

# Industrial Remote I/O Expansion Module

## Model No: LOGIC-RM100

### Data Sheet



| Item              | Information                            |
|-------------------|----------------------------------------|
| Name              | Industrial Remote I/O Expansion Module |
| Product Code      | Logic-RM100                            |
| Document Type     | Data sheet                             |
| Document Revision | Rev. 1.0                               |



## Overview

The LOGIC-RM100 platform is designed as a compact DIN-rail mounted remote I/O expansion system. It collects field input/output signals near the machine or process area and transfers them to a PLC, SCADA, HMI, controller, gateway or cloud platform using the selected communication interface.

The same platform can be configured with different I/O cards, including digital input, digital output, active analog input, passive analog input and analog output cards. RM100 provides RS485 Modbus RTU communication, RM200 adds Ethernet connectivity, and RM300 supports IoT/cloud connectivity where applicable.

## Features, Applications and Technical Specifications

### Feature Highlights

- Modular universal I/O expansion platform
- Supports up to 8 channels per I/O module
- Available in Digital Input, Digital Output, Analog Input and Analog Output variants
- DIN-rail mounted industrial design
- RS485 Modbus RTU/ASCII communication
- Optional Ethernet connectivity
- Optional Industrial IoT connectivity
- Supports MQTT(S), HTTP(S), CoAP and OPC-UA protocols
- 14-bit high-resolution analog input acquisition
- 12-bit analog output control
- Opto-isolated digital inputs and outputs
- 2.5 kV isolation protection
- Integrated diagnostic LED indication for communication and I/O status
- Smart Web UI configuration interface in IoT variants
- Industrial-grade surge and overvoltage protection
- Designed for distributed monitoring and control applications

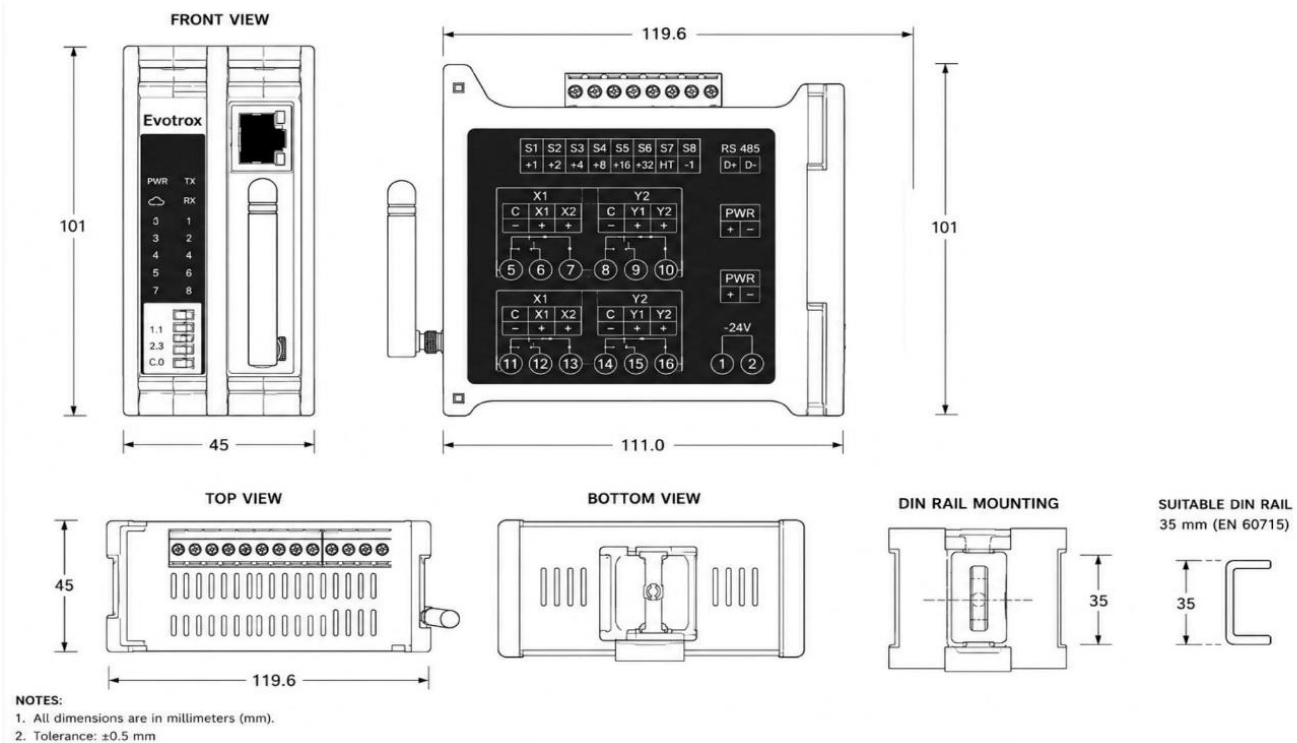
### Application Areas

- PLC and SCADA I/O expansion
- Industrial automation
- Process control systems
- Water and wastewater treatment
- HVAC and building automation
- Cold storage and refrigeration
- Environmental monitoring
- Agriculture and irrigation
- Energy and utility monitoring
- OEM equipment integration
- Industrial IoT and Industry 4.0 solutions

## Technical Specifications

| Category                       | Parameter                | Specification                              |
|--------------------------------|--------------------------|--------------------------------------------|
| General                        | Product Type             | Universal Remote I/O Expansion Module      |
|                                | Series                   | LOGIC-RM100 / RM200 / RM300                |
|                                | Mounting                 | DIN Rail Mount                             |
|                                | Expansion Slots          | 4 Slots                                    |
| Power Supply                   | Channel Capacity         | Up to 8 Channels                           |
|                                | Supply Voltage           | 24 VDC (Typical)                           |
|                                | Operating Range          | 18 to 30 VDC                               |
|                                | Power Consumption        | < 10 W (Depending on Configuration & Load) |
| Analog Input (AI Variant)      | Input Type               | 8 Channel Analog Input                     |
|                                | Signal Type              | 4-20 mA                                    |
|                                | Resolution               | 14-bit                                     |
|                                | Accuracy                 | ±0.1% Full Scale (Typical)                 |
|                                | Sampling Rate            | 1 kHz                                      |
|                                | Input Impedance          | >100 kΩ                                    |
|                                | Current Shunt Resistance | 250 Ω                                      |
|                                | Isolation                | 2.5 kV                                     |
| Analog Output (AO Variant)     | Protection               | ±30 V Overvoltage Protection               |
|                                | Output Signal            | 0-10 V / 4-20 mA                           |
|                                | DAC Resolution           | 12-bit                                     |
|                                | Voltage Load Impedance   | >1 kΩ                                      |
|                                | Current Load Impedance   | <500 Ω                                     |
| Digital Input (DI Variant)     | Input Type               | Digital Input                              |
|                                | Supported Signals        | Alarm, Switch, Contact Status              |
|                                | Response Time            | <10 ms                                     |
|                                | Isolation                | Opto-Isolated                              |
| Digital Output (DO Variant)    | Output Type              | Relay Output                               |
|                                | Relay Rating             | 250 VAC / 30 VDC, 5A                       |
|                                | Switching Frequency      | 1 Hz                                       |
|                                | Isolation                | Opto-Isolated, 2.5 kV                      |
| Serial Communication (RM100)   | Protection               | Surge & Overload Protection                |
|                                | Interface                | RS-485                                     |
|                                | Protocol                 | Modbus RTU / ASCII                         |
|                                | Device Address           | 1-247                                      |
|                                | Default Address          | 1                                          |
|                                | Default Baud Rate        | 9600 bps                                   |
|                                | Parity                   | Even                                       |
| Ethernet Communication (RM200) | Stop Bit                 | 1                                          |
|                                | Interface                | Ethernet                                   |
|                                | Protocol                 | Modbus TCP/IP                              |
| IoT Communication (RM300)      | IP Configuration         | DHCP / Static                              |
|                                | Connectivity             | Wi-Fi                                      |
|                                | Configuration            | Smart Web UI                               |
|                                | Cloud Connectivity       | Supported                                  |
| User Interface                 | Cloud Protocols          | MQTT(S), HTTP(S), CoAP, OPC-UA             |
|                                | Status Indicators        | PWR, TX, RX, Cloud                         |
|                                | Expansion Indicators     | Slot-wise LED Status                       |
|                                | Address Configuration    | DIP Switch                                 |
| Environmental                  | Operating Temperature    | -10°C to +60°C                             |
|                                | Storage Temperature      | -20°C to +80°C                             |
|                                | Humidity                 | 10% to 90% RH (Non-Condensing)             |

## Dimensional and Interface Drawing



## Ordering Information

### Ordering Code

| Code Segment                 | Description                                                                                                                                                                       |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LOGIC RM100                  | Remote IO Module                                                                                                                                                                  |
| INPUT / OUTPUT SPECIFICATION | 8X1: 8-channel digital input card 8Y2: 8-channel digital Output card 8A1: 8- channel Active Analog Input 8A2: 8-channel Passive Analog input 8A3: 8-channel Analog Current Output |
| EXTENSIONS                   | N: BLANK (NO EXTENSION) L1: LAN CARD FOR EXTENSIVE LAN PROTOCOL SUPPORT E1: IoT Card for Network Connectivity and IoT Application                                                 |

### Code Description

| Code | Title                   | Description                                                                                            |
|------|-------------------------|--------------------------------------------------------------------------------------------------------|
| X1   | DI Card – 2CH           | 2 Ch Opto-Isolated Digital Input                                                                       |
| Y1   | DO Card – R1CH          | 1 Ch Relay Output                                                                                      |
| Y2   | DO Card – R2CH          | 2 Ch Relay Output                                                                                      |
| Y3   | DO Card – T2CH          | 2 Ch Transistor Output                                                                                 |
| A1   | AI Card – IV            | 2 Ch Configurable Active Analog Input: 0-1 V, 0-5 V, 0-10 V, 0-20 Ma, 4-20 Ma                          |
| A2   | AI Card – RMV           | 1 Ch Configurable Passive Analog Input: NTC Thermistor (10K), PT100, PT1000, CU50, T/C (J, K, R, S, T) |
| A3   | AO Card – 2CH           | 2 Ch Analog Output: 0-20 Ma, 4-20 Ma                                                                   |
| I1   | GSM Card                | GSM / 4G Module for Cellular Network                                                                   |
| L1   | Lan Card                | Extension Lan card to support LAN Protocols                                                            |
| E1   | IoT Card (EdgeLink-100) | IoT Card for Network Connectivity and IoT Application                                                  |

## Contact Information

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