WIRELESS SENSORS TECHNOLOGY

PLUS TWPH-1UT
INSTALLATION GUIDE

IG_PLUS_TWPH-1UT_E01A

TEKON ELECTRONICS | AVEIRO, PORTUGAL
P.: +351 234 303 320 **M.:** +351 933 033 250 **E.:** sales@tekonelectronics.com

TEKONELECTRONICS.COM

PLUS TWPH-1UT
INSTALLATION GUIDE

Table of contents

step

01

WGW420 PLUS WIRELESS GATEWAY CONFIGURATION

step
01
WGW420 PLUS WIRELESS GATEWAY CONFIGURATION

TEKON CONFIGURATOR SOFTWARE is only compatible with the Microsoft® Windows® Operating System.

01

Connect the antenna to the *Gateway*.

02

Wiring

Connect the power supply and then the *RS485-USB* cable to the *Gateway*.

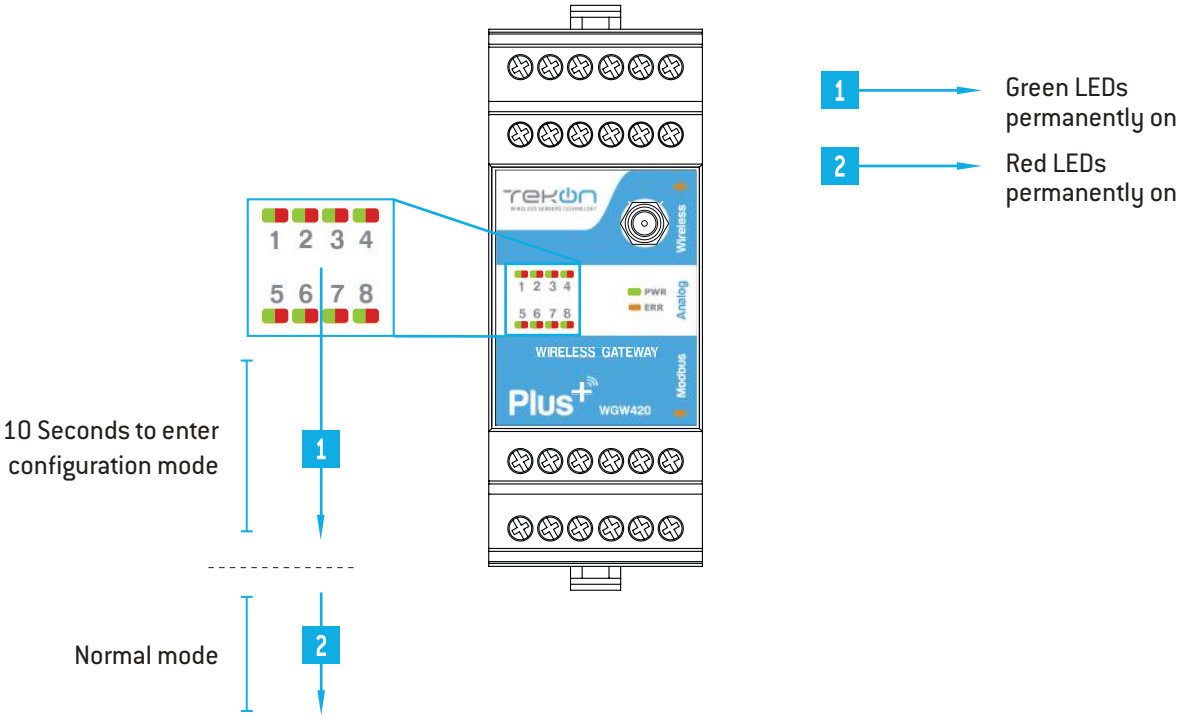
Wire Indication:
Blue - GND; Brown - +24 VDC; Orange - Data+ (A); Black - GND; Yellow - Data - (B)

03

Power ON the device.

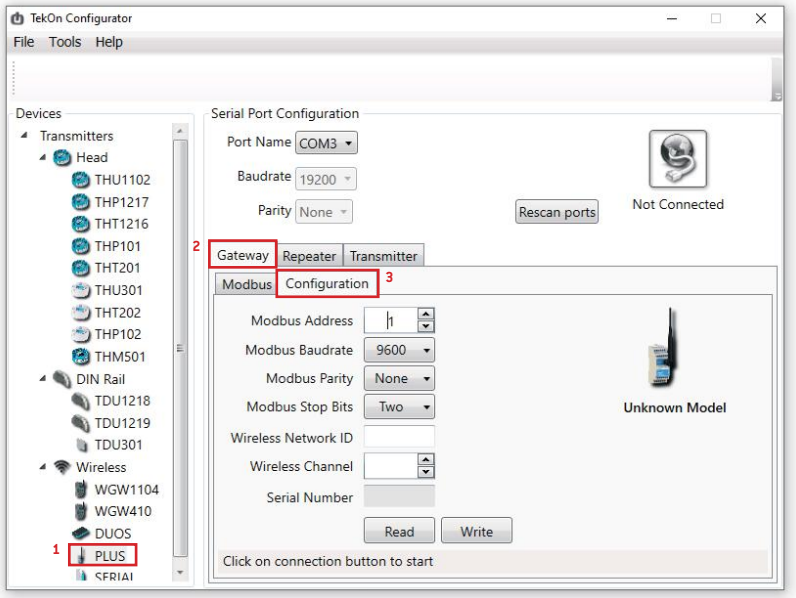
04

Check device connection state by LED indication.



05

Open *Tekon Configurator Software*[1] and select *PLUS* >> *Gateway* >> *Configuration*



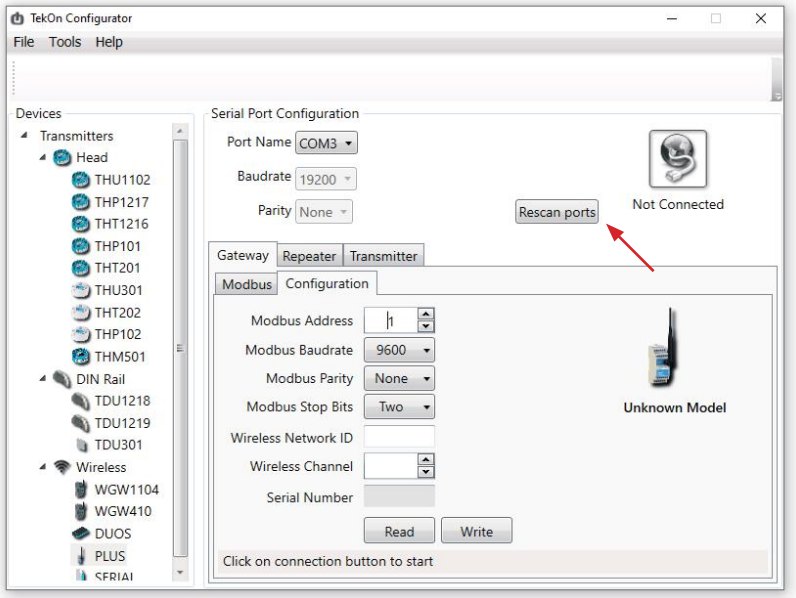
[1] Tekon Configurator software is free of charge and available at www.tekonelectronics.com

step
01
WGW420 PLUS WIRELESS GATEWAY CONFIGURATION

06

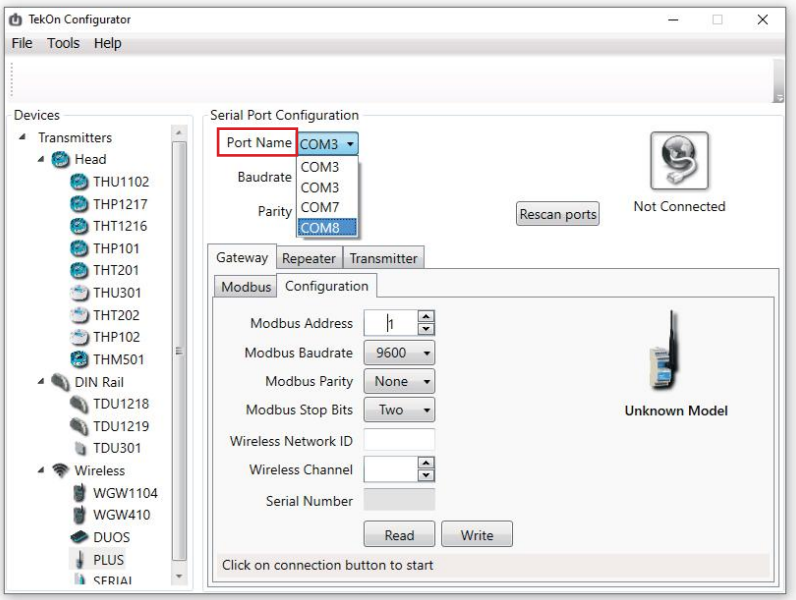
Select serial port corresponding to WGW420 PLUS Wireless Gateway

Click on the *Rescan Ports* button.



07

Select corresponding *Port name*[2].

