Energypro 2 (EB/PRO-02)
Smart Meter: User Manual V1.07

Important Note: This process only to be executed by a certified electrician

The Smart Meter (Energypro 2) is intended for installation in electrical distribution network

Control Interface and LED Indicators General description

The unit has 2 buttons. One main button for user access, one for hidden access (needle button for reset procedures).

Main Button

The unit is equipped with one Tactile switch button above the SMA antenna connector.

Single fingertip press: unit activates pairing mode

Double fingertip press followed by 3 sec press: buffer erase initiated

Software functionality of this button is handled by EB's application program.

Reset button

Hidden button (accessible only with needle).

1. Single press: reboot unit
2. First reset button press and hold, then Simultaneously press with Key button: Factory defaults applied, buffer erase & reboot of unit
3. First key button press and hold, then simultaneously press with reset button: Rollback Firmware applied

Functionality of this button will be handled by EB application program.

LED functionality

6 pcs LED   Main BTN

Reset BTN
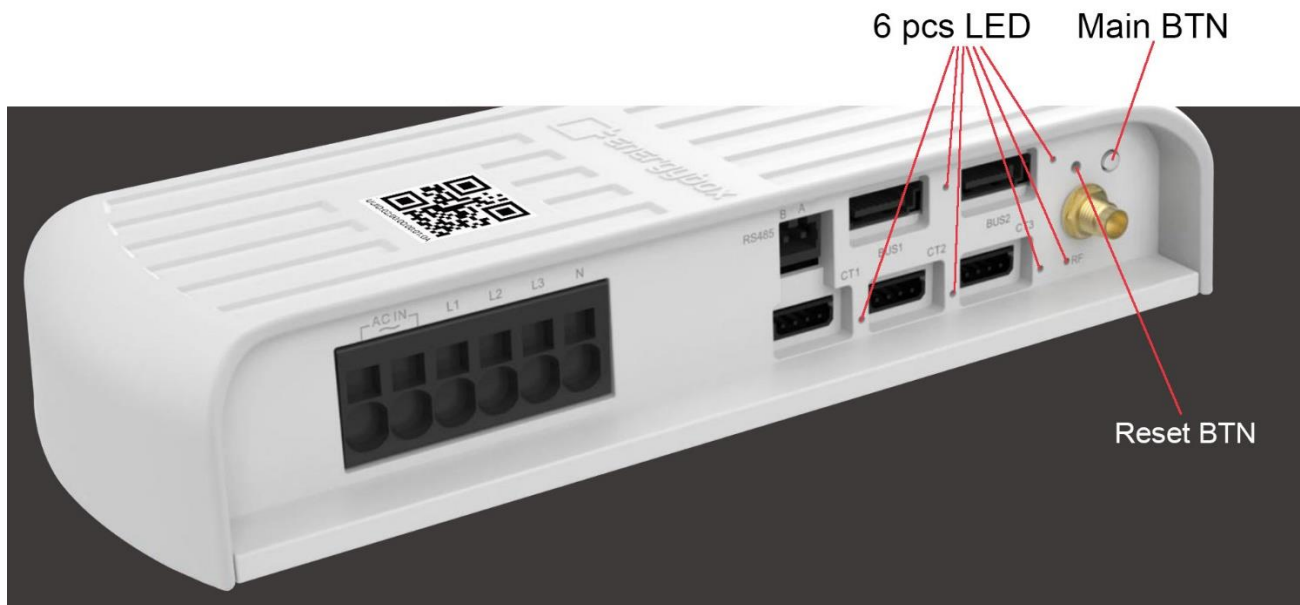
RF LED

Unit has a multicolor RF status LED with connectivity status indication.

| LED	Function
Red	Connected to gateway, Low RF signal RSSI <-80dB
Green	Connected to Gateway, Good RF signal strength RSSI >-40dB
Orange/ Amber	Connected to Gateway, Average RF signal strength RSSI -40 - -80dB
Color Flash (0.2 sec)	Connected to Gateway according signal, uploading buffered Data
Red blink	Power on, trying to Pair

Sensorbus LED

Unit has two individual Sensorbus Status LEDs, one per Sensorbus.

| LED	Function
Red	no device connected, sensorbus error
Green	device connected and successful read of data

