



**PRYCO, INC.**  
P. O. BOX 108  
Mechanicsburg, IL 62545

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**OPERATIONS  
AND  
MAINTENANCE  
MANUAL  
For  
EVOLUTION  
PLC SYSTEM**



**WHAT TO DO FIRST**

Upon receiving your new tank with PLC system equipment, always check for physical signs of damages before signing the bill of lading. Inspect for possible damage that might have occurred during shipment. All products are inspected at point of shipment to ensure they are free of any defects. Dropping and other rough handling in transit could place stress that will result in a failure. Check to ensure the system equipment arrives in good condition.

**THEN**

Always have the fuel system installed by trained, authorized personnel.

Record your model and serial numbers here and save this manual. The model and serial numbers are located on the tag inside the electrical enclosure cover.

Model: \_\_\_\_\_ Install Date: \_\_\_\_\_

Serial Number \_\_\_\_\_

Refer to this serial number whenever you contact the factory:

Pryco, Inc.  
 3rd and Garvey Sts  
 P.O. Box 108  
 Mechanicsburg, IL 62545

Telephone: 217-364-6647  
 Fax: 217-364-4494  
 Email: Pryco@Pryco.com

**PLC MAINTENANCE**

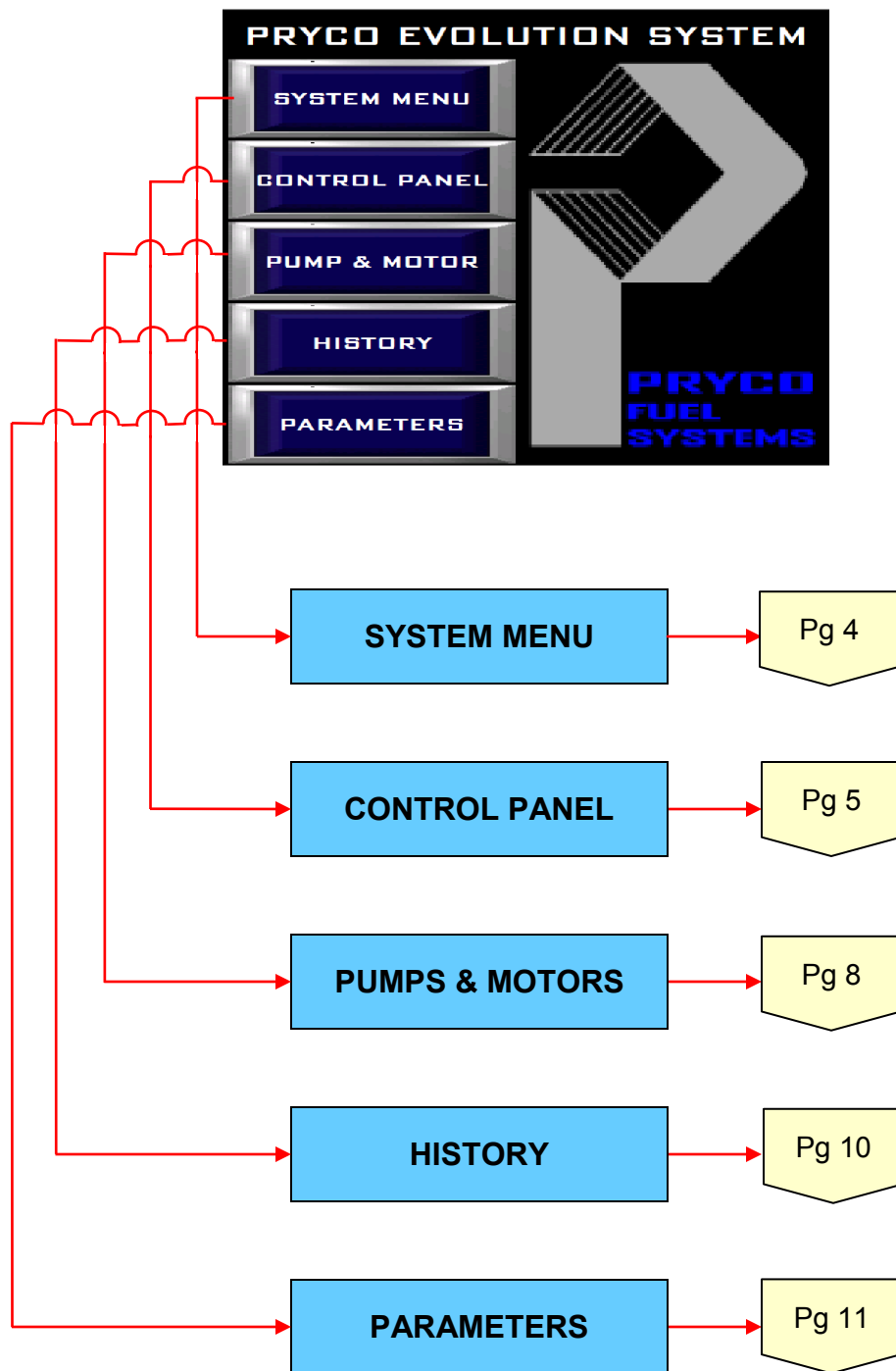
The PLC components , including the touch screen, generally need no maintenance except for an occasional dusting or light cleaning.

In a dusty environment, canned aerosol air, as is used for computer keyboards, etc., should be used to blow dust out of component vents.

The LCD touch screen will magnetically attract airborne particles and fingerprints. Do not use any abrasive cleaner or towels to clean the LCD screen—it will be permanently scratched. A dry soft cloth should be used. For more stubborn dirt, commercially available aerosol cleaners (for LCD/Plasma television, computer LCD monitor screen, etc.) and a soft cloth should work. Never use a petroleum-based solvent.

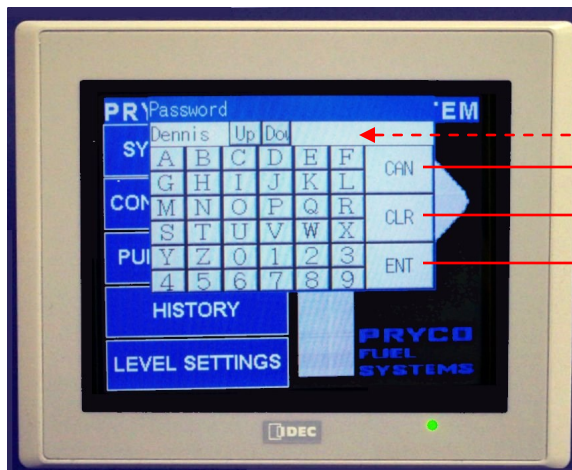
# MAIN MENU

This is the “home” touch screen page of the Evolution system. From here, using soft buttons an operator may select subsequent pages to monitor and control the fuel system PLC.



# SYSTEM MENU

This password protected page contains critical information relevant to the overall Evolution PLC system. The system password is maintained here.



Enter A Password One Character At A Time Using Touch-Letter Pad.

The Characters Entered Will Appear In The Upper-Right Input Area.

Then Press One Of The Action Buttons Below.

**CAN**

Cancel, Do Not Save, Then Return To The Main Menu

**CLR**

Clear The Input Area And Start Over

**ENT**

Accept What Is Entered, Save New Password, Then Return To Main Menu

# CONTROL PANEL

## Graphics Description

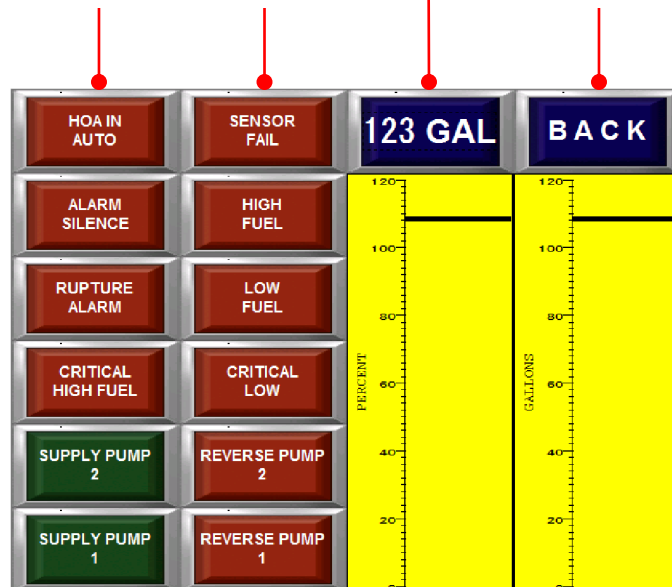
This is the monitoring screen page. Each monitored feature that is available to the system is represented here as a solid illuminated lamp. If a feature becomes “active” the lamp graphic flashes. An operator can determine at a glance if the system is operating normally.

Two yellow linear-scaled graphics report fuel level in “percent full” and in gallons. A digital readout of number of gallons (blue) is shown above these areas.

**GRAPHIC DISPLAYS – COL. 1**  
Actions/Alarms (See Page 6 &7)

**NUMBER GALLONS OF FUEL TANK**  
Digital Display

**BACK TO MAIN MENU**  
Soft Push Button (Page 3)



**NUMBER GALLONS OF FUEL IN TANK**  
Linear Display

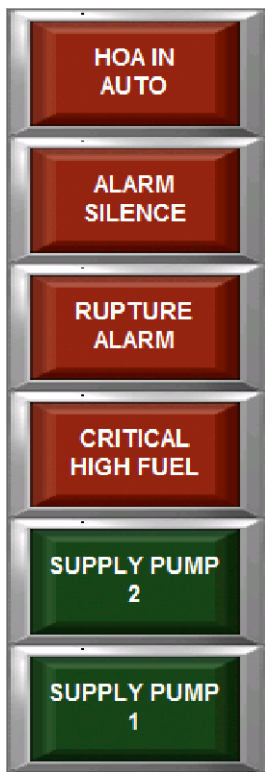
**PERCENT FULL**  
Linear Display

(Continues Next Page)

# CONTROL PANEL

## Graphics Actions/Alarms Display – Column 1

Red Graphic LED Lamps lit solid generally indicates normal operation



Correct the abnormal condition that is causing a flashing red LED graphic. The system will automatically restore the flashing LED graphic to its solid state.

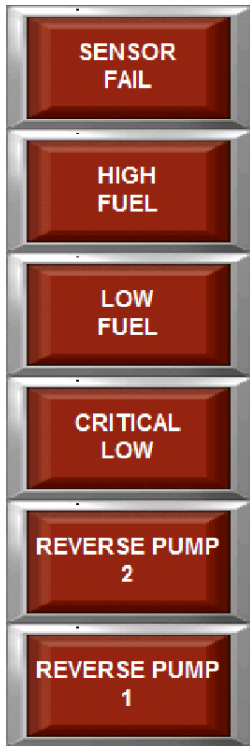
LIT SOLID	FLASHING
The "HOA Switch(s)" is in the "AUTO" position.	The HOA switch(s) is not in the "AUTO" position.
The "Alarm Silence Switch"	The alarm silence switch is for silencing alarm horn when ordered with Opt 223/224.
The "Rupture Alarm" monitor is functioning properly.	A leak in the secondary containment area is detected.
The "Critical High" fuel monitor is functioning properly.	The fuel level has exceeded the predetermined high fuel level—normally 103% capacity. Supply pump(s) and motor(s) are shut-down.
A second pump and motor (Supply Pump #2) of a duplex system is installed. (See page 8 to determine how the duplex system is set to operate.)	The second pump and motor (Supply Pump #2) of a duplex system is running. (See page 8 to determine how the duplex system is set to operate.)
A single pump and motor (Supply Pump) or the first pump and motor (Supply Pump #1) of a duplex system is installed. (See page 8 to determine how the duplex system is set to operate.)	A single pump and motor (Supply Pump) or the first pump and motor (Supply Pump #1) of a duplex system is installed running. (See page 8 to determine how the duplex system is set to operate.)

**(Continues Next Page)**

# CONTROL PANEL

## Graphics Actions/Alarms Display – Column 2

Red Graphic LED Lamps lit solid generally indicates normal operation

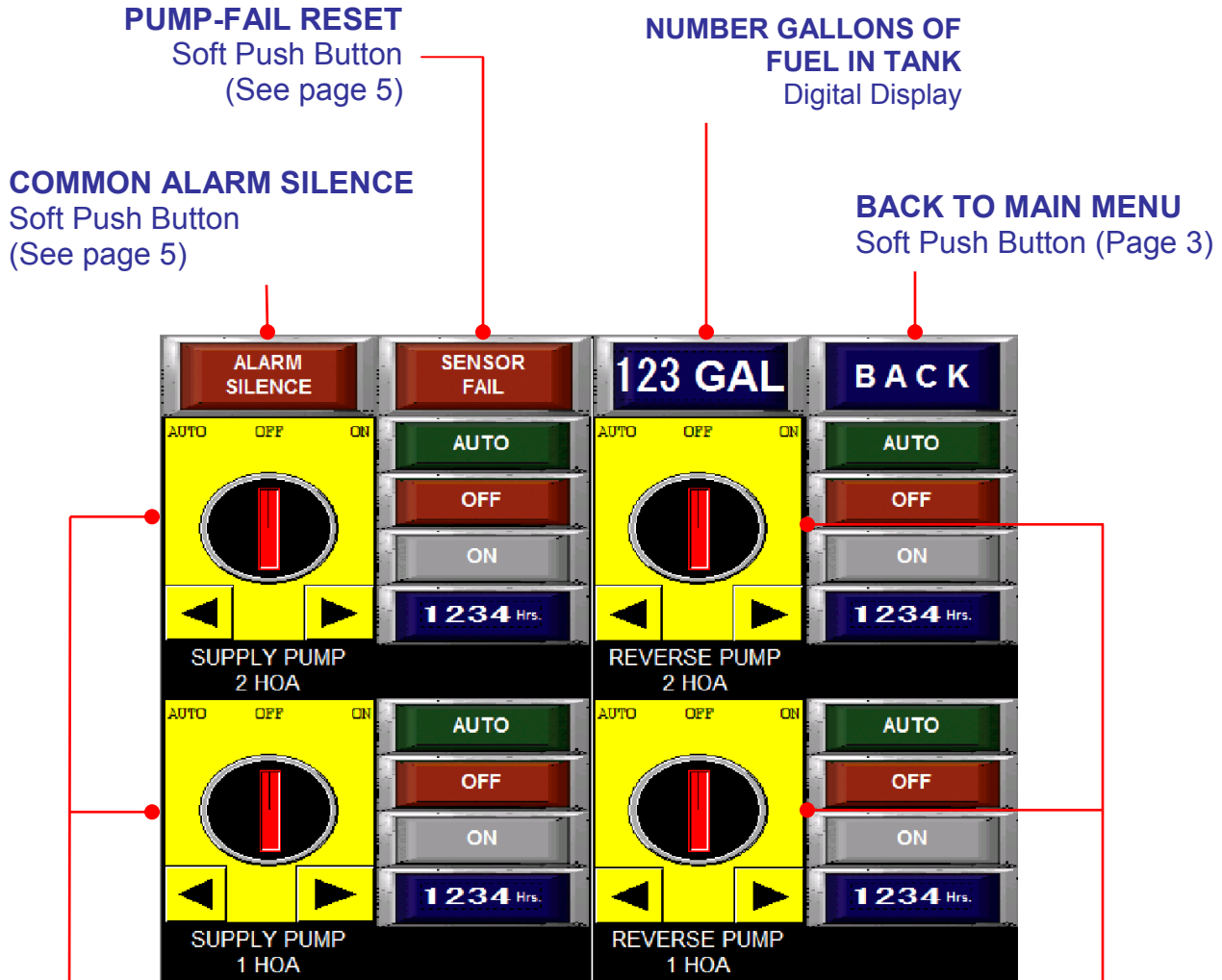


Correct the abnormal condition that is causing a flashing red LED graphic. The system will automatically restore the flashing LED graphic to its solid state.

LIT SOLID	FLASHING
The "Sensor Fail" monitor is functioning properly.	The sensor has lost signal or is not functioning at all. LED on top of ultra-sonic should always be RED.
The "High Fuel" monitor is functioning properly.	The fuel level has exceeded the predetermined high fuel level - normally 102% capacity.
The "Low Fuel" monitor is functioning properly.	The fuel level has dropped to the predetermined low fuel level - normally 50% capacity.
The "Critical Low" fuel monitor is functioning properly.	The fuel level has dropped to the predetermined critical low fuel level – normally 5% capacity.  To prevent loss of engine fuel prime, the generator engine should be wired through critical low.
A second pump and motor (Reverse Pump #2) of a duplex system is installed. (See page 8 to determine how the duplex system is set to operate.)	The second pump and motor (Reverse Pump #2) of a duplex system is running. (See page 8 to determine how the duplex system is set to operate.)
A single pump and motor (Reverse Pump) or the first pump and motor (Reverse Pump #1) of a duplex system is installed. (See page 8 to determine how the duplex system is set to operate.)	A single pump and motor (Reverse Pump) or the first pump and motor (Reverse Pump #1) of a duplex system is installed running. (See page 8 to determine how the duplex system is set to operate.)

# PUMPS & MOTORS

This LCD screen page contains input HOA switch and light graphics where an operator can control each pump motor of the fuel system. A motor may operate in either automatic or manual mode. The illuminated LCD boxes to the right of each switch report the switch position of its associated motor.



**SUPPLY MOTORS (HOA)**  
Soft Push Button

For control of Supply Pumps and Motors.

**REVERSE MOTORS (HOA)**  
Soft Push Button

For control Reverse Pumps and Motors.

**SEE PAGE 9**  
For a description and use of the HOA switches and LED graphics

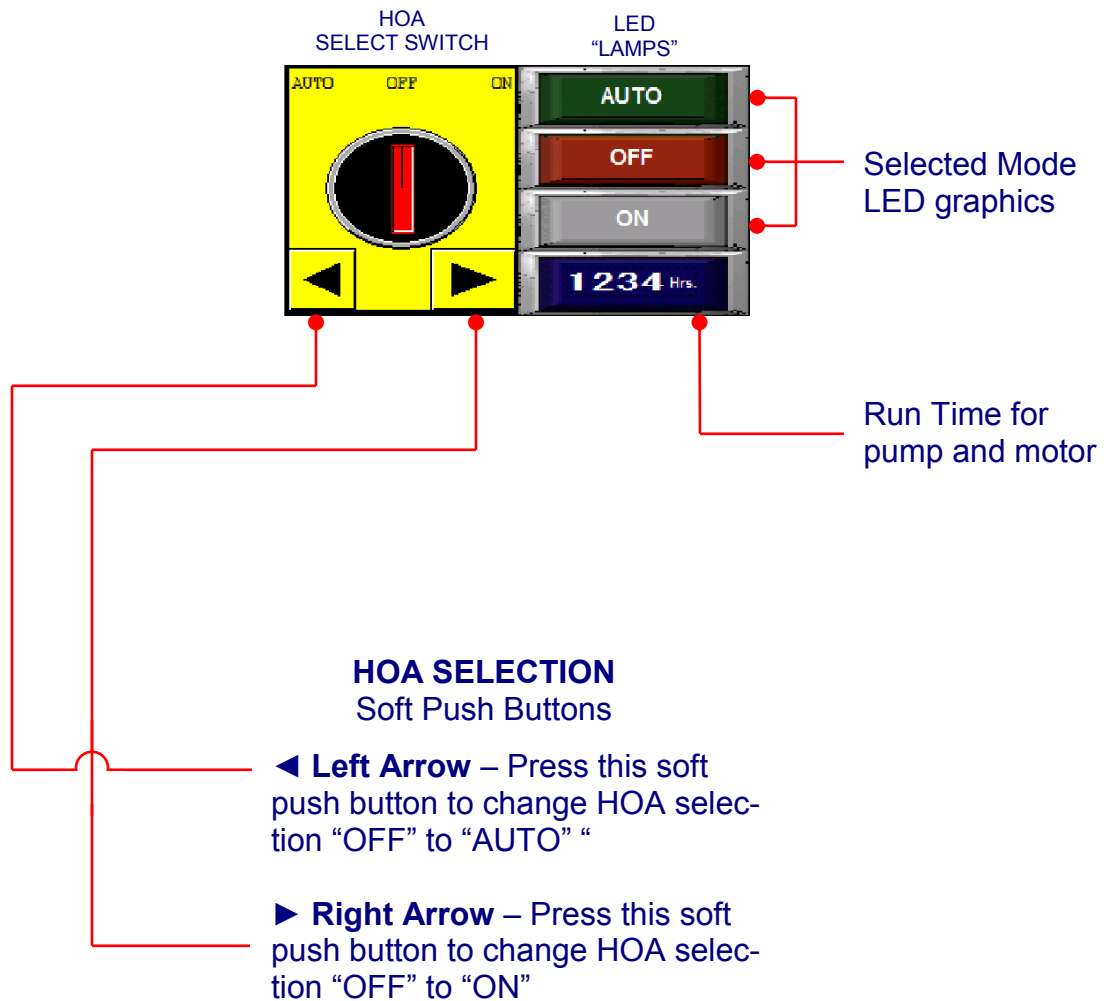
(Continues Next Page)



# PUMPS & MOTORS

## HOA Switches and LED Displays

Shown below is a graphic displays of an HOA switch and associated LED lamps. A graphic will be displayed for each pump motor installed. By pressing the left ◀ and right ▶ arrows, the “HOA Selection Knob” will move the red bar to point to which of the three modes is selected.



# HISTORY

## Activity Log Display

This screen page reports a time/date historical log of pump motor activities and alarm conditions. The soft push-buttons at bottom assist in scrolling through the log.

**OCCURENCE COLUMN**  
A display of the month and day and the time an activity occurred

**MESSAGE COLUMN**  
A display of active and inactive alarms and operator functions.

**BACK TO MAIN MENU**  
Soft Push Button (Page 3)



**Page Down** – To scroll down through the entries

**Page Up** – To scroll up through the entries

**Highlight** – Highlights (selects) first or latest log entry

# PARAMETERS

This password-protected page contains level settings at which specified actions (pump motor on/off, high low fuel levels, etc.) are to begin. Optional Pump fail timers are also displayed for user defined time. This allows dynamic fine tuning at the job sight.

**DESCRIPTION COLUMN  
(ACTIVITY LEVEL SETTING)**

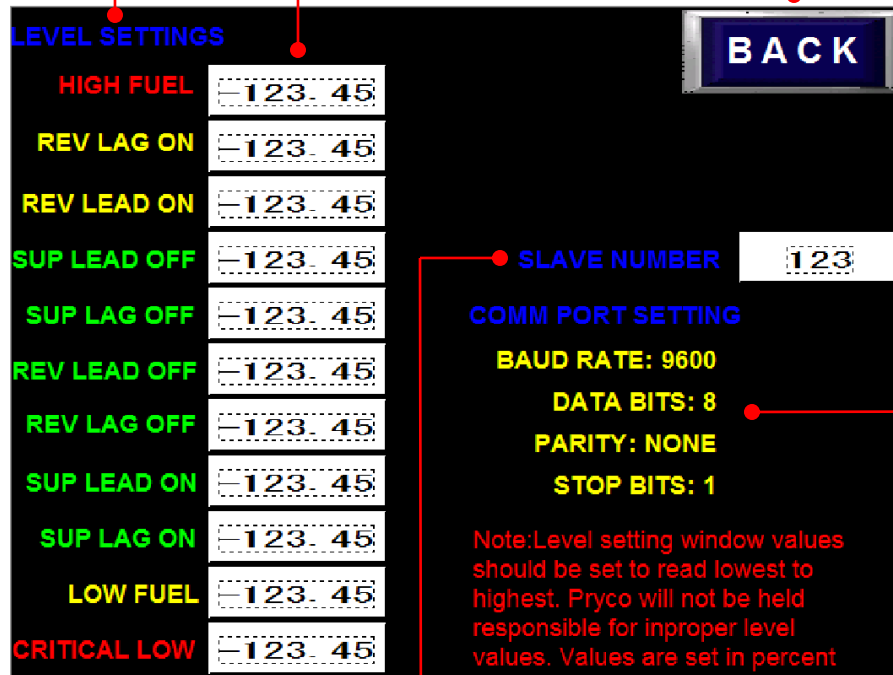
A display of the pump motor activity level setting

**LEVEL SETTING COLUMN**

Entry areas (using display touch keypad) that indicates the distance, in inches, that an activity begins

**BACK TO MAIN MENU**

Soft Push Button (Page 3)



**SLAVE NUMBER  
(MODBUS SLAVE NUMBER)**  
Using display touch keypad allows user to change slave number.

**MODBUS COMM SETTINGS**  
Displays communication port setting for Modbus.

## ***WARRANTY***

### **PRYCO, INC.**

All sales by **PRYCO, INC.**, are subject to the following terms and conditions as its Warranties:

1. **WARRANTIES** – Seller warrants the Goods will be as described on the face hereof, will be free from any defects in material and workmanship at the time of delivery and will be manufactured in accordance with the Fair Labor Standard Act of 1938, as amended. SELLER MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED. In order to assert a claim for breach of warranty, Buyer must contact Seller within one (1) year from date of sale determined by invoice date and which Seller's examination shall disclose to its satisfaction to thus defective. This remedy is agreed by Buyer and Seller to constitute a sole and exclusive remedy and all sales are made subject to the conditions that Seller is not liable for consequential damage or for personal injuries of Buyer or its agents thereof. Seller will not warrant installation of Goods by Buyer or its agents. Seller will not be responsible for service, labor or other expenses incurred by buyer, their customers or agent for replacement of defective goods.
2. **EXCLUSIVE REMEDY** – The exclusive remedy of the Buyer for any breach of the warranties set out in Section (7) will be, in Seller's sole discretion, the replacement or repair of the Defective Goods provided Buyer pays shipping charges for return of such Goods to Seller.
3. **LIMITATION OF DAMAGE** – In the event of a breach hereof, Seller will not under any circumstance be liable for consequential or incidental damage or expenses of the Buyer including without limitation lost profits, whether or not the Seller has been advised of the same.
4. **BUYER'S INDEMNITY** – The Buyer shall indemnify and hold Seller harmless from and against any and all losses, damages and expenses (including attorneys' fees and other costs of defending any action) that the Seller may sustain or incur as a result of any claim of negligence, breach of implied warranty or strict liability by the Buyer, its successors, agents, assigns or customers, whether direct or indirect, in connection with the use of the Goods.

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