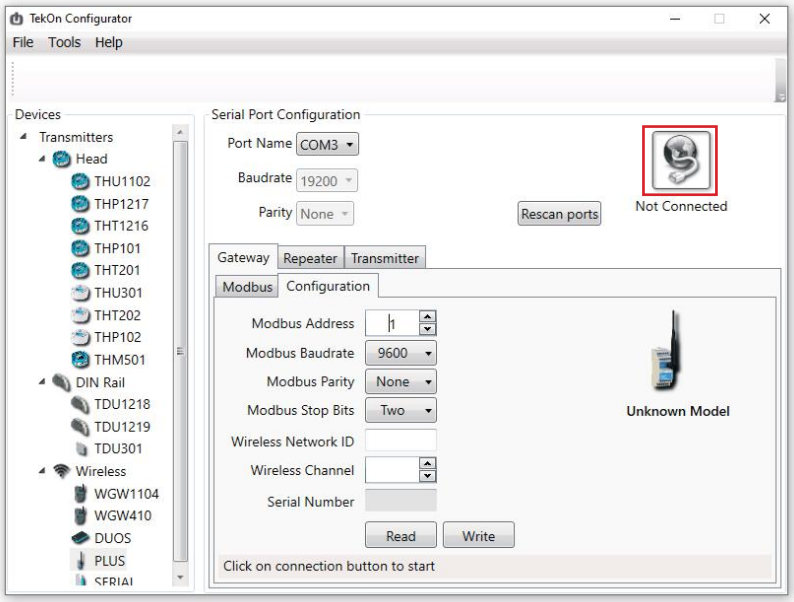


[2] You can check device's serial port name in "Device Manager" on Microsoft ® Windows® operating system.

08 Perform a power cycle on the *Gateway*.

NOTE:
After power up, you have 10 seconds to enter configuration mode by clicking on Connect button [ ] (while green LEDs are permanently on).
In this mode, you can manage device parameters: *Modbus Address*, *Modbus Baudrate*, *Modbus Parity*, *Wireless Network ID* and *Wireless Channel*.

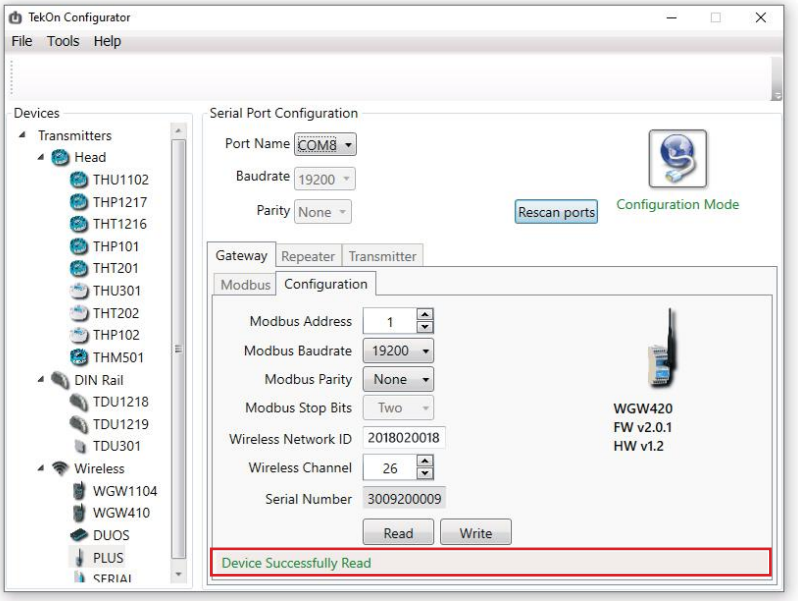
09 Click on *Connect* [ ] button to enter configuration mode.



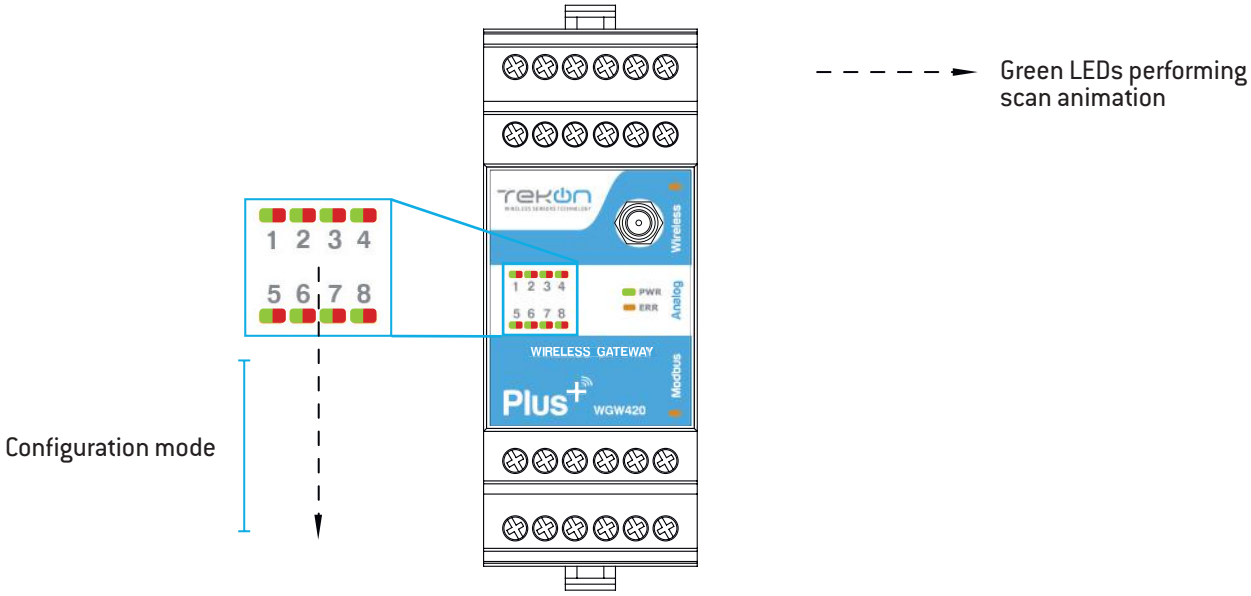
step
01
WGW420 PLUS WIRELESS GATEWAY CONFIGURATION

10

The status string at the bottom of the software window provides feedback on ongoing operations.



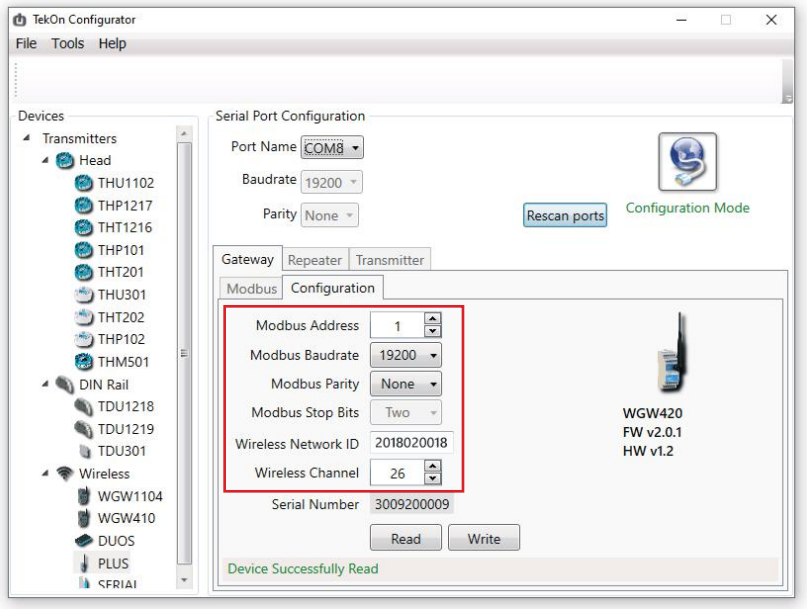
You can also verify configuration mode activation by checking LEDs on the gateway.



NOTE:
When the 10-second time frame to enter configuration mode is exceeded, the LEDs will turn permanently red and the gateway will enter normal operation mode.
To get back in configuration mode, you need to perform a power cycle - step 8.

11

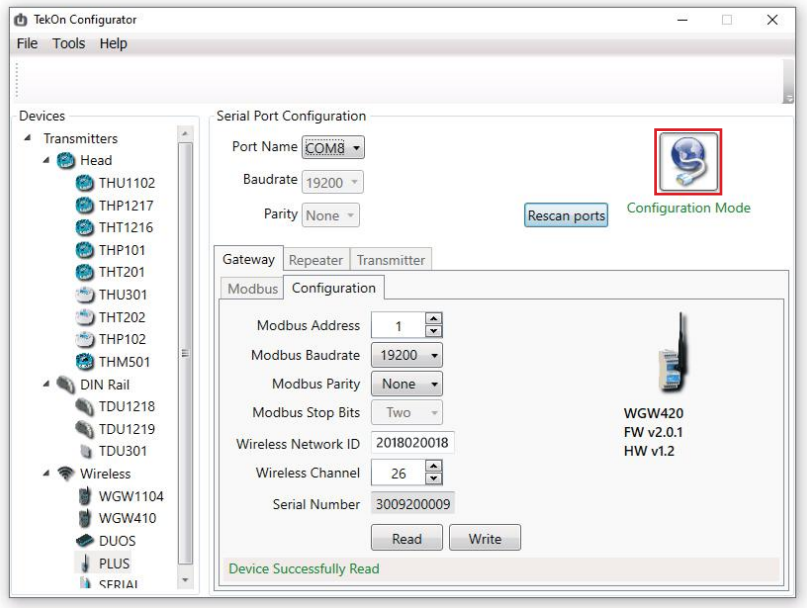
Take note of device configuration data available, namely: *Modbus Address*, *Modbus Baudrate*, *Modbus Parity*, *Wireless Network ID* and *Wireless Channel*.



NOTE:
The wireless network connection between devices is ensured by setting the same *Wireless Network ID* and *Wireless Channel* parameters.

12

Click on *Disconnect* [ ] button.

