3onedata
Reliable Connections



RIO1000 Series

DIN-Rail Mounting

Industrial I/O Server with 2 Ethernet Interfaces

- Support 2 10/100Base-T(X) self-adaptive Ethernet interfaces
- Support Modbus TCP protocol and can manage DI channel, DO channel and device system information through Modbus TCP Master
- Support customized Modbus TCP slave register address to facilitate the upgrading of industrial field system
- Support working modes such as DI, Counter, DO and Pulse Output
- Support network modes such as redundant mode, switching mode and dual IP mode to meet the needs of various network environments
- Support 12~48VDC power supply input
- Support -40~75℃ wide operating temperature range

Industrial Grade

CONNECTING FOR A BETTER FUTURE

3onedata Co.,Ltd.

Introduction

RIO1000 series is industrial I/O server specially designed for I/O devices to collect and control data, which can convert the collected I/O data into Modbus TCP protocol. This series supports 8 DI and 8 DO, 6 DI and 6 RO. It adopts DIN-Rail mounting to meet the requirements of different application scenes.

The I/O server supports a variety of network protocols, such as Modbus TCP, TCP, IP, UDP, TELNET, ARP, ICMP, HTTP, HTTPS, SNMP, SSH, SMTP, SNTP, DNS and DHCP protocols; It has perfect management functions and supports point-to-point configuration, access control, network diagnosis, rapid configuration, online upgrade, etc; Support DI, Counter, DO, Pulse Output and other working modes; Support Modbus TCP master (Client) device access; Support TELNET, WEB, SSH and other access methods. Network management system could bring you great user experience through its friendly interface design and easy and convenient operation.

RESET button can instantly restore factory defaults. Hardware adopts fanless, low power consumption, wide temperature and voltage design and has passed rigorous industrial standard tests, which can suit for the industrial scene environment with harsh requirements for EMC. It can be widely used in PLC control and management, Building Automation System, Health Care Automation System, measuring instrument and environmental forces monitoring system.

Features and Benefits

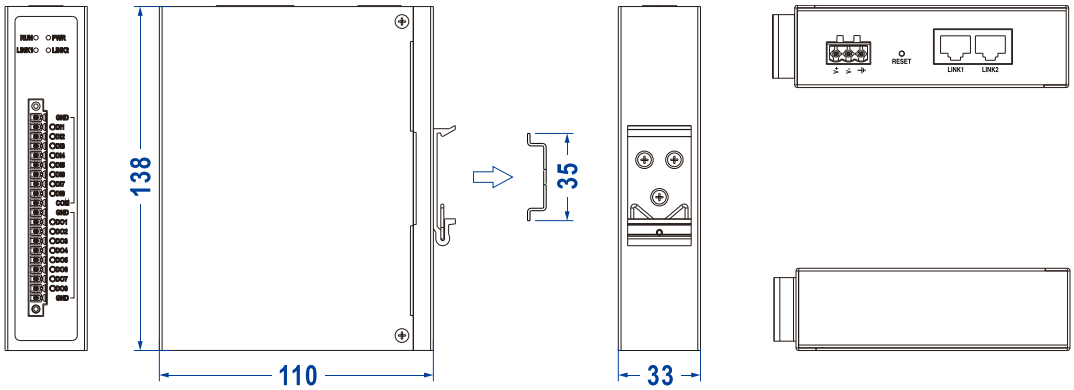
- Support 2 10/100Base-T(X) self-adaptive Ethernet interfaces and provide dual IP and MAC addresses to meet the requirements of multi-network management or network backups
- Support the setting of communication watchdog and enter the DO channel security mode
- Support customized Modbus TCP Slave start address and function code
- Support DI channel status detection and counter mode, and can be used as dry contact or wet contact
- Support DO channel state control and digital pulse output mode, with the maximum pulse frequency of 500Hz
- SNMPv1/v2c/v3 is used for network management of various levels
- Support TELNET, SSHD, HTTP, HTTPS and other configuration forms and access control
- SSHD and HTTPS can guarantee the access security of data
- User password can conduct user hierarchical management to improve the device management security
- Support IP address and MAC address filtering, which can achieve accurate access control easily

- Support multiple alarm methods, including e-mail, log server and SNMP Trap
- Support SNMP Trap alarm for DI and DO status changes, and special ID can be customized
- Support warm/cold start, network link failure, web log failure, IP modify and other system event alerts
- Support status monitoring such as routing table, system network and system log
- Support static routing configuration, and specify the data egress port across network segments
- Network diagnosis and troubleshooting could be conducted via Ping, Traceroute and packet capture diagnosis
- File management is convenient for the device rapid configuration and online upgrading
- Support point-to-point communication, and multiple I/O signals can be integrated on one network line to transmit input to output control

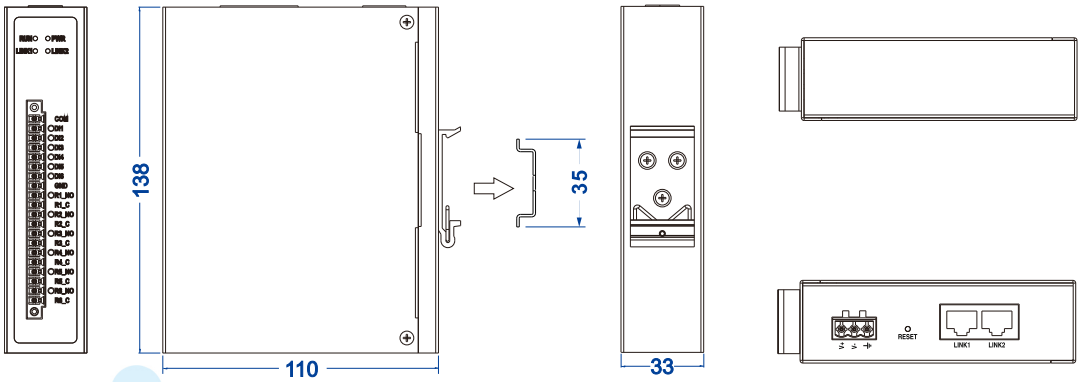
Dimension

Unit: mm

- RIO1000-2T-8IO(DI)-8IO(DO)-TB-P(12~48VDC)



- RIO1000-2T-6IO(DI)-6IO(RO)-TB-P(12~48VDC)



Specification

Ethernet Port	Standard: 10Base-T, 100Base-TX Protocol: Modbus TCP, TCP, IP, UDP, TELNET, ARP, ICMP, HTTP, HTTPS, SNMP, SSH, SMTP, SNTP, DNS and DHCP Rate: 10/100M Automatic Flow Control, MDI/MDI-X Autotunning Interface quantity: 2 Interface form: RJ45 Duplex mode: Full/Half Duplex Mode Self-adaption Network mode: single IP mode (redundant mode/switching mode) and dual IP mode Working mode: Modbus TCP Slave (Server), support function codes 01, 02, 03, 04, 05, 06, 15 and 16, and support up to 10 master connections Isolation protection: 1.5kVDC
DI Digital Input	Interface quantity: 6/8 Interface form: ● RIO1000-2T-8IO(DI)-8IO(DO)-TB-P(12~48VDC) 20-PIN 3.81mm pitch terminal blocks (DI channel occupies 10 pins) ● RIO1000-2T-6IO(DI)-6IO(RO)-TB-P(12~48VDC) 20-PIN 3.81mm pitch terminal blocks (DI channel occupies 8 pins) Digital filtering: software configuration (1-65535ms) Counter frequency: ≤1kHz Working mode: DI or counter Input type: dry contact (ON: GND short circuit; OFF: open circuit); Wet contact Source (NPN) (ON: 0~3VDC; OFF: 10~30VDC); Wet contact Sink (PNP) (ON: 10~30VDC; OFF: 0~3VDC)
DO Digital Output	RIO1000-2T-8IO(DI)-8IO(DO)-TB-P(12~48VDC) ● Interface quantity: 8 ● Interface form: 20-PIN 3.81mm pitch terminal blocks (DO channel occupies 10 pins) ● Pulse frequency: ≤ 500Hz ● Working mode: DO or pulse output ● Rated current: 200mA/Channel ● Output type: Sink (PNP) ● Overcurrent protection: 650mA/Channel Overvoltage protection: 45VDC
RO Relay Output	RIO1000-2T-6IO(DI)-6IO(RO)-TB-P(12~48VDC) ● Interface quantity: 6 ● Interface form: 20-PIN 3.81mm pitch terminal blocks (RO channel occupies 12 pins) ● Rated load: resistive load, 5A 250VAC, 5A 30VDC Inductive load, 2A 250VAC, 2A 30VDC ● Withstanding Voltage: coil and contact, 3,000VAC 50/60Hz 1

	min; Homopolar contact, 750VAC 50/60Hz 1 min ● Relay ON/OFF time: <10ms ● Insulation resistor:1000mΩ (Minimum) @500VDC ● Mechanical life: above 20,000,000 times ● Electrical Life: above 50,000 times (250VAC 5A, resistive load) ● above 50,000 times (30VDC 5A, resistive load) ● above 100,000 times (250VAC 2A, inductive load) ● above 100,000 times (30VDC 3A, inductive load) ● Contact resistance: <100mΩ
Management	WEB configuration (HTTP/HTTPS), TELNET configuration, SSHD configuration, point-to-point configuration
Security	Communication watchdog, SNMP management, mail alarm, SNMP Trap alarm, I/O Trap alarm, system alarm, user privilege classification, IP address filtering, MAC address filtering, remote access control
Indicator	Running indicator, power indicator, Ethernet indicator, I/O indicator
Power Supply	12~48VDC, 3-PIN 5.08mm pitch terminal block, support non-polarity
Power Consumption	● RIO1000-2T-8IO(DI)-8IO(DO)-TB-P(12~48VDC) No-load: 1.5W@12VDC (high temperature) Full-load: 2.8W@12VDC (high temperature) ● RIO1000-2T-6IO(DI)-6IO(RO)-TB-P(12~48VDC) No-load: 1.4W@12VDC (high temperature) Full-load: 2.4W@12VDC (high temperature)
Working Environment	Operating temperature: -40~75℃ Storage temperature:-40~85℃ Relative humidity: 5%～95%(no condensation)
Physical Characteristic	Housing: IP40 protection, metal Installation: DIN-Rail or wall mounting Dimension (W x H x D): 33mm×138mm×110mm Weight: 0.5kg
Industrial Standard	IEC 61000-4-2 (ESD, electrostatic discharge), Level 3B ● Air discharge:± 8kV ● Contact discharge: ±6kV IEC 61000-4-4 (EFT, electrical fast transient pulses), Level 3B ● Power supply: ±2kV

	• Signal: ±1kV IEC 61000-4-5 (Surge), Level 3B • Power supply: common mode±2kV, differential mode±1kV • Signal: common mode ±2kV, differential mode ±1kV Shock: IEC 60068-2-27 Free fall: IEC 60068-2-32 Vibration: IEC 60068-2-6
Authentication	CE, FCC, RoHS
Warranty	3 years

Ordering Information

Available Models	100M Copper Port	DI Input	DO Output	RO Output	Power Supply
RIO1000-2T-8IO(DI)-8IO(DO)-TB-P(12~48VDC)	2	8	8	—	12~48VDC
RIO1000-2T-6IO(DI)-6IO(RO)-TB-P(12~48VDC)	2	6	—	6	12~48VDC

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