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NAPCO NetLink™ NL-MOD

Network Communication Module

INSTALLATION INSTRUCTIONS

WI1242A 9/04

GENERAL DESCRIPTION

The NAPCO NetLink™ NL-MOD is a device that allows the reporting of alarms over a TCP/IP based (Intranet or Internet) network. Alarm reporting, previously performed via Telco only, can now be performed over both a TCP/IP network and/or Telco, or via the TCP/IP network as a backup. The NL-MOD is housed in a separate plastic enclosure. It is connected to the Local Download receptacle for the GEM-X255, Gem-P3200 and GEM-P9600 Napco control panels, and is connected via the Bell and PGM wires from the GEM-P1632, GEM-P816, Express and other control panels. The NL-MOD is compatible with the following control panels:

GEM-P816 (version 11 or greater)
GEM-P1632 (version 11 or greater)
GEM-P3200 (version 40 or greater)
GEM-P9600 (version 40 or greater)
GEM-X255 (version 4 or greater)

Not all control panels can be updated by replacing the existing firmware. The following is a list of minimum existing firmware:

GEM-P3200/P9600: V20 GEM-X255: V4

The NL-MOD is supported by PCD-Windows Quickloader download software version 4.4 or greater. For the panels listed above, the Quickloader software will support downloading through the Intranet or a corporate WAN, as well as the uploading of logs and other data.

The NL-MOD is one part of a larger system which includes a software package to allow its configuration before use (NL-MODCONFIG), a software package to allow the receipt of alarms, status and supervisory data (NL-CSRCV), and a small NL-MOD transient protection device (NL-ULBD). A short description of each is provided below:

NL-MODCONFIG Software:
NL-MODCONFIG is a software program allowing the configuration of the NL-MOD 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 NL-MOD via its network connection. In addition, NL-MODCONFIG allows the updating of the NL-MOD 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 NL-MOD through a TCP/IP network.
The NL-CSRCV software can supervise each NL-MOD, 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-MOD includes electromagnetic protection and meets direct and indirect ESD requirements for Information Technology equipment, however, burglary applications may call for better protection.
The NL-ULBD is a small device which gives added transient protection and mounts entirely inside the NL-MOD housing. The NL-ULBD protects the NL-MOD 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 NL-MOD.

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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 NL-MOD should be mounted in or adjacent to the control

panel. **NOTE:** To maintain the UL Supplemental Listing, the wire length (NL-MOD to control panel) must be no more than 20 feet and the panel shall reside in the same room as the NL-MOD 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:

- Compatible Gemini Control Panel (see chart below)

Control Panel	Full Zone Reporting Capability	Trigger Inputs Reporting Capability	Remote TCP/IP Download
GEM-X255 (version 4+)	YES	OPT	YES
GEM-P9600 (version 40+)	YES	OPT	YES
GEM-P3200 (version 40+)	YES	OPT	YES
GEM-P1632 (version 11+)		YES	YES*
GEM-P816 (version 11+)		YES	YES*
Express or Other Panels		YES	

*Only downloads initiated from a remote PC are possible and site initiated download requests made via the control panel are not, ie, AutoDL ID is not available.

- 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
GEM-P3200
GEM-P9600
GEM-X255

The instructions in this section below apply to the GEM-P3200/P9600/X255 control panels. (For the GEM-P1632/ P816 panels, turn to page 4, for the Express and other generic control panels, turn to page 7). **Note:** Initial download must be performed locally.

Follow the steps below for *existing systems.* For new panel installations, proceed to step 2. After the mounting location and all wire paths are selected, install the NL-MOD as follows:

1. **Save the Existing Control Panel Program.** To ensure the panel program is not lost, use PCD-Windows Quickloader software (version 4.4) to upload the existing program (User, Dealer & Descriptions). If PCD-Windows is not available, confirm written records of programming selections. **Note:** Program will be lost after Cold Start (step 3).

2. **Update the Control Panel EPROM** (if required)**.** The following control panel firmware must be updated to the following revisions:
   - GEM-P3200 (version 40 or greater)
   - GEM-P9600 (version 40 or greater)
   - GEM-X255 (version 4 or greater)

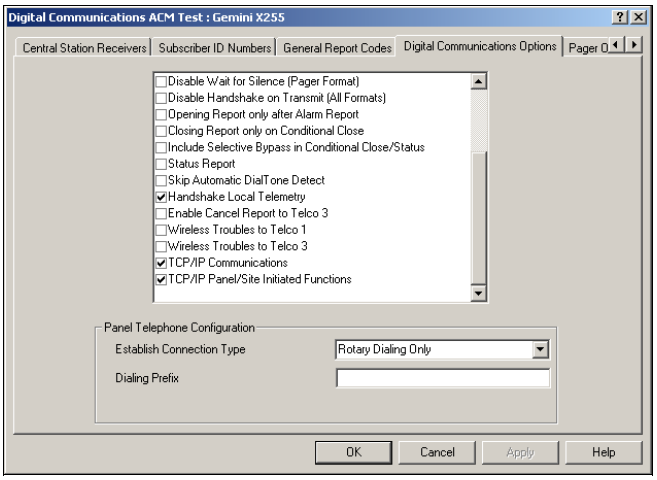
   Follow the procedure enclosed with the control panel *Software Enhancement EPROM* installation instructions (WI845).

3. **Perform a Cold Start of the Panel.**
   a. Press the Dealer Security Code and press [FUNCTION] (or [MENU]).
   b. Press [BYPASS] until "`Activate Program? Y/N`" appears, then press [ON/OFF] (or [ENTER]).
   c. Press [RESET] to enter Dealer Program Mode.
   d. Press [4] [0] [9 P] [3] [ON/OFF] (or [ENTER]).

   Press [RESET] twice to exit Dealer Program Mode.

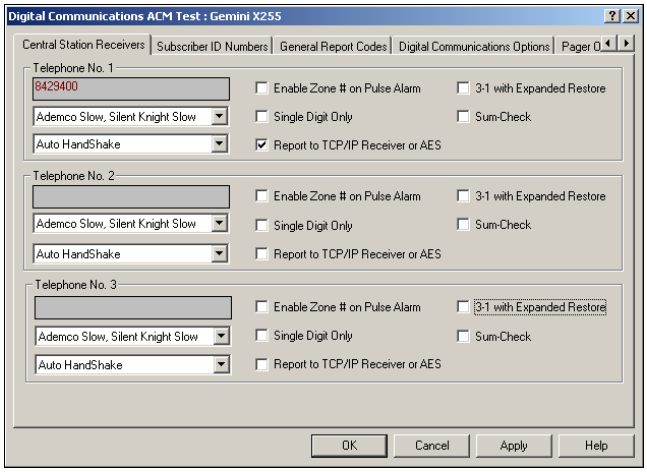
4. **Download a New Control Panel Program.** The PCD-Windows Quickloader download software can be used to configure the panel to recognize the NL-MOD. Alternatively, the keypad can be used with Direct Address Program Mode to program the panel.

   PROGRAM USING PCD-WINDOWS SOFTWARE.
   On the **Digital Communications** menu, there are five areas that relate to the NL-MOD operation. Configure as follows:
   a. **Enable TCP/IP Communications**. In PCD-Windows, click the **Digital Communications** button, and select the *Digital Communications Options* tab (see image below). Check "TCP/IP Communications". This feature informs the control panel that an NL-MOD will be installed in the system, and thus



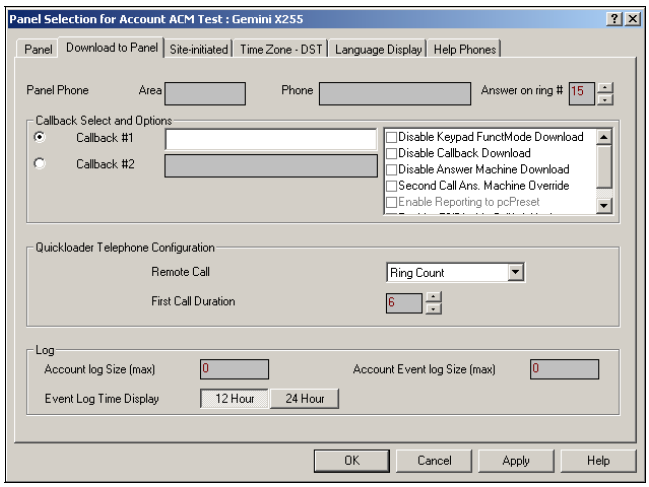
will make the appropriate adjustments to various downloading timeouts and to reporting properties. Click **Apply** to save.

b. **Enable Report to AES-TCP/IP**. Select the *Central Station Receivers* tab (see image below). For each telephone number desired, check "Report to TCP/IP Receiver or AES" to enable the panel to report alarms via the NL-MOD accessory. **Note:** All parameters apply as they normally would for Telco reporting. For backup reporting Telephone No. 2 should be enabled. Click **Apply** and **OK** to save.



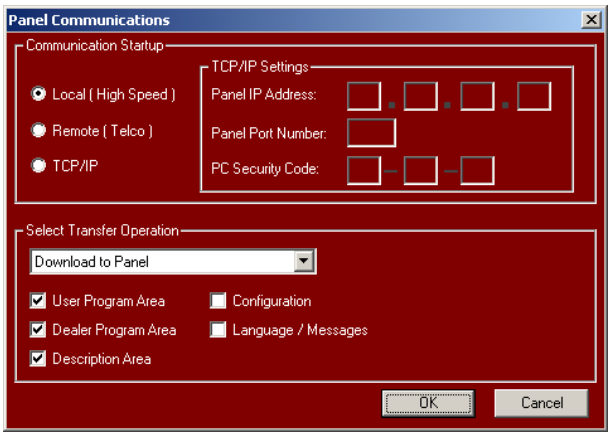
c. **Enable Handshake Local Telemetry** (Optional). In the *Digital Communications Options* tab (see previous image), check "Handshake Local Telemetry". This enables the panel to wait for a transmission acknowledgment from the NL-CSRCV software. (If the acknowledgment fails to occur within the allotted time, that control panel will generate a "Telemetry Failure" system trouble). Click **Apply** to save. **Note:** The NL-MOD can queue up to 50 alarms and will continuously attempt to transmit the alarm to the NL-CSRCV software.

d. **Enable TCP/IP Panel/Site Functions** (Optional) (**Note:** This option is for future use--proceed to "**Download to Control Panel**"). In the same *Digital Communications Options* tab, check "TCP/IP Panel/Site Initiated Functions" to enable the panel to connect via TCP (rather than dialup) for Auto Event Log Dumps, AutoDL ID, Function 6 and Site Initiated PCPreset connections. Click **Apply** to save.



e. **Enable Callback Select and Options** (Optional) (**Note:** This option is for future use--proceed to "**Download to Control Panel**"). Click the **Panel Selection** button, and select the *Download to Panel* tab (see image above). The **Callback Select and Options** radio buttons for Callback #1 or #2 will cause PCPreset IP Address #1 or PCPreset IP Address #2 to be used, respectively. Therefore, when "TCP/IP Panel/Site Initiated Functions" (see "d" above) is selected, the NL-MOD will try to connect to a PCPreset computer using an IP address determined by the Callback # selection. Click **OK** to save.

