



DC (24–48V) Input Module

Cat. No. 1771-IH

Installation Data

To The Installer

This document provides information on:

- important pre–installation considerations
- power supply requirements
- initial handling procedures
- installing the module
- using the indicators for troubleshooting
- module specifications

Pre–installation Considerations

The 1771–IH module is compatible with the following 2–wire devices:

- pushbuttons
- limit switches
- float switches
- selector switches

The off–state leakage current of your 2–wire devices should not exceed 1mA.

This module contains input filtering to limit the effect of voltage transients caused by contact bounce and/or radiated electrical noise. The delay due to input filtering is nominally 15 ± 7 ms for turning inputs on or off.

Power Requirements

Your module receives its power through the 1771 I/O chassis backplane from the chassis power supply. The module requires 74mA from the output of this supply. Add this to the requirements of all other modules in the I/O chassis to prevent overloading the chassis backplane and/or backplane power supply.

Initial Handling

The dc input module is shipped in a static–shielded bag to guard against electrostatic discharge damage. Observe the following precautions when handling the module.

Electrostatic Discharge Damage



ATTENTION: Under some conditions, electrostatic discharge can degrade performance or damage the module. Observe the following precautions to guard against electrostatic damage.

- Wear an approved wrist strap grounding device, or touch a grounded object to discharge yourself before handling the module.
- Do not touch the backplane connector or connector pins.
- If you configure or replace internal components, do not touch other circuit components inside the module. If available, use a static–free work station.
- When not in use, keep the module in a static–shielded bag.

Installing Your Module

In this section we tell you how to key your I/O chassis, install your module and make your wiring connections.

Keying Your I/O Chassis

Use the plastic keying bands, shipped with each I/O chassis, to key the I/O slots to accept only this type of module.

The module circuit board is slotted in two places on the rear edge. The position of the keying bands on the backplane connector must correspond to these slots to allow insertion of the module. You can key any connector in an I/O chassis to receive this module except for the left–most connector reserved for adapter or processor modules. Place keying bands between the following numbers labeled on the backplane connector:

- Between 4 and 6
- Between 16 and 18

You can change the position of these keys if system redesign and rewiring makes insertion of a different module necessary.

Installing the Input Module

To install the DC input module in your 1771 I/O chassis, follow the steps listed below.



ATTENTION: Remove power from the 1771 I/O chassis backplane and wiring arm before removing or installing an I/O module.

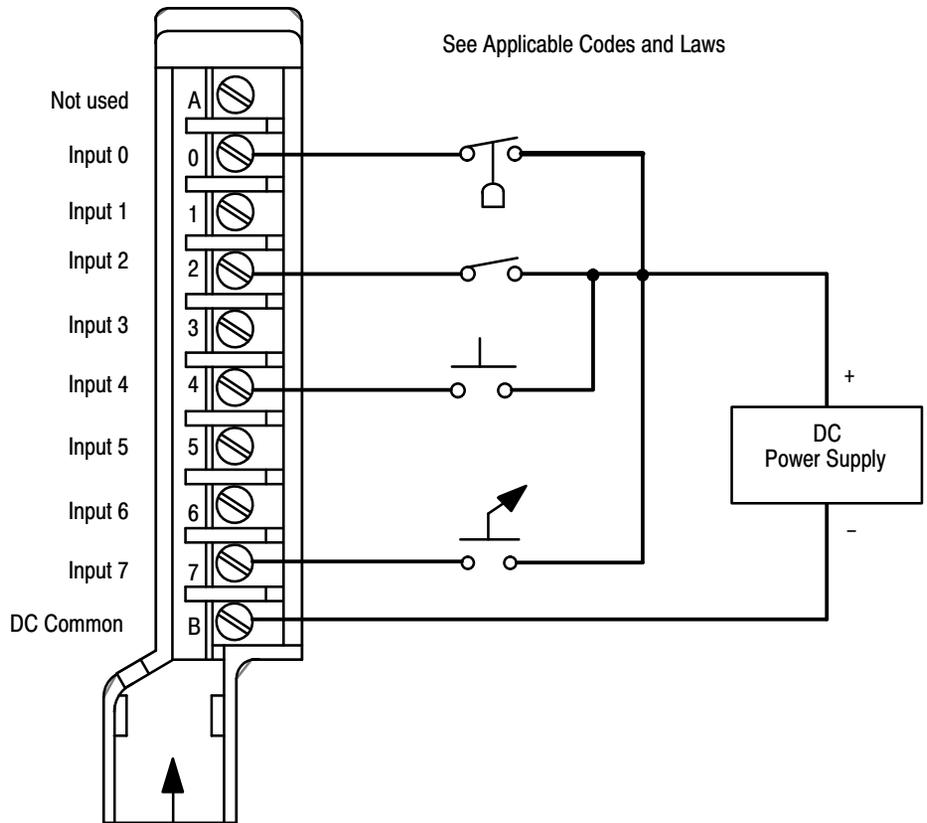
- Failure to remove power from the backplane or wiring arm could cause module damage, degradation of performance, or injury.
 - Failure to remove power from the backplane could cause injury or equipment damage due to possible unexpected operation.
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1. Turn off power to the I/O chassis.
2. Place the module in the plastic tracks on the top and bottom of the slot that guides the module into position.
3. Do not force the module into its backplane connector. Apply firm, even pressure on the module to seat it properly.
4. Snap the chassis latch over the top of the module to secure its position.
5. Connect the wiring arm to the module.
6. Make wiring connections to the field wiring arm as indicated in

Connecting Wiring to the Input Module

Connections to the input module are made to the 10 terminal field wiring arm (cat. no. 1771-WA) shipped with the module. Attach the wiring arm to the pivot bar on the bottom of the I/O chassis. The wiring arm pivots upward and connects with the module so you can install or remove the module without disconnecting the wires.

Figure 1
Connection Diagram (2-Wire Devices)



(Actual wiring runs in this direction.)

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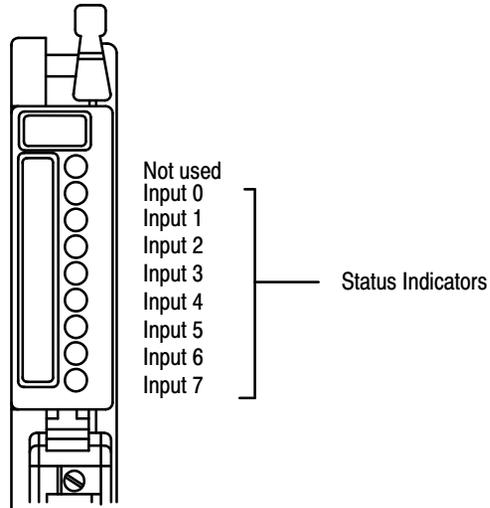
Connect one terminal of your 2-wire input device to terminals 0 through 7 (figure 1). When 2-wire devices are connected in the current source mode, the module serves as the current sink for the input devices.

Connect terminal B to the dc common (-). Terminal A is not used. Connect the +dc line to the other terminal of your input devices. Use stranded 14 or 16 gauge wire to minimize the voltage drop over long cable distances.

Interpreting the Status Indicators

The front panel of your module contains 8 red status indicators (figure 2). The red status indicators illuminate when the respective input is on.

Figure 2
Status Indicators



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Specifications

Inputs per Module	8	
Module Location	1771 I/O chassis	
Input Voltage Range	24 to 50V DC	
Nominal Input Current	8.4mA at 24V DC 20mA at 48V DC	
Maximum Off-state Current	1.0mA	
Maximum Off-state Voltage	4.5V DC	
Minimum On-state Voltage	10V DC	
Input Impedance	2.5 to 3K ohms maximum (on-state) 5 to 6K ohms maximum (off-state)	
Input Signal Delay	Low to high propagation delay 15ms±7ms High to low propagation delay 15±7ms	
Power Dissipation	8.1 Watts (max.), 0.4 Watts (min.)	
Thermal Dissipation	27.7 BTU/hr (max.), 1.3 BTU/hr (min.)	
Backplane Current	74mA @ 5V DC ±5%	
Opto-electrical Isolation	1500V AC (RMS)	
Environmental Conditions		
Operational Temperature	0° to 60°C (32° to 140°F)	
Storage Temperature	-40° to 85°C (-40° to 185°F)	
Relative Humidity	5 to 95% (without condensation)	
Conductors	Wire Size	14 gage stranded maximum 3/64 inch insulation maximum
	Category	2 ¹
Keying		Between 4 and 6 Between 16 and 18
Field Wiring Arm		Catalog Number 1771-WA

¹ Refer to publication 1770-4.1, Programmable Controller Wiring and Grounding Guidelines.



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