



DC (24V) Isolated Output Module Cat. No. 1771-OQ16

Installation Data

To The Installer

This document provides information on:

- important pre-installation considerations
- power supply requirements
- installing the module
- installing and connecting the wiring
- using the module indicators for troubleshooting
- replacing the fuses
- module specifications

Pre-installation Considerations

This module is designed to operate with dc relays and other dc output devices.

This module must be used in series B 1771 I/O chassis. It can also be used in a 1771-AM1 or 1771-AM2 chassis.

This module is not compatible with the 1771-AL local I/O adapter module.

Power Supply Requirements

The isolated output module is powered by the power supply connected to the I/O chassis backplane. The module requires a maximum current of 400mA from the +5V dc output of this supply. Total the current requirements of this module with the other modules in the I/O chassis to avoid overloading the supply or the I/O chassis backplane.

Installing the Module

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

Module Location in the I/O Chassis

Group your modules to minimize adverse effects from radiated electrical noise and/or heat. We recommend the following:

- Group analog input and low voltage DC modules away from AC modules or high voltage DC modules to minimize electrical noise interference.
- Place analog input modules and other I/O modules sensitive to heat away from slot power supplies to minimize adverse heat effects.

Initial Handling Procedures



WARNING: 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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- Touch a grounded object to rid yourself of charge before handling the module.
 - Do not touch the backplane connector or connector pins.
 - When you configure or replace internal components, do not touch other circuit components inside the module. If available, use a static-safe work station.
 - When not in use, keep the module in its static-shield bag.

Keying the I/O Chassis

Use the plastic keying bands, shipped with each I/O chassis, to key your I/O slots to accept only this type of module. Place keying bands between these numbers labeled on the backplane connector:

- between 22 and 24
- between 32 and 34

Slots on the rear edge of the circuit board are matched 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.



CAUTION: A module inserted into a wrong slot could be damaged by improper voltages connected through the wiring arm. Use keying bands to prevent damage to the module.

Inserting the Module into the Chassis

1. Position the module so that the circuit board on the rear of the module lines up with the top and bottom card guides in the chassis.
2. Slide the module into the chassis.
3. Press firmly to seat the module in the chassis backplane connector.
4. Swing the module locking latch down into place over the front of the module.

Connecting Wiring to the Module

You make connections to the module through the 1771-WN field wiring arm shipped with the module. The arm pivots on the chassis to connect with the 40 terminals on the front of the module (Figure 1). The wiring arm allows the module to be removed from the chassis without disconnecting wiring.

1. Make certain all power is removed from the module before making wiring connections.
2. Swing the wiring arm up into position on the front of the module. The locking tab on the module will secure it into place.
3. Make your connections to the field wiring arm as shown in Figure 1. (Use the label on the front of the wiring arm to identify your wiring.)

Note: A shorting bar can be use to connect the commons if no channel-to-channel isolation is required.

