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ICP Electronics Australia

U-7560M

OPC UA I/O Module
with 6-ch DI, 6-ch Relay
and 2-port Ethernet Switch

Features

- Built-in Web Server to Provide the Web User Interface
- Support OPC UA Server and MQTT Client Protocol
- Support to Execute OPC UA and MQTT Communication Simultaneously
- Support Logic Function Rule Setting: IF, THEN, ELSE
- Support RESTful API: Read/Write I/O and Virtual Point via HTTP
- Support Event Log: Record the I/O Value Change for Easy Device Tracking
- Built-in I/O Channels (6 x DI and 6 x Relay)
- 2-port Ethernet Switch for Daisy-Chain Topology
- IEEE 802.3af-compliant Power over Ethernet (PoE)

CE   RoHS

Introduction

U-7560M is an OPC UA I/O module that provides 6 digital input channels and 6 digital output Relay 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 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 and MQTT Client protocols (can execute both 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 IT system or field control system for reading and writing.

Software Specifications

Protocol	

OPC UA Server	● OPC Unified Architecture: 1.02
	● Core Server Facet
	● Data Access Server Facet
	● Method Server Facet
	● UA-TCP UA-SC UA Binary
	● User Authentication:
	  - Anonymous
	  - Username/Password
	  - X.509 Certificate
	● Security Policy:
	  - None
	  - Basic128Rsa15 (Sign, Sign & Encrypt)
	  - Basic256 (Sign, Sign & Encrypt)
	● Max. Session Connections: 3
	● Can Execute with MQTT Communication Simultaneously

MQTT Client	● 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) ● Can Execute with OPC UA Communication Simultaneously

Function	
Web Interface for Configuration	● 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.
Scaling	● Convert the analog signal to a more readable value. ● Function is only available for modules with AI/O.
Security	● Based on security considerations, only the service ports needed by the I/O modules are open up, and the rest are not open. ● Forbidden to use ping: turn off this function so that others cannot scan the device, so as to reduce the possibility of network attacks. ● Firewall settings, allowing specific IP to have permission to connect to the module
RESTful API	● User can read/write the I/O & Virtual points through HTTP.
Rule Setting	● Provide simple logic condition rule setting, let UA I/O do automatic condition judgment and action control, to achieve simple intelligentization.
Event Log	● When the I/O value changes, record the current I/O value for easy device tracking in the future.

■ System Specifications

CPU Module	
CPU	32-bit CPU (400 MHz)
Isolation	
Intra-module Isolation	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 and ±8 kV Air for random point
Surge (IEC 61000-4-5)	±2 kV for Power Line
LED Indicators	
Status	1 x PoE Power 1 x System Running 1 x Ethernet Link/Act 16 x I/O Channel Status
Ethernet	
Ports	RJ-45 x 2, 10/100 Base-TX, Swtich Ports (LED indicators)
PoE	Yes
Power	
Reverse Polarity Protection	Yes
Input Range	12 ~ 48 VDC
Consumption	3.8 W
Powered from PoE	Yes, IEEE 802.3af, Class 1
Powered from Terminal Block	Yes, 12 ~ 48 VDC
Mechanical	
Dimensions (mm)	97 x 120 x 42 (W x L x H)
Installation	Wall Mounting
Environmental	
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	6
Type	Wet Contact
Sink/Source (NPN/PNP)	Sink/Source
ON Voltage Level	+10 VDC ~ +50 VDC
OFF Voltage Level	+4 VDC Max.
Max. Counts	16-bit (65535)
Frequency	50 Hz
Min. Pulse Width	10 ms
Input Impedance	10 kΩ
Overvoltage Protection	+70 VDC

Relay Output	
Relay Output	6
Type	Power Relay, Form A (SPST N.O.)
Contact Rating	5 A @ 250 VAC/24 VDC (Resistive Load)
Operate Time	10 ms (max.)
Release Time	5 ms (max.)
Electrical Endurance	100,000 ops.
Mechanical Endurance	20,000,000 ops.

■ Wire Connections

Digital Input/Counter	Readback as 1	Readback as 0
Sink	+10 ~ +50 V_{DC} 	OPEN or <4 V_{DC}
Source	+10 ~ +50 V_{DC} 	OPEN or <4 V_{DC}

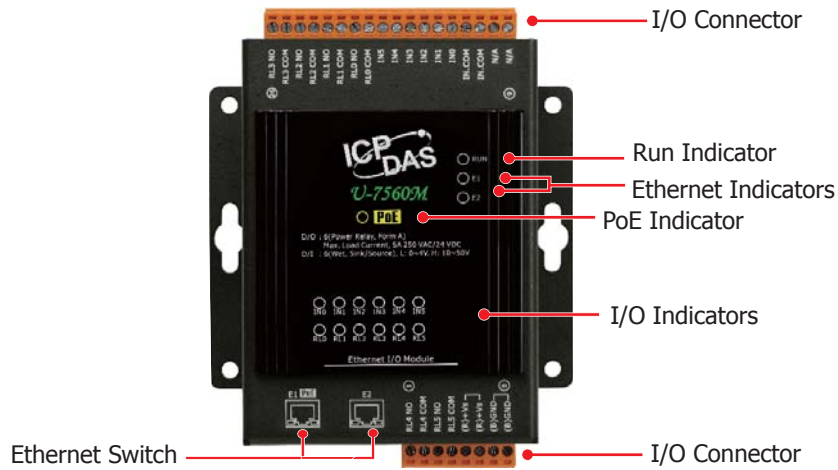| Power Relay	ON State: Readback as 1
Relay Output	
	OFF State: Readback as 0

