AB QUALITY

Contact Output Module
Cat. No. 1771-OWNA

Installation Instructions

To The Installer

This document provides information on:

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

Pre-installation Considerations

This module must be used in a 1771-A1B through -A4B or later I/O chassis. This module does not contain surge limiting circuitry. Use this module for switching resistive loads only**. This module is not recommended for inductive or capacitive loads.**

The outputs are arranged in 4 groups of 8, each group with its own common. The module can simultaneously switch all 32 outputs to separate loads, with a maximum of 12A per module. Each output can conduct a maximum load of 1.0A continuously at 30W maximum. Ac loads switched by the modules should have a power factor (PF) of 1.0.

Maximum interconnect cable length for this module is 1000 ft. (304.8 meters).

Power Supply Requirements

The controller or I/O chassis power supply, connected through the backplane of the I/O chassis, powers the logic circuitry of the contact output modules. This supply also provides the necessary power to energize the coils of the module relays. The maximum current drawn from this supply when all coils are energized is 2.5A. Nominal backplane current is 1.8A

Initial Handling Procedures

When handling the module, observe the following warning:

⚠ **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.

The contact output module contains components which can be damaged by electrostatic discharge. The module is shipped in an electrostatic shielded bag for protection. Follow the handling procedures outlined below to guard against damage to your module.

- 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-safe work station.
- When not in use, keep the module in its static-free shield 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 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 the keying bands on the chassis backplane between:

- 6 and 8
- 16 and 18

Slots on the rear edge of the circuit board are matched to these slots to allow insertion of this type of module. You can key any connector in an I/O chassis to receive this module except for the leftmost connector reserved for adapter or processor modules.

Inserting the Module Into the Chassis

1. Turn off power to the I/O chassis.

2. 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.

3. Slide the module into the chassis.

4. Press firmly to seat the module in the chassis backplane connector.

5. Swing the module locking latch down into place over the front edge of the module.

Connecting Wiring to the Module

You make connections to the module through the field wiring arm cat. no. 1771-WN. The arm pivots on the I/O chassis to connect with terminals on the front of the module and acts as a terminal strip. 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.
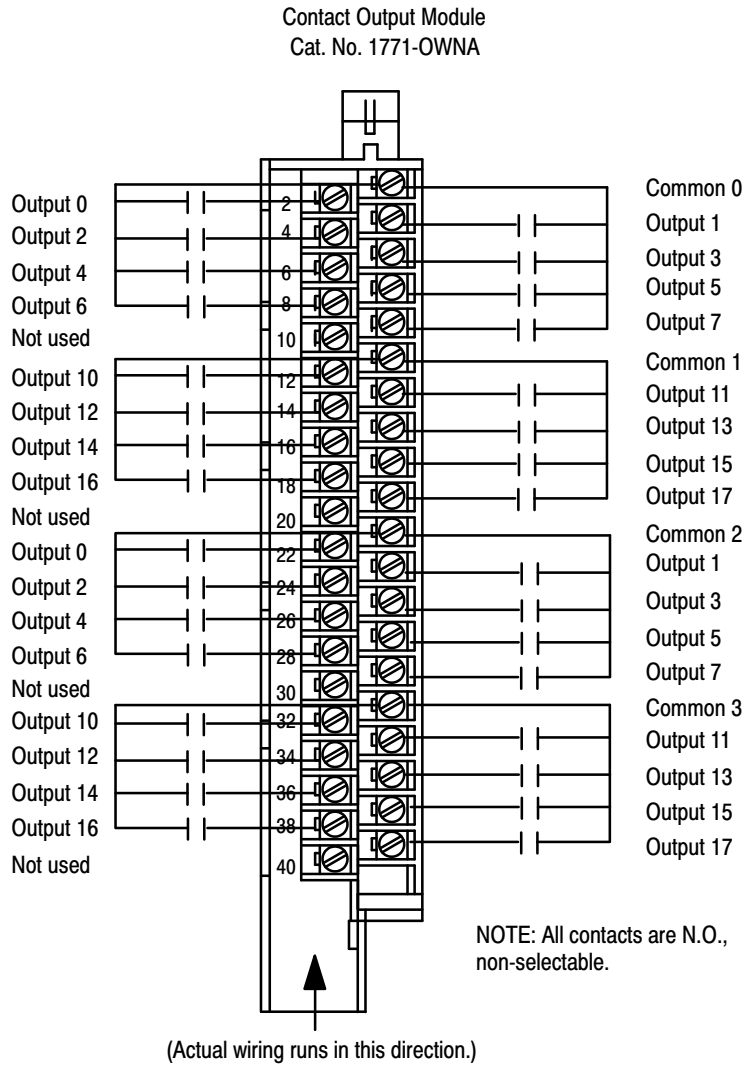
> ⚠ **ATTENTION:** Remove power from the 1771 I/O chassis backplane and wiring arm before removing or installing an I/O module. Failure to remove power from the backplane or wiring arm could cause module damage, degradation of performance, or injury.

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.)

> ⚠ **ATTENTION:** The field wiring arm terminal identification number is not the same as the number of the bit which controls that output.

Figure 1
Connection Diagram for the 1771-OWNA Contact Output Module

Contact Output Module
Cat. No. 1771-OWNA

Left	Terminal	Right
		Common 0
Output 0	2	
Output 2	4	Output 1
Output 4	6	Output 3
Output 6	8	Output 5
Not used	10	Output 7
		Common 1
Output 10	12	
Output 12	14	Output 11
Output 14	16	Output 13
Output 16	18	Output 15
Not used	20	Output 17
		Common 2
Output 0	22	
Output 2	24	Output 1
Output 4	26	Output 3
Output 6	28	Output 5
Not used	30	Output 7
		Common 3
Output 10	32	
Output 12	34	Output 11
Output 14	36	Output 13
Output 16	38	Output 15
Not used	40	Output 17

NOTE: All contacts are N.O., non-selectable.

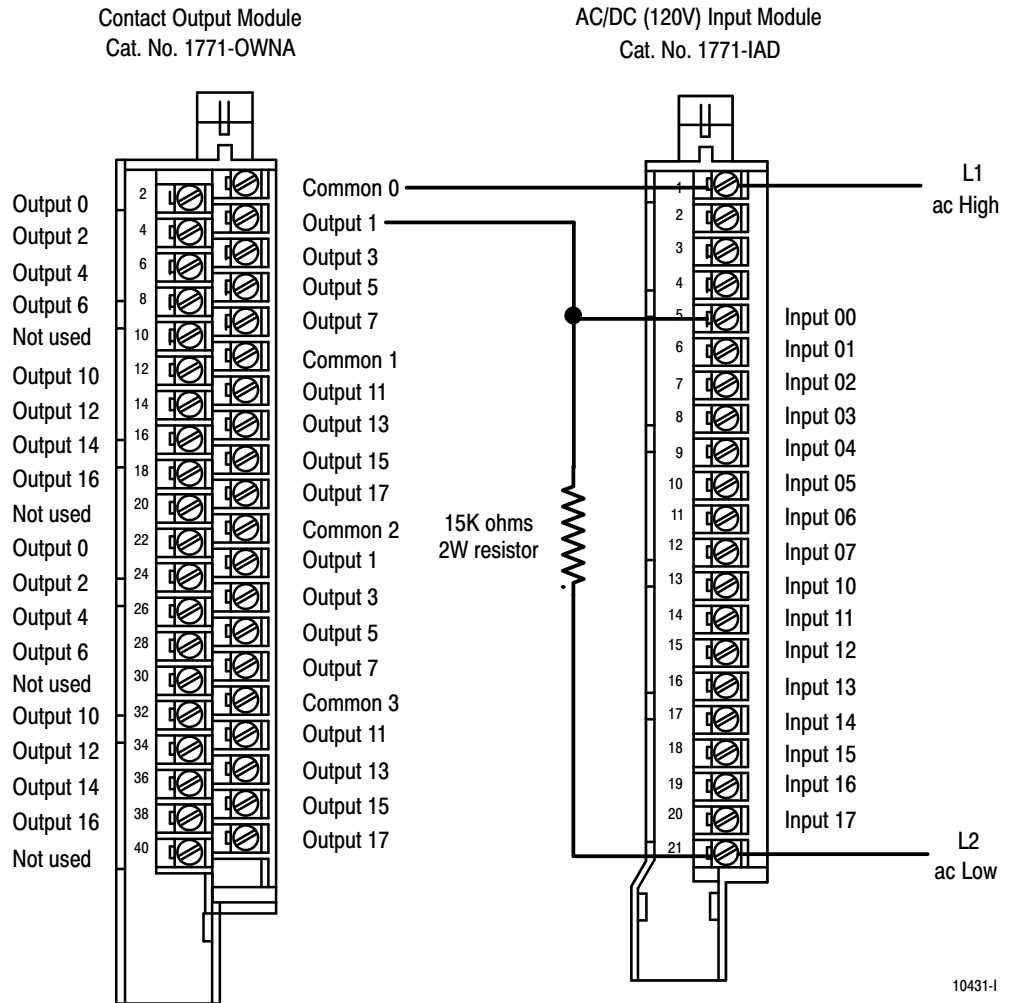(Actual wiring runs in this direction.)

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⚠ **ATTENTION:** Do not attempt to increase load current or wattage capability beyond the rating by connecting two or more outputs in parallel. The slightest variation in output relay switching time may cause one set of contacts to switch the total load current.

You can use an output of the 1771-OWNA module to drive an input of a
120V ac input module (1771-IA, -IA2, -IAD) to indicate the status of
turning on a motor starter, for example (Figure 2) but you must connect a
15K 2W resistor between the output terminal and L2 (common). Inputs
configured with the output module are not isolated from each other.

Figure 2
Contact Output Module Driving an Input Module

Contact Output Module
Cat. No. 1771-OWNA

AC/DC (120V) Input Module
Cat. No. 1771-IAD

Contact Output Module (left)	#	#	Output terminals		#	AC/DC Input Module
Output 0	2		Common 0	L1 ac High	1	
Output 2	4		Output 1		2	
Output 4	6		Output 3		3	
Output 6	8		Output 5		4	
Not used	10		Output 7		5	Input 00
Output 10	12		Common 1		6	Input 01
Output 12	14		Output 11		7	Input 02
Output 14	16		Output 13		8	Input 03
Output 16	18		Output 15		9	Input 04
Not used	20		Output 17		10	Input 05
Output 0	22		Common 2	15K ohms 2W resistor	11	Input 06
Output 2	24		Output 1		12	Input 07
Output 4	26		Output 3		13	Input 10
Output 6	28		Output 5		14	Input 11
Not used	30		Output 7		15	Input 12
Output 10	32		Common 3		16	Input 13
Output 12	34		Output 11		17	Input 14
Output 14	36		Output 13		18	Input 15
Output 16	38		Output 15		19	Input 16
Not used	40		Output 17	L2 ac Low	20	Input 17
					21	

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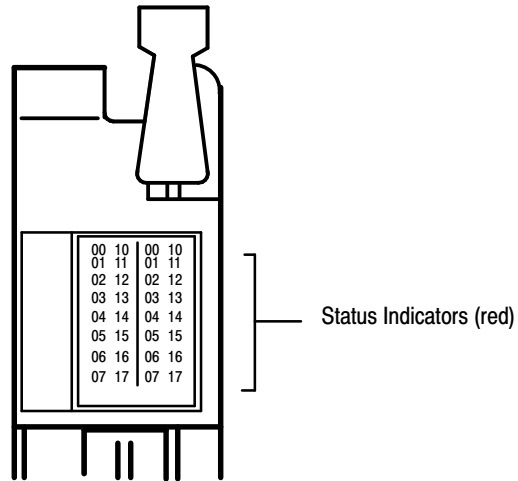## Interpreting the Status Indicators

The module has 32 status indicators on the module front plate. These represent the control status of the output relays. Each indicator is lit when its corresponding relay is energized.

Figure 3
Status Indicators

Status Indicators (red)

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Specifications

Outputs per module		32 (4 groups of 8)
Module Location		1771-A1B thru -A4B or later, 1771-AM1 or -AM2 chassis
Voltage Rating		24 - 138V ac rms 24 - 125V dc
Current Rating	Max. per channel Max. per module Max. per group	10mA - 1A continuous (derate linearly 0.033A/^{o}C above 45°C) 12A (derate linearly 0.4A/^{o}C above 45°C) 4A (derate linearly 0.133A/^{o}C above 45°C)
Surge Current		1A (max) per output (at rated power)
Power Rating		dc: 30W per output (resistive) maximum ac: 30W per output (resistive) maximum
Minimum Contact Load		10mA
Operate/Release Time		5ms ($\pm$1ms) typical
Bounce Time		1ms (max)
Switching Frequency		10Hz (max)
Power Dissipation		All relays OFF: 15mW; All relays ON: 12.5W (max.)
Thermal Dissipation		All relays OFF: 0.05 BTU/hr; All relays ON: 42.75 BTU/hr (max.)
Backplane Current		2.5A maximum; 1.8A nominal
Isolation Voltage		1000V between open contacts 1500V coil to contact
Interconnect Cable Length		1000 ft. (304.8 meters)
Conductors	Wire Size Category	14 gauge stranded (max) 3/64 inch insulation (max) Category 1[1]
Environmental Conditions Operating Temperature Storage Temperature Relative Humidity		 0 to 60°C (32 to 140°F) -40 to 85°C (-40 to 185°F) 5 to 95% (without condensation)
Keying		Between 6 and 8 Between 16 and 18
Field Wiring Arm		Cat. No. 1771-WN
Wiring Arm Screw Torque		7-9 inch pounds

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

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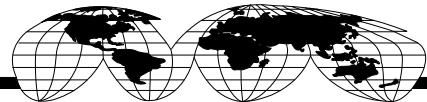
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