# Modbus TCP/RTU GSM Gateway

RS-485 · Ethernet · GSM/GPRS · SMS Control & Monitoring

EPL-GSM-100
User Manual · V1.0
25.08.2026



## SAFETY WARNINGS

Read this user manual carefully before operating the device. Follow the installation, electrical connection and commissioning sections step by step. Thereafter the owner/user must keep this manual in a known and visible place for the service life of the product.

- ⚠ Use the product inside a panel only and within the stated environmental conditions.
- ⚠ The operating voltage of the product is stated on its label. Do not supply the product from any source outside this value.
- ⚠ Do not touch the supply terminals of the product with bare hands.
- ⚠ All service and repair work may be carried out only by Energyplus technical service. No other person should intervene in the product.
- ⚠ Ensure that the system is properly earthed so that the product operates correctly.
- ⚠ Store the product in a dry environment; otherwise a fault may occur.

Use of the product contrary to the conditions stated above may cause fire, serious personal injury, or damage to the product or to the structure in which it is installed. Energyplus Teknoloji accepts no liability for such situations caused by the user.

## SYMBOLS

| SYMBOL DESCRIPTIONS | |
|---|---|
| ! | Used for important points in the following sections. |
| ⚡ | Used for warnings relating to voltage. |
| ⎓ | Indicates that the supply voltage of the product is DC. |
| CE | Indicates that the product complies with the relevant EU directives. |
| ♻ | The product must not be treated as normal household waste; it must be handed over to a collection point for the recycling of electronic equipment. |

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# 1. DESCRIPTION

The EPL-GSM-100 is an industrial gateway that performs protocol conversion between Modbus TCP clients and Modbus RTU slave devices, with a GSM modem for remote monitoring and control via SMS. SCADA systems, HMI panels and BMS software send Modbus TCP requests over Ethernet, and the unit delivers them to PLCs, meters, sensors and actuators on the RS-485 line. A key feature of the EPL-GSM-100 is its ability to operate in environments without a fixed Internet connection. The GSM modem enables remote operators to send SMS commands to query device status or trigger control actions, and the gateway can proactively send SMS alerts when alarm conditions are detected. The unit is built on an ESP32-C3 microcontroller with an Ethernet controller and runs FreeRTOS-based multitasking firmware. Wi-Fi and Bluetooth interfaces are present on the ESP32-C3 and are reserved for future firmware features.

## Key Features

- Modbus TCP ↔ Modbus RTU protocol conversion
- One independent RS-485 port (COM1) supporting up to 32 slave devices
- Modbus TCP client connections via Ethernet
- Integrated GSM/GPRS modem (quad-band 2G)
- SMS command reception — query and control Modbus slaves remotely
- SMS alarm notification — proactive alerts on fault or threshold conditions
- Network configuration by static IP or DHCP
- Built-in web interface for configuration, monitoring and diagnostics
- Slave device health monitoring (response time, success rate)
- Wi-Fi and Bluetooth reserved for future use
- Timestamped error log (last 50 records)
- Remote firmware update (OTA) via Ethernet
- Automatic recovery through hardware and software watchdogs

## 1.1 Package Contents

- 1× EPL-GSM-100 Modbus TCP/RTU GSM Gateway
- 1× Plug-in terminal set
- 1× GSM antenna (SMA connector)

* For special orders, package contents may vary depending on the project or customer request.

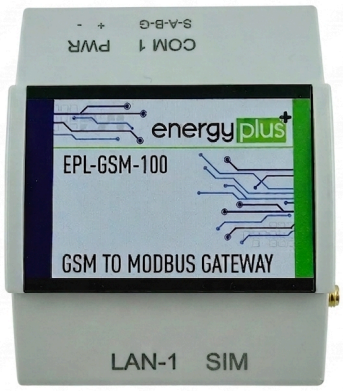



Figure 1.1 – EPL-GSM-100 front panel view

## 2. TECHNICAL SPECIFICATIONS

| GENERAL | |
|---|---|
| Model | EPL-GSM-100 |
| Product Name | Modbus TCP/RTU GSM Gateway |
| Brand | Energyplus |
| Country of Origin | Türkiye |
| Conformity | CE |
| Firmware Version | V1.0.46 |

| ELECTRICAL RATINGS | |
|---|---|
| Supply Voltage | 24 VDC ±5% |
| Power Consumption | ≤ 3 W |

