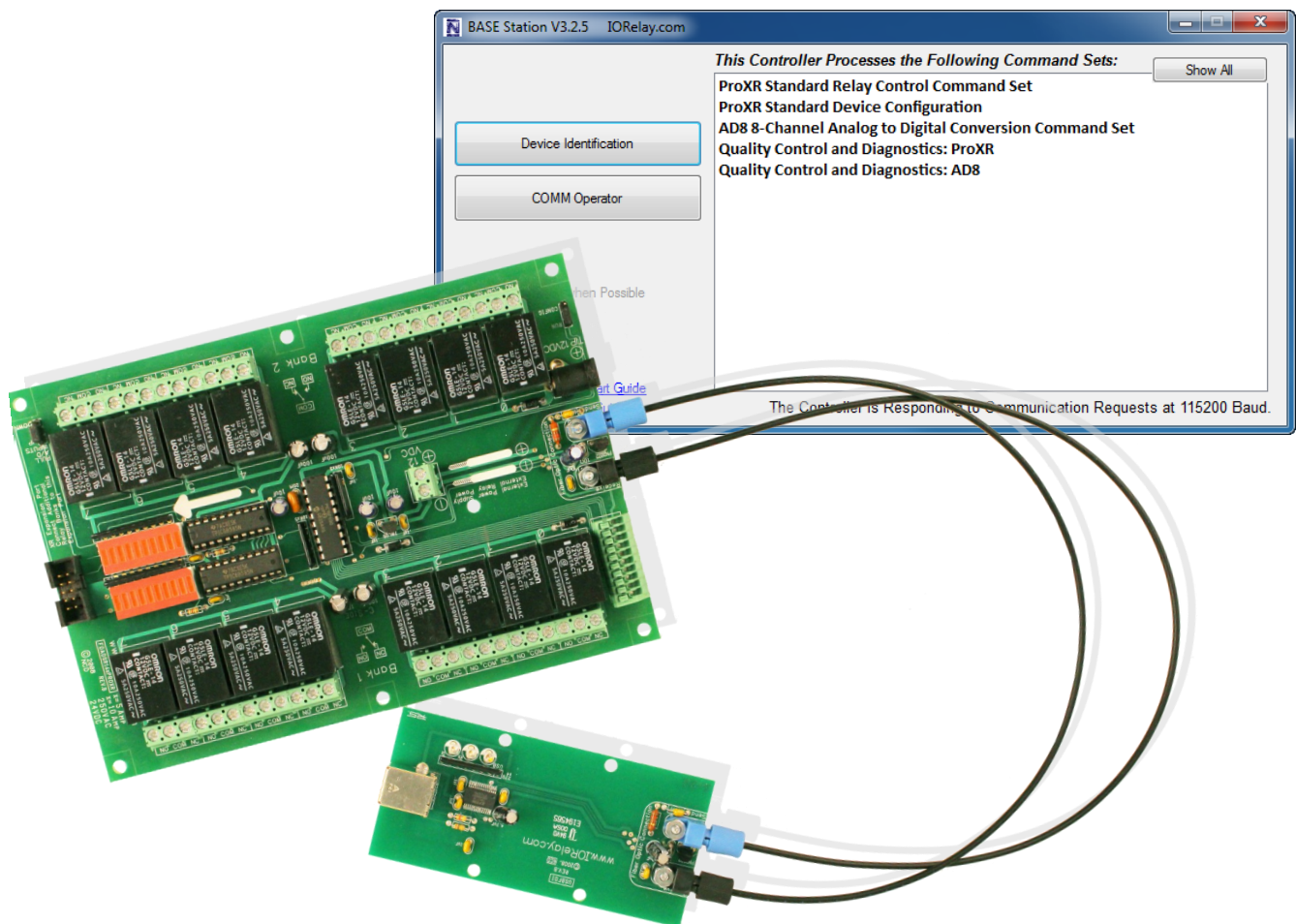


Quick Start Guide

Fiber Optic

Interface Technology



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NOTICE: Portions of this Manual REQUIRE Internet Access

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Introduction

Fiber Optic controllers were designed with electrical isolation in mind. When controlling a large motor, or anything that creates motion and therefore induction, you need to concern yourself with isolating inductive loads. Fiber Optic communication transmits light through a channel rather than through a wire that pulses current, meaning that there is no connection for which electrical current to travel back to and harm your computer. Though limited to short range communication, Fiber Optic Communication is ideal for applications in which inductive loads are a concern.

Hardware

- ▶ Fiber Optic Cable
- ▶ Fiber Optic Relay Controller
- ▶ Fiber Optic Interface Board (USB, Ethernet, or 802.15.4 to Fiber Optic Interface)
- ▶ USB Cable, Ethernet Cable (Depending on chosen Communications Interface)

Software

Fiber Optic devices can be used with multiple communication interfaces. Set up will depend on the interface you are using to communicate with your device. Your computer may need to install drivers or require additional set up. If you are unsure of set up process, see the respective Quick Start Guides for specific set up instructions.

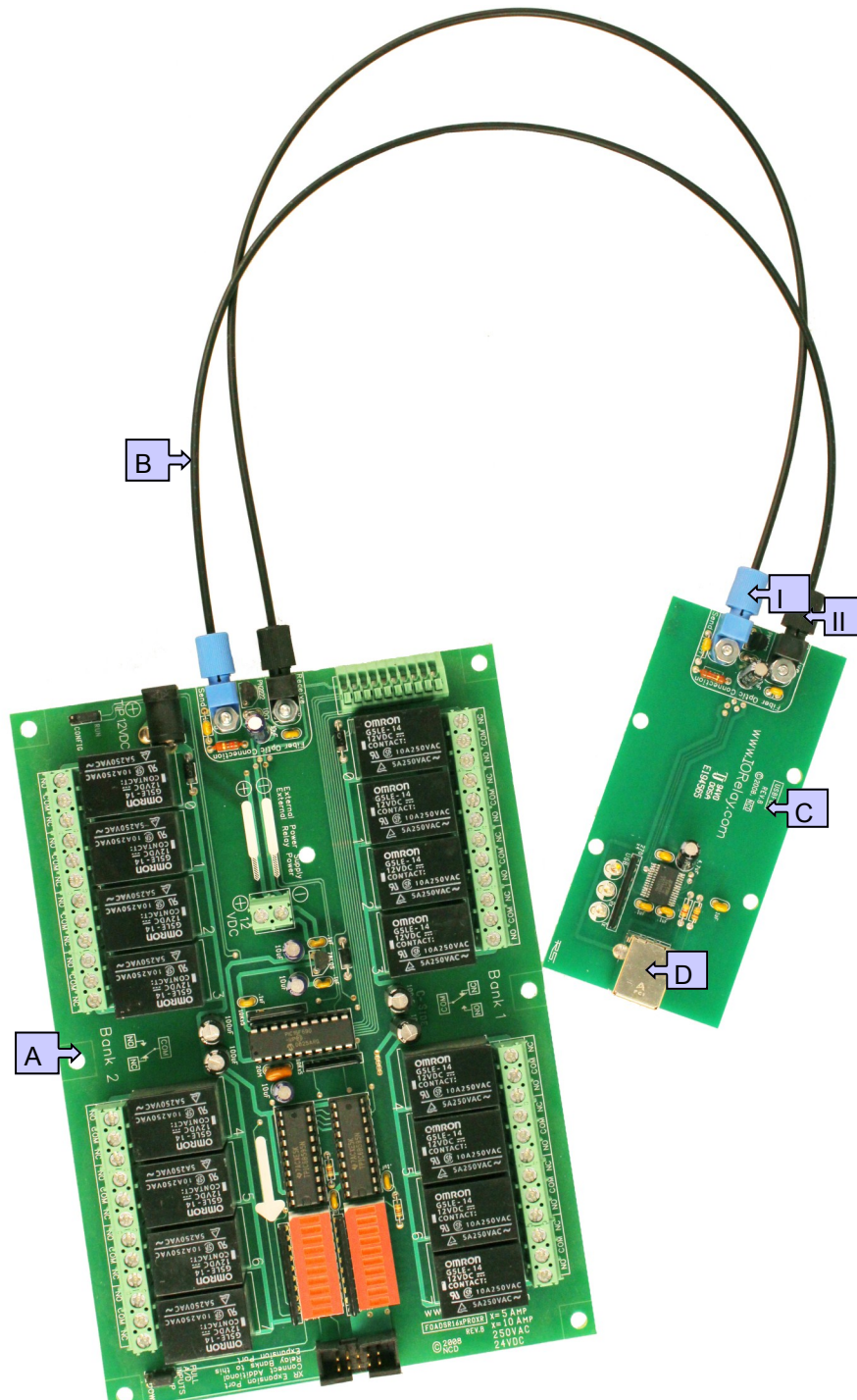
- ▶ [USB Quick Start Guide](#)
- ▶ [Ethernet Quick Start Guide](#)
- ▶ [802.15.4 Quick Start Guide](#)

Getting Started

1. Adjust the length of Fiber Optic cables. Be careful when cutting the cable. Remember, Fiber Optic devices communicate through the transmission of light. **DO NOT USE PLIERS TO CUT FIBER OPTIC CABLE.** Pliers will pinch the cable limiting the amount of light that can shine through. It is suggested to use a utility knife against a hard surface, like the edge of a table. Make sure to cut your cables the same length.
2. Install Fiber Optic cable into the board and the Interface Board. Make sure to connect the "Send" from one board to the "Receive" of the other. Repeat for the second Fiber Optic cable.
 - ▶ **Note:** If you are having communication issues, check these Fiber Optic Connections. This is the most commonly experienced communications problem. The shorter your cable is the further it should be retracted in the fiber optic connector. Inserting a short fiber optic cable fully in the connection will apply too much light to the receiver and it will not work. If communication is not working try adjusting this connection until you have reliable communication. We do not recommend cutting the fiber optic cable shorter than 24". If shorter cable is required please contact NCD Technical support staff for instructions on modifying the controller for this.

Fiber Optic Hardware

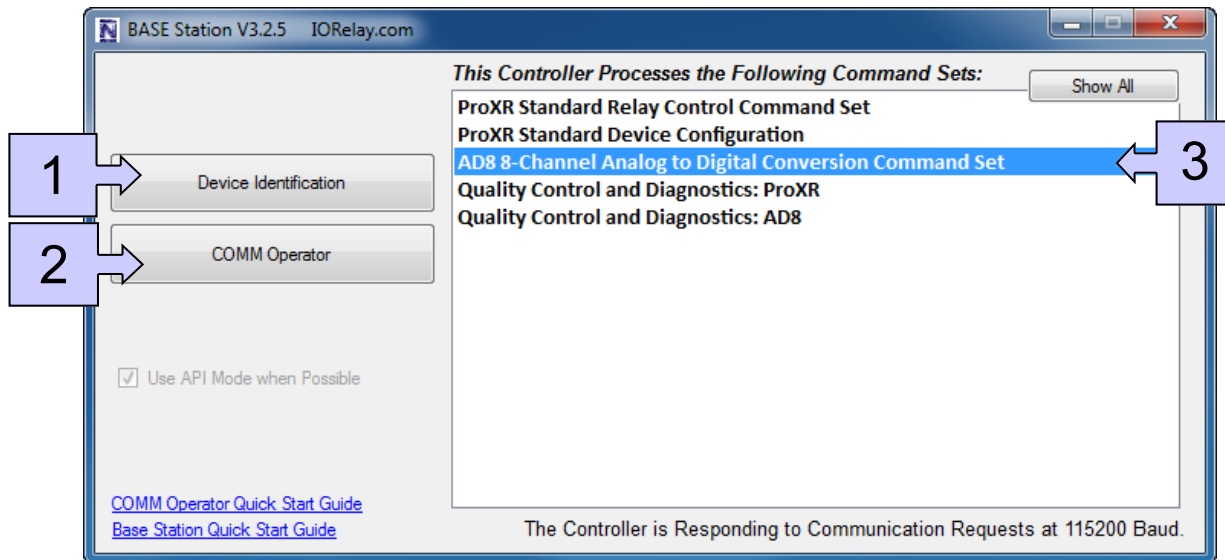
- A. Relay Controller. Several different boards are compatible with Fiber Optic capability. The board depicted in the diagram is a 16-Channel AD8. For approximate board layout, see [NCD Hardware Quick Start Guide](#).
- B. Fiber Optic Cable.
- C. Fiber Optic Interface Board. Provides communication between the device and the computer. Diagram depicts a USB to Fiber Optic Interface Board.
- D. Communication Interface Connector. The diagram depicts a USB Connector. The type of connector will depend on the communication interface you have chosen.



Base Station

Base Station Software

Download and install [NCD Base Station Software](#) to communicate with your Fiber Optic controller. After connecting the controller to your computer, select the correct port or IP Address for your controller. You will see the dialog box shown in the screen shot below. Select one of the commands sets to begin testing or sending commands to your device.



When Base Station Software runs on your Windows computer, the software will identify the type of controller and will build a list of command sets that are compatible with your controller. These are the basic parts to the main Base software application:

1. **Device Identification and Documentation:** This button displays Read-Only information stored in the controller. It can help you identify the type of device that is connected and what its capabilities are. This portion of the software also builds a library of documents that will be helpful in using the controller it has identified. This library of documents will change depending on the type of device which has been identified.
2. **COMM Operator:** COMM Operator is a tool for testing and learning how to communicate with all Network and COM based devices. This manual may include command codes you can send to the device using COMM Operator. COMM Operator should be thought of as a terminal to send and receive bytes of data. COMM Operator was used extensively in the development of this device and should be referenced throughout the learning process. COMM Operator is a commercial product and is NOT Free. The 30-Day Evaluation version is provided and users may purchase a license for this software if they would like to continue use beyond 30 days.
3. **Command Sets:** Each Device contains a set of commands that are identified by the Base Station software. Choose the command set you would like to explore in this box. Click one time on the command set you would like to explore.

Note: There may be more basic features depending on your device. Other features you may notice:

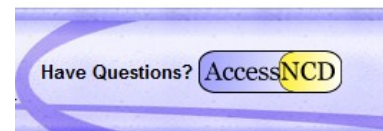
- ▶ **Device Configuration:** This button allows you to modify important device settings to help improve communication speed, functionality, and timing parameters of the device. Device Configuration is rarely used by the user
- ▶ **Display Command Set:** When working with Base software, many windows will display the actual command codes used to trigger a particular function. This option allows you to choose Decimal and Hex formats. This manual is shown in both Hex and Decimal format. Decimal is typically used in COMM Operator and is our preferred format, but Hex works great too.
- ▶ **Run Mode:** Run mode is used for daily operations and is the default mode of operation. To prevent accidental writes to non-volatile memory, the device must be placed in Configuration Mode to change EEPROM memory. Click this button anytime you need to change modes. Note that a jumper on the controller will force this device into Configuration mode. If a device is powered up in Configuration Mode and you are using a Web-i interface, the Web-i will boot in DHCP mode as a safeguard in case the device becomes inaccessible with a static IP address.

Technical Support

Technical support is available through our website, controlanything.com.

AccessNCD is the way we connect NCD engineers to our customers.

Click on the **AccessNCD** button located on the top right of the header of each page of our website.



For technical support and application information, contact Travis Elliott, our technical engineer. If you feel that you have discovered a bug in the firmware of our controllers, contact Ryan Sheldon, our hardware developer. If you have programming-related questions or have discovered a bug in our software, please contact Shirui Xu, our software engineer.

Click the '*Tech Support Staff*' tab and click on the appropriate engineer link for assistance. Click on our '*Forum*' tab if you would like to post publicly or review problems that other customers have had and our recommended solutions.



Our engineers monitor questions and respond continually throughout the day. Before requesting telephone technical support, we ask that customers please try to resolve their problems through **AccessNCD** first. However, for persistent problems, NCD technical support engineers will schedule a phone consultation.

Contact Information

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All orders *must* be placed online at our website, www.controlanything.com

Notice:

The only authorized resellers of NCD products are

- ▶ www.controlanything.com
- ▶ www.relaycontrollers.com
- ▶ www.relaypros.com
- ▶ www.amazon.com

All other websites are not authorized dealers; we have noticed some retailers offering our products fraudulently.