

Product Name: Temp and Humidity Sensor Model AK2

Application: Accurate measurement of temperature and humidity in industrial and building

environments

Communication Protocol: Modbus RTU (RS485) and Modbus TCP (Ethernet)



Features

* Precise Measurement:

High accuracy temperature and humidity measurement

* Standard Communication Protocol:

The RS485 interface implements the Modbus RTU software protocol and supports communication over this network.

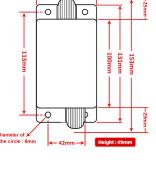
- * Standard Communication Protocol: Ethernet network or LAN cable supporting Modbus TCP, JSON, and HTTP software protocols.
- * Easy Installation: Designed for wall mounting or duct installation
- * High Reliability:

Stable performance in diverse environmental conditions

- * Durable Design: Suitable for industrial environments with harsh conditions
- * By adding the DRG01 module, which is also available on the website, installation in electrical panels and on DIN rails is possible.

General Specifications			
Dimensions	153 × 68 × 49 mm		
Enclosure Material	ABS		
Installation	Wall-mounted (with screws or mounting bracket)		
Cable	One meter of flexible shielded four-core input cable (power + RS-485) with a thickness of 0.25 mm ²		
Protective Cover	Equipped with a protective cover made of ABS for the temperature and humidity sensor with 40 centimeters (not thant) cable		
IP	IP61		











Technical Specifications		
Temperature Measurement Range	-20 to +85 °C	
Humidity Measurement Range	0 to 100%	
Temperature Measurement Accuracy	±0.3 °C	
Humidity Measurement Accuracy	±3% RH	
protocol	Supports Modbus TCP protocol over LAN	
protocol	Supports Modbus RTU protocol over RS-485	
web service	Professional web service for configuration via browser	
Relay Output	Two relay outputs, 1 amp each	
Input Voltage	24 V	

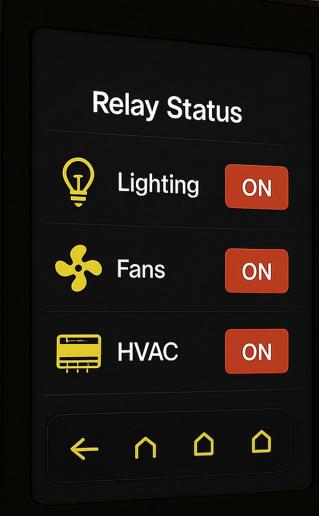
Thermostatic Mode

When the relays are set based on ambient temperature or humidity, they operate within a defined range: one value is received as the Max temperature—for example, 25°C—and another as the Min temperature—for example, 23°C. Based on this information, the control range becomes 23°C to 25°C. The same configuration can be applied to humidity.

Note: The difference between these two values cannot be less than 1°C for temperature mode and less than 5% for humidity mode.









Specifications

Product Name: Network Relay Output Module 8-Channel Model R08-ND Application: Used for remote control and management of industrial and electrical

equipment over a network using the Modbus TCP/RTU protocol.

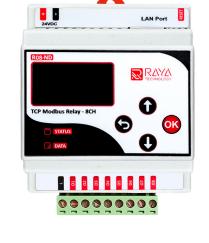
Communication Protocol: Modbus RTU (RS485) and Modbus TCP (Ethernet)

Manufacturer: RayaTechnology - Icman

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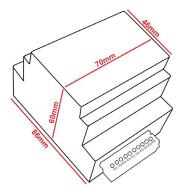


- * Industrial Automation Systems: Control and monitoring of factory equipment and production lines.
- * Electrical and Safety System Monitoring: Used in power distribution panels, fire alarm, and suppression systems.
- * Remote Equipment Control: Managing industrial machinery via network and internet.
- * Greenhouse and Controlled Environment Automation: Monitoring and controlling sensors, vents, and ventilation.
- * Building Management Systems (BMS): Intelligent control of lighting, ventilation, and electrical equipment.



Dimensions	86 × 70 × 60 mm		
Enclosure Material	ABS		
Installation	DIN Rail		

General Specifications



Technical Specifications			
Supports Modbus TCP Commands	F01, F03, F05, F06		
Network Interface	Hardware LAN module for stable communication		
Number of Outputs	8 relay outputs		
Communication Protocol	Modbus RTU and Modbus TCP		
Network Security	IP filtering for security settings		
Status Display	Live status indication of relays		
Configuration	Settings adjustable via device menu and web service		
By adding the DRG01 module, which is also available on the website, installation in electrical panels and on DIN rails is possible.			





