Quick Start Guide

Device Communications

Communicating with NCD Device Command Sets

Incomplete Documentation

Device Communications

Regardless of the Communication technology you have chosen to use, all NCD Devices have a command set. This command set can be used to control relays, program settings, read the status of inputs, read the status of relays, and much more. This command set forms the basis for which all NCD devices interact with your favorite interface technology.

NCD Controllers are always waiting for the user to send a command. When the command has finished execution, the controller sends back a confirmation. For instance, if you want to turn on the first relay, you can send the following command:

254   Enters Command Mode

108   Activates the First Relay

1   Applies this command to bank 1 of the relay controller

When the controller has finished executing the command, the controller will send back a confirmation byte. In the case of command 254, 108, 1 the controller will send back an 85 to let you know that it has finished turning on the first relay and it is ready for the next command.

Most of the time, we use decimal values for our command set. Some programmers prefer to use Hexadecimal format, which is easy to translate. If you prefer to use Hex, then simply translate the decimal values to Hex format. In the case of 254, 108, 1 the Hex format would be 0xFE 0x6C 0x01 (with a confirmation byte of 0x55).

We will designate the command instructions in the following format throughout our guides:

Send Bytes:	Byte 1:	Byte 2:	Byte: 3
Function:	Command	Activate Relay	Bank
Decimal Values:	254	108	1
Hex Values	0xFE	0x6C	0x01

Receive Byte:	Decimal:	85
	Hex:	0x55

COMM Operator Examples:
254 108 1   Turn on first relay

NCD Component Library Command Method:
Not Yet Implemented

There is one very important rule that should be followed during communications using this method. Before sending a command to the controller, it is absolutely essential that you clear the serial receive buffer. If you do NOT clear the serial receive buffer, you will invariably run into the problem of unreliable or unexpected results. Data tends to pile up in the Serial Receive Buffer, and when you ask the buffer for data, there's a pretty good chance you will be reading old data if you do not clear the buffer. Because of this, we highly recommend all users to follow this procedure when communicating to any NCD device:

1. *Clear the Serial Receive Buffer*

2. *Send a Command*

3. *Wait for a Response*

If your software is written to follow these rules, you will be rewarded with software that stays in reliable communications with the device. If you skip any of these rules, your software will appear to have bugs that cannot be resolved.