Port	Description	Port Specification	Cable Requirements
CT1	Panel Current Phase 1	0-1V analog	Max 1m / 3.3ft
CT2	Panel Current Phase 2	0-1V analog	Max 1m / 3.3ft
CT3	Panel Current Phase 3	0-1V analog	Max 1m / 3.3ft
SB1/2	Sensorbus	Serial Data Interface	Max 1.5m / 4.95 ft per segment
Modbus	Modbus port	RS485	Twisted Pair
AUX	Powering device	CAT II 100 - 277VAC, 60Hz CAT III: 100 – 150 VAC, 60 Hz Max. 0.2A Input current	AWG 12 – 18 suitable for 80ºC
L1	Phase 1	CAT III: 100-277VAC, 60Hz	AWG 12 – 18 suitable for 80ºC
L2	Phase 2	CAT III: 100-277VAC, 60Hz	AWG 12 – 18 suitable for 80ºC
L3	Phase 3	CAT III: 100-277VAC, 60Hz	AWG 12 – 18 suitable for 80ºC
N	Panel Neutral	CAT III 0V	AWG 12 – 18 suitable for 80ºC
ANT	Wireless 915Mhz	50Kbps	SMA connector

Sensorbus 1/2 are sata based connectors for Sensors Busses. They are used to connect sub-metering devices (Energyspider 2) via sata cable.The Sub-metering devices provide the functionality of sub-metering single branches/loads. The Current Transformers (EnergyCTs) can be connected to the sub-metering devices (Energyspider 2). The main device (Energypro 2) will auto detect the connected sub-metering devices (Energyspider 2) and the connected EnergyCTs accordingly.
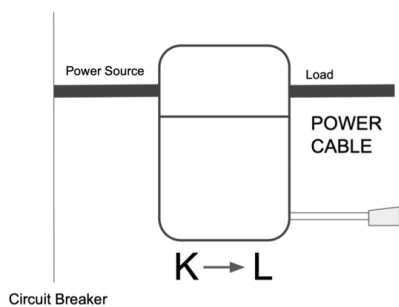

