netirrigate®

PART #: NETB13PPAC
User Manual and Installation Guide

The PumpProxy® AC (Part # NETB13PPAC) is designed for the remote monitoring and control of electrically powered three phase and single phase pumps. For engine driven pumps, please refer to the user manual and installation guide for Part # NETB14PPDC.

PumpProxy AC with WIRE RAT technology

Revision History		
Rev	**Date**	**Description**
A	November 21, 2013	Initial release of manual.
B	May 1, 2015	Revision B

Customer Support:
Email: help@netirrigate.com
Phone: (800) 961-9549 x3
www.netirrigate.com

Business Address:
2356 W Industrial Park Dr Ste B
Bloomington, IN 47404

I. Grant of license. Subject to customer paying all amounts payable hereunder, Net Irrigate, LLC ("Net Irrigate") grants to customer a non-exclusive, nontransferable license during the term hereof to use the software embedded in Net Irrigate® and/or WireRat® branded products (the "products") purchased by customer (the "licensed software") for customer's irrigation system monitoring needs.

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III. Data and privacy. Manufacturer may, without restriction, collect information or data arising from or otherwise relating to the use of its product. Manufacturer shall have exclusive rights in the information and data and may disclose, disseminate, or sell any non-personally identifiable information or data to third parties.

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V. Warranties and liability. Net Irrigate represents, warrants, and covenants to customer that the products manufactured shall be free from defects in materials and workmanship for the period of 1 (one) year from the date products are linked to an irrigation site within Net Irrigate's software used for management of the services. Customer acknowledges and agrees that Net Irrigate shall have no liability arisingfrom the operation or use of the products for special, indirect, consequential, exemplary, punitive, or incidental damages (including loss of equipment, data, revenue, profits, crops or other economic advantage), even if it has been advised of the possibility of such damages, and even if such damages are directly or indirectly caused by negligence or a tort committed by Net Irrigate, its agents, or its assigns. The maximum liability of Net Irrigate to any person, firm or corporation whatsoever arising out of or in the connection with any license, use or other employment of the products, whether such liability arises from any claim based on breach or repudiation of contract, breach of warranty, tort, or otherwise, shall in no case exceed the equivalent of the price paid by the customer for the products. The essential purpose of this provision is to limit the potential liability of the parties arising from this agreement. The parties acknowledge that the limitations set forth in this section 4 are integral to the amount of consideration levied in connection with the license of the service and that, were Net Irrigate to assume any further liability other than as set forth herein, such consideration would of necessity be set substantially higher. Certain states and/or jurisdictions do not allow the exclusion of implied warranties or limitations of liability for incidental or consequential damages, so the exclusions set forth above may not apply to you.

a. Wireless carriers. Customer expressly acknowledges and agrees that it has no contractual relationship whatsoever with the underlying wireless service provider or its affiliates or contractors and that customer is not a third party beneficiary of any agreement between manufacturer and the underlying carrier. In addition, customer acknowledges and agrees that the underlying carrier and its affiliates and contractors shall have no legal, equitable, or other liability of any kind to customer and customer hereby waives any and all claims or demands thereof. Manufacturer also shall have no liability arising from or related to the instability or outage of the underlying carrier's wireless service or that of its affiliates or contractors.

b. Disruption of services. Customer acknowledges and agrees that Net Irrigate shall have the right to disrupt or otherwise suspend services integral to the hardware and software functions if payment is not received by its distributors or dealers or end users. Net Irrigate shall have no liability for any damages arising from or related to such disruption or suspension.

b. Customer duties. To maintain warranties, customer shall be required to test product annually—measured from the date of installation—to ensure the effectiveness of the alarm and security responses.

VI. Non-exhaustive disclaimers. Customer acknowledges and agrees that acts of god, lightning strikes, floods, tornadoes, or use for which the product was not intended, theft, or attempted theft are not events covered by warranty. Net Irrigate may deny customer support if products or services are used for any purpose other than which they were intended. Customer acknowledges that these disclaimers are not intended to be exhaustive.

VII. Government rights. The licensed software is commercial computer software under federal government acquisition regulations and agency supplements to them. If the licensed software is provided to the federal government and/or its agencies, it is provided only under the restricted rights provision of the federal acquisition regulations applicable to commercial computer software developed at private expense and not in the public domain. The use, duplication, or disclosure by the federal government and/or its agencies is subject to restrictions as set forth in subdivision (c)(ii) of the rights and technical data and computer software clause at DFARS 252.227-7013 and far 52.227-19(c).