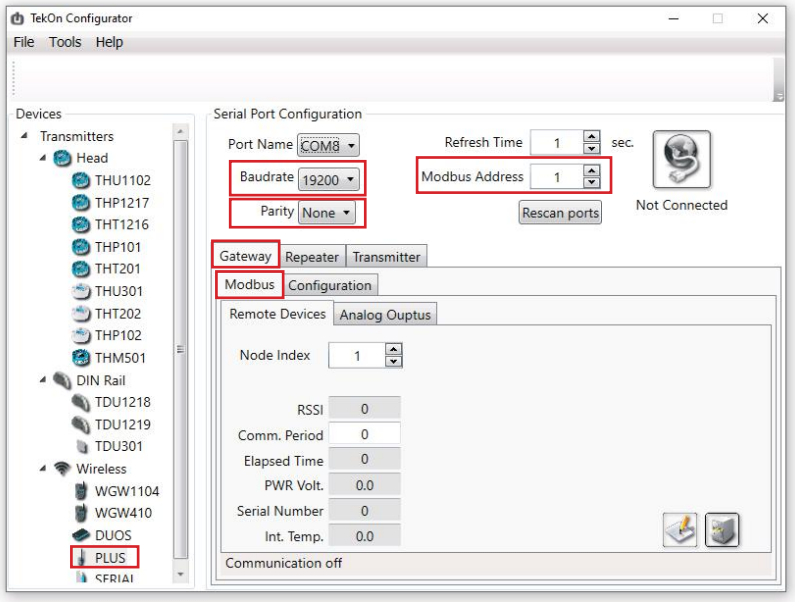


step
01
WGW420 PLUS WIRELESS GATEWAY CONFIGURATION

13

Modbus Communication

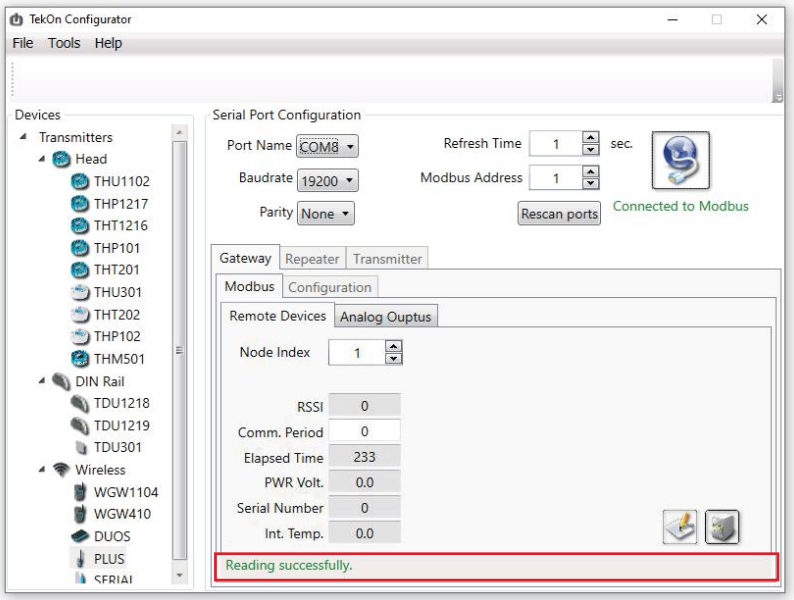
Select *Modbus* tab of the *Gateway* and set the previously saved configurations.



Ensure that *Port name*, *Baudrate*, *Parity* and *Modbus Address* fields are the same as those obtained in configuration mode.

14

Click on *Connect* [ ] button and check operation status at the bottom of the window.

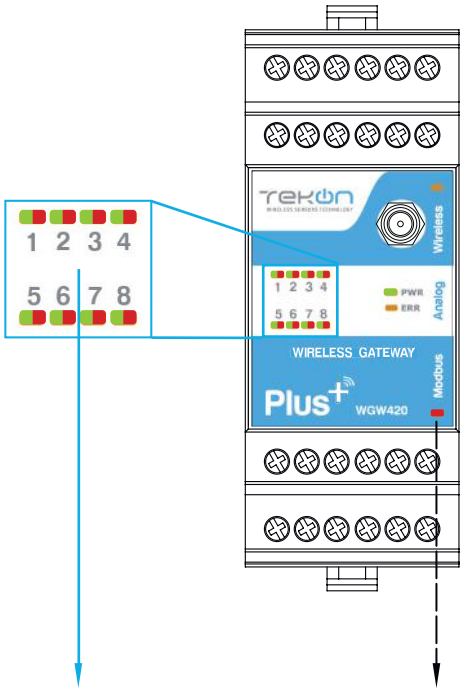


The messages *Connected to Modbus* and *Reading successfully* will appear if *Serial Port* configuration parameters are correct and the Modbus connection is established.

step 01

WGW420 PLUS WIRELESS GATEWAY CONFIGURATION

NOTE:
See WGW420 Datasheet to access LED indication information - page 4.



Red LEDs permanently on

LED flashes on each wireless communication

step

02

TWPH-1UT PLUS WIRELESS TEMPERATURE TRANSMITTER CONFIGURATION

step **02**

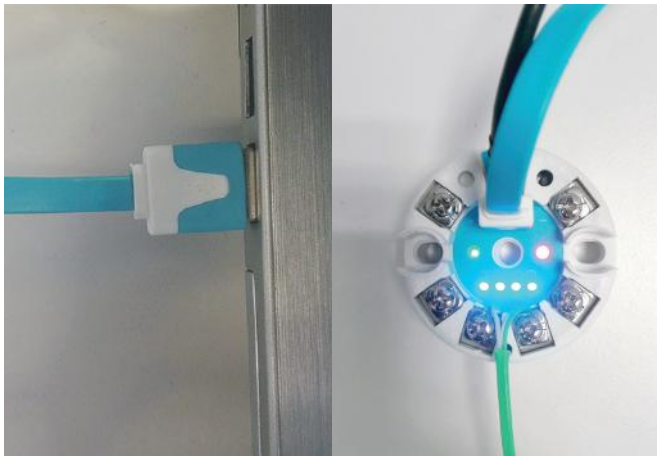
TWPH-1UT PLUS WIRELESS TEMPERATURE TRANSMITTER CONFIGURATION

01

Connect the antenna and sensor connectors to the *TWPH-1UT PLUS Wireless Transmitter*..

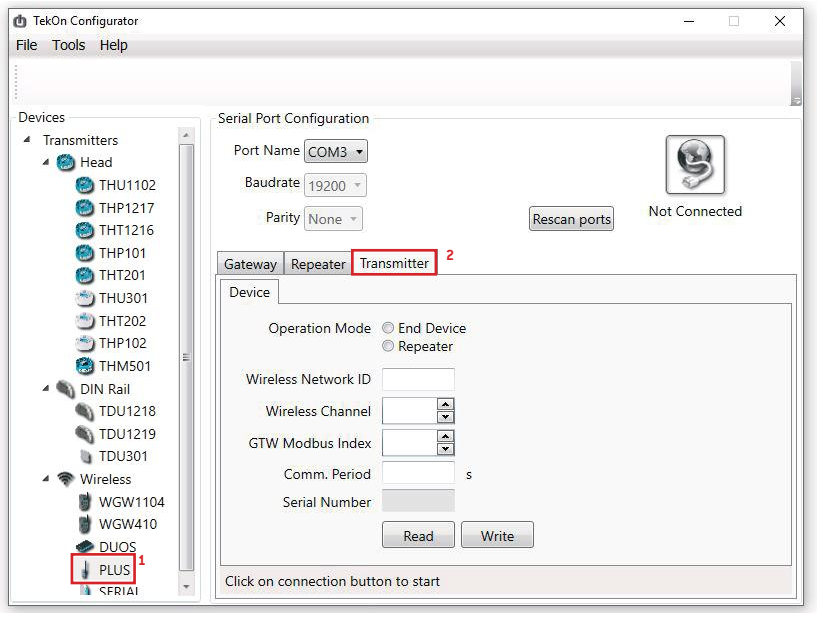
02

Connect the micro USB cable to the computer and then to *TWPH-1UT PLUS Wireless Transmitter*.



03

Open a new window of *Tekon Configurator Software* and select *PLUS* >> *Transmitter* menu.

