



## U-7545M

#### **OPC UA I/O Module**

with 16-channels DO and 2-port Ethernet Switch

#### **₱** Features

- Support OPC UA Server / Client 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: 16 x DO
- Dual-port Ethernet Switch for Daisy-Chain Topology
- IEEE 802.3af-compliant Power over Ethernet (PoE)









#### **■ Introduction**

**U-7545M** is a UA I/O module that provides 16 digital output channels. It has a built-in dual-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 / Client, 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				
OPC UA Server / Client	<ul> <li>OPC Unified Architecture: 1.02</li> <li>Core Server Facet</li> <li>Data Access Server Facet</li> <li>Method Server Facet</li> <li>UA-TCP UA-SC UA Binary</li> <li>User Authentication: <ul> <li>Anonymous</li> <li>Username/Password</li> <li>X.509 Certificate</li> </ul> </li> <li>Security Policy: <ul> <li>None</li> <li>Basic128Rsa15 (Sign, Sign &amp; Encrypt)</li> <li>Basic256 (Sign, Sign &amp; Encrypt)</li> </ul> </li> <li>Can Execute with MQTT and RESTful API Communication Simultaneously</li> <li>Max. Session Connections: 3 (Server only)</li> </ul>			
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)			
RESTful API	User can read/write the I/O & Virtual points through HTTP and HTTPS.			

Function		
Web Interface for Configuration	<ul> <li>The system operation can be performed through the browser without installing software tools.</li> <li>Use AES 256 encryption algorithm to encrypt web page setting data for general communication.</li> <li>HTTPS upgrades the security of web communication.</li> </ul>	
Scaling	<ul> <li>Convert the analog signal to a more readable value.</li> <li>Function is only available for modules with AI/O.</li> </ul>	
Security     Infromation Security: Provide HTTPS, Port Bir Allowlist, ICMP drop functions.     Data security: Provide Certificate (X.509), Communication Encryption (SSL/TLS) function		
Rule Setting	Provide simple logic condition rule setting, let UA     I/O do automatic condition judgment and action     control, to achieve simple intelligentization.	
Schedule	Provide schedule function to execute the set rules at a specific time.	
Event Log	• When the I/O value changes, record the current I/O value for easy device tracking in the future.	
IoTstar Setting	Support loTstar cloud management software developed by ICP DAS.	

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# **■ System Specifications**

CPU Module			
СРИ	32-bit CPU (400 MHz)		
Watchdog Timer	Module, Communication(Programmable)		
Isolation			
2-way Isolation	I/O: 3750 VDC		
EMS Protection			
ESD (IEC 61000-4-2)	±4 kV Contact for each terminal ±8 kV Air for random point		
EFT (IEC 61000-4-4)	±4 kV for Power Line		
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, Swtich Ports		
PoE	Yes		
LAN bypass	Yes		
Security	ID, Password and IP Filter		
Power			
Reverse Polarity Protection	Yes		
Consumption	3.1 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 Output			
Channels	16		
Туре	Isolated Open Source		
Sink/Source (NPN/PNP)	Source		
Load Voltage	+10 ~ +40 VDC		
Load Current	600 mA/channel		
Overvoltage Protection	+47 VDC		
Overload Protection	1.4 A (with short-circuit protection)		
Short-circuit Protection	Yes		
Power on Value	Programmable		
Safe Value	Programmable		

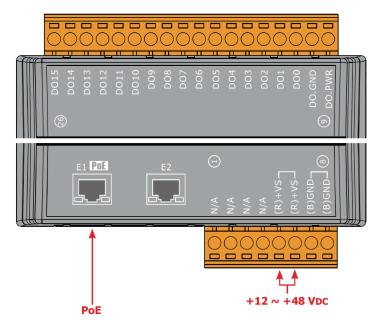
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### **■ Wire Connections**

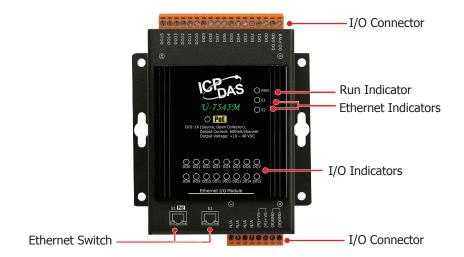
Output Type	ON State Readback as 1	Output Type	OFF State Readback as 0
Drive Relay	DOX DO.GND DO.PWR	Drive Relay	X DOX DO.GND DO.PWR
Resistance Load	DOX DO.GND DO.PWR	Resistance Load	+ → DOX DO.GND DO.PWR

## **■ Pin Assignments**

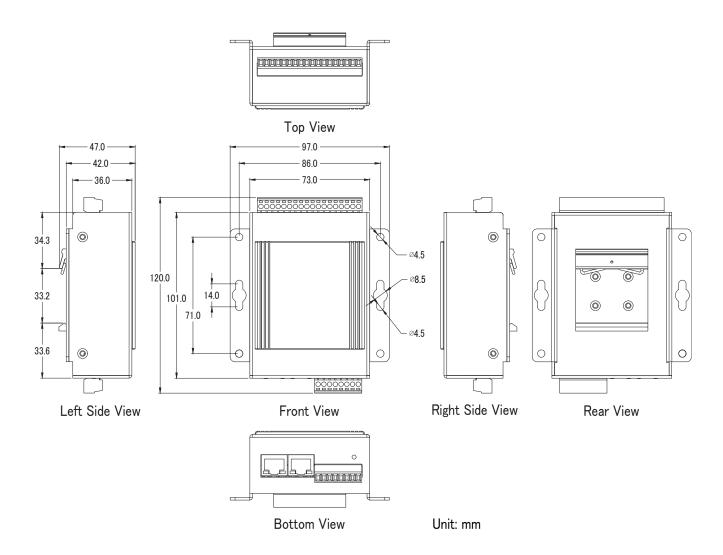


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### **Appearance**



## **■ Dimensions (mm)**



### Ordering Information

U-7545M CR OPC UA I/O Module with 16-channels DO and 2-port Ethernet Switch. (RoHS)

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