



PLUS TWP-XAI INSTALLATION GUIDE

IG_PLUS_TWP-XAI_E01A

PLUS TWP-XAI WIRELESS TRANSMITTER INSTALLATION GUIDE

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PLUS TWP-XAI WIRELESS TRANSMITTER INSTALLATION GUIDE

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step
01

WGW420 PLUS WIRELESS GATEWAY CONFIGURATION

WG420 PLUS WIRELESS GATEWAY CONFIGURATION | step **01**

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.



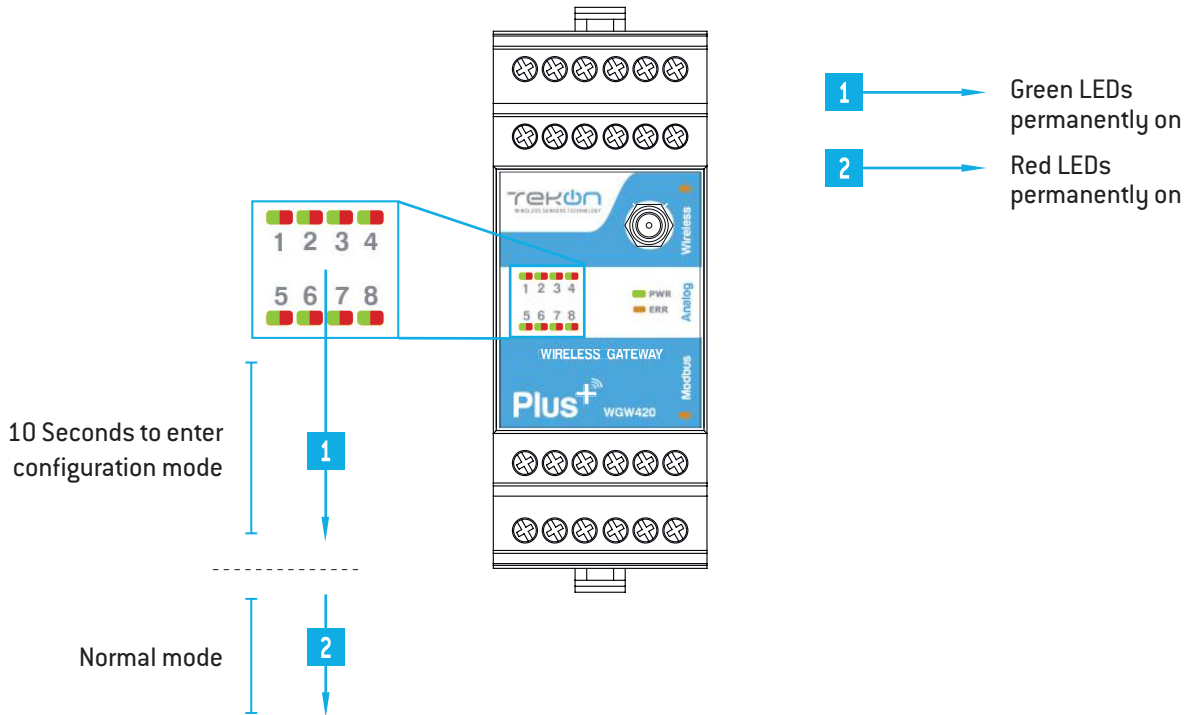
step

01

WGW420 PLUS WIRELESS GATEWAY CONFIGURATION

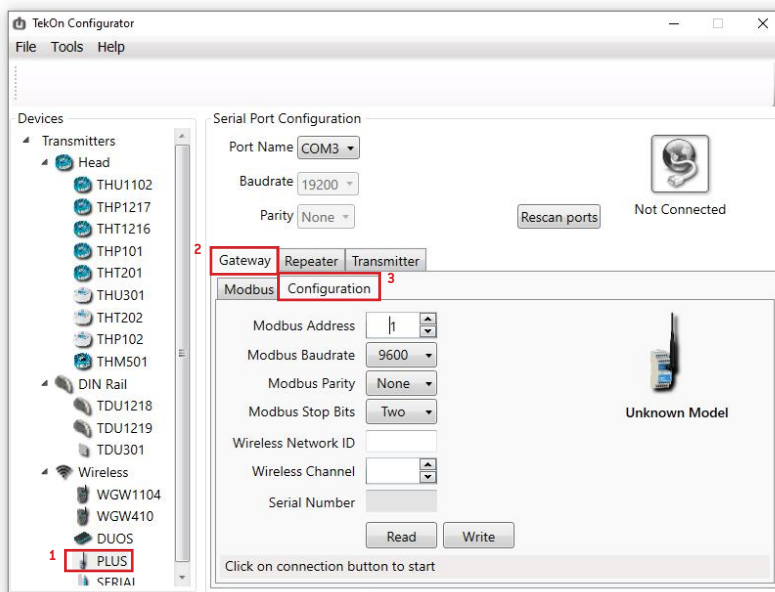
04

Check device connection state by LED indication.



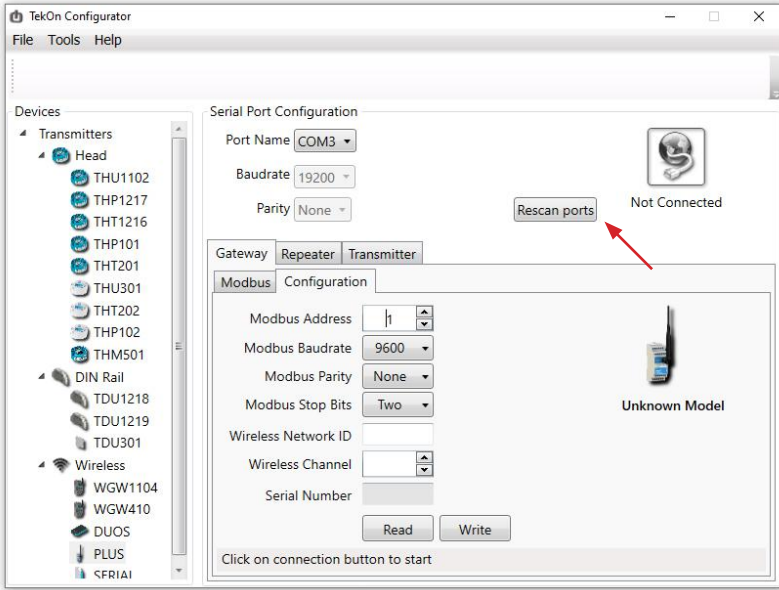
05

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



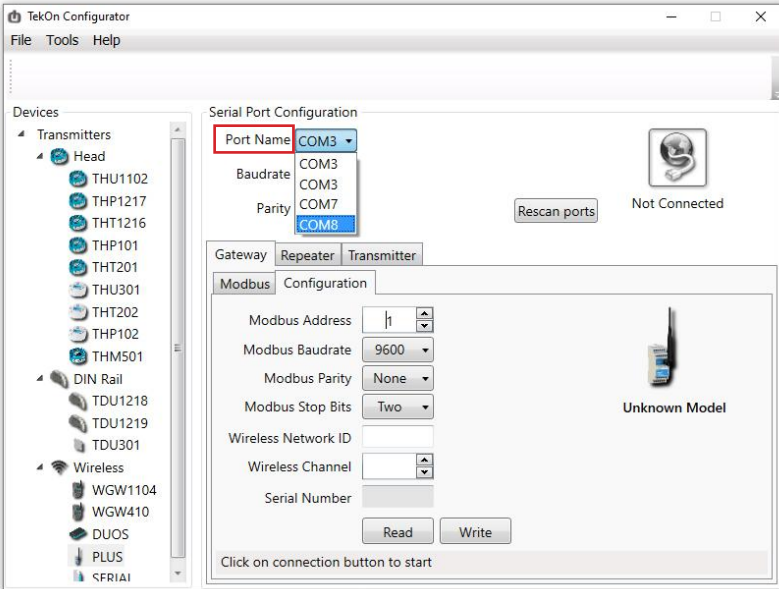
¹ Tekon Configurator software is free of charge and available at www.tekonelectronics.com

06 Select serial port corresponding to WG420 PLUS Wireless Gateway
Click on the *Rescan Ports* button.



The screenshot shows the TekOn Configurator interface. On the left, a tree view lists various devices under 'Transmitters', 'DIN Rail', and 'Wireless'. The 'Wireless' section is expanded, showing 'WG420 PLUS'. The main window is titled 'Serial Port Configuration' and has several tabs: 'Gateway', 'Repeater', and 'Transmitter'. The 'Transmitter' tab is active. Underneath, there are sub-tabs for 'Modbus' and 'Configuration'. The 'Configuration' sub-tab is selected. The 'Port Name' dropdown is set to 'COM3'. Below it, 'Baudrate' is '19200' and 'Parity' is 'None'. To the right, there is a 'Rescan ports' button and a 'Not Connected' status indicator. Below the configuration fields, there are 'Read' and 'Write' buttons. At the bottom, a note says 'Click on connection button to start'.

07 Select corresponding *Port name*².



This screenshot is similar to the previous one, but the 'Port Name' dropdown menu is open, showing a list of available ports: 'COM3', 'COM7', and 'COM8'. The 'COM3' option is highlighted in blue. The rest of the interface remains the same as in the previous step.

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

step

01

WGW420 PLUS WIRELESS GATEWAY CONFIGURATION

08

Perform a power cycle on the *Gateway*.




NOTE:

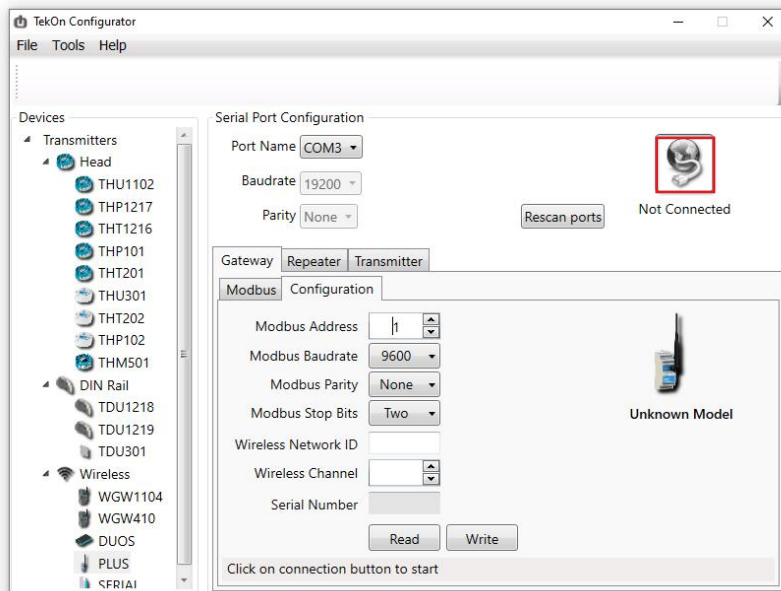


After power up, you have 10 seconds to enter configuration mode by clicking on Connect button () (while green LEDs are permanently on).

In this mode, you can manage device parameters: *Modbus Address*, *Modbus Baudrate*, *Modbus Parity*, *Wireless Network ID* and *Wireless Channel*.

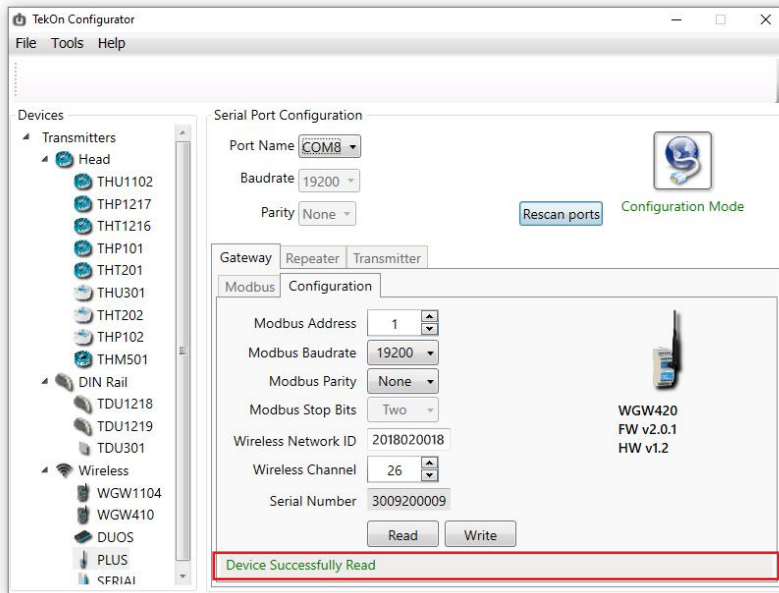
09

Click on *Connect* () button to enter configuration mode.

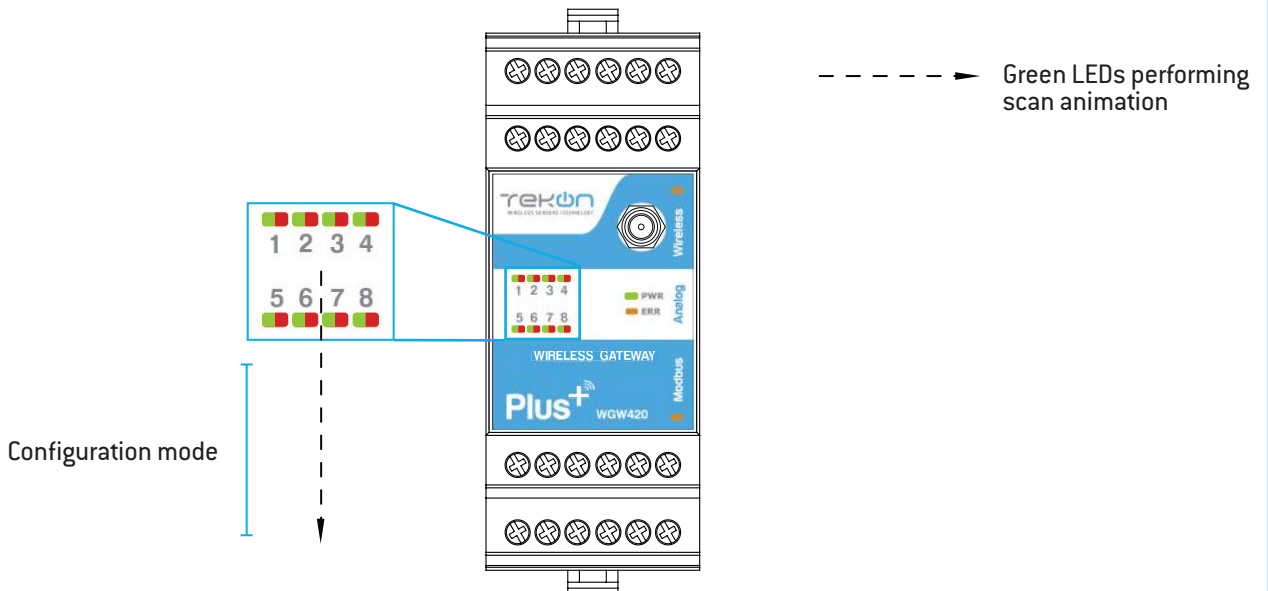


10

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.



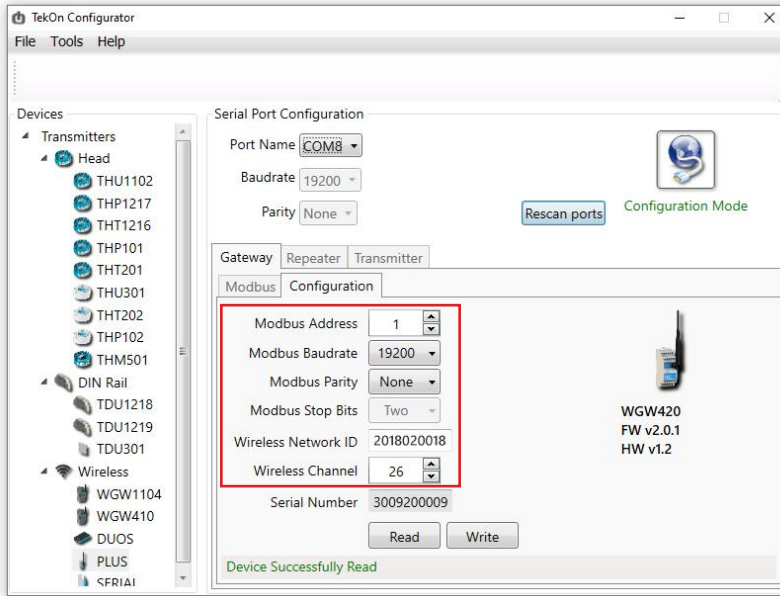
NOTE: When the 10-second time frame to enter configuration mode is exceeded, the LEDs will turn permanently red and the gateway will enter normal operation mode. To get back in configuration mode, you need to perform a power cycle - step 8.

step
01

WGW420 PLUS WIRELESS GATEWAY CONFIGURATION

11

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

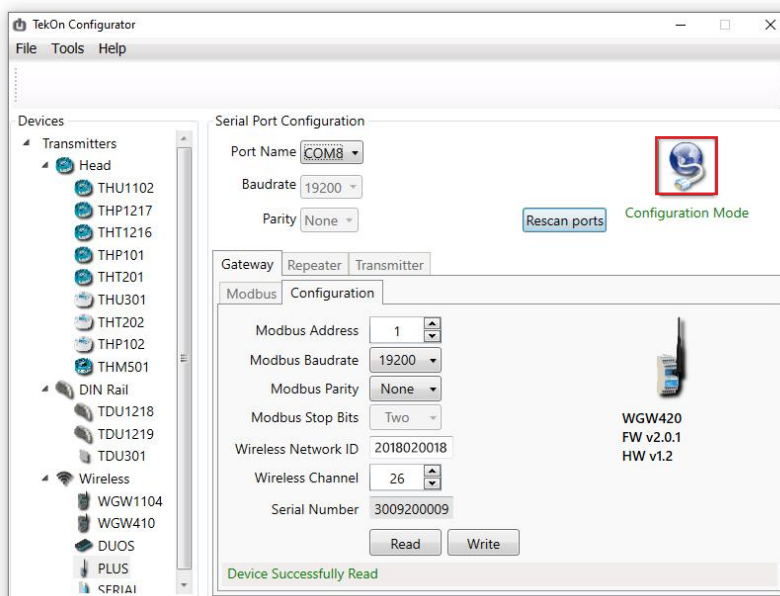


NOTE:

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

12

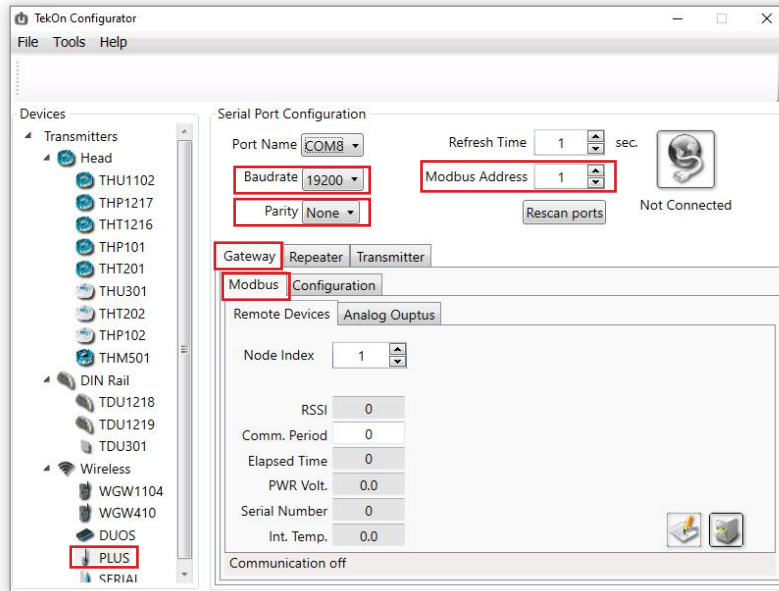
Click on *Disconnect* (🌐) button.



13

Modbus Communication

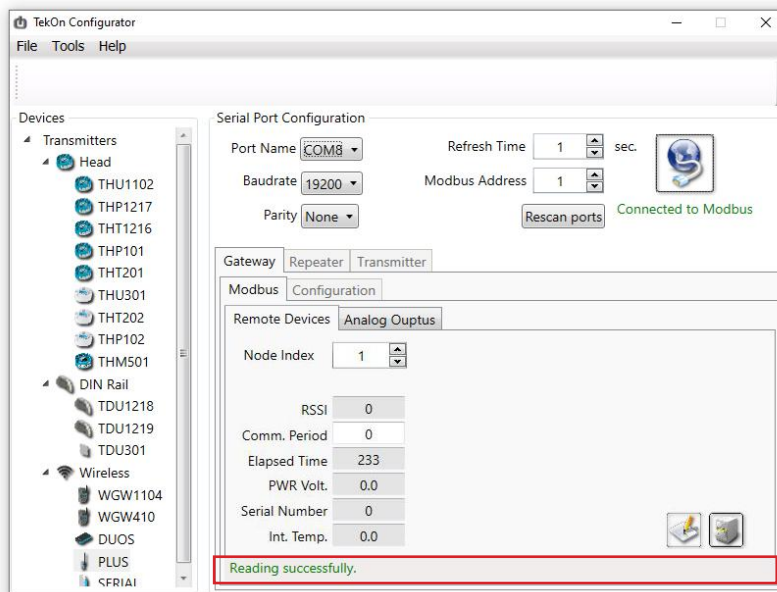
Select *Modbus* tab of the *Gateway* and set the previously saved configurations.



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

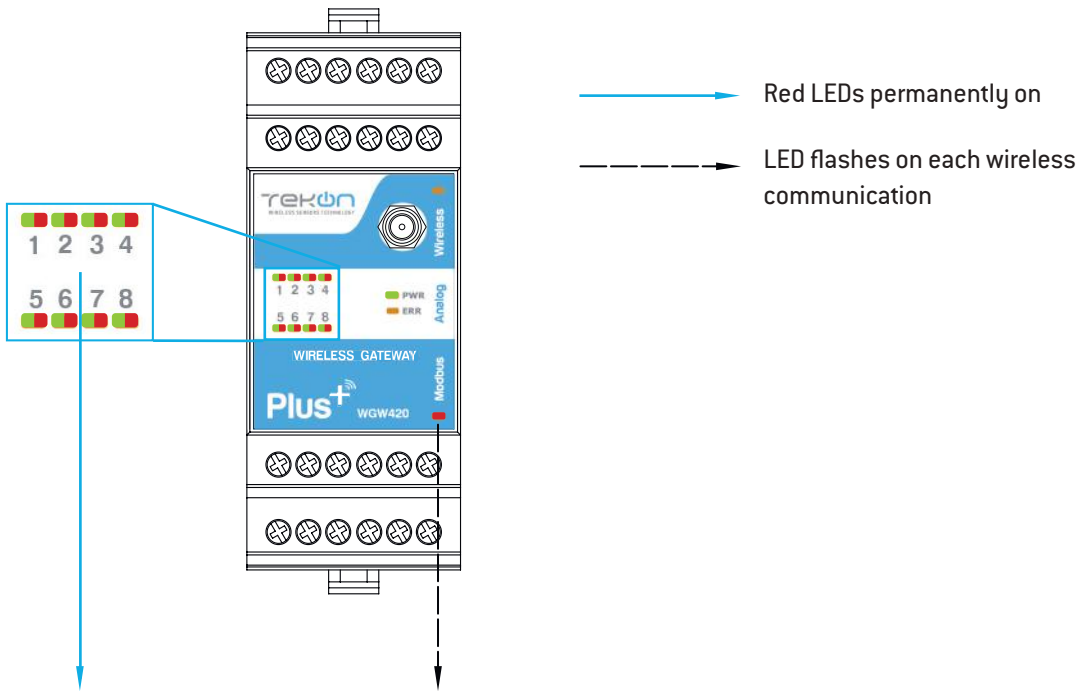
01

WG420 PLUS WIRELESS GATEWAY CONFIGURATION



NOTE:

See WG420 Datasheet to access LED indication information - page 4.



step
02

TWP-XAI PLUS WIRELESS TRANSMITTER CONFIGURATION

step

02

TWP-XAI PLUS WIRELESS TRANSMITTER CONFIGURATION

01

Loosen the 4 screws of the case and open it.

[Example image]



02

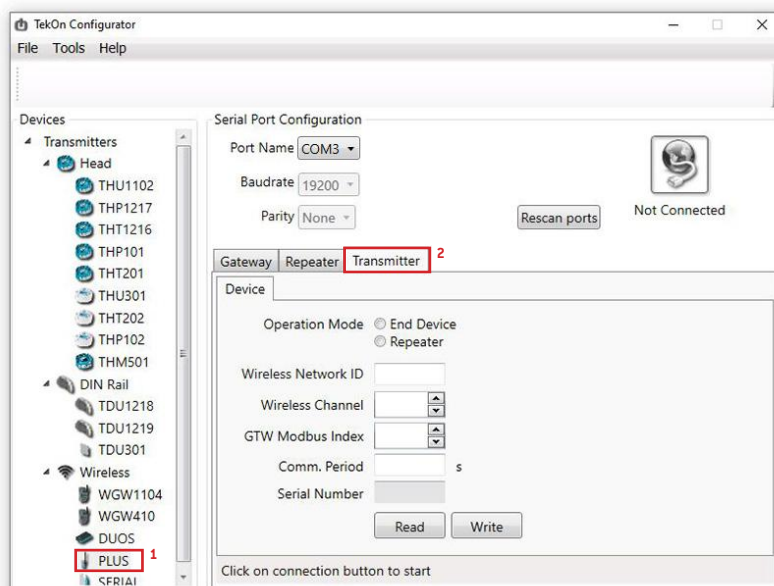
Connect a micro USB cable to the computer and then to *TWP-1AI PLUS Wireless Transmitter*.

[Example image]



03

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



TWP-XAI PLUS WIRELESS TRANSMITTER CONFIGURATION

04 Click on *Rescan Ports* button.

The screenshot shows the TekOn Configurator application window. On the left, there is a 'Devices' tree with categories: Transmitters (Head, Wireless), DIN Rail, and Wireless. The 'Serial Port Configuration' window is open, showing 'Port Name' set to COM3, 'Baudrate' at 19200, and 'Parity' set to None. A 'Rescan ports' button is visible next to a 'Not Connected' status icon. Below this, there are tabs for 'Gateway', 'Repeater', and 'Transmitter'. The 'Device' configuration section includes 'Operation Mode' (radio buttons for End Device and Repeater), 'Wireless Network ID', 'Wireless Channel', 'GTW Modbus Index', 'Comm. Period', and 'Serial Number'. 'Read' and 'Write' buttons are at the bottom of this section. A note at the very bottom says 'Click on connection button to start'.

05 Select corresponding *Port name*¹.

This screenshot is similar to the previous one, but the 'Port Name' dropdown menu is open, showing a list of available ports: COM3, COM3, COM7, and COM20. The 'COM20' option is highlighted in blue. The rest of the interface remains the same as in the previous step.

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

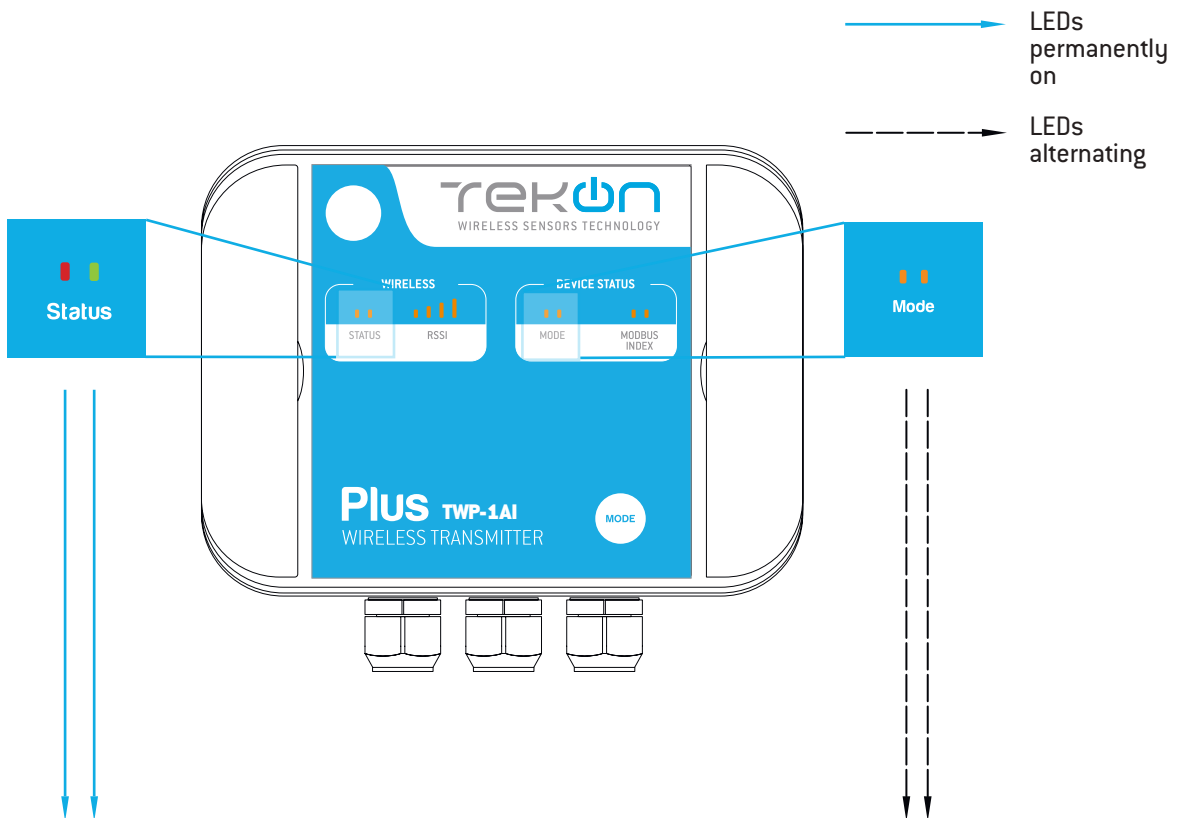
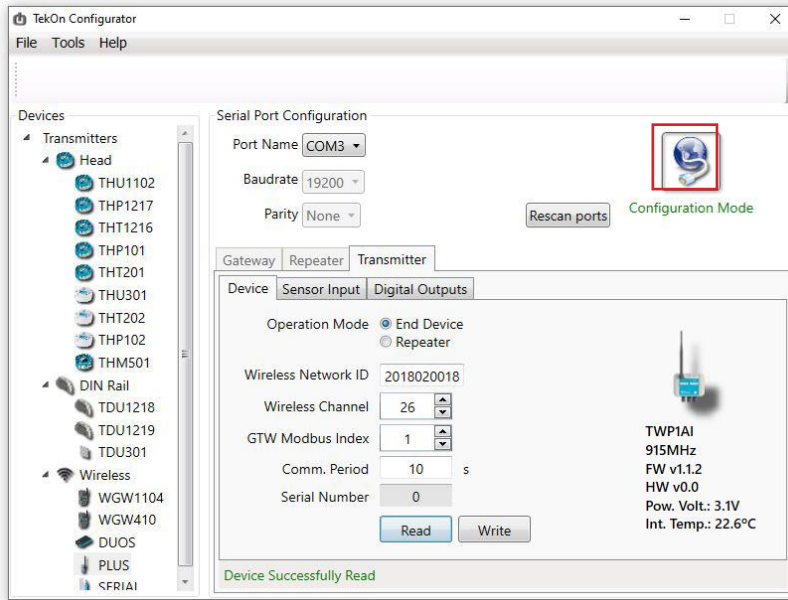
step

02

TWP-XAI PLUS WIRELESS TRANSMITTER CONFIGURATION

06

Click on *Configuration Mode* () button.



TWP-XAI PLUS WIRELESS TRANSMITTER CONFIGURATION

07

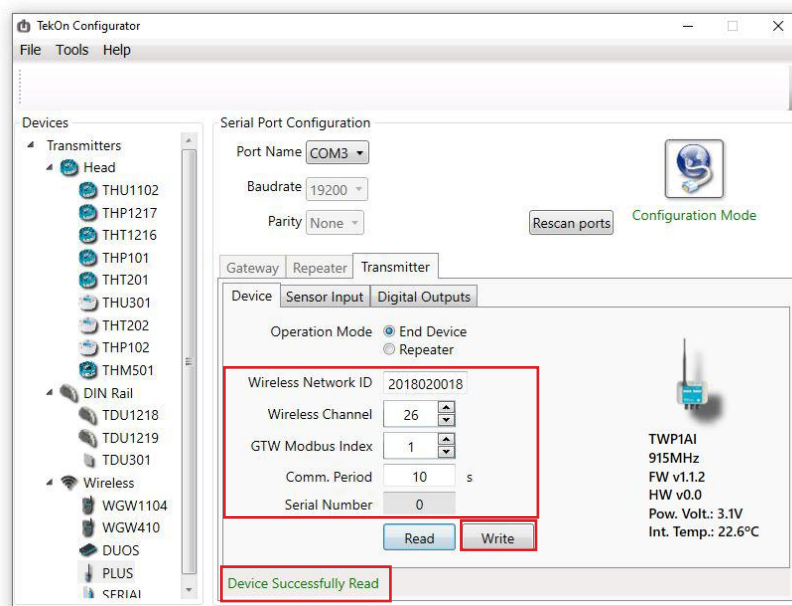
Configure *Wireless Network ID* and *Wireless Channel* previously obtained from *Gateway*.

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.



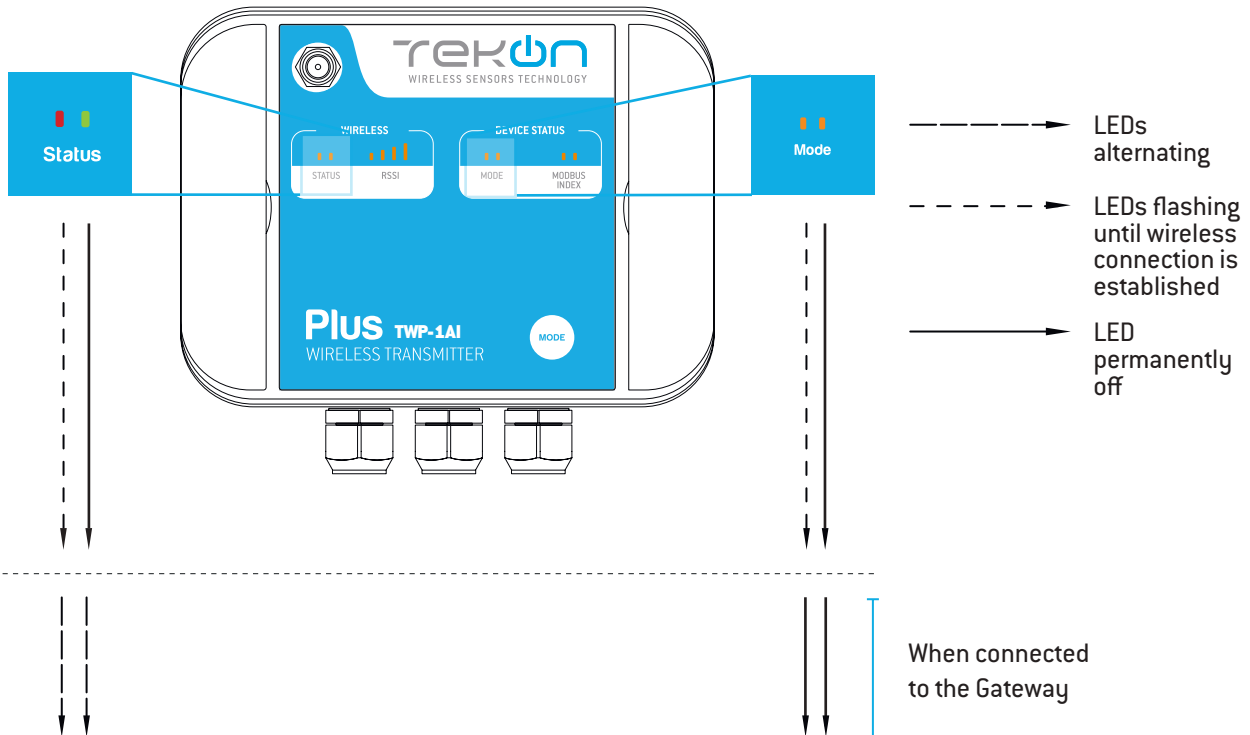
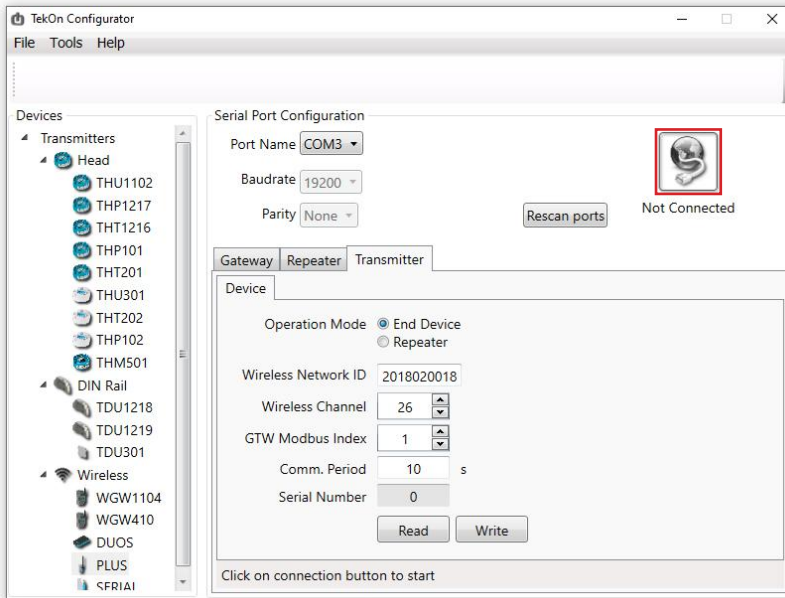
step

02

TWP-XAI PLUS WIRELESS TRANSMITTER CONFIGURATION

08

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



TWP-XAI PLUS WIRELESS TRANSMITTER CONFIGURATION

step
02

After clicking on *Disconnect* button, the device will permanently attempt to connect to a wireless network. If there is no communication, the Status LED flashes slowly and the Mode LED flashes quickly. 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

TWP-XAI TRANSMITTER ANALOG INPUT CONFIGURATION

TWP-XAI TRANSMITTER ANALOG INPUT CONFIGURATION



NOTE:

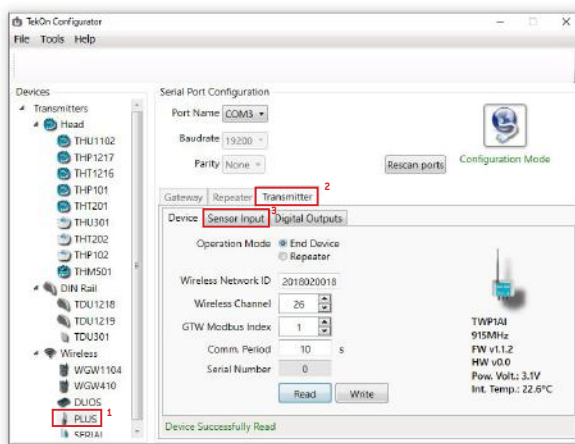
By default, analog inputs are switched OFF for power optimization. Each analog input can be configured independently, as current input [0..20mA] or voltage input [0..10V]

01

To enter in *Configuration Mode* follow steps 01 to 05 of TWP-XAI PLUS Wireless *Transmitter* Configuration.

02

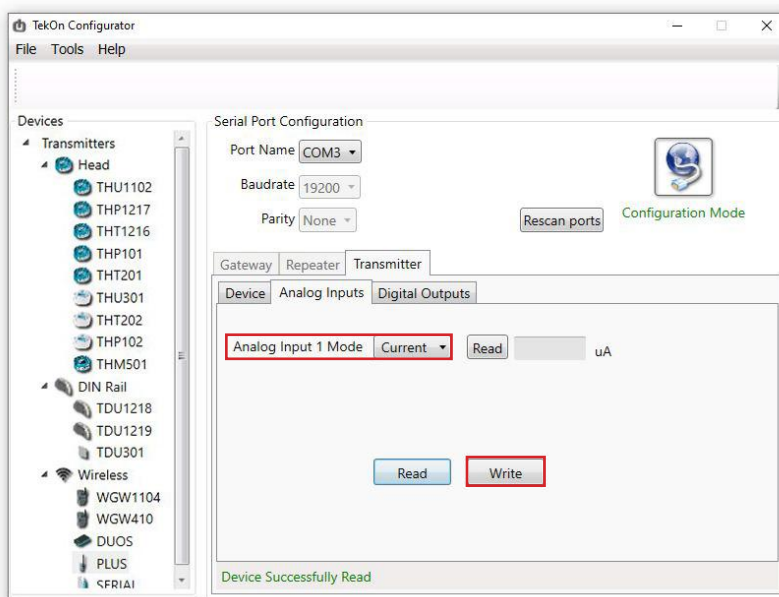
In *Tekon Configurator Software* select *PLUS >> Transmitter >> Analog Inputs* menu



If you are configuring *PLUS TWP-2AI*, reproduce configuration steps to the second temperature input.