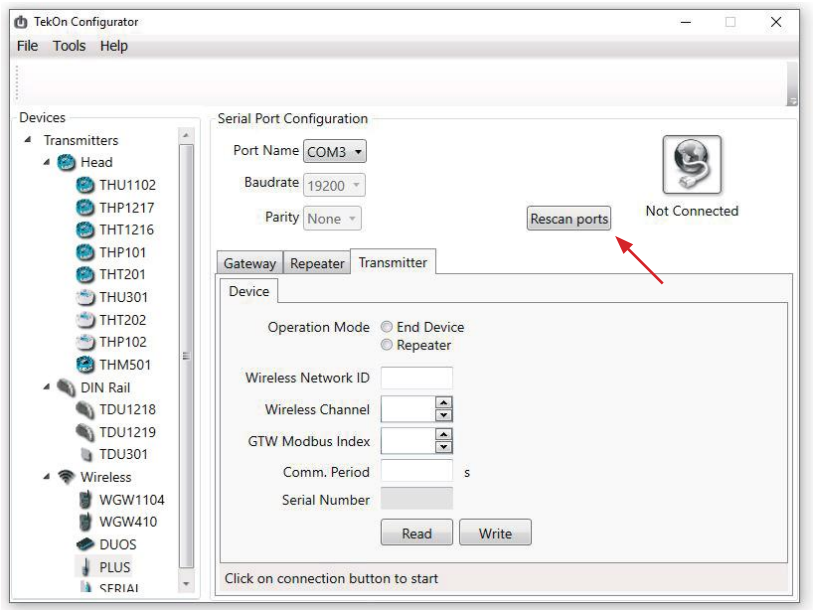


step 02

TWPH-1UT PLUS WIRELESS TEMPERATURE TRANSMITTER CONFIGURATION

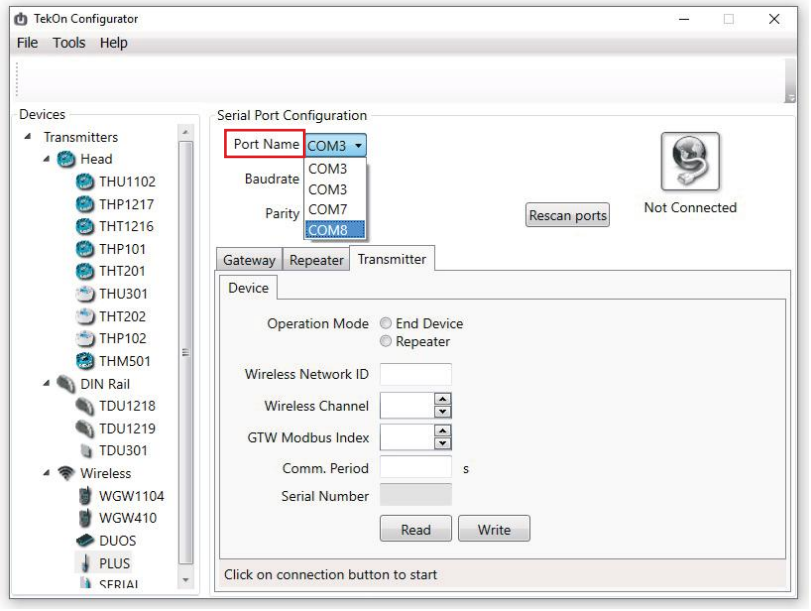
04

Click on *Rescan Ports* button.



05

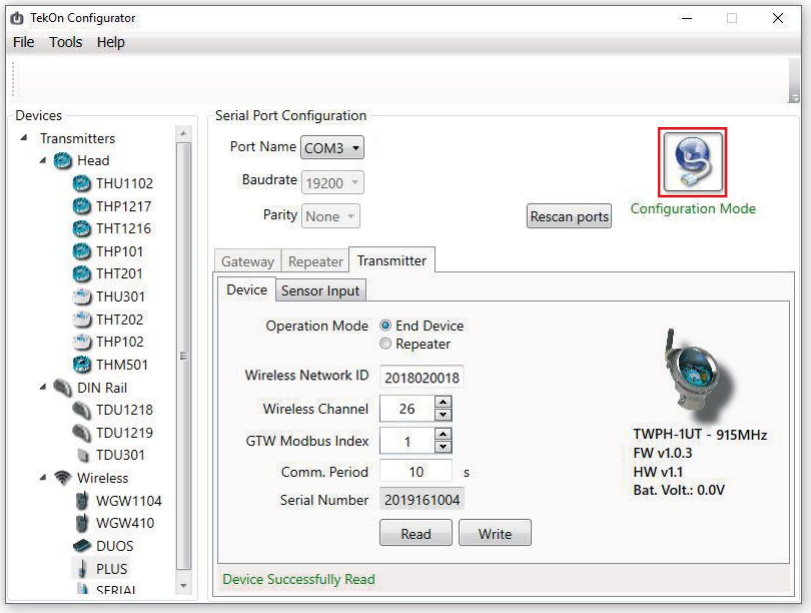
Select corresponding *Port name*[1].



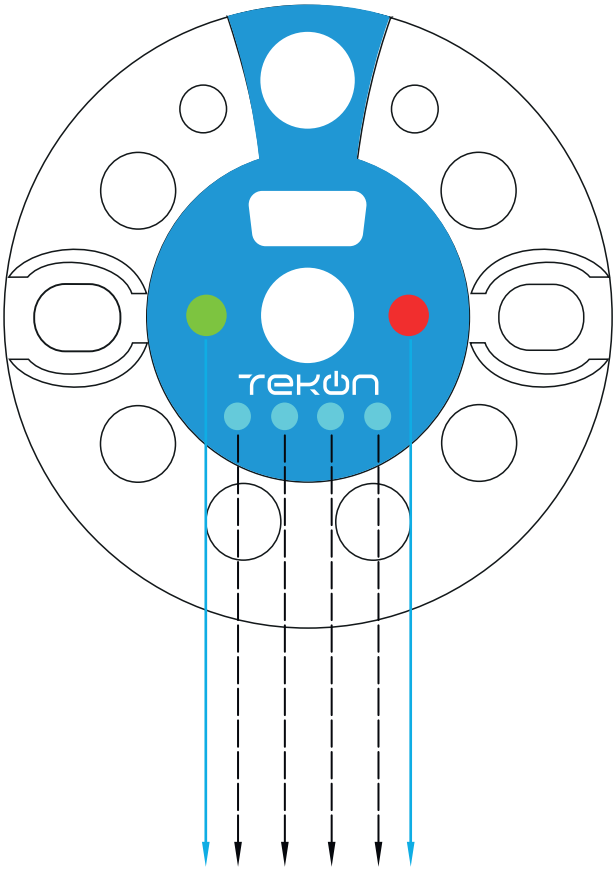
[1] You can check device's serial port name in "Device Manager" on Microsoft® Windows® operating system.

06

Click on *Configuration Mode* ( ) button.



When the *TWPH-1UT Transmitter* is in *Configuration Mode*, all LEDs are active but with different behaviours.



LED permanently on

LED flashing with 1 second interval

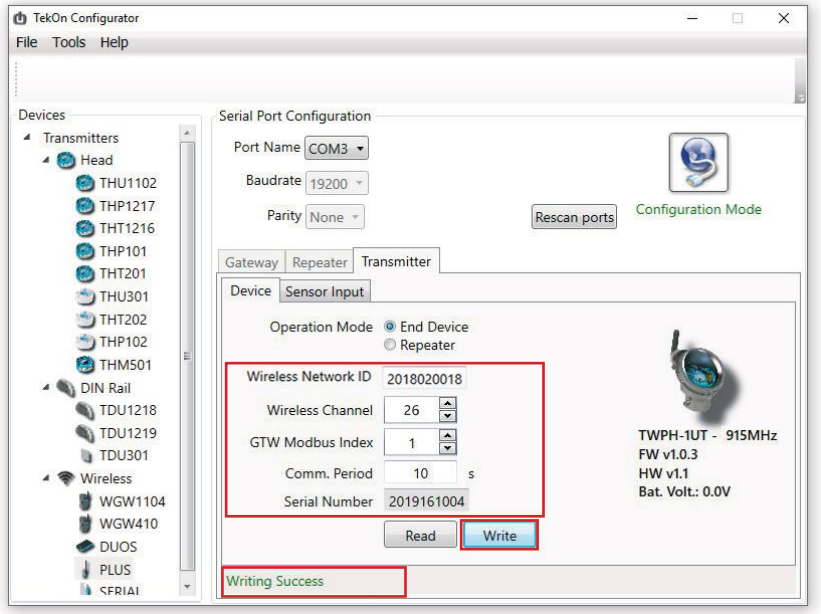
step
02
TWPH-1UT PLUS WIRELESS TEMPERATURE TRANSMITTER CONFIGURATION

07

Configure *Wireless Network ID* and *Wireless Channel* previously obtained from *Gateway*.

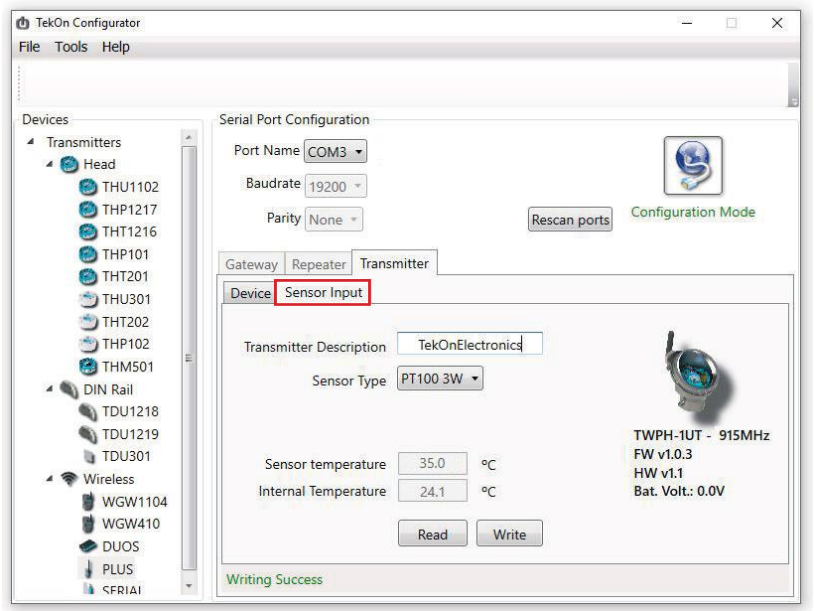
The wireless connection between both devices is ensured by setting the same *Wireless Network ID* and *Wireless Channel* parameters.
Gateway Modbus Index will define the modbus registers window used to store information sent by the transmitter.
Each transmitter should have a different *Gateway Modbus Index* in order to avoid information override.

Click on *Write* button to update *Transmitter* settings.