Download to Control Panel. Before proceeding, save the information (File, Save Work). Then click the **Panel Communication** button.



Note: The download cannot be via TCP/IP until the NL-MOD is programmed by the NL-MODCONFIG software. In the **Select Transfer Operation** drop-down box, select *Download to Panel*. Check **User Program Area**, **Dealer Program Area** and **Description Area**. Do not check TCP/IP. Click **OK** to initiate the data transfer to the control panel. In UL installations, disable remote downloading (no unattended downloading allowed) and after changing the program, always verify panel operation at the panel site.

PROGRAM USING THE KEYPAD

Instead of using PCD-Windows Quickloader download software to program the panel, access the control panel directly through the keypad as detailed below. See previous descriptions for each address.

a. Enable "TCP/IP Communications" via address 2423, bit 2
b. Enable "Handshake for Local Telemetry" via address 1027 bit 7.
c. Enable "TCP/IP Panel/Site Initiated Functions" via address 2423, bit 3.
d. For each telephone number desired, enable "Report to TCP/IP Receiver or AES" via addresses 0526 (bit 6), 0551 (bit 6) and 0576 (bit 6) for Telco 1, Telco 2

and Telco 3 respectively.

e. Enable "Callback Select Options" via address 1022. Enter either "1" for Callback Telephone Number 1 or "2" for Callback Telephone Number 2.

4. **Mount NL-MOD.** Remove power to panel. To maintain UL Supplemental Listing for the GEM-X255, GEM-P9600 and GEM-P3200 panels, it is required that the NL-MOD be installed in the same housing or in the same room as the control panel, with no intervening walls or barriers. **Note:** The UL Supplemental Listing requirement is necessary for these three control panels because the Local DNLD jack located on each panel is not protected to UL transient requirements.
   Mount using the mounting flanges on both sides of the NL-MOD box using the screws appropriate for the location.

5. **NL-MOD Jumper.** Make sure jumper JP2 is installed for normal operation. Refer to "Load Factory Defaults" below for JP2 operation.

6. **NL-MOD Wiring and Connections.** Refer to the wiring diagram.
   a. Insert the LAN Ethernet connector (RJ45 style) into the receptacle marked "Ethernet" on the NL-MOD circuit board. Insert the other end into the local network connector.
   b. Insert the 6-conductor modular cable (supplied) into J1 (RJ12 style) of the control panel. Insert the other end into the "LOCAL DNLD" receptacle (RJ12 style) on the NL-MOD circuit board.
   c. Connect the panel Aux Power terminals 13 (+) and 14 (–) to the NL-MOD terminals 1 (+) and 2 (–). See wiring diagram on page 11.

   The Supervisory Output (SUPV) will be active low if the NL-MOD 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 NL-MOD receives an acknowledgement from the NL-CSRCV software after reporting a closing.

7. **Power Up NL-MOD.** Upon applying power, the DS1 LED on the NL-MOD will turn on and remain on during the NL-MOD startup sequence (duration is approximately 15 seconds). The LED will turn off for up to 20 seconds while the NL-MOD 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 NL-MOD is communicating over the network.

8. **Program the NL-MOD with NL-MODCONFIG.** The NL-MODCONFIG software is used to program the NL-MOD. 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 the NL-MODCONFIG software on a PC (see System Requirements on page 2). Then use NL-MODCONFIG to program the NL-MOD.
   Use one of two methods:

   a. Connect to the NL-MOD 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.

9. **Test Installation.** Test the system by sending a Digital Dialer Test report out through the LAN (Ethernet) into the NL-CSRCV application. **Note:** The NL-MOD will attempt to send check-in signals immediately after the unit is configured with NL-MODCIONFIG software. Therefore, if the NAPCO NetLink™ NL-CSRCV Central Station Receiver Application software has not been configured to accept check-in signals from this unit or the NL-MODCONFIG programming was performed via a crossover cable, then the control panel will indicate a System Trouble E25 within two minutes of NL-MOD programming.

LOAD FACTORY DEFAULTS

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

1. Remove power from the NL-MOD device.
2. Remove jumper JP2
3. Re-apply power. After about 40 seconds, the NL-MOD 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 NL-MOD has been programmed using the NL-MODCONFIG software, the LED will flash once (for 1 second) upon powerup indicating the NL-MOD has a valid configuration programmed.

INSTALLATION INSTRUCTIONS
GEM-P816
GEM-P1632

The instructions in this section below apply to the GEM-P816/P1632 control panels. (For the GEM-P3200/P9600/X255 panels, turn to page 2, for the Express and other generic control panels, turn to page 7). **Note:** Initial download must be performed locally.

Follow the steps below for *existing systems*. For new panel installations, proceed to step 2. After the mount-

ing location and all wire paths are selected, install the NL-MOD as follows:

1. **Save the Existing Control Panel Program.** To ensure the panel program is not lost, use PCD-Windows Quickloader software (version 4.4) to upload the existing program (User, Dealer & Descriptions). If PCD-Windows is not available, confirm written records of programming selections. **Note:** Program will be lost after Cold Start (step 3).

2. **Update the Control Panel EPROM** (if required)**.** The following control panel firmware must be updated to the following revisions:
   - GEM-P816 (version 11 or greater)
   - GEM-P1632 (version 11 or greater)

   Follow the procedure enclosed with the control panel *Software Enhancement EPROM* installation instructions (WI845).

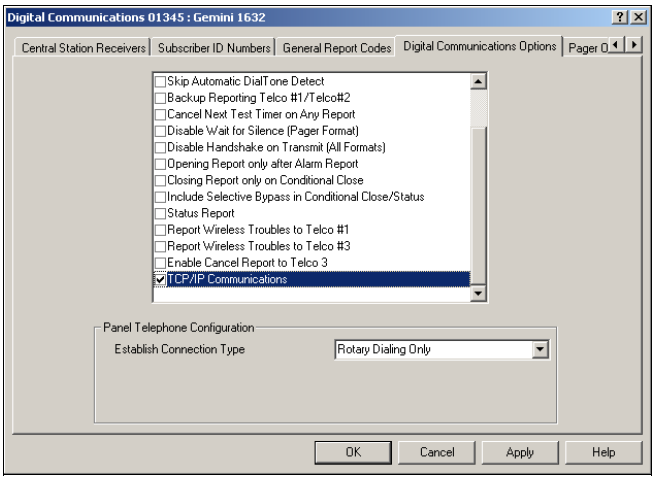
3. **Perform a Cold Start of the Panel.**
   a. Press the Dealer Security Code and press [FUNCTION] (or [MENU]).
   b. Press [BYPASS] until "Activate Program? Y/N" appears, then press [ON/OFF] (or [ENTER]).
   c. Press [RESET] to enter Dealer Program Mode.
   d. Press [1] [1] [9 P] [8 A] [ON/OFF] (or [ENTER]).

   Press [RESET] twice to exit Dealer Program Mode.

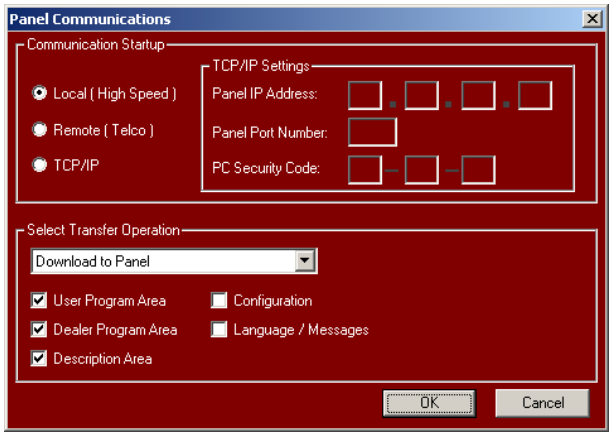
4. **Download a New Control Panel Program.** The PCD-Windows Quickloader download software can be used to configure the panel to recognize the NL-MOD. Alternatively, the keypad can be used with Direct Address Program Mode to program the panel.

   PROGRAM USING PCD-WINDOWS SOFTWARE.
   On the **Digital Communications** menu, there is one option that relates to the NL-MOD operation. Configure as follows:

   - **Enable TCP/IP Communications**. In PCD-Windows, click the **Digital Communications** button, and select the *Digital Communications Options* tab (see image below). Check "TCP/IP Communications". This feature informs the control panel that an NL-MOD will be installed in the system, and thus will make the appropriate adjustments to various downloading timeouts and to reporting properties. Click **Apply** to save.



Download to Control Panel. Before proceeding, save the information (File, Save Work). Then click the **Panel Communication** button.



Note: The download cannot be via TCP/IP until the NL-MOD is programmed by the NL-MODCONFIG software. In the **Select Transfer Operation** drop-down box, select *Download to Panel*. Check **User Program Area**, **Dealer Program Area** and **Description Area**. Do not check TCP/IP. Click **OK** to initiate the data transfer to the control panel. In UL installations, disable remote downloading (no unattended downloading allowed) and after changing the program, always verify panel operation at the panel site.

PROGRAM USING THE KEYPAD
Instead of using PCD-Windows Quickloader download software to program the panel, access the control panel directly through the keypad as detailed below. See previous descriptions for each address.

- Enable "TCP/IP Communications" via address 1063, bit 0

5. **Mount NL-MOD.** Remove power to panel. To maintain UL Supplemental Listing for the GEM-P816 and GEM-P1632 panels, it is required that the NL-MOD be installed in the same housing or in the same room as the control panel, with no intervening walls or barriers. **Note:** The UL Supplemental Listing requirement is necessary for these two control panels because the Local DNLD jack located on each panel is not protected for transients.
   Mount using the mounting flanges on both sides of the NL-MOD box using the screws appropriate for the location.

6. **NL-MOD Jumper.** Make sure jumper JP2 is installed for normal operation. Refer to "Load Factory Defaults" on page 4 for JP2 operation.

7. **NL-MOD Wiring and Connections.** Refer to the wiring diagram.
   a. Insert the LAN Ethernet connector (RJ45 style) into the receptacle marked "Ethernet" on the NL-MOD circuit board. Insert the other end into the local network connector.
   b. Insert the 6-conductor modular cable (supplied) into J1 (RJ12 style) of the control panel. Insert the other end into the "LOCAL DNLD" receptacle (RJ12 style) on the NL-MOD circuit board. **Note:** This connection is used for downloading purposes only and is **not** used for reporting.
   c. Connect the panel Bell terminal 3 (+) to the NL-MOD Bell terminal 4. Connect PGM1 terminal 7 to NL-MOD Panic terminal 5.
   d. Connect the panel Aux Power terminals 5 (+) and 6 (–) to the NL-MOD terminals 1 (+) and 2 (–). See wiring diagram on page 11.

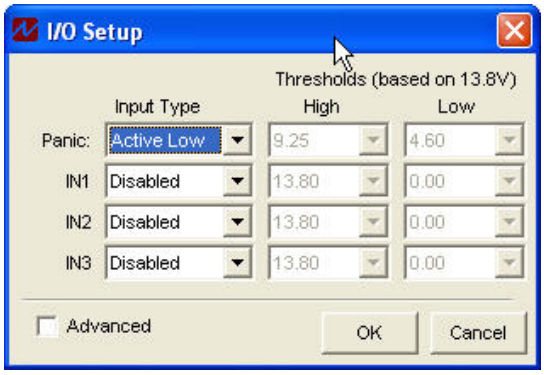
   The Supervisory Output (SUPV) will be active low if the NL-MOD is programmed for supervision (Check In) and the NL-MOD fails to check in with the NL-CSRCV four consecutive times.
   The Ringback Output (R.B.) will be active low for 2 seconds if the NL-MOD receives an acknowledgement from the NL-CSRCV software after reporting a closing.

8. **Power Up NL-MOD.** Upon applying power, the DS1 LED on the NL-MOD will turn on and remain on during the NL-MOD startup sequence (duration is approximately 15 seconds). The LED will turn off for up to 20 seconds while the NL-MOD 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 NL-MOD is communicating over the network.

9. **Program the NL-MOD with NL-MODCONFIG.** The NL-MODCONFIG software is used to program the NL-MOD. 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 the NL-MODCONFIG software on a PC (see System Requirements on page 2). Then use NL-MODCONFIG to program the NL-MOD.
   Use one of two methods:

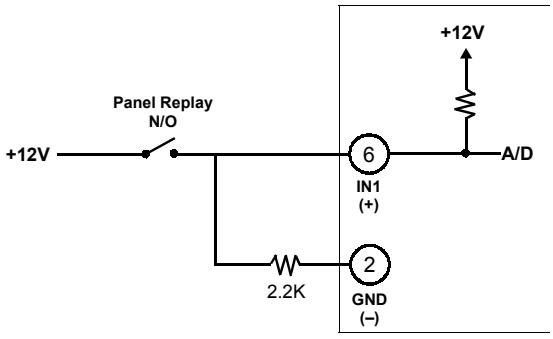
   a. Connect to the NL-MOD through the LAN.
   b. Use a laptop or a PC connected to a network crossover cable (not supplied).

   Be sure to have the IP address, subnet mask and gateway address. See WI1243 for more information regarding programming with the NL-MODCONFIG software.



Optional Inputs (PANIC and IN1-IN3)
In the NL-MODCONFIG software, use the **Optional Input Setup** button (located at the bottom of the NL-MODCONFIG main screen) to allow the configuration of four parallel inputs located on the NL-MOD board terminal strip. Upper and lower voltage limits can be programmed into the NL-MOD. In the **I/O Setup** dialog, use the **Input Type** drop down to select as follows:

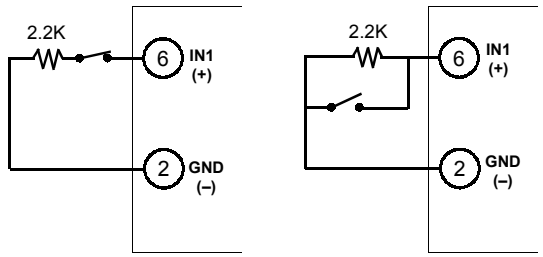
- If **Active-low** selected from the drop-down list, the input is considered normal if it is above the upper threshold and faulted if it is below the lower threshold. An input value between the lower and upper thresholds maintains the current state.
- If **Active-high** is selected from the drop-down 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 NL-MOD terminals 2 and 6. If button is normally closed, connect in series. If button is normally open, then connect in parallel. See diagrams below.



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 NL-MOD 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.

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

INSTALLATION INSTRUCTIONS
EXPRESS PANELS
OTHER GENERIC PANELS

The instructions in this section below apply to the Express and other generic control panels. (For the GEM-P3200/ P9600/X255 panels, turn to page 2, for the GEM-P1632/ P816, turn to page 4).

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

1. **Mount NL-MOD.** Remove power to panel. To maintain UL Supplemental Listing for the panels, it is required that the NL-MOD be installed in the same housing or in the same room as the control panel, with no intervening walls or barriers.
   Mount using the mounting flanges on both sides of the NL-MOD box using the screws appropriate for the location.

2. **NL-MOD Jumper.** Make sure jumper JP2 is installed for normal operation. Refer to "Load Factory Defaults" on page 4 for JP2 operation.

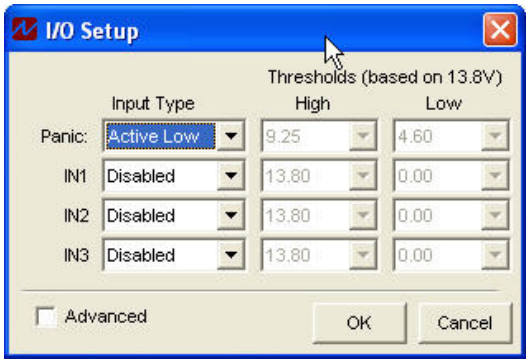
3. **NL-MOD Wiring and Connections.** Refer to the wiring diagram.
   a. Insert the LAN Ethernet connector (RJ45 style) into the receptacle marked "Ethernet" on the NL-MOD circuit board. Insert the other end into the local network connector.
   b. **For Express control panels only**: Connect the control panel +BELL terminal (for XP-600/400 or GEM-P800 use terminal 10, and for GEM-P801 use terminal 14) to the NL-MOD BELL terminal 4. Connect the control panel PGM1 terminal (for XP-600/400 or GEM-P800 use terminal 15 and for GEM-P801 use terminal 19) to NL-MOD PANIC terminal 5. Be sure to program the control panel to activate the PGM1 terminal on a panic.
   c. Connect the panel positive and negative Aux Power outputs to the NL-MOD terminals 1 (+) and 2 (–) respectively. See wiring diagram on page 11.

   The Supervisory Output (SUPV) will be active low if the NL-MOD is programmed for supervision (Check In) and the NL-MOD 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 NL-MOD receives an acknowledgement from the NL-CSRCV software after reporting a closing.

4. **Power Up NL-MOD.** Upon applying power, the DS1 LED on the NL-MOD will turn on and remain on during the NL-MOD startup sequence (duration is approximately 15 seconds). The LED will turn off for up to 20 seconds while the NL-MOD 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 NL-MOD is communicating over the network.

5. **Program the NL-MOD with NL-MODCONFIG.** The NL-MODCONFIG software is used to program the NL-MOD. 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 2). Then use NL-MODCONFIG to program the NL-MOD.
   Use one of two methods:
   a. Connect to the NL-MOD through the LAN.
   b. Use a laptop or a PC connected to a network crossover cable (not supplied).

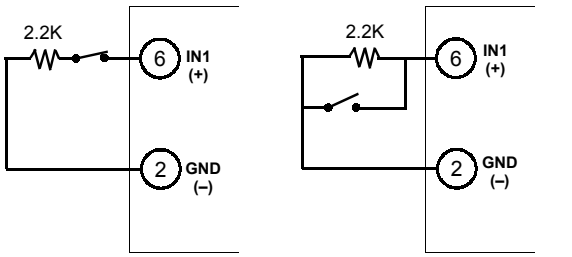
   Be sure to have the IP address, subnet mask and gateway address. See WI1243 for more information regarding programming with the NL-MODCONFIG software.



Optional Inputs (PANIC and IN1-IN3)

In the NL-MODCONFIG software, use the **Optional Input Setup** button (located at the bottom of the NL-MODCONFIG main screen) to allow the configuration of four parallel inputs located on the NL-MOD board terminal strip. Upper and lower voltage limits can be programmed into the NL-MOD. 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.

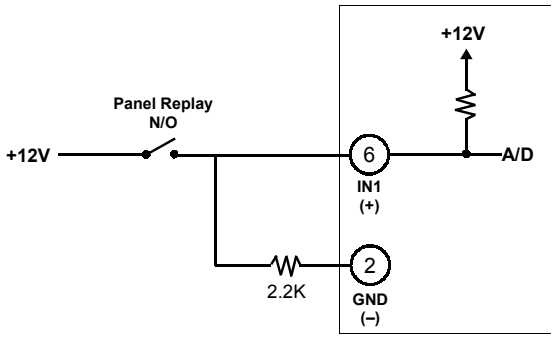


N/C Panic Switch in Series **N/O Panic Switch in Parallel**

Example: Select EOLR in the I/O Setup Screen

- 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 NL-MOD terminals 2 and 6. If button is normally closed, connect in series. If button is normally open, then connect in parallel. See diagrams below.

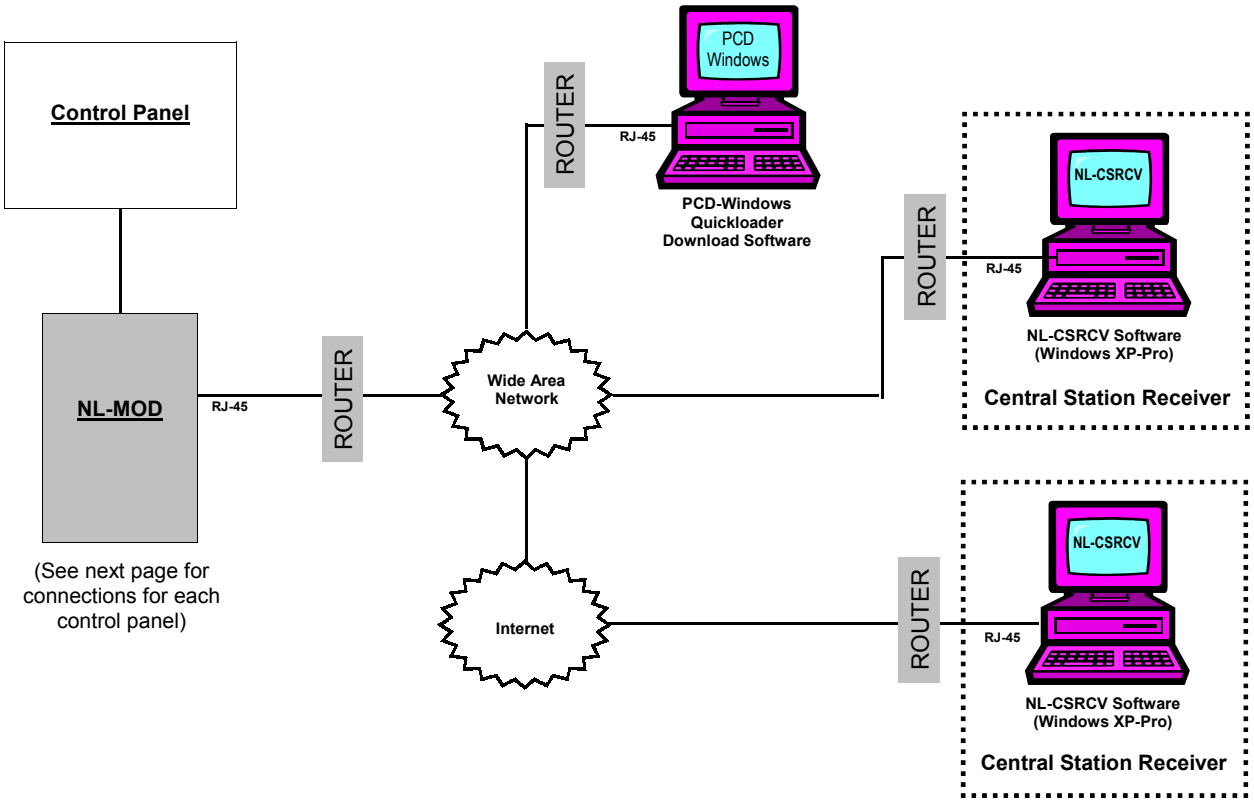


Active high Example: N/O Relay Contact

- 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 NL-MOD 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.

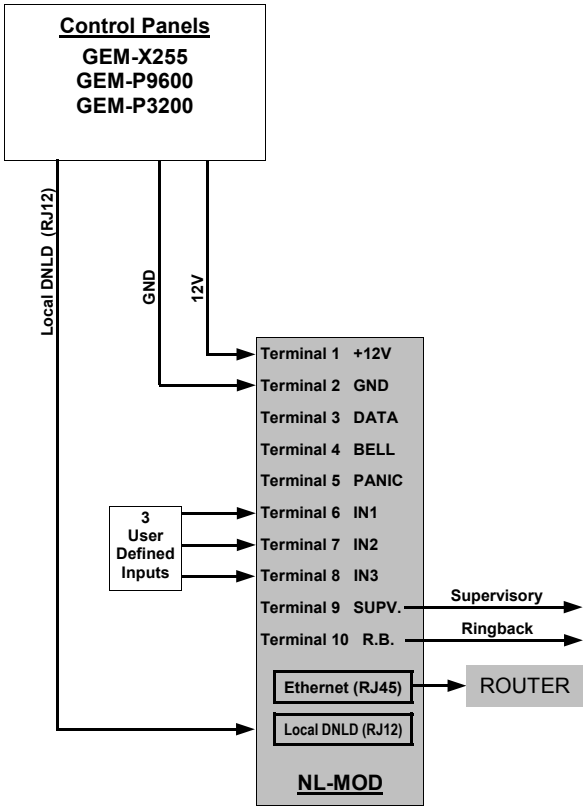
6. **Test Installation.** Test the system by sending a Digital Dialer Test report out through the LAN (Ethernet) into the NL-CSRCV application.

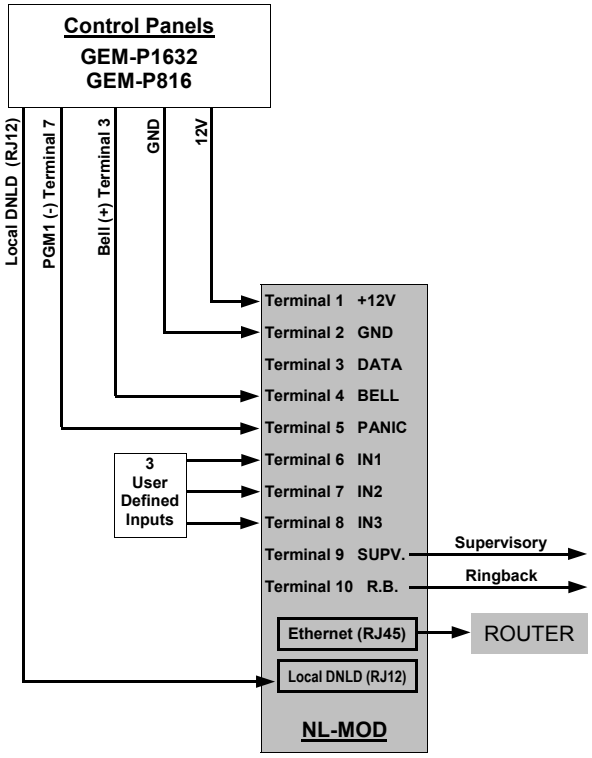
NL-MOD Configuration Overview

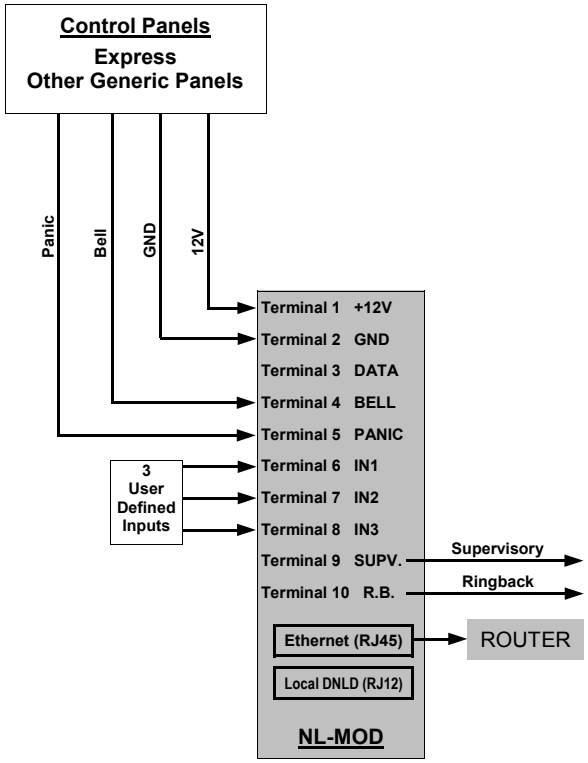


(See next page for connections for each control panel)

Detailed NL-MOD Connections

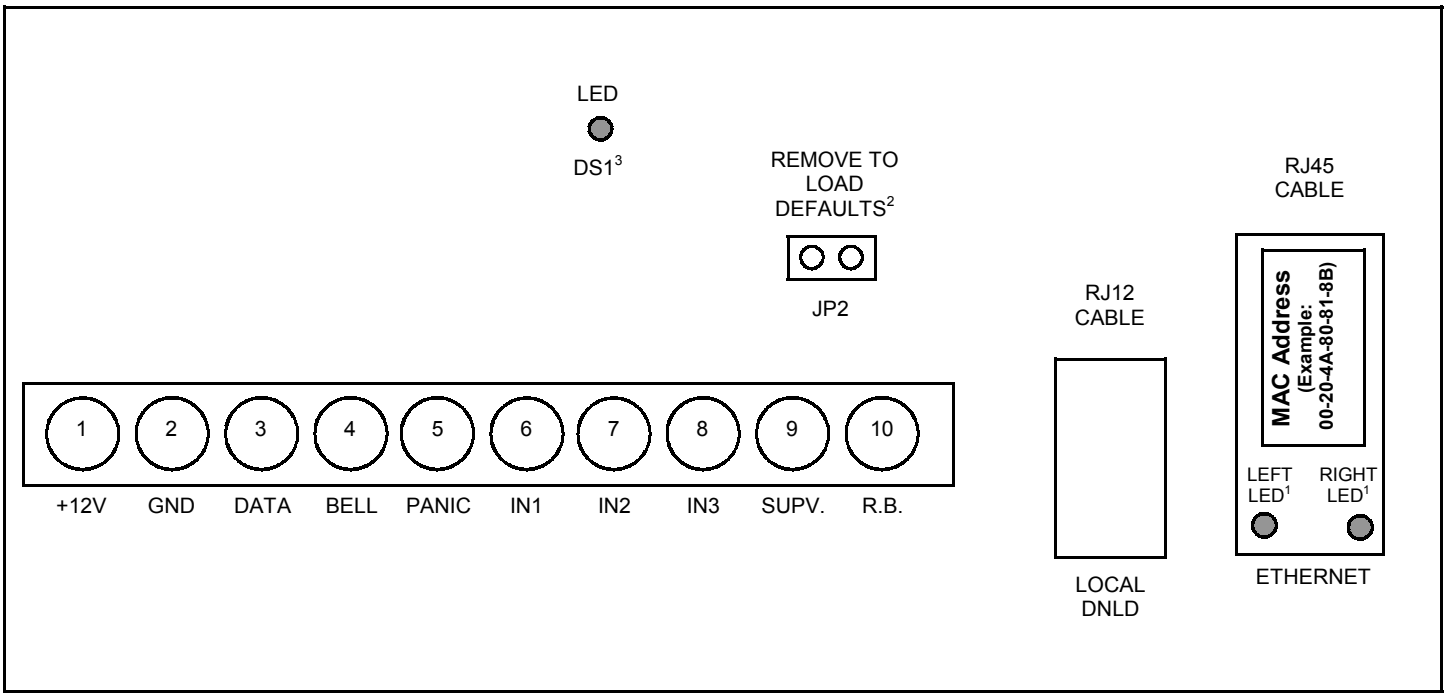






NL-MOD WIRING DIAGRAM

REFER TO WI1242



NL-MOD Wiring Diagram 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 pages 4, 6 and 7 for DS1 LED operation.
4. **Voltage Input**: 12V Nominal.
5. **Current**: 90mA

NL-MOD 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**

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