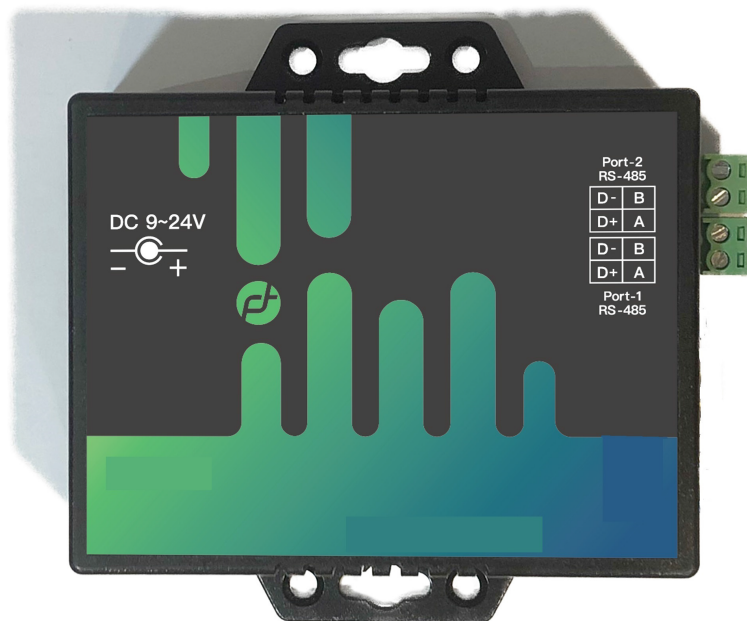


# User Manual

## GW-3201M1

Serial to IP Intelligent Gateway  
with Modbus conversion



## **Disclaimers and Safety**

The accuracy of the information in the manual has been confirmed by the manufacturer. All specification and information are subject to change without prior notification by the manufacturer. The manufacturer makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranties as to merchantability or fitness for any particular purpose. Manufacturer reserves the right to improve this manual or device at any time without notice.

Device has been tested and complied with safety regulation and certificated for use. The purpose of limits is to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. Before you attempt to unpack or use this product, please read the manual and instruction carefully. It will help to protect you from injury and minimize the possibility of risk of damage to the device.

- Follow the safety precautions and warning to reduce any risk.
- Do not expose the unit to rain or put it near water or any liquid during installation.
- Do not insert any object into this device through any slot or openings.
- Do not put the device on a stable surface to get rid of the risk from vibration or collision.
- Only use the power supply unit dedicatedly designed for this device.
- Do not block the opening and vents to avoid the heating accumulated.

### Package Content

1x GW-3201M1

### Introduction

CTR-3201M1 is Serial to IP intelligent Gateway with Modbus conversion. The major purpose of this device is to convert Modbus UTP to Modbus TCP (either way). CTR-3201M1 provides one IP port and two Serial ports for conversion. The two serial ports can be used in the same time. The USB port is left to equip with communication kits, such as BLE dongle.

With the Friendtrol Installation Wizard, all of the settings can be completed step by step within few minutes. In addition, since it is based on Friendtrol Edge Computing Platform, the settings for IP port and serial port can be very flexible. There is also an APP available to monitor the status of the conversion.