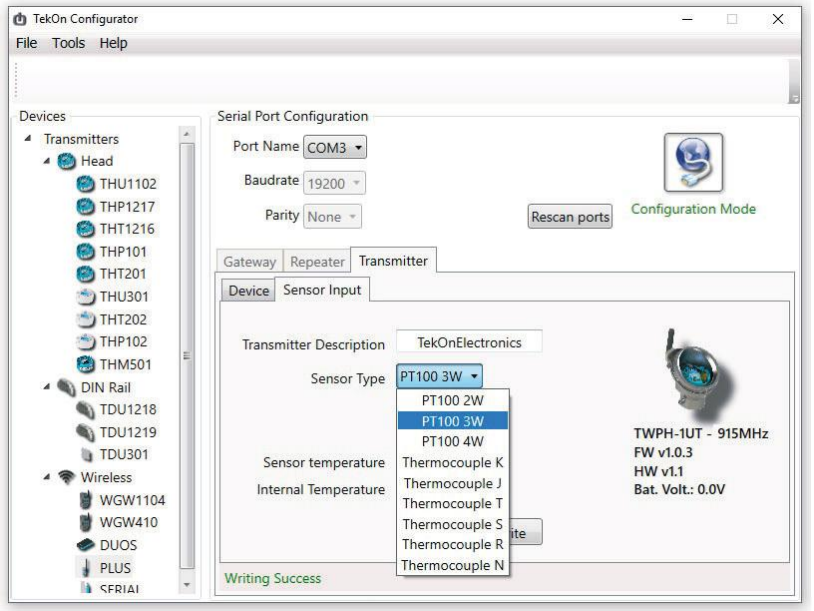
08

Click on *Sensor Input* tab.



09

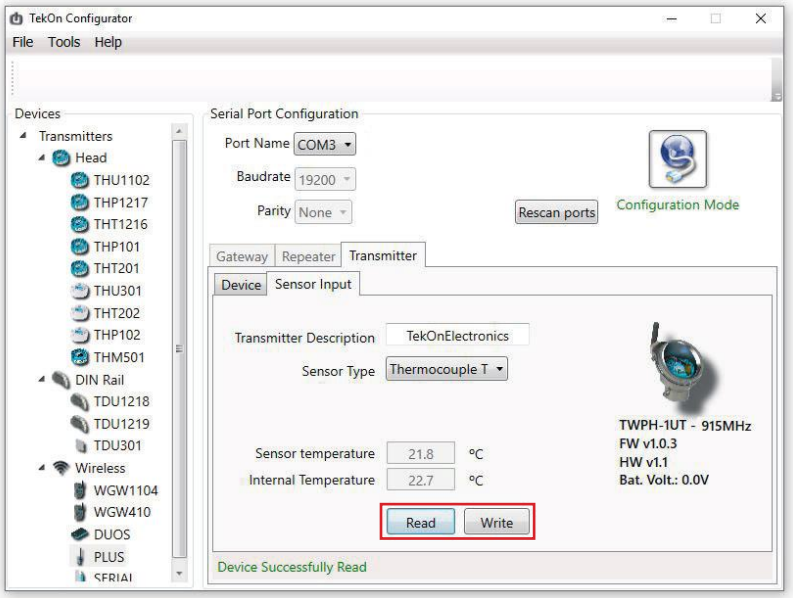
Select the *Sensor Type* you will use.



step
02
TWPH-1UT PLUS WIRELESS TEMPERATURE TRANSMITTER CONFIGURATION

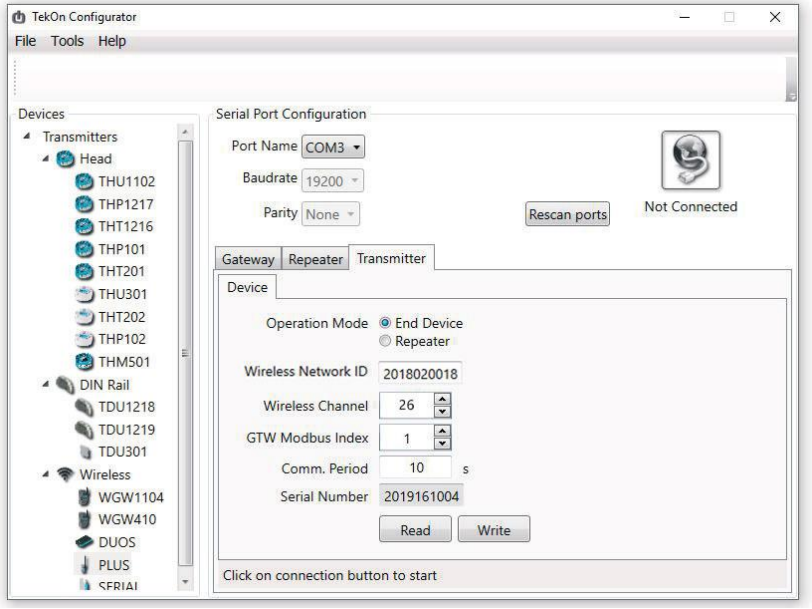
10

Click on *Write* button to update the *Transmitter* settings.
Click on *Read* button to read the sensor and internal temperature.



11

Click on *Configuration Mode* ( ) button to exit from configuration mode to normal operating mode.



After clicking on *Disconnect* button, the device will permanently attempt to connect to a wireless network.
If there is no communication, the red LED flashes slowly until the connection occurs or by 1 minute. When there's a successful connection directly to a wireless network, both status LEDs alternate quickly - during 1 minute if the transmitter is operating as end device or permanently if operating as repeater.

NOTE:
Make sure that the devices are at a distance of at least 3 meters or remove the antenna from the gateway (in case both devices are near each other).

step

03

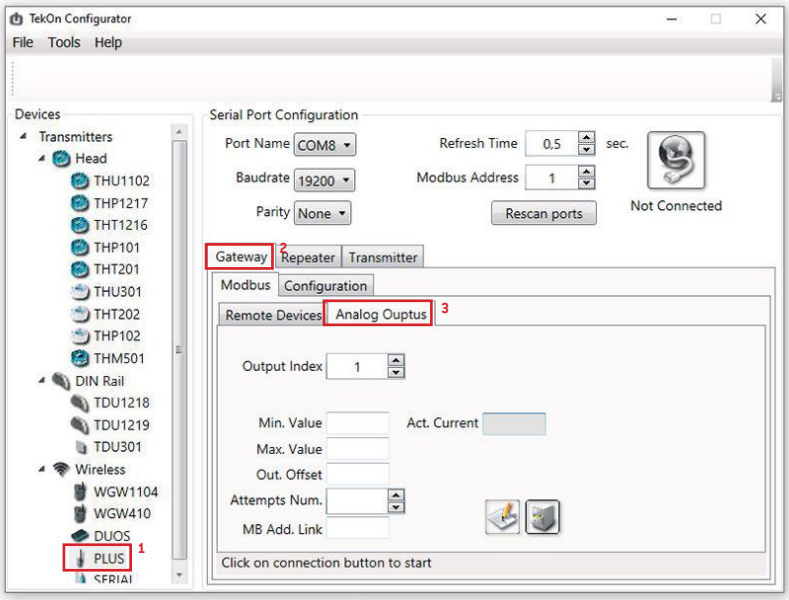
WGW420 GATEWAY ANALOG OUTPUTS CONFIGURATION

step **03**

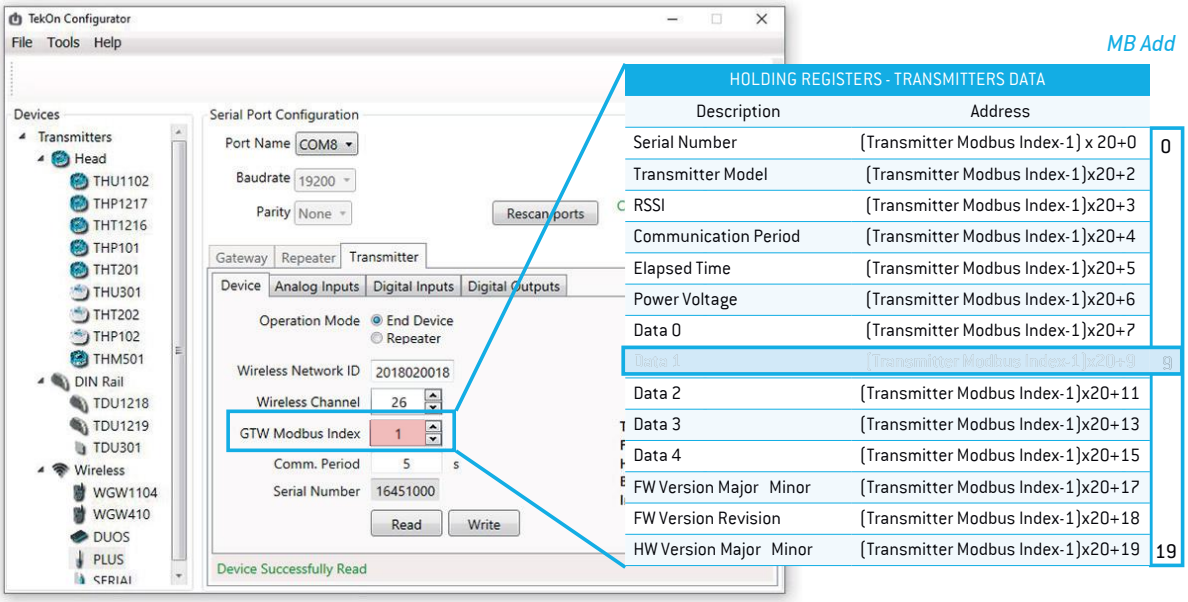
GATEWAY ANALOG OUTPUTS

01 Follow steps 06 and 07 of the PLUS Wireless *Gateway* Configuration.

02 In *Tekon Configurator Software* select *PLUS* >> *Gateway* >> *Analog Outputs* menu



03 Considering the transmitter configuration with GTW Modbus Index=1, there is a Gateway Modbus Address Window corresponding to Modbus address window [0-19].

