



U-7555M

OPC UA I/O Module
with 8-ch DI, 8-ch DO
and 2-port Ethernet Switch

Features

- Support OPC UA Server and MQTT Client Protocol
- Support RESTful API via HTTP and HTTPS
- Support to Execute OPC UA, MQTT and RESTful API Simultaneously
- Support Logic Function Rule Setting: IF, THEN, ELSE
- Support Schedule: to Execute the Set Rules at a Specific Time.
- Support Event Log: Record the I/O Change for Device Tracking
- Support IoTstar Cloud Management Software.
- Built-in Web Server to Provide the Web User Interface
- I/O Channels: 8 x DI and 8 x DO
- Dual-port Ethernet Switch for Daisy-Chain Topology
- IEEE 802.3af-compliant Power over Ethernet (PoE)



Introduction

U-7555M is an OPC UA I/O module that provides 8 digital input channels and 8 digital output channels. It has a built-in two-port Ethernet switch to implement daisy-chain topology. The cabling is much easy and can reduce the total cable and switch cost. It follows IEEE 802.3af (Class 2) compliant Power over Ethernet (PoE) specification. It allows receiving power from PoE enabled network by Ethernet pairs. This feature provides greater flexibility and efficiency to simplify system design, save space, and reduce wirings and power sockets. It provides a Web UI to configure/control/monitor the modules, connections, and I/O status via a web browser. It is easy, fast, and no extra APP needed.

In industrial communication, UA I/O provides OPC UA Server, MQTT Client and RESTful API protocols (can execute all communications at the same time.). Users can choose the networking mode according to their cases. And to transmit the values of the built-in I/O channels to the cloud system or field control system for displaying, analysis or strategy. Support Scaling. Let the analog signal be converted into a more readable value. Support logic function rule setting IF, THEN, ELSE, can set up logical condition/action for I/O and virtual point; Provide schedule function to execute the set rules at a specific time; and support RESTful API function, can read/write I/O and virtual point through HTTP or HTTPS.

Software Specifications

| Protocol | | Function | |
|---------------|---|---------------------------------|---|
| OPC UA Server | <ul style="list-style-type: none"> ● OPC Unified Architecture: 1.02 ● Core Server Facet ● Data Access Server Facet ● Method Server Facet ● UA-TCP UA-SC UA Binary ● User Authentication: <ul style="list-style-type: none"> - Anonymous - Username/Password - X.509 Certificate ● Security Policy: <ul style="list-style-type: none"> - None - Basic128Rsa15 (Sign, Sign & Encrypt) - Basic256 (Sign, Sign & Encrypt) ● Max. Session Connections: 3 ● Can Execute with MQTT and RESTful API Communication Simultaneously | Web Interface for Configuration | <ul style="list-style-type: none"> ● The system operation can be performed through the browser without installing software tools. ● Use AES 256 encryption algorithm to encrypt web page setting data for general communication. ● HTTPS upgrades the security of web communication. |
| MQTT Client | <ul style="list-style-type: none"> ● Connect to the MQTT Broker to read or control the I/O channel value by the publish/subscribe messaging mechanism. (MQTT Ver. 3.1.1; TLS Ver. 1.2) | Scaling | <ul style="list-style-type: none"> ● Convert the analog signal to a more readable value. ● Function is only available for modules with AI/O. |
| RESTful API | <ul style="list-style-type: none"> ● User can read/write the I/O & Virtual points through HTTP and HTTPS. | Security | <ul style="list-style-type: none"> ● Information Security: Provide HTTPS, Port Binding, Allowlist, ICMP drop functions. ● Data security: Provide Certificate (X.509), Communication Encryption (SSL/TLS) functions. |
| | | Rule Setting | <ul style="list-style-type: none"> ● Provide simple logic condition rule setting, let UA I/O do automatic condition judgment and action control, to achieve simple intelligentization. |
| | | Schedule | <ul style="list-style-type: none"> ● Provide schedule function to execute the set rules at a specific time. |
| | | Event Log | <ul style="list-style-type: none"> ● When the I/O value changes, record the current I/O value for easy device tracking in the future. |
| | | IoTstar Setting | <ul style="list-style-type: none"> ● Support IoTstar cloud management software developed by ICP DAS. |

System Specifications

| CPU Module | |
|-----------------------------|---|
| CPU | 32-bit CPU (400 MHz) |
| Watchdog Timer | Module, Communication (Programmable) |
| Isolation | |
| 2-way Isolation | I/O: 2500 VDC |
| EMS Protection | |
| EFT (IEC 61000-4-4) | ±2 kV for Power Line |
| ESD (IEC 61000-4-2) | ±4 kV Contact for each terminal ±8 kV Air for random point |
| Surge (IEC 61000-4-5) | ±2 kV for Power Line |
| LED Indicators | |
| Status | Run, Ethernet, I/O |
| Ethernet | |
| Ports | 2 x RJ-45, 10/100 Base-TX, Switch Ports |
| PoE | Yes |
| LAN bypass | Yes |
| Security | ID, Password and IP Filter |
| Power | |
| Reverse Polarity Protection | Yes |
| Consumption | 4.0 W |
| Powered from PoE | IEEE 802.3af, Class2 |
| Powered from Terminal Block | +12 ~ +48 VDC |
| Mechanical | |
| Dimensions (mm) | 97 x 120 x 47 (W x L x H) |
| Installation | DIN-Rail mounting |
| Environment | |
| Operating Temperature | -25 °C ~ +75 °C |
| Storage Temperature | -30 °C ~ +80 °C |
| Humidity | 10 ~ 90% RH, Non-condensing |

I/O Specifications

| Digital Input/Counter | |
|--------------------------|---|
| Channels | 8 |
| Type | Dry Contact Wet Contact |
| Sink/Source (NPN/PNP) | Dry: Source Wet: Sink/Source |
| On Voltage Level | Dry: Close to GND Wet: +10 ~ +50 VDC |
| OFF Voltage Level | Dry: Open Wet: +4 VDC (max.) |
| Max. Counts | 4,294,967,295 (32-bit) |
| Frequency | 100 Hz |
| Min. Pulse Width | 5 ms |
| Effective Distance | 500m (max.) |
| Input Impedance | 10 kΩ |
| Overvoltage Protection | +70 VDC |
| Digital Output | |
| Channels | 8 |
| Type | Isolated Open Collector |
| Sink/Source (NPN/PNP) | Source |
| Load Voltage | +10 ~ +40 VDC |
| Load Current | 650 mA/Channel at 25°C |
| Overvoltage Protection | +47 VDC |
| Short-circuit Protection | Yes |
| Power on Value | Programmable |
| Safe Value | Programmable |

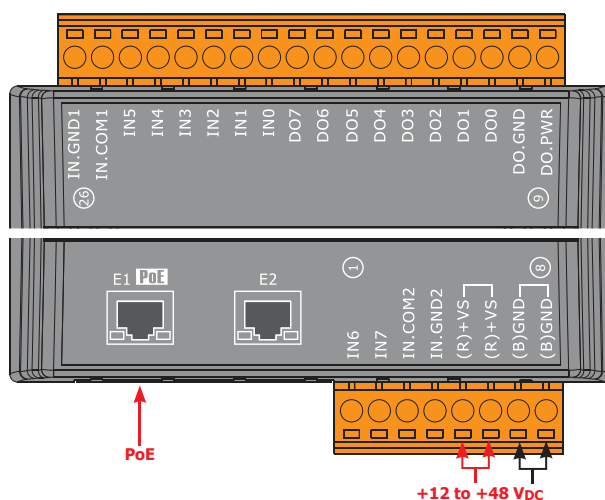
Wire Connections

| Digital Input/Counter | Readback as 1 | Readback as 0 |
|-----------------------|-------------------|--------------------|
| Wet Contact (Sink) | +10 ~ +50 Vdc | OPEN or <4 Vdc |
| | +10 ~ +50 Vdc | OPEN or <4 Vdc |

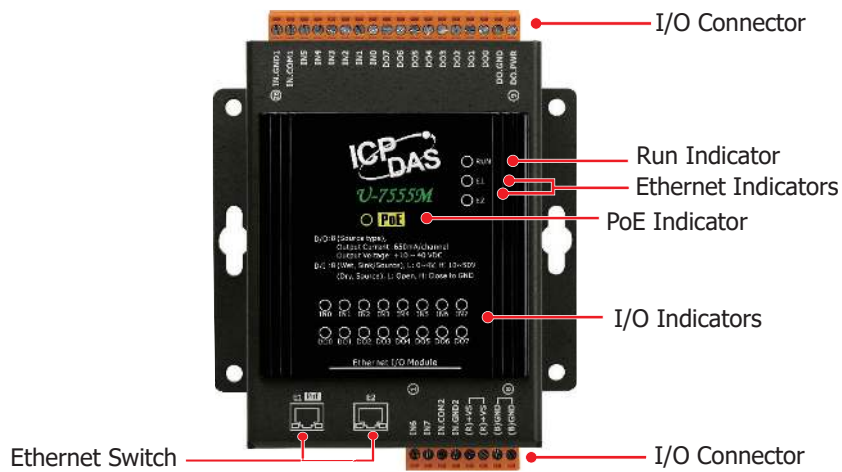
| Digital Input/Counter | ON State Readback as 1 | OFF State Readback as 0 |
|-----------------------|------------------------|-------------------------|
| Dry Contact | | |

| Digital Output | ON State Readback as 1 | OFF State Readback as 0 |
|----------------|------------------------|-------------------------|
| Source | | |

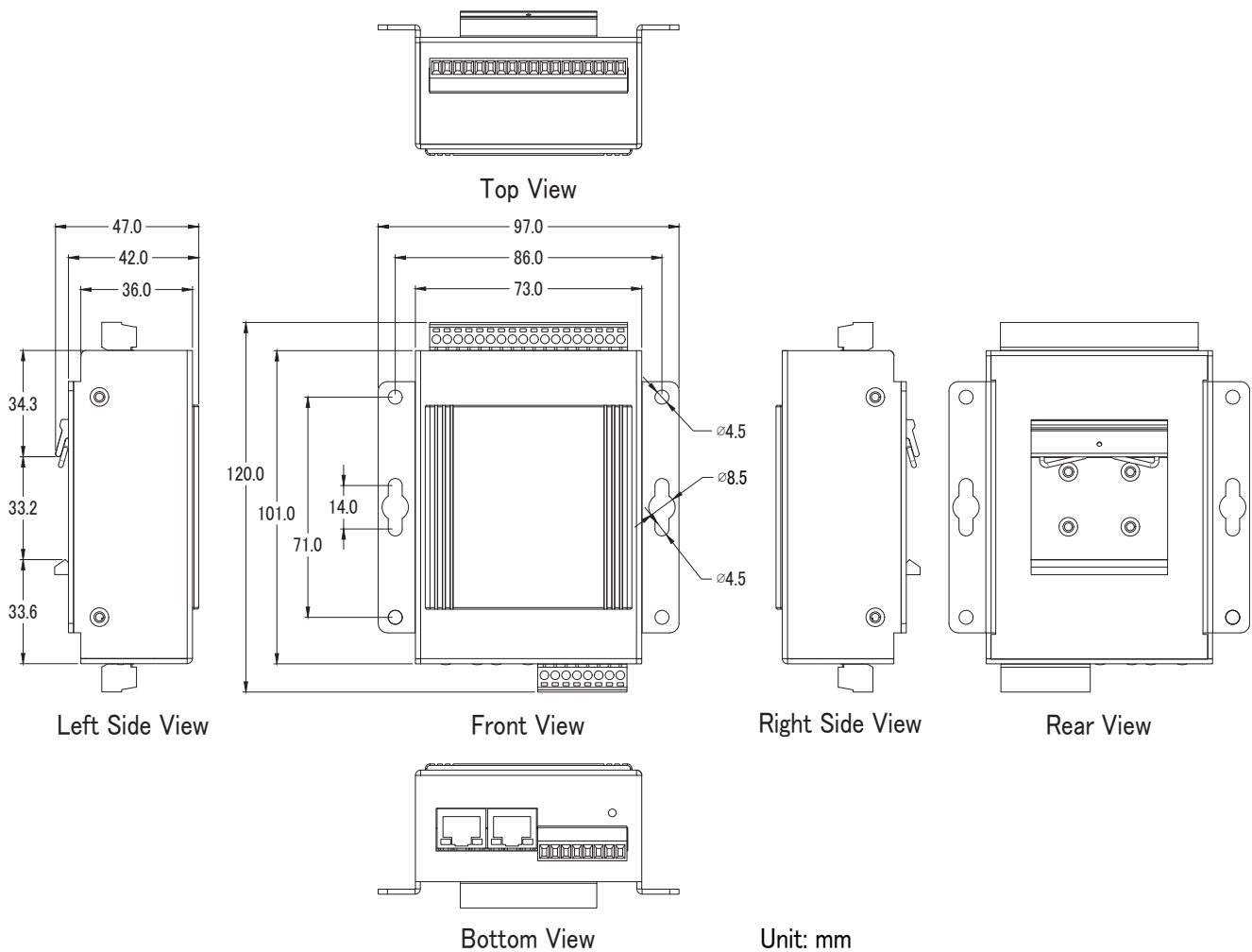
Pin Assignments



Appearance



Dimensions (mm)



Ordering Information

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|-------------------|---|
| U-7555M CR | OPC UA I/O Module with 8-ch DI, 8-ch DO, and 2-port Ethernet Switch. (RoHS) |
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