

SYN-CTL-FL10

Compact Automation Controller

User Manual

Version: 1.0.1

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Important Safety Instructions



1. Do not expose this apparatus to rain, moisture, dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the



6. Clean this apparatus only with dry cloth.



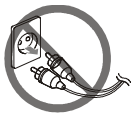
2. Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure the unit is well ventilated.



7. Unplug this apparatus during lightning storms or when unused for long periods of time.



3. To prevent risk of electric shock or fire hazard due to overheating, do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.



8. Protect the power cord from being walked on or pinched particularly at plugs.



4. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.



9. Only use attachments / accessories specified by the manufacturer.



5. Do not place sources of naked flames, such as lighted candles, on the unit.



10. Refer all service to qualified service personnel.

1. Introduction

1.1 Overview

The product is a compact centralized control processor designed for AV and automation control applications. It supports network-based device management and provides multiple control interfaces, including RS-232/422/485, IR, relay, and GPIO.

The product can work together with compatible touch panels and control devices to enable integrated control of AV equipment, environmental systems, and other connected devices.

Built on the Node-RED platform, it supports flexible automation workflows and low-code control programming for customized system integration.

1.2 Features

- Supports centralized control of AV and automation devices
- Supports low-code automation programming via Node-RED
- Dual Gigabit Ethernet ports with PoE support on LAN 1
- Supports RS-232, RS-422, and RS-485 serial communication
- Supports IR, relay, and GPIO integration for external device control
- Web UI and Telnet API for device management and control
- Compact design for flexible installation

1.3 Package Contents

- 1 x SYN-CTL-FL10 Unit
- 1 x 12V DC Power Adapter
- 4 x AC Power Cord (US, EU, UK, AU plugs)
- 3 x 3.5mm 3-pin Phoenix Male Connectors
- 1 x 3.5mm 4-pin Phoenix Male Connector
- 1 x 3.5mm 5-pin Phoenix Male Connector
- 1 x 3.5mm 6-pin Phoenix Male Connector
- 4 x Wall-Mount Brackets (with 4 x Screws)
- 2 x Rack-Mount Brackets

1.4 Specifications

1.4.1 System Specifications

Technical	
LAN	2 x RJ45 Gigabit Ethernet ports
PoE Support	IEEE 802.3af PD (LAN 1)
Serial	1 x configurable RS-232/422/485 port, 1 x RS-232 port
IR	2 x configurable IR output / serial Tx ports
Digital I/O	4 x configurable digital input/output channels
Relay	2 x SPDT relay ports
Display	1 x OLED Screen
Button	1 x RESET button; 1 x Front Panel button
Control Method	LAN (Web UI / Telnet API)
Automation Platform	Node-RED

General	
Operating Temperature/ Humidity	32–113°F (0–45°C), 10%–90% RH, non-condensing
Storage Temperature/ Humidity	-4–158°F (-20–70°C), 10%–90% RH, non-condensing
ESD Protection	Human body model: ±8kV (air-gap discharge) / ±4kV (contact discharge)
Power	12V DC; PoE
Power Consumption	3.6W (Max)
Dimensions (W x H x D)	8.46" x 0.98" x 4.72" (215mm x 25mm x 120mm)
Net Weight	1.54lbs (0.70kg)

1.4.2 Interface Electrical Specifications

GPIO

Digital Input	
Input Voltage Range	0–30 VDC
Logic High Threshold	> 2 VDC
Logic Low Threshold	< 0.8 VDC
Undefined Region	0.8–2.0V DC
Input Impedance	> 10k ohms
Pull-up Resistor	Programmable 5 V, 1k Ω
Digital Output	
Output Impedance	60Ω
Pull-up Resistor	Programmable 5 V, 1k Ω
Power	
Power	5V 0.2 A

Note: The input logic thresholds include a non-guaranteed region between 0.8 V and 2.0 V due to hardware design limitations. Signals within this range may result in unstable or undefined detection. It is recommended to ensure input signals are driven outside this range for reliable operation.

Relay Output

Item	
Contact Rating	1A @ 30 VAC/VDC

IR Output

Item	
Carrier Frequency	20 kHz – 60 kHz

Serial Ports

Item	Specification
Baud Rate	Up to 115200 bps
Protocols	RS-232 / RS-422 / RS-485
Flow Control	RTS/CTS (COM1 only)
Pin Definition	RS-232: 1 = Tx, 2 = Rx, 3 = GND, 4 = RTS, 5 = CTS RS-422: 1 = Tx-, 2 = Rx+, 3 = GND, 4 = Tx+, 5 = Rx- RS-485: 1 = Tx-, 3 = GND, 4 = Tx+

2. Panel Overview

2.1 Panel Layout

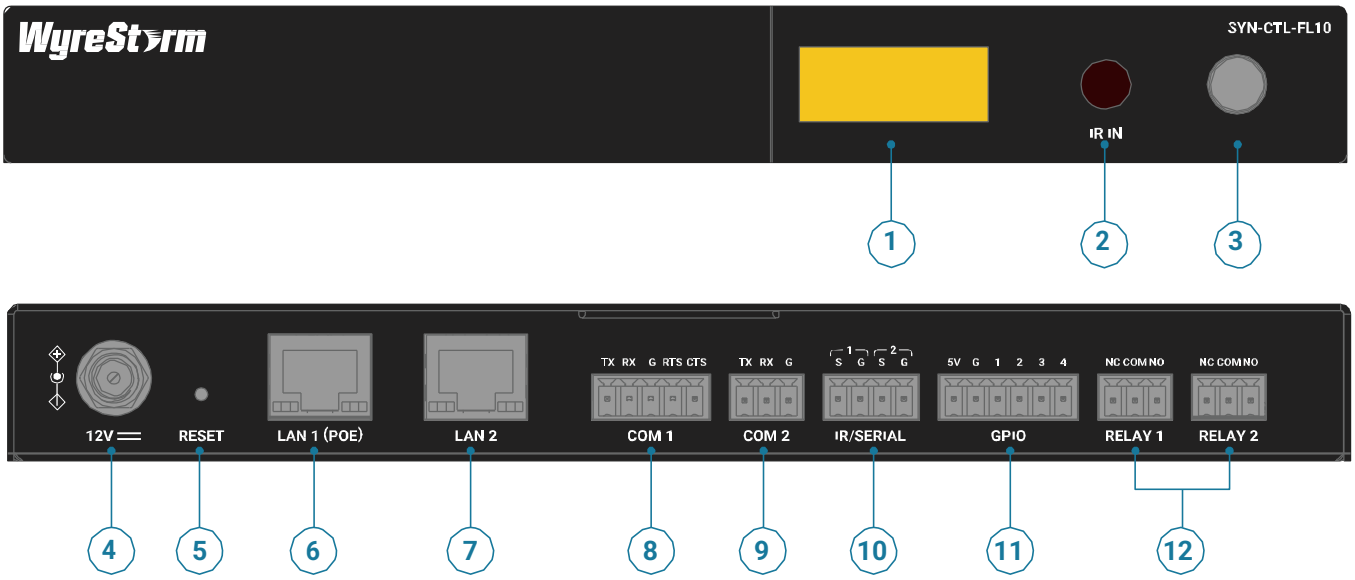
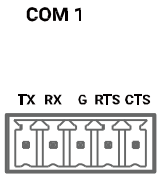
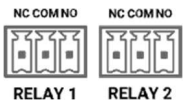


Figure 1: Panel Layout

#	Name	Description
1	OLED Screen	Displays device information, including LAN IP addresses, firmware version, device temperature, and hostname. LAN-1 IP: 192.168.11.230 LAN-1 Net Mask: 255.255.255.0 Hostname: SYN-CTL-FL10-0D8B0F Figure 2: OLED Screen Information Pages
2	IR IN	IR receiver window for receiving IR control signals.
3	Button	Press to cycle through OLED screen information pages.
4	12V	Connect to a power adapter for 12V DC power input.
5	RESET	Press and hold for 10 seconds to restore factory default settings and reboot the device.
6	LAN 1 (POE)	RJ45 Gigabit Ethernet port for LAN control (Telnet API and Web UI) and PoE power input. Default IP mode: DHCP
7	LAN 2	RJ45 Gigabit Ethernet port for LAN control (Telnet API and Web UI) and PoE power input. Default IP mode: DHCP
8	COM 1	5-pin phoenix connector for serial communication. Supports RS-232, RS- 422, and RS-485 modes.
9	COM 2	3-pin phoenix connector for RS-232 serial communication.
10	IR/SEREAL	Two configurable IR output or serial Tx ports via 4-pin phoenix connector.
11	GPIO	6-pin phoenix connector for 4-channel configurable GPIO (digital input/output).
12	RELAY 1–2	Two independent relay control ports via 3-pin phoenix connectors.

