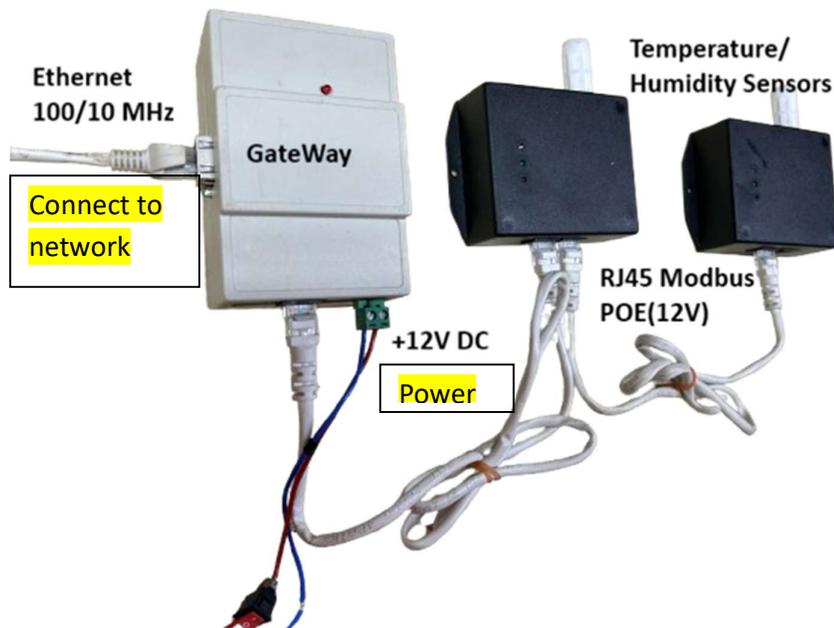


# Environment Monitor V1.0

## 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 Switch) 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**

```
C:\Windows\System32>ipconfig

Windows IP Configuration

Wireless LAN adapter Local Area Connection* 1:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 2:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix  . :
    IPv6 Address. . . . . : 2405:201:28:10f1:b25c:8e5f:3081:b184
    Temporary IPv6 Address. . . . . : 2405:201:28:10f1:78fb:5df6:bb75:a578
    Link-local IPv6 Address . . . . . : fe80::48a2:2e92:c2b2:c3a1%19
    IPv4 Address. . . . . : 192.168.29.229
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : fe80::anda:cff:fec2:41e7%19
                                192.168.29.1

Wireless LAN adapter Wi-Fi:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :
```

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**

```
C:\Windows\System32>arp -a

Interface: 192.168.29.229 --- 0x13
Internet Address      Physical Address      Type
224.0.0.2             01-00-5e-00-00-02    static
224.0.0.22            01-00-5e-00-00-16    static
239.255.255.250      01-00-5e-7f-ff-fa    static

C:\Windows\System32>arp -a

Interface: 192.168.29.229 --- 0x13
Internet Address      Physical Address      Type
192.168.29.146       de-ad-be-ef-fe-ed    dynamic
224.0.0.2             01-00-5e-00-00-02    static
224.0.0.22            01-00-5e-00-00-16    static
239.255.255.250      01-00-5e-7f-ff-fa    static

C:\Windows\System32>
```

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**

**TempModbus Configuration**

**Network Configuration**

TempModbus IP Address: 192.168.29.146

Gateway: 192.168.29.1

Subnet Mask: 255.255.255.0

**Windows PC Server Configuration**

Server IP Address: 192.168.29.229

Server Port: 5000

Polling Interval (seconds): 10

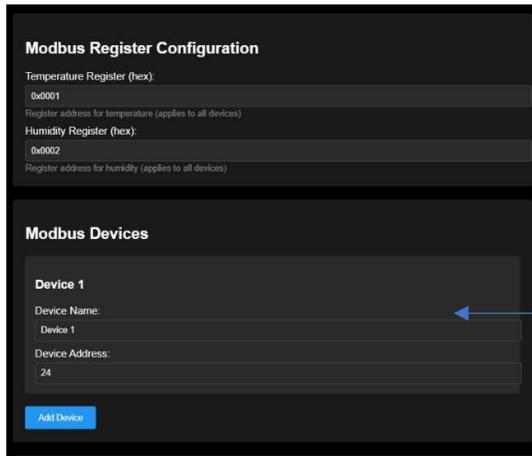
Time between Modbus polls (1-3600 seconds)

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.