Make Sure the EnergyCTs installed are in right direction Arrow pointing to Load

Installation inside Panel
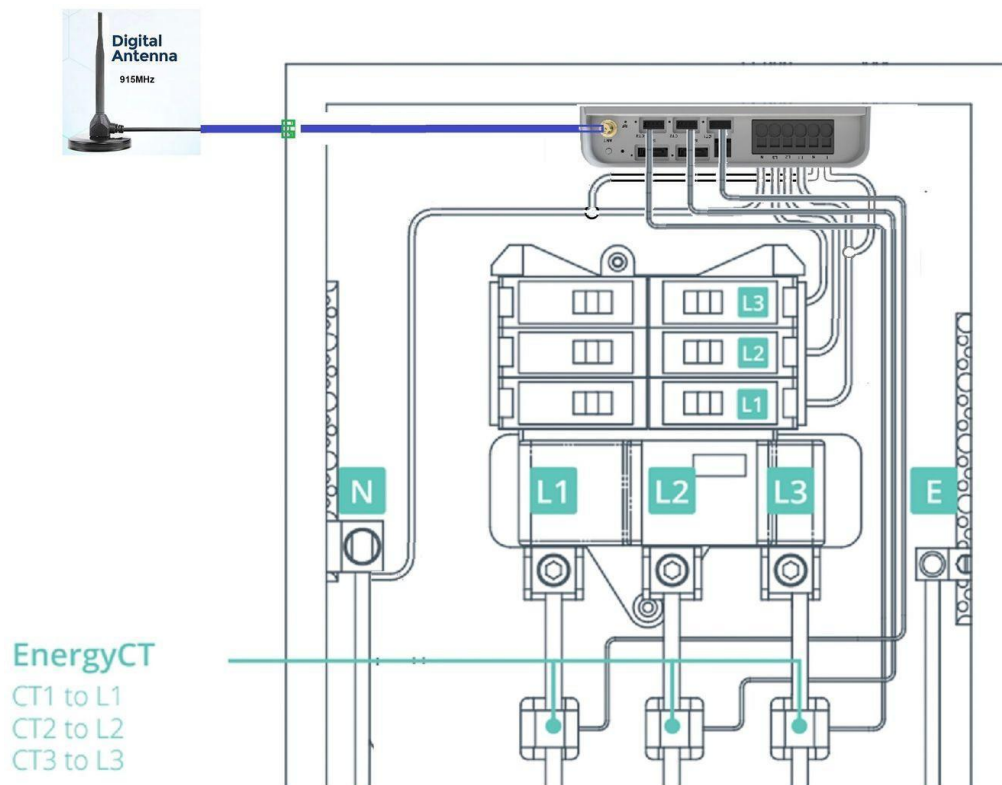
The Smart Meter (Energypro 2) is mounted within the electrical panel. It can be attached to the top or bottom