Note: The DC adapter takes priority over PoE. When both are connected, the device draws power from the adapter.

2.2 Connector Pin Definitions

#	Pin	Description
1		**Note:** The COM 1 pin definitions vary depending on the selected serial mode. **RS-232 Mode** 1: TX 2: RX 3: GND 4: RTS 5: CTS **RS-422 Mode** 1: TX- 2: RX+ 3: GND 4: TX+ 5: RX- **RS-485 Mode** 1: TX- 3: GND 4: TX+
2		TX: Transmit data RX: Receive data G: Signal ground
3		S1: IR or serial signal for Port 1 G1: Signal ground S2: IR or serial signal for Port 2 G2: Signal ground
4		5V: 5V power output G: Signal ground 1–4: Digital input/output channels
5		NC: Normally closed COM: Common NO: Normally open

3. Installation

Note: Disconnect the device from the power source before installation.

Attaching the Wall Mount Brackets

1. Attach the two wall mount brackets to one side of the enclosure using the included screws, as shown in the figure below.

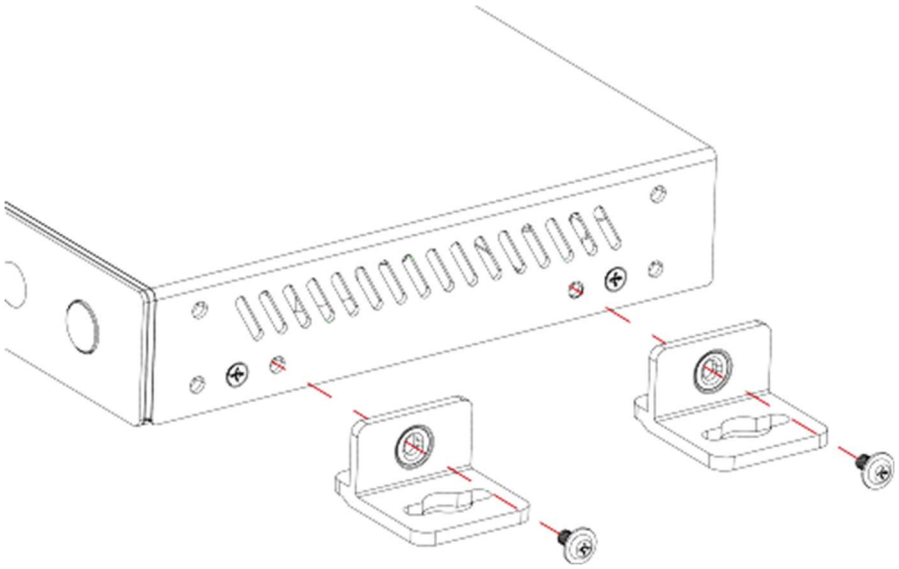


Figure 3: Bracket Installation on the Device

2. Repeat the above step for the other side of the device.
3. Mount the device with the brackets at the desired location using user-supplied screws (not included).

4. Typical Application

4.1 AV System Application

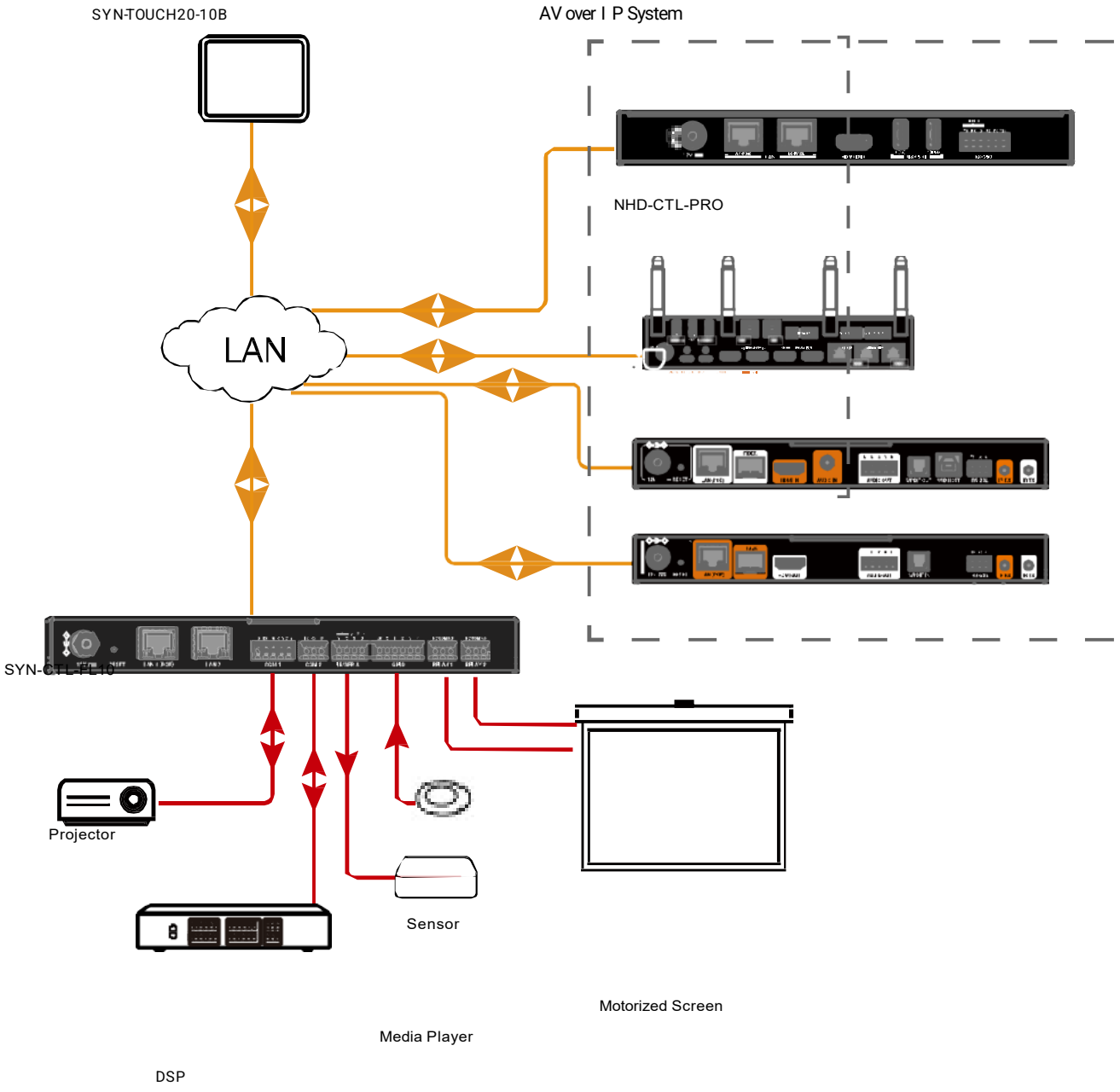


Figure 4: Application Example

Application Notes

- SYN-CTL-FL10 provides centralized control for AV and building automation devices via multiple control interfaces, including LAN, RS-232/422/485, IR/Serial, GPIO, and relay outputs.
- SYN-CTL-FL10 can directly control AV endpoints or communicates with an IP controller for AV over IP system management.
- Diagram represents a typical application scenario; actual system configuration may vary.

4.2 GPIO Wiring Examples

The GPIO interface provides four configurable digital input/output channels for integration with external control devices. Each GPIO channel can be independently configured as a digital input or output through the Web UI. For details, refer to **5.4.4 GPIO**.

GPIO inputs can receive external trigger signals from devices such as push buttons, sensors, and third-party controllers. GPIO outputs can provide control signals to external devices such as LED indicators or relay modules.

Note: The GPIO input supports voltages from 0 to 30 VDC. For reliable detection, ensure the input voltage is below 0.8 V for LOW or above 2.0 V for HIGH. Signals within **0.8–2.0 V** may result in undefined detection.

Example 1: Push Button Input (Dry Contact)

GPIO Input — Push Button — GND

Configuration:

Setting	Value
Mode	Input
Internal Pull Up	Enabled

Operation:

Button State	GPIO Status
Released	High
Pressed	Low

Typical Devices

- Push buttons
- Magnetic door contacts
- Relay dry contacts

Typical Applications

- Room control
- Lighting control
- Display power trigger

Example 2: Active Sensor Input

Sensor Out — GPIO Input
Sensor GND — GND

Configuration:

Setting	Value
Mode	Input
Internal Pull Up	Disabled

Operation:

The GPIO level changes according to the output signal of the connected sensor.

Typical Devices

- PLC digital outputs
- PIR motion sensors
- Active sensors
- Third-party controllers

Typical Applications

- Motion detection
- Occupancy detection
- Automation triggering

Example 3: GPIO Output

```
GPIO Output ——— Relay Module GPIO Input
GND ———————— Relay Module GND
Relay Module ——— Projector / Screen / Lighting / Alarm
```

Configuration:

Setting	Value
Mode	Output

Operation:

GPIO Status	Typical Behavior
High/Low	Output control signal to the connected device

Typical Devices

- Relay modules
- LED indicators
- Third-party controllers

Typical Applications

- Projector or screen control
- Status indication
- Alarm triggering
- Automation control

Internal Pull-up Configuration

Enable Internal Pull-up when connecting passive dry-contact devices that do not actively drive the GPIO voltage, such as push buttons or magnetic door contacts. Disable it when connecting devices that actively drive the GPIO voltage, such as PLC outputs or active sensors.

GPIO Connection Notes

- Configure the GPIO mode before connecting external devices.
- Do not exceed 30 VDC on GPIO inputs.
- Do not connect GPIO outputs directly to high-current loads.
- Use external relay modules or driver circuits when controlling high-power devices.
- Ensure connected devices share a common ground when required.

5. Web UI

The web UI is a browser-based interface for configuring, managing, and monitoring the device. For optimal performance, use the latest version of Chrome, Safari, Microsoft Edge, or Firefox.

5.1 Accessing the Web UI

By default, the device uses DHCP to obtain an IP address and requires a DHCP server on the network.

1. Connect the LAN 1 or LAN 2 port of the device to a local area network with DHCP enabled to obtain an IP address.
2. Connect the PC to the same network as the device.
3. View the device IP address on the front-panel OLED screen.
4. Enter the device IP address in a web browser and press Enter. The Login page is displayed.



Figure 5: Login Page

5. Input the username and password, then press Enter.
   The default username and password are both set to **admin**.
   Upon first login, the system prompts a password change. Enter a new password and click **Apply** to complete the update.
   Note: The new password must have at least one lower-case letter, one upper-case letter, one number and one special character, and be 8 to 24 characters long.

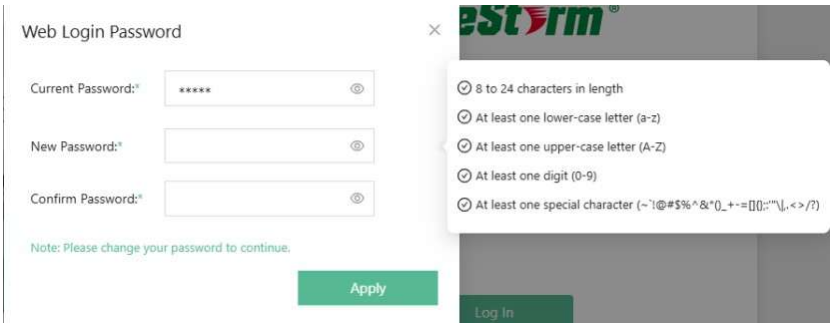


Figure 6: Login Password Change

6. After login, the main page is displayed. Use the top navigation bar to access the corresponding pages.

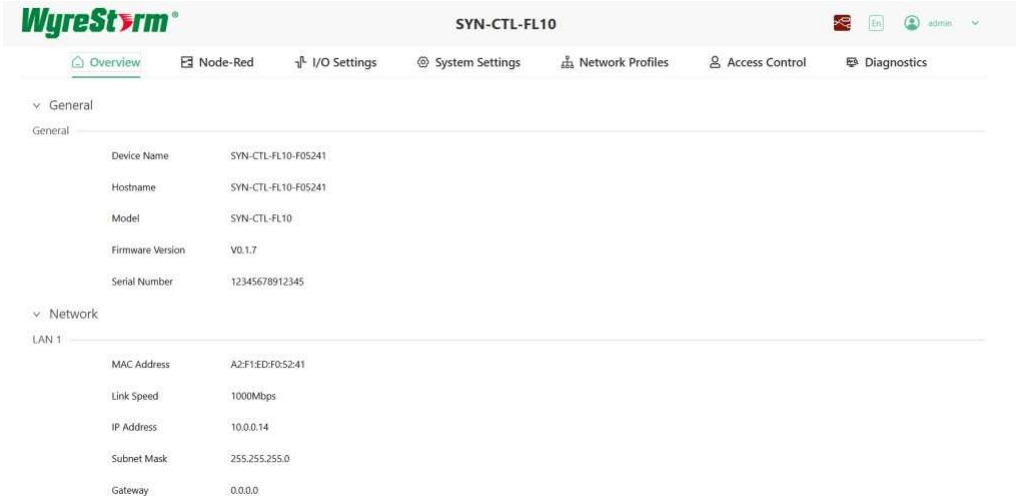


Figure 7: Home Page

Top Navigation
The top navigation bar provides access to the following pages:

- **Overview**: Displays general device information and network settings.
- **Node-Red**: Manages the Node-RED runtime, including Git history viewing and system commands (Restart and Factory Reset).
- **I/O Settings**: Configures the hardware I/O interfaces, including COM, IR/Serial, GPIO, and relay settings.
- **System Settings**: Configure general device settings, firmware updates, system operation, time server, HTTPS, and cloud settings.
- **Network Profiles**: Configures network settings, IEEE 802.1X authentication, and device discovery services.
- **Access Control**: Manages user accounts, user roles, and access permissions for each section (Full access, View, and Hidden).
- **Diagnostics**: Monitors system status, including temperature, CPU/memory/disk usage, system uptime), and system log export.

Top-Right Action Icons
Three functional icons are located in the top-right corner of the interface for quick access to commonly used functions:

- Node-RED Icon: Opens the Node-RED visual programming editor directly.
  Note: This differs from the "Node-RED" page in the main navigation, which is used for runtime management rather than flow editing.
- Language Icon (EN): Displays the current interface language.
- User Account Icon: Displays the currently logged-in user (for example, admin).
- Logout Icon: Click to select the drop-down option for logout.

5.2 Overview

5.2.1 General

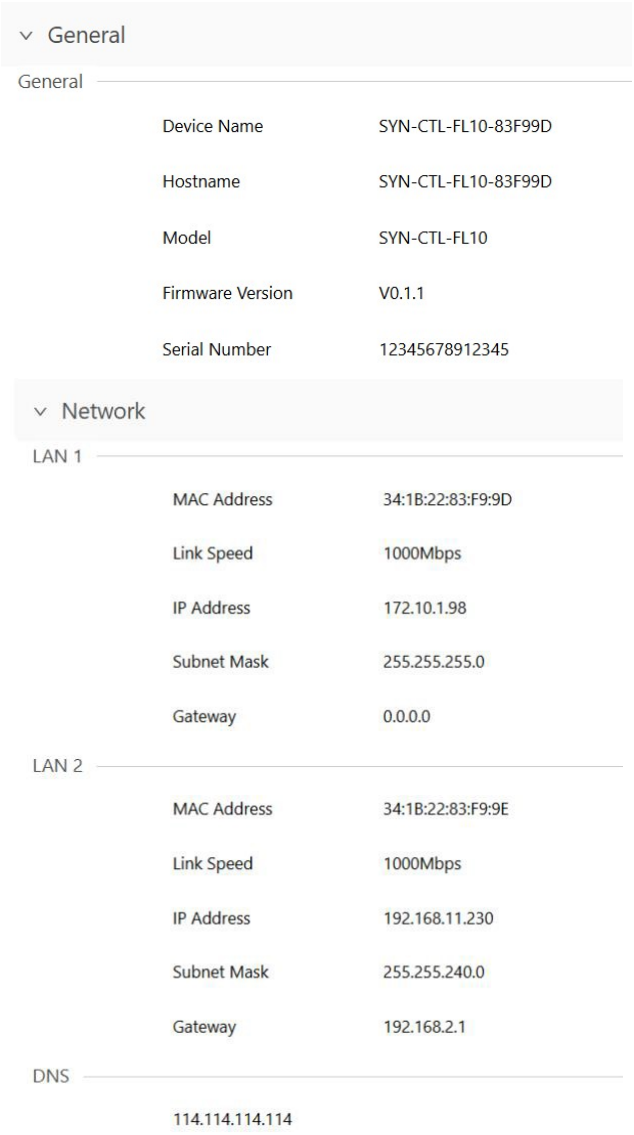


Figure 8: General

General
This section displays the device name, hostname, model, firmware version, and serial number.