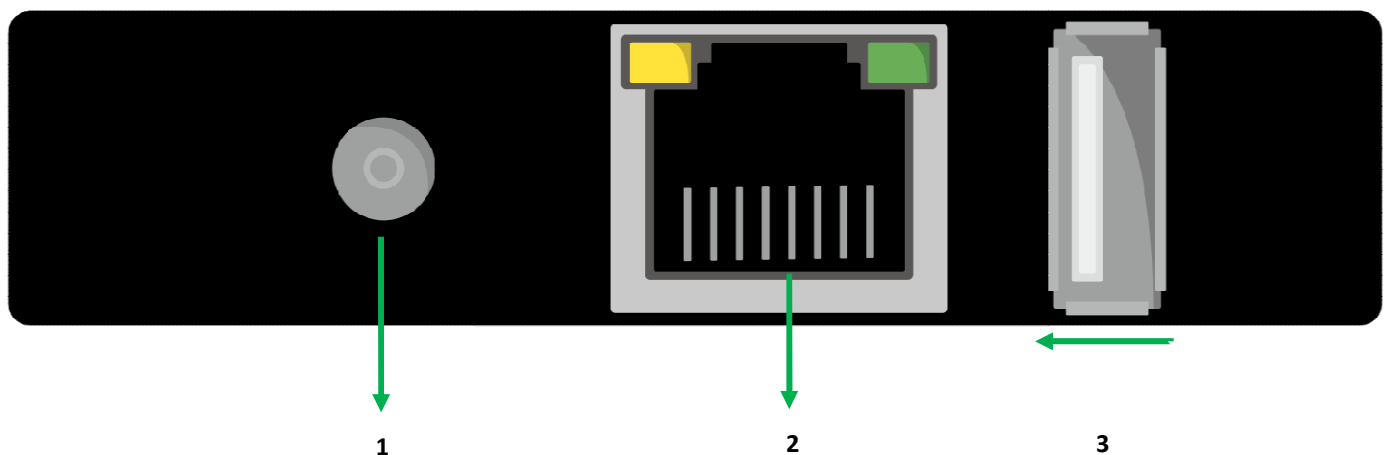
### Features

---

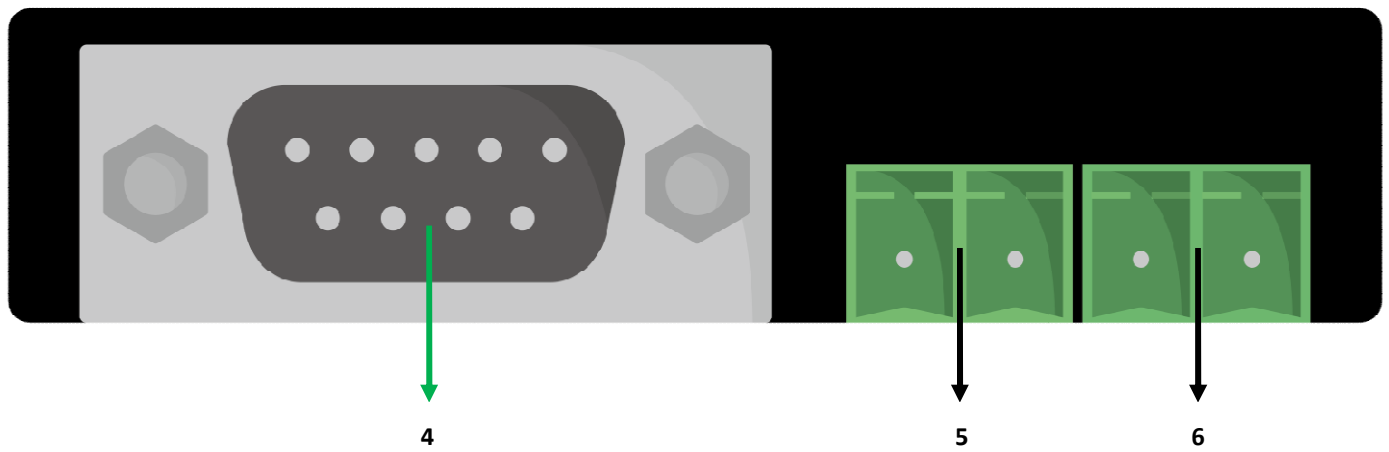
- Edge Computing based Intelligent Gateway
- 512MB RAM & 8GB ROM embedded
- Support Friendtrol Installation Wizard via web interface
- Support VPN on IP port
- Support White List on IP port
- Support Modbus RTU/ASCII on serial port
- Support log history
- Support APP status monitoring

### Panel Description

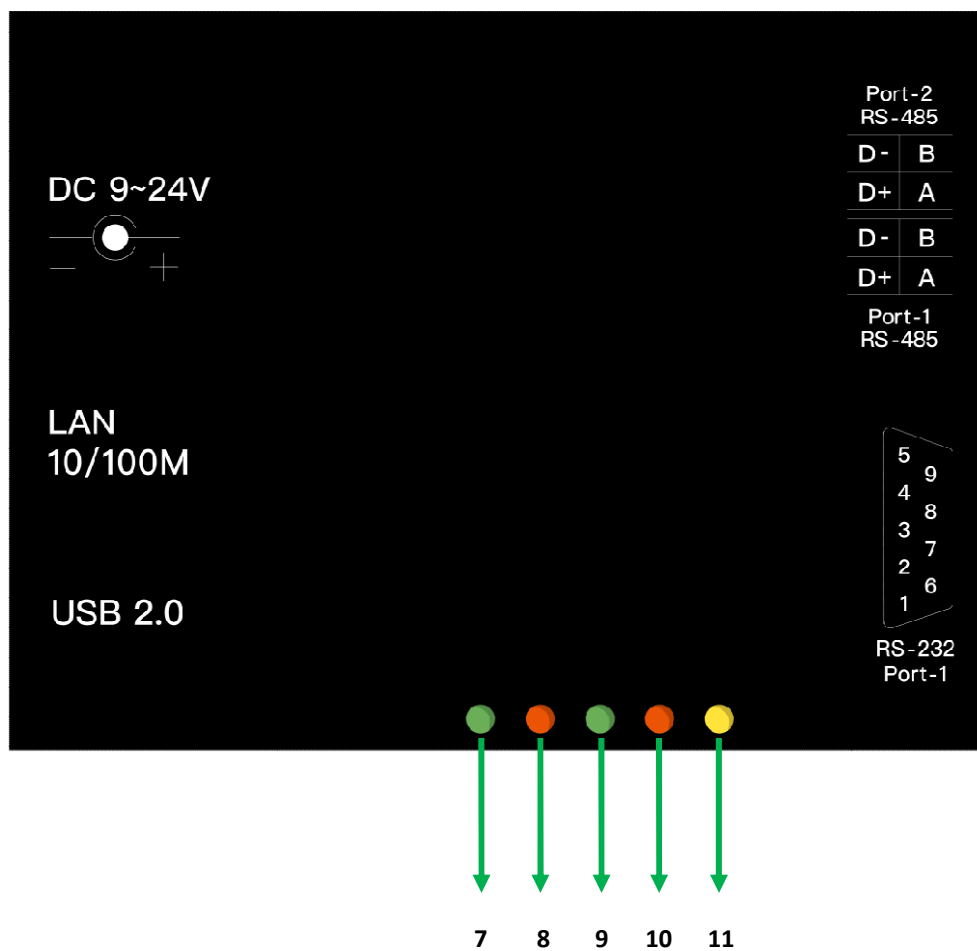
Front Panel




Rear Panel



Top Panel



|    |                        |  |
|----|------------------------|--|
| 1  | Power Input            | Connect to power supply  |
| 2  | Ethernet               | Connect to LAN   |
| 3  | USB                    | Connect to communication kits (optional)   |
| 4  | Serial Port 1 (RS-232) | Connect to device with RS-232<br> |
| 5  | Serial Port 1 (RS-485) | Connect to device with RS-485  |
| 6  | Serial Port 2          | Connect to device with RS-485  |
| 7  | Green LED              | TX of Serial Port 2  |
| 8  | Red LED                | RX of Serial Port 2  |
| 9  | Green LED              | TX of Serial Port 1  |
| 10 | Red LED                | RX of Serial Port 1  |
| 11 | Yellow LED             | System indication  |

## Specification

### **I/O Interface**

|                        |  |
|------------------------|--|
| Ethernet               | <b>1 x RJ-45 Connector</b><br>10/100 Mbps<br>ICMP, TCP/IP, DHCP, Static IP |
| Serial Port 1 (RS-232) | <b>1 x DB-9 male connector</b><br>For RS-232 only                          |
| Serial Port 1 (RS-485) | <b>1 x 2pins-phoenix terminal block</b><br>For RS-485 only                 |
| Serial Port 2 (RS-485) | <b>1 x 2pins-phoenix terminal block</b><br>For RS-485 only                 |
| USB (Reserved)         | <b>1 x USB3.0 Type A female connector</b><br>Reserved (optional function)  |

### Others

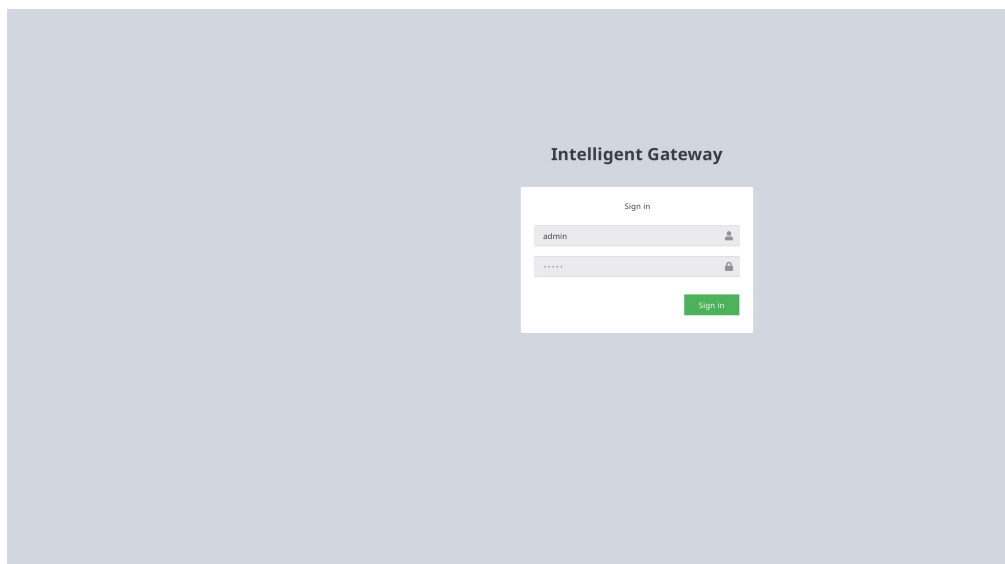
|                       |                                |
|-----------------------|--------------------------------|
| Power Supply          | 9-24V DC                       |
| Power Consumption     | Up to 10W                      |
| Operating Temperature | -20°C to 75°C (4°F to 167°F)   |
| Storage Temperature   | -40°C to 85°C (-40°F to 185°F) |
| Enclosure             | Plastic                        |
| Fixedness             | Mounting ear with screws       |
| Humidity              | 20 - 80% RH [Not Condensation] |
| Device Dimension      | 68x88x27 mm (WxDxH)            |
| Package Dimension     | 160x130x38 mm (WxDxH)          |

### Default System Settings

Please connect your PC to GW-3201M via LAN port. The default IP address of LAN is **192.168.100.1**. The account and password for Friendtrol Installation Wizard is listed as below.

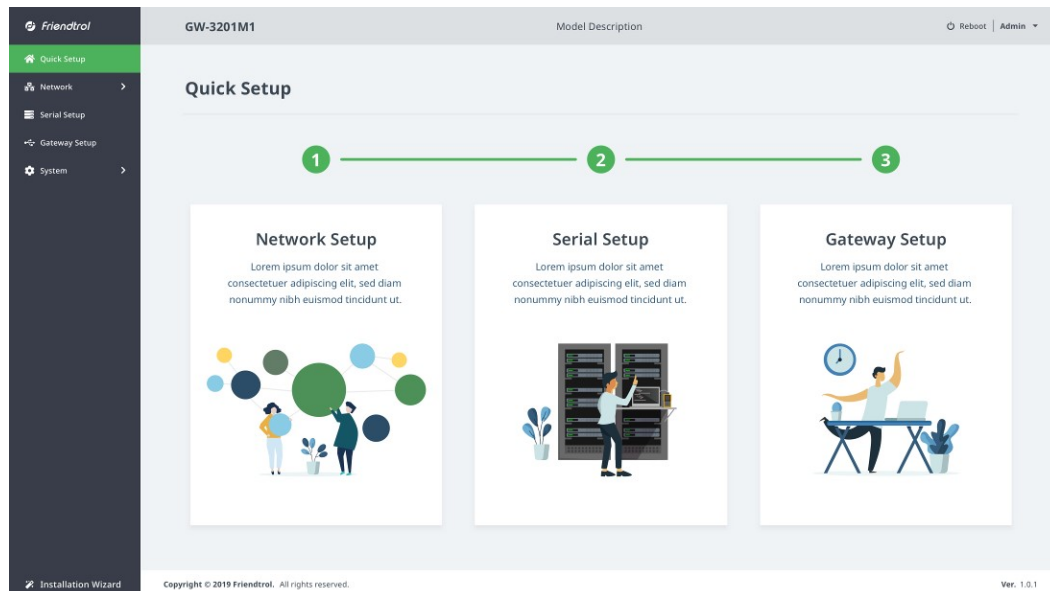
#### Installation Wizard:

admin / admin



## FriendrollInstallation Wizard

FriendrollInstallation Wizard is a tool to help user to set up this gateway quickly. User just needs to follow the three steps below, and will complete the configuration in a short time.

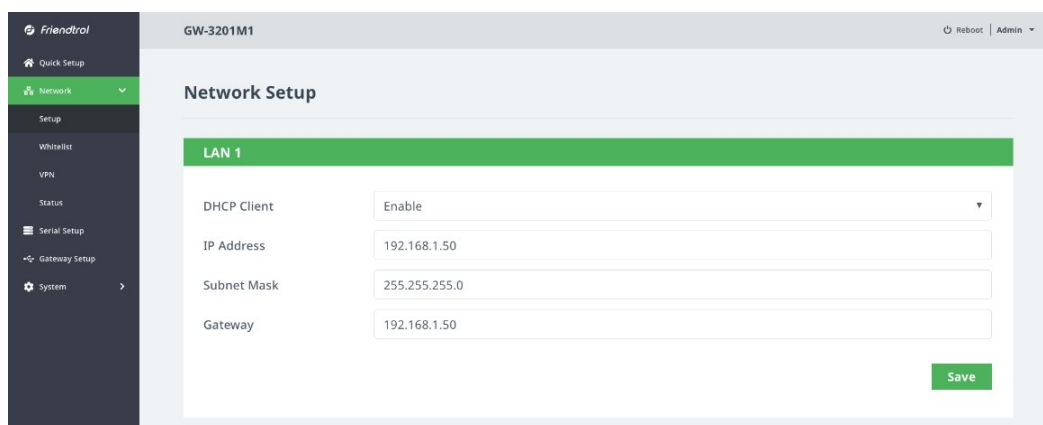


### 1. Network

The first step is to set up Ethernet port for general IP settings, white list and VPN.

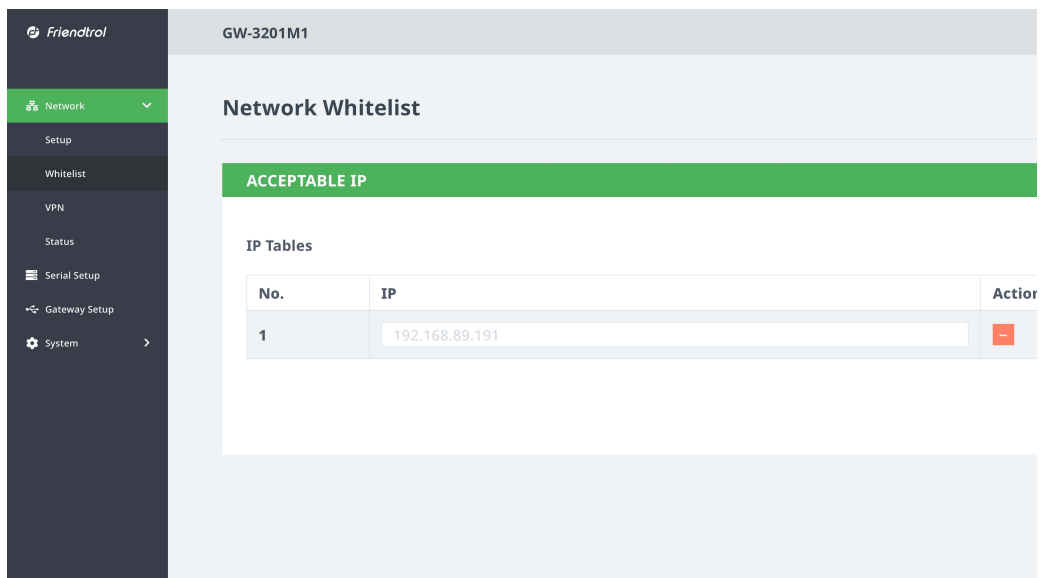
#### 1-1. Network Setup

This part is to complete the general IP settings.



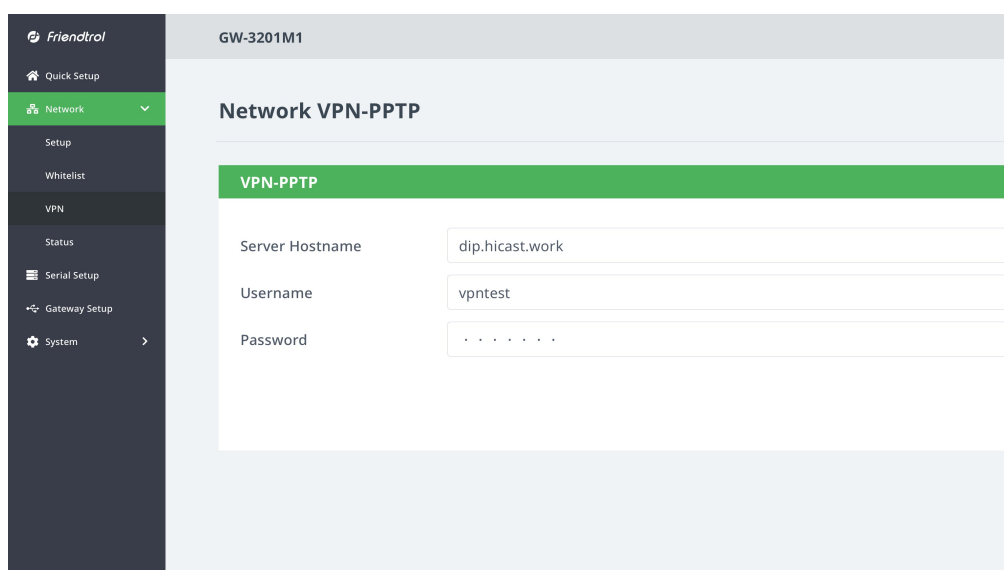
### 1-2. White List

Sometimes the user might allow the outside system connecting to GW-3201M1. In order to make sure there is no attack from uncertain IP address, white list is built for this case. Therefore only the IP address in the white list can access GW-3201M1.



### 1-3. VPN

When the user wants GW-3201M1 can access to internet, VPN would be used for security issue. In Friendtrol Edge Computing system, we provide this function to meet this goal.





## 1-4. Network Status

User can see the Network status in this section.

The screenshot shows the 'Network Status' page of the Friendtrol GW-3201M1 web interface. The left sidebar contains navigation options: Network (selected), Setup, Whitelist, VPN, Status, Serial Setup, Gateway Setup, and System. The main content area displays two tables: 'Network LAN1' and 'Network VPN'. The 'Network LAN1' table lists IP Address (192.168.89.199), Subnet Mask (255.255.255.0), MAC Address (b8:27:eb:49:bb:a6), and Gateway (192.168.89.1). The 'Network VPN' table lists IP Address (10.44.6.91), Subnet Mask (255.255.255.255), Peer (10.64.64.65), and Gateway. The bottom of the page includes a copyright notice for 2019 Friendtrol and a version number of 1.0.1.

| Network LAN1 |                   |
|--------------|-------------------|
| IP Address   | 192.168.89.199    |
| Subnet Mask  | 255.255.255.0     |
| MAC Address  | b8:27:eb:49:bb:a6 |
| Gateway      | 192.168.89.1      |

| Network VPN |                 |
|-------------|-----------------|
| IP Address  | 10.44.6.91      |
| Subnet Mask | 255.255.255.255 |
| Peer        | 10.64.64.65     |
| Gateway     |                 |

## 2. Serial Setup

The second step is to set up the general settings for the two Serial ports.

The screenshot shows the 'Serial Setup' page of the Friendtrol GW-3201M1 web interface. The left sidebar contains navigation options: Quick Setup, Network, Serial Setup (selected), Gateway Setup, and System. The main content area displays the 'Port1' configuration settings. The settings include Baudrate (9600), Parity (None), Bytesize (8), Stopbits (1), XON / XOFF (OFF), RTS / CTS (OFF), and Timeout (0.5 seconds). A 'Save' button is located at the bottom right of the configuration area. The bottom of the page includes a copyright notice for 2019 Friendtrol and a version number of 1.0.1.

| Port1      |   |
|------------|---|
| Baudrate   | 9600  |
| Parity     | None  |
| Bytesize   | 8   |
| Stopbits   | 1   |
| XON / XOFF | <input type="radio"/> ON <input checked="" type="radio"/> OFF |
| RTS / CTS  | <input type="radio"/> ON <input checked="" type="radio"/> OFF |
| Timeout    | 0.5 second(s)   |

### 3. Gateway Setup

This third step is to complete the conversion between Modbus RTU and Modbus TCP. (Bi-directional)

Friendtrol GW-3201M1

### Gateway Setup

#### Port1

Conversion Type

Data Framer ☐ RTU ☒ ASCII

#### Modbus TCP Properties

Listener Port

TCP Inative Timeout

### 4. System

This section is to see the log and the status of the whole System, and even set up the system.

Friendtrol GW-3201M1

### System Log

| Type | Message  | Time   |
|------|--|--------|
| io   | function_codefunction_codefunction_codefunction_codefunction_codefunction..... | 2019/0 |