03

As an example, select *Current* option on Analog Input 1 and click *Write*.



If you are configuring *PLUS TWP-2AI*, reproduce configuration steps to the second temperature input.

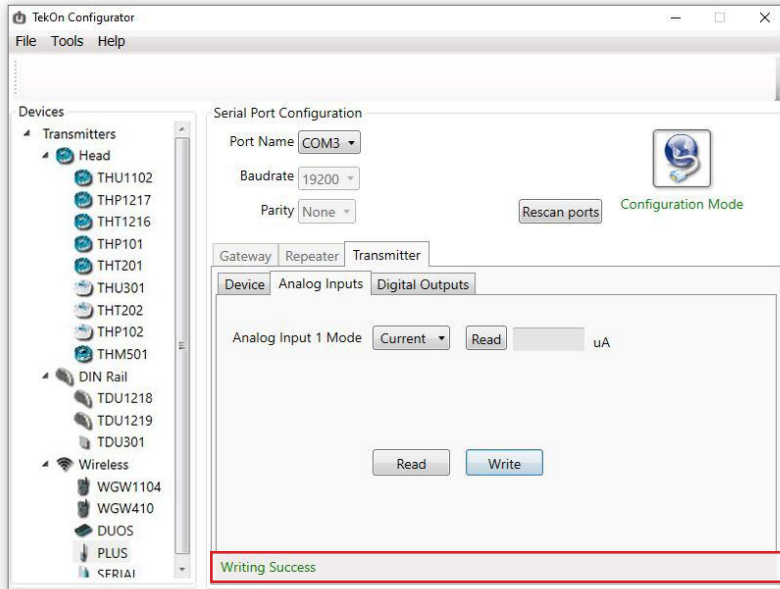
step

03

TWP-XAI TRANSMITTER ANALOG INPUT CONFIGURATION

04

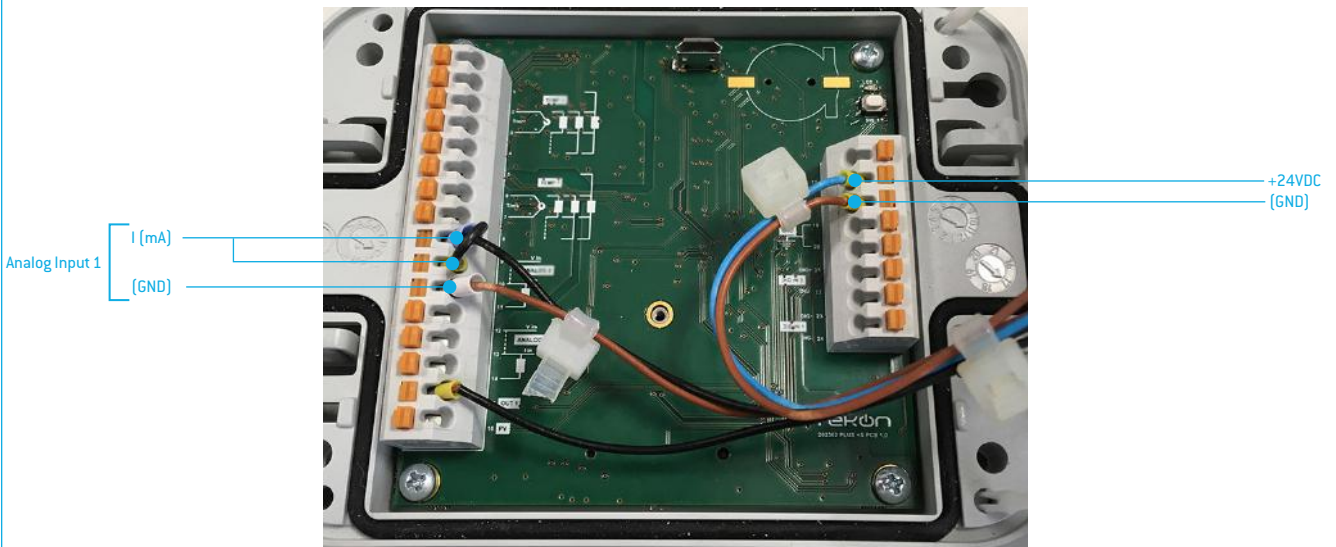
The status string at the bottom of the software window provides feedback on ongoing operations.



05

Wiring

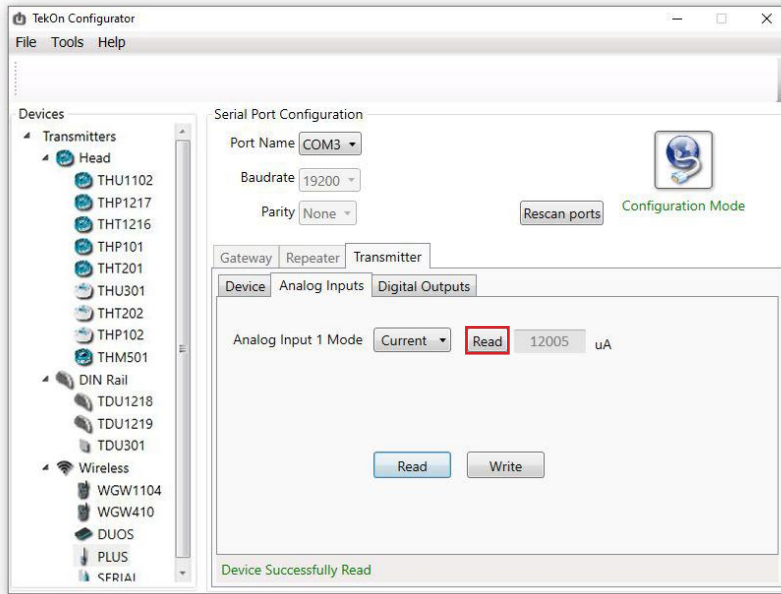
Wire the device according to the diagram below.



TWP-XAI TRANSMITTER ANALOG INPUT CONFIGURATION **step 03**

06

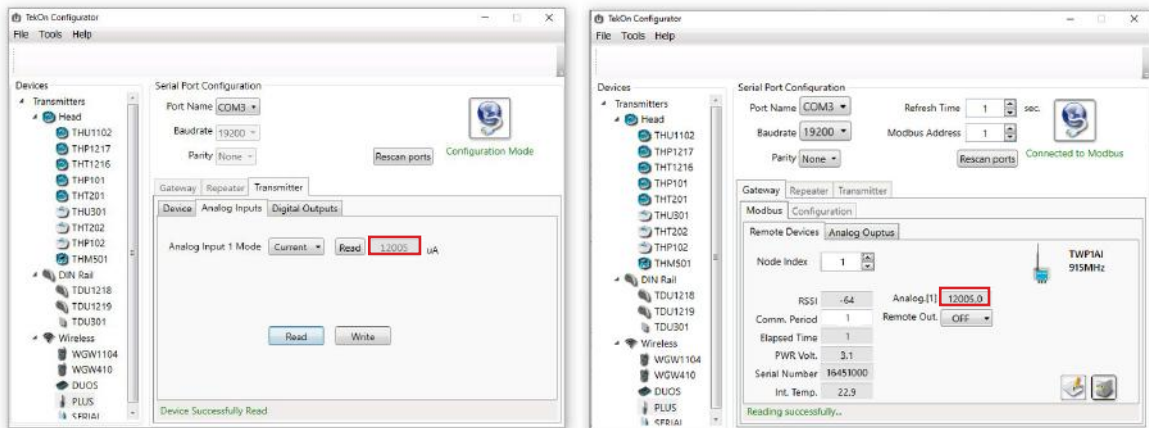
Validate configuration by clicking on *Read* button.



NOTE: Configuration and Operation validated. Measured value of current and voltage depend on the setup. In this example 12mA (12000uA) are being injected.

07

Exit configuration mode and compare data sent by wireless communication.



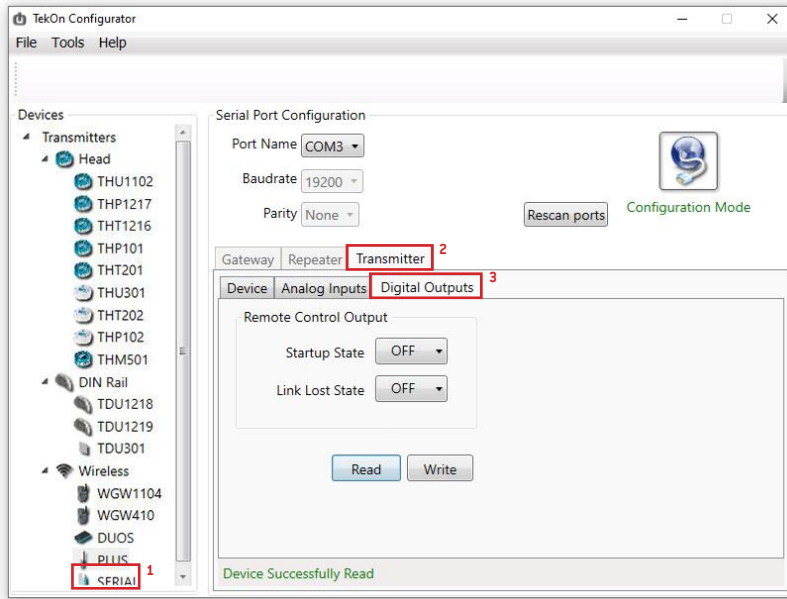
step
04

TWP-XAI TRANSMITTER DIGITAL OUTPUT CONFIGURATION

TWP-XAI TRANSMITTER DIGITAL OUTPUTS CONFIGURATION

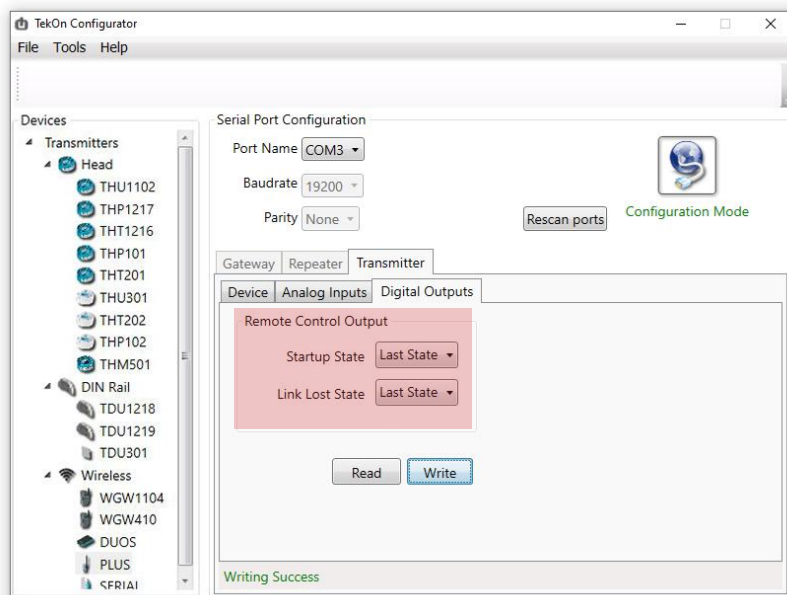
01 To enter in *Configuration Mode* follow steps 01 to 05 of TWP-XAI PLUS Wireless *Transmitter* Configuration.

02 In *Tekon Configurator Software* select *PLUS >> Transmitter >> Digital Outputs* menu



03 **Remote Control Output**
Digital output remotely controlled by Gateway modbus protocol.

Define *Start-up state* and *Link lost state*. Click on *Write* button.



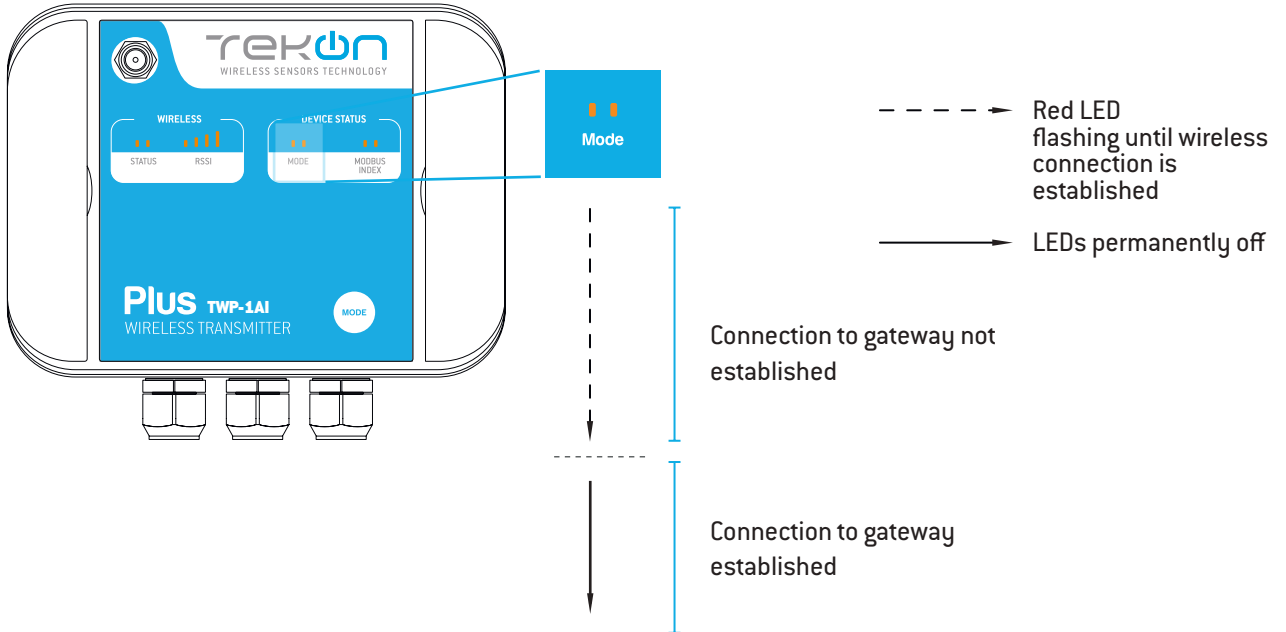
step

04

TWP-XAI TRANSMITTER DIGITAL OUTPUTS CONFIGURATION

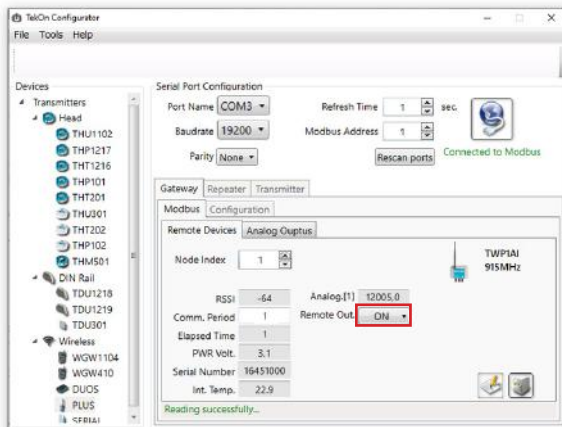
04

Exit configuration mode and verify setup by checking LEDs indicators.



05

Using the Tekon Configurator you can change the State of Remote Output by setting the modbus register on the gateway. The Gateway will send the information in the next time the transmitter performs a communication.



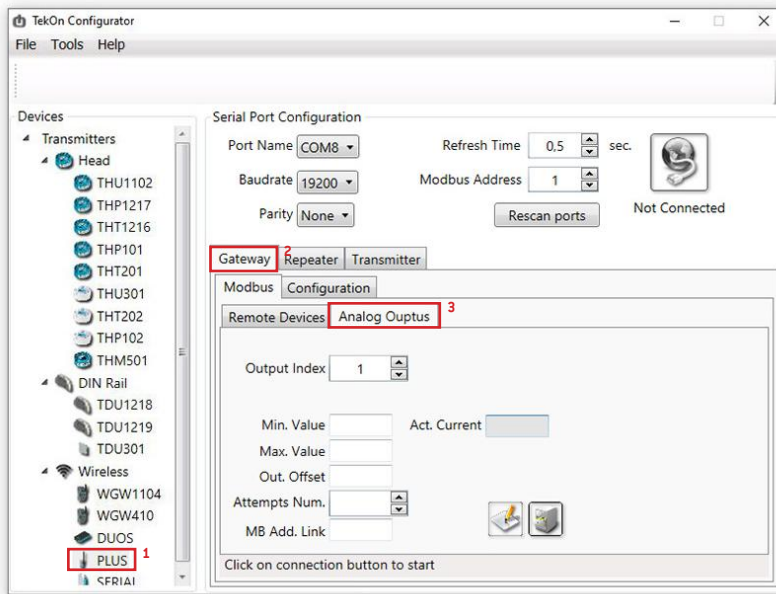
step
05

WGW420 GATEWAY ANALOG OUTPUTS CONFIGURATION

step
05 | 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].

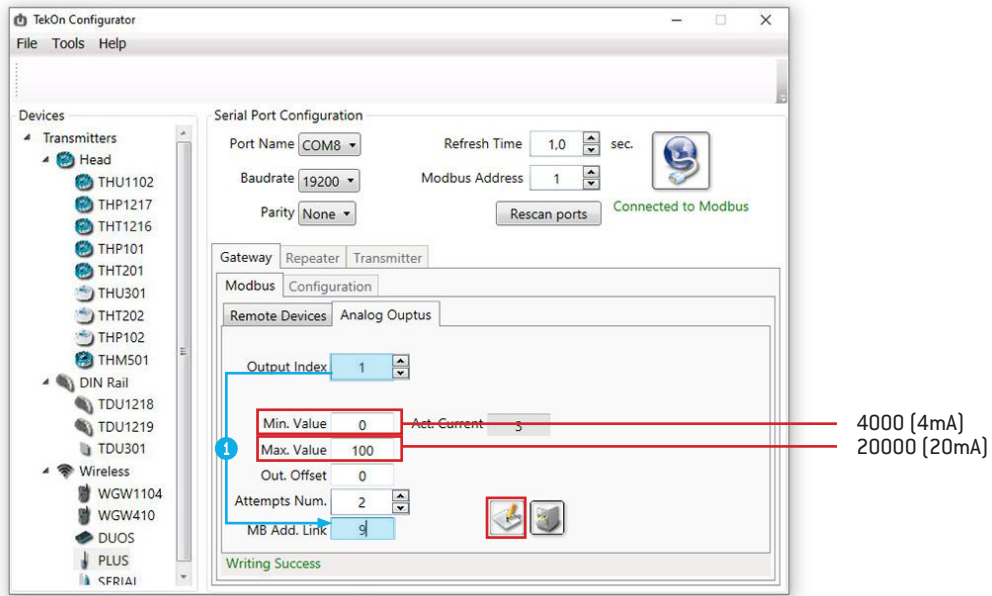
The screenshot shows the 'Transmitter' configuration window with 'GTW Modbus Index' set to 1. A callout points to a table of holding registers. The table lists various data points and their corresponding Modbus addresses. 'Data 1' is highlighted with a blue box and the number 9 in the address column.

HOLDING REGISTERS - TRANSMITTERS DATA	
Description	Address
Serial Number	(Transmitter Modbus Index-1)x20+0
Transmitter Model	(Transmitter Modbus Index-1)x20+2
RSSI	(Transmitter Modbus Index-1)x20+3
Communication Period	(Transmitter Modbus Index-1)x20+4
Elapsed Time	(Transmitter Modbus Index-1)x20+5
Power Voltage	(Transmitter Modbus Index-1)x20+6
Data 0	(Transmitter Modbus Index-1)x20+7
Data 1	(Transmitter Modbus Index-1)x20+9
Data 2	(Transmitter Modbus Index-1)x20+11
Data 3	(Transmitter Modbus Index-1)x20+13
Data 4	(Transmitter Modbus Index-1)x20+15
FW Version Major Minor	(Transmitter Modbus Index-1)x20+17
FW Version Revision	(Transmitter Modbus Index-1)x20+18
HW Version Major Minor	(Transmitter Modbus Index-1)x20+19

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

04

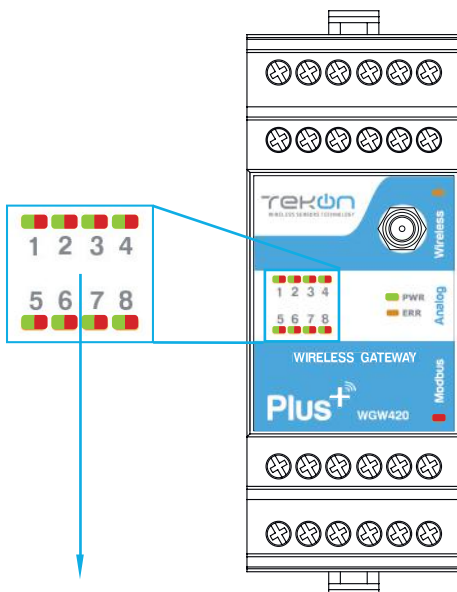
Link *Analog Output Index 1* (Gateway) to *Analog Input 1* (Transmitter) and configure MB Add Link according to the previous step. Set minimum and maximum values and click on *Write*



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
06

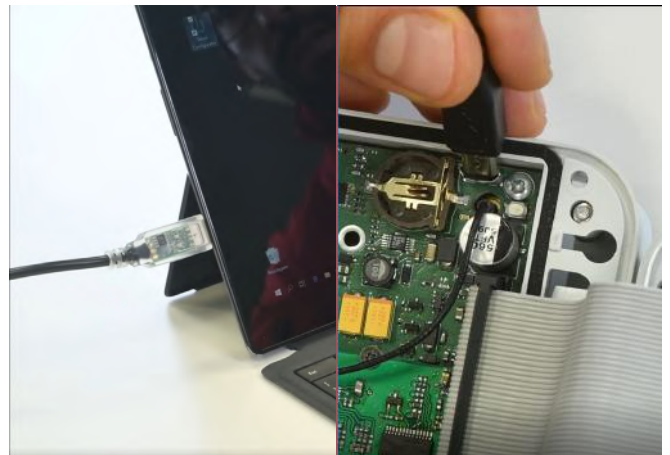
WRP001 PLUS WIRELESS REPEATER CONFIGURATION

CONNECT AND CONFIGURE THE PLUS WIRELESS REPEATER

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



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



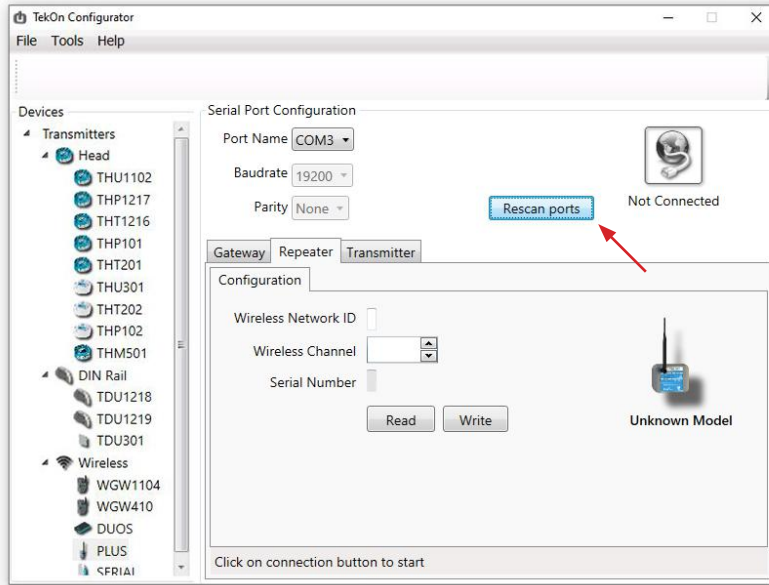
03 Open a new window of *TekOn Configurator Software* and select *PLUS >> Repeater* menu.

step
06

CONNECT AND CONFIGURE THE PLUS WIRELESS REPEATER

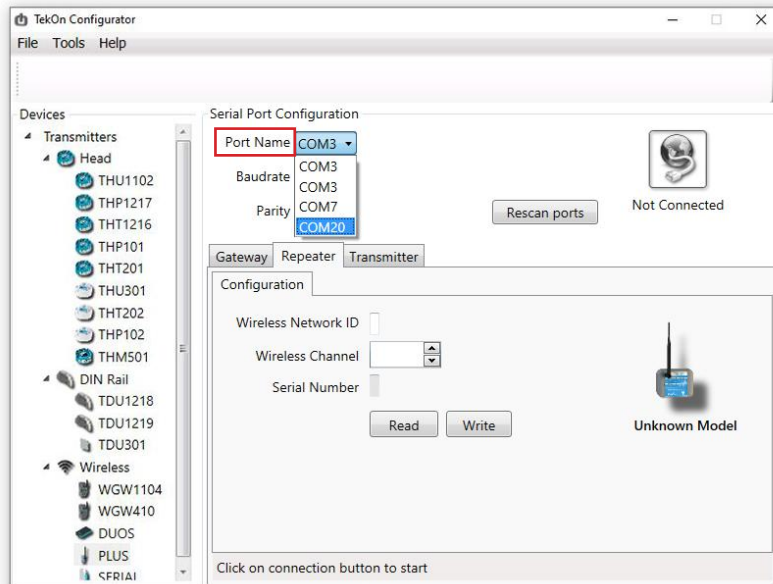
04

Click on *Rescan Ports* button.



05

Select corresponding *Port name*¹.

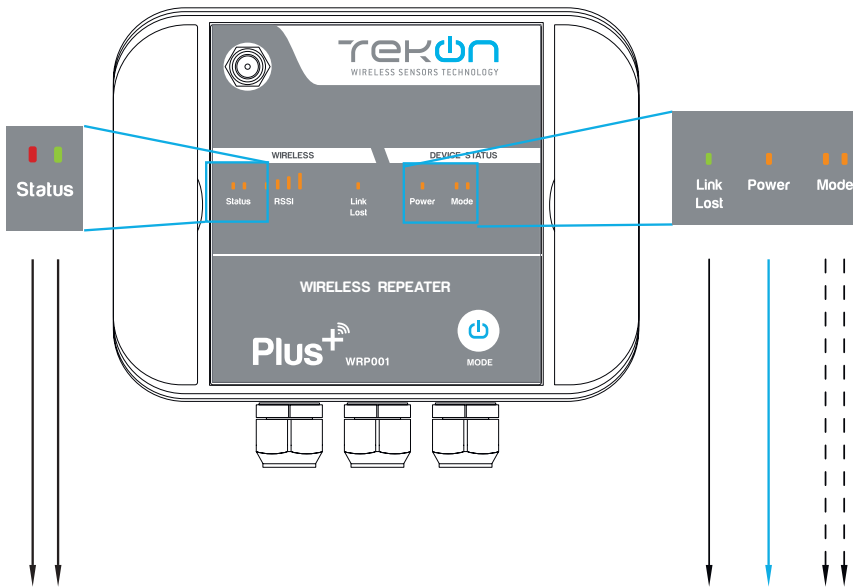
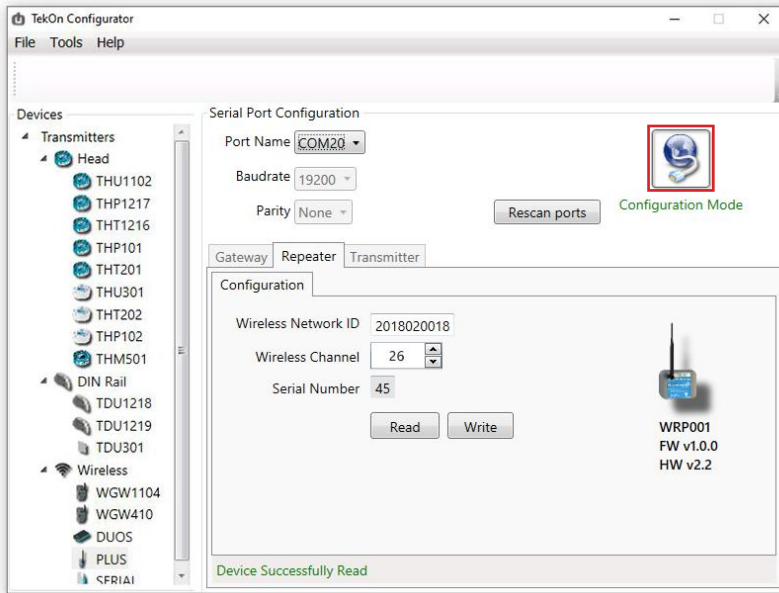


¹ You can check device's serial port name in "Device Manager" on Microsoft® Windows® operating system.

CONNECT AND CONFIGURE THE PLUS WIRELESS REPEATER **step 06**

06

Click on *Configuration Mode* (🌐) button.



- LED permanently on
- - - LEDS flashing until wireless connection is established
- LED permanently off

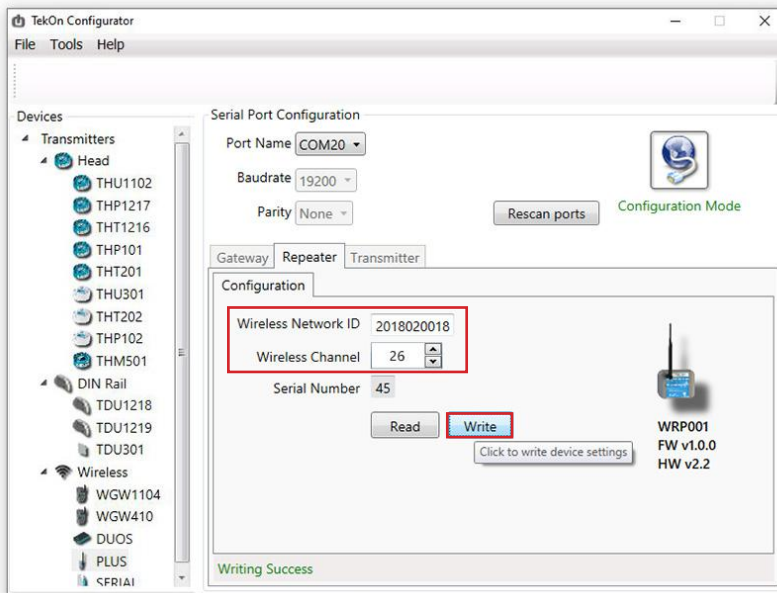
step
06

CONNECT AND CONFIGURE THE PLUS WIRELESS REPEATER


07

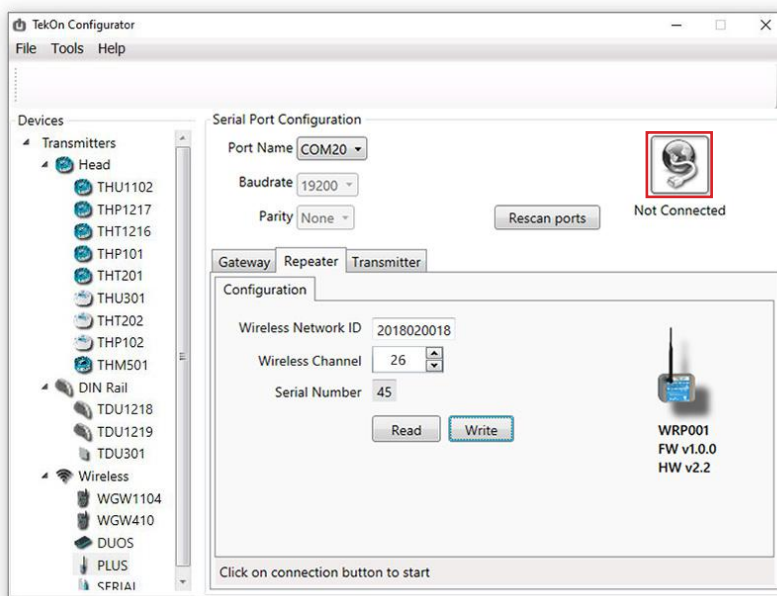
Configure *Wireless Network ID* and *Wireless Channel* previously obtained from *Gateway*.

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

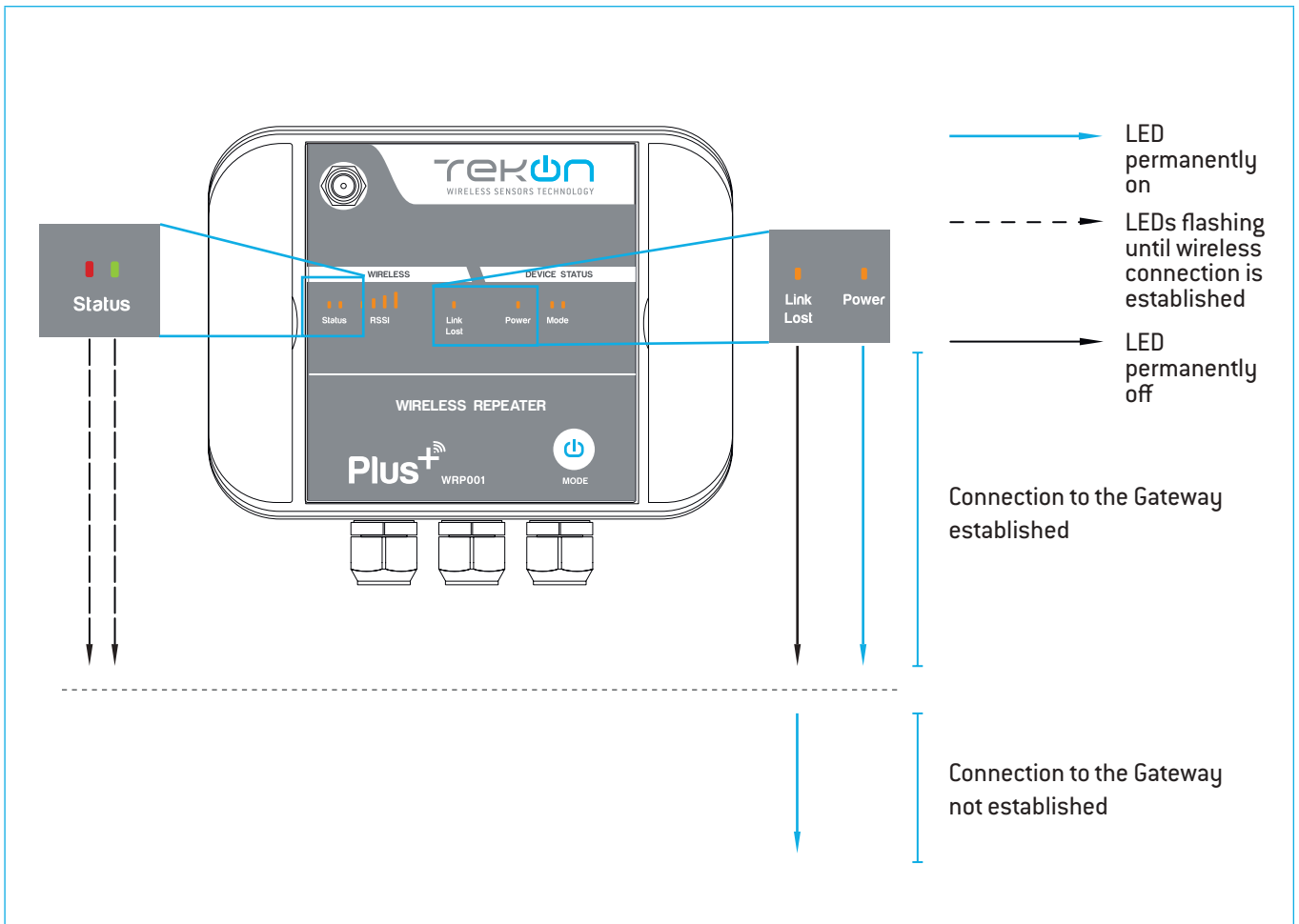


08

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



CONNECT AND CONFIGURE THE PLUS WIRELESS REPEATER



step
07
SITE SURVEY MODE

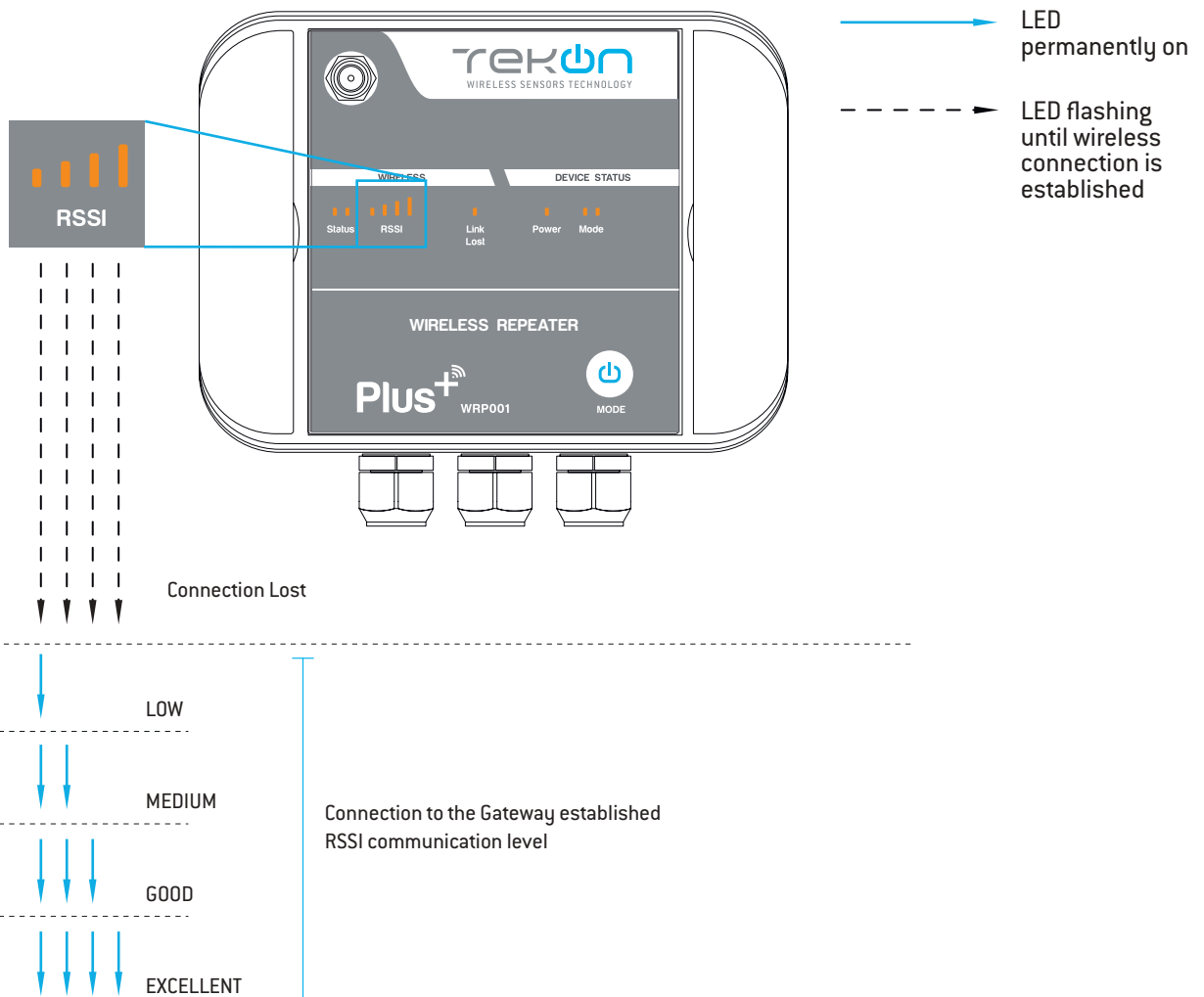
Site survey mode is a tool that allows a quick wireless signal strength evaluation at the site of installation. It doesn't require additional equipment or software.

This feature is available in all the transmitters and repeater from PLUS Product Family.

01

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

RSSI LEDs indicate the signal strength.



02

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

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