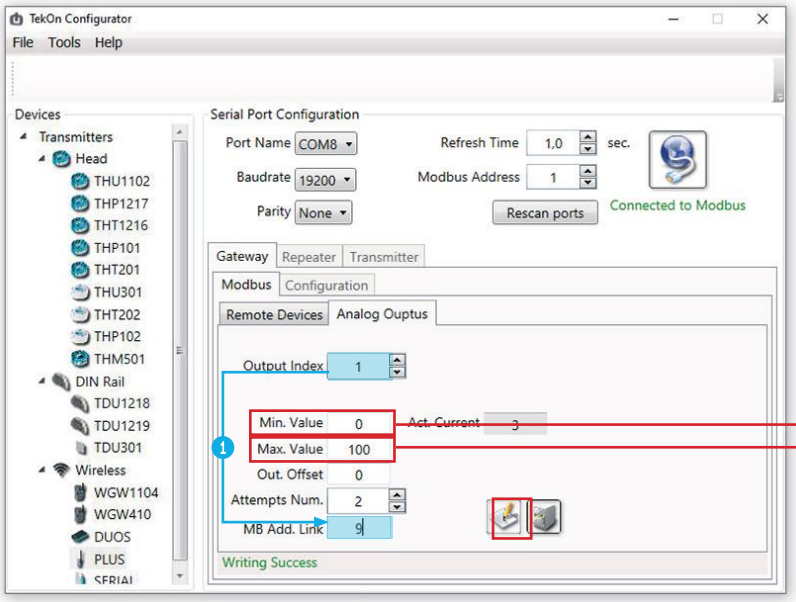


NOTE:
Transmitter analog input 1 data is received and stored at the Gateway Modbus address [9].

step
03 GATEWAY ANALOG OUTPUTS

04

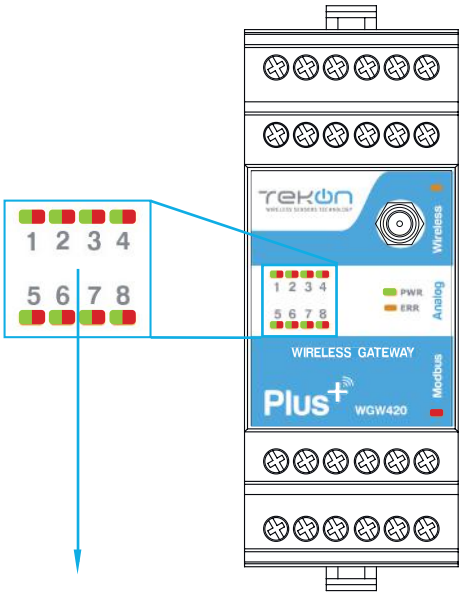
Link *Analog Output Index 1* (Gateway) to *Analog Input 1* (Transmitter) and configure MB Add Link according to the previous step. Set minimum and maximum values and click on *Write*



NOTE:

① Output index 1 is linked to modbus address [9], according to mapping table of step 03.

Modbus address double word (float 32) value is converted into 4..20 mA scale according to minimum and maximum defined values.



1 → Green led permanently on during a closed current loop

2 → Red led permanently on during an open current loop

step

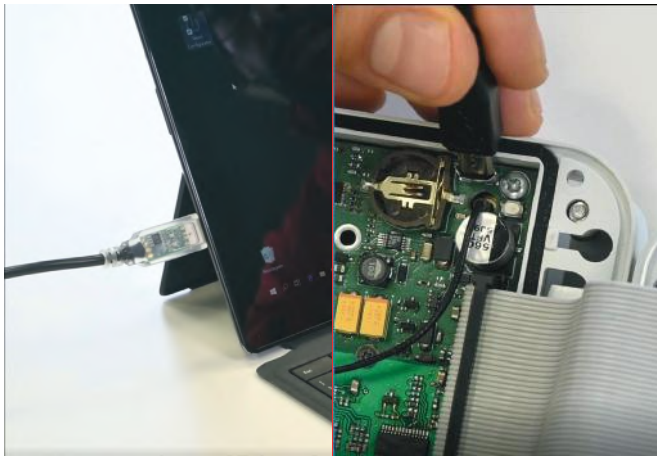
04

WRP001 PLUS WIRELESS REPEATER CONFIGURATION

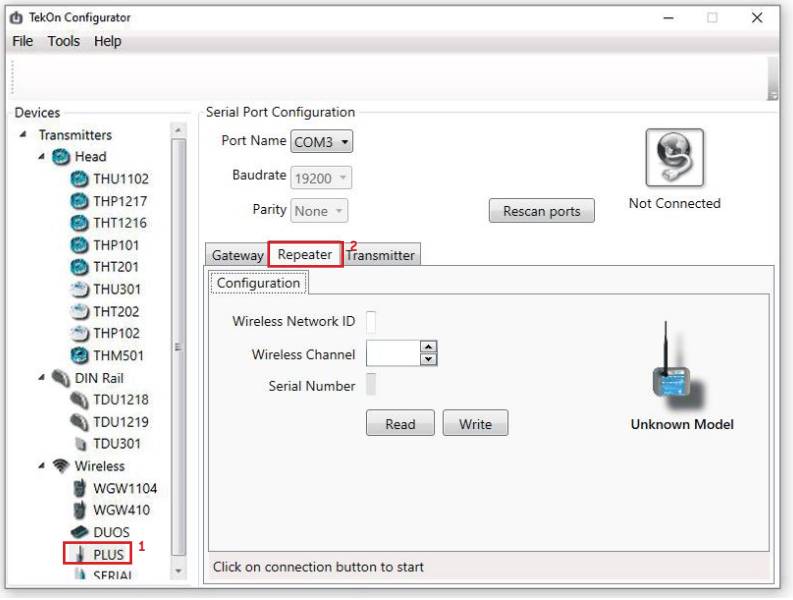
step
04 CONNECT AND CONFIGURE THE PLUS WIRELESS REPEATER

01 Loosen the 4 screws of the case and oppen it.

02 Connect a micro USB cable to the computer and then to *WRP001 PLUS Wireless Repeater*.

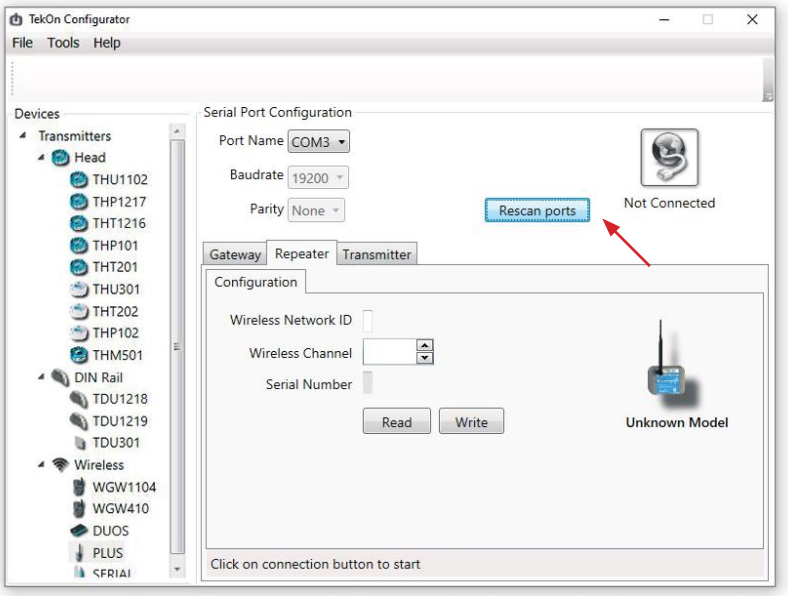


03 Open a new window of *Tekon Configurator Software* and select *PLUS* >> *Repeater* menu.



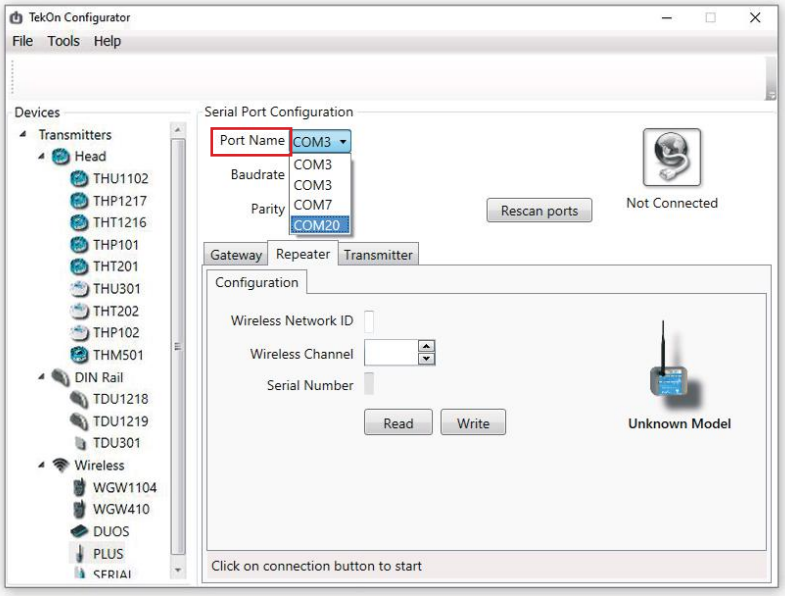
04

Click on *Rescan Ports* button.



05

Select corresponding *Port name*[1].

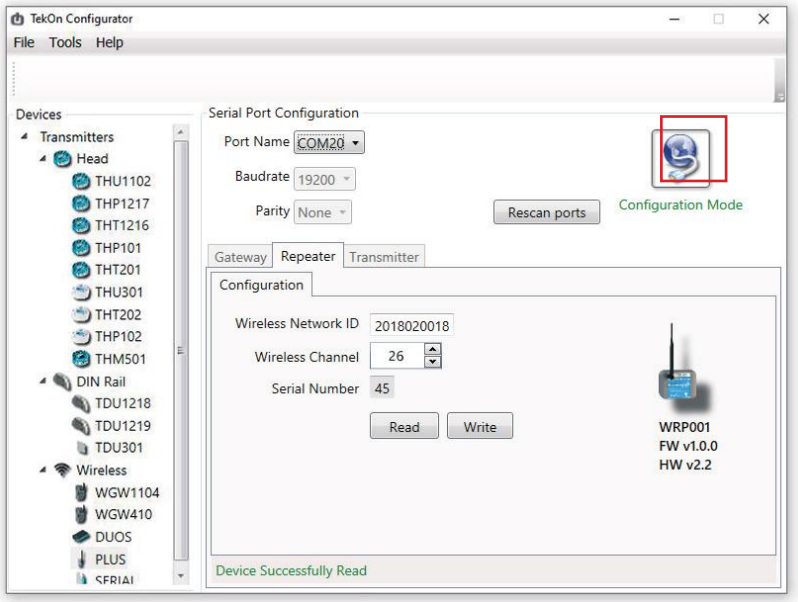


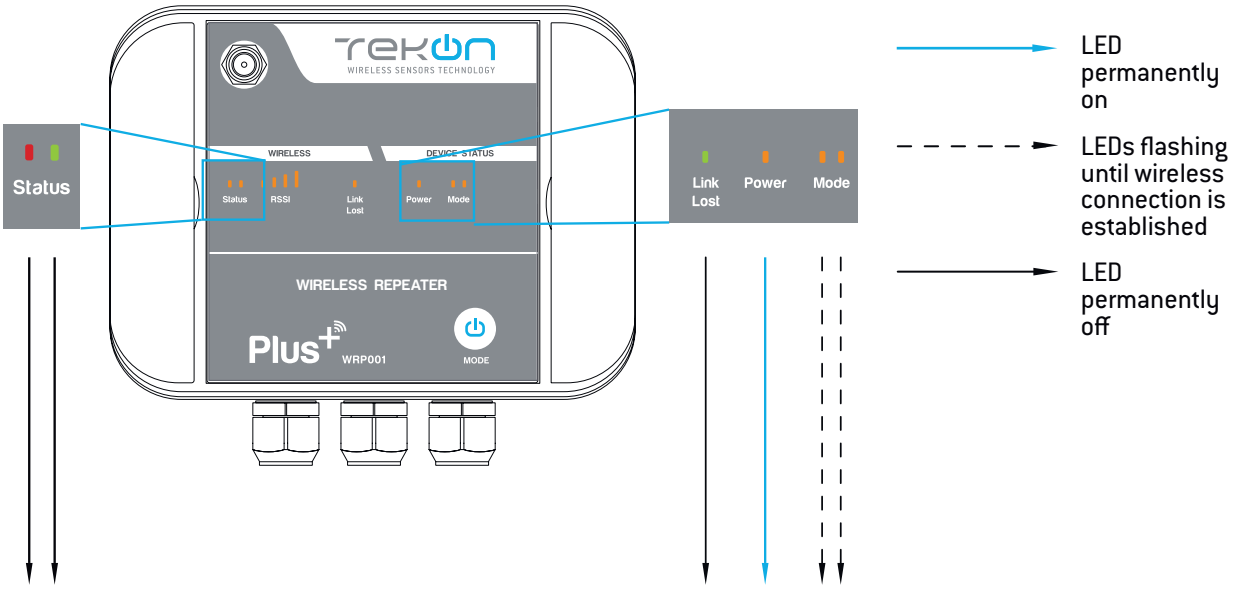
[1] You can check device's serial port name in "Device Manager" on Microsoft® Windows® operating system.

step
04 CONNECT AND CONFIGURE THE PLUS WIRELESS REPEATER

06

Click on *Configuration Mode* ( ) button.





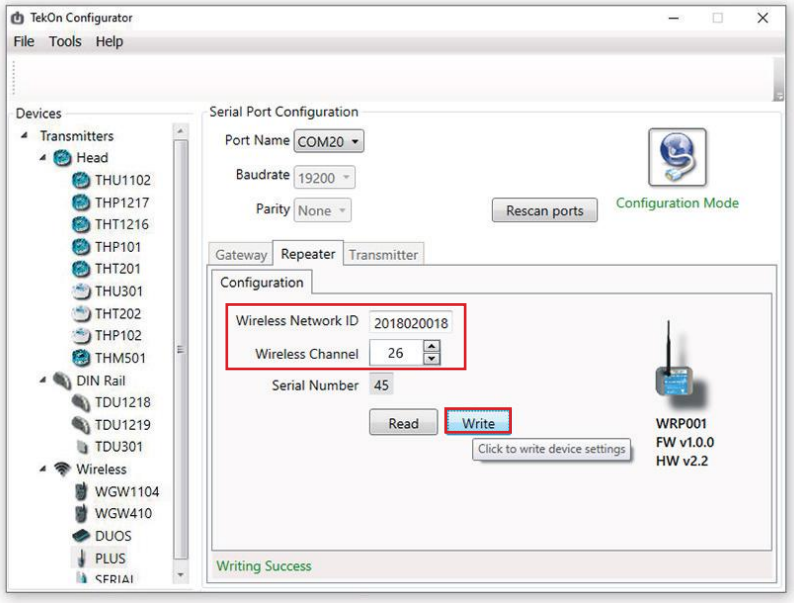
step **04**

CONNECT AND CONFIGURE THE PLUS WIRELESS REPEATER

07

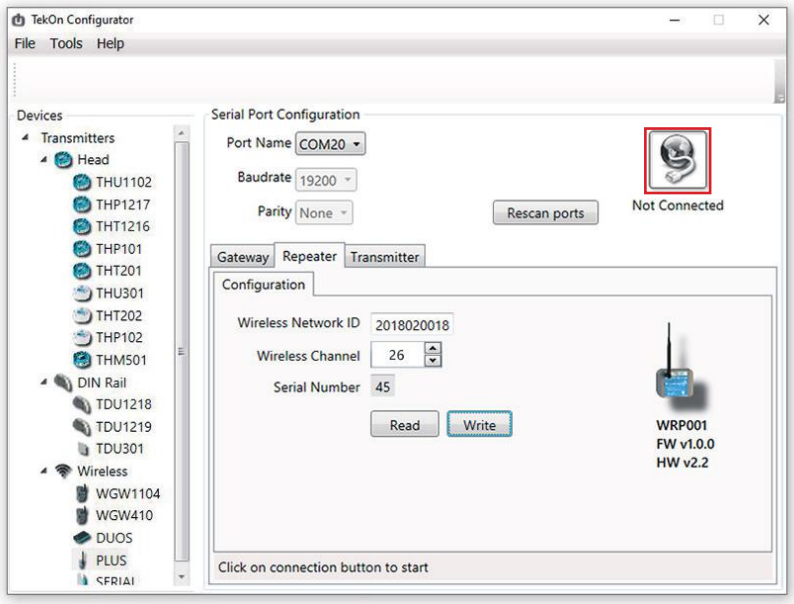
Configure *Wireless Network ID* and *Wireless Channel* previously obtained from *Gateway*.

Click on *Write* button to update *Transmitter* settings.

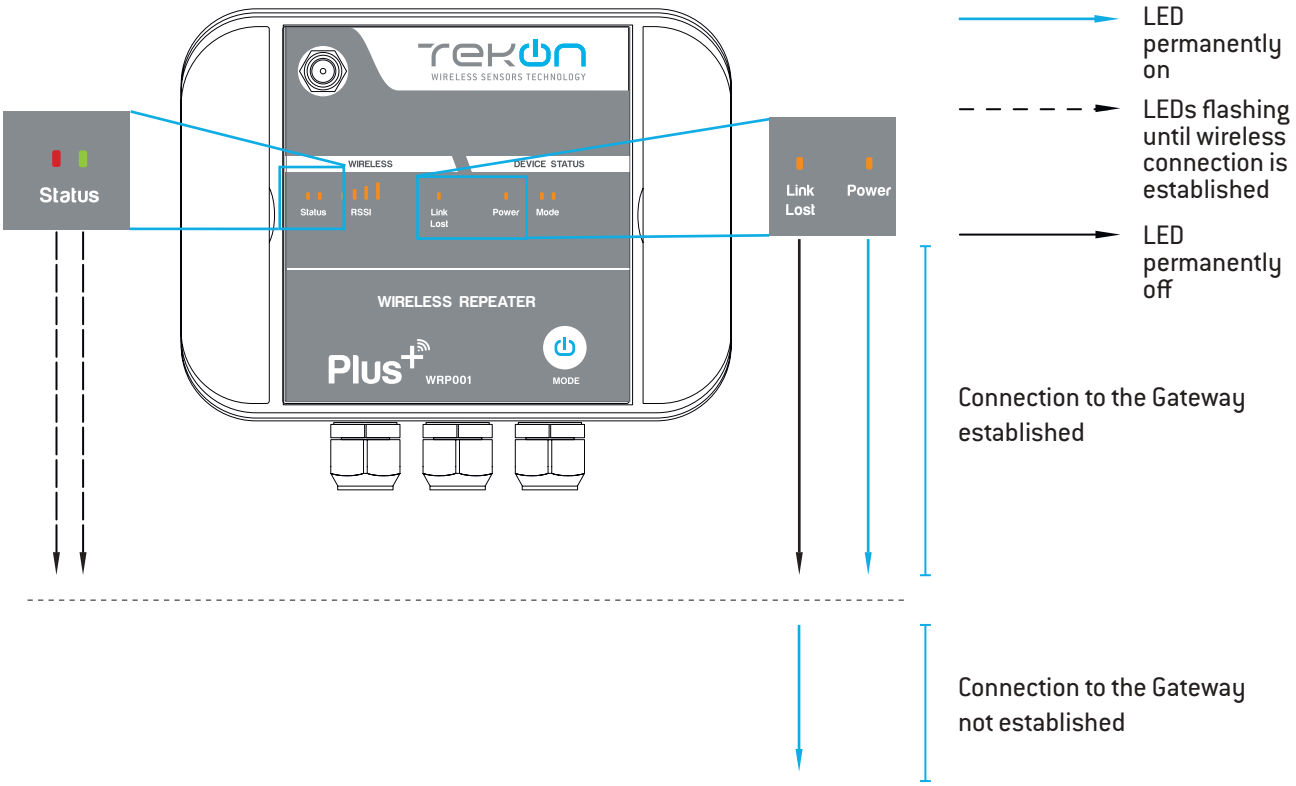


08

Click on *Configuration Mode* ( ) button to exit setup and resume normal operating mode.