Network
This section displays network settings for LAN 1 and LAN 2 ports, including MAC address, link speed, IP address, subnet mask, gateway, and DNS server information.

5.3 Node-Red

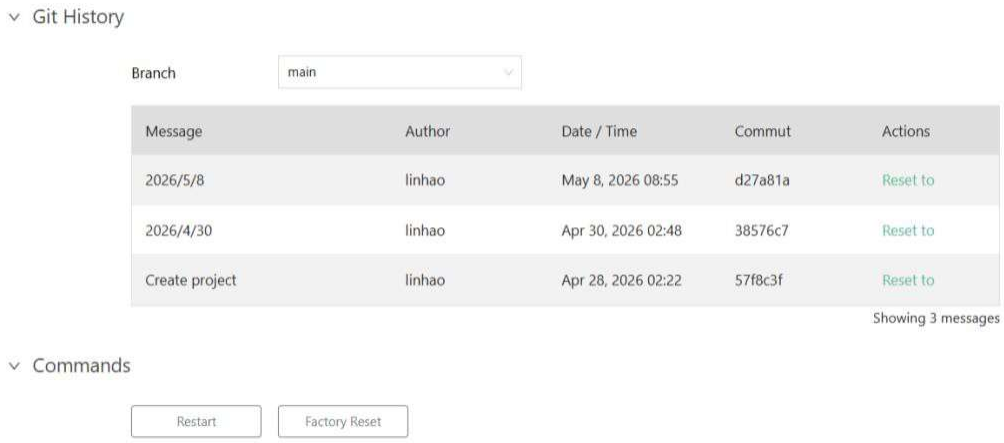


Figure 9: Node-Red

The Node-Red page provides runtime management and maintenance functions for Node-RED projects.

Git History
This section displays the version history of Node-RED projects and supports the following operations:
- View commit history information
- Switch between available branches
- View commit author and timestamp information
- Reset the project to a selected commit version

Note: Resetting to a previous version overwrites the current project configuration.

The following information is displayed for each commit:
- **Message**: Commit description
- **Author**: Commit author
- **Date / Time**: Commit timestamp
- **Commit**: Commit ID
- **Actions**: Available actions for the selected commit

Commands
This section provides system-level control commands for the Node-RED service.
- **Restart**: Restart the Node-RED runtime service.
- **Factory Reset**: Restore the Node-RED service and related settings to factory defaults. Note: Factory Reset removes all customized Node-RED configurations and cannot be undone.

5.4 I/O Settings

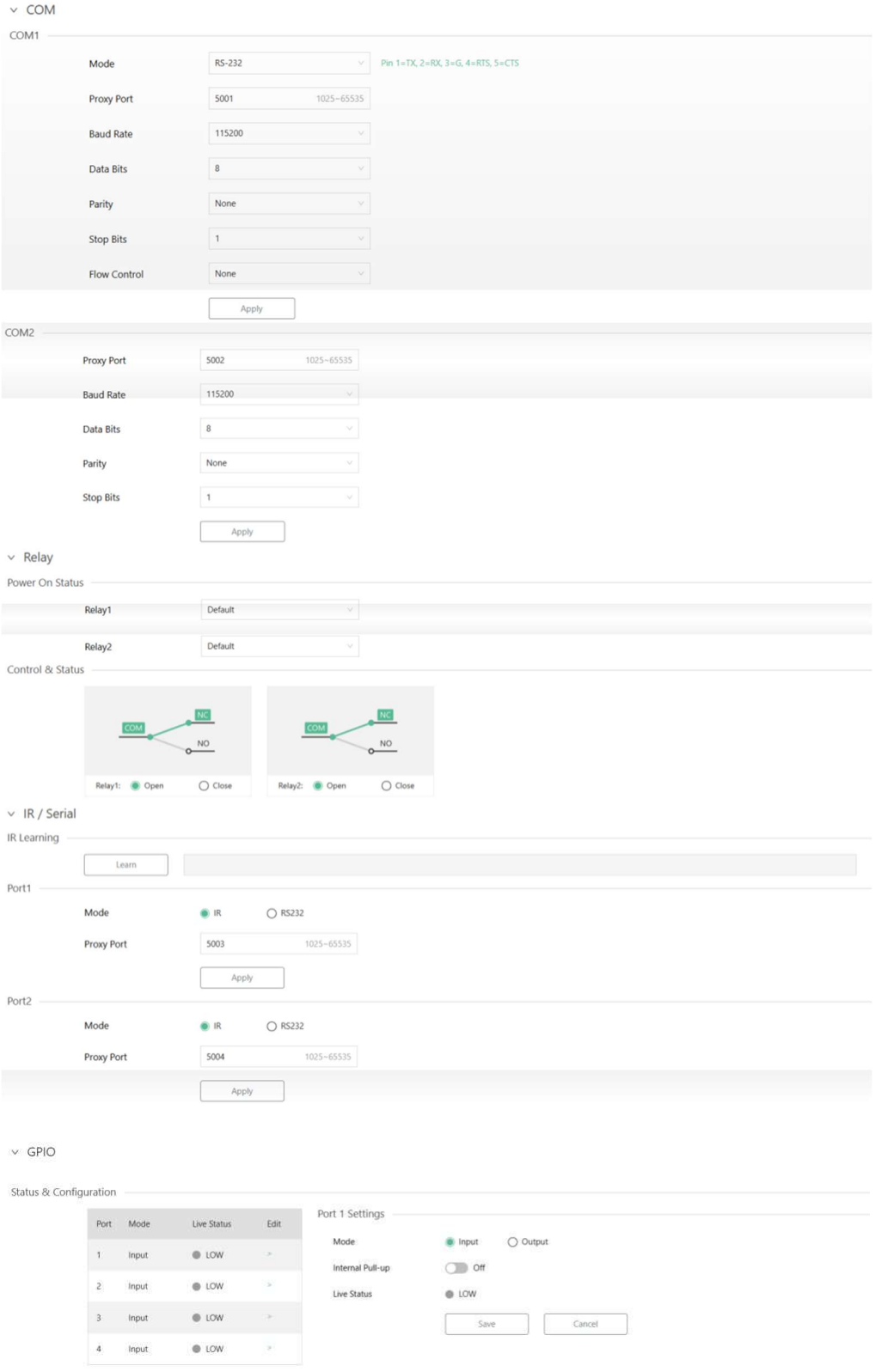


Figure 10: I/O Settings

This page provides settings for the hardware I/O interfaces of the device, including COM 1–2, IR/Serial, GPIO, and RELAY 1–2. The available settings vary by interface.

5.4.1 COM

This section configures the working parameters of the COM 1–2 ports to adapt to different serial communication scenarios.

COM1
COM1 supports multiple serial communication standards and hardware flow control.

- **Mode**: Select the serial communication standard. Signal assignments for each mode are as follows:
  - **RS-232**:
    TX: Transmit data, RX: Receive data, G: Signal ground, RTS: Request to send, CTS: Clear to send
  - **RS-422**:
    TX: Transmit negative (TX−), RX: Receive positive (RX+), G: Signal ground, RTS: Transmit positive (TX+), CTS: Receive negative (RX−)
  - **RS-485**:
    TX: Transmit negative (TX−), G: Signal ground, RTS: Transmit positive (TX+) Default: **RS-232**
- **Proxy Port**: Set the TCP port used for serial communication over TCP/IP. Range: 1025–65535
  Default: 5001
- **Baud Rate**: Select the baud rate for serial communication.
  Default: 115200
- **Data Bits**: Select the number of data bits per data frame.
  Default: 8
- **Parity:** Select the parity check mode. Available options: None, Odd, Even Default: None
- **Stop Bits**: Select the number of stop bits per data frame.
  Default: 1
- **Flow Control**: Select the hardware flow control mode.
  Available options: None, RTS/CTS Default: None
- **Apply**: Save and apply the current COM1 settings.