VIII. Export controls. Customer acknowledges that the licensing and distribution of the licensed software is subject to the export control laws and regulations of the United States of America, and any amendments thereof, which restrict exports and re-exports of software, technical data, and direct products of technical data. Customer agrees that it will not export or re-export any licensed software, or any information or documentation related thereto, directly or indirectly, without first obtaining permission to do so as required from the United States of America Department of Commerce's Bureau of Export Administration, or other appropriate governmental agencies, to any countries, end-users, or for any end uses that are restricted by U.S. export laws and regulations, and any amendments thereof.

IX. Miscellaneous. Customer may not assign, transfer, or delegate any of its rights, duties or obligations hereunder, in whole or in part, without the prior written consent of Net Irrigate. Customer shall not disclose the terms and conditions of this agreement, except as may be required to implement and enforce the terms of this agreement, or as may be required by legal procedures or by law. In all matters relating to this agreement, customer and Net Irrigate shall act as independent contractors. This agreement shall be governed, construed, and interpreted under the laws of the state of Indiana, to the exclusion of any conflict of law or choice of law rule or principle that might refer construction or interpretation of this agreement to the substantive law of another jurisdiction. Any action to enforce this agreement or for breach of this agreement shall be brought in a state or federal court situated in Marion County, Indiana, and each of the parties hereby consents to personal jurisdiction of and venue in such courts, and waives any future right to object to this designation of jurisdiction and venue. The waiver or failure of any party to exercise in any respect any right provided for under this agreement shall not be deemed a waiver of any future right hereunder. This agreement shall bind the parties, their permitted successors, heirs, and assigns. No provision of this agreement which may be found to be unenforceable shall in any way invalidate any other provision or provisions of this agreement, all of which shall remain in full force and effect. Any ambiguities in this agreement shall not be strictly construed against the drafter of the language concerned but shall be resolved by applying the most reasonable interpretation under the circumstances, giving full consideration to the intentions of the parties at the time of contracting. There are no representations, promises, warranties or understandings relied upon by customer which are not contained herein. Customer shall be responsible for any and all taxes applicable to this agreement, excluding taxes on the income of Net Irrigate. In any collection action or litigation relating to this agreement, Net Irrigate shall be entitled to recover its costs of collection or litigation, including reasonable attorney's fees.

Contents

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Applications

Part # NETB13PPAC (branded the PumpProxy®) is specifically designed to remotely monitor and control AC powered irrigation pumps. With a PumpProxy®AC installed on an irrigation pump, you can:

- Remotely start or stop a pump with our website, mobile app, or via our toll-free number.
- Receive notifications when the pump panel powers on or off.
- Receive notifications when the pump powers on and off.
- Receive well wire theft alerts via WireRat® Technology.
- Replace underground "kill wires" from your center pivot irrigation panel to its associated pump (requires complement Part # NETB14PIV or NETB13PIV).

**Use as a stand-alone pump monitoring and control unit...**

PumpProxy®

Or in a master-slave scenario with a center pivot or linear system

PivotProxy®

PumpProxy®

PumpProxy® Basics

Identifying the Device ID

All NetIrrigate® products are uniquely identified by a 6 digit serial number which is barcoded on both the packaging carton and the physical unit. Net Irrigate refers to this number as the "Device ID."
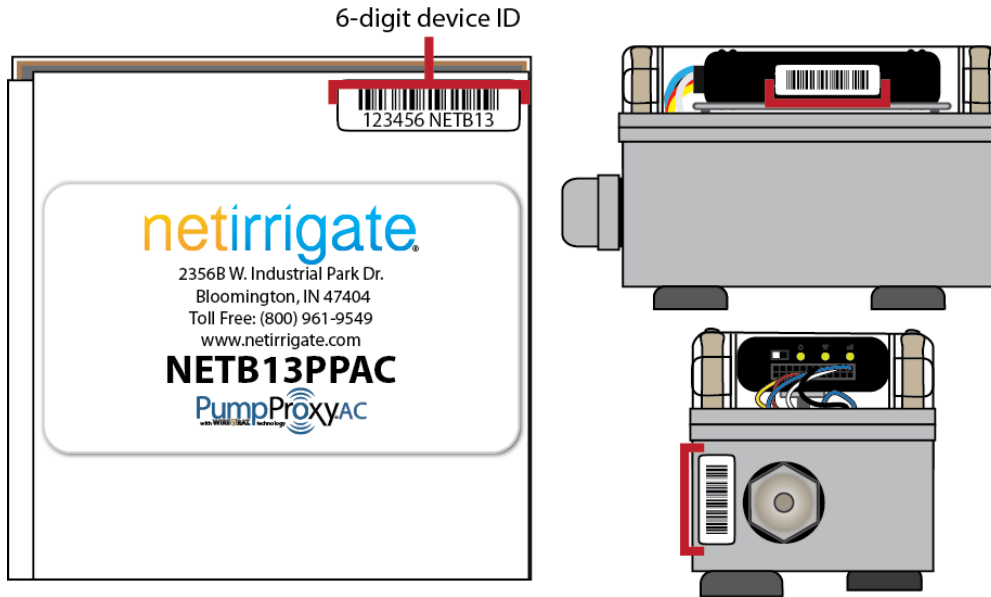
Package Contents

All NETB13PPAC units ship with:

1. A ½" NPT Cord Grip to be used with the knock out on the pump control panel.
2. Magnetic mounts which come pre-installed on the enclosure.
3. An extra Device ID bar code sticker which can be placed on the exterior of the pump panel.
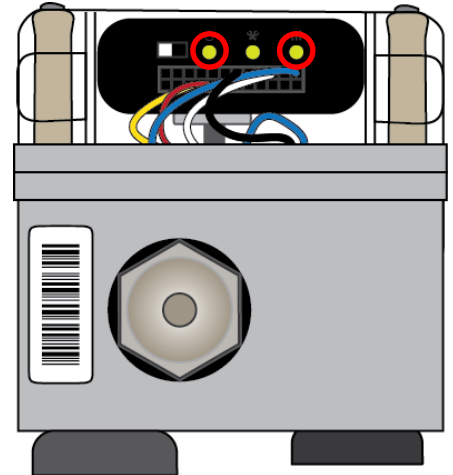
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Bench Testing

Before installing the PumpProxy®, it is vital that the bench test is performed to ensure that the device 1) has adequate cellular coverage in the area and 2) is functioning correctly. Performing a bench takes only minutes.

To bench test, remove the wire nut on the green wire and hold the white and green wire together for **10 seconds.** Within 3 minutes of breaking the bond, you will see the two outer lights on the modem go from flashing to fully illuminated. If you do not see this, contact Net Irrigate support at (800) 961-9549.

Remote Start and Stop

If the NETB13PPAC is wired correctly, it may be used to remotely start or stop a pump (or potentially any other control circuit). Starting or stopping the pump can be done with the NetIrrigate® iPhone app and Android app, or through www.netirrigate.com .'.'under.'.

Customer, Site, and Notification Recipient Setup

Before mounting the NETB13PPAC on an actual pump control panel, it is best to setup the customer information, the irrigation site details, and the intended notification recipients in the NetIrrigate® system. Additionally, you will need to link this information to the Device ID you intend to mount. Setup is fast and easy and can be accomplished through one of three possible ways:

1. Login to www.netirrigate.com. If you do not yet have a username and password for your dealership, please contact customer support at (800) 961-9549 or email help@netirrigate.com. For details on how to utilize the dealer portal on www.netirrigate.com, please review the document entitled "*Net Irrigate Software Guide for Dealers.*"
2. Login to the NetIrrigate® mobile app. You may use the same login information as you would use to login to www.netirrigate.com.
3. If you do not have access to a computer or the NetIrrigate® mobile apps, just contact customer support at (800) 961-9549 and an agent will be happy to setup the customer, site, and notification recipients for you.

"Notification recipients" are the people who are contacted (either via voice call, text message, or email) when a pump starts or stops. Up to ten notification recipients can be configured per pump site. Notification recipients can be easily enabled or disabled by using the web portal, mobile apps, or simply by calling customer support at (800) 961-9549.

Setting Up a Kill Wire Replacement Scenario with a Pivot

If the NETB13PPAC will be used in conjunction with a center pivot irrigation system equipped with a NetIrrigate® PivotProxy®, it is important to properly configure the association on the netirrigate.com web portal. See **Appendix A** for configuration details.

Wet/Dry Behavior

It is important to note that in Master-Slave scenarios, the NETBXXPIV unit on the pivot will by default always relay pump start/stop messages to a NETB13PPAC if the pump panel is ON. To run the pivot dry, do one of the following:

- Turn the HAND/OFF/AUTO switch to the HAND position.
- Disconnect the power to the pump control panel.
- Use the NetIrrigate® mobile apps to simply disable the notification recipients associated with the remote pump control signals before starting the pivot.

Installation

HIGH VOLTAGE WARNING: Installation should be performed by qualified licensed electricians.

3 Phase Pump Controllers without Step Down Transformers

The most common type of AC pump controller installation assumes a 3 phase combination starter with a 480 volt contactor, coil, and hand/off/auto selector switch. The diagram should be adhered to such that both power loss and thermal overload events can be trapped by the NETB13PPAC.

1. **ENSURE POWER IS OFF AT THE PUMP PANEL.**
2. Mount the NETB13PPAC outside the pump controller enclosure. Run the connection cord through an available knock-out.
3. A 480 to 120 VAC control transformer with 50va capacity or larger must be added to all pump controllers that do not have a 120 VAC control circuit.
4. An auxiliary relay with one normally open (NO) contact and a 120 VAC coil must be added to all pump controllers that do not have a 120 VAC control circuit.
5. Wire the NETB13PPAC as shown in the diagram below.
6. After wiring has been completed, place the selector switch in the AUTO position. The pump can now be started and stopped via remote commands to the NETB13PPAC. Remote commands can come from either a person or a NETB14PIV unit mounted on a corresponding pivot.
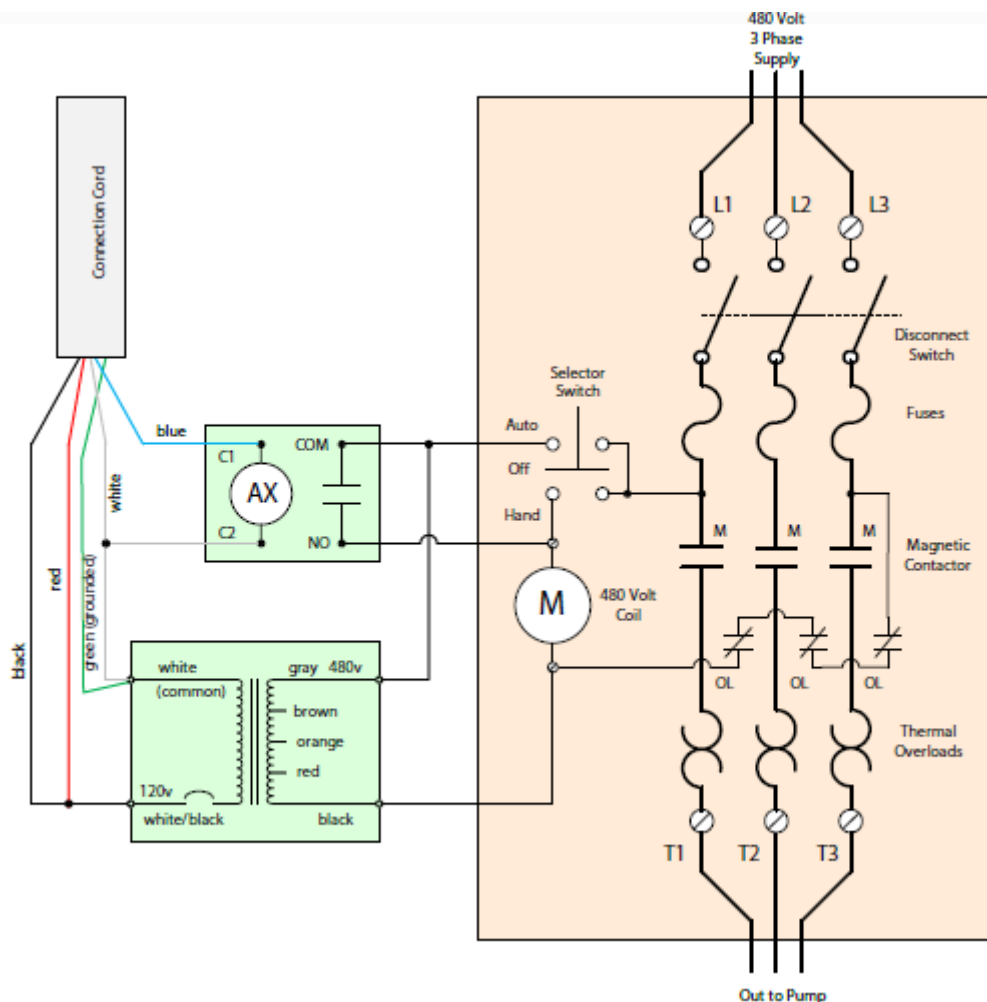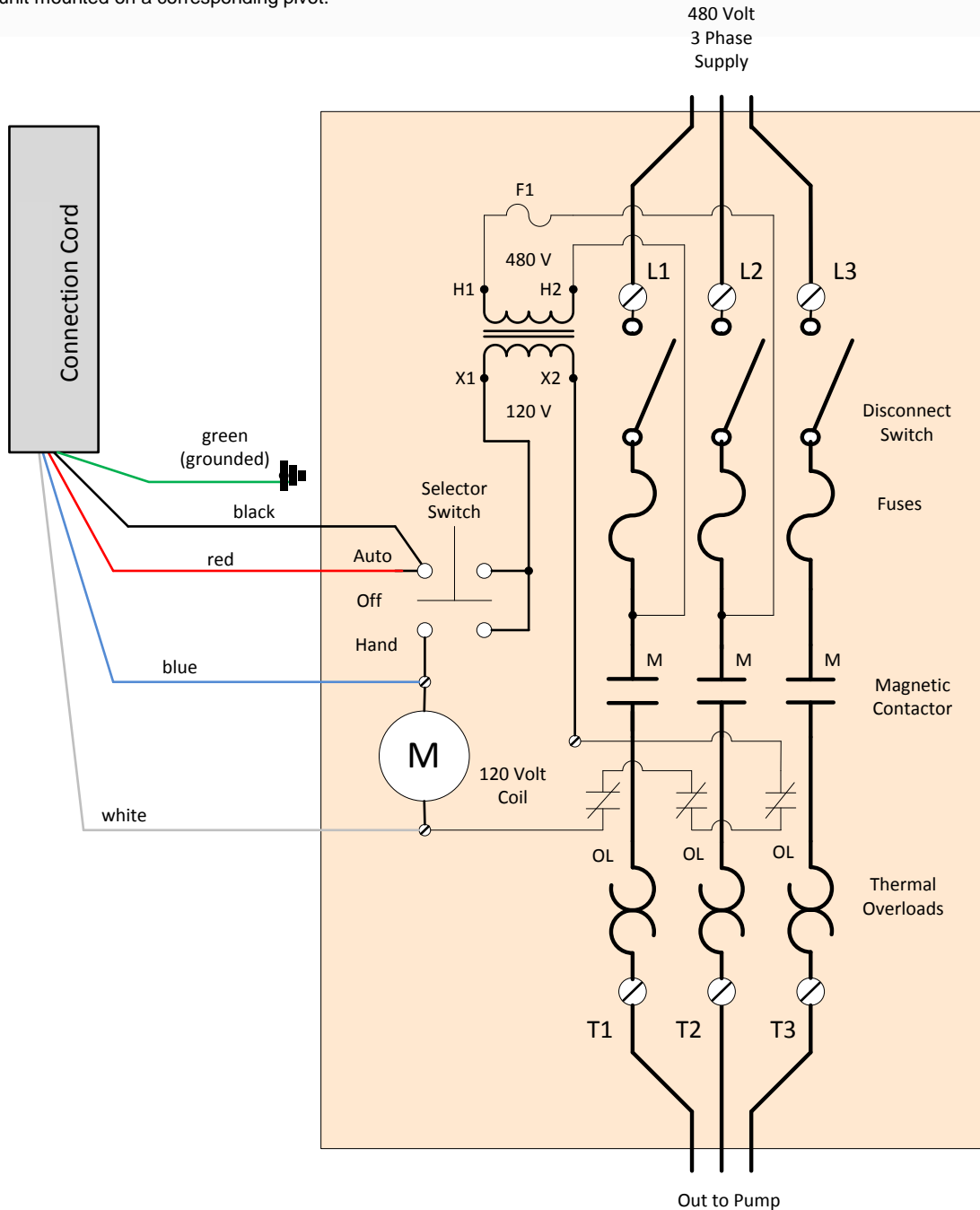
## 3 Phase Pump Controllers with 120 Volt Contactor Coil

Pump control panels with a built-in 120 volt contactor coil and a hand/off/auto selector do not need an auxiliary transformer and relay installed. The diagram below should be adhered to such that both power loss and thermal overload events can be trapped by the NETB13PPAC.

1. **ENSURE POWER IS OFF AT THE PUMP PANEL.**
2. Mount the NETB13PPAC outside the pump controller enclosure.
3. Wire the NETB13PPAC as shown in the diagram below.
4. After wiring has been completed, place the selector switch in the AUTO position. The pump can now be started and stopped via remote commands to the NETB13PPAC. Remote commands can come from either a person or a NETB14PIV unit mounted on a corresponding pivot.

480 Volt
3 Phase
Supply

Connection Cord

F1

480 V

H1   H2

X1   X2

120 V

L1   L2   L3

Disconnect Switch

Fuses

green (grounded)

black

red   Auto

Selector Switch

Off

Hand

blue

M

120 Volt Coil

white

M   M   M

Magnetic Contactor

OL   OL   OL

Thermal Overloads

T1   T2   T3

Out to Pump

Net Irrigate NETB13 PPAC

Connection Diagram for 480 Volt 3 Phase Pump Controller
with 480 Volt Contactor Coil and Auto-ReStart Time Delay Relay
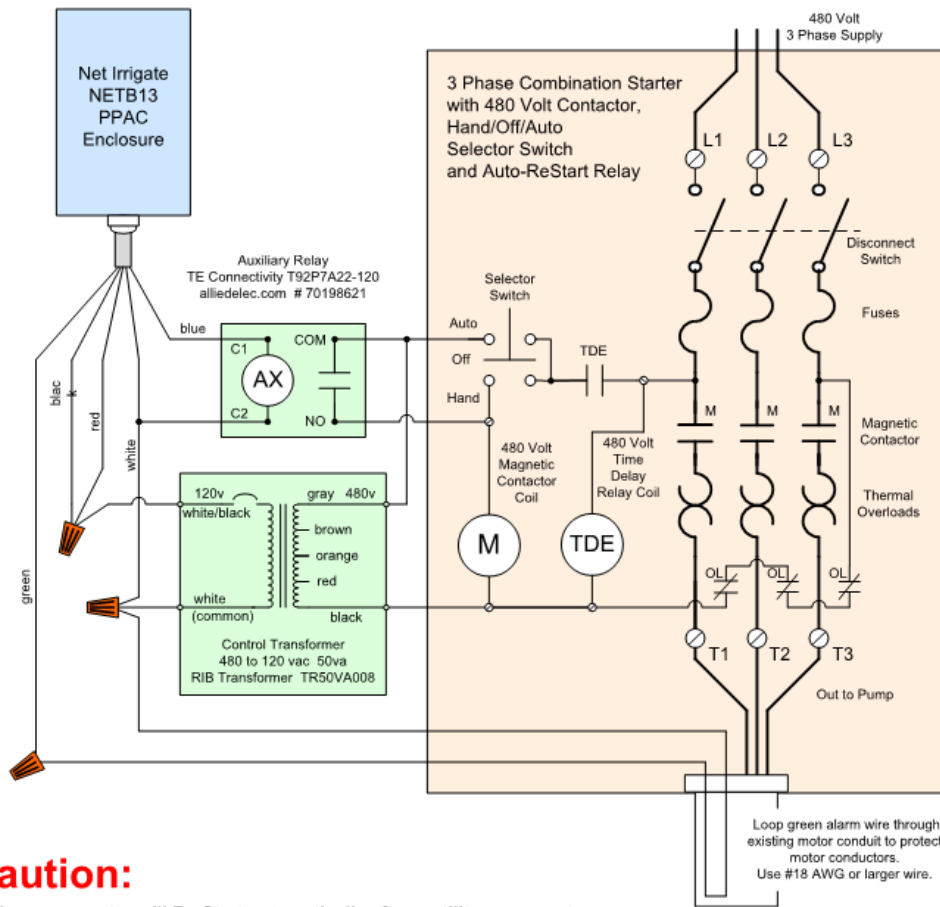
Caution:

1. The pump motor will Re-Start automatically after a utility power outage.
2. The pump motor can Re-Start automatically after a time delay when the disconnect switch is turned on and the Selector Switch is in the 'Hand ' or 'Auto' position.
3. The pump motor will not operate until the TDE relay timer setting has expired.

Installation

1. Mount the Net Irrigate NETB13 PPAC Pump Proxy enclosure outside the pump controller enclosure.
2. Wire the pump controller as shown in the diagram to prevent damage to the pump motor.
3. A 480 to 120 vac control transformer with 50va capacity or larger must be added to all pump controllers that do not have a 120 vac control circuit. (RIB Transformer Model: TR50VA008 or equivalent)
4. An auxiliary relay with one normally open (NO) contact and a 120 vac coil must be added to all pump controllers that do not have a 120 vac control circuit. (TE Connectivity Part No. T92P7A22-120   alliedelec.com Stock No. 70198621)
5. To complete the alarm circuit connect a loop of wire between the white and green wires of the Net Irrigate enclosure.

Operation

1. To operate the pump locally. Place the Selector Switch in the 'Hand' position to run pump.
2. To operate the pump remotely. Place the Selector Switch in the 'Auto' position. The pump motor can be started and stopped by sending cell phone commands to the NETB13 PPAC enclosure.
3. If the alarm circuit is opened (white/green) an alarm message will be transmitted to designated individuals.

Net Irrigate NETB13 PPAC Enclosure
Connection Diagram for Normally Closed Alarm Circuit
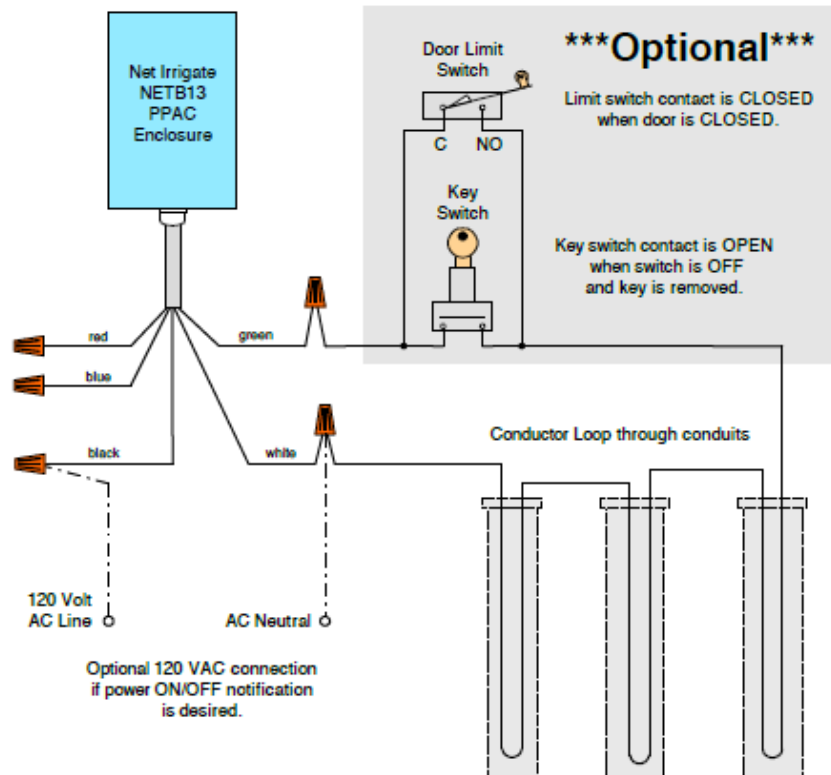
Installation

1. Mount the Net Irrigate NETB13 PPAC enclosure outside the pump controller enclosure.
2. Mount and connect the key switch and door switch as shown in the diagram.
3. Use an #18 AWG or larger conductor and loop through all the conduits being protected.

Operation

1. The NETB13 enclosure is powered by an internal battery and does not require AC power.
2. When the connection between the green and white wires is broken a 'Cut Wire Alarm' message will be transmitted to the designated individuals.
Optional 3. If additional AC power ON/OFF notification is desired connect the black and white wires to any 120 VAC supply line.

Testing Procedures

Before testing notifications services, at least one notification recipient should be configured for the site in question. If this has not been done, please see previous section, Bench Testing.

Testing Power-Up Notifications

If the wiring schemes on pages 8 and 9 are adhered to, a *"{NetIrrigateSiteName} detects power ON at panel"* notification should occur when the main disconnect of the pump panel is turned on. The notification should occur within 3 minutes after power has been applied to the panel. If a power-up notification is not received, contact customer support at (800) 961-9549 to ensure the unit is registered on the network.

Testing Power Failure Notifications

Providing the pump panel has been on for at least 3 minutes (to ensure backup battery is adequately charged), shut-off the main disconnect to the pump panel. Within 3 minutes, you should receive a *"{NetIrrigateSiteName} detects power off at panel or switch in hand position"* notification. If a power-down notification is not received, contact customer support at (800) 961-9549.

Testing Thermal Overload Notifications

Newer thermal-overload protectors are typically equipped with a dial or test button to simulate a thermal overload. Older overload protectors not equipped with solid state components will have to have at least one heater removed to most accurately simulate an overload. When a thermal overload is simulated, the pump should automatically stop and a *"{NetIrrigateSiteName} has stopped pumping."* notification will be triggered.

Testing Remote Start and Stop of Pump

Remotely controlling the pump can be accomplished via one of two interfaces:
- www.netirrigate.com website
- The NetIrrigate® mobile apps

Testing Remote Pump Control with the Website

![netirrigate logo]

From the Net Irrigate website, select the Reports page > List View and hit STOP on the site you are wanting to control.

Testing Remote Pump Control with the Net Irrigate® App

The NetIrrigate® mobile app facilitates remotely starting and stopping a pump. Simply log in with your Net Irrigate credentials, and select the pump from your list of sites. Here you may select to turn off or on the pump, as applicable.

![netirrigate logo]

Appendix A
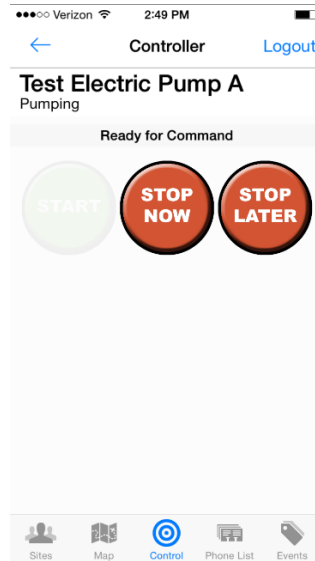
Setting Up Kill Wire Replacement Configurations with a Pivot

If the NETB13PPAC will be used in conjunction with a center pivot irrigation system equipped with a NetIrrigate® PivotProxy®, it is important to properly configure the association in the NetIrrigate® web portal.

The NETB13PPAC can be configured in a kill wire replacement scenario with a pivot with a WireRat® or PivotProxy®. This pivot can automatically shut down the engine when the pivot stops walking. To configure this relationship, follow the steps outlined below:

**Before starting you must have the 6 Digit Device ID of the PumpProxy® and the PivotProxy®

1. Navigate to the "Phone List" tab within the Customers section of the web portal.
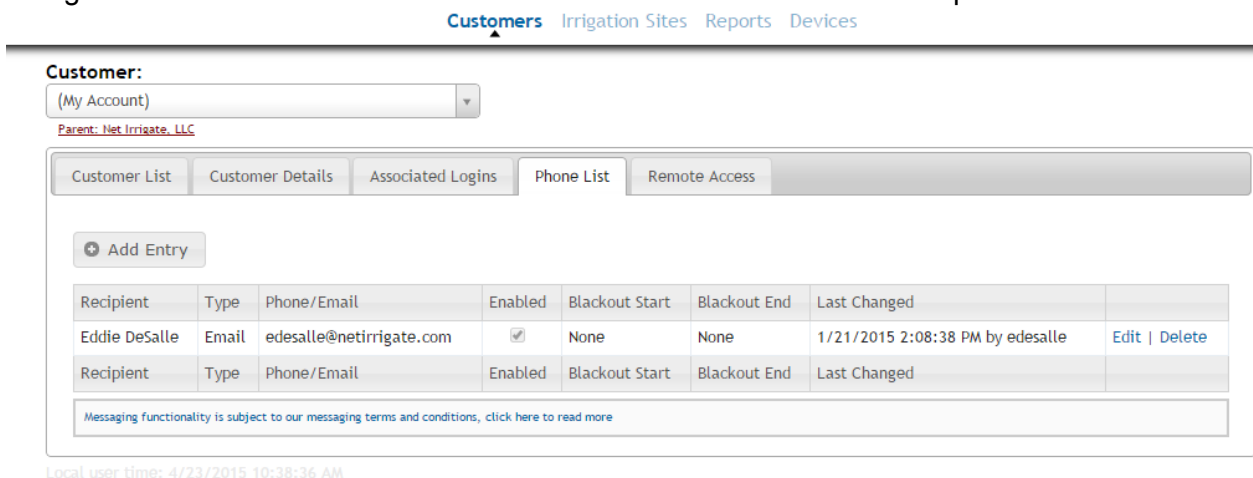
2. Click on Add Entry and select the type of corresponding scenario you are trying to create: STOP PPAC (with XX DeviceID), START PPAC (with XX Device ID). The target is the 6 digit Device ID.
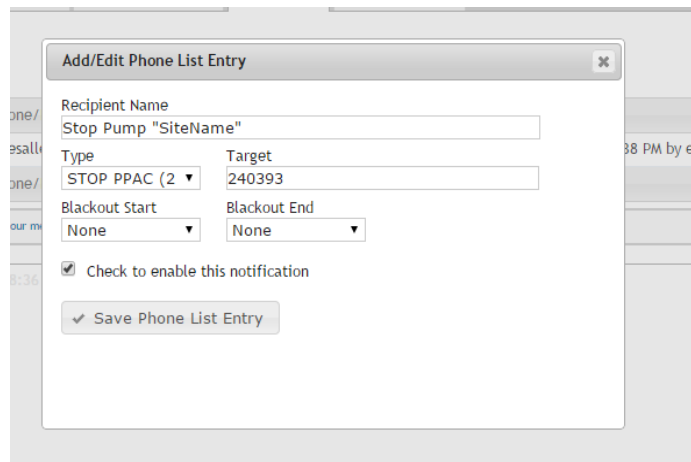
3. Then go back and select the Site that you are setting up to control: Irrigation Sites> Select the Site> Click on Notifications Tab.

4. After you have selected the Site, select the notification recipient from the drop down list and add it to the corresponding notification. EX: When Pivot A starts> add the Start PPAC notification to the "is now running" set up, and same for stopped walking.

MESSAGE: {NetIrrigateSiteName} is now running.

Recipient	Type	Target	Enabled	Ignore Start Hour	Ignore End Hour	Last Changed	
Start Test Pump A	START PPAC (240X-249X)	240227	☑	None	None	4/23/2015 11:03:05 AM by aaa_dealer	Delete

New Recipient: Add/Edit Phone List

| AgWire | Voice Call | (123) 456-7890 ▼ | ⊕ Add Selected Notification Recipient |

MESSAGE: {NetIrrigateSiteName} has stopped walking.

Recipient	Type	Target	Enabled	Ignore Start Hour	Ignore End Hour	Last Changed	
Stop Test Pump A	STOP PPAC (240X-249X)	240227	☑	None	None	4/23/2015 11:03:17 AM by aaa_dealer	Delete

New Recipient: Add/Edit Phone List

| AgWire | Voice Call | (123) 456-7890 ▼ | ⊕ Add Selected Notification Recipient |

Should you have any questions with NETB13PPAC configurations or if you wish to associate more than one PumpProxy® with one pivot, please contact customer support at (800) 961-9549.