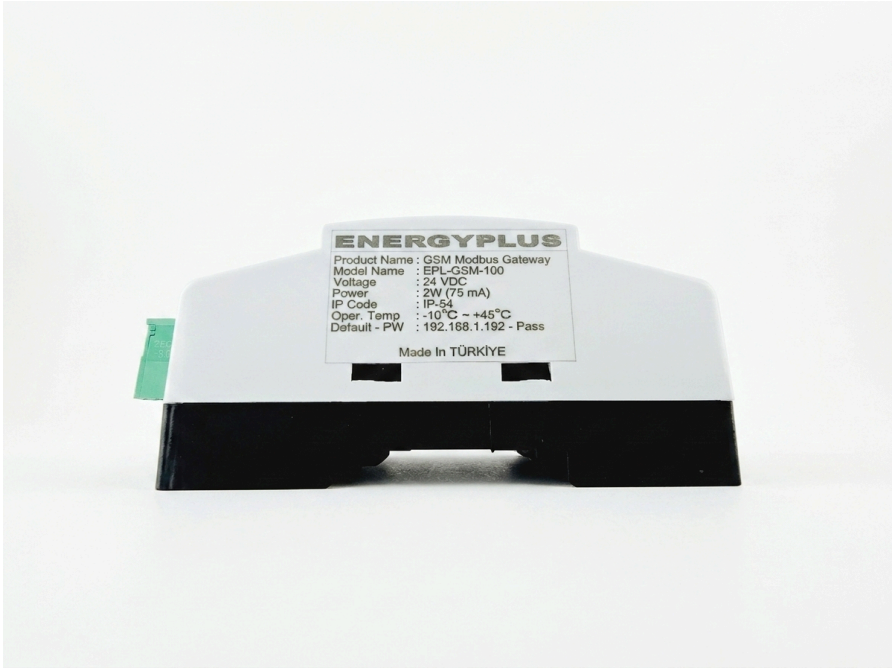

ENERGYPLUS
Product Name : GSM Modbus Gateway
Model Name : EPL-GSM-100
Voltage : 24 VDC
Power : 2W (75 mA)
IP Code : IP-54
Oper. Temp : -10°C ~ +45°C
Default - PW : 192.188.1.192 - Pass
Made In TÜRKİYE

Figure 2.1

## 3. PRODUCT COMPONENTS

| INDICATORS AND CONNECTION ELEMENTS | |
|---|---|
| PWR terminal | 24 VDC supply input; the + and – poles are marked on the unit. |
| COM 1 (RS-485) | RS-485 port with S , A, B and G (GND) terminals. |
| LAN-1 | Ethernet port (RJ45); link and activity LEDs on the connector. |
| SIM slot | Micro-SIM (2FF) card slot for the GSM modem. |
| ANT connector | SMA connector for external GSM antenna. |
| Green LED | System running in normal operation. |
| Blue LED | GSM modem activity (registered / data transfer / SMS). |

## 4. WIRING DIAGRAM

Terminal layout: **PWR (+ –) · COM 1 (S-A-B-G) · LAN-1 · SIM**

| TERMINAL CONNECTIONS | |
|---|---|
| PWR — + | 24 VDC supply input |
| COM 1 — S | RS-485 — Terminator (RS-485-A Connected) |
| COM 1 — A | RS-485 — A conductor |
| COM 1 — B | RS-485 — B conductor |
| COM 1 — G | RS-485 — GND |
| LAN-1 | Ethernet port (RJ45) |
| ANT | GSM antenna (SMA) |
| SIM | Micro-SIM card slot |