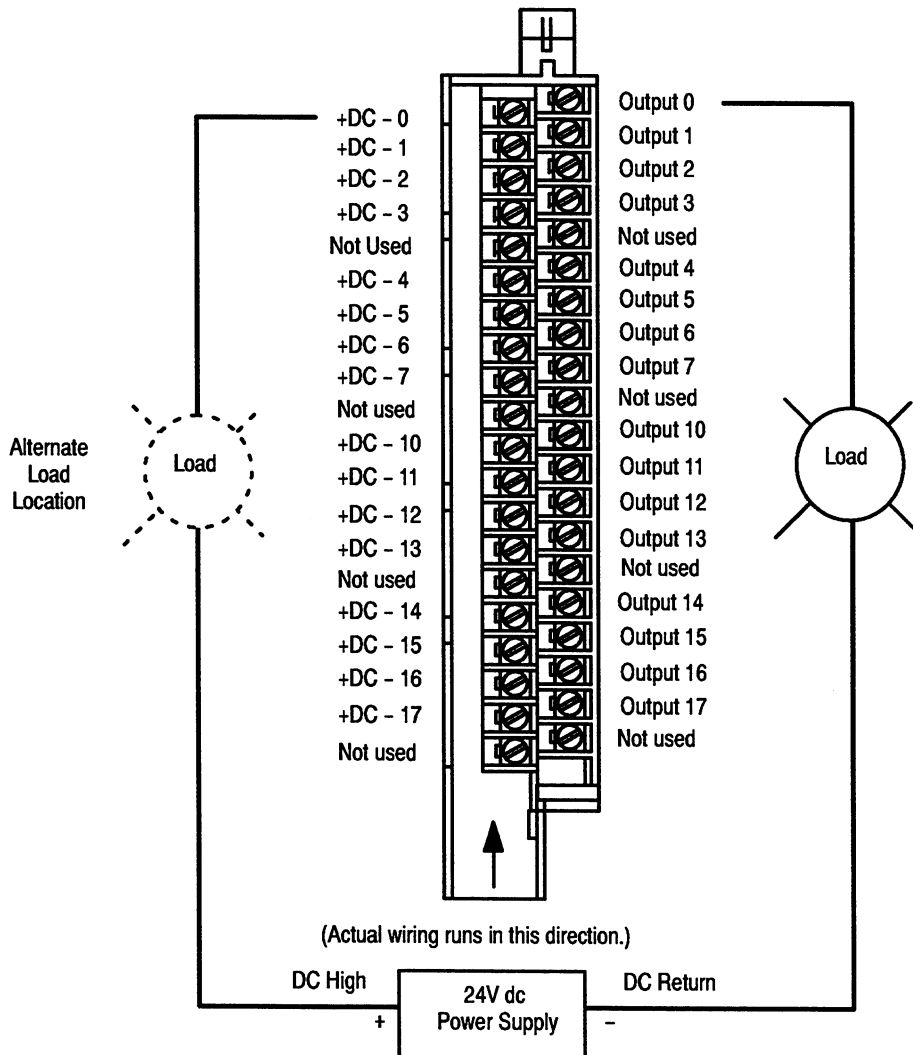
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 (Cat. No. 1771-OQ16)



CAUTION: The field wiring arm terminal identification number is not the same as the number of the bit associated with that output.

You should identify the labels on the wiring arm with the name or number of the device connected at each terminal.