step
04 CONNECT AND CONFIGURE THE PLUS WIRELESS REPEATER



step

05

SITE SURVEY MODE

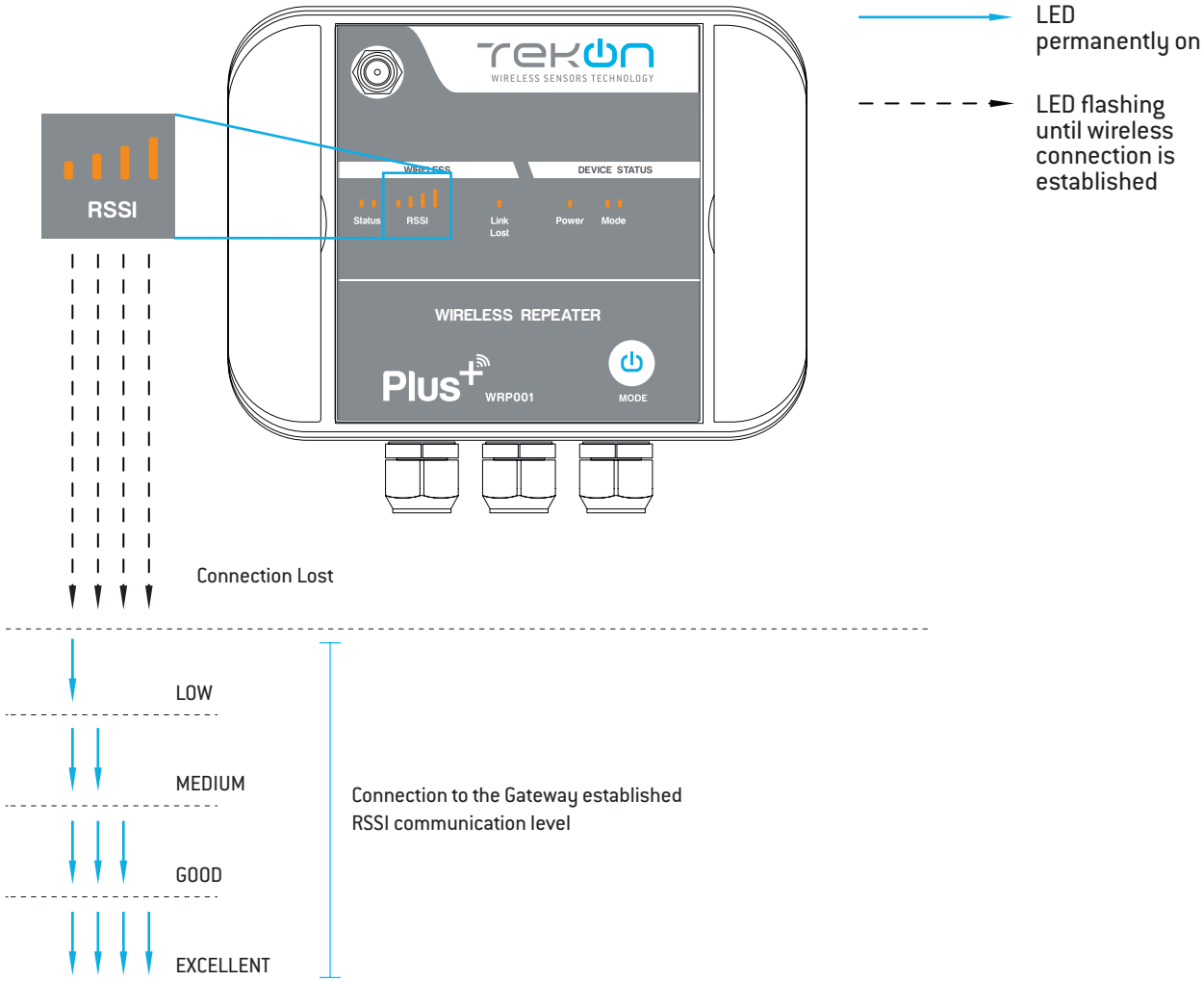
step
05 SITE SURVEY MODE

Refers to following devices: *TWP4AI Transmitter*, *TWP-4AI4DI1UT Transmitter*, *WRP001 Repeater* and *TWPH-1UT Transmitter.*
Site survey mode is a tool that allows a quick wireless signal strength evaluation at the site of installation. It doesn't require additional equipment or software.

01

Press and hold Mode (⏻) button untill Status LEDs are permanently on and Mode LEDs flash.

RSSI LEDs indicate the signal strength.



02

Press and hold Mode (⏻) button untill RSSI LEDs switch off and device resumes normal operation mode.

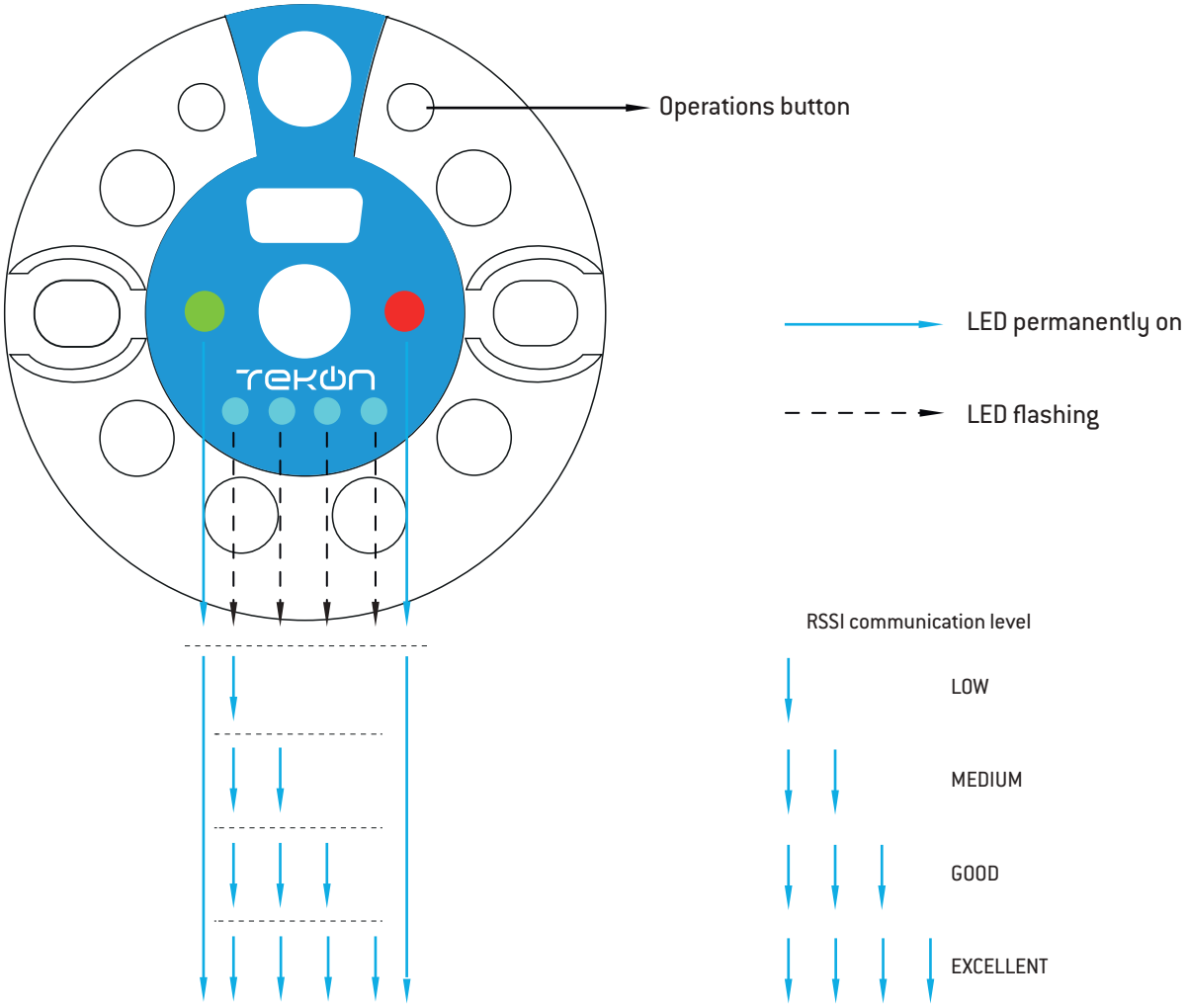
step 05

SITE SURVEY MODE

03

Press and hold operations button for 3 seconds. Red and green LEDs will stay on.

Blue LEDs indicate the signal strength.



04

Press and hold operations button for 3 seconds to exit Site Survey Mode and activate normal operation mode.

TEKON ELECTRONICS
a brand of Bresimar Automação S.A.

Avenida Europa, 460
Quinta do Simão
3800-230 Aveiro
PORTUGAL

Sales
P.: +351 234 303 320
M.: +351 933 033 250
E.: sales@tekonelectronics.com

Technical Support
E.: support@tekonelectronics.com