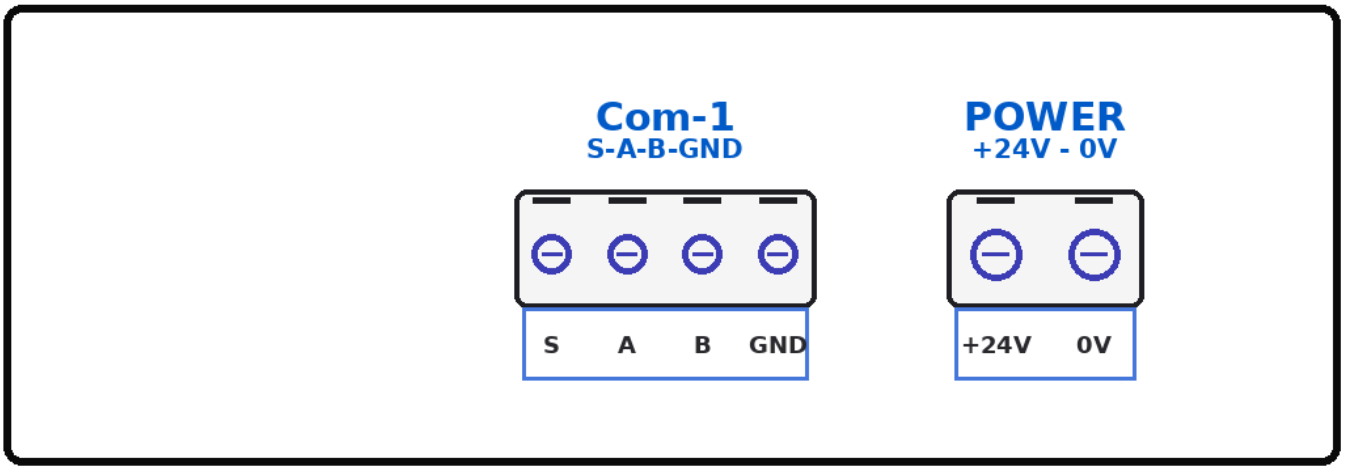



Figure 4.1 - Modbus and Power Port Layout

## 5. INSTALLATION

1. Disconnect the supply and confirm that the panel is de-energised.
2. Mount the unit on the DIN rail, leaving clearance for ventilation.
3. Insert a valid Micro-SIM card (with SMS service enabled) into the SIM slot before powering on.
4. Connect the GSM antenna to the SMA connector marked ANT.
5. Connect the RS-485 line to COM 1 following the S-A-B-G order: S, A, B, G = GND.
6. Ensure that termination resistors (120 Ω) are fitted at both ends of the RS-485 line.
7. Plug the Ethernet cable into the LAN-1 port.
8. Connect the 24 VDC supply to the PWR terminal, observing the + and – markings.
9. Apply power and confirm that the green LED lights. The blue LED will blink while the GSM modem registers on the network.
10. Open a browser on the same network and navigate to 192.168.1.192. Log in with the password "Pass".
11. Configure network settings, Modbus parameters, authorised SMS numbers and alarm rules, then change the password.
12. Test the Modbus TCP connection from the SCADA/BMS. Verify SMS operation by sending a STATUS command from an authorised number.

