

I/O Modules

EXPANSION MODULES AND WIRING ADAPTER

MOUNTING INSTRUCTIONS

Supported Documents

- I/O Module Product Datasheet (31-00588)
- I/O Module Installation Instruction and Commissioning Guide (31-00589)



WARNING

Electrical Shock Hazard.

Can cause severe injury, death, or property damage.

Disconnect the power supply before beginning installation to prevent electrical shock and equipment damage. More than one power supply may have to be disconnected.

When installing this product

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and marked on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check the product operation.
5. Be sure wiring complies with all applicable codes, ordinances, and regulations.

INTRODUCTION

This document contains mounting instructions for I/O modules, wiring adapter, and auxiliary terminal block on the DIN rail. For illustration purposes, the IO-16UIO-S-S variant is used across the document, however, the instructions apply to all other variants.

The I/O modules are compatible with the following controller models of CPO and Niagara brands. A common controller illustration is used in this document to refer to these controllers.

- CPO-PC500
- CPO-PC600
- N-ADV-134-H
- N-ADV-133-H
- N-ADV-112-H

Mounting overview

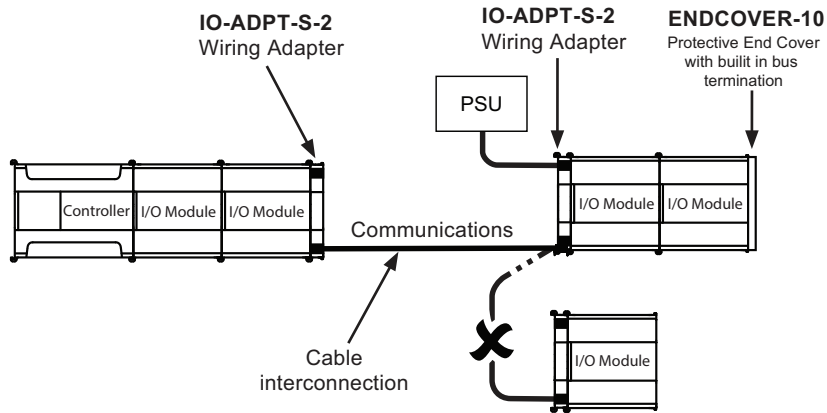
The I/O modules can be mounted by snapping on the controller or mounted remotely. See the example diagrams to understand the local and remote mounting and its connections. For more detailed diagrams, refer to I/O modules Installation & Commissioning instruction document (31-00589).

The max allowed power cable length is 328 ft (100m).

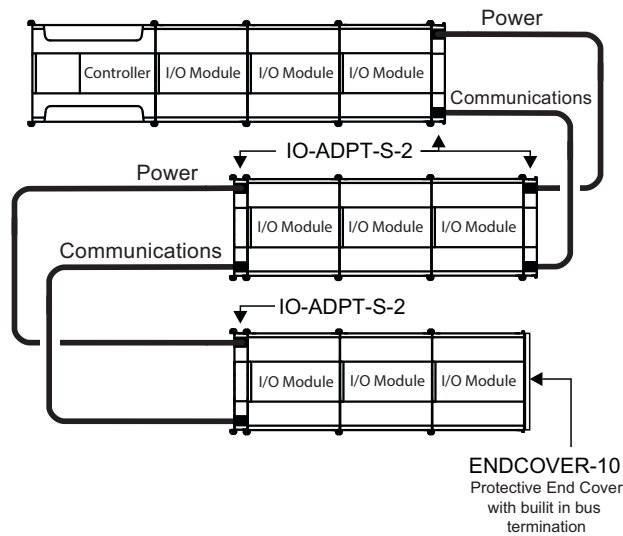
The max allowed communications cable length for connecting room 1 and room 2 is:

- 131 ft (40m) - any type of cabling and daisy chain topology
- 2625 ft (800m) - twisted pair or telephone cable and daisy chain topology.
- The controller must be positioned at one end of the Panel Bus and bus termination at the other end. The Protective End Cover has a built in end of line resistor to terminate the RS485 bus (ENDCOVER-10).

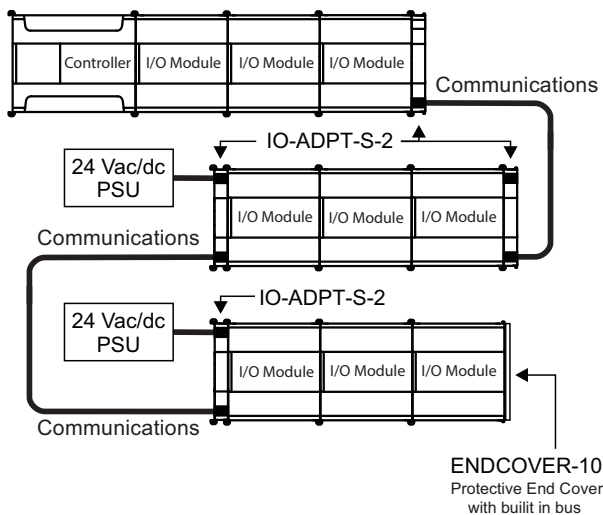
Example 1: The I/O modules should be connected in series, not in parallel.



Example 2: Both the communication bus and power are extended to an additional row of I/O modules on a separate DIN rail.

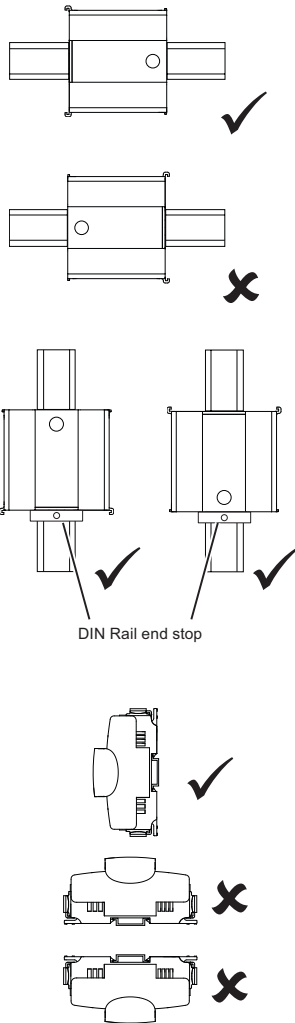


Example 3: The communication bus is extended to an additional row of I/O modules on a separate DIN rail. Power is supplied separately to the I/O modules.



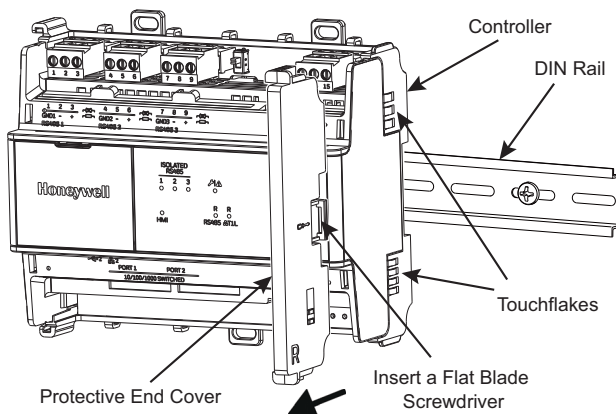
Mounting precautions

I/O Modules and Wiring Adapter support both Horizontal and Vertical DIN rail mounting on a vertical surface. Do not mount on a horizontal surface.



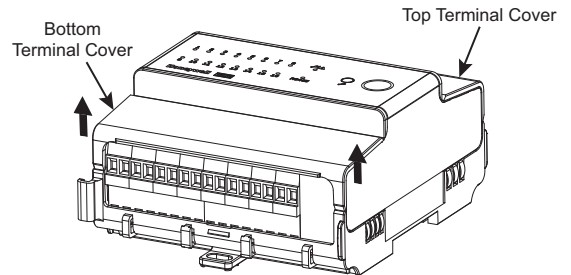
Mounting the I/O module on a Wall/Panel using DIN Rail

The I/O module mounts to the side of the controller. Remove the protective end cover from the controller to reveal the touchflakes.

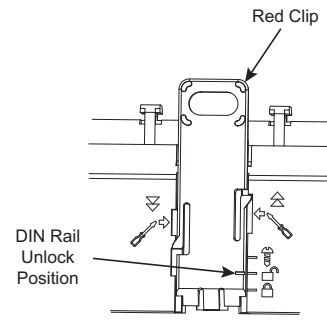


The I/O module connects to the controller touchflakes for the power and communications. To mount the I/O module next to a Wiring Adapter, see “Mounting Wiring adapter on the DIN Rail” on page 4.

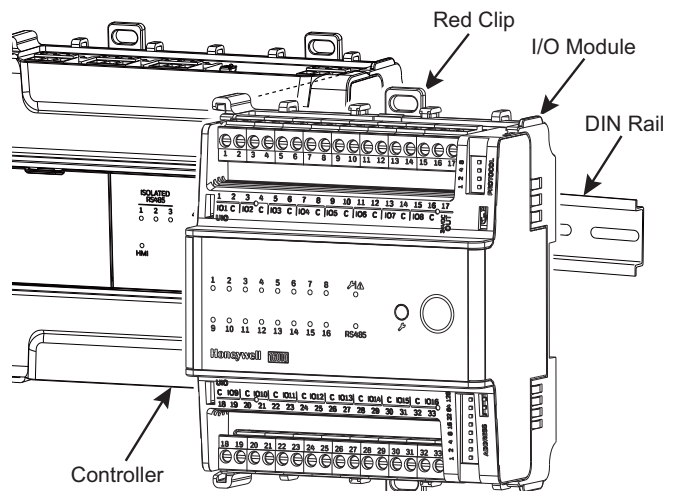
1. Remove the bottom Terminal Cover from the I/O module. Use your fingers to push the cover upwards as shown in the below figure.



2. Remove the top Terminal Cover as described in the previous step.
3. Extend both red clips to the unlock position as shown in the below figure.



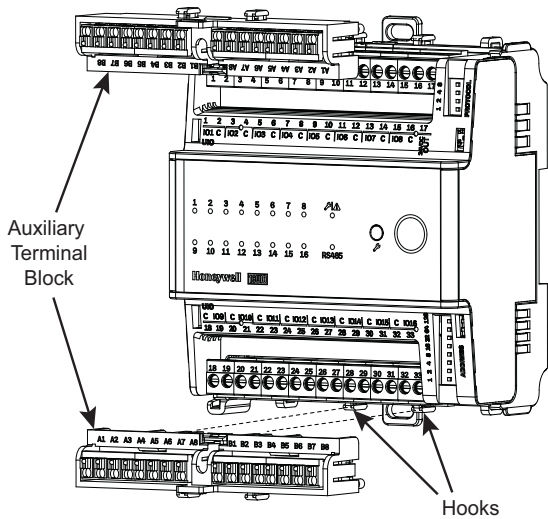
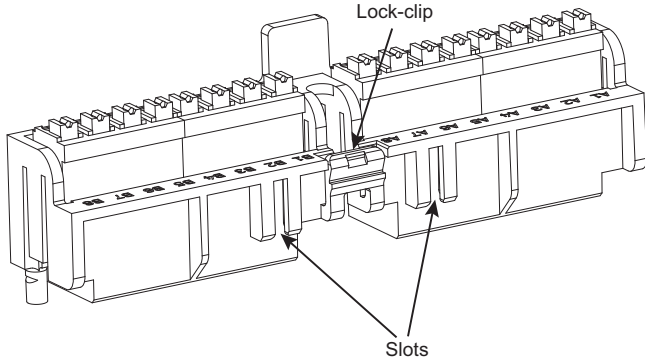
4. Hold the I/O module in an orientation such that the red clip is facing toward the DIN rail.



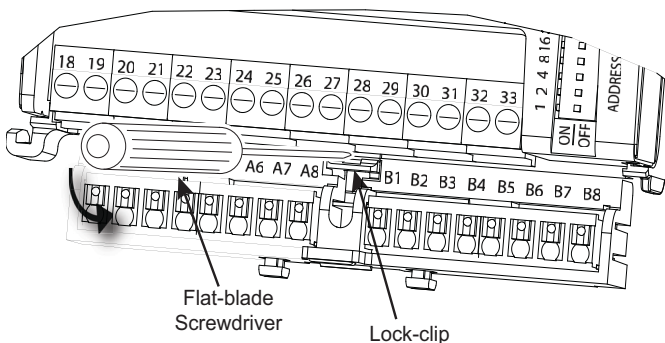
5. Mount the I/O module onto the DIN rail and push both red clips in to secure it in place.
6. Replace the terminal covers.

Installing the Auxiliary Terminal Block (optional)

1. Install the Auxiliary terminal block onto the I/O module by inserting the slots of the auxiliary terminal block into the two hooks of the I/O module and push it till the lock-clip is locked with the I/O module.



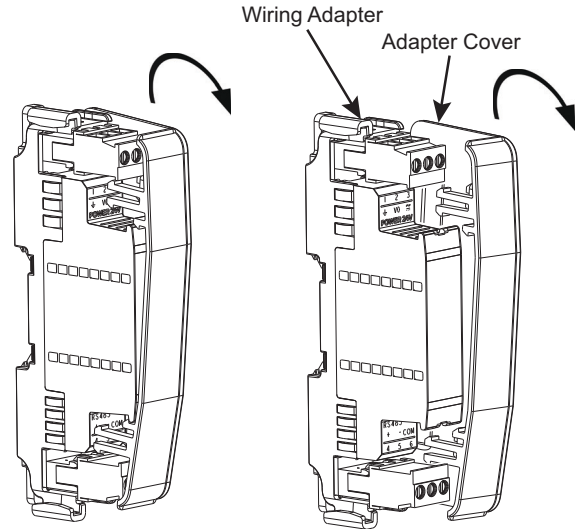
2. Remove the insulation 5mm from the wires' end by using a stripping tool.
3. Refer to the I/O Module Installation Guide (31-00589) for wiring connections and insert the wires into the auxiliary terminal blocks.
4. To remove the auxiliary terminal block, insert a flat blade screwdriver into the lock-clip and release it.



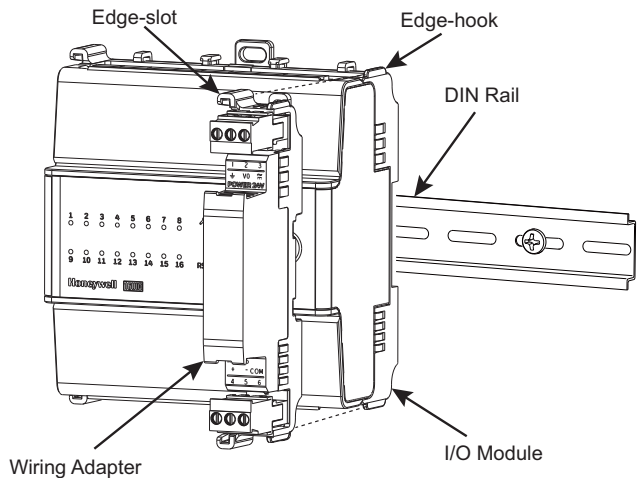
Mounting Wiring adapter on the DIN Rail

NOTE: Use the Wiring Adapter to extend Power and Comms to the next DIN rail or to extend Power and Comms to a remote I/O module.

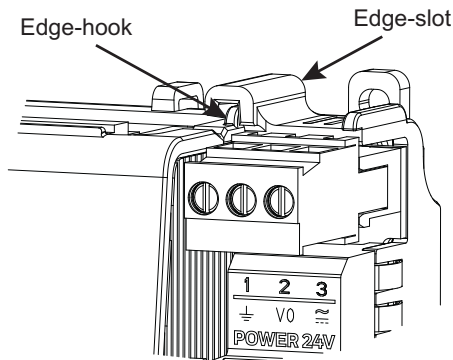
1. Remove the adapter cover by pulling out the cover as shown in the below image.



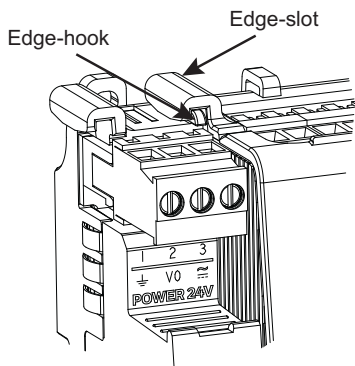
2. Extend the red clips on the wiring adapter to the last position.
3. Hold the wiring adapter in the position as shown below.



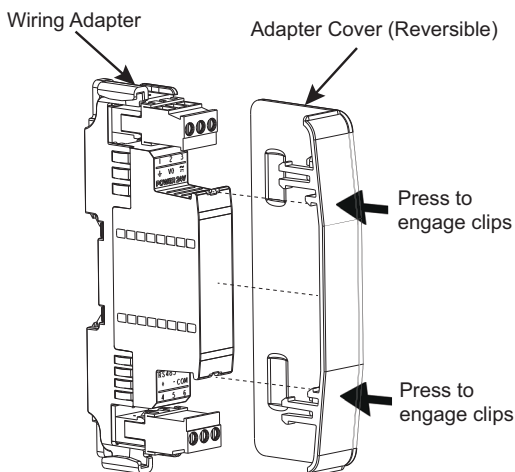
- For the **right side mounting**, mount the adapter in a way that the edge-slot of the adapter aligns with the axis of the edge-hook of the I/O module to attach and secure them together.