COM2
COM2 is a 3-pin RS-232 serial port.

Proxy Port: Set the TCP port for serial-to-network communication.
Value range: 1025–65535
Default: 5002

- **Baud Rate**: Select the baud rate for COM2 communication.
  Default: 115200
- **Data Bits**: Select the number of data bits per data frame for COM2.
  Default: 8
- **Parity**: Select the parity check mode for COM2.
  Available options: None, Odd, Even Default: None
- **Stop Bits**: Select the number of stop bits per data frame for COM2.
  Default: 1
- **Apply**: Save and apply the current COM2 settings.

5.4.2 Relay

This section provides settings for the relay power-on behavior and manual control. The device is equipped with two SPDT relay channels, corresponding to the RELAY1 and RELAY2 terminals on the device.

Power On Status

Set the contact state of each relay when the device is powered on.

- **Relay1**: Set the power-on state of Relay 1.
  - **Default:** The relay maintains the factory default state after power-on.
  - **Last Saved**: The relay retains the last saved working state after power-on.
- **Relay 2**: Set the power-on state of Relay 2. Same function as Relay 1.

Control & Status

Display the real-time contact state of each relay and support manual switching of the on-off state.



Figure 11: Manual Switching on the Relay

- **Open**: The common terminal (COM) is connected to the normally closed terminal (NC), and the normally open terminal (NO) is disconnected.
- **Close**: The common terminal (COM) is connected to the normally open terminal (NO), and the normally closed terminal (NC) is disconnected.
  Default state: Open
  Note: The green line in Figure 11: Manual Switching on the Relay **Figure 11** indicates the current conduction path of the relay contact.

5.4.3 IR/Serial

This section is used to configure the working mode of the 2-channel IR/Serial ports, and supports IR code learning function. Each port can be independently switched between IR mode and RS- 232 mode, corresponding to the IR/SERIAL terminal on the device.

IR Learning
Used to capture and store IR remote control codes for subsequent IR emission control.

- **Learn:** Click to enter the IR code learning mode.

Note: After clicking **Learn**, aim the IR remote control at the **IR IN** window on the device front panel, and press the desired button on the remote control to capture the IR code.

Port 1 / Port 2
Each port can be configured independently.

- **Mode**: Select the working mode of the port (IR/RS232).
  When RS232 mode is selected, additional communication parameters are available, including baud rate, data bits, parity and stop bits.

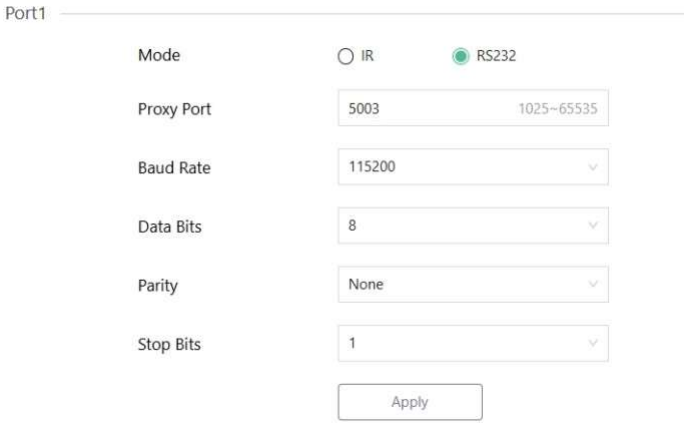


Figure 12: Selecting RS-232 Mode

  Default: **IR**
- **Proxy Port**: Set the TCP proxy port used for network communication with the port when IR mode is selected.
  Value range: 1025–65535
  Default for Port 1: 5003; Default for Port 2: 5004
- **Apply:** Save and apply the settings of the corresponding port.

5.4.4 GPIO

This section is used to configure the operating mode and parameters of the 4-channel general- purpose input/output (GPIO) ports, and display the real-time level status of each port, corresponding to the GPIO terminal on the device panel.

Status & Configuration

The list displays the overview information of all GPIO ports. Click the arrow in the Edit column to enter the configuration panel of the corresponding port.

- **Port**: GPIO channels 1–4
- **Mode**: The current operating mode of the GPIO port.
  Default for all ports: Input
- **Live Status**: Display the current real-time level state of the port.
  - **LOW**: Low level state
  - **HIGH**: High level state Default: LOW
- **Edit**: Click to enter the parameter configuration interface of the corresponding port.

Port Settings

Configure the working parameters of the selected GPIO port. The displayed options vary according to the selected working mode.

When Input mode is selected:

- **Mode:** Select the operating mode of the GPIO port.
  Available options: Input, Output Default: Input
- **Internal Pull-up**: Enable or disable the internal pull-up resistor of the port.
  Default: Off
- **Live Status**: Displays the real-time level of the input port, which is read-only and cannot be modified manually.
- **Save**: Save and apply the current settings.
- **Cancel**: Discard the current modification and return to the list page. When Output mode is selected:

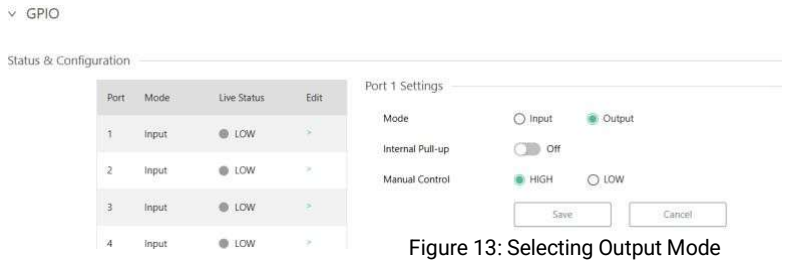


Figure 13: Selecting Output Mode

- **Mode**: Select the operating mode of the GPIO port.
  Available options: Input, Output
- **Internal Pull-up**: Enable or disable the internal pull-up resistor of the port.
  Default: Off
- **Manual Control**: Set the output level state manually.
  Available options: HIGH, LOW Default: HIGH
- **Save**: Save and apply the current settings.
- **Cancel**: Discard the current modification and return to the list page.

5.5 System Settings

5.5.1 General

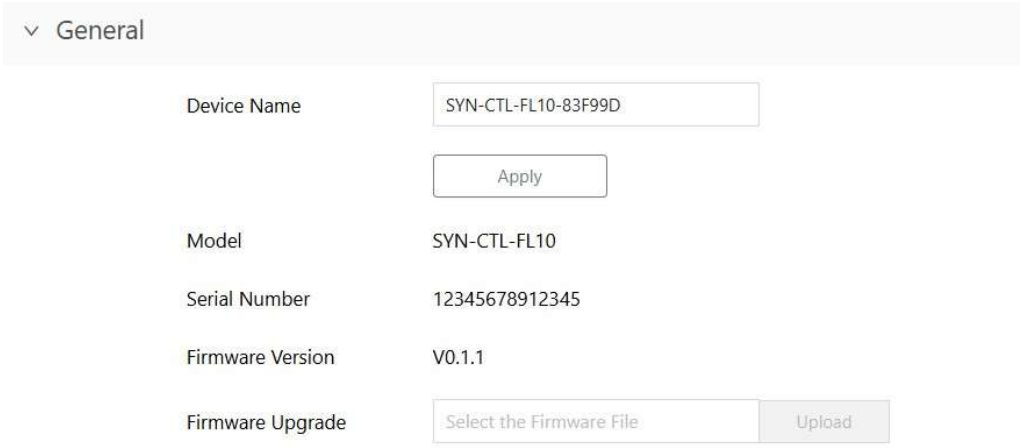


Figure 14: General

This section displays the device name, model, serial number, firmware version, and provides options to configure device name and perform firmware updates.

