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GW310.31
GSM Supported Modbus RTU-TCP/IP Converter

Modbus

Features

- Modbus RTU Master
- Modbus TCP/IP Server
- GSM (LTE, 3G)
- 2x RS-485 ports
- 24V AC/DC power supply
- Configuration DIP Switch
- IP20 Plastic box
- Rail mount feature

Applications

GW series communication gateways are used in building automation and HVAC applications. With the module, devices with Modbus RTU communication can be accessed over the network with the Modbus TCP/IP protocol.

Usage Notes

Please read the document carefully. GW310 has been designed and manufactured with the latest technological developments and safety rules. Safety warnings must be observed to prevent injury and property damage.

Safety Advice-Caution

The device's installation, maintenance, and repair must be done by authorized personnel. The power supply of the device is 24 V/AC or 24 V/DC. 24 V/DC supply is recommended. When using 24 V/AC, it is recommended to use an isolated transformer.

About product

Product code	Definition	Power	Communication
GW300	Wi-Fi Ethernet 2x RS-485 Port	24V AC/DC	Modbus RTU Master Modbus TCP/IP Server
GW310	GSM (LTE, 3G) Wi-Fi (Web Server) Ethernet (Web Server) 2x RS-485 Ports	24V AC/DC	Modbus RTU Master Modbus TCP/IP Server

Technical Specifications

Power Supply	24V AC/DC +10%-15%, 50/60Hz
Power Consumption	Max ~12.0 VA
Operating temperature	0°C ...+50°C
Storage Temperature	-20°C ...+70°C
Relative Humidity	5...95% rh, non-condensing
Wiring Connections	Socket Terminal Block, max 1 x 2.5 mm ^{2}

Communication	2 pcs RS-485 Ports
Plastic box	IP20 according to EN 60529
Box Type	DIN Rail Plastic Enclosure
Plastic Enclosure Material	ABS (UL 94 V-0)
Dimensions	**Dimensions Excluding Antenna** 70 x 57 x 115 mm (W x H x D) **Dimensions Including Antenna** 70 x 203 x 130 mm (W x H x D)

Mounting Location

Due to its structure, the device is suitable for wall mounting or rail mounting within the panel. It is recommended to have space for cable and antenna connections to the terminals of the device while mounting on the rail.

CAUTION: Power off the supply at 1A-C type circuit breaker or glass fuse before installation to avoid fire, shock or death.
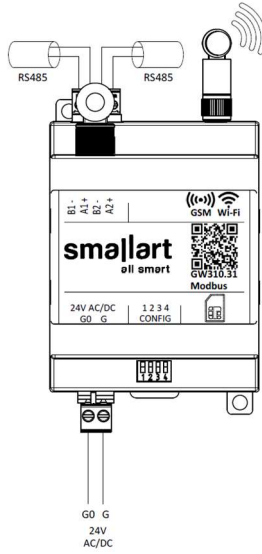
Mounting Instructions

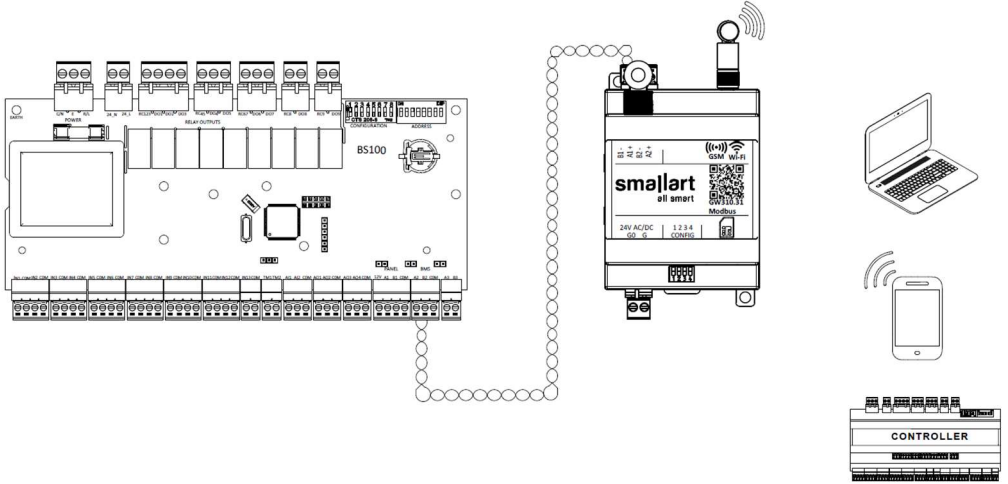Please follow the instructions below during mounting.

1. **Step:** Make sure the device is not powered.
2. **Step:** Make the equipment and communication connections you will use according to the connection diagrams given below.
3. **Step:** Make sure the connections are made correctly.
4. **Step:** Power the device.

Connection Diagram

GW310 Connection Diagram
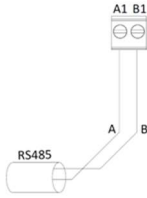
Usage Areas

Device Power Connection

Connect the 24V AC output of the transformer to the G terminal and the neutral output of the transformer to the G0 terminal or connect the (+) part of the 24V DC power supply to the G terminal and the (-) part to the G0 terminal.

Device Communication Connection

The communication cable from the serial port can be connected to the device as shown in the figure. The device has 2 RS485 ports. According to the application, a connection should be made to the relevant port. RS485 port configurations can be set on the web server.

Access Point
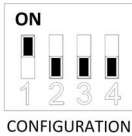
In order to turn the Access Point on, dip switch 1 must be set to on. When the access point is turned on, the device will appear as "SMALLART_GW310_xxx" in Wi-Fi scans. The access point must be turned off after the necessary configurations are complete.

Web Server
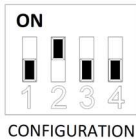
To turn off the web server, dip switch 2 must be set to the on position. To configure the device, the web server must be turned on. When it is desired to connect to the Web Server through the access point, It is possible to log in with a 192.168.4.1 Ip address. When it is desired to log in via Ethernet or Wi-fi, it is possible to connect to the Web Server from the IP address of the device. It is recommended to turn the web server off after the necessary configurations are completed.

Factory Settings
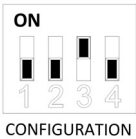
Dip switch 3 must be turned on for the device to return to its factory settings. When the blue and red LEDs stop flashing and turn on, the factory reset process will be completed. After returning the device to its factory settings, dip switch 3 should be turned off.

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Operator Settings

GSM Settings

Start

GSM Settings

GSM Operator :	Turkcell ▾
Pin No :	• ☐ Pin number ENABLE

SAVE

After connecting the device, open the web interface for operator settings. You can select the operator you are using from the "GSM Operator" section. After selecting the appropriate GSM operator on this screen, press the "SAVE" button.
Note: "Turkcell" operator settings are made here by default.

GSM Settings

Start

GSM Settings

GSM Operator :	Other ▾
APN :	
User Name :	
Password :	
Pin No :	• ☐ Pin number ENABLE

SAVE

If you have a GSM operator that is not defined in the system, select the "Other" option, fill in the necessary information and press the "SAVE" button.

Note: If your GSM line has a pin code, the "Pin number ENABLE" option must be activated.

Modbus Settings (Modbus Settings)
Port-1

Modbus Settings

[Start]

Modbus RTU-1 Setting

TCP Port :	502
Baudrate :	9600
Data Type :	8 Bit
Parity :	None Parity
Stop Bit :	1 Stop Bit
RTU Timeout :	1000
Delay Between Regs :	20

☐ Modbus RTU-2 Enable

[SAVE]

Baudrate

Baud rate settings of the relevant Modbus RTU Slave port can be adjusted on this screen. The supported baud rates are 9600, 14400, 19200, 38400, 56000, 57600, and 115200.

Data Type

7-8 Bits can be selected as Data type in device Modbus RTU Slave settings.

Parity

The device supports none, odd, and even parity options.

RTU timeout

After the query from Modbus TCP/IP is forwarded to the Modbus RTU line, if there is no response from the Modbus RTU line within the RTU Timeout period, an error message is returned. The RTU timeout can be adjusted between 1-65535 milliseconds. If this value is low, Modbus queries will often fail.

Delay Between Regs

It is the waiting time between Modbus messages.

Port-2

Modbus Settings

Start

Modbus RTU-1 Setting

TCP Port :	502
Baudrate :	9600
Data Type :	8 Bit
Parity :	None Parity
Stop Bit :	1 Stop Bit
RTU Timeout :	1000
Delay Between Regs :	20

☑ Modbus RTU-2 Enable

Modbus RTU-2 Setting

TCP Port :	503
Baudrate :	9600
Data Type :	8 Bit
Parity :	None Parity
Stop Bit :	1 Stop Bit
RTU Timeout :	1000
Delay Between Regs :	20

SAVE

If you want to use the second port of the device, the "Modbus RTU-2 Enable" option must be activated.

Baudrate

Baud rate settings of the relevant Modbus RTU Slave port can be adjusted on this screen. The supported baud rates are 9600, 14400, 19200, 38400, 56000, 57600, and 115200.

Data Type

7-8 Bits can be selected as Data type in device Modbus RTU Slave settings.

Parity

The device supports none, odd, and even parity options.

RTU timeout

After the query from Modbus TCP/IP is forwarded to the Modbus RTU line, if there is no response from the Modbus RTU line within the RTU Timeout period, an error message is returned. The RTU timeout can be adjusted between 1-65535 milliseconds. If this value is low, Modbus queries will often fail.

Delay Between Regs

It is the waiting time between Modbus messages.

Wi-Fi Settings (Wi-Fi Settings)

It is the menu the Wi-Fi configurations of the device are changed. To scan Wi-Fi, it must be enabled then the scanning should be started by the "Scan" button. After the necessary settings are done, it must be saved by the "Save" button and all the settings of the device must be changed, and then the device must be restarted with the "Start" button.

Note: It is used for Web Server adjustments.

Static IP

It is used when it is desired to enter Static IP to the device. When activated, the IP Address, Gateway, and Netmask must be edited. If it is not activated, the device will automatically receive IP from the modem it is connected to.

IP Address (IP Address): It is the address of the device on the network. Default IP address: 192.168.1.2

Gateway IP): This is the section where the router gateway address will be entered. Default gateway: 192.168.1.1

Netmask (Netmask): This is the section to enter the netmask. Default netmask: 255.255.255.0

LEDs and Their Meanings

Red LED: Error Information LED
- Lights up when there is no Ethernet or Wi-Fi connection, or it is disconnected. It turns off when the connection is established.

Green LED: Connection Info LED
- Blinks in case the Wi-Fi Access point is turned on.
- Lights up if there is a connection via Ethernet or Wi-Fi and turns off in case of a disconnection.

Blue LED: Status Information LED
- Notifies by flashing that the system is working properly.

If all LEDs are flashing in sequence, it means that it is making the factory setting.

Note: When the blue LED in the upper right corner lights up continually and quickly, it indicates that the GSM has an internet connection.

Dimensions(mm)