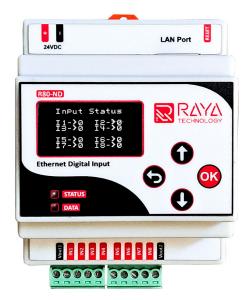
Product Name: 8-Channel Network Digital Input Module Model R80-ND

Application: Used for receiving and monitoring digital inputs from industrial equipment and automation systems over a network.

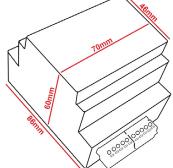
Communication Protocol: Modbus RTU (RS485) and Modbus TCP (Ethernet)



- * Industrial automation systems
- * Power and safety system monitoring
- * Remote equipment control
- * Greenhouse and controlled environment automation
- * Building Management Systems (BMS)



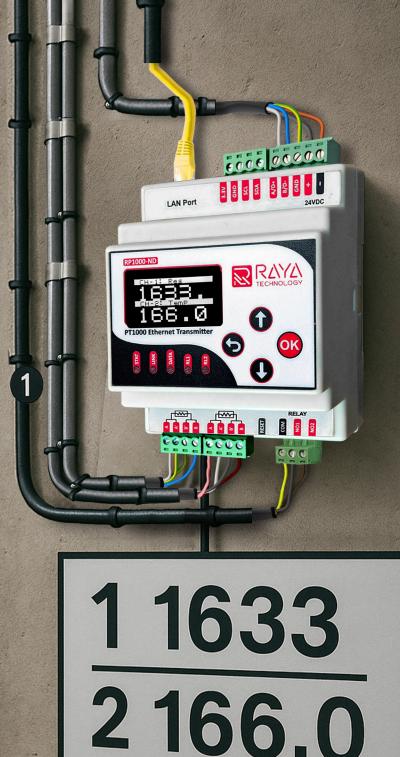
General Specifications		Technical Specifications		
Dimensions	86 × 70 × 60 mm	Supports Modbus TCP Commands F02 , F03 , F06		
Enclosure Material	ABS	Network Interface	Hardware LAN module for stable communication	
Installation	DIN Rail	DIN Rail Number of Inputs 8 digital input channels		
Tomas		Communication Protocol	Modbus RTU and Modbus TCP	
		Network Security	IP filtering for security settings	
		Status Display	Real-time monitoring of digital inputs	
		Configuration	Settings adjustable via device menu and web service	
		voltage input	24V voltage input, suitable for industrial environments	



By adding the DRG01 module, which is also available on the website, installation in electrical panels and on DIN rails is possible.







2166,0 PT1000 TEMPERATURE SENSOR

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Product Name: Modbus PT1000 Temperature Transmitter Model RP1000-ND

Application: Used for measuring and monitoring the temperature of industrial equipment and processes over a network using the Modbus protocol.

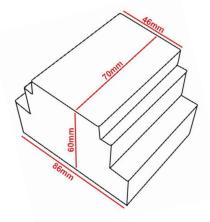
Communication Protocol: Modbus RTU (RS485) and Modbus TCP (Ethernet)



- * Environmental temperature monitoring and control in the oil, gas, and petrochemical industries
- * Greenhouse automation and intelligent ventilation systems
- * Temperature monitoring in sensitive laboratory and medical equipment
- * Temperature control and monitoring in furnaces, cold storage units, and industrial production lines
- * Application in energy management systems and energy consumption optimization

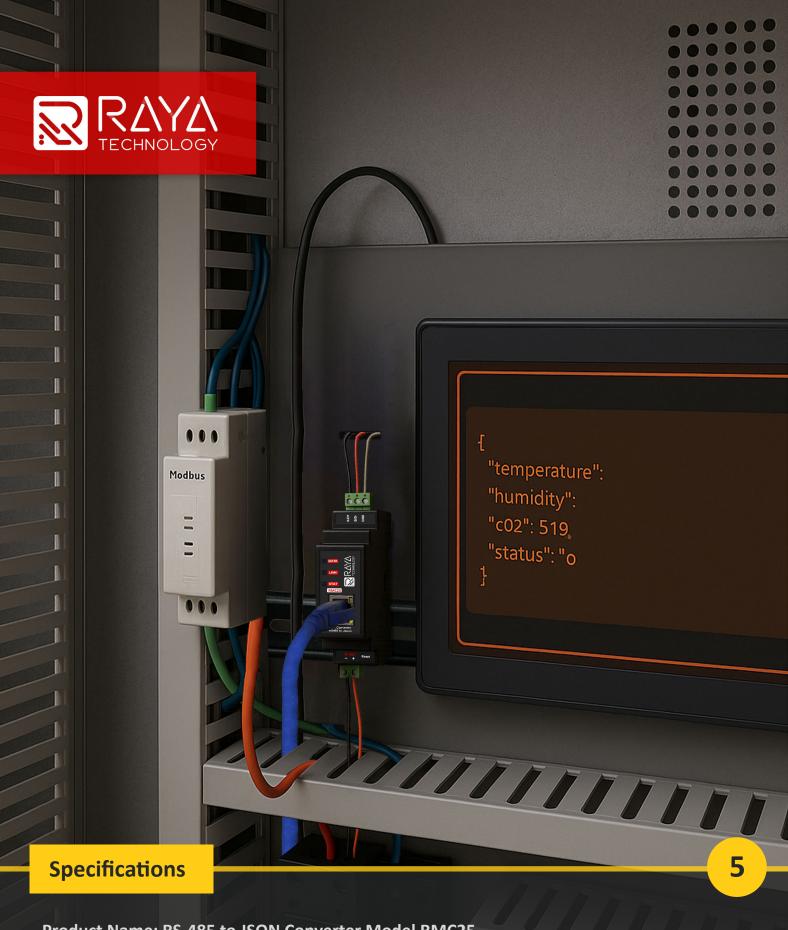


General Specifications			
Dimensions	86 × 70 × 60 mm		
Enclosure Material	ABS		
Installation	DIN Rail		
By adding the DRG01 module, which is also available on the website, installation in electrical panels and on DIN rails is possible.			



	Technical Specifications
	High-precision temperature measurement using PT1000 sensor across a wide temperature range
	Internal transmitter capable of reading and transmitting data via Modbus RTU (RS485) and Modbus TCP (LAN)
	Dual communication (RS485 and LAN) for greater flexibility in control systems
	Software calibration for precise adjustment and correction of potential sensor errors
	Modbus address, Baud rate, and other communication parameters are configurable
	Industrial and rugged design, suitable for harsh environmental conditions and various SCADA, PLC, and HMI systems
	This product is dual-channel





Product Name: RS-485 to JSON Converter Model RMC25

Application: It is used to connect Modbus devices to a network and transmit data to IoT

servers or monitoring software via JSON, MQTT, or HTTP.

Communication Protocol: Modbus RTU (RS485), Modbus TCP (Ethernet) and JSON



Description

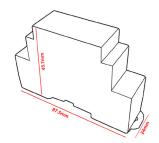


This device is equipped with a Modbus RTU port based on RS485, enabling communication with various PLCs. It features 100 Modbus memory registers. To

convert data into JSON format, PLC, DCS, or SCADA engineers must store the desired data in registers 1 to 100 of the device. Then, when a user sends a JSON page request to the sensor via LAN cable using the HTTP protocol, the data is provided as output in JSON format.

One of the applications of this device is transferring RSŁAO PLC network data to a website or software platform. The popularity of this converter lies in its support for the JSON protocol, which is widely used among developers and in the web world. Whenever there is a need to transmit various sensor or PLC register data over a network to a website and provide more professional services to clients, this converter becomes an essential choice.

General Specifications		Technical Specifications
Dimensions	24 × 87.5 × 45.7 mm	Support for JSON protocol over LAN
Enclosure Material	ABS	Support for Modbus TCP protocol over LAN
Installation	DIN Rail	Support for Modbus RTU protocol over RS-485
		Equipped with a professional web service for configuration via a browser







Product Name: Modbus Lux Meter Sensor – Model RL5-ND

Application: Measurement and monitoring of ambient light intensity with data transmission via the Modbus protocol for industrial, building, and smart system applications.

Communication Protocol: Modbus RTU (RS485), Modbus TCP (Ethernet)



Description

The RL5-ND sensor uses a Japanese chip with a measurement range of 1 to 65,535 lux. The measurement accuracy is 1 lux, with a measurement error of 5%.

The lux meter sensor measures ambient light intensity in industrial and non-industrial environments such as greenhouses, poultry farms, livestock centers, server rooms, laboratories, cold storage facilities, office buildings, residential buildings, and more.



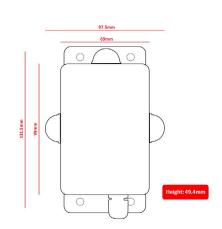
General Specifications

131.5*97.5*49.4 mm

ABS

DIN Rail / Wall-Mounted

Technical Specifications	Gen
Support for Modbus TCP protocol over LAN	Dimensions
Support for Modbus RTU protocol over RS-485	Enclosure Material
Provides values of 3 physical sensors simultaneously along with the average of all three.	Installation
Measurement range: 1 to 65,535 lux	
Measurement accuracy: 1 lux	
Waterproof package with IP64 standard	
Ability to automatically send logs to the server	
Equipped with a professional web service for configuration via browser	









Product Name: CO2 Transmiter Model RC2-D

Application: Measurement of carbon dioxide (CO2) concentration in the environment,

along with temperature, humidity, and pressure parameters

Communication Protocol: Modbus RTU (RS485)

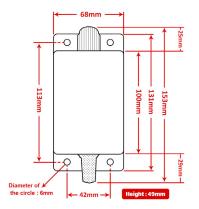


Key Features

- * OLED digital display for real-time value monitoring
- * Accurate measurement of CO2, temperature, humidity, and ambient pressure
- * RS485 output with Modbus RTU protocol
- * Two adjustable relay outputs (for ventilation control or alarms)
- * Threshold configuration and calibration capability
- * Robust design with replaceable internal sensor
- * Easy installation and operation
- * By adding the DRG01 module, which is also available on the website, installation in electrical panels and on DIN rails is possible.

Applications

- * HVAC Systems (Heating, Ventilation, and Air Conditioning)
- * Indoor Air Quality Control (Schools, Offices, Hospitals)
- * Greenhouses and Plant Cultivation Centers
- * Laboratories and Research Facilities
- * Server Rooms or Clean Rooms



RC2-D
1909 ppm Press: 880 hPa T:17.0 C M:33 % CO2 Transmitter
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© RAYA © REPORTED

Features		
Power Supply	24 V DC	
Communication Output	RS485 – Modbus RTU	
Relay Output	2 units, configurable	
IP	64	
Dimensions	153 × 68 × 49 mm	
Enclosure Material	ABS	
Installation	Wall-mounted (with screws or mounting bracket)	
Cable	One meter of flexible shielded four-core cable (power + RS-485) with a thickness of 0.25 mm ²	
Protective Cover	Equipped with a porous brass protective cover	





Temperature Measurement Features

Operating Temperature Range: -10 to +60 °C

Measurement Range: -10 to 60 °C

Typical Accuracy ±0.8 °C (at 15 to 35 °C)

±1.5 °C (at -10 to 60 °C)

Repeatability: ±0.1 °C

Annual Accuracy Drift: Less than 0.03 °C

Operating Temperature Range: -10 to +60 °C

Short-term Storage Temperature: -10 to +50 °C (Shortterm storage refers to temporary conditions during transportation)



CO2 Gas Measurement Features

0-10,000 ppm (Calibrated CO2 Measurement Range)

Output Range: 0 to 40,000 ppm

Accuracy: ±(5% + 40 ppm) within the range of 400 to 5,000 ppm

Annual Accuracy Drift (with automatic self-calibration algorithm enabled): ±(0.5% + 5 ppm of reading)

Due to the effect of air pressure on CO2 levels, the accuracy of the pressure sensor will influence the accuracy of the measured CO2 concentration.

Humidity Measurement Features

Operating Humidity Range: 0 to 90% RH

Measurement Range: 0 to 90% RH

Typical Accuracy

 $\pm6\%$ RH (at 15 to 35 °C and 20 to 65% humidity)

±9% RH (at -10 to 60 °C and 0 to 90% humidity)

Repeatability: ±0.4% RH

Annual Accuracy Drift: Less than 0.25% RH

Pressure Measurement Features

Operating Range: 20 to 110 kPa (absolute pressure)

Equivalent Altitude: -700 m at 50 kPa pressure

Calibration Range: 50 kPa to 110 kPa (absolute pressure)

Load Range: 0.2 to 1.1





Specifications

Product Name: 8-Channel Input Card Model R80

Application: Used for monitoring and receiving digital signals from industrial equipment via the Modbus RTU protocol.

Communication Protocol: Modbus RTU (RS485)



- * Industrial Automation Systems
- * Building Automation
- * Greenhouses
- * Production Lines
- * Energy Monitoring Systems





Features	Gene	ral Specifications
Communication with the central unit via Modbus RTU protocol	Dimensions	87/50 * 36/50 * 58/70 mm
Receiving digital signals from 8 independent inputs	Enclosure Material	ABS
Internal isolation for enhanced safety and noise reduction	Installation	DIN Rail
Individual input status indication via dedicated LEDs	Techni	cal Specifications
Supports voltage and contact signals within standard range	Number of Digital Inputs	8 channels
Automatic detection system for Modbus network disconnection	Communication Protocol	Modbus RTU
Modbus address can be changed via Write Single Holding Register function (0X06)	Communication Interface	RS485
Simultaneous reading of all input statuses via Read Discrete Inputs function (0X02)	35.50	
Capability to read all input statuses using Read Holding Register command (0X03)	32.59	24.50
Special protection for RS-485 port to improve communication stability	87.50 76.50 1 43.00	87.50
24V DC power supply with optimized consumption	→ 21.60 ·	



Product Name: 8-Channel Input/Output Card Model R44

Application: Suitable for industrial monitoring and control via RS-485 network using the

Modbus RTU protocol.

Communication Protocol: Modbus RTU (RS485)



- * Intelligent Monitoring Systems
- * Remote Control
- * Industrial Automation
- * Security Systems

- * Smart Greenhouses
- * Energy Management
- *Combining input and output in a single device allows efficient control, monitoring, and management of industrial processes.

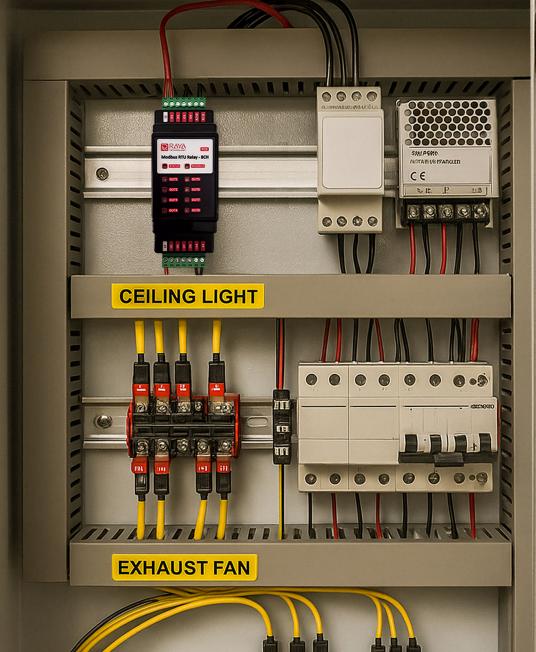


* Security Systems and management of industrial processes.		
Features	General Specifications	
Communication with the central unit via Modbus RTU protocol	Dimensions	87/50 * 36/50 * 58/70 mm
4 isolated digital input channels for receiving digital signals	Enclosure Material	ABS
4 relay output channels (1 Amp) for controlling various equipment	Installation	DIN Rail
Internal isolation to protect inputs and reduce noise	Techni	ical Specifications
Capability to control equipment up to 1000 meters away from the central unit	Number of Digital Inputs	4 channels
Automatic detection system	Number of Relay Outputs	4 channels
Automatic shutdown of outputs after 4 minutes of Modbus network disconnection for enhanced safety	Communication Interface	RS485
Modbus address configurable via Write Single Holding Register function (0X06)	Communication Protocol	Modbus RTU
Read input status via Read Discrete Inputs function (0X02)	1 - 24.50 →	
Read relay status via Read Holding Register function (0X03)	38.50	**************************************
Send commands to relays via Write Single Holding Register function (0X06)	32.59 30 00 00 00 00 00 00 00 00 00 00 00 00 0	▼ ▼ ▼ ▼ ▼ ▼ ▼ ▼ ▼ ▼ ▼ ▼ ▼ ▼ ▼ ▼ ▼ ▼ ▼
Special protection for RS-485 port against noise and voltage fluctuations	2160 ►	
24V DC power supply with optimized consumption		



Separate LEDs for displaying network, input, and output status





Specifications

Product Name: 8-Channel Relay Output Card Model R08

Application: Suitable for industrial monitoring and control via RS-485 network using the

Modbus RTU protocol.

Communication Protocol: Modbus RTU (RS485)

Manufacturer: RayaTechnology - Icman

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Using output cards, it is possible to send on/off commands to various equipment such as fans and heaters through the Modbus network in industries like agriculture and greenhouses, water and wastewater, oil and

Ability to read device address, read all relay statuses together, or read each relay individually
via Read Holding Register (0X03)

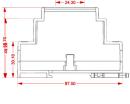
Ability to write the device address and control each relay individually via Write Single Holding
Register (0X06)



gas, and more. This product significantly reduces cabling between equipment and central control panels. Additionally, these cards can be connected to various Modbus-compatible devices such as PLCs, RTUs, DCS systems, and others.

Features	General Specifications	
Communication with the central unit via Modbus RTU protocol	Dimensions	87/50 * 36/50 * 58/70 mm
Ability to send commands to devices up to 1000 meters away from the central unit	Enclosure Material	ABS
Equipped with 8 relay outputs (1 Amp) for simultaneous control of 8 different devices	Installation	DIN Rail
Two separate voltage inputs on each side of the device for input voltages up to 220V	Technical Specifications	
Simultaneous use of two different output voltages supported	Number of Relay Outputs	8 channels
Automatic detection of Modbus network disconnection	Communication Interface	RS485
Automatic shutdown of outputs after 4 minutes of Modbus disconnection (for enhanced safety in industrial networks)	Communication Protocol	Modbus RTU
Modbus address changeable via Modbus network (software-based)	Input voltage	24V
Special protections for RS-485 output		
Separate LEDs for Modbus network and output status indication	***************************************	-24.30-

32.55 **)**







Product Name: Modbus Wind Speed Sensor – Model WS2-Modbus

Application: Accurate wind speed measurement in industrial environments and

automation projects via Modbus RTU protocol.

Communication Protocol: Modbus RTU (RS485)



- * Weather stations and climate monitoring
- * Building automation and industrial HVAC
- * Smart control systems for greenhouses and livestock farms
- * Environmental monitoring in mines and power plants
- * Wind speed measurement in wind turbines and offshore platforms



Features

RS485 industrial communication with Modbus RTU support

Advanced calibration with Zero and Span adjustment capability

High accuracy in wind speed measurement using software filtering

Wide compatibility with PLCs, HMIs, data loggers, and monitoring software

Simultaneous digital and pulse output (600 pulses per revolution)

Modbus RTU: F03, F06



Software Features

Support for Modbus RTU settings: including device addressing, baud rate, parity bit, and stop

Ability to read data in various units (wind speed in meters per second, kilometers per hour, etc.)

Adjustment and correction of readings using calibration parameters





Product Name: Modbus Earth Meter – Model RED71

Application: For measuring the resistance of the earthing system and continuously monitoring

it in industrial electrical projects and automation systems using the Modbus network.

Communication Protocol: Modbus RTU (RS485)



Description

The Earth Detector device, model RED71 from Raya Technology, is a module for detecting the connection of the earth wire and wiring, designed to monitor the integrity of neutral, phase, and earth connections in single-phase and three-phase electrical systems. This device, leveraging the Modbus protocol, can

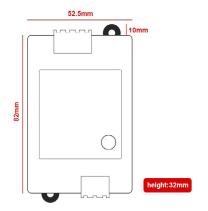


connect to monitoring and industrial automation systems and features an RCD (Residual Current Device) test button with a test current of 30 milliamps for up to 2 seconds. Its use in industrial electrical panels, data centers, and sensitive equipment is recommended to increase safety and prevent hazards arising from earth faults.

* In addition to being usable in Modbus network—based industrial automation systems, this device can also be installed independently in the electrical panel; such that, by using the LED indicators embedded on the device, the earth status can be determined and utilized.

Applications

- * Industrial and building electrical panels
- * Electrical monitoring systems
- * Data centers and sensitive equipment
- * Building or industrial projects in the commissioning phase
- * UPS and generator systems



General Specifications		
Dimensions	52.5 * 82 * 32 mm	
Enclosure Material	ABS	
Installation	DIN rail / Wall-mounted	
Modbus-RTU (via RS-485 network)		
Standard 6-state earth tester output		
Equipped with RCD (Residual Current Device) test button		





Product Name: 10-Channel Battery Health Measurement Device – Model RBH10

Application: Monitoring the health and performance of UPS batteries in data centers, hospitals, power plants, and industrial facilities.

