

# Modbus module for use with C440, S611 and as Stand-alone I/O

## Installation

The Modbus module is designed to be used in industrial applications and installed in accordance with this document.

### Mount the Module.

**To mount the stand-alone design in application field,**

The stand-alone design provides 2 optional mounting methods for the customer.

- 35mm DIN Rail Mounting
- Panel mounting features 79x18mm with two # 10 screws.

Connect the Modbus communication cable to the Modbus adapter Connect the Modbus RS-485 cable to the 5-position connector located at the top of the module. Connect 24 Vdc control power to the 5-position header. The connector has screws for positive retention to eliminate accidental unplugging Use one wire per terminal.

### Set the Modbus address, TX mode, and baud rate

The Modbus address, TX mode, and baud rate are set using DIP switches on the face of the module. The Modbus address is in binary with the major units numbered to the left of the switch on the side label. Adding up the major units set to ON determines the Modbus address.

**Table 1. Modbus Dipswitch baud rate selection**

B1 (Sw8)	B0 (Sw7)	Baud
OFF	OFF	9600
OFF	ON	19,200(Default)
ON	OFF	38,400
ON	ON	115,200

TX mode is selected using Sw6  
OFF=RTU  
ON=ASCII

The Modbus MAC address is set by Sw5-Sw1.

### Modbus Address Configuration

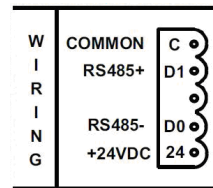
Dip Switch	Value
5	16
4	8
3	4
2	2
1	1

Example: To set the address to 25, start from the switch mark 32 and set the switches to OFF(32), ON(16), ON(8), OFF(4), OFF(2), ON(1) (16+8+1=25).

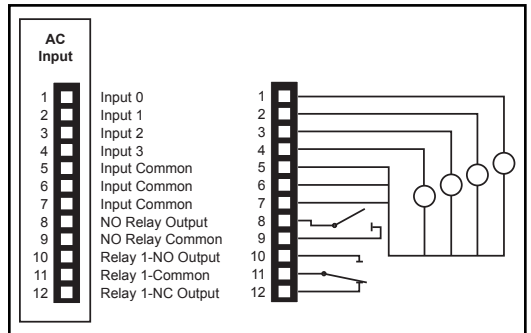
5pin 24VDC power, Modbus Connector

CURRENT DRAW:18mA

TERMINAL TORQUE:25Nm(2.25 lb-in)



### C441NS – 120VAC Input specification

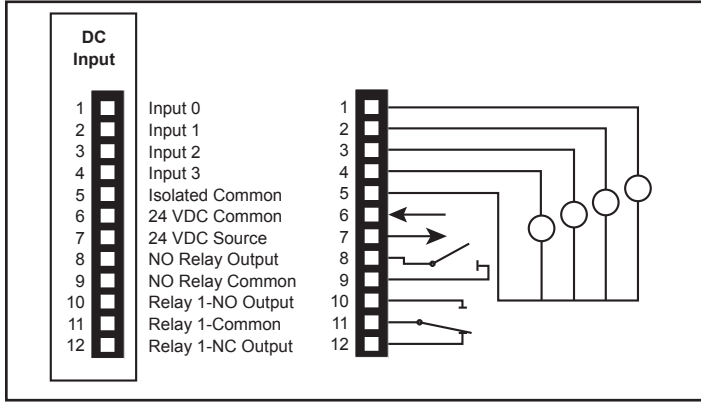


Specification	value
Number of Inputs	4
Voltage Category	120VAC
Operating Range	80-140VAC
Operating Frequency	50/60Hz
Signal Delay Max	30ms
Input Type	IEC 61131-2, Type 1 Digital
Off State Voltage	0-30VAC
On State Voltage	79-140VAC
On State Current Max	15mA
Supply	External Supply



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**C441PS – 24VDC Input specification**



Specification	value
Number of Inputs	4
Voltage Category	24VDC
Type	Current Sinking
Input Type	IEC 61131-2, Type 1 Digital
On State Voltage	15V-30VDC
Steady State Current Max	15mA
Off State Voltage	0-5VDC
24VDC source current limit	50mA
Isolation Voltage	250VAC

