# UA-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
- Built-in OPC UA Server
- Support MQTT Client Communication Protocol
- 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)

## Introduction

UA-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 easier and total costs of cable and switch are significantly reduced. UA-7560M 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.

UA I/O provides OPC UA server and MQTT client function in industrial networking communication. Users can choose the networking mode according to their needs and environment, to transmit the values of built-in I/O channels to the cloud IT system or field control system for reading and writing.

## 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<br>1 x System Running<br>1 x Ethernet Link/Act<br>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 |
| Wet Contact, ON Voltage Level | +10 VDC ~ +50 VDC |
| Wet Contact, 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. |

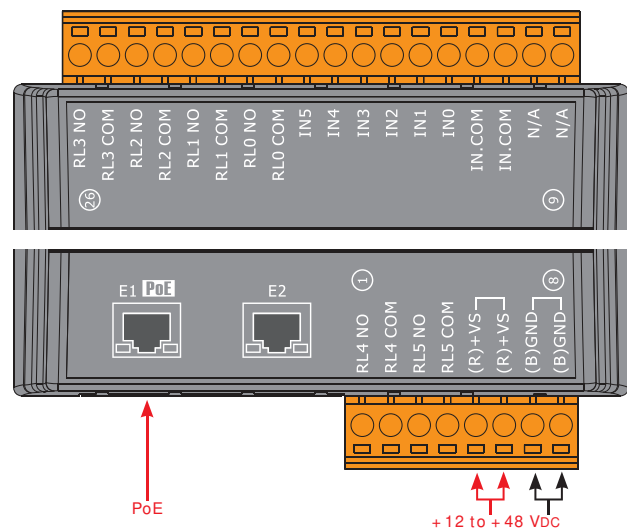## ■ Software Specifications

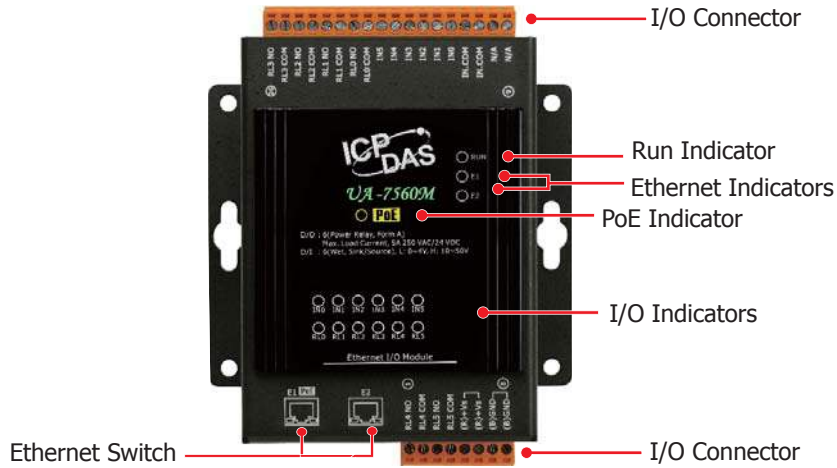| Protocol | |
|---|---|
| OPC UA Server | ● OPC Unified Architecture: 1.02<br>● Core Server Facet<br>● Data Access Server Facet<br>● Method Server Facet<br>● UA-TCP UA-SC UA Binary<br>● User Authentication:<br>  - Username/Password<br>  - X.509 Certificate<br>● Security Policy:<br>  - None<br>  - Basic128Rsa15 (Sign, Sign & Encrypt)<br>  - Basic256 (Sign, Sign & Encrypt)<br>● Recommend to keep the maximum number of sessions within 3 connections. |
| 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) |
| **Function** | |
| Web Interface for Configuration | The system operation can be performed through the browser without installing software tools. |

## ■ Wire Connections

| Digital Input/Counter | Readback as 1 | Readback as 0 |
|---|---|---|
| Sink | +10 ~ +50 $V_{DC}$<br>INx 10K IN.COM To other channels | OPEN or <4 $V_{DC}$<br>INx 10K IN.COM To other channels |
| Source | +10 ~ +50 $V_{DC}$<br>INx 10K IN.COM To other channels | OPEN or <4 $V_{DC}$<br>INx 10K IN.COM To other channels |

| Power Relay | ON State: Readback as 1 |
|---|---|
| Relay Output | RLx.COM AC/DC LOAD RLx.NO Relay Close To other channels |
| | **OFF State: Readback as 0** |
| | RLx.COM AC/DC LOAD RLx.NO Relay Open To other channels |

## ■ Pin Assignments

RL3 NO, RL3 COM, RL2 NO, RL2 COM, RL1 NO, RL1 COM, RL0 NO, RL0 COM, IN5, IN4, IN3, IN2, IN1, IN0, IN.COM, IN.COM, N/A, N/A (26 ... 9)

E1 PoE, E2 (1) RL4 NO, RL4 COM, RL5 NO, RL5 COM, (R)+VS, (R)+VS, (B)GND, (B)GND (8)

PoE

+12 to +48 $V_{DC}$

## Appearance

I/O Connector

Run Indicator

Ethernet Indicators

PoE Indicator

I/O Indicators

Ethernet Switch

I/O Connector

## Dimensions (mm)

**Top View**

97.0
86.0
73.0

42.0
40.0

⌀4.5

⌀4.5

120.0 101.0 71.0 14.0

⌀8.5

**Left Side View**

**Front View**

**Bottom View**

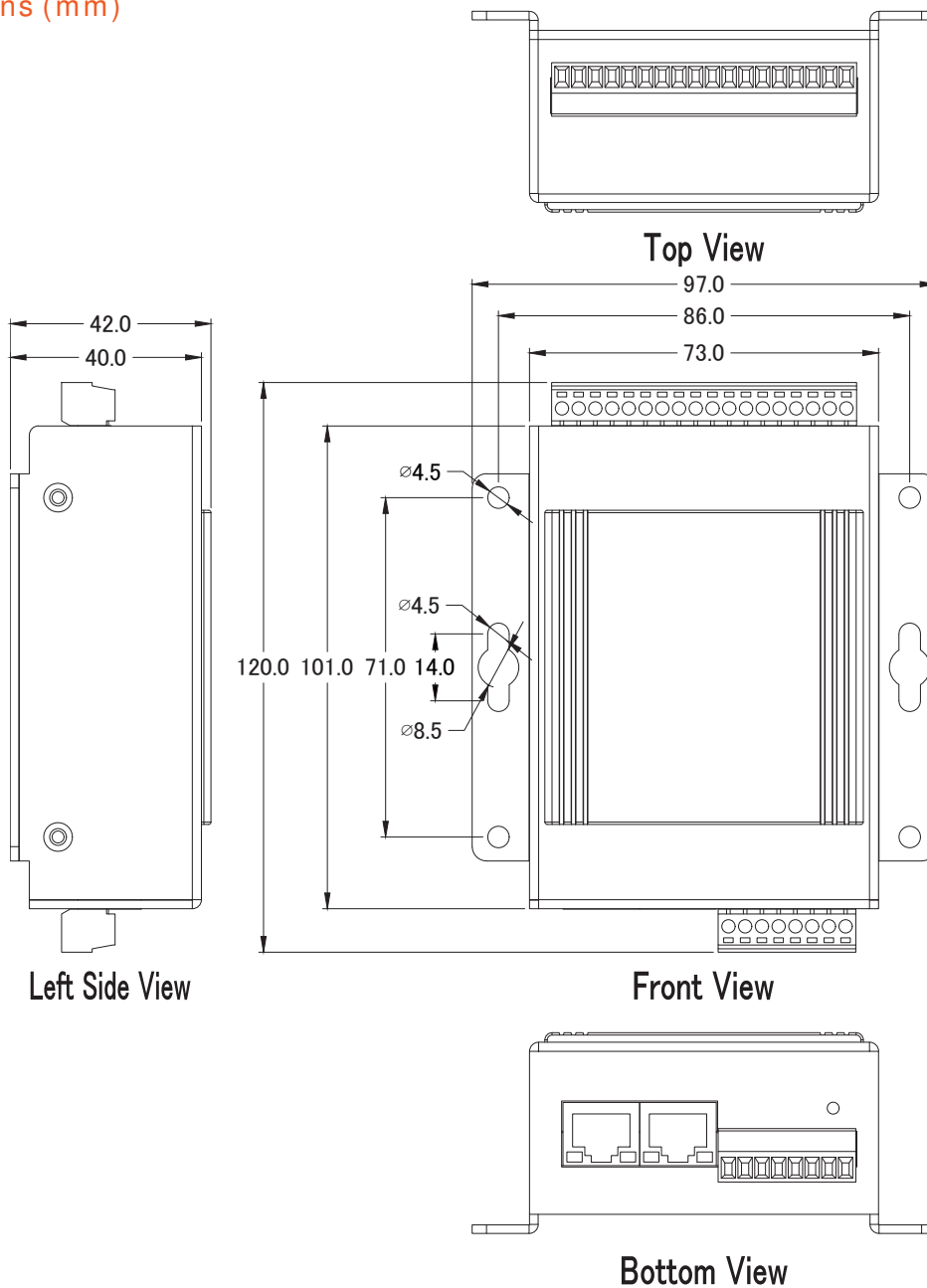## Ordering Information

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