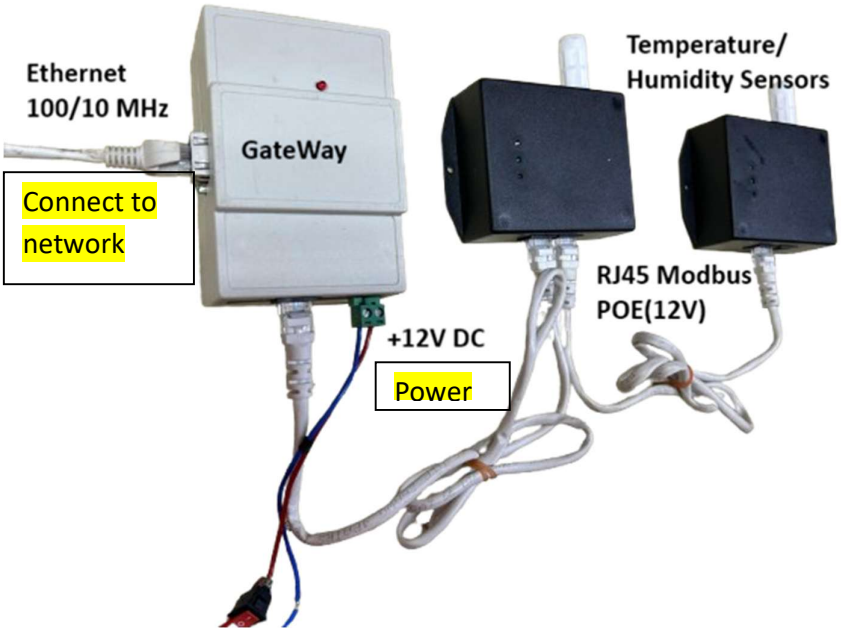
Environment Monitor V1.0

1. Installation

1.1 Install the Windows Application Setup file
TempModbusDashboard.Setup.msi

1.2 Connect a Power adapter (12V DC) to the Gateway. You will see the RED led on the Gateway lit (ON).
WARNING: The voltage must be in the range of 9V-14V. Otherwise, the Gateway may be damaged.

1.3 Connect an Ethernet cable to the Ethernet Connector on the side of the device (NOT to BLACK RJ45 that is used for RS485.)
WARNING: Please note that both the Ethernet connector as well as RS485 Modbus sensor connector are 8 pin RJ45. Reversing connection might damage the device.



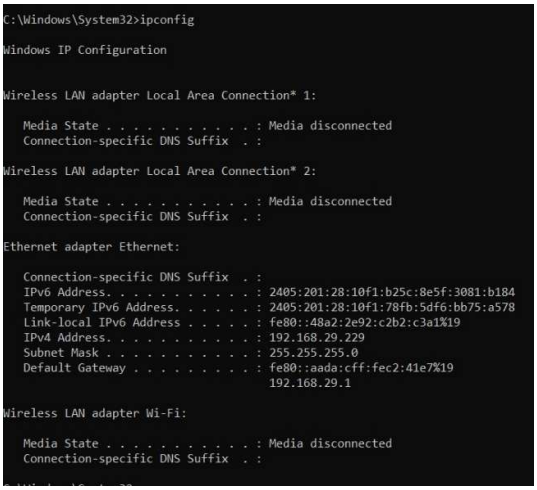
1.4 You can connect the Sensors as shown in the above diagram with a RJ48 cable. Once the Gate Way is powered, you will see power LED on the Gateway as well as on the Sensors (RED). The length of the Gate Way to PC (or Swich) can be the standard Ethernet cable (up to 100 m) and please note that the Ethernet works only with 100/10 MHz connectivity and not on Gigabit Ethernet.

2 *Gate Way* Configuration

2.1 The ***Gate Way*** will connect to the Network if you have enabled DHCP to automatic. If you want to use a static IP to the ***Gate Way***, it is possible in the setting. First you have to connect to a known IP so that you can access the Settings in the **Gate Way**.

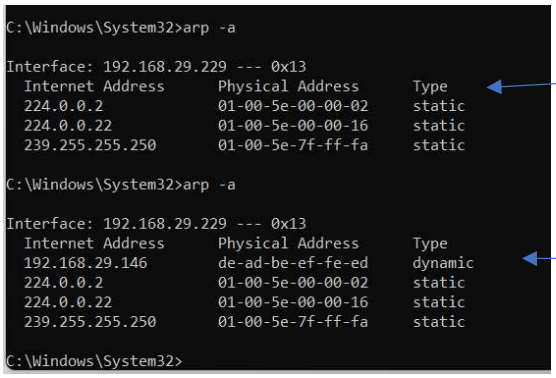
2.2 **Finding the IP of PC** where you will run the *TempModbusDashboard* windows application that will show a dashboard with sensor values.
Open Command prompt in windows

*Enter **ipconfig***



2.3 You will see the PC IP address in IPv4 Adress – 192.168.29.229 in this example
You ***Gate Way*** device will also be connected in the same network.

2.4 Finding the IP of the ***Gate Way***
You shall type ***arp -a***

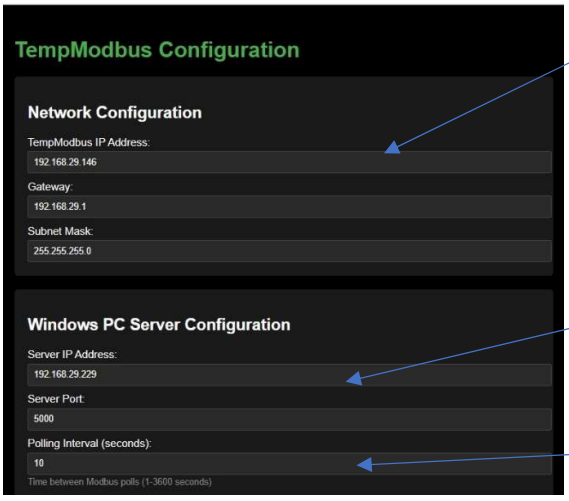


When the ***Gate Way*** is NOT connected

When the ***Gate Way*** is connected

The IP of the ***Gate Way*** in this example is 192.168.29.146

2.5 Configuring Server

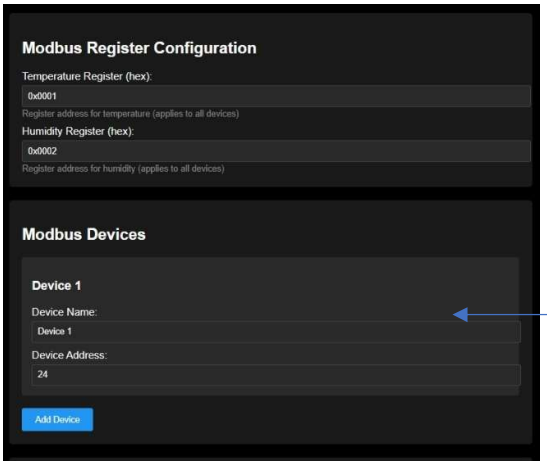


Check IP of ***Gate Way***

PC IP and Port

Interval for sending Temperature/ Humidity data in seconds – 10 Sec

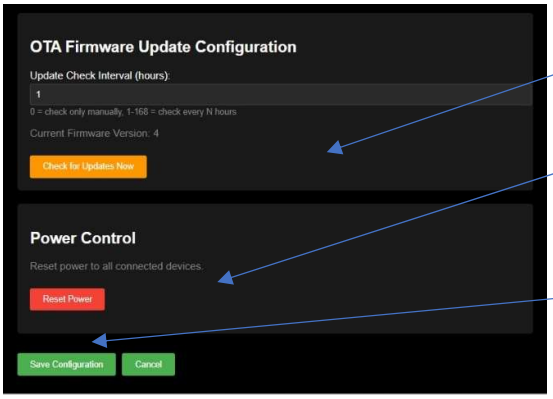
2.6 The **Modbus configuration** sets the registers for reading the respective values. PLEASE do not change this. This option is given to add any new type of Sensors like pressure etc to be included.



Add Sensor Devices here. Name and ID must be entered. They are saved in the Gate Way

Modbus Devices is the place where you can Name a device and assign the ID of the device (Fixed for each Sensor device- you can find on the sticker on the device). You can add multiple devices by clicking ***Add Device*** button.

2.7 OTA firmware updating can be done here.



Device firmware shall be updated.

Power to the Sensors can be turned OFF/ON here.

Saves Configuration and restarts the ***Gate Way***.

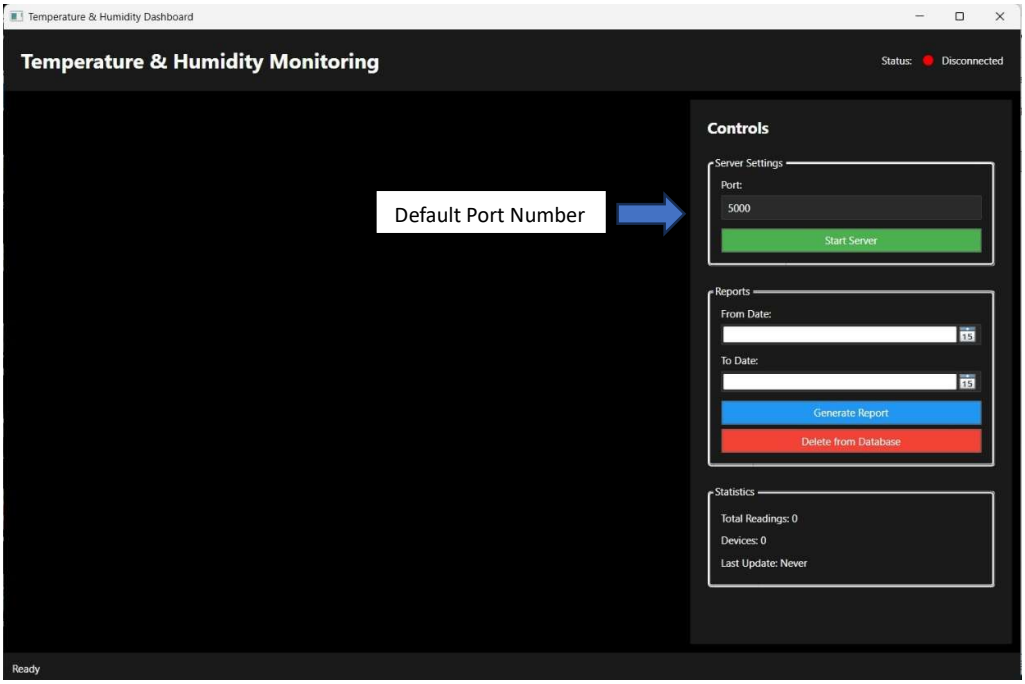
2.8 Please enter the Correct Device IDs. In 2.6. Each Sensor will be scanned one after another. Only the connected devices data shall be displayed on the dashboard.