■ Pin Assignments
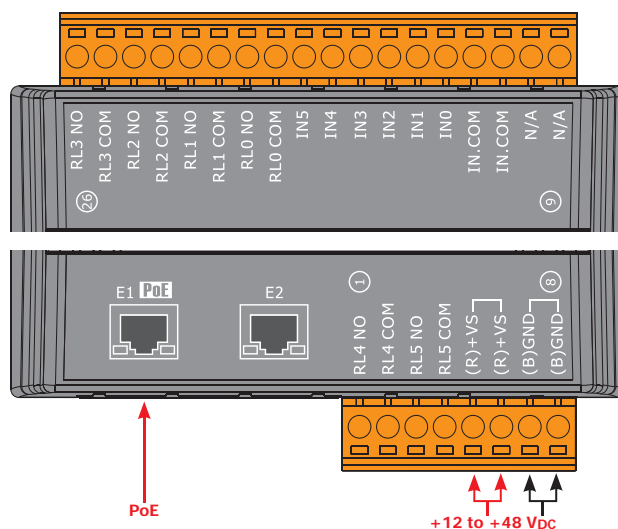
PoE

+12 to +48 V_{DC}

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📁 Appearance

I/O Connector

Run Indicator

Ethernet Indicators

PoE Indicator

I/O Indicators

Ethernet Switch

I/O Connector

📁 Dimensions (mm)

Top View

42.0
40.0

97.0
86.0
73.0

∅4.5

∅4.5
14.0
∅8.5

120.0 101.0 71.0

Left Side View

Front View

Bottom View
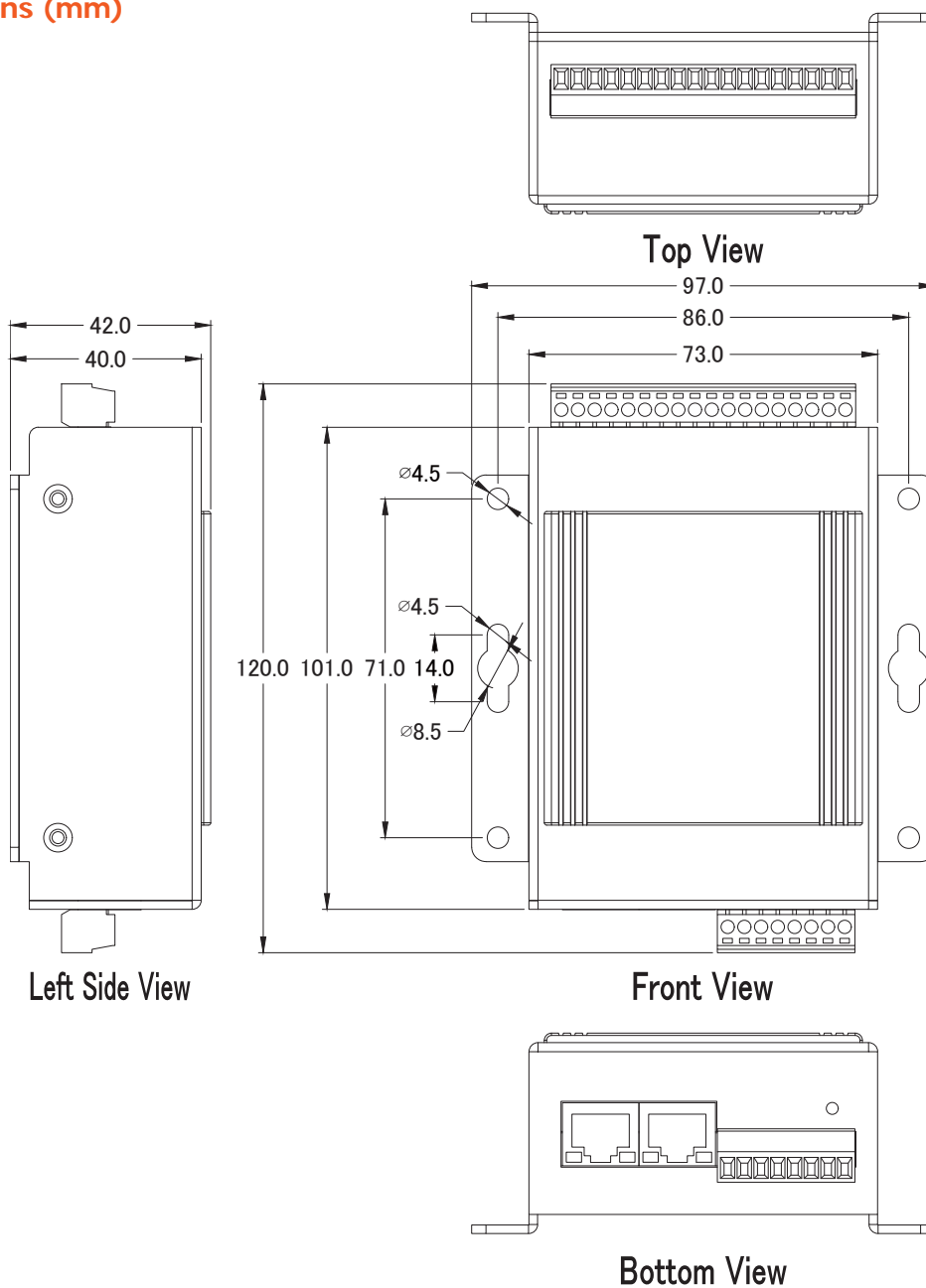
📁 Ordering Information

U-7560M CR	OPC UA I/O Module with 6-ch DI, 6-ch Relay, and 2-port Ethernet Switch. (RoHS)