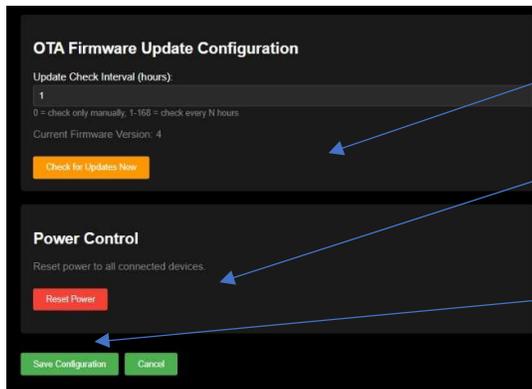


The screenshot shows two sections of a web interface. The top section, titled "Modbus Register Configuration", contains two rows: "Temperature Register (hex):" with a value of "0x0001" and a note "Register address for temperature (applies to all devices)", and "Humidity Register (hex):" with a value of "0x0002" and a note "Register address for humidity (applies to all devices)". The bottom section, titled "Modbus Devices", shows a table with one entry: "Device 1" with "Device Name: Device 1" and "Device Address: 24". Below the table is a blue "Add Device" button.

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.



The screenshot shows two sections of a web interface. The top section, titled "OTA Firmware Update Configuration", has a "Update Check Interval (hours):" field with the value "1" and a note "0 = check only manually, 1-168 = check every N hours". Below this is a "Current Firmware Version: 4" and a yellow "Check for Updates Now" button. The bottom section, titled "Power Control", has a note "Reset power to all connected devices." and a red "Reset Power" button. At the very bottom are two green buttons: "Save Configuration" and "Cancel".

Device firmware shall be updated.

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

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

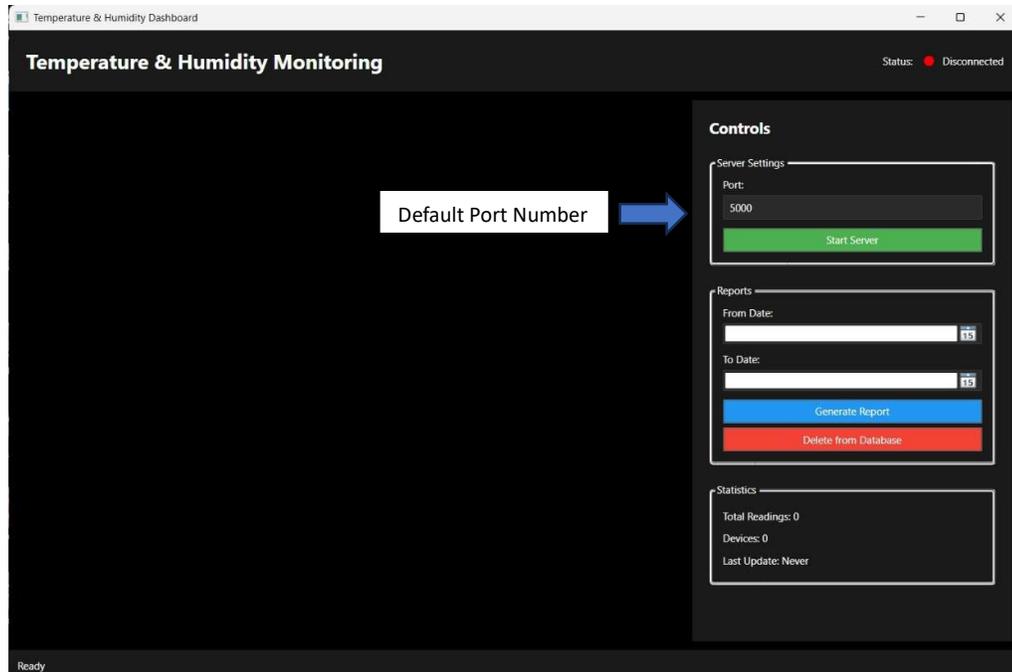
- 2.8 Please enter the Correct Device IDs. In 2.6. Each Sensor will be scanned one after another. Only the connected devices data shall be displayed on the dashboard.

### 3 Dashboard

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

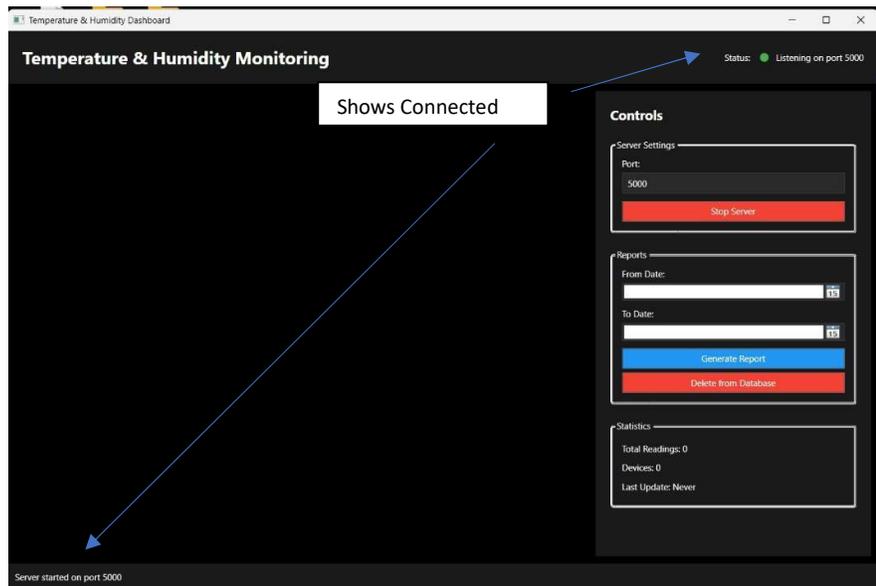
*TempModbusDashboard.exe*

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.

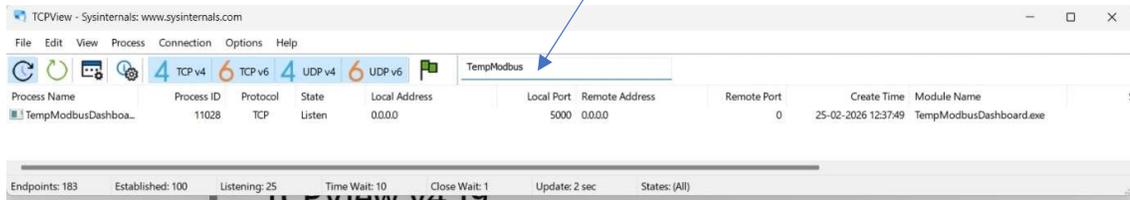


3.3 If not connected, Check if port is open

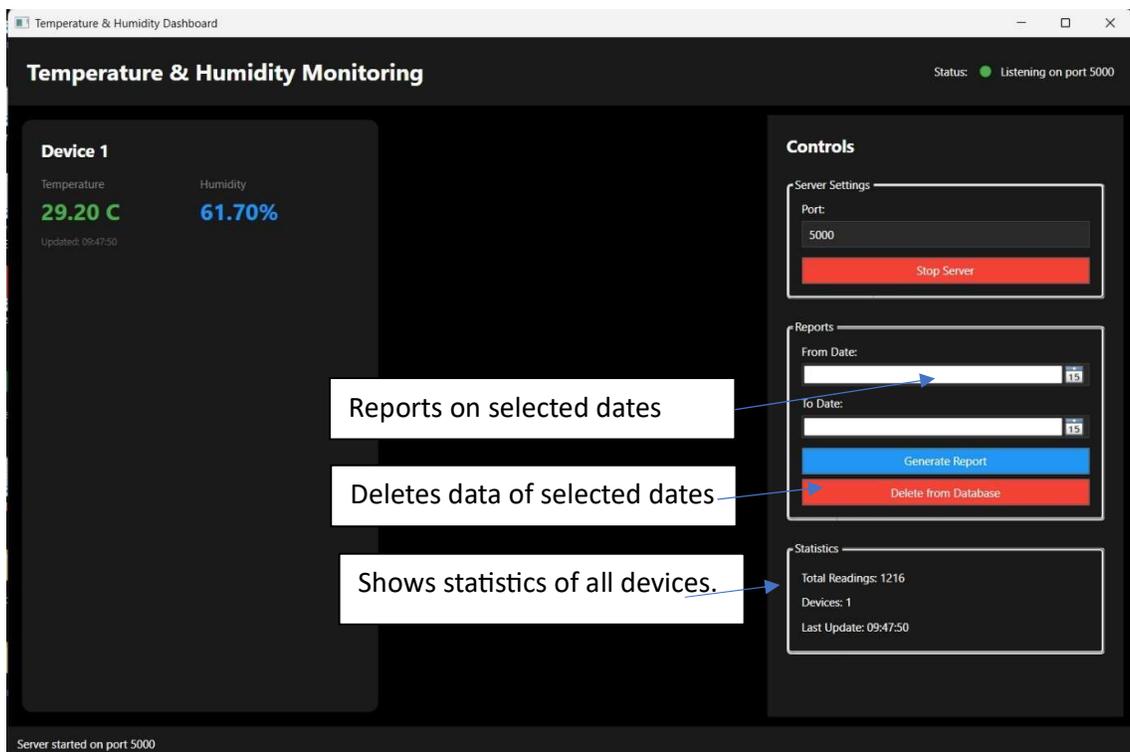
Download <https://download.sysinternals.com/files/TCPView.zip>

Run the tcpview.exe in the zip folder

You have to enter **TempModbusDashboard** here to filter.  
Local port 5000 shows the port is open.



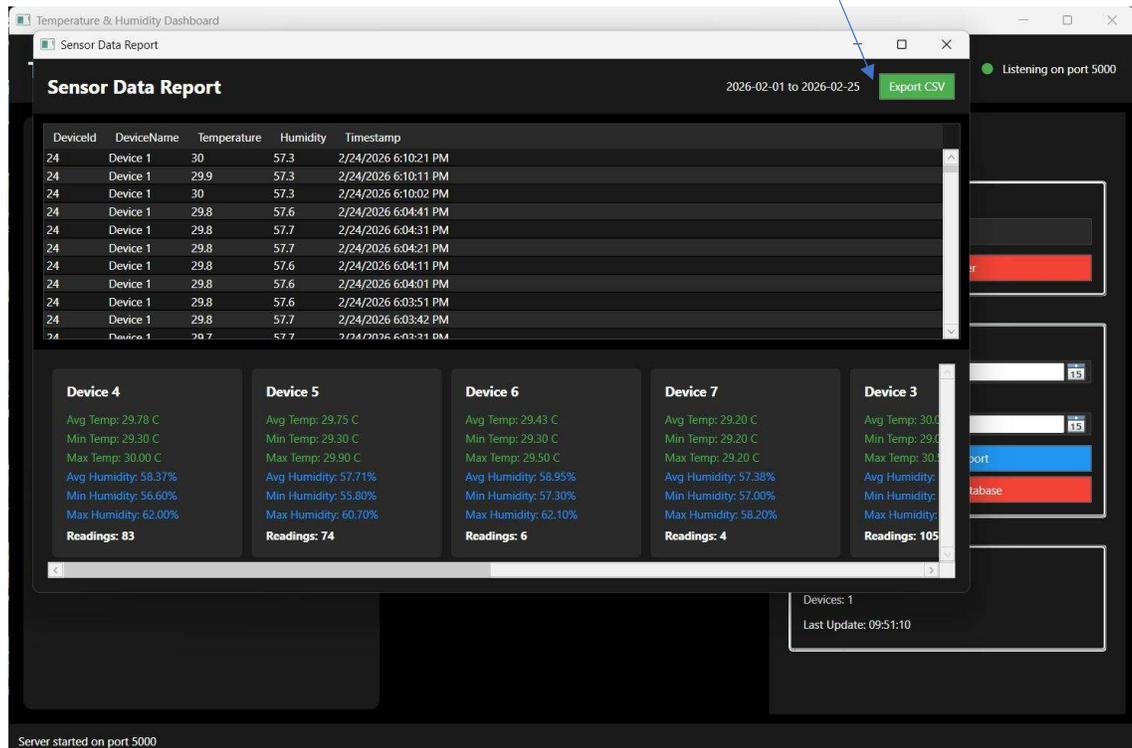
- 3.4 In case the port is not open, check with your network administrator if it is in LAN  
To open ports in Windows 11, create a new rule in **Windows Defender Firewall with Advanced Security** by choosing "Inbound Rules," clicking "New Rule," and selecting "Port". Specify TCP or UDP, enter the port 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.