3 Dashboard

3.1 Now you can run the dashboard application.
This file will be found in the Installed Application path.

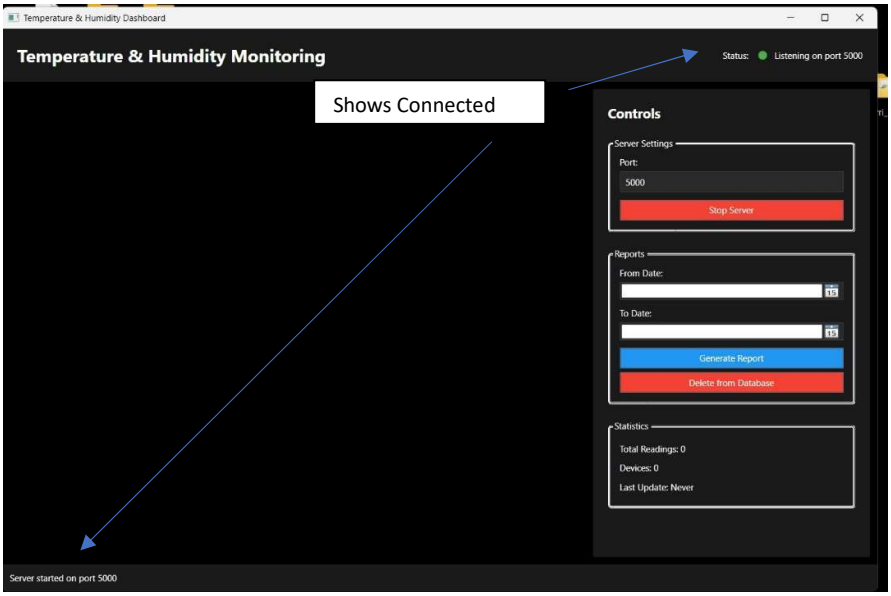
TempModbusDashboard.exe

The dashboard view

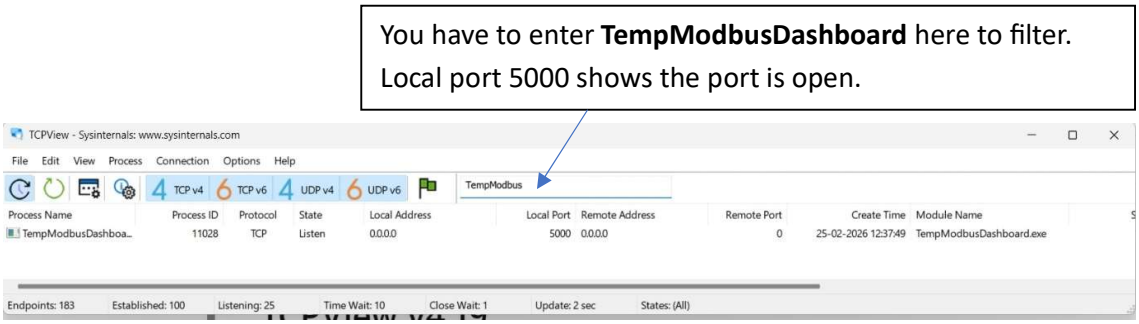


The Default Listening port is 5000. You can change it too. Ensure that the Port is open in the Firewall setting.

3.2 Now Press the ***Start Server*** button in the dashboard.

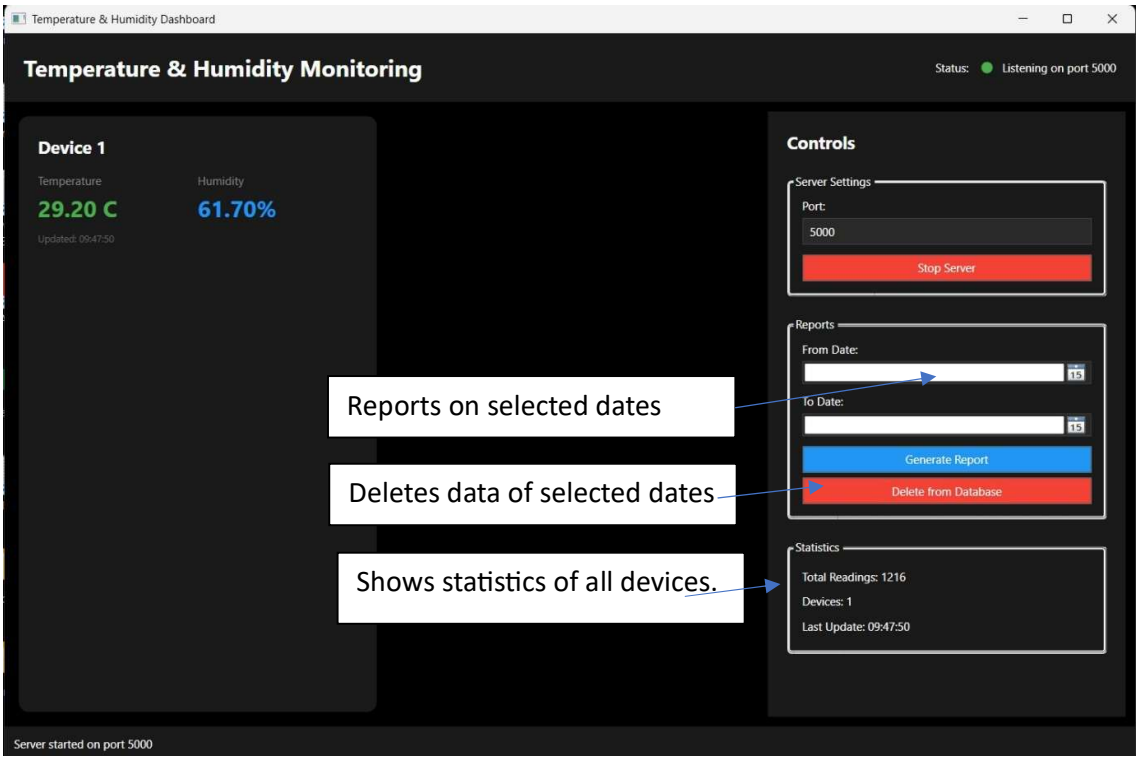


3.3 If not connected, Check if port is open
Download https://download.sysinternals.com/files/TCPView.zip
Run the tcpview.exe in the zip folder



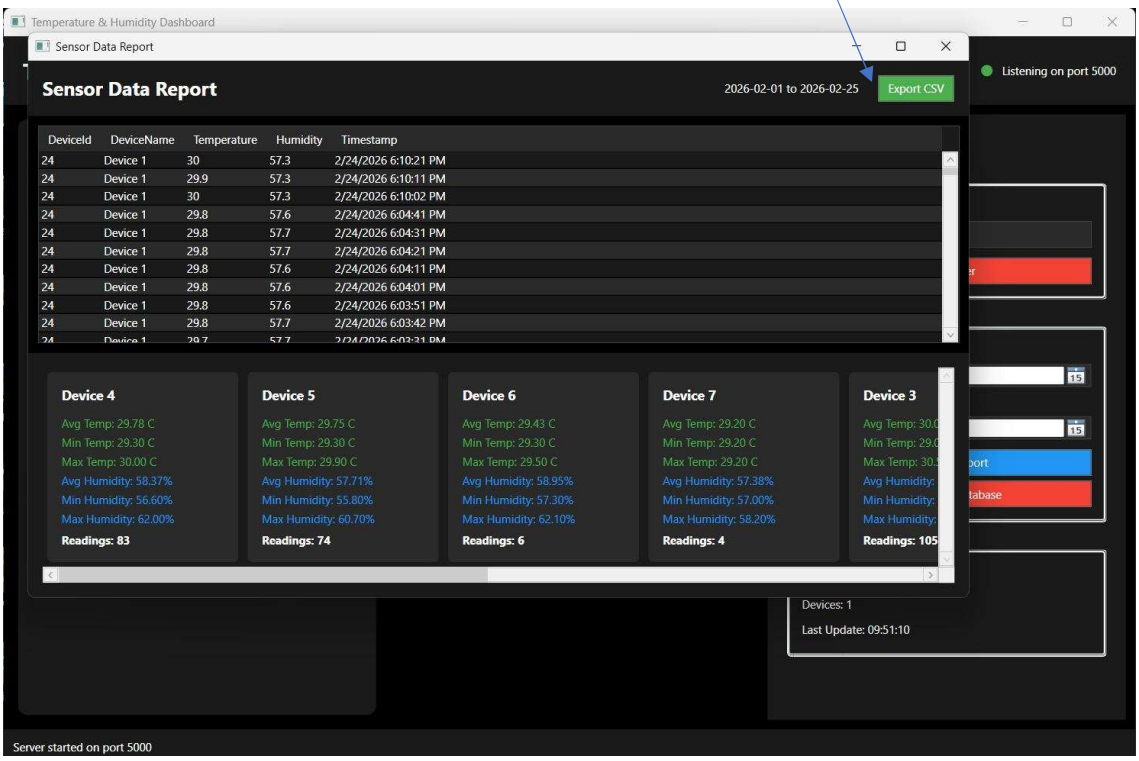
3.4 In case the port is not open, check with your network administrator if it is in LAN
To open ports in Windows 11, create a new rule in **Windows Defender Firewall with Advanced Security** by choosing "Inbound Rules," clicking "New Rule," and selecting "Port". Specify TCP or UDP, enter the port number 5000, select "Allow the connection," and name the rule. You may select port number that is not used for other essential services in Windows/ Network.

3.5 The dashboard will show each sensor as card display. More sensor info shall be automatically aligned in a presentable way on the dashboard.



4 Logging and Reports

4.1 The ***Gate Way*** stores all data in an internal database in the PC. The data can be viewed for selected dates. If you want the current date data to be included, in the **To Date** enter Current data+1.



4.3 The data base size depends on the free disk space and normally limited to 2 GB size. It is advised that regular backups via CSV export is taken and the data for the period deleted.

Notes: