



**PULSAFEEDER
RELAY NODE (NRLY)**

INSTALLATION & OPERATION MANUAL

SERIAL #: _____



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PULSAbLue NRLY

1 Introduction

The RELAY NODE (NRLY) is a LONWORKS™ technology based NODE. It contains its own micro controller which talks directly to other LONWORKS NODES on a twisted pair communication wire. It contains four relays with both Normally Open and Normally Closed contacts.

The NRLY option adds four relays to any Pulsafeeder 3300 Series controller. These relays can be selectably programmed the same as the relays in the main controller. They can be used for alarms, chemical feeds, biocide feeds, clock timers or any other function requiring an ON/OFF relay.

The NRLY is also used with the B3410 Multi Boiler Controller. It is required to operate the motorized ball valves for boilers. The relays can also be activated by any alarm condition generated by the 3300/3400 Controller. It will also feed chemical based on percent of blowdown time, percent on time, after a predefined number of gallons from either water meter, and/or by a biocide schedule.

1.1 Specifications

The NRLY is housed in a NEMA 4X PVC enclosure and requires a 3300/3400 Controller with a Network Interface Node (NIN) for operation.

Enclosure	NEMA 4X PVC
Relays	Four NO and NC contacts
Current Rating	3 amps @ 230 VAC per relay
Distance between two furthest Nodes	400 m (1312 ft) max.

2 Unpacking, Mounting and Installation

2.1 Unpacking

Inspect the shipping carton for obvious external damage. Note on the carrier's bill-of-lading the extent of the damage, if any, and notify the carrier. Save the shipping carton until your Relay Node is started up.



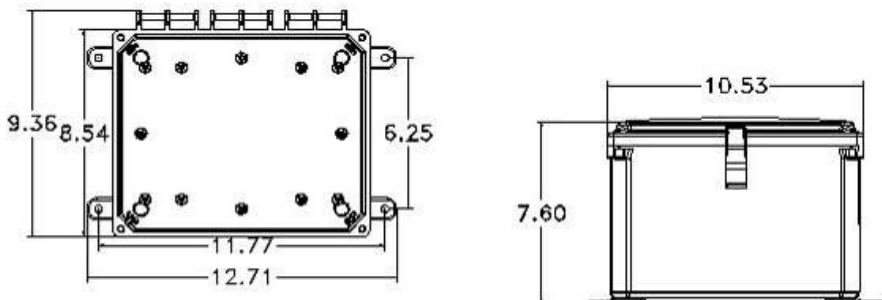
If there was shipping damage, call the Pulsafeeder Customer Service Department at (800) 333-6677 for authorization to return the node to the factory in the original carton.

2.2 Mounting

The NRLY is supplied with four mounting feet. The NRLY can be mounted to a panel or to a flat non-vibrating wall.

- Attach the four mounting feet to the back of the controller enclosure.
- Install on smooth surface to prevent stress on the mounting feet.
- Do not install on vibrating wall.
- If enclosure is installed in corrosive environments, consider purging.
- Dimensions indicated as inches (millimeters).
- The enclosure material is PVC.
- Use #10 mounting screws (4).
- Avoid drilling or punching additional holes in the controller enclosure. Damage incurred as a result of any alteration to the enclosure is not covered under the Pulsafeeder product warranty.

The dimensions of the enclosure in inches are:



The NRLY has a shipping weight of about 8 lbs.

3 INSTALLATION

3.1 Incoming Power

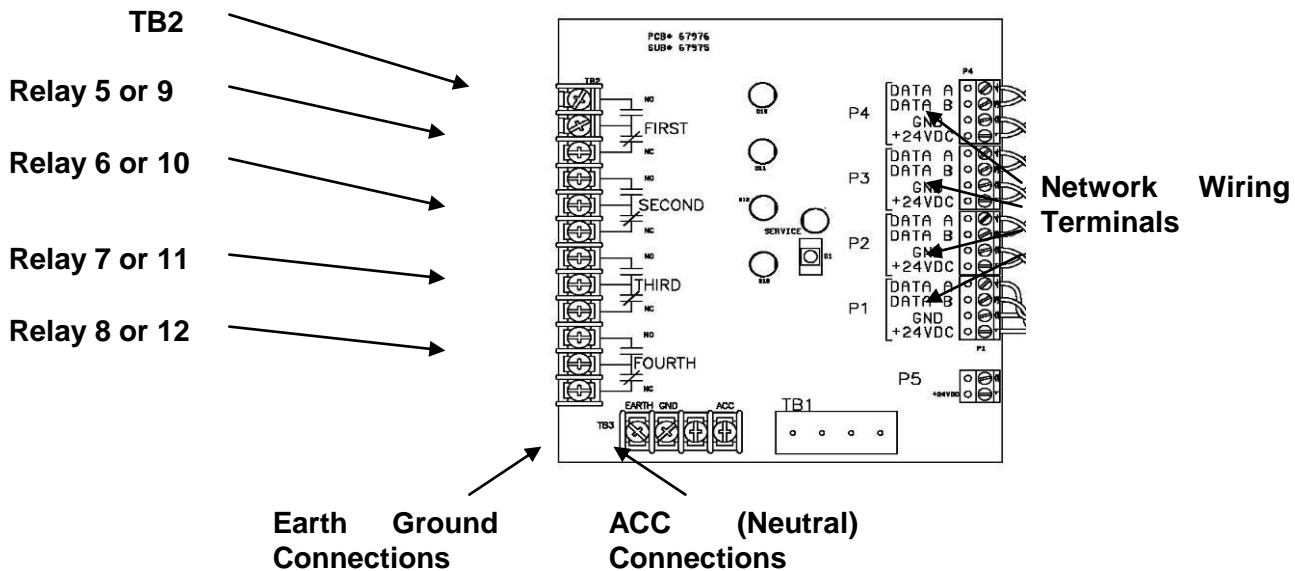
The NRLY can be powered from either 115 VAC or 230 VAC at 50/60 Hz. The NRLY comes with a power cord and receptacles. The power cord and receptacles are rated for 115VAC. If the relay node will be powered by 230 VAC, the power cord and receptacles will need to be removed and the incoming power and the relay outputs will need to be hard-wired.

3.2 Relay Outputs

All 4 relays in the NRLY have both a Normally Open and a Normally Closed contact. The Normally Open relay contacts are wired to the receptacles. If 115 VAC and only the Normally Open contact are to be used simply plug your devices into the molded receptacles. If 230 VAC or both the Normally Open and the Normally Closed contacts are to be used, remove the receptacles and hard-wire your devices to the relay outputs.

The relays are designed with both a Normally Open and Normally Closed contact so that motorized valves may be used. If a motorized valve is to be used, connect the Normally Open (NO) contact to the open connection of the valve and connect the normally closed (NC) contact to the close connection of the valve. Each relay output requires a neutral connection and an earth ground connection for proper operation.

The receptacle on the far left is relay #5 (or #9 for a second NRLY) and the receptacle on the far right is relay #8 (or #12 for a second NRLY). On the NRLY board, relay #5 (or #9) is at the top of terminal block TB2 and relay #8 (or #12) is on the bottom of TB2.



There are 3 terminals for each relay in the NRLY. The top 3 terminals on TB2 are the Normally Open, Center Tap, and Normally Closed contacts for relay #5 (or #9) in that order. The bottom 3 terminals of TB2 are the Normally Open, Center Tap, and Normally Closed contacts for relay #8 (or #12). The center taps of each relay have a jumper wire to the other relays to make them hot. If the jumper wires are removed the relays become dry contacts.

Terminal Block TB3 is used as a tie point for ACC and Earth Ground connections.

Refer to the drawing in the back of this manual for wiring instructions.

WARNING! THE CONTROL RELAYS ARE INTENDED FOR ELECTRONIC OR SMALL MOTOR-DRIVEN CHEMICAL PUMPS. LARGER PUMPS REQUIRE THE -HR OPTION WITH 25-AMP-RATED INTERPOSING RELAYS. CONTACT PULSAFEEDER FOR SPECIAL INSTRUCTIONS

3.3 Node Installation

Before it can be used, the NRLY must be installed in the firmware of the controller.

Node installation is a 3-step process; select the node to be installed, press the service pin on the node, and press any key on the keypad.

To install the NRLY in the firmware:

- Go to the **Main Menu** by pressing "**BACK**".

MAIN MENU	
=====	
3	CALENDAR TIMER
4	ALARMS
5	WATER METERS
6	4-20 MA OUTPUTS
7	SYSTEM SETUP
8	CLOCK

- Highlight **SYSTEM SETUP**, then press **ENT**. You should see the following screen:

SYSTEM SETUP	
=====	
1	PROCESS PARAMETERS
2	INITIALIZATION
3	SECURITY
4	SOFTWARE VERSIONS
5	DIAGNOSTICS
6	COMMUNICATIONS
7	NODE INSTALLATION

- Highlight **NODE INSTALLATION**, then press **ENT**. You should see the following screen:

NODE INSTALLATION	
-------------------	--

=====
1 INSTALL A NEW NODE
2 DE-INSTALL A NODE

-
- Highlight **INSTALL A NEW NODE**, then press **ENT**.

You should see the following screen:

INSTALL A NEW NODE =====
1 RELAYS 5-8
2 RELAYS 9-12
3 MAKEUP COND
4 REMOTE SENSOR
5 REMOTE SENSOR

- Highlight the node to be installed, then press **ENT**.

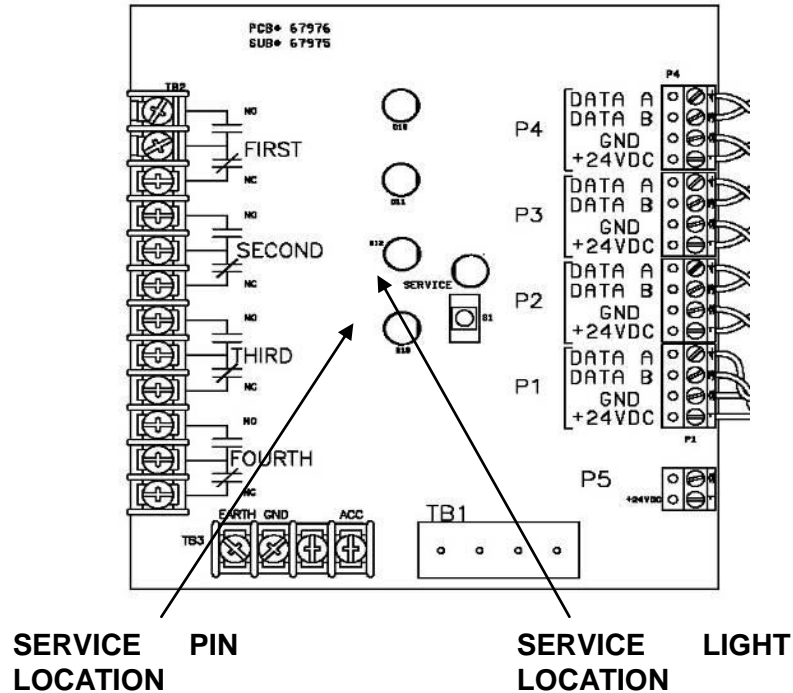
It is recommended that the first NRLY be installed as **RELAYS 5-8**. The second NRLY would be **Relays 9-12**.

The following screen should appear:

PRESS SERVICE PIN AND THEN PRESS ANY KEY
--

- Press the **Service Pin** on the relay node to be installed.

The service pin on the NRLY is located:



The service light will come on solid while the service pin is pressed. When the service pin is released the service light will turn off.

- After the service pin is pressed, press **any key** on the controller keypad to complete the installation of the relay node.

The relays are programmed and manually operated in the same fashion as the chemical relays in the 3300/3400 Controller box. They will be labeled **RELAYS 5-8** or **RELAYS 9-12**. Please refer to the instruction manual of your 3300/3400 Controller for configuration of the relays.

4 Maintenance and Technical Service

4.1 Replacing the Fuse

The NRLY contains a 10A, 250V fuse. The fuse holder is located on the bottom of the enclosure. It is accessible from the outside of the box. Replacement fuses must be a fast blow type. If the fuse is blown, the relays will not work.

4.2 Technical Service

Your PULSAblue is a state of the art microprocessor based controller. If you are experiencing a problem with your process control instrument, first consult the troubleshooting guide in this manual. If the problem is not covered or cannot be solved, contact Technical Services for assistance:

PULSAFEEDER INC. (SPO)
27101 AIRPORT ROAD
PUNTA GORDA, FL 33982
941-575-3800

Trained technicians are available to diagnose your problem and arrange a solution. Solutions may include purchase of replacement parts or returning the controller to the factory for inspection and repair. All returns require a Return Authorization number to be issued by Pulsafeeder. Parts purchased to correct a warranty issue may be credited after an examination of original parts by Pulsafeeder. Warranty parts returned as defective which test good will be sent back freight collect. No credit will be issued on any replacement electronic parts.

Any modifications or out-of-warranty repairs will be subject to bench fees and costs associated with replacement parts.

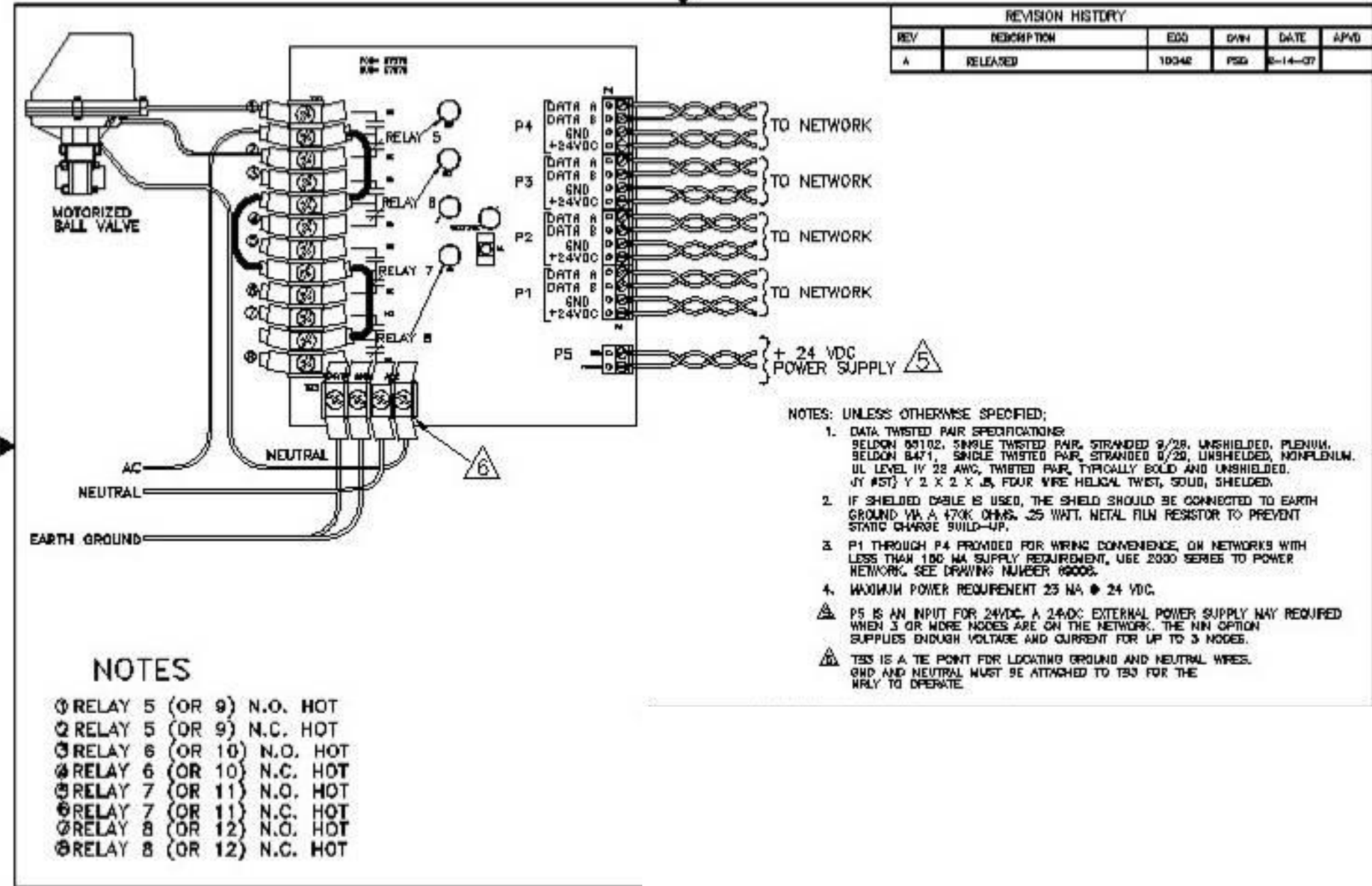
Warranty

Pulsafeeder, Inc. warrants control systems of its manufacture to be free of defects in material or workmanship. Liability under this policy extends for 24 months from date of shipment. Electrodes/probes are considered maintenance items and as such are warranted for six (6) months from the date of shipment of the controller. Electrodes/probes purchased as spare parts are warranted for 90 days from date of shipment. The manufacturer's liability is limited to repair or replacement of any failed equipment or part, which is proven defective in material or workmanship upon completion of the manufacturer's examination. This warranty does not include removal or installation costs and in no event shall the manufacturer's liability exceed the selling price of such equipment or part.

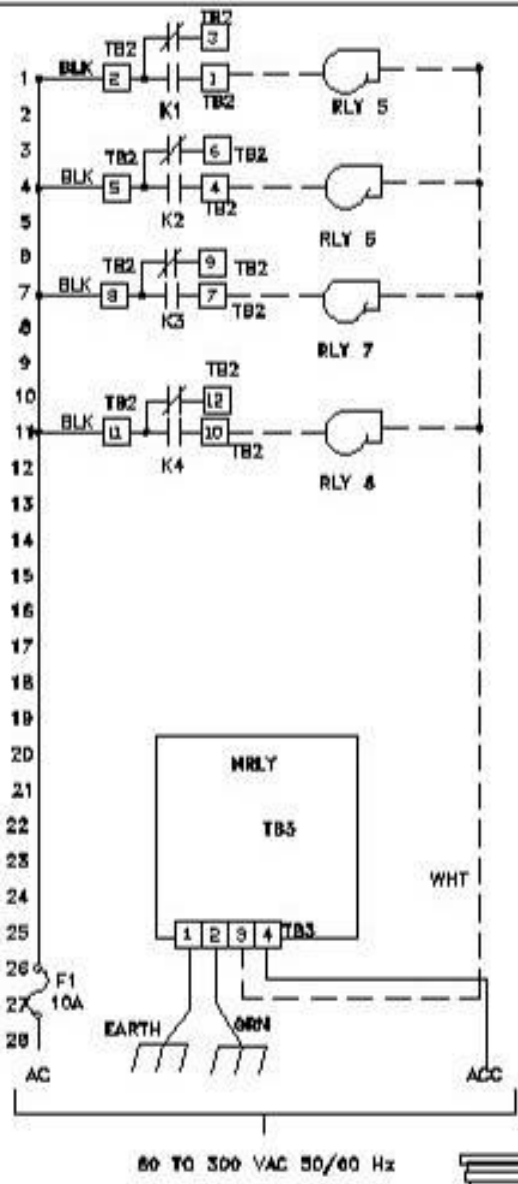
The manufacturer disclaims all liability for damage to its products through improper installation, maintenance, use, or attempts to operate such products beyond their functional capacity, intentionally or otherwise, or any unauthorized repair. The manufacturer is not responsible for consequential or other damages, injuries, or expense incurred through the use of its products.

The above warranty is in lieu of any other warranty, whether expressed or implied. The manufacturer makes no warranty of fitness or merchantability. No agent of ours is authorized to provide any warranty other than the above.

5 Drawings

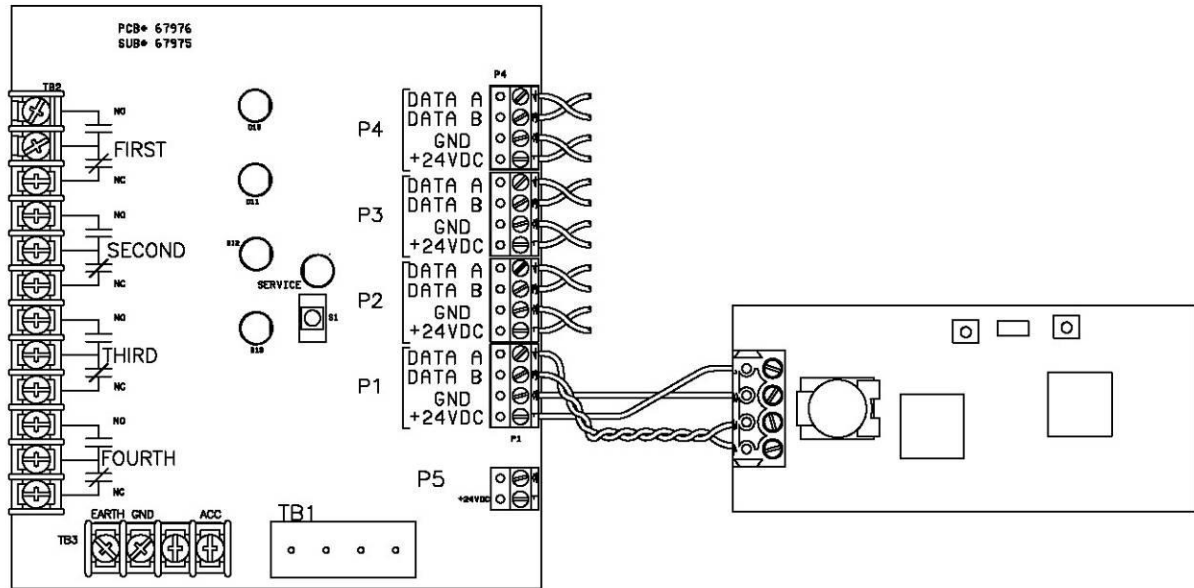


REVISIONS			
REV	DESCRIPTION	DATE	APPROVAL
A	ECO 10042	FSC	2-14-07



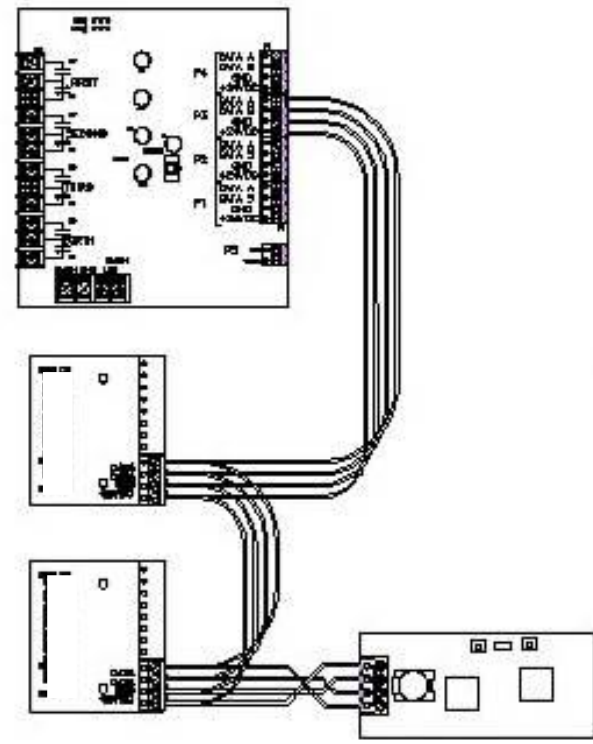
Notes: UNLESS OTHERWISE SPECIFIED:
 1) Prewired _____
 2) Wired By Others-- - - - -
 3) Relay Contacts Rated 10A/250 VAC
 1/3HP/250VAC

REVISION HISTORY					
REV	DESCRIPTION	ECO	DWN	DATE	APVD
A	RELEASE	0571	EV	2/96	
B	REVISED	1263	EV	9/2/97	

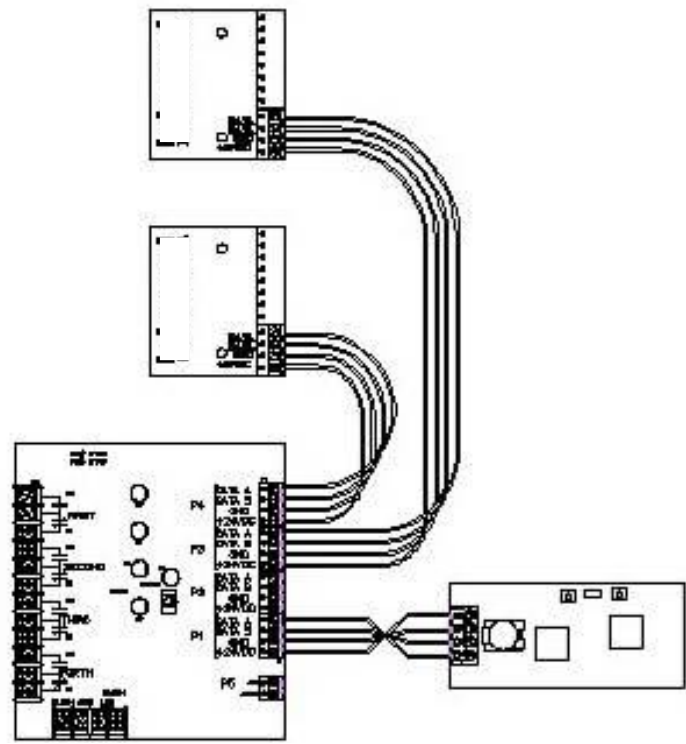


NOTES: UNLESS OTHERWISE SPECIFIED;
 1. NIN OPTION PROVIDES +24 VDC TO ALL NODES. IF USING MORE THAN 3 NODES AN EXTERNAL +24 VDC POWER SUPPLY IN PARALLEL IS RECOMMENDED.

REVISION HISTORY						
REV	DATE	DESCRIPTION	BY	APP	DATE	APP'D
A		RELEASE	1048	BY	5/3/87	



OR



D
C
B
A

I
C
B
A

NOTES: UNLESS OTHERWISE SPECIFIED:

1. DATA TWISTED PAIR SPECIFICATIONS:
 BELDEN 83102, SINGLE TWISTED PAIR, STRANDED 8/30, UNSHIELDED, PLURIM,
 BELDEN 8471, SINGLE TWISTED PAIR, STRANDED 8/20, UNSHIELDED, HIRPLDUM,
 UL LEVEL IV 22 AWG, TWISTED PAIR, TYPICALLY SOLID AND UNSHIELDED,
 JY (ST) T 2 x 2 J6, FOUR WIRE HELICAL TWIST, SOLID, SHIELDED.
2. IF SHIELDED CABLE IS USED, THE SHIELD SHOULD BE CONNECTED TO EARTH
 GROUND VIA A 470K OHMS, .25 WATT, METAL FILM RESISTOR TO PREVENT
 STATIC CHARGE BUILD-UP.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVALS
A	ECC Q254	MLM 9/95	