Communication Protocol: Modbus RTU (RS485)



Description



This device is a product of Raya Technology. Its main function is to monitor the health of batteries (especially UPS

batteries) under various conditions. By measuring parameters such as voltage, current, temperature, and the internal resistance of battery cells, the device evaluates their health status. Device communication is via the Modbus protocol, and real-time monitoring and data logging are available.

- Ability to integrate with network monitoring systems (SNMP / JSON / TCP)
- Suitable for data centers, industrial facilities, banks, and high-capacity UPS systems

Key features

- * Cold test: measuring the voltage, current, and temperature of each battery during normal UPS operation
- * Hot test: measuring internal resistance, voltage, current, and temperature for a precise assessment of battery health
- * UPS control: the ability to command the contactor to disconnect or connect the input and output power
- * Full communications: support for RS-485 and Modbus RTU, and if needed, by connecting the RMC20 converter, sending results over the network in the form of SNMP, JSON, Metrics, and Modbus TCP
- * Expandability: each device covers 10 batteries; with one converter, you can manage up to 10 devices and a total of 100 batteries simultaneously.

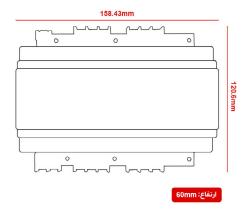
Applications

- * Data centers (IT) to maintain the stability of emergency power.
- * Oil, gas, and petrochemical industries to ensure the readiness of backup systems.
- * Hospitals and medical centers to guarantee the operation of sensitive medical equipment.
- * Power plants and substations for managing industrial battery banks.
- * Large organizations and offices for monitoring and maintaining UPS batteries.





Technical specifications	
Number of channels	10 channels
Measurable voltage range	0 to 15 V DC
Voltage measurement accuracy	±0.05 V
Measurable current range	0 to 100 A (depending on shunt design)
Current measurement accuracy	±0.1 A
Measurable parameters	Voltage, current, temperature, internal resistance
Tests	Cold (Cold Test) and Hot (Hot Test)
Output control	Command to disconnect/connect the UPS contactor
Hardware communication protocol	RS-485، LAN (Ethernet)
Software protocols	Modbus RTU: Modbus TCP: SNMP: Metrics: JSON
Expandability	Connection of up to 10 devices (monitoring 100 batteries) with a single converter Advantages



General Specifications	
Dimensions	158.43 * 120.6 * 60 mm
Enclosure Material	ABS
Installation	DIN rail







Product Name: Modbus Temperature and Humidity Sensor

Model: TH1-ECO

Key Features

- Software Protocol: Modbus RTU (over RS-485 network)
- Temperature Measurement Range: -20°C to +85°C
- Humidity Measurement Range: 0 to 100% RH
- Professional Waterproof Package: IP64 rated
- High-Quality Sensor: Swiss-made sensor
- Included: Source code file for Delta PLC connection program







Product Name: Modbus Light Intensity Sensor (Lux Meter)

Model: LX1

Key Features

• Software Protocol: Modbus RTU (over RS-485 network)

• Lux Measurement Range: 1 to 98,000 lux

• Lux Measurement Accuracy: 1 lux

• Automatic Detection: Auto-detection of Modbus network disconnection

• Waterproof Package: IP64 rated







Product Name: Modbus Soil Moisture Sensor

Model: SM3-ECO

Key Features

- Suitable for smart irrigation systems
- Suitable for greenhouse climate control systems
- Software Protocol: Modbus RTU (over RS-485 network)
- Moisture Measurement Range: 0 to 100%
- waterproof package: IP64 rated
- Compatible with various PLCs



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Product Name: Modbus Buried Soil Moisture Sensor

Model: SM4-ECO

Key Features

- Suitable for smart irrigation systems
- Suitable for greenhouse climate control systems
- Software Protocol: Modbus RTU (over RS-485 network)
- Moisture Measurement Range: 0 to 100%
- waterproof package: IP67 rated
- Compatible with various PLCs







Product Name: Pulse Wind Speed Sensor

Model: WS1-Modbus

Key Features

- Pulse output accuracy and count: 600 pulses
- Maximum output frequency and response speed: 30 kHz
- Compatible with various PLCs and microcontrollers
- Resistant to harsh environmental conditions



Chapter 1

Modbus TCP Products

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