and also to the inner side walls of the panel by using the integrated magnets on the base of the Energypro 2 housing. The final mounting position is depending on the given environment and the remaining space within the cabinet.
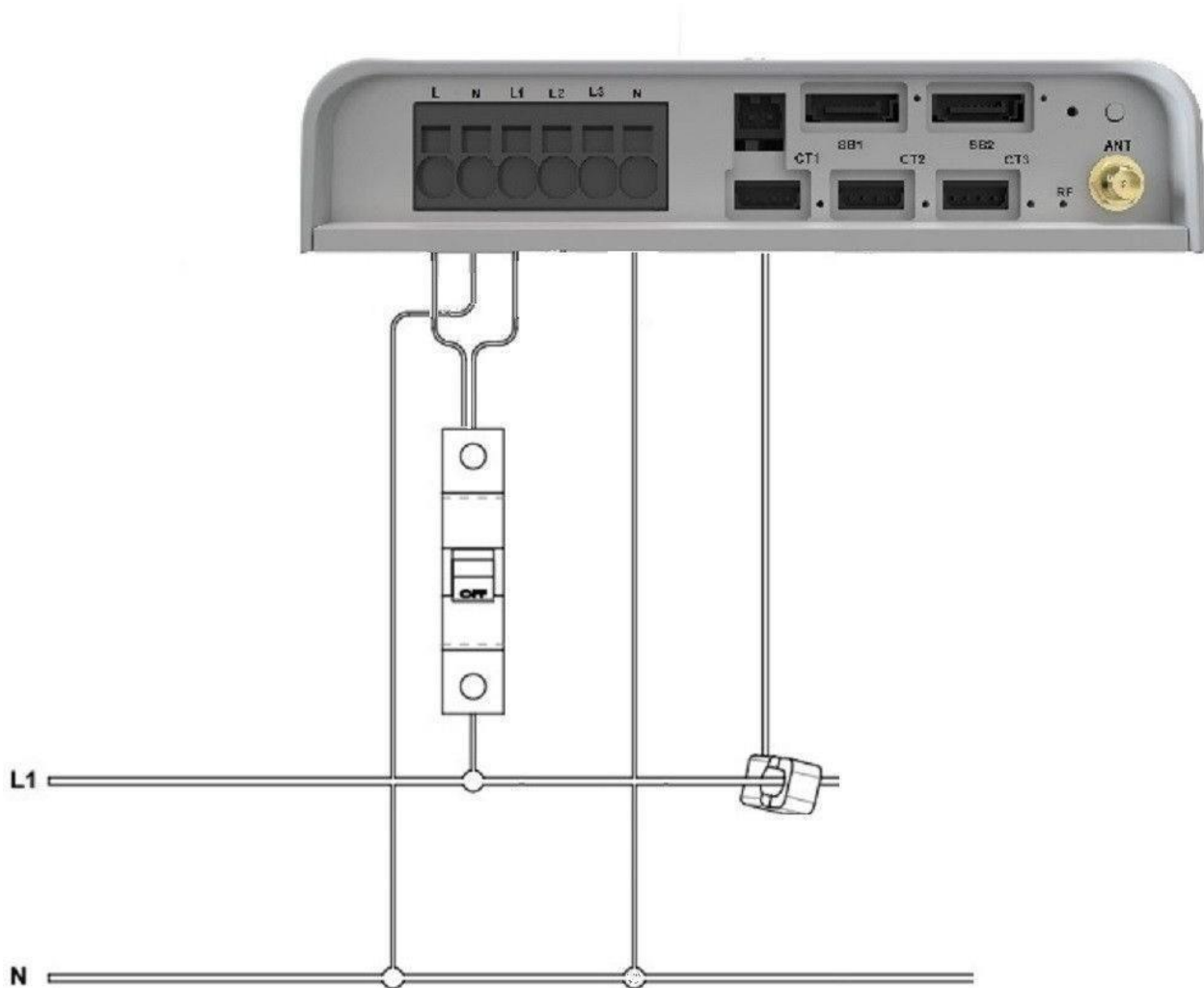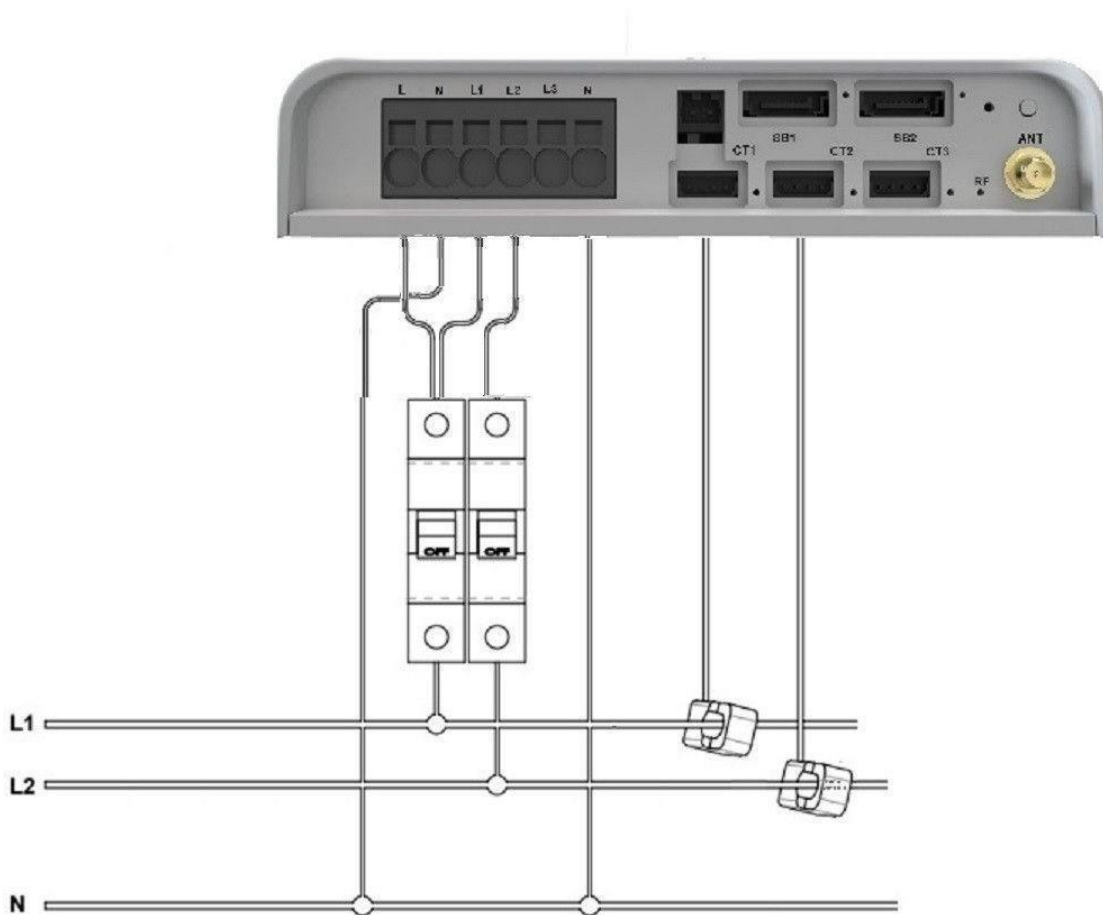
Wye – 1-phase / 3 wires (single phase)
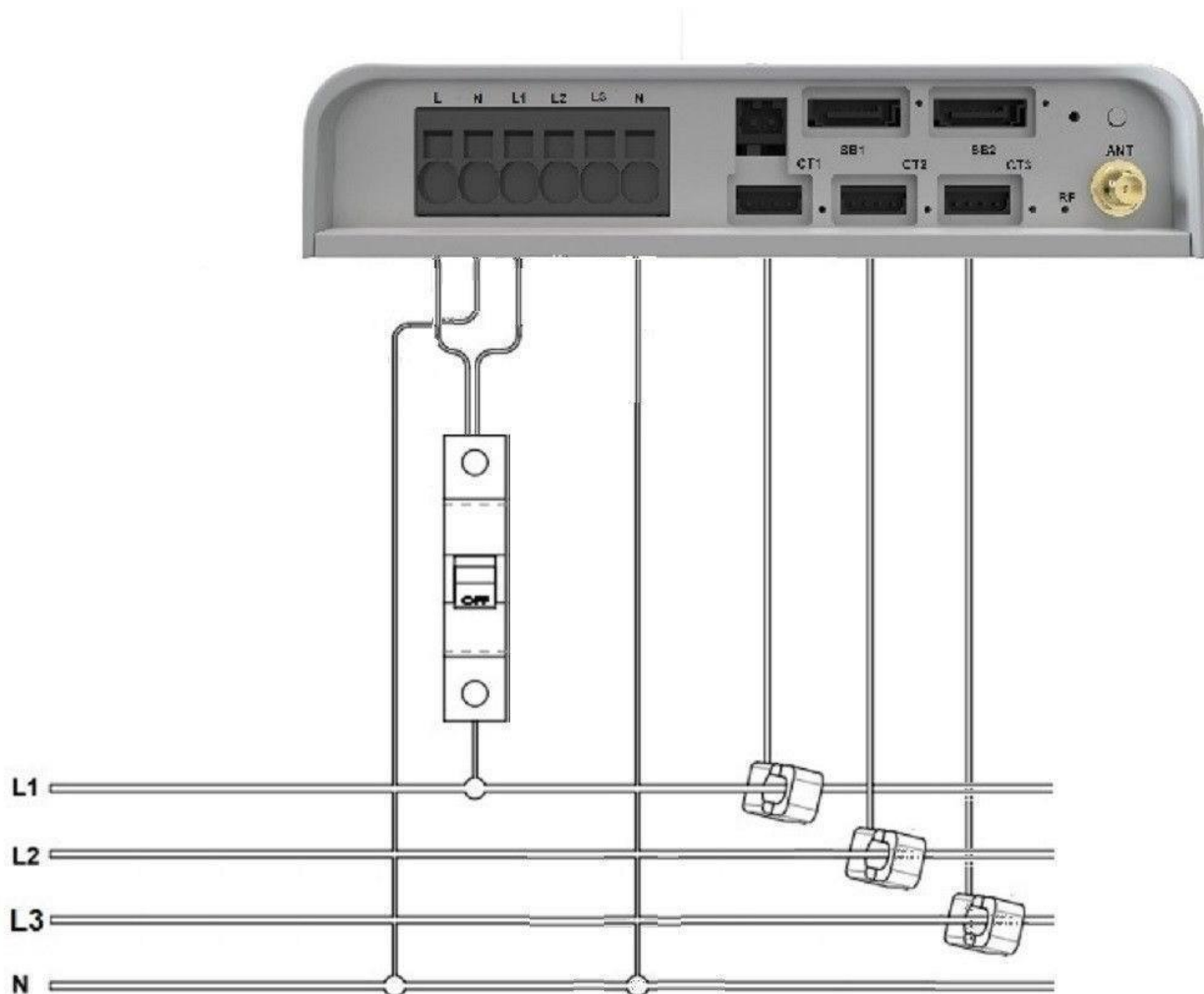
Wye – 3-phase / 4 wires (three phase)
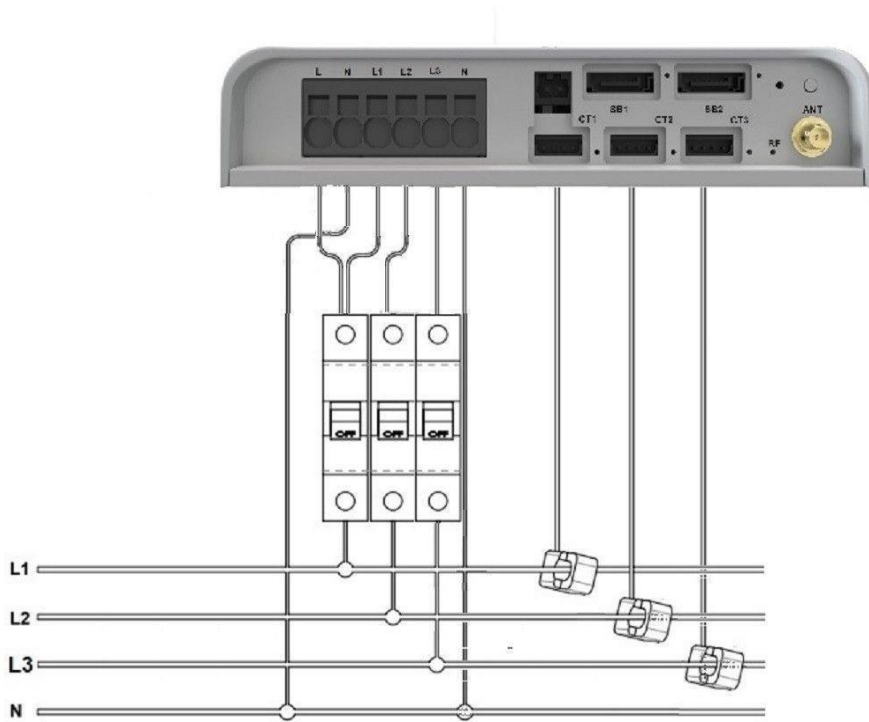
Wye – 1-phase / 2 wires (single phase)

Wye - 2-phase / 3 wires (split phase)

Be safe! Cut the power during installation and make sure that no voltage is present anymore.

- Check the EnergyCT load direction.
- Mark & Check configuration on platform
- Make sure if you make any configuration change on the platform, to update the configuration to the EnergyPro 2 through clicking on the green button on the table view.
- Check the current reading with a clamp meter and cross check with the values on SuperHub Devices web interface.

Configuration

After successful installation of the Energypro 2 in the electrical panel make sure to connect the RF antenna with the SMA port on the Energypro 2 device. The main communication interface is RF sub 1Ghz (915Mhz) based.
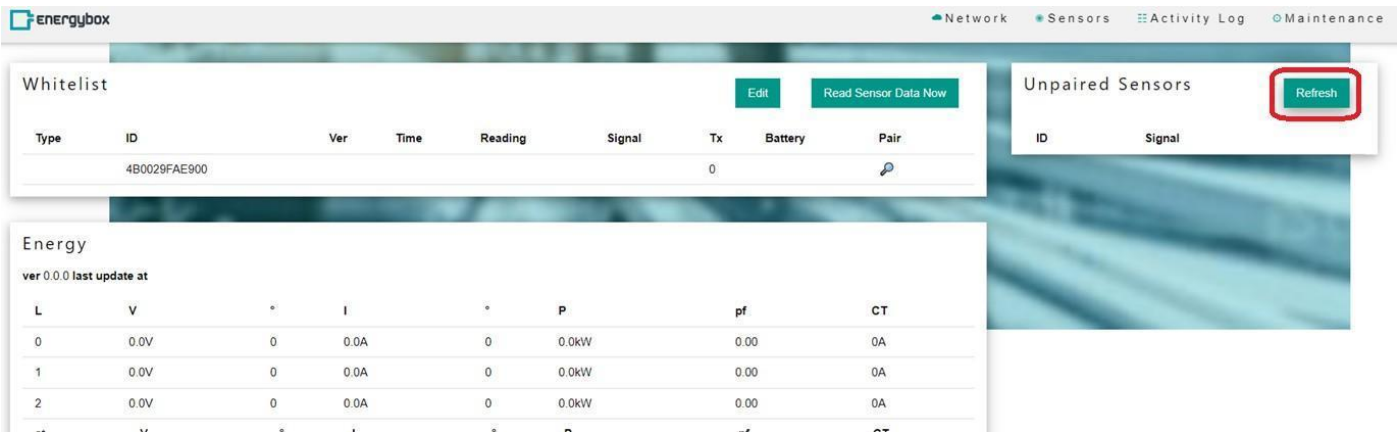
EnergyBox SuperHub wireless gateway will pair with the Energypro 2 via RF link. The platform a web interface (admin portal) allows configuration of settings and display of Energy readings incl. P, U, I, cos phi or power factor, phase angle for mains and (if connected) sub branches of Energyspider 2 readings.
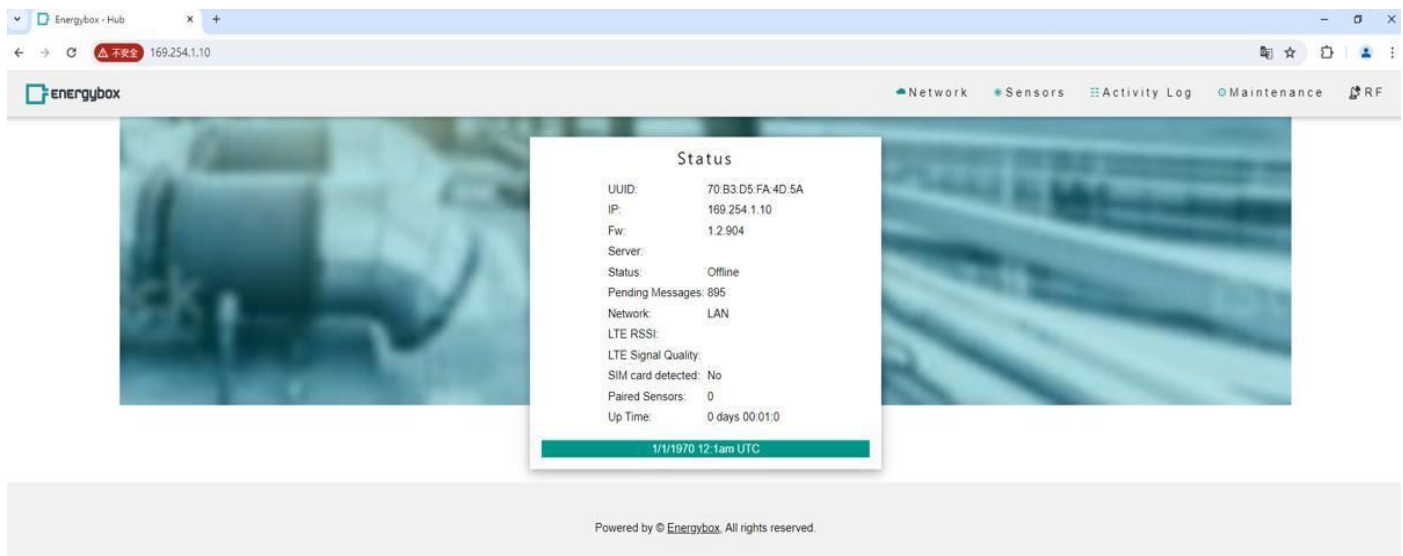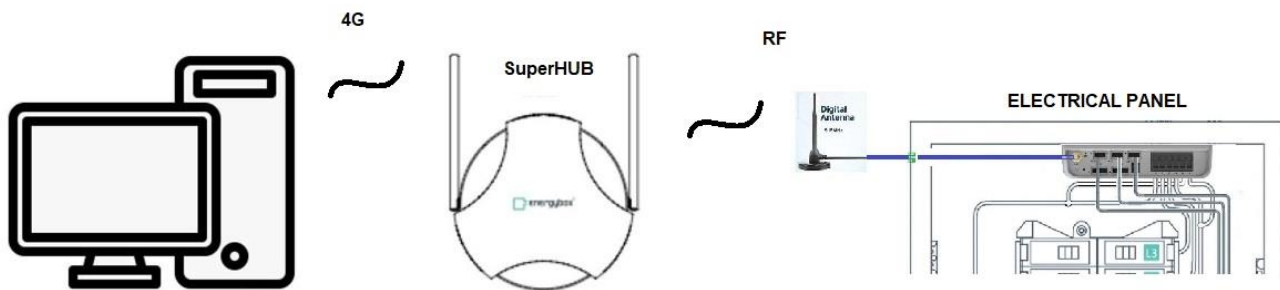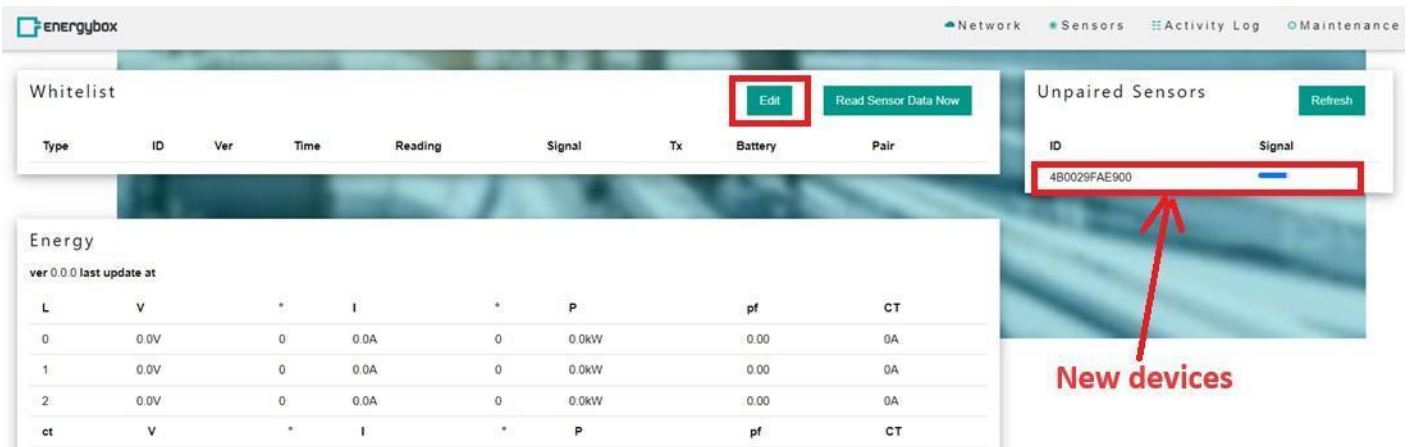
Click the "Sensors" icon
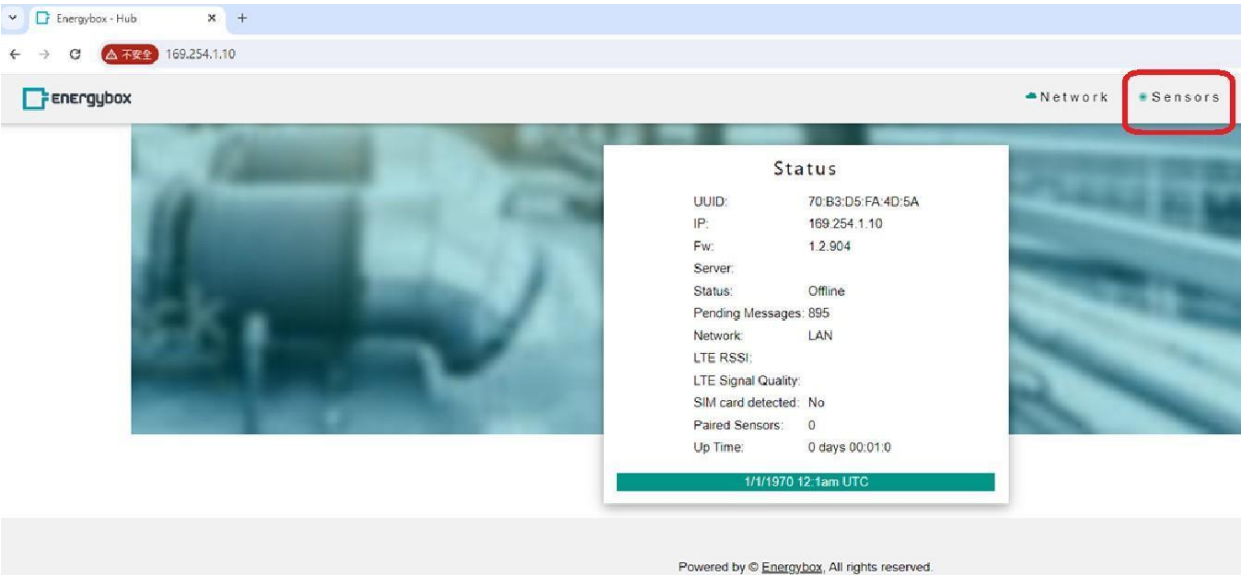
Click the "Refresh" button to refresh the unpaired device list.

If a new devices fined, Click Edit button.
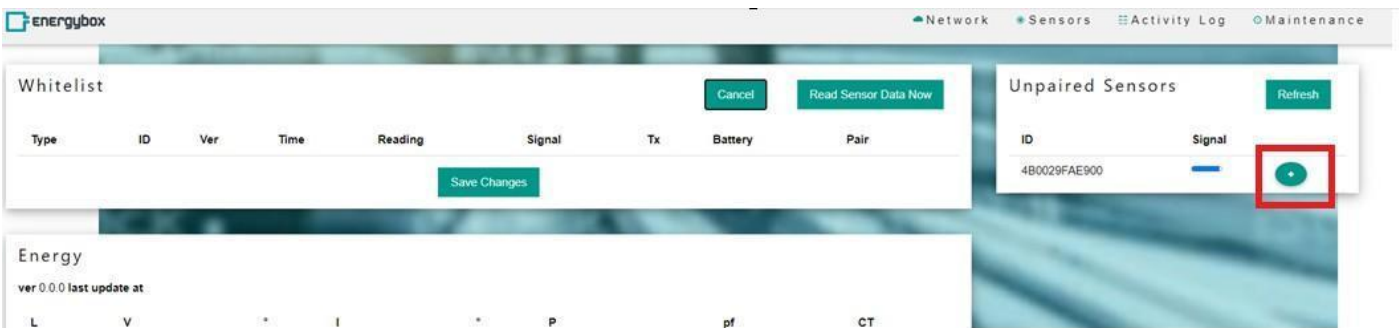
Click "+" button to add a new device to Whitelist.
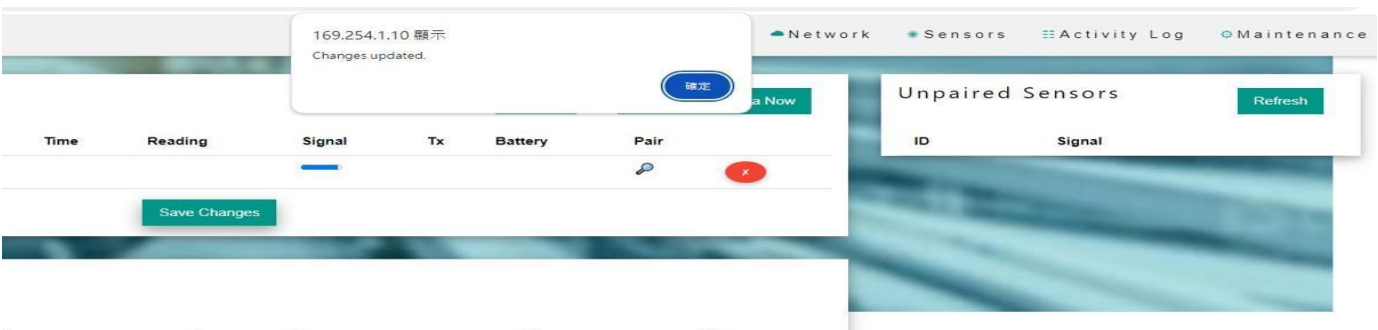
Click "Save Changes" button and click OK/Confirm to save the new devices.

The EnergyPro2 devices RF LED will change from red to green color after it is paired with the superHUB.

Environmental Conditions

#		
1	Suitable environment	Indoor use only
2	Altitude range	< 2000m above Sea level
3	Operation Temperature range	-10°C to + 55°C
4	Humidity range	Max. 90% non-condensing
5	Overvoltage category	Mains: Rated CAT II 100 - 277 VAC; Rated CAT III 100 - 150 VAC; Voltage sensing port: Rated CAT III 3
6	Pollution degree	PD 2

2.

⚠	ISO 7000 - 0434B (2004-01)	Caution *

To indicate that caution is necessary when operating the device or control close to where the symbol is placed. To indicate that the current situation needs operator awareness or operator action in order to avoid undesirable consequences. On the health app quality label: to indicate that the health app requires approval from a health professional for use.

FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-       Reorient or relocate the receiving antenna.
-       Increase the separation between the equipment and receiver.
-       Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-       Consult the dealer or an experienced radio/TV technician for help.

" FCC RF Radiation Exposure Statement
Caution: To maintain compliance with the FCC's RF exposure guidelines, place the unit at least 20cm from nearby persons."