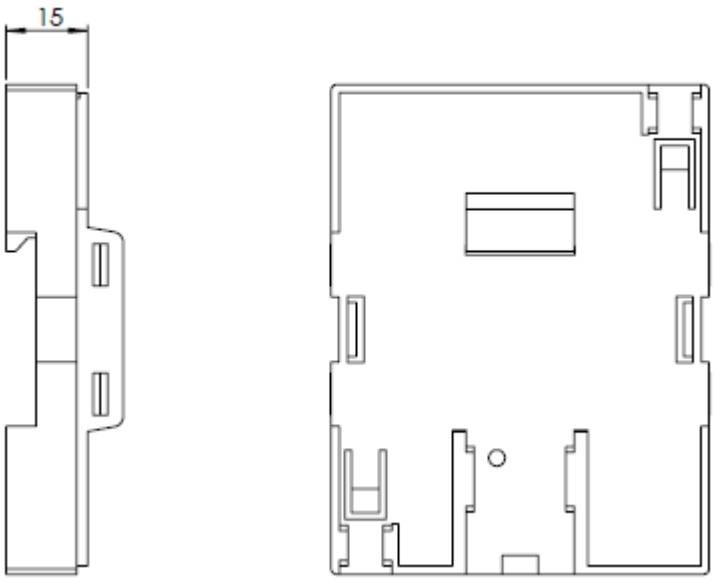



Figure 5.1 – DIN-rail mounted box

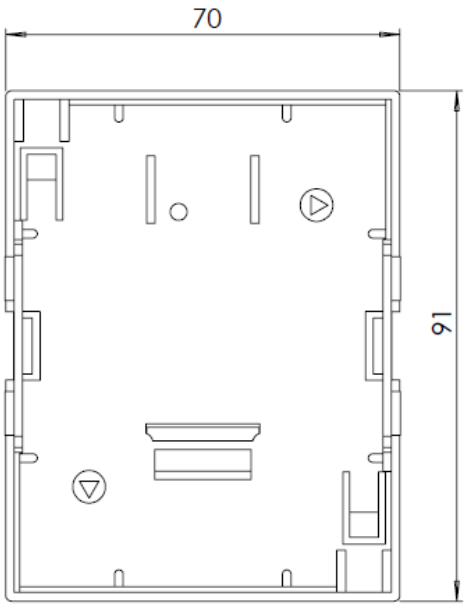
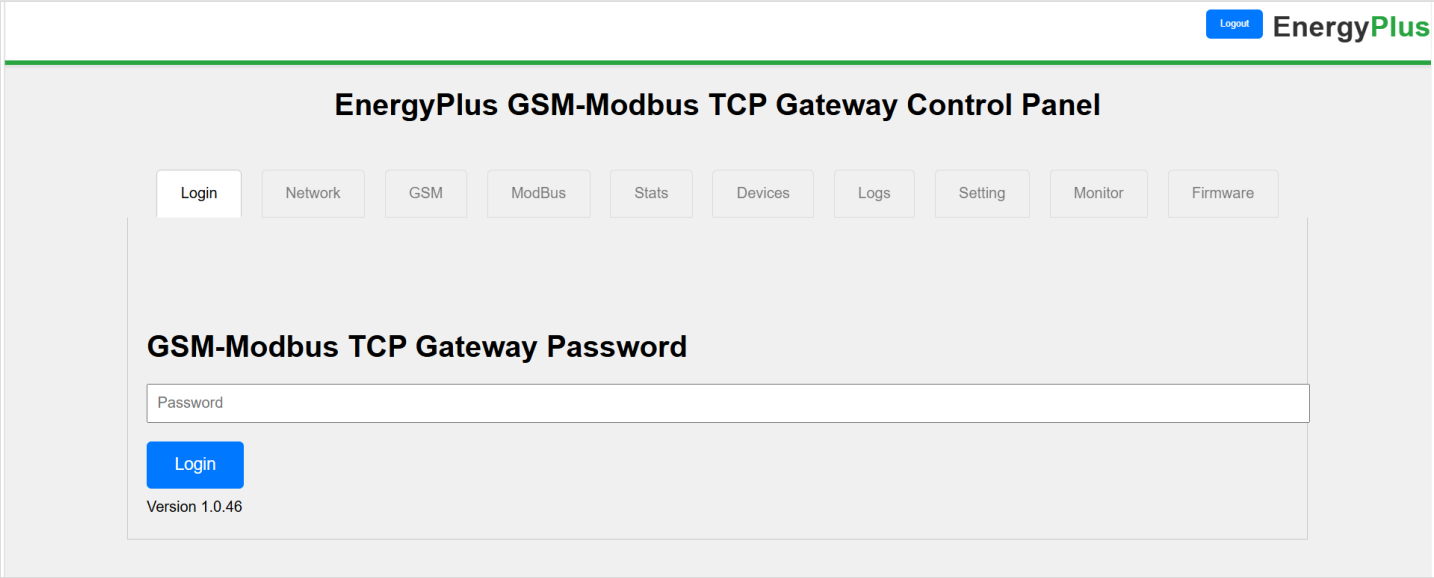



Figure 5.2 – DIN rail-mounted enclosure + dimensions

# 6. WEB INTERFACE

The unit includes a built-in web interface accessible from any browser on the same network. Network settings, Modbus port parameters, authorised SMS numbers, alarm rules and the slave list are configured here. Factory default address: 192.168.1.192 | Default password: Pass




Login Screen – Access to the interface is password protected

## 7. INSTALLATION WARNINGS

- ⚠ Installation and maintenance must be carried out only by qualified technical personnel, with the unit disconnected from the supply.
- ⚠ The unit ships with a factory default password. The password must be changed during commissioning; otherwise anyone with network access can reconfigure the device.
- ⚠ The unit is intended for in-panel use and must not be exposed to direct water or dust.
- ⚠ Reversing A and B on the RS-485 line prevents communication; follow the terminal markings.
- ⚠ The shield (S) must be earthed at one point only; earthing both ends creates an earth loop.
- ⚠ Do not route the RS-485 line in the same conduit as power cables.
- ⚠ Do not obstruct the ventilation openings or mount the unit directly beside heat-producing equipment.
- ⚠ The supply voltage must not go outside the 24 VDC ±5% range.

## 8. DIMENSIONS

Dimensions (W x D x H): 90 x 70 x 32 mm · Weight: 200 g

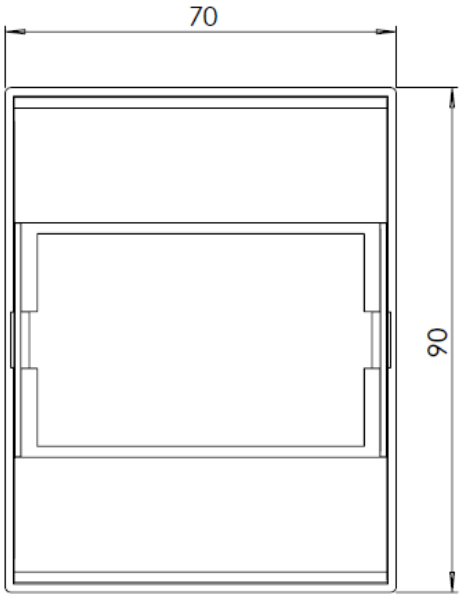



Figure 8.1 – Box dimensions including the outer lid

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