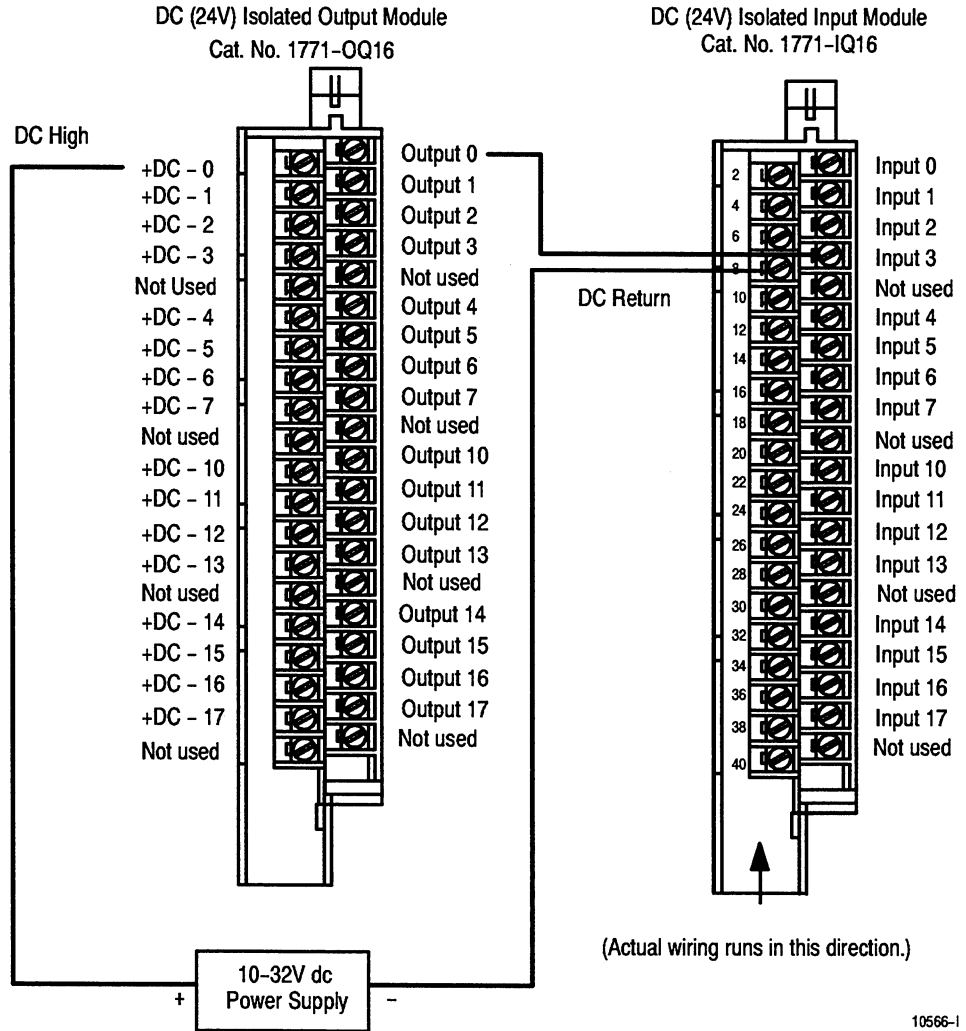
Figure 1
Connection Diagram for the 1771-OQ16 Isolated Output Module



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You can use an output of the 1771-OQ16 module to drive an input of a 24V DC input module (1771-IQ16) to indicate status of turning on a motor starter, for example (Figure 2).

Figure 2
Driving an Input with an Output



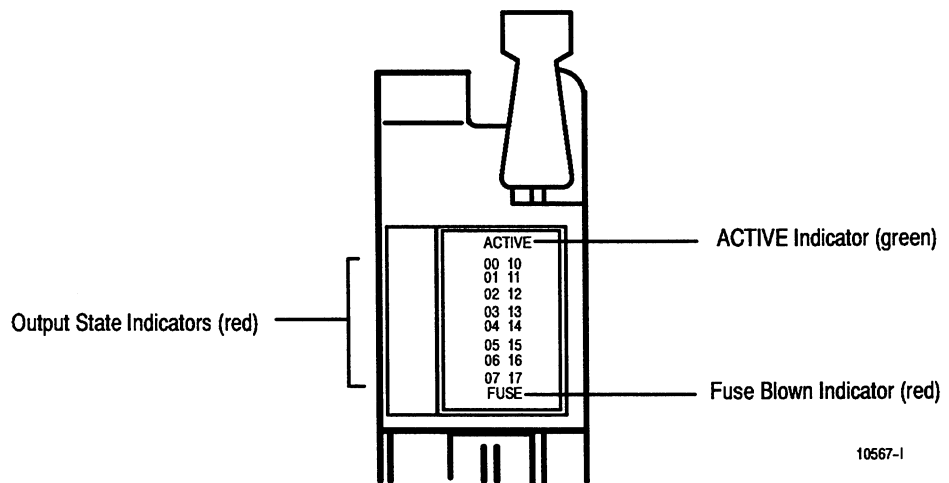
Interpreting the Status Indicators

The module has 18 LED indicators (Figure 3), consisting of 16 output status indicators, a fuse blown indicator and an active indicator. The 16 status LED indicators will light when an "on" signal has been communicated between the module and the system backplane.

The ACTIVE indicator will light when the module has successfully started up and initialized.

The fuse blown indicator will light when the fuse has cleared or been removed, the channel associated with that fuse has been turned "on", the applied voltage to that channel is above the specified minimum "on" voltage, and the load is less than or equal to the maximum specified for this module. The fuse blown indicator will reset after the fuse has been replaced and chassis power has been cycled.

Figure 3
Status Indicators



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Replacing a Fuse

Each module output is individually fused. You can easily access the module fuses through openings provided in the component –side cover. Follow the procedure to replace a fuse.

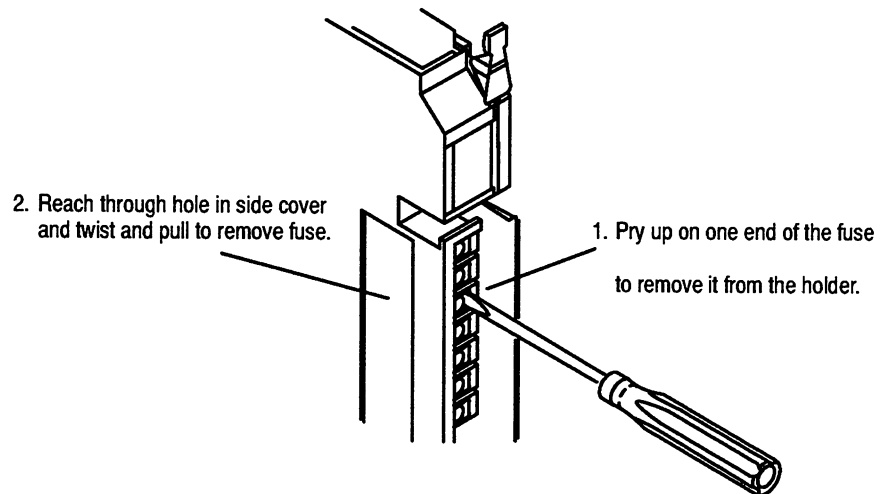


WARNING: Remove power from the 1771 I/O chassis backplane and wiring arm before removing or installing an I/O module.

- 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.

If a blown fuse occurs:

1. Turn off power to the I/O chassis backplane.
2. Pivot the field wiring arm away from the module and pull the module from the I/O chassis.
3. Use a small common screwdriver to reach through the front of the module and carefully pry one end of the fuse out of its holder.



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4. Reach through the access hole in the side cover and carefully twist and pull to remove the blown fuse. Replace it with a 3A 2AG fast acting fuse (Littelfuse part number 225003).
5. Reinstall the module in the I/O chassis.
6. Reposition the field wiring arm.
7. Restart system power.

Specifications

Outputs per Module	16
Module Location	1771-A1B thru - A1B I/O Chassis
Voltage Rating	10 to 32V dc
Maximum Load Current	2.0A per output; 32.0A maximum per module
Minimum Load Current	5mA
On-state Voltage Drop (maximum)	0.34A per output (maximum)
Off-state Leakage Current	2 mA per output (maximum)
Surge Current (maximum)	4A for 10msec., repeatable every 2 sec.
Off-state Current (maximum)	2mA @ 32V dc
Signal Delay Times	Turn On: 100usec (max); Turn Off: 300usec (max)
Power Dissipation	13.0 Watts (max); 2.0 Watts (min)
Thermal Dissipation	44.3 BTU/hr (max); 6.8 BTU/hr (min)
Backplane Current	400mA maximum
Isolation Voltage	1500V channel-to-channel 1500V channel to backplane
Power Rating	0.68 Watts per output (max) @ 2A
Maximum Cable Length	100 ft (304.8 m)
Conductors	Wire Size Category
	14 gauge stranded maximum 3/64 inch insulation maximum 1 ¹
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)
Keying	Between 22 and 24 Between 32 and 34
Field Wiring Arm	Catalog Number 1771-WN
Wiring Arm Screw Torque	9 pound-inches
Fuses	3A 2AG Fast Acting fuses (1 per output) Littelfuse P/N 225003 (Optional fuse kit Cat No. 1771-FF contains 5 fuses)

¹Refer 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 Fax: (1) 414 382-4444