**Environmental Ratings of the Module**

Transportation and Storage	Temperature	-50°C to 80°C (-58°F to 176°F)
	Humidity	5-95% non-condensing
Operating	Temperature	-40°C to 55°C [-40°F to 131°F]
	Humidity	5-95% non-condensing
	Altitude	Above 2000 meters (6600 feet) consult factory
	Shock	15G any direction for 11 milliseconds
	IEC 60068-2-27	
	Vibration	10-150Hz, 3G, 0.3mm Maximum Peak-to-Peak
Pollution Degree	3	

**Approvals/Certifications**

**Electrical/EMC**

• Radiated and Conducted Emissions	EN 55011 Class A
• ESD Immunity (IEC61000-4-2)	+/- 8kV air, +/- 4kV contact (IEC61131-2)
• Radiated Immunity (IEC61000-4-3)	10V/m 80-1000 MHz, 80% amplitude modulation @ 1kHz (IEC61131-2)
• Fast Transient (IEC61000-4-4)	+/- 2kV supply and control +/- 1kv communications (IEC31161-2)
• Surge (IEC61000-4-5)	+/- 1kV line-to-line +/- 2kV line-to-ground (IEC61131-2)
• RF Conducted (IEC61000-4-6)	10V, 0.15 – 80MHz (IEC61131-2)
• Magnetic Field (IEC61000-4-8)	30 A/m, 50Hz (IEC61131-2)
• Ingress Protection Degree (IEC60947-1)	IP20
• Circuit Board Coating	Yes

**Agency Certifications**

cULus by UL to UL 508  
CSA C22.2 No. 14  
CE (Low Voltage Directive, EMC Directive)

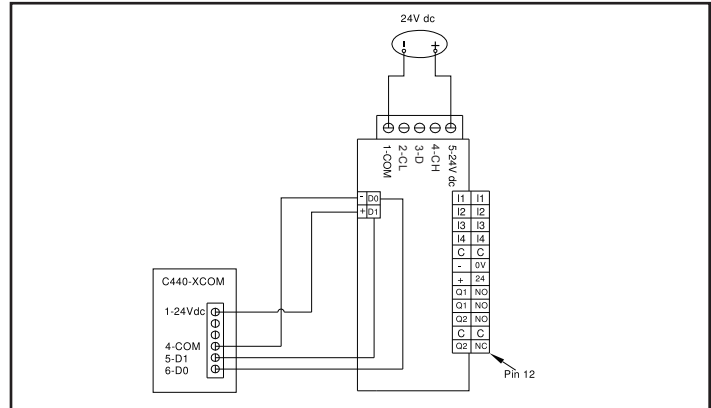


**Module Electrical Requirements**

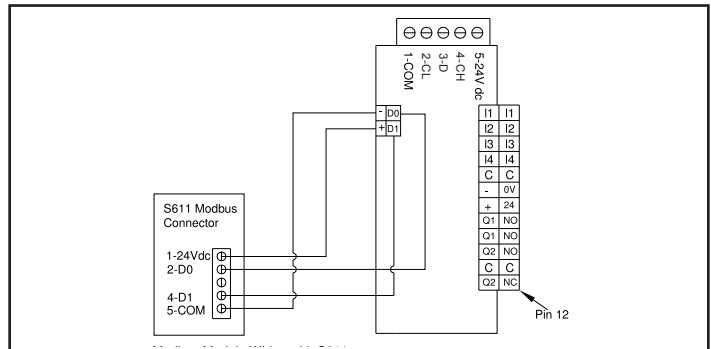
Voltage Range	Nominal 24VDC 18-30VDC
Current Draw	Approx. 30mA

**Note:** The device is for use with Eaton UL Listed Power Supply, Catalog Nos. PSG60E, PSG60F.

Any UL Listed isolated power supply with an isolated 28 VDC output may be used, provided that a UL Listed or Recognized Fuse rated no more than 4A Maximum be installed.



**Figure 1. Modbus Module Wiring with C440**



**Figure 2. Modbus Module Wiring with S611**

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