

# Modbus / TCP Remote Digital I/O Module

# RIO-2018



## Features

- Remote thermocouple input module with web access AJAX and Modbus / TCP
- 1 x 10/100Mbps Ethernet port
- 3 channels J or K type thermocouple input with cold junction compensation
- 2 x 5000Vrms isolated digital input (bipolar input photocoupler)
- 1 x Form C relay with contact rating 30VDC@1A or 125VAC@0.5A
- Support web-based temperature monitoring and DIO control
- Optional DIN RAIL mounting kit (DK-35A)
- Windows configuration utility included

## H/W Specifications

### CPU / Memory

- CPU: NXP Arm Cortex-M3 LPC1768 100MHz
- Memory: 512KB on-chip Flash, 64KB SRAM

### Network Interface

- Type: 1 x 10/100Mbps Ethernet, RJ45 connector
- Protection: 1.5KV magnetic isolation
- Protocol: Modbus / TCP, UDP, HTTP, DHCP

### Thermocouple Input

- J type: Maxim MAX31855J converter with CJC Range: -210°C~+1200°C
- K type: Maxim MAX31855K converter with CJC Range: -200°C~+1350°C
- Resolution: 14-bit, 0.25°C
- Connector: OMEGA PCC-SMP Thermocouple connector Thermocouple fault detection

### Relay Output

- No. of Channels: 1 x Form C
- Contact Rating: 30VDC@1A or 125VAC@0.5A

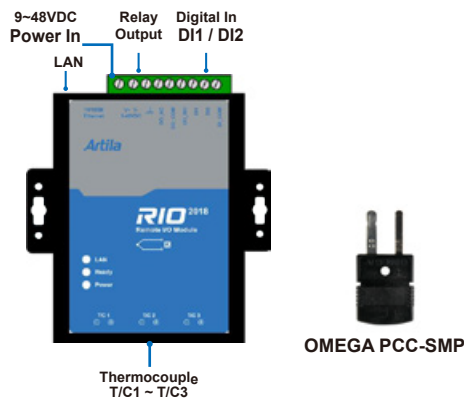
### Isolated Digital Input

- No. of Channels: 2
- Logic High: 5~24VDC
- Logic Low: 0~1.5VDC
- Opto-Isolation: 5000Vrms
- Response Time: 20µs

### General

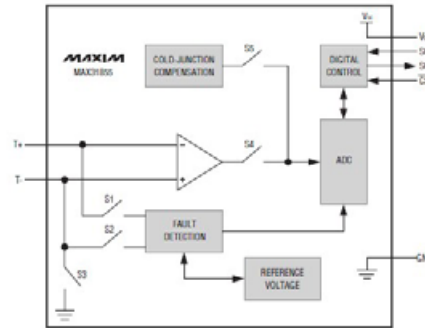
- Power Input: +9~+48VDC (Terminal Block)
- Protection: Auto polarity and surge protect
- Dimensions (W x H x D): 78 x 108 x 24mm (3. (3.0x4.25x0.94in))

## Front View

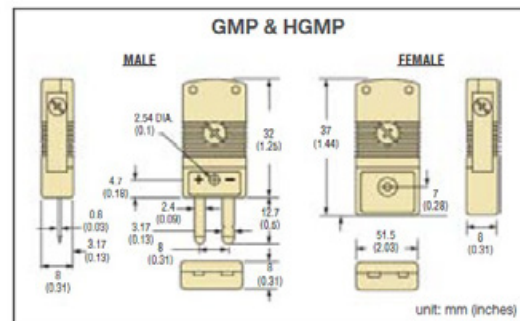


## Thermocouple Input

- The thermocouple input is connected to MAX31855 Cold Junction Compensated Thermocouple to Digital Converter. The connector is OMEGA PCC-SMP. Please make sure the type of thermocouple matches the model of RIO-2018. Please refer to datasheet of MAX31855
- for the technical specification of thermocouple measurement.



## Thermocouple



The following two items are available from [www.omega.com](http://www.omega.com).

- J type Thermocouple: 5SRTC-GG-J-24-36
- K type Thermocouple: 5SRTC-GG-K-24-36

## Ordering Information

### RIO-2018J

- Analog Input Remote I/O Module with J type Thermocouple input channel

### RIO-2018K

- Analog Input Remote I/O Module with K type Thermocouple input channel

### DK-35A (36-DK35A-000)

- DIN RAIL Mounting Kit

### PWR-12V-1A

- 100~240VAC to 12VDC 1A Power Adapter