



AC (24V) Input Module

Cat. No. 1771-IN

Installation Data

To The Installer

This document provides information on:

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

Pre-installation Considerations

This module contains input filtering to limit the effects of voltage transients caused by contact bounce and/or radiated electrical noise. The delay due to filtering is nominally 18 ± 10 ms for turning ac inputs on or off.

This module is designed to operate with ac proximity switches and other input devices with an off-state leakage current less than 2.8mA peak.

Power Requirements

Your module receives its power through the 1771 I/O chassis backplane from the chassis power supply. The module requires 80mA 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.

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 10 and 12

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

Installing Your Input Module

To install the AC 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.

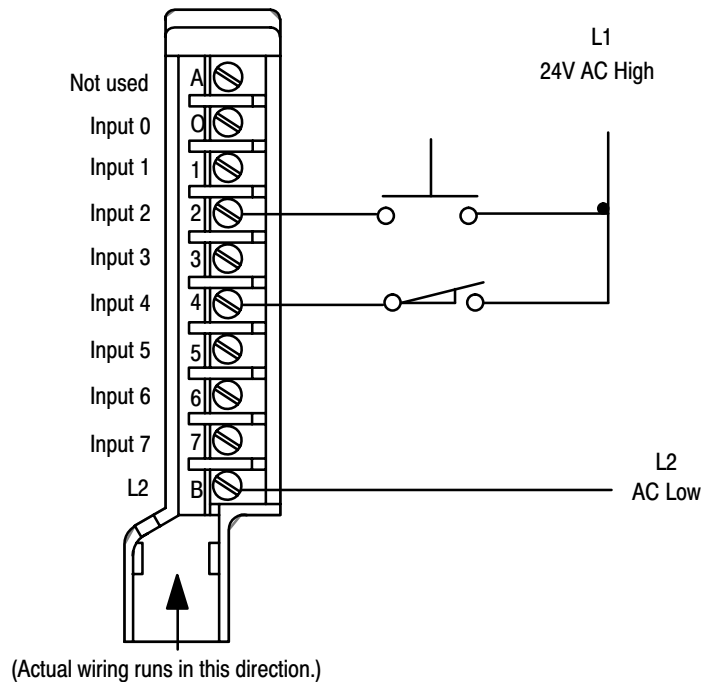
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1. Turn off power to the I/O chassis.
 2. Place the module in the plastic tracks on the top and bottom of the slot that guides the module into position.
 3. Do not force the module into its backplane connector. Apply firm, even pressure on the module 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 Figure 1.

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 (Figure 1). 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



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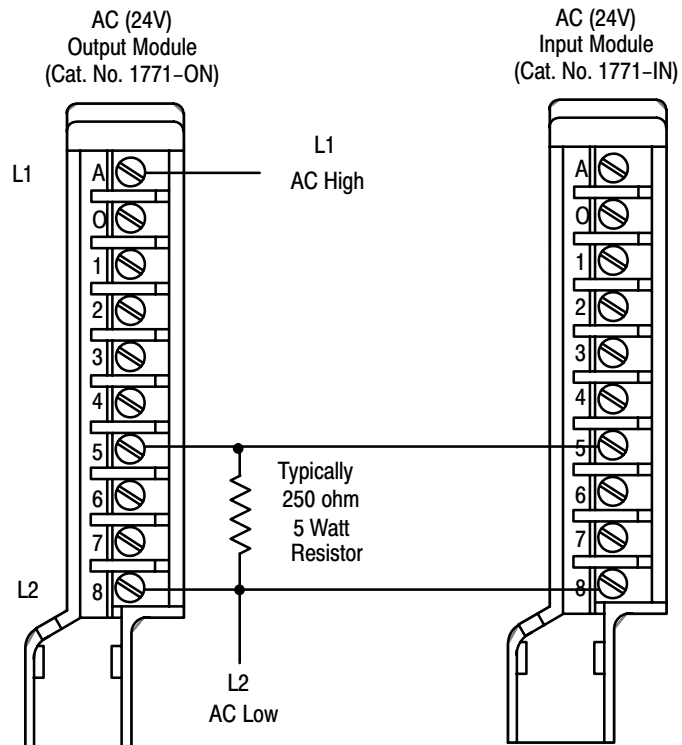
Connect one terminal of your 2-wire input device to terminals 0 thru 7 (Figure 1).

Connect terminal B to the L2 (low) ac return. Terminal A is not used. Connect L1 (high) ac 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.

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Important: You can use an AC (24V) Output Module (cat. no. 1771-ON) to directly drive terminals on an AC/DC (24V) Input Module (cat. no. 1771-IN) (figure 2), but you must connect a 250 ohm, 5W resistor between the output terminal and L2 (common) as shown in Figure 2. **Use the same ac power source to power both modules to ensure proper phasing and prevent module damage.**

Figure 2
Driving an Input with an Output

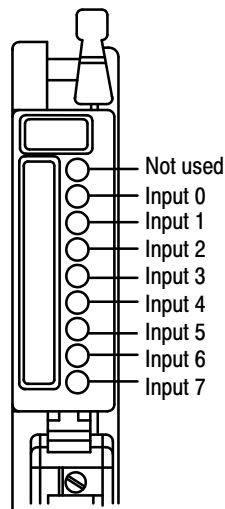


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Interpreting the Status Indicators

The front panel of your module contains 8 orange status LED indicators (Figure 3). The status indicators are provided for system logic side indication of individual inputs. When an indicator lights, voltage is present on the terminal. The module transfers this information to the backplane for the processor to read.

Figure 3
Status Indicators



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Specifications

Inputs per Module	8
Module Location	1771 I/O chassis
Nominal Input Voltage	24V ac @ 47 – 63Hz
Nominal Input Current	7mA @ 12V ac 18mA @ 24V ac 22mA @ 28V ac
On-state Voltage Range	12V ac to 28V ac
Maximum Off-state Voltage	10.5V ac peak
Maximum Off-state Current	2.8mA ac peak
Input Signal Delay	18±10ms, on or off for ac
Power Dissipation	3.1 Watts (max.), 0.4 Watts (min.)
Thermal Dissipation	10.6 BTU/hr (max.), 1.4 BTU/hr (min.)
Backplane Current	80mA
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	14 gage stranded maximum
Wire Size	3/64 inch insulation maximum
Category	2 ¹
Keying	Between 4 and 6 Between 10 and 12
Wiring Arm	Catalog Number 1771-WA

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



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WORLD HEADQUARTERS
Allen-Bradley
1201 South Second Street
Milwaukee, WI 53204 USA
Tel: (1) 414 382-2000
Telex: 43 11 016
FAX: (1) 414 382-4444

EUROPE/MIDDLE EAST/AFRICA HEADQUARTERS
Allen-Bradley Europe B.V.
Amsterdamseweg 15
1422 AC Uithoorn
The Netherlands
Tel: (31) 2975/43500
Telex: (844) 18042
FAX: (31) 2975/60222

ASIA/PACIFIC HEADQUARTERS
Allen-Bradley (Hong Kong) Limited
Room 1006, Block B, Sea View Estate
28 Watson Road
Hong Kong
Tel: (852) 887-4788
Telex: (780) 64347
FAX: (852) 510-9436

CANADA HEADQUARTERS
Allen-Bradley Canada Limited
135 Dundas Street
Cambridge, Ontario N1R 5X1
Canada
Tel: (1) 519 623-1810
FAX: (1) 519 623-8930

LATIN AMERICA HEADQUARTERS
Allen-Bradley
1201 South Second Street
Milwaukee, WI 53204 USA
Tel: (1) 414 382-2000
Telex: 43 11 016
FAX: (1) 414 382-2400