For the **left side mounting**, mount the adapter in a way that the edge-hook of the adapter aligns with the axis of the edge-slot of the I/O module to attach and secure them together.



- The wiring adapter has a reversible cover to safeguard the touchflakes. Place the adapter cover on the side of the wiring adapter to cover the touchflakes that are not being used. Attach the adapter cover by pressing at the location of the clips until both clips are engaged.



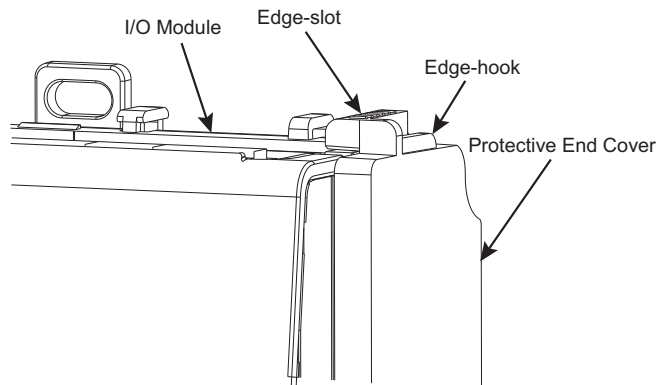
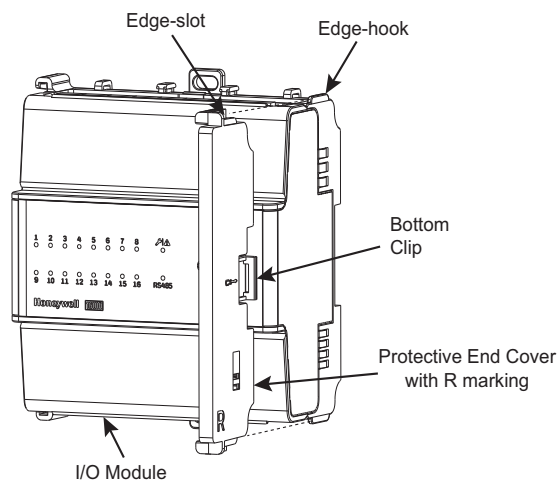
- On the last I/O module in the panel, mount the protective end cover. Refer to See "Protective end cover" on page 5.

Protective end cover

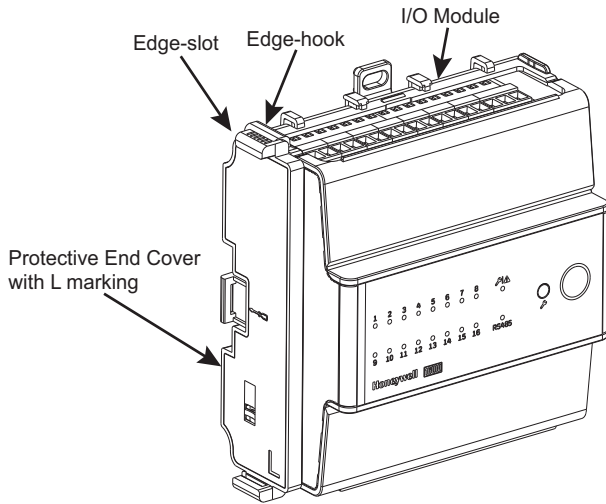
The protective end cover comes factory installed on the controller. Remove the protective end cover from the controller and mount on the last I/O module in the panel. The protective end cover safeguards the touchflakes and has a built in end of line resistor to terminate the RS485 bus.

Mounting Protective end cover on the last I/O module

- For the **right side mounting**, hold the Protective end cover (marked with R) in a way that the edge-slot of the cover aligns with the axis of the edge-hook of the I/O module, and slide along till the bottom clip is locked with the I/O module.



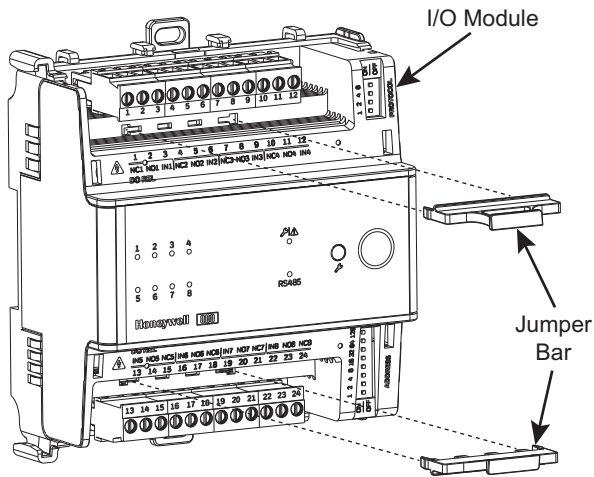
For the **left side mounting**, hold the Protective end cover (marked with L) in a way that the edge-hook of the cover aligns with the axis of the edge-slot of the I/O module, and slide along till the bottom clip is locked with the I/O module.



Mounting Jumper bars on the I/O module (only for DO relay variants)

The DO variants of I/O modules include two jumper bars in the carton. One jumper bar is used for the top row of terminals and the other is used for the bottom row of terminals. Each jumper bar connects the "IN" terminals internally.

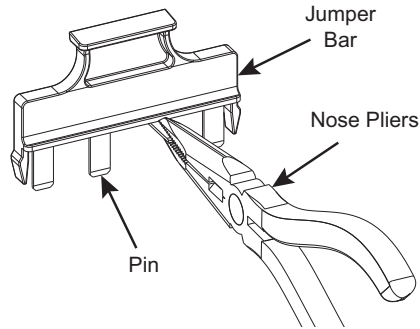
1. Insert the pins of the jumper into the slots as shown in the below image.



The jumper connects all four "IN" terminals into a single terminal. It enables a single power source connection to one terminal.

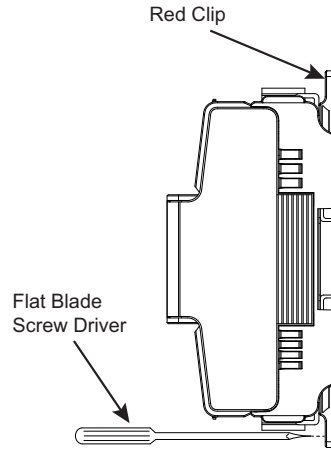
If two different power supplies are required to connect, use a needle nose pliers to break off a pin on the jumper bar by bending it back & forth until it breaks and then

insert the jumper bar into the slot. This connects only three terminals and the fourth terminal is available for another power supply.

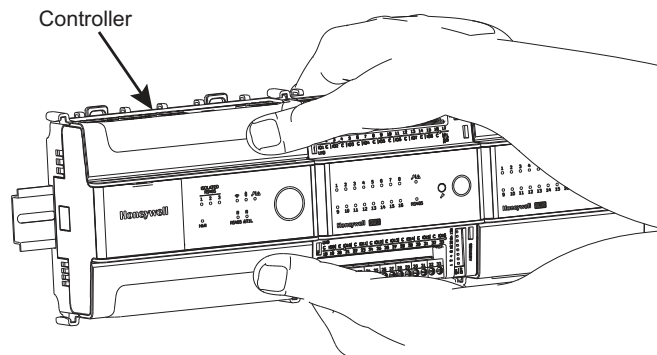


Removing the I/O module from the DIN Rail

1. Power off the I/O modules before proceeding.
2. Disconnect all the input/output terminals from the I/O module.
3. Remove the protective end cover if you are removing the last I/O module in the panel. Set the protective end cover aside.
4. Hold the I/O module with one hand and insert a flat blade screwdriver into the bottom red clip slot and pull downward. Insert a flat blade screwdriver into the top red clip slot and pull upward.

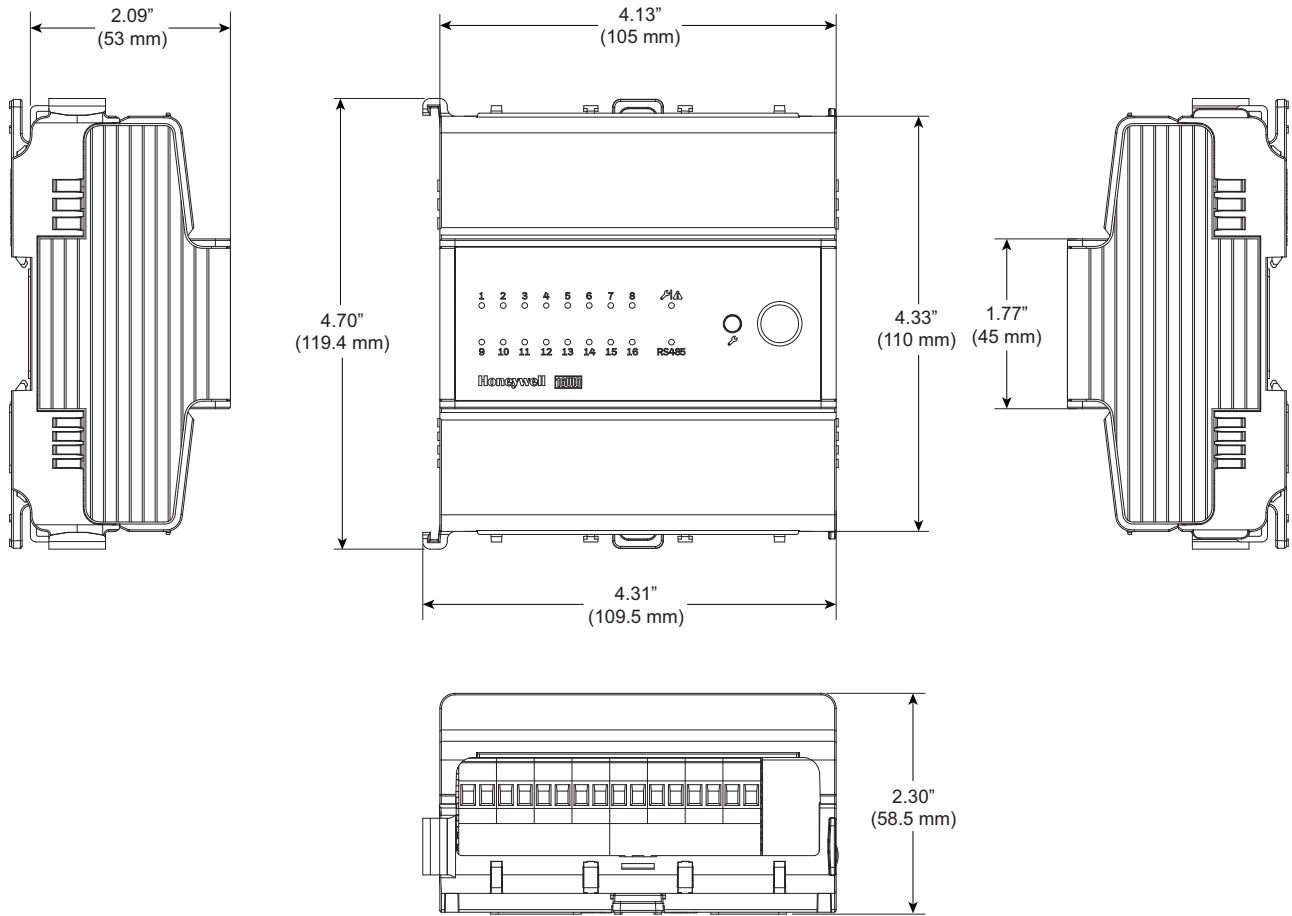


5. After the I/O module is released from the DIN rail, push the edge-slots of the I/O module on four corners in the direction as shown in the below image.
6. After all corners are released, grasp the I/O module and pull straight out.

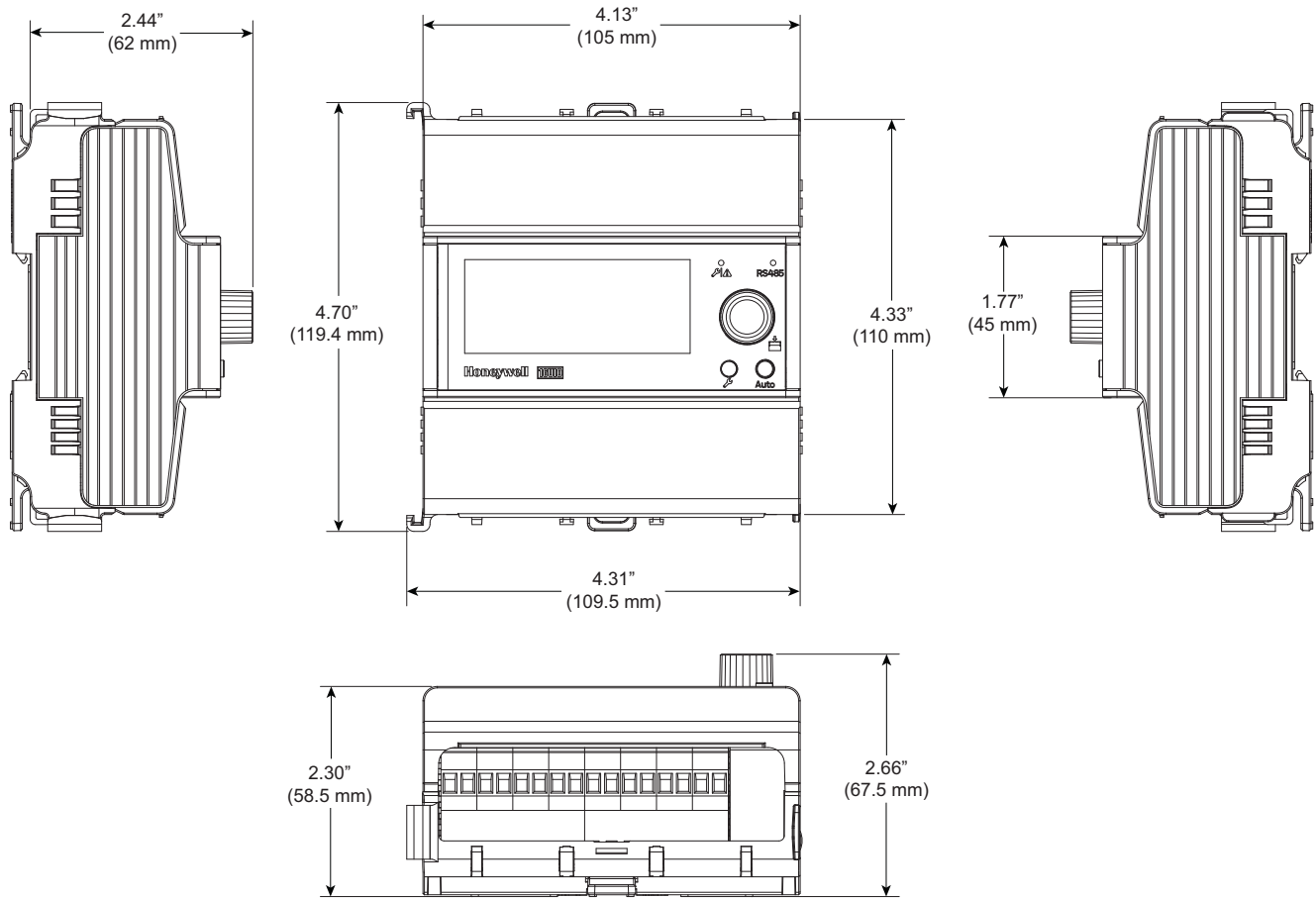


DIMENSIONS

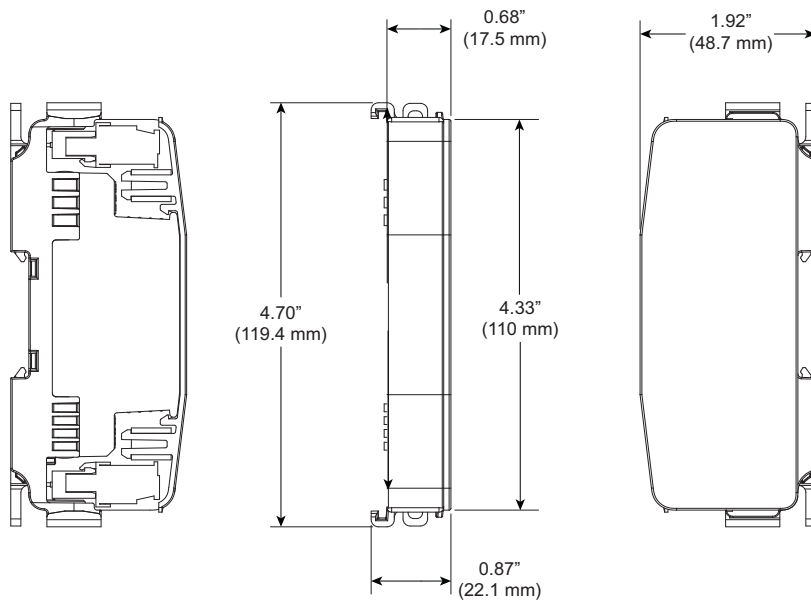
I/O Module Non-HOA Variants



I/O Module HOA variants



Wiring Adapter



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31-00555-01 | Rev. 07-23
Part Number: 31-00555-01

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