Modbus TCP/RTU Gateway

Connects the Modbus RTU Field to the Ethernet Network

PRODUCT DATA

GENERAL INTRODUCTION

Modbus RTU devices in the field sit on an RS-485 line, while SCADA, HMI and building management software speak over Ethernet. The EPL-MBC-100 bridges the two: it converts Modbus TCP requests into Modbus RTU and carries the responses back. Two independent RS-485 ports let a single unit serve two separate field lines, addressing up to 32 slave devices per port. Configuration, monitoring and diagnostics are handled through the built-in web interface; slave health tracking and the error log make the source of a fault visible.

Key Feature:

Modbus TCP/RTU conversion for up to 64 slave devices over dual RS-485 ports

ADVANTAGES

◊ Two Independent Field Lines in One Unit

COM01 and COM02 operate independently, each with its own baud rate and timeout settings, serving up to 32 slave devices. Separating two lines does not require a second gateway.

◊ Diagnostics That Show the Faults

The slave health monitor tracks response time and success rate for each device individually, and the error log stores the last 50 faults with timestamps. Which device is failing is not guessed — it is seen.

◊ Uninterrupted Operation

Hardware and software watchdogs, task-level health monitoring and automatic UART recovery let the unit recover on its own. No watchdog reset was observed during a 72-hour continuous test.

◊ Configuration From a Browser

Network settings, port parameters and the slave list are managed through the built-in web server without installing separate software; the diagnostics panel shows live status.

TECHNICAL SPECIFICATIONS

GENERAL	
Brand	Energyplus
Country of Origin	Türkiye
Conformity	CE
Firmware Version	V1.6.8

ELECTRICAL RATINGS	
Supply Voltage	24 VDC ±5%
Power Consumption	2 W (75 mA)

MODBUS TCP	
Port	501, 502 (configurable)
Simultaneous Connections	2 clients
Timeout	3000 ms (configurable)
Buffer Size	260 bytes (7 MBAP + 253 PDU)

TECHNICAL SPECIFICATIONS

MODBUS RTU	
Number of Ports	2 independent RS-485 (COM01, COM02)
Baud Rate	9600 / 19200 / 38400 / 57600 / 115200
Data Bits	8 or 9
Parity	None, Even, Odd
Stop Bits	1 or 2
Timeout	100 – 5000 ms (configurable)
Slave Count	32 per port (64 total)
Slave Address Range	1 – 247

SUPPORTED FUNCTION CODES	
0x01 / 0x02	Read Coils and Discrete Inputs
0x03 / 0x04	Read Holding and Input Registers
0x05 / 0x06	Write Single Coil and Single Register
0x0F / 0x10	Write Multiple Coils and Multiple Registers

ETHERNET	
Speed	10 / 100 Mbps auto-negotiation
Duplex Mode	Half / Full auto-negotiation
IP Assignment	Static or DHCP
Web Interface	HTTP, Port 80
Connector	RJ45 with status LEDs
Default IP Address	192.168.1.192
Default Password	Pass

ENVIRONMENTAL CONDITIONS	
Operating Temperature	-10 °C ... +45 °C
Storage Temperature	-20 °C ... +70 °C
Relative Humidity	10% ... 90% (non-condensing)
Ingress Protection	IP-54

WIRING DIAGRAM & INSTALLATION

The top face carries the 24 VDC supply (PWR) and two RS-485 ports, each wired S-A-B-G (S, A, B, GND). The LAN-1 and LAN-2 Ethernet ports are on the bottom face. The unit mounts on a DIN rail.

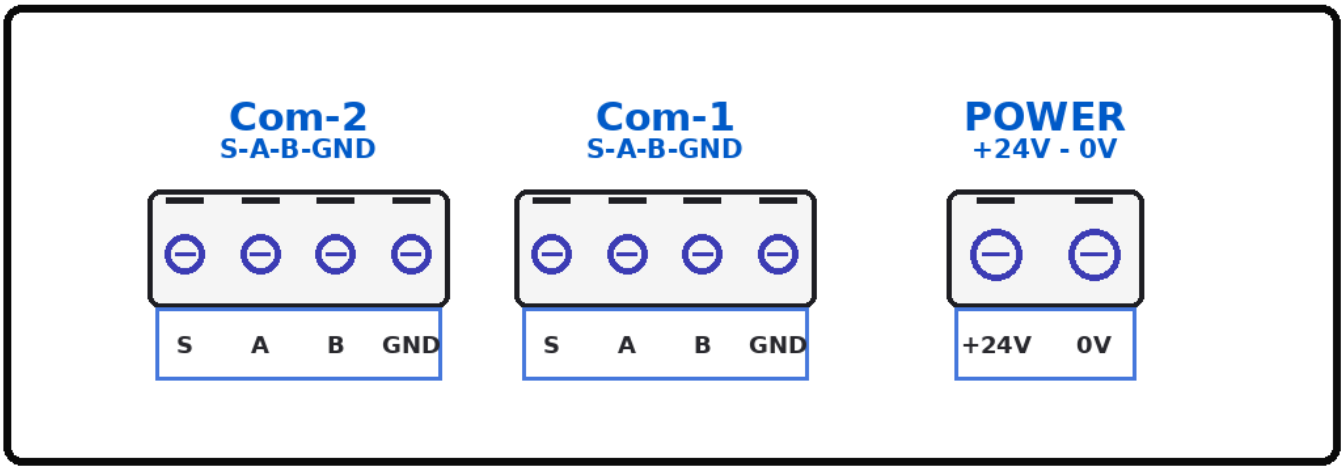

Figure 1 – Modbus and Power Port Layout

PHYSICAL DIMENSIONS

DIMENSIONS AND WEIGHT	
Dimensions (W x D x H)	90 x 70 x 32 mm
Weight	200 g
Mounting Type	DIN Rail / ray (TS35)

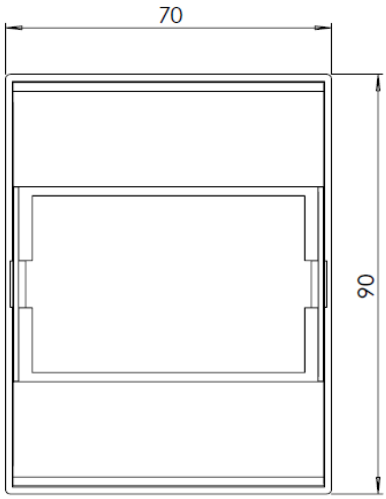

Figure 2 – Box dimensions including the outer lid

Figure 3 – Terminal layout and connection points

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