

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Rockwell / Allen-Bradley 1771-OGD* at our website: ***Click HERE***

ALLEN-BRADLEY

TTL Output Module
Cat. No. 1771-OGD

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 for troubleshooting
- replacing the fuse
- module specifications

Pre-installation Considerations

You can use this module in a Series A or B 1771-A1B, -A2B, -A3B, -A3B1, and -A4B chassis. The module is also compatible in a 1771-AM1 or -AM2 I/O chassis.

You can use any TTL device that meets the input logic level specification of -0.2V dc to +0.8V dc (low), and 2.0V dc to 5.25V dc (high).

Power Requirements

The TTL module requires power from two sources: the I/O chassis backplane, and a +5V dc power supply that you provide for transmission of TTL signals.

Backplane
The TTL module receives its power through the 1771 I/O chassis backplane from the chassis power supply. The module requires 230mA 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.

Customer Supply
You must provide a separate +5(±0.25)V dc power supply for the TTL outputs from the module and for your TTL input devices. Your module requires 310mA maximum from the output of your supply. Ripple should not exceed 50mV peak to peak.

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Initial Handling

The TTL output 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 its static-shielded bag.

Installing Your Module

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

Selecting the Logic Level

You can select one of two logic conditions:

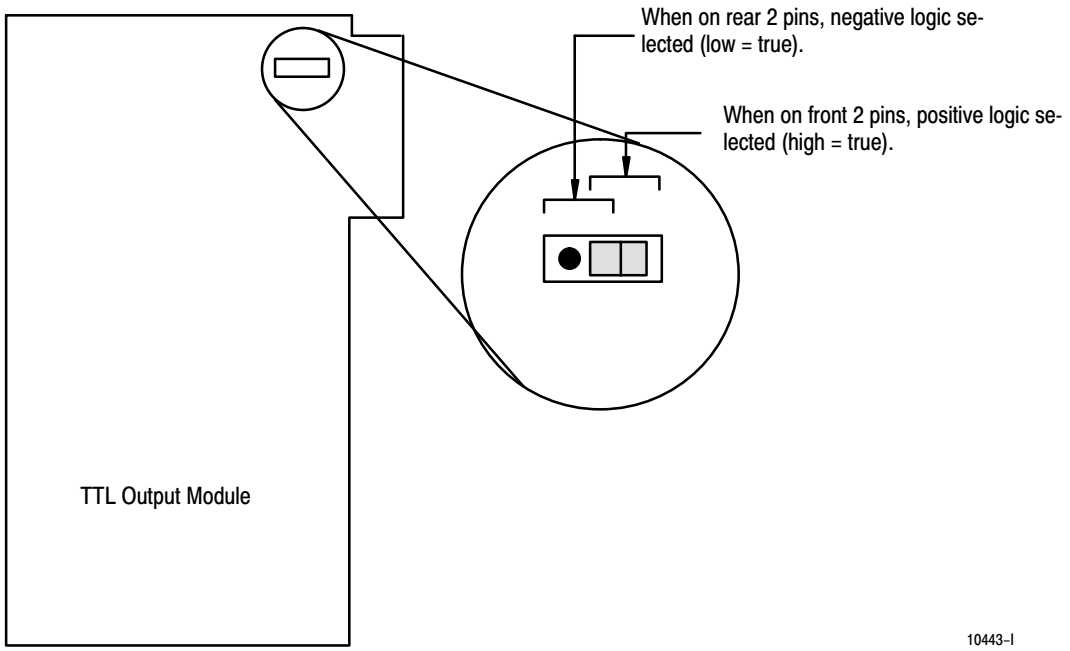
If you choose:	Then:	Jumper Position
HIGH = TRUE logic (positive)	2.0 to 5.25V dc corresponds to logic ”1” (on)	Toward front of module
LOW = TRUE logic (negative)	–0.2 to 0.8V dc corresponds to logic ”1” (on)	Toward rear of module
Note: Selecting positive logic automatically enables the HIGH (positive logic) indicator		

You select high-true or low-true using the jumper accessible through a slot at the top of the module.

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

1. Locate the jumper in the slot at the top edge of the module.
2. Use tweezers to position the jumper as required for your application.

TTL Logic Level Selection Jumper Assembly



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 upper backplane connector:

- Between 16 and 18
- Between 26 and 28

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

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Installing the Output Module

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

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

- Failure to remove power from the backplane or field 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.

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. Secure the module's position by doing the following:
   - with a Series A chassis, snap the chassis latch over the top of the module
   - with a Series B chassis, pull down the locking bar
5. Connect the wiring arm to the output module.