- **Device Name**: Enter a new device name.
  Name requirement: 1–31 characters long, only letters, numbers, hyphens (“-”), underscores (“_”) and spaces are supported. Leading or trailing hyphens (“-”), underscores (“_”) and spaces are not allowed.
  Default: SYN-CTL-FL10-xxxxxx, where “xxxxxx” is generated from the last six hexadecimal digits of the device MAC address.
- **Apply**: Save and apply the current settings.
- **Firmware Upgrade**:
  1. Click **Select the Firmware File** to browse for a firmware file on the PC.
     Note: A valid firmware file must have the .binextension.
  2. Click **Upload** to upload the firmware file and start the upgrade process.

Note:

- DO NOT disconnect the device from power source during the firmware update process.
- The device automatically reboots after the firmware update is complete.

5.5.2 Commands

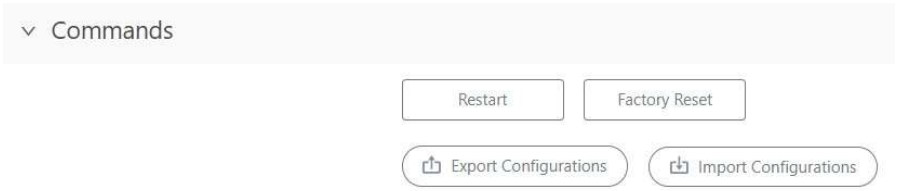


Figure 15: Commands

This section provides system-level operations and system configuration file import/export functions.

- **Restart**: Reboot the device.
  Note: After the device reboots, wait several seconds before refreshing the browser and logging back in to the Web UI.
- **Factory Reset**: Restore the device to factory default settings. This function can also be performed by pressing and holding the Reset button on the front panel for 10 seconds.
- **Export Configurations**: Export the current system configuration.
- **Import Configurations**: Import a system configuration file to the device.

5.5.3 Date / Time

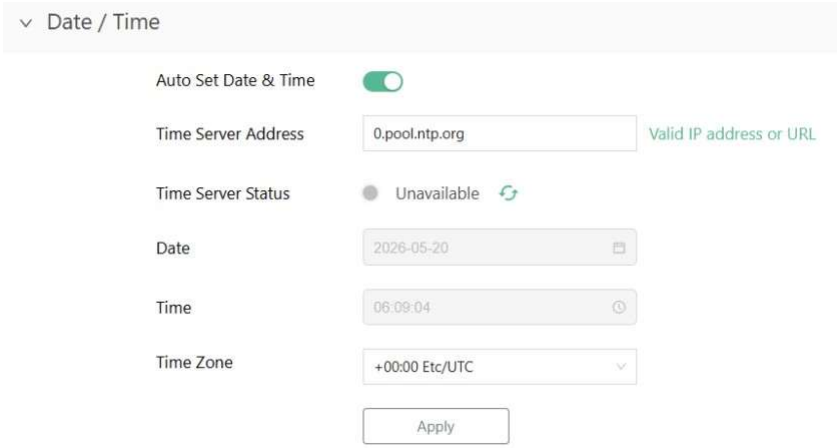


Figure 16: Date / Time

This section provides configuration options for date, time, and time server settings.

- **Auto Set Date & Time**: Enable or disable the automatic time synchronization with the time server.
  Default: Enabled
- **Time Server Address**: Enter a valid timer server IP address or URL.
- **Time Server Status**: Displays the connection status of the time server.
  - **Refresh**: Click the Refresh icon to update the current connection status.
- **Date**: When Auto Set Date & Time is disabled, enter the date manually.
- **Time**: When Auto Set Date & Time is disabled, enter the time manually.
- **Time Zone**: Select the time zone.
- **Apply**: Save and apply the current settings.

5.5.4 HTTPS

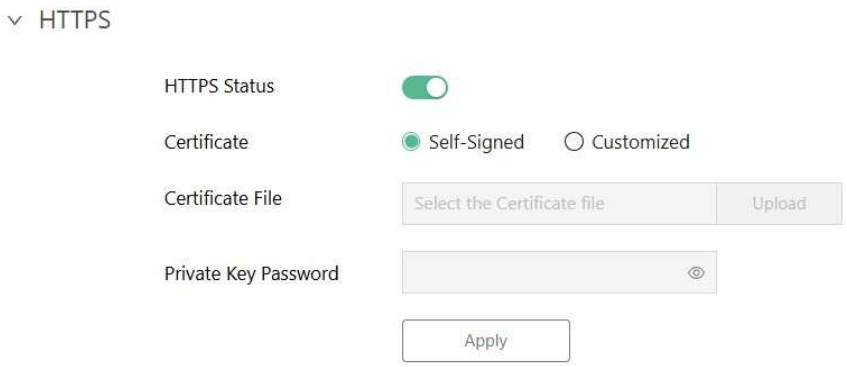


Figure 17: HTTPS

This section provides configuration options for HTTPS settings.

- **HTTPS Status**: Enable or disable the HTTPS access.
  Default: Enabled
- **Certificate**: Select the certificate type between Self-Signed and Customized.
  Default: Self-Signed
- **Certificate File**: When Customized is selected, select a certificate file from the local computer and click Upload.
- **Private Key Password**: When Customized is selected, enter the private key password.
- **Apply**: Save and apply the current settings.

5.5.5 Cloud

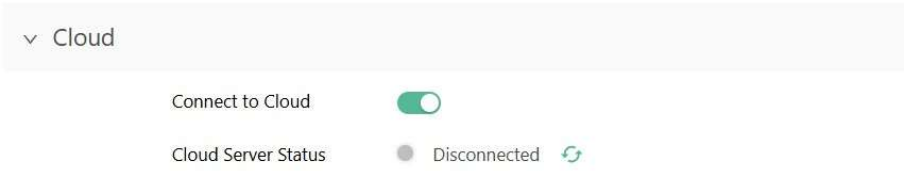


Figure 18: Cloud

This section provides configuration options to manage the cloud connection.

- **Connect to Cloud**: Enable or disable the device connection to the cloud.
  Default: Enabled
- **Cloud Server Status**: Displays the connection status between the device and the cloud server.
  - **Refresh**: Click the Refresh icon to update the current connection status.

5.6 Network Profiles

5.6.1 Network

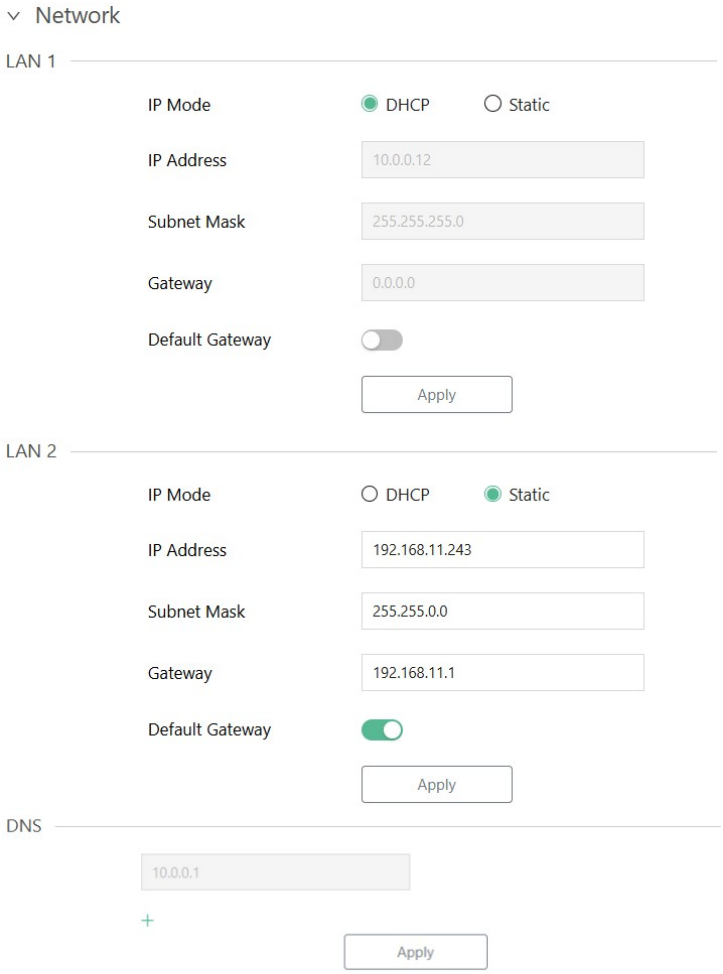


Figure 19: Network

This section provides IP and DNS configuration options for LAN 1 and LAN 2 ports.

- **IP Mode:** Select DHCP or Static.
  Default: DHCP
- **IP Address:** When Static is selected, enter the IP address.
- **Subnet Mask:** When Static is selected, enter the subnet mask.
- **Gateway:** When Static is selected, enter the gateway.
- **Default Gateway**: Enable or disable the default gateway for the current port. Only one LAN port can be configured as the default gateway at a time.
- **Apply**: Save and apply the current settings.
- **DNS**: Click the Add icon to add a DNS server address.

5.6.2 802.1X

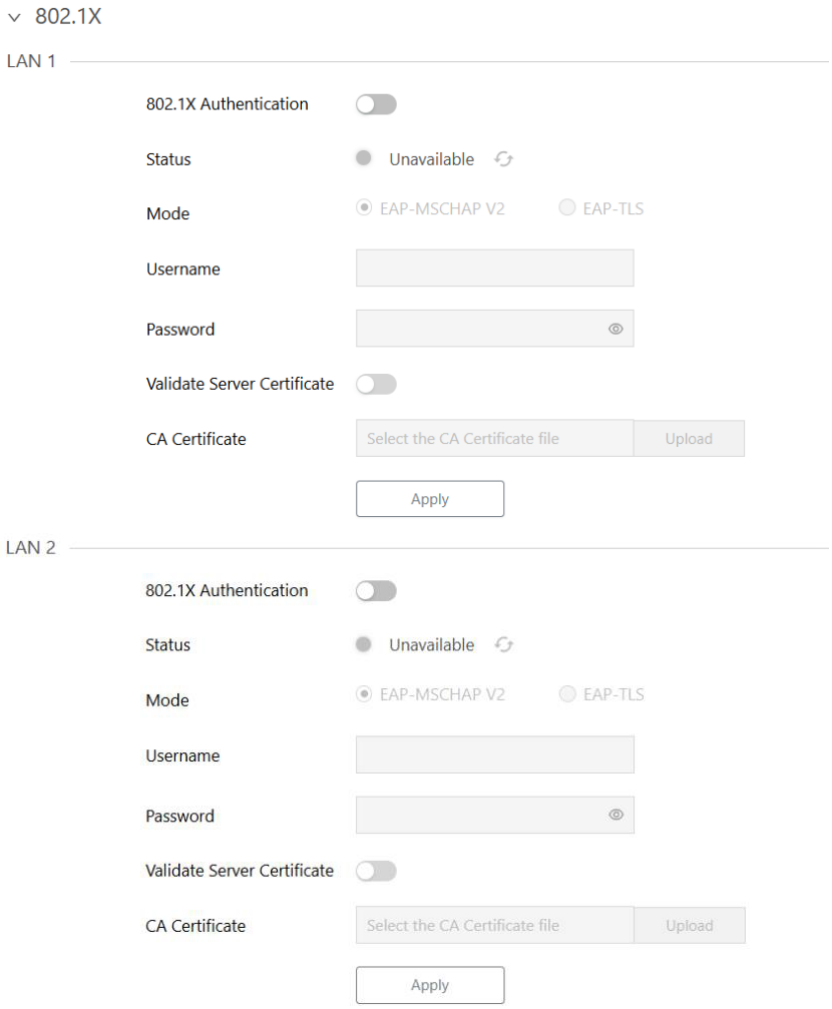


Figure 20: 802.1X

This section provides 802.1X authentication settings for LAN 1 and LAN 2.

- **802.1X Authentication**: Enable or disable 802.1x authentication service for the device.
  Default setting: **Disabled**
- **Status:** Display the current authentication status.
- **Mode:** When 802.1x feature is enabled, select one of the following authentication methods:
  - **EAP-MSCHAP V2**: Select to authenticate the device using a username and password.
    - The username can include letters, numbers, hyphens (“-”), underscores (“_”), “@” and “.”, and must be 1 to 24 characters long. Hyphens and underscores must not appear at the beginning or end.
    - The password must consist of 1–24 printable ASCII characters.

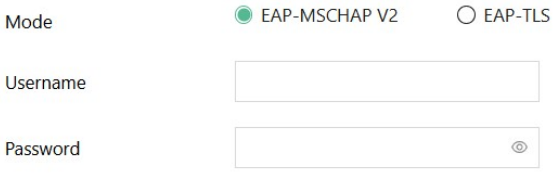


Figure 21: PEAP-MSCHAP V2 Configuration

- **EAP-TLS**: Select to authenticate the device using a client certificate and private key.
  The private key password is optional but recommended.
  This method provides higher security through certificate-based authentication and is recommended for environments with strict security requirements.

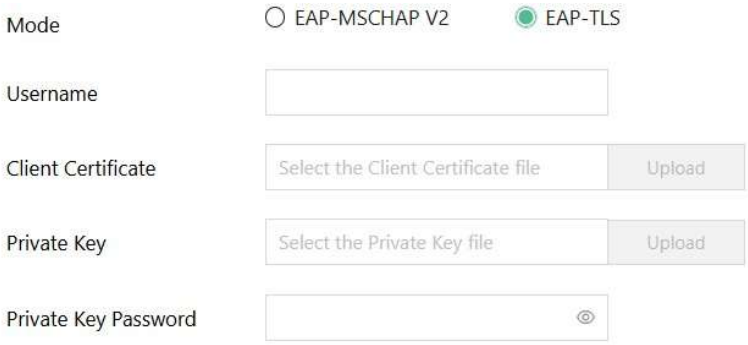


Figure 22: EAP-TLS Configuration

- **Valid Server Certificate**: Enable or disable server certificate verification.

When enabled, click **Browse** to upload a **CA certificate**. The device verifies the identity of the RADIUS server using the CA certificate during authentication. Network access is granted only after successful verification.
This option is recommended for high-security environments. Default: Disabled

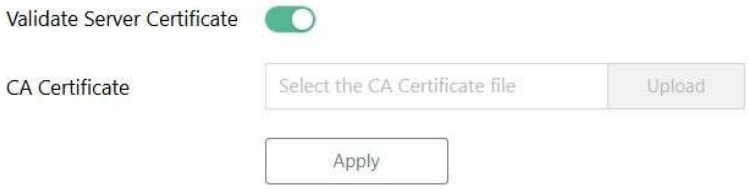


Figure 23: Server Certificate Configuration

5.6.3 Discovery

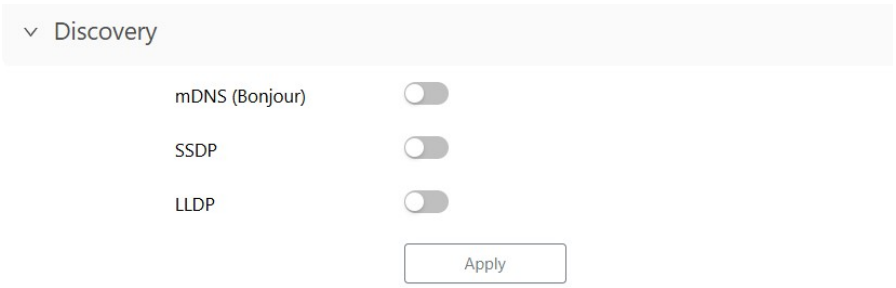
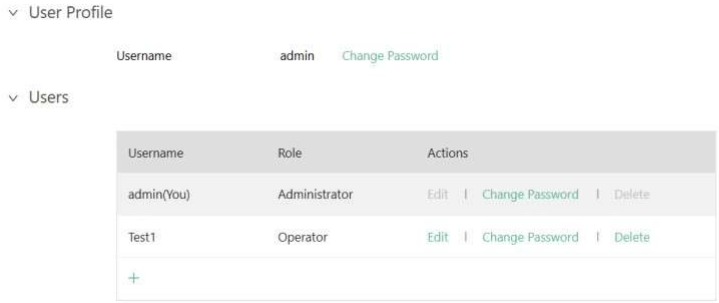


Figure 24: Discovery

This section provides configuration options for device discovery protocols.

- **mDNS (Bonjour)**: Enable or disable the mDNS discovery service.
  Default: Enabled
- **SSDP**: Enable or disable the SSDP discovery service.
  Default: Enabled
- **LLDP**: Enable or disable the LLDP discovery protocol.
  Default: Enabled

5.7 Access Control



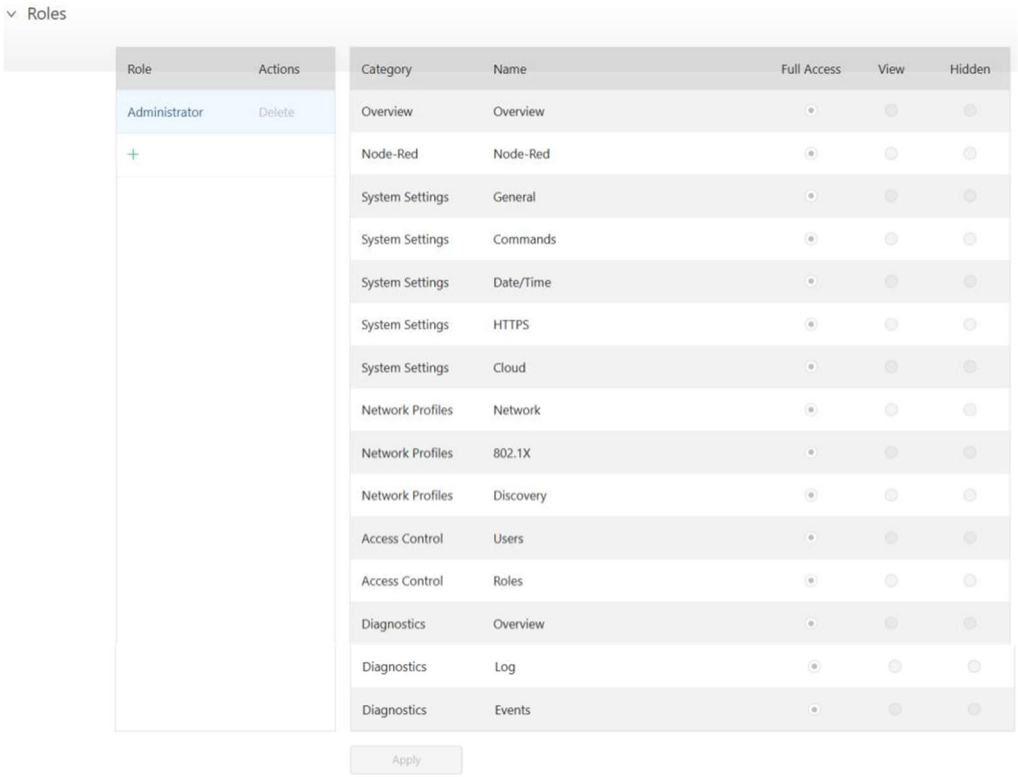


Figure 25: Access Control

This page manages user accounts, user roles, and access permissions for each section of the Web UI.

User Profile
Displays the currently logged-in administrator account.

Users
Displays user account names and assigned roles, and provides options to create/edit/delete user accounts, and change account password.

Roles
Displays user roles and manages access permissions for each Web UI section for each role.

Creating a New Web UI Account

1. Create a new role.
   Click the Add (**+**) icon in the **Roles** section and enter a role name to create a new role. Example: “Operator”

   Note: The role name supports letters, numbers, dots (“.”), underscores (“_”), and hyphens (“-”), and must begin and end with a letter or a number.

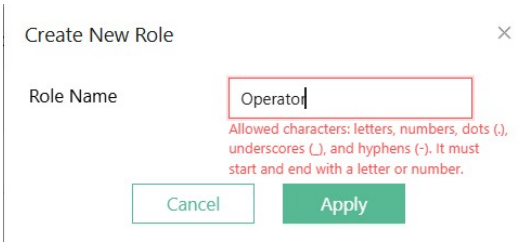


Figure 26: Creating a New Role

2. Configure role permissions.
   Define the access permission for each Web UI section for the new role: Full Access, View, and Hidden.

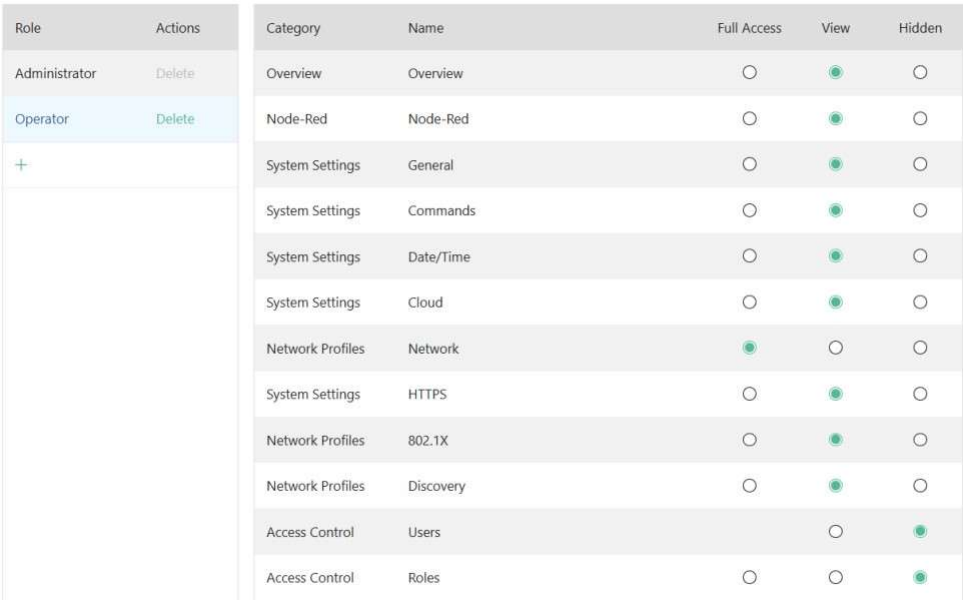


Figure 27: Configuring Role Permissions

3. Create a new user account.
   In the Users section, click the Add (+) icon, enter a username and password, select the role for the new account, and then click **Apply**.

   Note: The password must contain at least one lowercase letter, one uppercase letter, one number, and one special character, and must be 8 to 24 characters long.

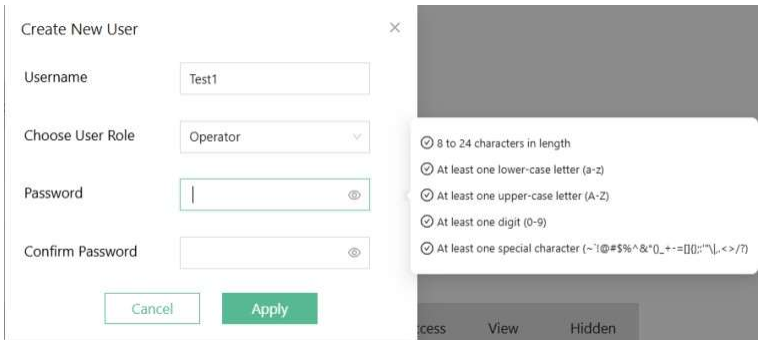


Figure 28: Creating a New User Account

5.8 Diagnostics

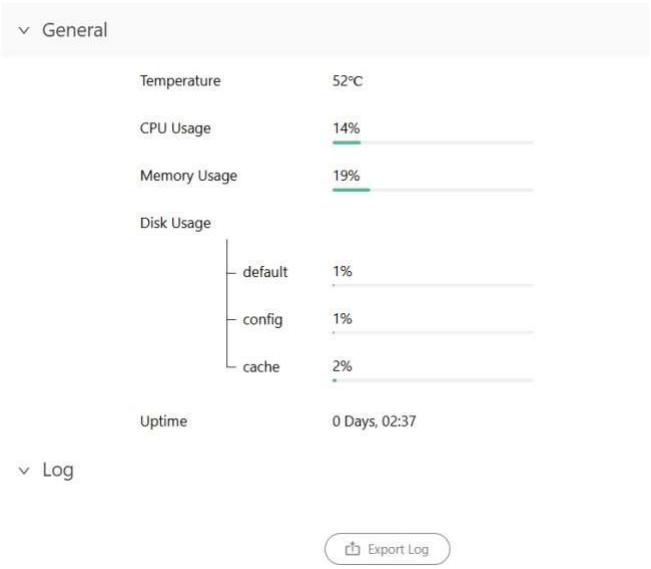


Figure 29: Diagnostics

This page provides system monitoring and diagnostic information, including device temperature, CPU/memory/disk usage, system uptime, and system log export.