NAPCO NetLink™ NET-COMM

Internet Communication Module
INSTALLATION INSTRUCTIONS

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GENERAL DESCRIPTION

The NAPCO NetLink™ NET-COMM is a Universal IP Communicator that allows the reporting of alarms over a TCP/IP based (Intranet or Internet) network.

NET-COMM provides a maximum of six independent reporting channels that may be connected to any security control panel. It includes an input that may be connected to a standard bell output (12V DC output in alarm), which reports a burg alarm for a steady bell output and a fire alarm for pulsing. It also includes 4 additional inputs that may be configured for either positive or negative trigger.

When triggered, NET-COMM communicates the appropriate alarm signal over the internet to a computer running the NAPCO Central Station Receiver Application (NL-CSRCV). If installed in a security office, the NL-CSRCV may be configured to provide a security console, which includes a basic automation system, allowing the processing, disposition and logging of alarms. If installed in a central station, it may be configured to act as a receiver, outputting alarms directly to the automation system.

The NET-COMM is programmed with the NL-MODCONFIG software package, which configures the input types styles, IP addresses and other system parameters.

NL-MODCONFIG Software:

NL-MODCONFIG is a software program allowing the configuration of the NET-COMM with appropriate information (such as the static IP address of the module, static IP address of the NL-CSRCV receiver, etc.). The NL-MODCONFIG software is run on a PC (see System Requirements) and connects to the NET-COMM via its network connection. In addition, NL-MODCONFIG allows the updating of the NET-COMM firmware. **Note:** The NL-MODCONFIG software and its database should be retained if future access is necessary. For more information, see WI1243.

Central Station Receiver Application (NL-CSRCV)

The NL-CSRCV is a PC based application that is designed to act as a remote monitoring receiver. In place of receiving alarm data through a telephone line, the NL-CSRCV application receives encrypted alarm data sent from the NET-COMM through a TCP/IP network.

The NL-CSRCV software can supervise each NET-COMM, receive alarms, provide a means of maintaining accounts and provide a means of displaying alarms and event history (opening/closing, etc.). The NL-CSRCV could be used to display alarm events locally or can be used to route events to an automation system. For more information, see the NL-CSRCV User Guide OI294.

Transient Protection (NL-ULBD)

The NL-ULBD is a small device which gives added transient protection and mounts entirely inside the NET-COMM housing. The NL-ULBD protects the NET-COMM from significantly larger transients and surges which may emanate from the network cable or associated devices. It is connected in series between the Ethernet cable that provides network access and the RJ45 connector in the NET-COMM.

SPECIFICATIONS

Dimensions: 1 1/2" x 7" x 4 3/4" (HxWxD)

Input Voltage: 13.0-10.0VDC.

Input Current: Maximum current (@8 VDC) = 100mA, Nominal current (@12 VDC) = 80mA (supplied by control panel connections). Available panel combined auxiliary current is reduced by 100mA.

Outputs are PGM-style open collector (negative trigger) with a maximum sink current of 50mA.

MAXIMUM WIRE LENGTH

The NET-COMM should be mounted in or adjacent to the control panel. **NOTE:** To maintain the UL Supplemental Listing, the wire length (NET-COMM to control panel) must be no more than 20 feet and the panel shall reside in the same room as the NET-COMM with no intervening walls or barriers. **NOTE:** For best results when making RJ45 cable assemblies, it is recommended to use an *AMP* Brand Professional crimping tool (part # 3-231652-0), and to always match the type of cable used (stranded or solid) with the correct type of RJ45 plug.

SYSTEM REQUIREMENTS

System Hardware:
- Standard 6 conductor modular RJ12 Cable, 1 foot in length (provided). Required for full zone reporting/downloading (see chart above).
- Access to the local area network.
- 128MB RAM.

NL-MODCONFIG Software:
- Windows® XP Professional or Windows® 2000. (Windows® XP Home Edition is **not** supported).

NL-CSRCV Software:

- Windows® XP Professional installed on a dedicated PC.
- Intel® Pentium® 4 (2GHz processor or faster) with at least 512 MB RAM.
- Hard drive space 20GB or higher.
- Not supported: Hyper-Threading technology, Dual Processors and Windows® XP Themes.
- NAPCO Tested and certified using a Dell™ Dimension™ Series 2400 & 4400 PC. **Note:** Installations with other PC's could vary and are at installer's risk.
- Network Card requirements: 100 BaseT Ethernet.

INSTALLATION INSTRUCTIONS

After the mounting location and all wire paths are selected, install the NET-COMM as follows:

1. **Mount NET-COMM.** Remove power to panel. To maintain UL Supplemental Listing for the panels, it is required that the NET-COMM be installed in the same housing or in the same room as the panel, with no intervening walls or barriers.

   Mount using the mounting flanges on both sides of the NET-COMM box using the screws appropriate for the location.

2. **NET-COMM Jumper.** Make sure jumper JP2 is installed for normal operation. Refer to "Load Factory Defaults" on page 3 for JP2 operation.

3. **NET-COMM Wiring and Connections.** Refer to the wiring diagram.

   a. Insert the LAN Ethernet connector (RJ45 style) into the receptacle marked "Ethernet" on the NET-COMM circuit board. Insert the other end into the local network connector.

   b. If using the control panel Bell Output to initiate burglar and fire alarm reports, connect the panel + BELL terminal to the NET-COMM BELL terminal.

   c. If using the control panel negative trigger (PGM) to initiate a panic alarm, connect the panel PGM1 terminal to the NET-COMM PANIC terminal. Be sure to program the control panel to activate the PGM1 terminal on a panic.

   d. Connect the panel positive and negative Aux Power outputs to the NET-COMM terminals 1 (+) and 2 (–) respectively. See wiring diagram on page 5.

   The Supervisory Output (SUPV) will be active low if the NET-COMM is programmed for supervision (Check In) and the NET-COMM fails to check in with the NL-CSRCV four consecutive times.

   The Ringback Output (R.B.) will be active low for 2 seconds if the NET-COMM receives an acknowledgement from the NL-CSRCV software after reporting a closing.

4. **Power Up NET-COMM.** Upon applying power, the DS1 LED on the NET-COMM will turn on and remain on during the NET-COMM startup sequence (duration is approximately 15 seconds). The LED will turn off for up to 20 seconds while the NET-COMM verifies its configuration. The LED will then flash continuously indicating the unit has not

been programmed. **Note:** Once the unit has been programmed with an acceptable program, the DS1 LED will flash for 1 second and not continuously. After the power up sequence ends and normal operation begins, the LED will turn on only when the NET-COMM is communicating over the network.

5. **Program the NET-COMM with NL-MODCONFIG.** The NL-MODCONFIG software is used to program the NET-COMM. Before using the NL-MODCONFIG software, obtain a static IP address, subnet Mask and Gateway that will be dedicated to network communication. This information can be obtained from your network administrator.

   Install NL-MODCONFIG software on a PC (see System Requirements on page 1). Then use NL-MODCONFIG to program the NET-COMM.

   Use one of two methods:

   a. Connect to the NET-COMM through the LAN.

   b. Use a laptop or a PC connected to a network crossover cable (not supplied).

   Be sure to have the IP address, subnet mask and gateway address. See WI1243 for more information regarding programming with the NL-MODCONFIG software.
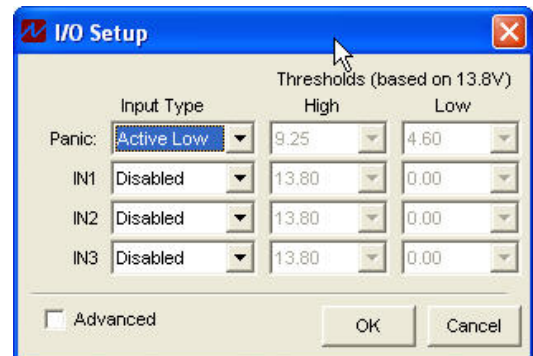
Trigger Inputs (PANIC and IN1-IN3)

In the NL-MODCONFIG software, use the **Trigger Input Setup** button (located at the bottom of the NL-MODCONFIG main screen) to allow the configuration of four parallel inputs located on the NET-COMM board terminal strip. Upper and lower voltage limits can be programmed into the NET-COMM. In the **I/O Setup** dialog, use the **Input Type** drop-down to select as follows:

- If **Active-low** selected from the drop-down list, the input is considered normal if it is above the upper threshold and faulted if it is below the lower threshold. An input value between the lower and upper thresholds maintains the current state.
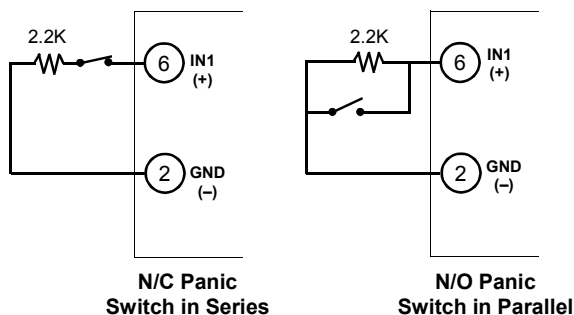
- If **Active-high** is selected from the drop-down list, the input is considered normal if it is below the lower threshold and faulted if it is above the upper threshold. An input value between the lower and upper thresholds maintains the current state. A 2.2K EOL resistor is needed. See diagram below.
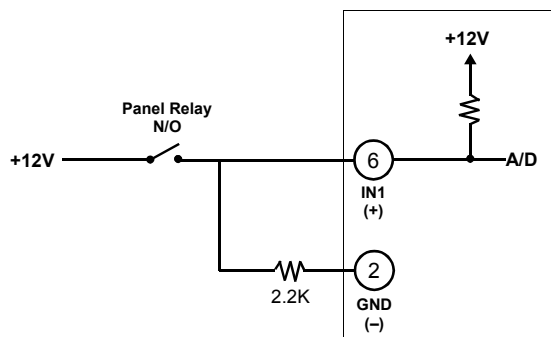
Active high Example: N/O Relay Contact

- If **EOLR** is selected from the drop-down list, this enables the 2.2K EOL Resistor. The default input is in a normal state if the input is between the lower threshold and the upper threshold. If not between these two thresholds the input is considered faulted.

  If EOLR is selected, the values programmed are identical to the values used in the panel. For example, to install a panic button, connect between the NET-COMM terminals 2 and 6. If button is normally closed, connect in series. If button is normally open, then connect in parallel. See diagrams below.

N/C Panic Switch in Series   **N/O Panic Switch in Parallel**

Example: Select EOLR in the I/O Setup Screen

- If **Disabled** is selected from the drop-down list, the input is disabled and will not respond to any input voltage. The Optional Inputs (IN1, IN2 and IN3 on the NET-COMM terminal strip) are configured with the lower limits set to zero and the upper limits set to 255. This results in all the Optional Inputs being normal (i.e. "non-activated") regardless of the actual input voltage.

6. **Test Installation.** Test the system by sending a Digital Dialer Test report out through the LAN (Ethernet) into the NL-CSRCV application.

LOAD FACTORY DEFAULTS

Defaulting the NET-COMM will return it to its original "out of box" condition. Default the NET-COMM as follows:

1. Remove power from the NET-COMM device.
2. Remove jumper JP2
3. Re-apply power. After about 40 seconds, the NET-COMM will flash the LED continuously indicating the default configuration has been loaded.
4. Upon continuous flashing of the LED, replace jumper JP2.

The default configuration data consists of all options disabled except for Panic, which is set to Active Low. Once the NET-COMM has been programmed using the NL-MODCONFIG software, the LED will flash once (for 1 second) upon powerup indicating the NET-COMM has a valid configuration programmed.

NET-COMM Configuration Overview

Control Panel

PCD
Windows

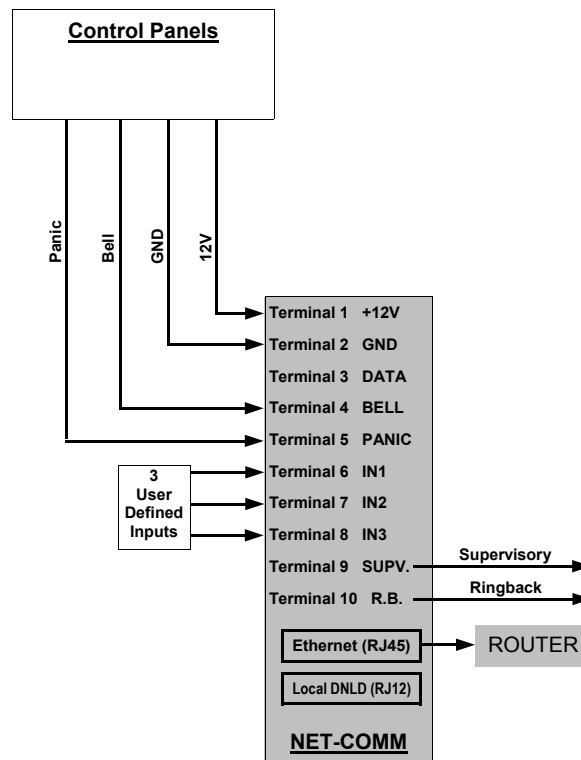ROUTER

RJ-45

**PCD-Windows
Quickloader
Download Software**

NL-CSRCV

ROUTER

RJ-45

**NL-CSRCV Software
(Windows XP-Pro)**

Central Station Receiver

NET-COMM

RJ-45

ROUTER

**Wide Area
Network**

Internet

ROUTER

RJ-45

NL-CSRCV

**NL-CSRCV Software
(Windows XP-Pro)**

Central Station Receiver
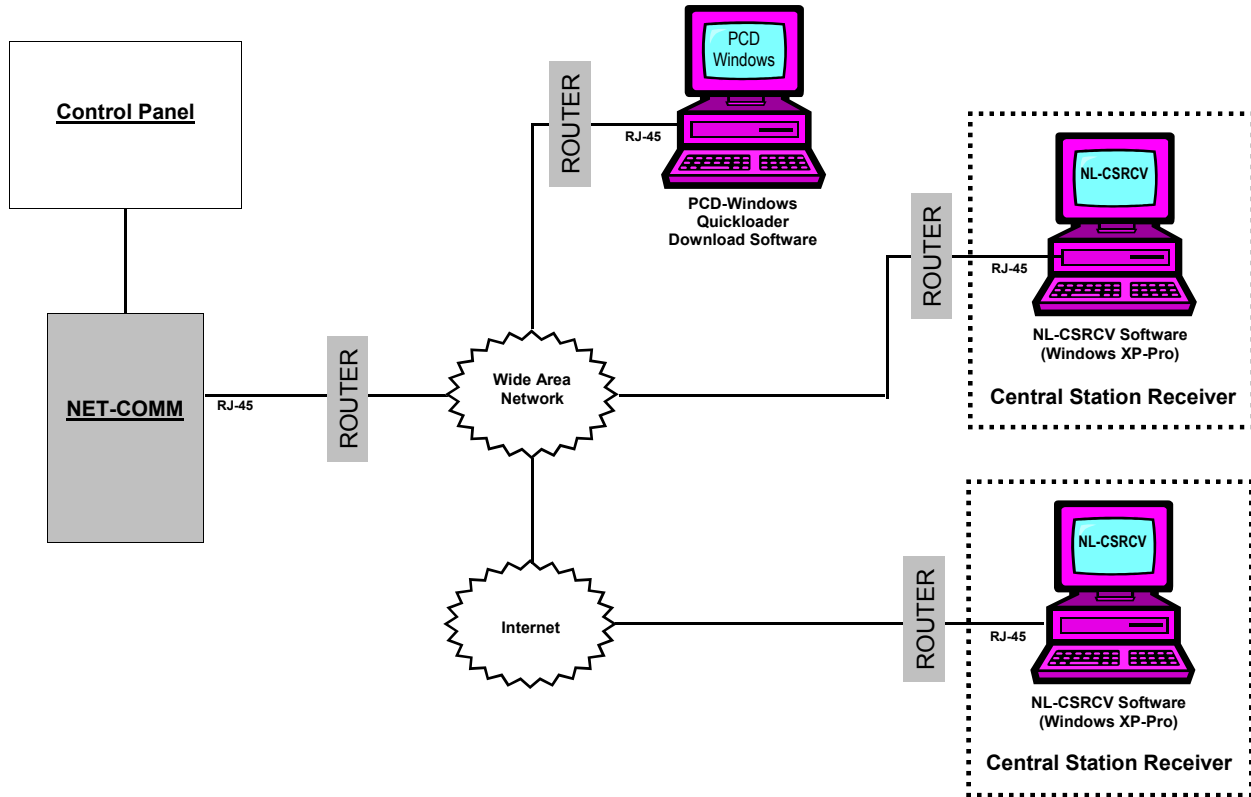
Detailed NET-COMM Connections

Control Panels

Panic

Bell

GND

12V

Terminal 1   +12V

Terminal 2   GND

Terminal 3   DATA

Terminal 4   BELL

Terminal 5   PANIC

**3
User
Defined
Inputs**

Terminal 6   IN1

Terminal 7   IN2

Terminal 8   IN3

Terminal 9   SUPV.   Supervisory

Terminal 10   R.B.   Ringback

Ethernet (RJ45)   ROUTER

Local DNLD (RJ12)

NET-COMM

NET-COMM WIRING DIAGRAM

REFER TO WI1242

Notes:
1. See table below for description of right and left Ethernet Connection LED Functions.
2. Normal operation requires this shunt connector to be placed on top of JP2.
3. See page 2 for DS1 LED operation.
4. **Voltage Input**: 12V Nominal.
5. **Current**: 90mA.

LED
DS1[3]

REMOVE TO
LOAD
DEFAULTS[2]

JP2

(TO NAPCO PANELS ONLY)
RJ12 CABLE

LOCAL DNLD

(TO ROUTER)
RJ45 CABLE

MAC Address
(Example: 00-20-4A-80-81-8B)

LEFT LED[1]   RIGHT LED[1]

ETHERNET

1	2	3	4	5	6	7	8	9	10
+12V	GND	DATA	BELL +	PANIC	IN1	IN2	IN3	SUPV.	R.B.

Typical Control Panel

- Panic PGM/Lug
- Bell + Out
- Panel Aux Power (-)
- Panel Aux Power (+)
- Optional Output
- Optional Output
- Optional Output

NET-COMM TERMINAL DESCRIPTIONS

TERMINAL NUMBER	DESCRIPTION
1	**Positive 12 Volts**
2	**Ground**
3	**Data (not currently used)**
4	**Bell**
5	**Panic.** Configured by the **Optional Input Setup** screen.
6	**User Defined Parallel Input 1.** Configured by the **Optional Input Setup** screen.
7	**User Defined Parallel Input 2.** Configured by the **Optional Input Setup** screen.
8	**User Defined Parallel Input 3.** Configured by the **Optional Input Setup** screen.
9	**Supervisory (Active Low)**
10	**Ringback (Active Low)**

ETHERNET CONNECTION LED FUNCTIONS

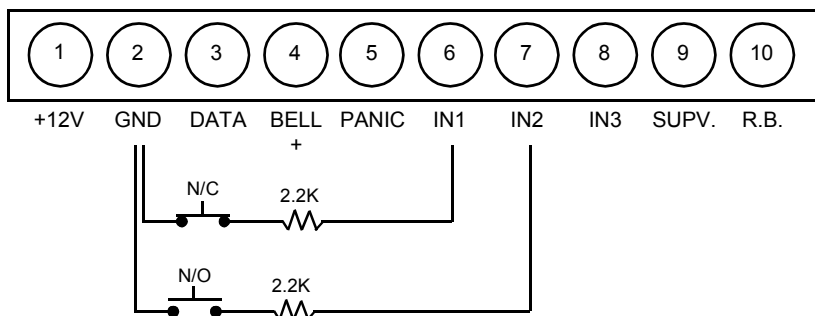| LEFT LED	RIGHT LED	MEANING
OFF	OFF	NO LINK
SOLID AMBER	BLINKING AMBER	10 MBPS HALF DUPLEX
SOLID GREEN	BLINKING AMBER	100 MBPS HALF DUPLEX
SOLID AMBER	BLINKING GREEN	10 MBPS FULL DUPLEX
SOLID GREEN	BLINKING GREEN	100 MBPS FULL DUPLEX

Input Selection: "Active Low" in *I/O Setup* Dialog

1	2	3	4	5	6	7	8	9	10
+12V	GND	DATA	BELL +	PANIC	IN1	IN2	IN3	SUPV.	R.B.

**Typical
Control Panel**

PGM 1 (– negative output)

PGM 2 (– negative output)

PGM 3 (– negative output)
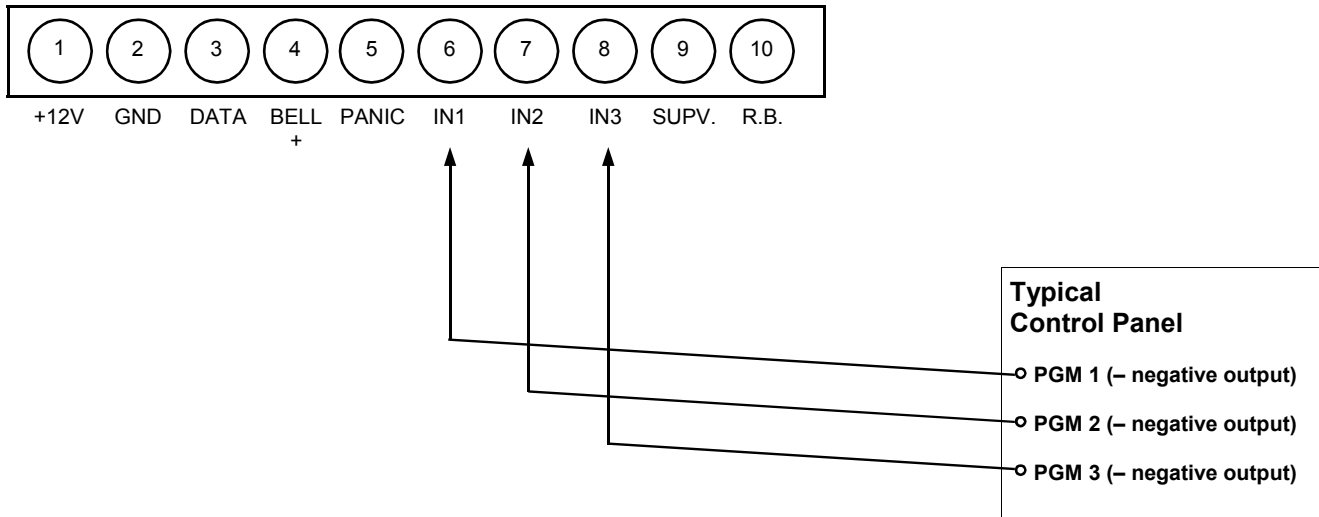
Input Selection: "Active High" Example in *I/O Setup* Dialog

1	2	3	4	5	6	7	8	9	10
+12V	GND	DATA	BELL +	PANIC	IN1	IN2	IN3	SUPV.	R.B.

2.2K

2.2K

2.2K

Panel Relay N/O

Panel Relay N/O

Panel Relay N/O

**Typical
Control Panel**

+12V PGM 1 (+ positive output)

+12V PGM 2 (+ positive output)

+12V PGM 3 (+ positive output)
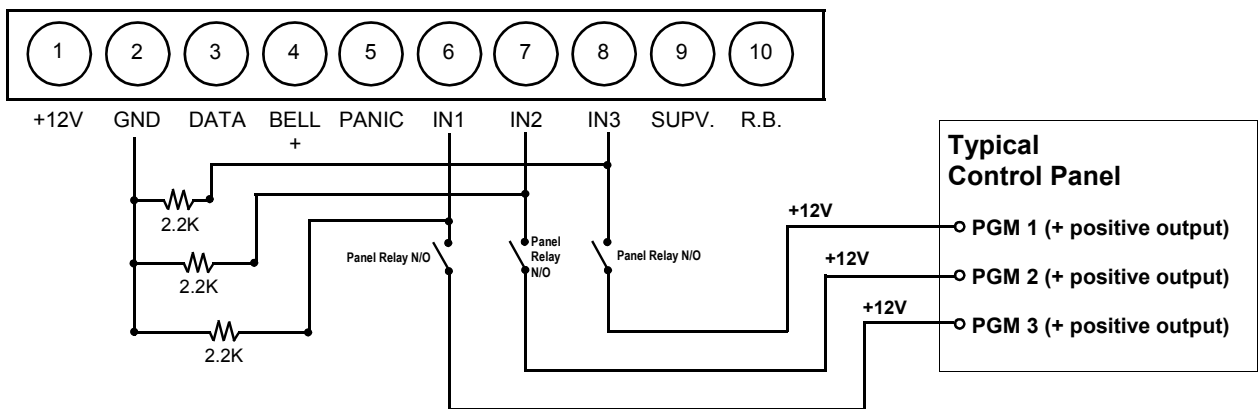
Input Selection: "EOLR" in *I/O Setup* Dialog*

1	2	3	4	5	6	7	8	9	10
+12V	GND	DATA	BELL +	PANIC	IN1	IN2	IN3	SUPV.	R.B.

N/C   2.2K

N/O   2.2K

*Used as a stand-alone unit (no control panel)

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This warranty shall not apply to any equipment, or any part thereof, which has been repaired by others, improperly installed, improperly used, abused, altered, damaged, subjected to acts of God, or on which any serial numbers have been altered, defaced or removed. Seller will not be responsible for any dismantling or reinstallation charges.

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Any action for breach of warranty, including but not limited to any implied warranty of merchantability, must be brought within the six months following the end of the warranty period.

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NAPCO RECOMMENDS THAT THE ENTIRE SYSTEM BE COMPLETELY TESTED WEEKLY.

Warning: Despite frequent testing, and due to, but not limited to, any or all of the following: criminal tampering, electrical or communications disruption, it is possible for the system to fail to perform as expected. NAPCO does not represent that the product/system may not be compromised or circumvented; or that the product or system will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; nor that the product or system will in all cases provide adequate warning or protection. A properly installed and maintained alarm may only reduce risk of burglary, robbery, fire or otherwise but it is not insurance or a guarantee that these events will not occur. CONSEQUENTLY, SELLER SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE, OR OTHER LOSS BASED ON A CLAIM THE PRODUCT FAILED TO GIVE WARNING. Therefore, the installer should in turn advise the consumer to take any and all precautions for his or her safety including, but not limited to, fleeing the premises and calling police or fire department, in order to mitigate the possibilities of harm and/or damage.

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