Connecting Wiring to the Output Module

Connect wiring to the output module using the field wiring arm (cat. no. 1771-WH) shipped with the module (shown in the connection diagram below). Make your connections as follows:

1. Attach the field wiring arm to the pivot bar on the bottom of the I/O chassis.
2. Pivot the field wiring arm upward and push it into the module until the field wiring arm clicks into position. The field wiring arm is designed to let you install and remove the module without disconnecting the wires.

ATTENTION: Do not apply ac or reverse dc voltage to module terminals. Circuitry at the input of module may be damaged.

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

3. Separate the shielded cables from wiring that radiates electrical noise. Refer to category 2, low power dc I/O lines, in publication 1770-4.1, ‘‘Programmable Controller Wiring and Grounding Guidelines”.

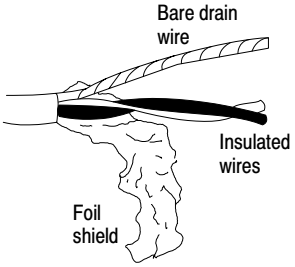
4. Prepare the cable for grounding by doing the following:

Remove a length of cable jacket from the Belden 8761 cable.

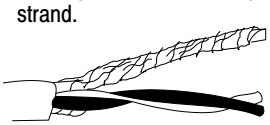


Belden 8761 Cable

Pull the foil shield and bare drain wire from the insulated wires.



Twist the foil shield and drain wire together to form a single strand.



Attach a ground lug.

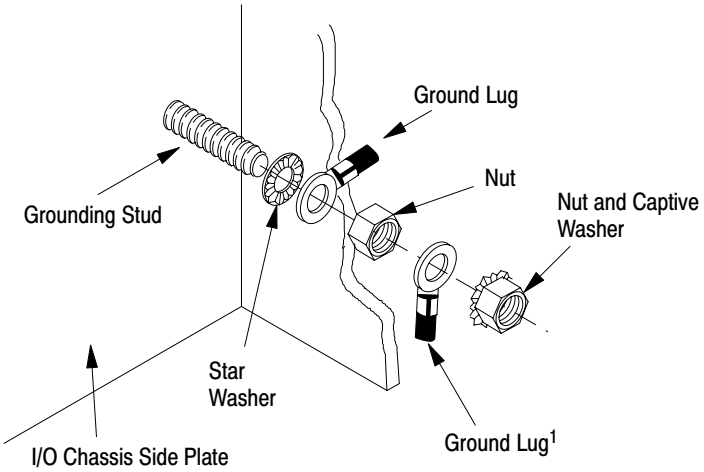


20104

5. Ground the single strand (at the ground lug end) to the grounding stud on the I/O chassis or by using single-point grounding.

Chassis Ground

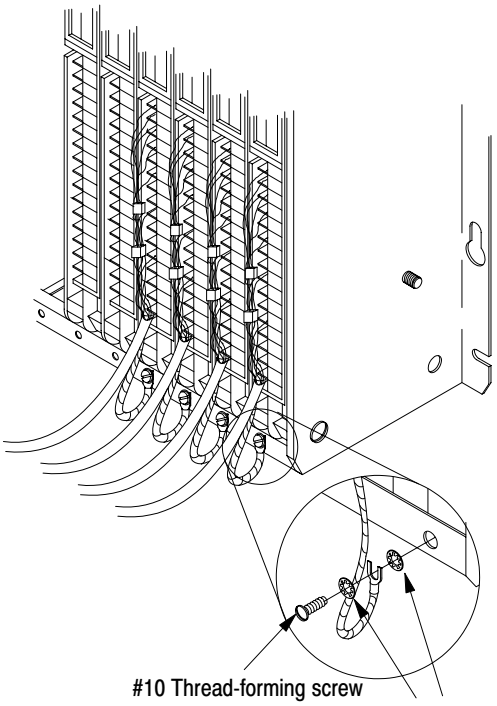
When you connect grounding conductors to the I/O chassis grounding stud, place a star washer under the first lug, then place a nut with captive lock washer on top of each ground lug.



19480

[1]Use the cup washer if crimp-on lugs are not used.

Single-point Grounding

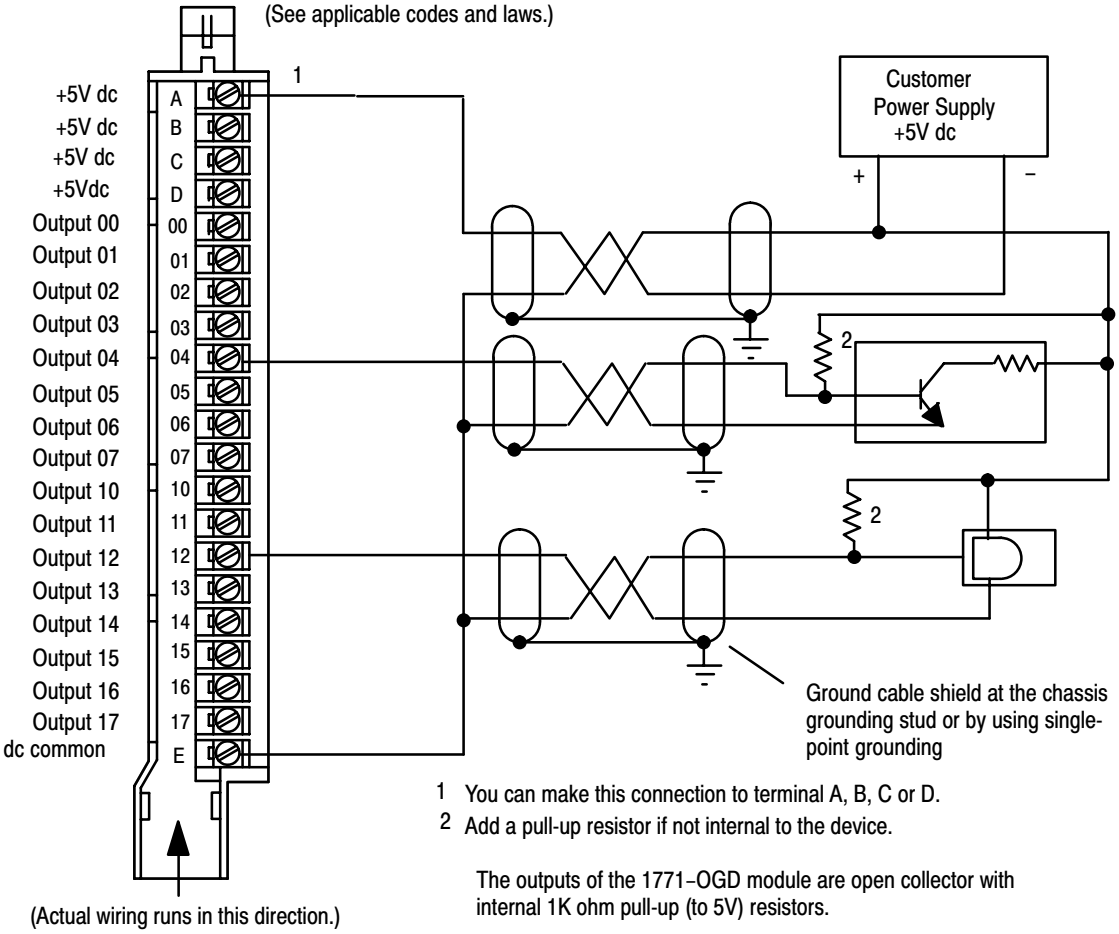


19923

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

6. You must connect both ends of the insulated signal return wire in each transmission cable as follows:

   - connect one end to the dc common terminal of your +5V dc power supply
   - connect the other end to the dc common terminal of the field wiring arm



7. Connect TTL output devices using Belden 8761 shielded cable as shown in the connection diagram. Do not exceed 50 cable feet for any output device. Connect the insulated wires to their respective terminals on the field wiring arm.

Driving Inputs with Outputs

Input terminals of the TTL input module (cat. no. 1771-OGD) may be directly driven by the outputs of the TTL output module (cat. no. 1771-IGD). Connect the cable shield between modules at one end only.

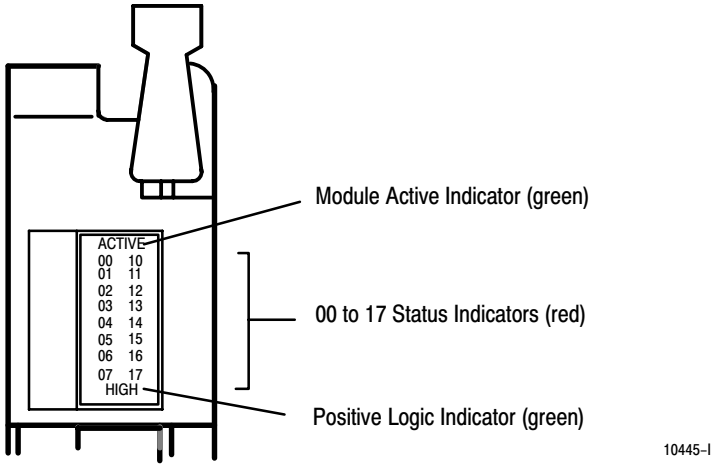
Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Interpreting the Status Indicators

The front panel of your module contains 18 status LED indicators (Figure 1). The green top indicator, labeled ‘‘ACTIVE,” is on when the fuse is good. The green bottom indicator, when on, indicates you selected high-true logic. When off, it indicates you selected low-true logic.

Each of the lower 16 red status indicators light when their corresponding output terminal delivers TTL voltages in the true state.

Figure 1
Status Indicators



Replacing the Fuse

To replace a blown fuse, proceed as follows:

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

- Failure to remove power from the backplane or field 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.

1. Turn off power to the I/O chassis.
2. Remove the module from the I/O chassis.
3. Remove the blown fuse from the fuse holder (accessible through the slot in the side cover), and replace with a 0.5A, 250V normal blow fuse.
4. Reinsert the module into the I/O chassis and turn on power to the chassis.

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Installation Instructions
TTL Output Module
Cat. No. 1771-OGD

Specifications

Outputs per Module	16
Module Location	Series A or B 1771-A1B, -A2B, -A3B, -A3B1, or -A4B I/O chassis. Other locations include 1771-AM1, and -AM2 I/O chassis.
Output Voltage Range HIGH = TRUE LOW = TRUE	 ON; 2.0 to 5.25V dc OFF: –0.2 to +0.8V dc ON: –0.2 to +0.8V dc OFF: 2.0 to 5.25V dc
Maximum Output Current	Source: 1mA; Sink: 20mA
Customer Supply Voltage	5V dc (±0.25V) 50mV peak-to-peak ripple max.
Customer Supply Current per Module	310mA max.
Output Signal Delay	Less than 1ms
Power Dissipation	2.8 Watts (max.); 1.0 Watts (min.)
Thermal Dissipation	9.5 BTU/hr (max.); 3.4 BTU/hr (min.)
Backplane Current	230mA max.
Isolation Voltage	Tested at 1500V ac (rms) for 1 second
Environmental Conditions Operational 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)
Conductors Wire Size Cable Category	14 gauge stranded maximum 3/64 inch insulation maximum Shielded (Belden 8761) 2[1]
Fuse	0.5A 250V Normal Blow
Keying	Between 16 and 18 Between 26 and 28
Field Wiring Arm	Catalog Number 1771-WH
Wiring Arm Screw Torque	7-9 inch-pounds

[1] You use this conductor-category for planning conductor routing as described in the system-level installation manual.

ALLEN-BRADLEY
A ROCKWELL INTERNATIONAL COMPANY

Allen-Bradley has been helping its customers improve productivity and quality for 90 years. A-B designs, manufactures and supports a broad range of control and automation products worldwide. They include logic processors, power and motion control devices, man-machine interfaces and sensors. Allen-Bradley is a subsidiary of Rockwell International, one of the world's leading technology companies.

With major offices worldwide.

Algeria • Argentina • Australia • Austria • Bahrain • Belgium • Brazil • Bulgaria • Canada • Chile • China, PRC • Colombia • Costa Rica • Croatia • Cyprus • Czech Republic • Denmark • Ecuador • Egypt • El Salvador • Finland • France • Germany • Greece • Guatemala • Honduras • Hong Kong • Hungary • Iceland • India • Indonesia • Israel • Italy • Jamaica • Japan • Jordan • Korea • Kuwait • Lebanon • Malaysia • Mexico • New Zealand • Norway • Oman • Pakistan • Peru • Philippines • Poland • Portugal • Puerto Rico • Qatar • Romania • Russia–CIS • Saudi Arabia • Singapore • Slovakia • Slovenia • South Africa, Republic • Spain • Switzerland • Taiwan • Thailand • The Netherlands • Turkey • United Arab Emirates • United Kingdom • United States • Uruguay • Venezuela • Yugoslavia

World Headquarters, Allen-Bradley, 1201 South Second Street, Milwaukee, WI 53204 USA, Tel: (1) 414 382-2000 Fax: (1) 414 382-4444

Publication 1771-2.176 January 1994
Supersedes Publication 1771-2.131 – May 1989

PN 955107-25
Copyright 1994 Allen-Bradley Company, Inc. Printed in USA

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP