Fast Response DC Input Module
Cat. No. 1771–IT

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 1ms for turning DC inputs on or off.

> ⚠ **ATTENTION:** This module may not be suitable for use with hard contact devices because its fast response could register contact sources as input data. A DC input module (cat. no. 1771–IB) is recommended for interfacing with hard contacts.

Use this module with devices that benefit from very short delay times, such as:

- photoelectric switches
- incremental encoders
- dc proximity switches

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.

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 6 and 8
- Between 32 and 34

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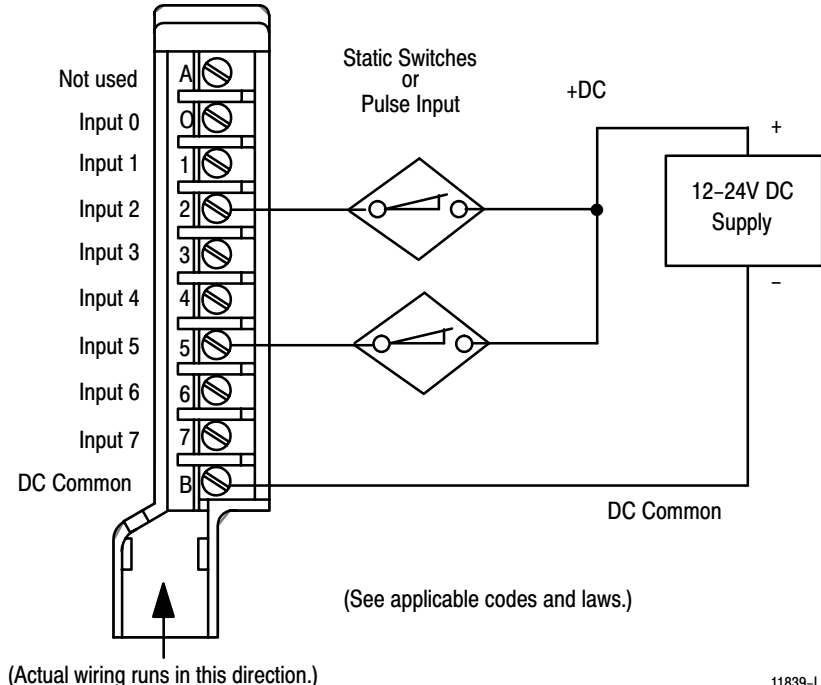
Connect one terminal of your 2–wire input device to terminals 0 thru 7 (Figure 1).

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.

Important: You can use a DC Output Driver Module (cat. no. 1771–OB) to directly drive terminals on a Fast Response DC Input Module (cat. no. 1771–IT) (   ). **Use the same dc power source to power both modules to ensure that common is at the same potential.**

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Figure 2
Driving an Input with an Output

DC Output Driver Module
Cat. No. 1771–OB

Fast Response DC Input Module
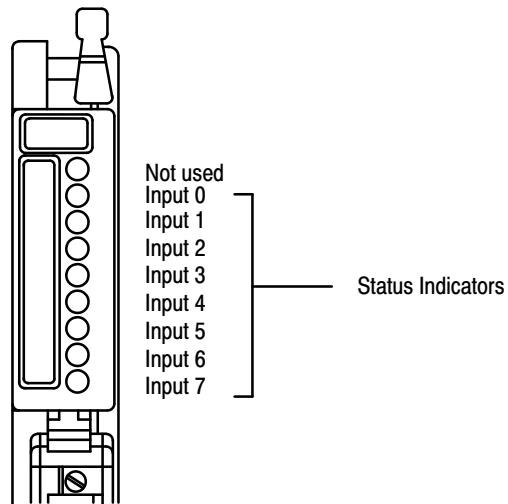Cat. No. 1771–IT

12–24V DC
Power Supply
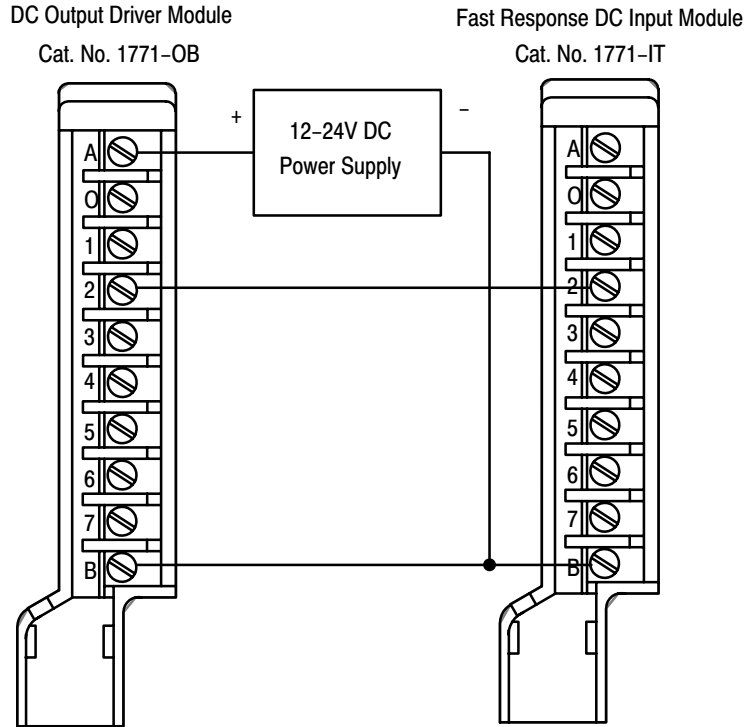
11840–I

Interpreting the Status Indicators

The front panel of your module contains 8 red status LED indicators
(Figure 3). The red status indicators are provided for system logic side
indication of individual inputs. When a red LED lights, the input is on.

Figure 3
Status Indicators

Not used
Input 0
Input 1
Input 2
Input 3
Input 4
Input 5
Input 6
Input 7

Status Indicators

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Specifications

Inputs per Module	8
Module Location	1771 I/O chassis
Nominal Input Voltage	12–24V DC
Input Voltage Range	Logic 0: 0V min. to 4V max. Logic 1: 10V min. to 27V max.
Nominal Input Current	8mA @ 12V DC 24mA @ 24V DC
Input Signal Delay	0.6ms ($\pm$0.2ms) on or off
Input Impedance	On: 1–2K ohms Off: 2–3K ohms
Power Dissipation	5.9 Watts (max.), 0.4 Watts (min.)
Thermal Dissipation	20.0 BTU/hr (max.), 1.3 BTU/hr (min.)
Backplane Current	74mA
Opto–electrical Isolation	1500V AC (RMS)

Environmental Conditions
    Operational Temperature
    Storage Temperature
    Relative Humidity
	
	0° to 60^oC (32° to 140^oF)
	-40° to 85^oC (-40° to 185^oF)
	5 to 95% (without condensation)

Conductors Wire Size Category	14 gage stranded maximum 3/64 inch insulation maximum 2^1
Keying	Between 6 and 8 Between 32 and 34
Wiring Arm	Catalog Number 1771–WA

[1] Refer to publication 1770–4.1, Programmable Controller Wiring and Grounding Guidelines.

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