Already wired (cable length 1,5 mt)	Already wired (cable length 3 mt)
<b>Primary Current</b>	200 A 600 A 1600 A	1600 A	200 A 600 A	100 A 400 A	Up to 4000A
<b>Secondary Output</b>	5 A	5 A		333 mV	333 mV
<b>Distance CT→Meter</b>	<3 mt**			20-40mt	20-40mt
<b>Meter compatibility</b>	EM330, EM530, WM15			EM111, EM210	EM210

\* Product code include 3 coils

\*\* calculation of distance depends on burden value of CT. Please refer to calculation slide and CTs data-sheets

## 8. Annex 3 – Ordering information

### EUROPE/CE

BRAND	CATEGORY	CG PN	EAN	ENEL X PART NUMBER	DESCRIPTION
<b>Gavazzi</b>	Gateway and Accessories	UWP30RSEXXX	8030956085242	153-000290	Gateway
<b>Gavazzi</b>	Gateway and Accessories	SPMA24301	5350035433645	153-000291	Power Supply
<b>Gavazzi</b>	Gateway and Accessories	EM200-96 ADAPTER	8030956077070	153-000308	96x96 adaptor for EM210
<b>Teltonika</b>	Gateway and Accessories	UWP-WIFI-KIT-02	8030956091762	835-000050	Wi-Fi Interface + internal antenna
<b>Gavazzi</b>	Gateway and Accessories	SH2DSP24	8030956078770	153-000295	Modem interface
<b>Teltonika</b>	Gateway and Accessories	UWP-MODEM-KIT-4G-E02	8030956090666	835-000051	LTE Modem + internal/external antenna
<b>Enel</b>	Gateway and Accessories			145-000348-A	Enel Sim Card Global
<b>Enel</b>	Gateway and Accessories			145-000349-A	Enel Sim Card Italy
<b>Gavazzi</b>	Meters	EM21072DMV53XOSX	8030956079579	153-000309	Meter 3-phs, 240 V L-N / 415 V L-L, 333mV
<b>Gavazzi</b>	Meters	EM21072DMV63XOSX	8030956079609	153-000310	Meter 3-phs, 100 V L-N / 230 V L-L, 333mV
<b>Gavazzi</b>	Meters	EM340DINAV23XS1X	8030956070187	153-000315	Meter 3-phs, 400 V, 65A dir.
<b>Gavazzi</b>	Meters	EM112DINAV01XS1X	8030956069594	153-000316	Meter 1-ph, 230 V, 100A dir.
<b>Gavazzi</b>	Meters	EM111DINAV81XS1X	8030956069433	153-000317	Meter 1-ph, 230 V, 32A direct, no UL
<b>Gavazzi</b>	Sensors	CTV2X100A333MV	8030956065848	190-000227	CT split, 333mV for EM210, up to 100A
<b>Gavazzi</b>	Sensors	CTV6X400A333MV	8030956083415	190-000229	CT split, 333mV for EM210, up to 400A
<b>Gavazzi</b>	Sensors	ROG4X1002M3503X	8030956089820	190-000231	Rogowski coil for EM210, up to 4000A
<b>Gavazzi</b>	Sensors	CTA5X200A5A	8030956085716	190-000225	CT split miniature max 200A
<b>Gavazzi</b>	Sensors	CTA6X600A5A	8030956085785	190-000226	CT split miniature max 600A
<b>Gavazzi</b>	Sensors	CTV2X100A333MV	8030956065848	190-000227	CT split, 333mV for EM210, up to 100A
<b>Gavazzi</b>	Sensors	CTV6X400A333MV	8030956083415	190-000229	CT split, 333mV for EM210, up to 400A
<b>Gavazzi</b>	Sensors	ROG4U1002M4003X	8030956091212	190-000232	Rogowski coil (USA and Canada) for EM210_MV



## 9. Annex 4 – Meter configuration

METER MODEL	PARAMETER	ATTRIBUTE NAME ON UCS TOOL	ATTRIBUTE NAME ON DISPLAY	VALUE	NOTE
<b>EM111</b>	VT primary (only in case of CT)	Voltage sensor primary current	Pri Curr	CT→Primary Current	i.e. for CTV-2X 100A 333MV, CT primary is 100
<b>EM330</b>	CT Ratio	Current transformer ratio	Ct rAtlo	Primary current= depending on CT Secondary current=5 (always 5Amps)	I.e for CTD-2X 200 5A XXX, CT ratio is: Primary=200 Secondary=5 Ratio=200/5=40
	System Type	Electrical system	SYStEM	3P→3 phases system 3P.n→3 phases system with neutral 2P→2 phases with neutral	
	Measurement Type	Measurement Mode Selection	MEASurE	B	
<b>EM340</b>	System Type	Electrical system	SYStEM	3P→3 phases system 3P.n→3 phases system with neutral 2P→2 phases with neutral	
	Measurement Type	Measurement Type	MEASurE	B	
<b>EM530</b>	CT Ratio	Current transformer ratio	CT RAT	Primary current= depending on CT Secondary current=5 (always 5Amps)	I.e for CTD-2X 200 5A XXX, CT ratio is: Primary=200 Secondary=5 Ratio=200/5=40
	System Type	Electrical system	SYSTEM	3P→3 phases system 3P.n→3 phases system with neutral 2P→2 phases with neutral	
	Measurement Type	Measurement Mode Selection	MEASurE	B	

<b>EM210</b>	Sensor Type	Sensor Selection	SEnSOR	Ct→VT sensors Rog→Rogowski 100mV	
	VT primary (only in case of CT)	Voltage transfor- mer ratio	Ct Prin	CT→Primary Current	i.e. for CTV-2X 100A 333MV, CT primary is 100
	Rogowski Range (only in case of Rogowski coil)	Rogowski Sensor Range	roG	"1,00k", that means 1000A "2,00k", that means 2000A "4,00k", that means	please select the upper value (in kAmps) compared to the nominal available
					current in the site. (i.e. if the available max current is 1050 Amps, please select "2,00k")
	System Type	Electrical system	SYS	3P→3 phases unbalan- ced system 3P.n→3 phases unbalan- ced system with neutral 3P.1→3 phases balanced	
	Application	Application	APPLiCat	E	
<b>WM15</b>	CT ratio	Current transfor- mer ratio	CT Ratio	CT Ratio→[primary current]/[secondary current]	I.e for CTD-2X 200 5A XXX, CT ratio is: 200/5=40
	System Type	Electrical system	SYS	3P→3 phases unbalan- ced system 3P.n→3 phases unbalan- ced system with neutral 2P→2 phases with/wi- thout neutral 1P→single phase	