The report can be saved as a CSV file and can be opened spreadsheet program



The screenshot displays a web interface for a "Temperature & Humidity Dashboard". The main section is titled "Sensor Data Report" and shows a table of data for the period "2026-02-01 to 2026-02-25". A green "Export CSV" button is visible in the top right corner of the report area. Below the table, there are five summary cards for "Device 4", "Device 5", "Device 6", "Device 7", and "Device 3", each showing average, minimum, and maximum temperature and humidity, along with the total number of readings. The interface also includes a "Listening on port 5000" indicator and a "Server started on port 5000" message at the bottom.

DeviceId	DeviceName	Temperature	Humidity	Timestamp
24	Device 1	30	57.3	2/24/2026 6:10:21 PM
24	Device 1	29.9	57.3	2/24/2026 6:10:11 PM
24	Device 1	30	57.3	2/24/2026 6:10:02 PM
24	Device 1	29.8	57.6	2/24/2026 6:04:41 PM
24	Device 1	29.8	57.7	2/24/2026 6:04:31 PM
24	Device 1	29.8	57.7	2/24/2026 6:04:21 PM
24	Device 1	29.8	57.6	2/24/2026 6:04:11 PM
24	Device 1	29.8	57.6	2/24/2026 6:04:01 PM
24	Device 1	29.8	57.6	2/24/2026 6:03:51 PM
24	Device 1	29.8	57.7	2/24/2026 6:03:42 PM
24	Device 1	29.7	57.7	2/24/2026 6:03:31 PM

**Device 4**  
Avg Temp: 29.78 C  
Min Temp: 29.30 C  
Max Temp: 30.00 C  
Avg Humidity: 58.37%  
Min Humidity: 56.60%  
Max Humidity: 62.00%  
Readings: 83

**Device 5**  
Avg Temp: 29.75 C  
Min Temp: 29.30 C  
Max Temp: 29.90 C  
Avg Humidity: 57.71%  
Min Humidity: 55.80%  
Max Humidity: 60.70%  
Readings: 74

**Device 6**  
Avg Temp: 29.43 C  
Min Temp: 29.30 C  
Max Temp: 29.50 C  
Avg Humidity: 58.95%  
Min Humidity: 57.30%  
Max Humidity: 62.10%  
Readings: 6

**Device 7**  
Avg Temp: 29.20 C  
Min Temp: 29.20 C  
Max Temp: 29.20 C  
Avg Humidity: 57.38%  
Min Humidity: 57.00%  
Max Humidity: 58.20%  
Readings: 4

**Device 3**  
Avg Temp: 30.00 C  
Min Temp: 29.00 C  
Max Temp: 30.00 C  
Avg Humidity: 57.38%  
Min Humidity: 57.00%  
Max Humidity: 58.20%  
Readings: 105

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: