PUMP WATCH®

WEB-BASED CELLULAR REMOTE MONITORING CONTROL PANEL

User Manual

PRIMEX™
MUNICIPAL WATER CONTROL SOLUTIONS
WWW.PRIMEXCONTROLS.COM

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Clearwater, FL	800-349-1905
Detroit Lakes, MN	888-342-5753
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WARNINGS

Failure to read and understand the information provided in this manual may result in personal injury or death, damage to the product or product failure. Please read each section in its entirety and be sure you understand the information provided in the section and related sections before attempting any of the procedures or operations given.

Failure to follow these precautions could result in serious injury or death. Keep these instructions with warranty after installation. This product must be installed in accordance with National Electrical Code, ANSI/NFPA 70 so as to prevent moisture from entering or accumulating within the controller housing.

⚠ WARNING

ELECTRICAL SHOCK HAZARD

A qualified service person must install and service this product according to applicable codes and electrical schematics. Disconnect power prior to servicing an equipment with the Pump Watch® Retro panel.

- Do not connect power to this equipment if it has been damaged or has any missing parts.
- Do not install in areas with: excessive or conductive dust, corrosive or flammable gas, moisture or rain, excessive head, regular impact shocks, or excessive vibration.

⚠ WARNING

EXPLOSION OR FIRE HAZARD

Do not use this product with flammable liquids. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70.

TABLE OF CONTENTS

INTRODUCTION

Designed for municipal wastewater lift stations and similar applications, the Pump Watch® is a simple and effective tool for management of a wastewater collection system via a cellular network. Alarms are monitored and service personnel notified in the event of a failure.

Data logging and trending of critical information enables the User to visually track system performance and recognize impending problems. The station data can be visualized in a simple and intuitive way from your web browser on a PC, tablet or smart phone.

ORDERING INFORMATION

Two versions of the Pump Watch® are available:

- **Pump Watch® Gateway** (For use with a Station View® controller.
- **Pump Watch® Panel** (NEMA 4 enclosure).

Note: All Pump Watch® units include 2 years of cellular service.

1. Pump Watch® Gateway

For installation inside a control panel using the Station View™ controller.

Parts Included:

Pump Watch® Gateway

+

3dBA Gain Antenna

+

Modbus Serial Cable

2. Pump Watch® Retro

For installation outside a control panel or for retrofit applications

Includes:

- 14x12x6 NEMA 4X thermoplastic enclosure
- Pump Watch® Gateway
- DC Power supply and battery backup
- Requires 120 VAC supply power
- I/O terminals for hardwring with existing control panel
- 100/150/200A to 4-20mA current transducer
- Station View™ - RTU mode (no control)
- Can monitor lift stations with up to 3 pumps

Pump Watch®

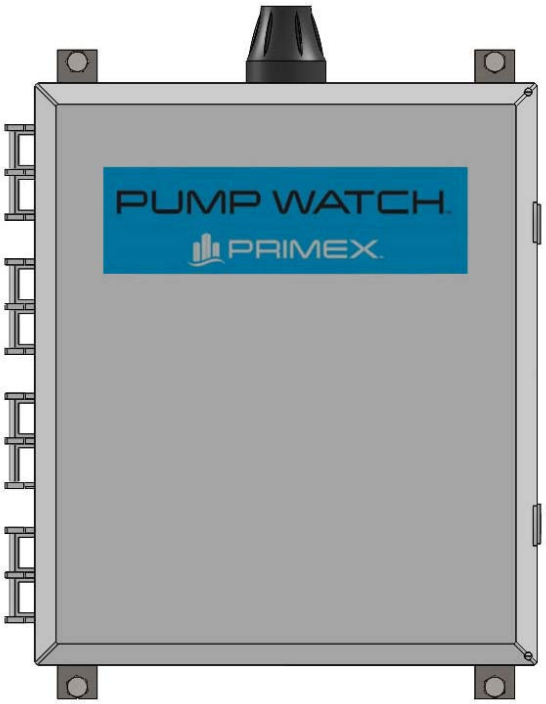
3. Options

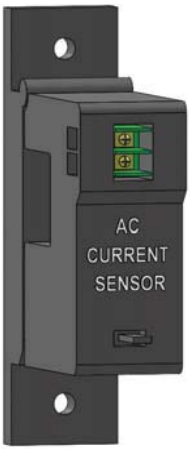
- High Gain Antenna (pole mounted)
- Low Loss Cable - 20ft, 40ft and 60ft (cable cannot be spliced.)

PUMP WATCH® RETRO INTRODUCTION

The Pump Watch® Retro remote monitoring system is designed to be connected to most duplex or triplex lift station type control panels. The Pump Watch® Retro control panel monitors pump run, pump fault, run time, cycles, amps and flow. It can also monitor system in-flow, power failure, level and level alarms. All of this data is then relayed to the cloud, via acellular network, to a secure website, and can be accessed and monitored from virtually anywhere in the world.

RECEIVING AND INSPECTION





TOOLS & ADDITIONAL MATERIALS REQUIRED

Drill and drill-bit

Wire cutter

Wire stripper

Caulking gun and Silicone caulking

Phillips screwdriver

Flat screwdriver

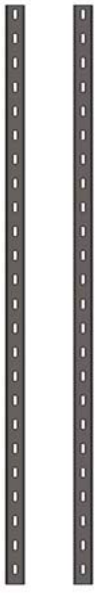
Small flat screwdriver

Ratchet with sockets

Lag bolts

Machine screws

*Submersible Pressure Transducer



Unistrut

Liquid-tight conduit

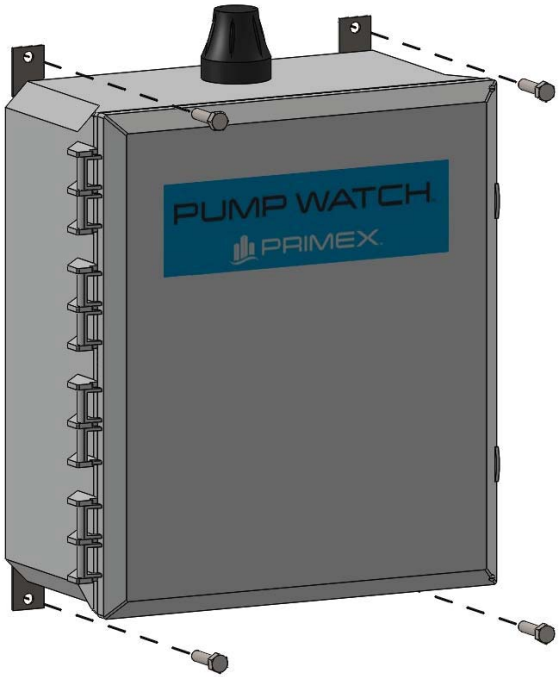
Liquid-tight conduit fittings

Conduit

*May already be available in the existing lift station control panel.

MOUNTING THE PUMP WATCH® RETRO PANEL

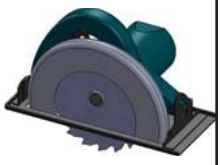
Mount the Pump Watch® panel using a solid base such as treated posts with a treated plywood overlay. Mounting on Unistrut or other metal structure is also common. Please use the appropriate hardware for securely anchoring the panel to the metal structure.



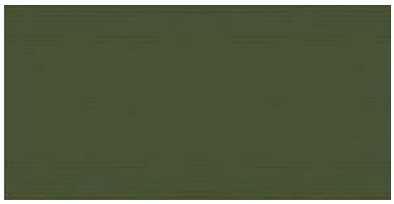
TOOLS & MATERIALS NEEDED

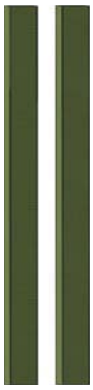

Lag bolts


Drill and drill-bit

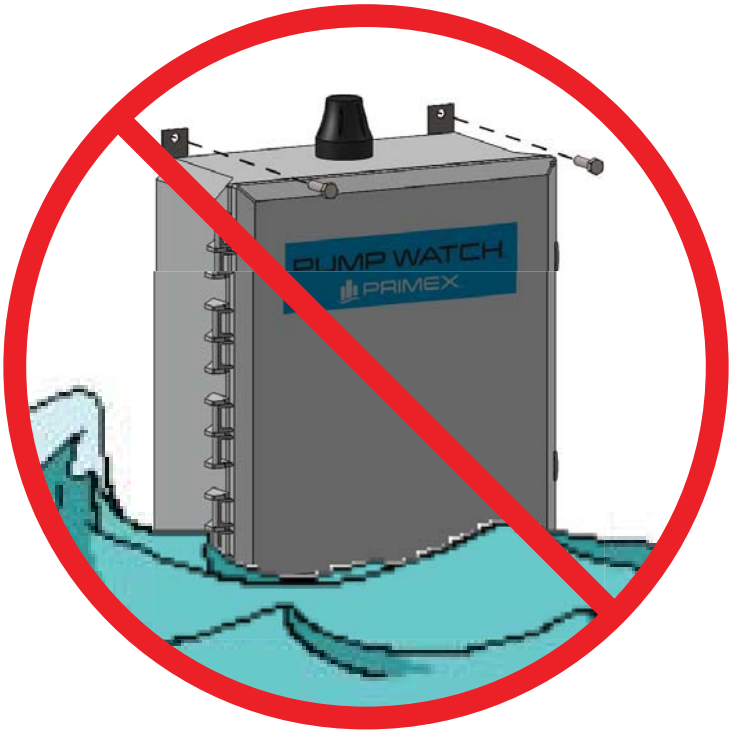

Circular saw


Ratchet with sockets


Treated Plywood

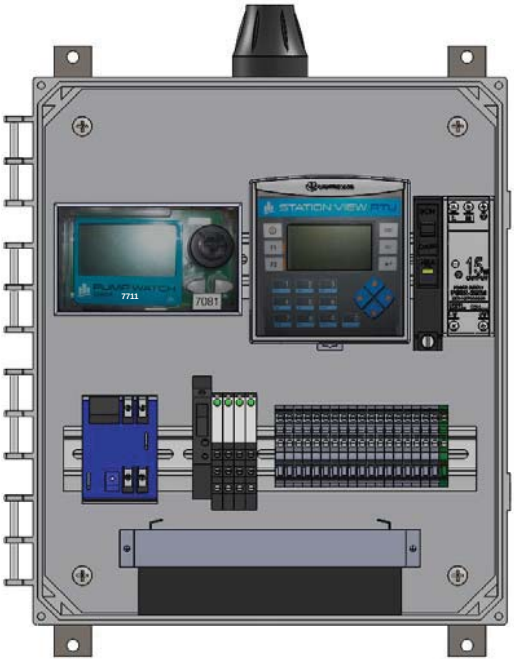

Treated Posts

⚠ **WARNING! Do not** mount the panel where there is the possibility of water submergence.



WIRING METHODS

When wiring the Pump Watch® panel, be sure to use liquid-tight conduit or strain relief fittings.



TOOLS & MATERIALS NEEDED

Drill and drill-bit

Flat screwdriver

Caulking gun and
Silicone caulking

CONDUIT OPTIONS

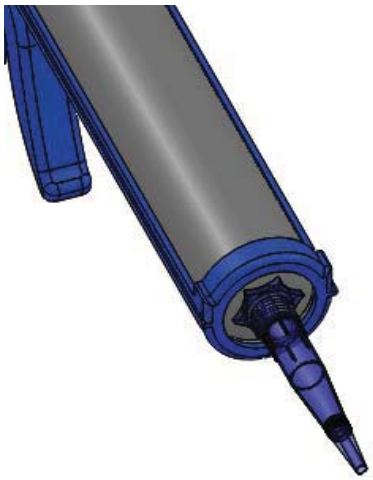
Liquid-tight
conduit fittings

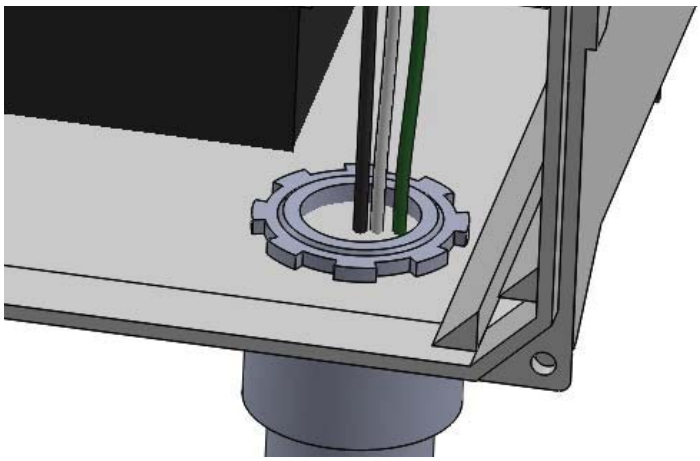
Liquid-tight conduit

OR

Conduit

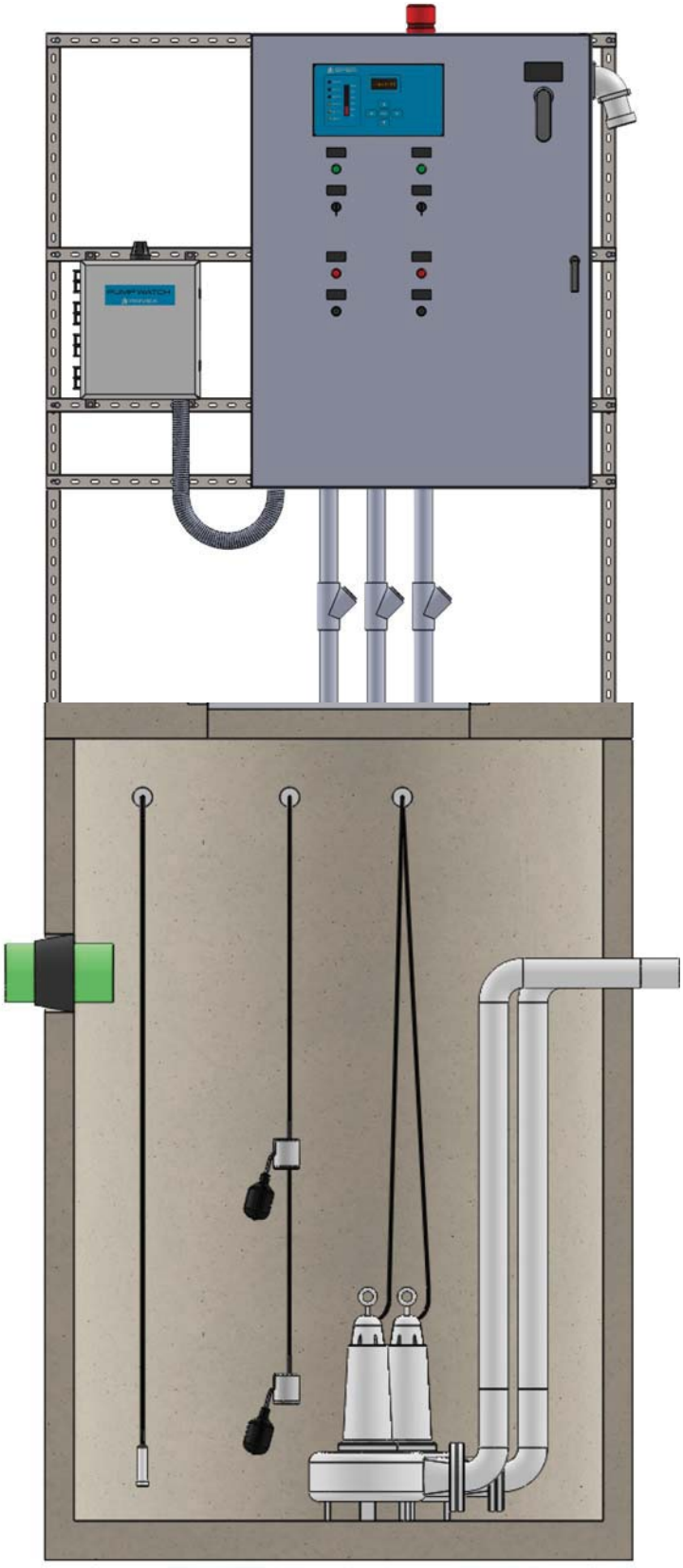
Use liquid tight fittings and conduit to run cables between the Pump Watch® Retro and the Lift Station control panel. Do not run conduit from the Pump Watch® Retro to the wet well.



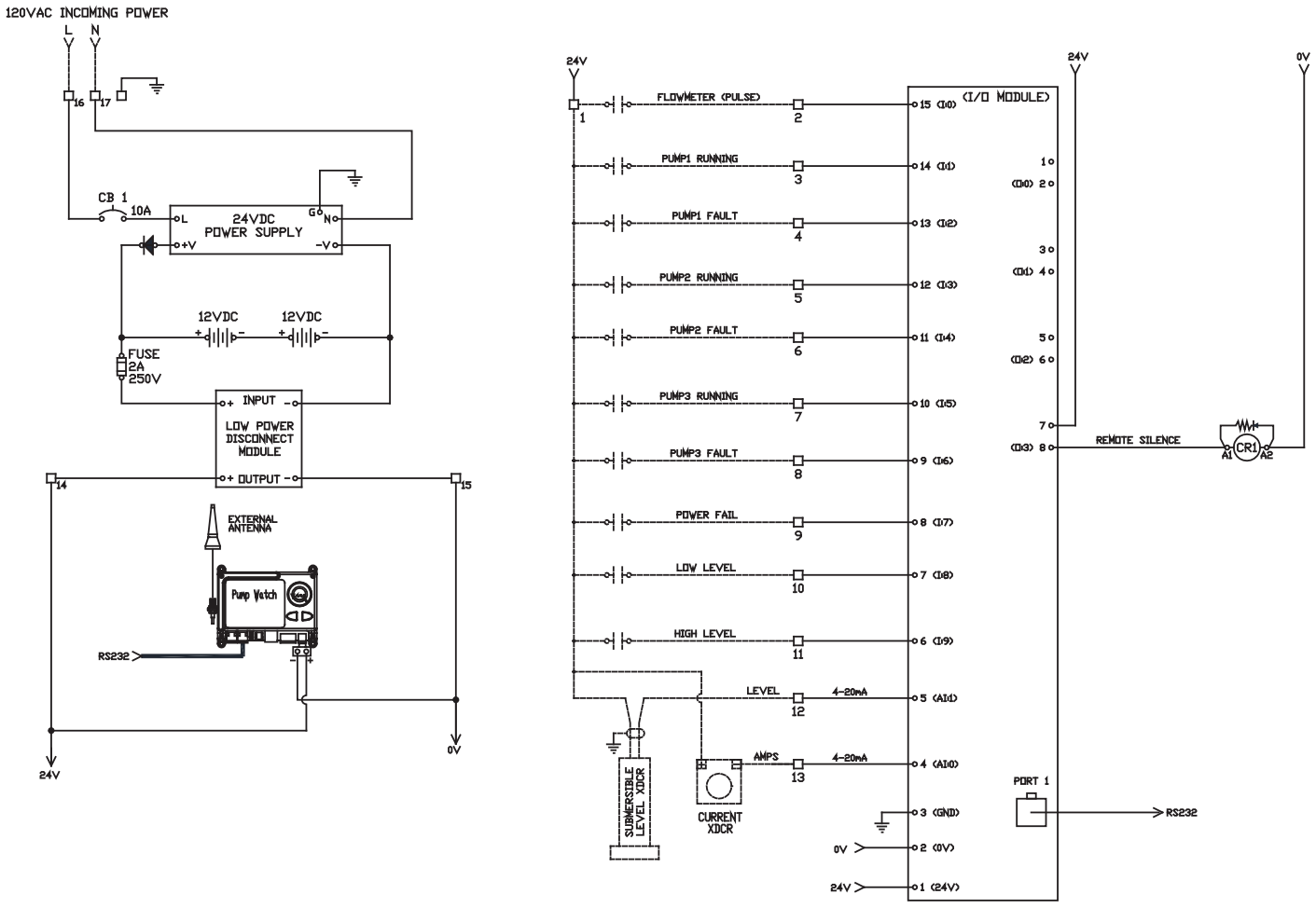


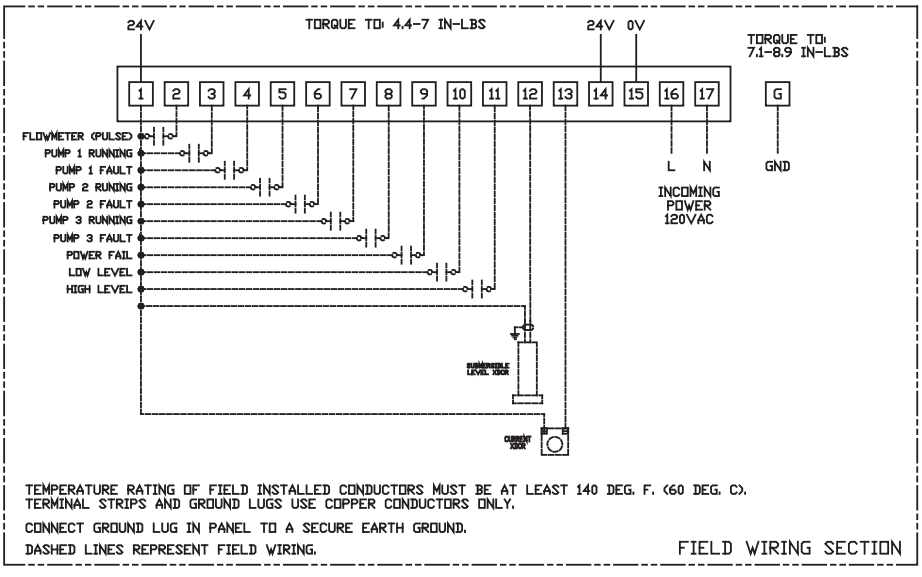
SYSTEM VIEW

PUMP WATCH® RETRO INSTALLATION EXAMPLE



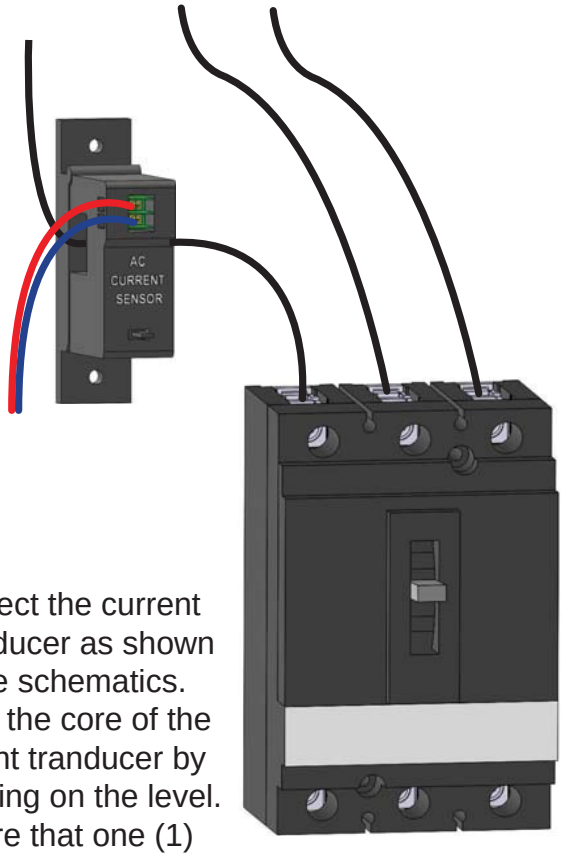
SCHEMATIC


120VAC INCOMING POWER
L
N
16
17
CB 1
10A
24VDC
POWER SUPPLY
L
N
+V
-V
12VDC
12VDC
FUSE
2A
250V
INPUT
LOW POWER
DISCONNECT
MODULE
OUTPUT
14
15
EXTERNAL
ANTENNA
Pump Watch
RS232
24V
0V
24V
FLOWMETER (PULSE)
PUMP1 RUNNING
PUMP1 FAULT
PUMP2 RUNNING
PUMP2 FAULT
PUMP3 RUNNING
PUMP3 FAULT
POWER FAIL
LOW LEVEL
HIGH LEVEL
LEVEL
4-20mA
AMPS
4-20mA
SUBMERSIBLE
LEVEL XDCR
CURRENT
XDCR
(I/O MODULE)
15 (I0)
14 (I1)
13 (I2)
12 (I3)
11 (I4)
10 (I5)
9 (I6)
8 (I7)
7 (I8)
6 (I9)
5 (AI1)
4 (AI0)
3 (GND)
2 (0V)
1 (24V)
24V
0V
REMOTE SILENCE
CR1
A1
A2
PORT 1
RS232


24V
TORQUE TO: 4.4-7 IN-LBS
24V
0V
TORQUE TO:
7.1-8.9 IN-LBS
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
G
FLOWMETER (PULSE)
PUMP 1 RUNNING
PUMP 1 FAULT
PUMP 2 RUNING
PUMP 2 FAULT
PUMP 3 RUNNING
PUMP 3 FAULT
POWER FAIL
LOW LEVEL
HIGH LEVEL
L
N
INCOMING
POWER
120VAC
GND
TEMPERATURE RATING OF FIELD INSTALLED CONDUCTORS MUST BE AT LEAST 140 DEG. F. (60 DEG. C).
TERMINAL STRIPS AND GROUND LUGS USE COPPER CONDUCTORS ONLY.
CONNECT GROUND LUG IN PANEL TO A SECURE EARTH GROUND.
DASHED LINES REPRESENT FIELD WIRING.
FIELD WIRING SECTION

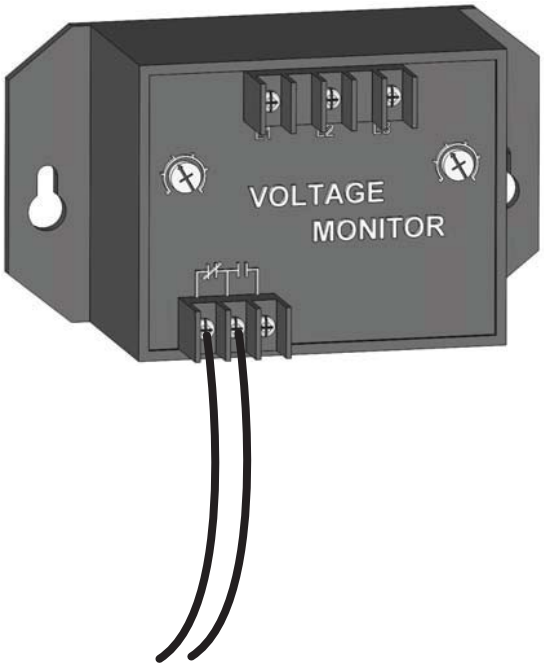
SENSOR WIRING

CURRENT SENSOR EXAMPLE



Connect the current transducer as shown on the schematics. Open the core of the current tranducer by pressing on the level. Ensure that one (1) incoming power conductor passes through the center of the current transducer.

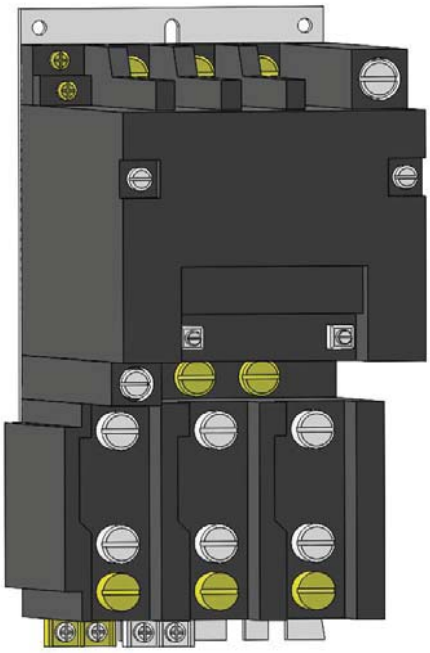
POWER FAIL SIGNAL EXAMPLE



Wire the power fail input to a voltage/phase monitor device's non-powered contacts in the control panel. The contacts must close on power failure.

PUMP RUN AND PUMP FAIL SIGNAL EXAMPLE

Wire the pump run inputs to a non-powered auxiliary contact in the control panel, which closes when the pump is called to run. These must be wired for each pump.



Wire the pump fail inputs to a non-powered auxiliary contact in the control panel, which closes when the pump circuit detects a failure condition. These must be wired for each pump.

PUMP WATCH® RETRO TROUBLESHOOTING

PROBLEM	CAUSE (S)	SOLUTION (S)
No reading from transducer. (level or current)	Transducer wired incorrectly.	Check transducer connection.
	Damaged or broken cable.	Repair the transducer cable.
	Faulty transducer.	Replace the transducer.
No flow reading is present.	The Station View™ RTU controller is configured incorrectly.	Check the Station View™ RTU controller flow configuration.
	Damaged or broken cable.	Repair the flow meter cable.
	Faulty flow meter.	Replace the flow meter.
Pump 3 data is not displayed.	The Pump 3 run and fault signals are not wired correctly.	Check Pump 3 connections.
	Damaged or broken wiring.	Repair Pump 3 run and fault monitoring wiring.
Station View™ RTU controller display is off.	There is no power supplying the panel.	Repair/connect the supply power.
	The main breaker is off.	Turn the main breaker on.
	The fuse is blown.	Check for damaged or shorted wiring and replace the fuse.
	Faulty power supply.	Check for a green indicator on the power supply and call factory for a replacement if not illuminated.
	Faulty Station View™ RTU controller.	Call factory for a replacement.
The Pump Watch® web interface is not updating.	The Pump Watch® panel is not powered on.	Ensure panel is powered.
	The cellular signal strength is too weak.	Move the Pump Watch® panel to a less obstructed location or purchase a high gain, pole-mountable antenna to increase cellular strength.
	The Pump Watch® website is experiencing problems.	Call the AMI™ customer support number.

STATION VIEW® RTU
INTRODUCTION & SPECIFICATIONS

GENERAL
Duplex or Triplex lift station monitoring.
4-20mA transducer with (optional) 2 back up floats (High + low)
Pump amps monitoring
Pump flow monitoring with level transducer or flow meter (pulsed)
Power loss monitoring
Graphic display with easy navigation and intuitive setup.
LCD backlit display. 128x64 pixels
Real Time clock
NEMA 4X (Front panel)

REMOTE TELEMETRY UNIT FEATURES:
Level/flow monitoring
Tank level in feet
High Level float switch status indication
Low Level float switch status indication
Pump high current alarming (based on motor Amps + timer)
Pump dry run alarming (based on motor Amps + timer)
Pump current indication
Pump run indication

SYSTEM
24hrs data log + 7 days of historical data
- Volume pumped (with transducer)
- Number of starts for each pump/24hrs
- Run time for each pump/24hrs
- GPM for each pump (with transducer)

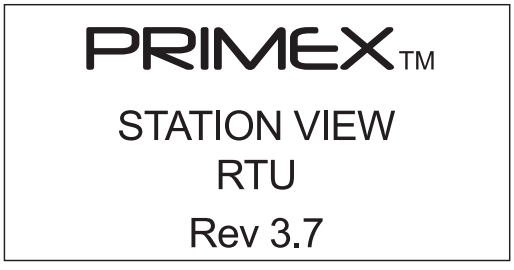
Real time clock
Password protection

ELECTRICAL SPECIFICATIONS (non-configurable I/O)
10 Digital inputs
2 analog inputs (4-20mA)
8 digital outputs (6 relay + 2 transistors)
24Vdc power, 5.2W
Battery backup

COMMUNICATION
Serial port: RS 485 Modbus RTU slave

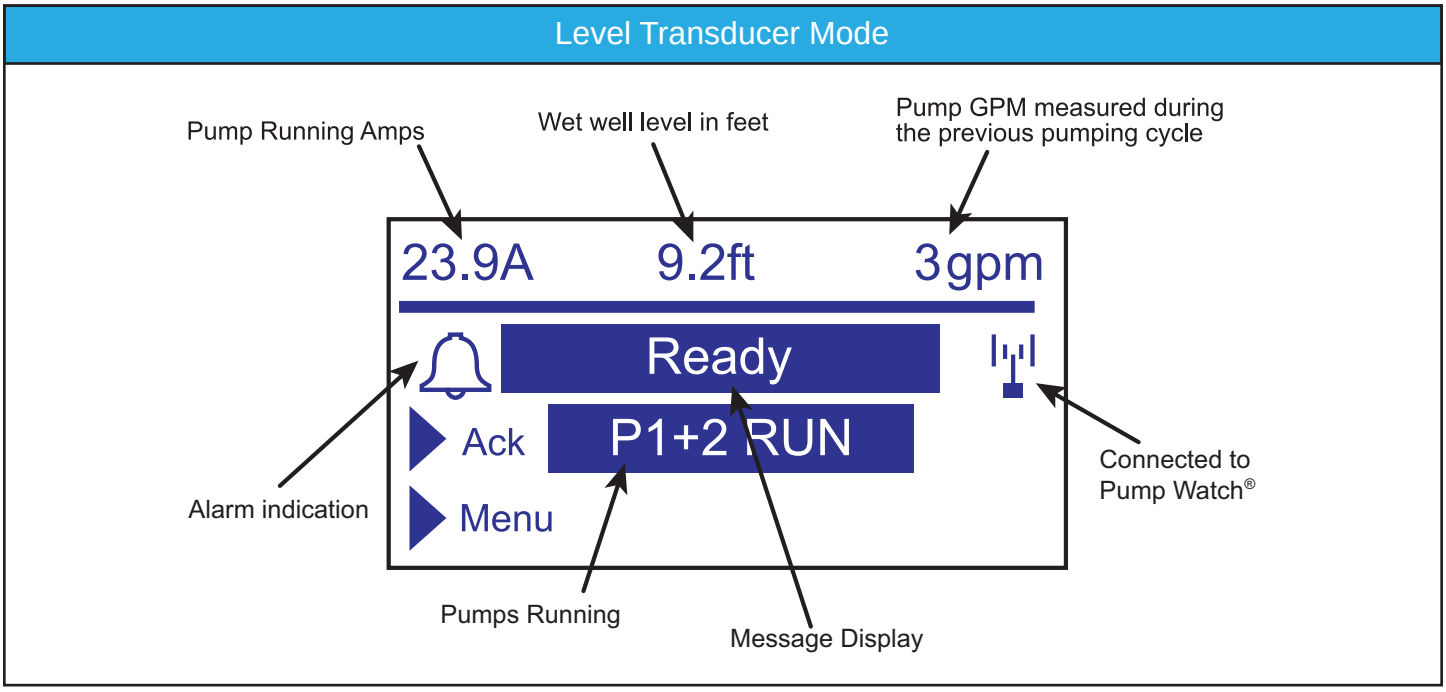
CERTIFICATION
UL /CE listed

POWER UP SCREEN & REVISION



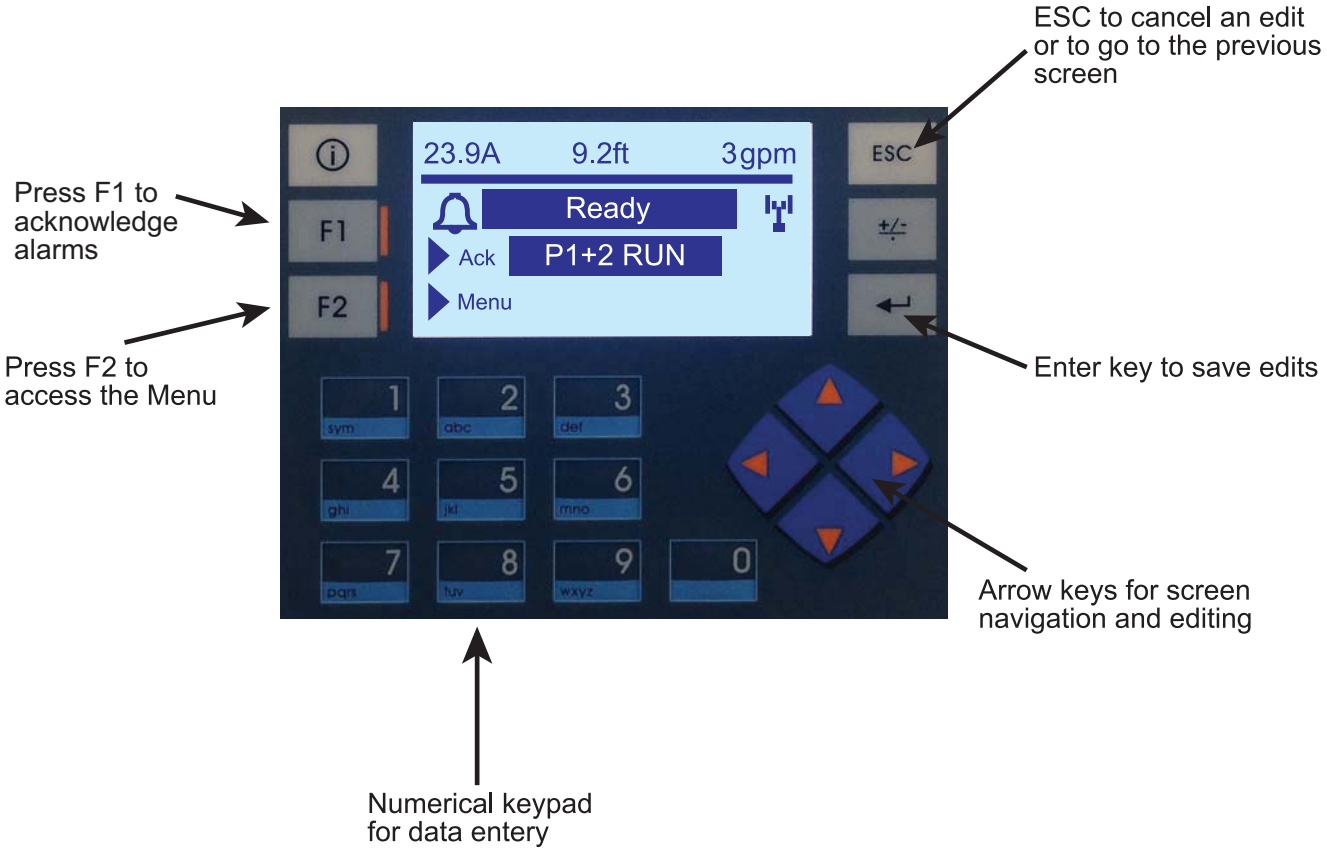
MAIN SCREEN

The main screen gives the operator an overview of the lift station status.



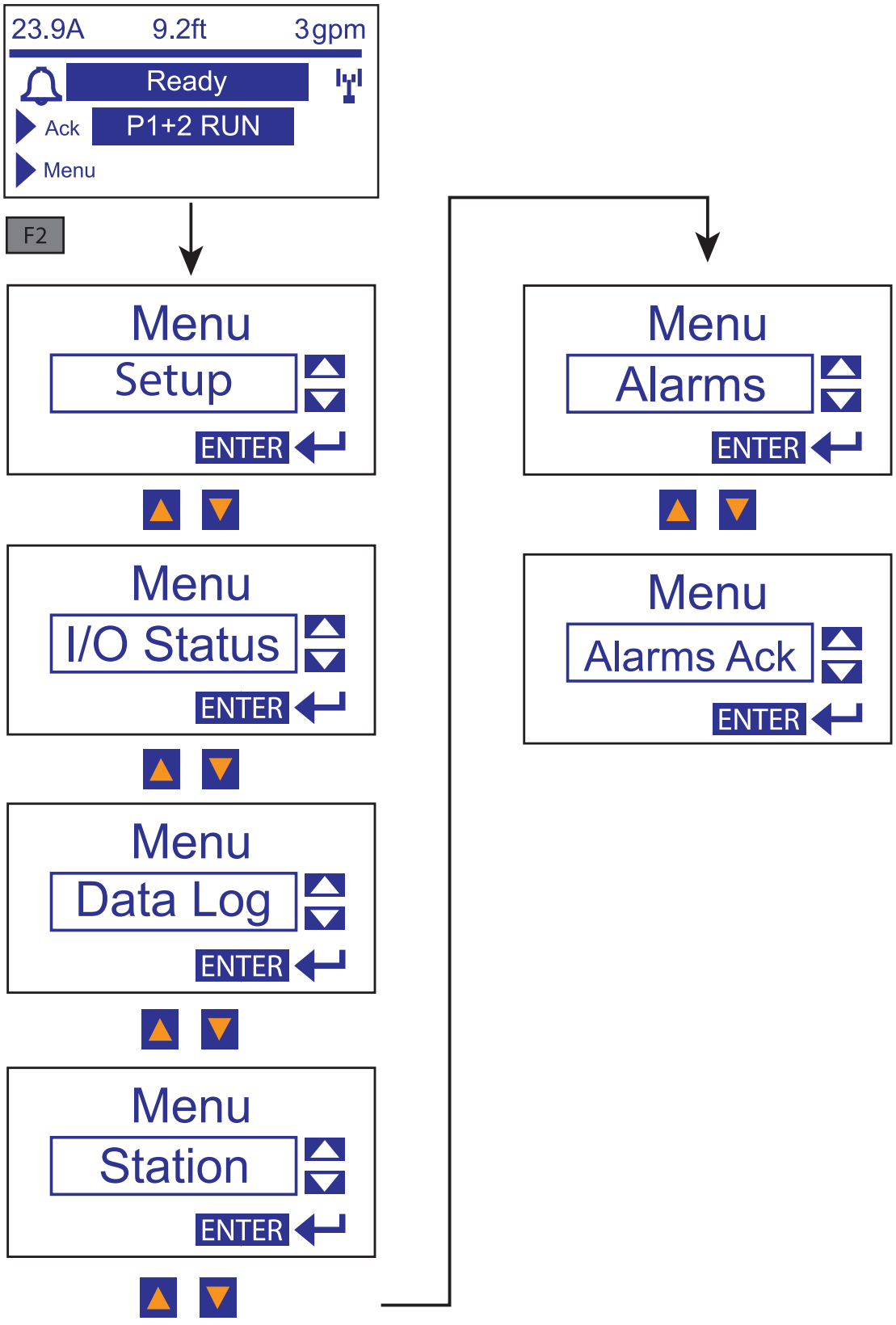
KEY PAD OPERATION

The remote telemetry unit keypad is used for screen navigation and data entry.



MAIN MENU NAVIGATION

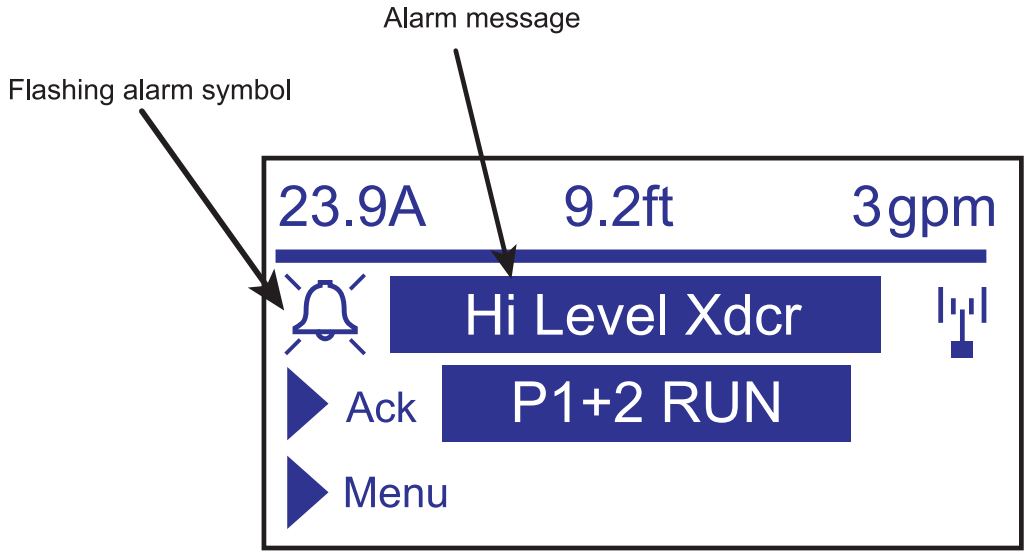
Navigation from the Main screen to the Menu Screens.



Press ESC to go back to the previous screen at any time.

ACTIVE ALARMS

If an alarm event occurs, it is displayed on the message bar on the Main Screen. A flashing alarm bell is also displayed.

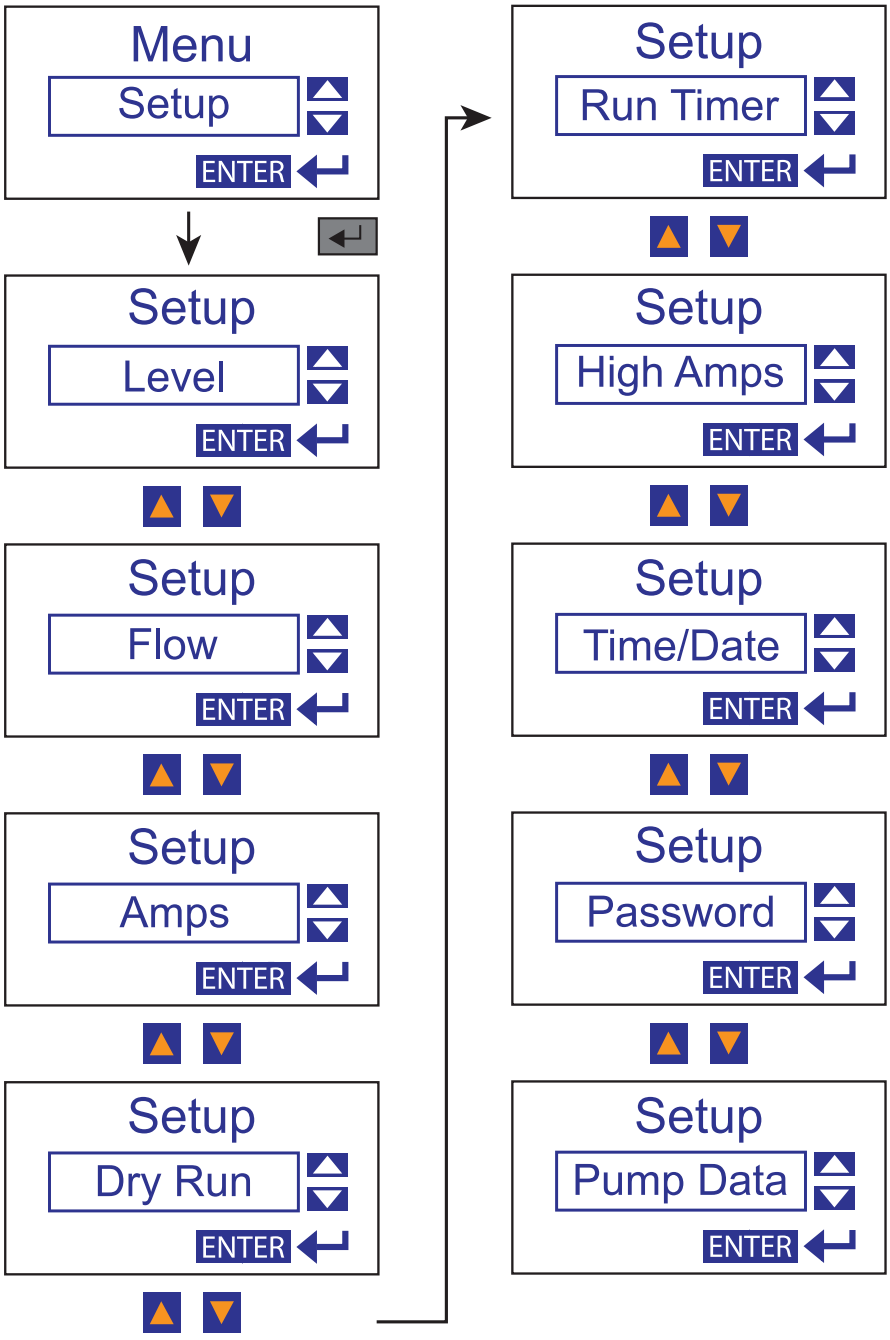


Possible alarms include:

#	DISPLAY	DEFINITION	FIX
0	**HIGH LEVEL XDCR**	Level in the wet well has exceeded the High Level set point	Check pump operation, check in flow, check level transducer
1	**LOW LEVEL XDCR**	Level in the wet well has exceeded the Low Level set point	Check pump operation, check in flow, check level transducer
2	**RUN TIME FAULT**	Pump running longer than allowable time Run time	Check pump operation, check in flow, check level transducer
3	**HIGH LEVEL FLOAT**	High level float switch is ON (UP)	Check pump operation, check in flow, check level transducer
4	**LOW LEVEL FLOAT**	Low level float switch is OFF (DOWN)	Check transducer
5	**HIGH AMPS**	Pump amps higher than expected (after time delay)	Check pump, check voltage (low or imbalance)
6	**DRY RUN**	Pump amps lower than expected (after time delay)	Check transducer, check low level float, check pump
7	**SENSOR OPEN**	Transducer signal is less than 4mA	Check transducer connection, check transducer and vent tube
8	**SENSOR FAIL**	Transducer signal is more than 20mA	Check transducer and wiring
9	**CURRENT XDUCR OPEN**	Current sensor signal is less than 4mA	Check transducer connection, check transducer
10	**POWER FAIL**	Power loss or Phase loss to the control panel	Check incoming power and phase lose monitor setting (if used)

SET UP

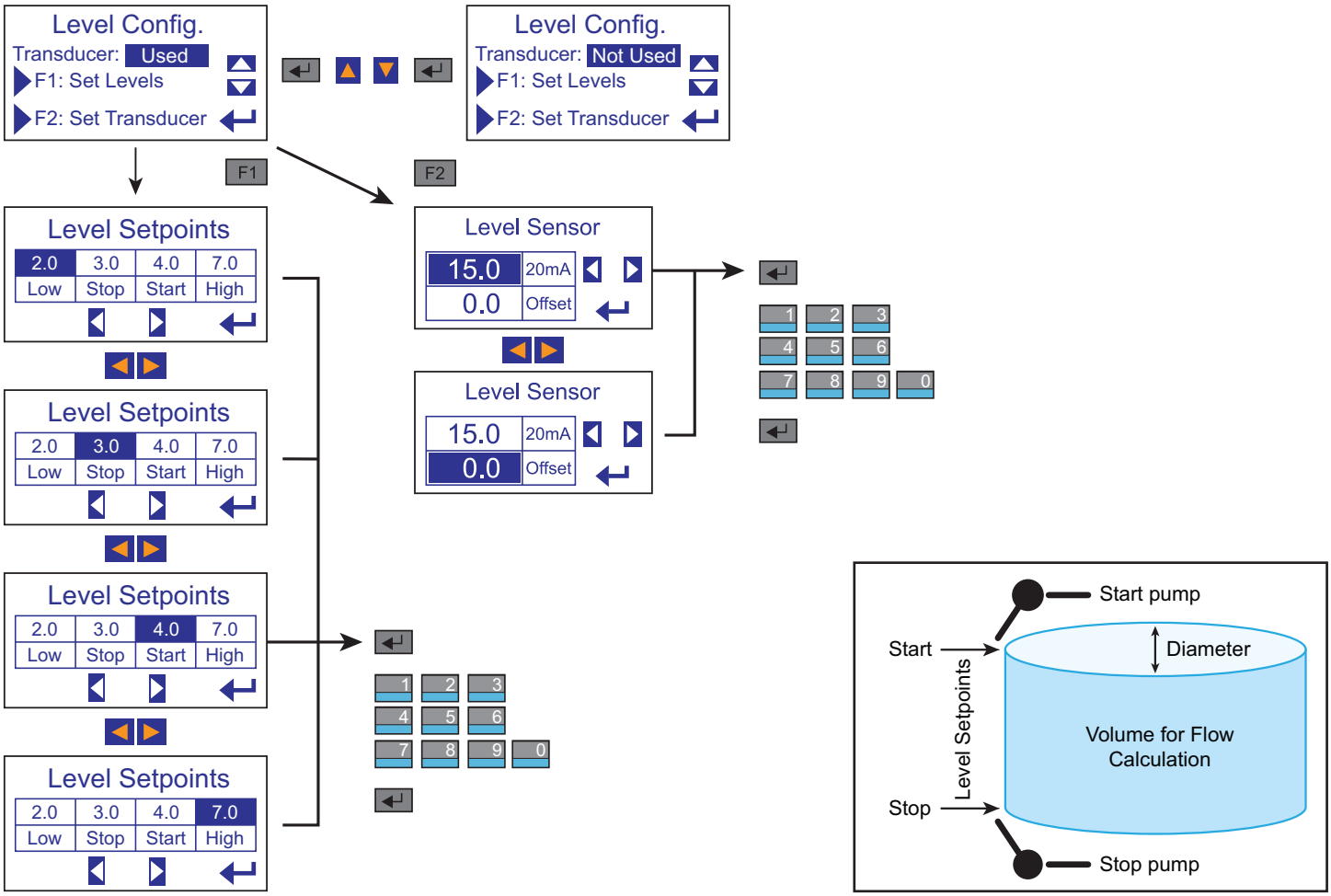
This menu is used for setting up the number of pumps in the system, level sensing data, flow sensing, current sensing, dry run alarm, max. run time, high amp alarm, the system date/time, the system password, and the pump data.



Press ESC to go back to the previous screen at any time.

LEVEL SETUP

The Station View™ RTU controller is intended to use an analog (4-20mA) transducer to monitor the level of the wet well, as well as for flow calculations. The use of the level transducer can be configured here.



The Level Setpoints are not used for controlling the pump. They are used for volumetric flow calculation alarm only. The flow calculation is based on the diameter of the tank (see Flow Setup), the Start and Stop Level Setpoints, and the fill and discharge times. Both In-Flow and Discharge flow are calculated during every cycle.

Low = Low level alarm. Activates a low level (transducer) alarm condition.
Stop = Stop level. The flow calculation cycle will stop. (Set a few inches above the actual pump stop level.)
Start = Start level. The flow calculation cycle begins. (Set a few inches below the actual pump start level.)
High = High level alarm. Activates a high level (transducer) alarm condition.

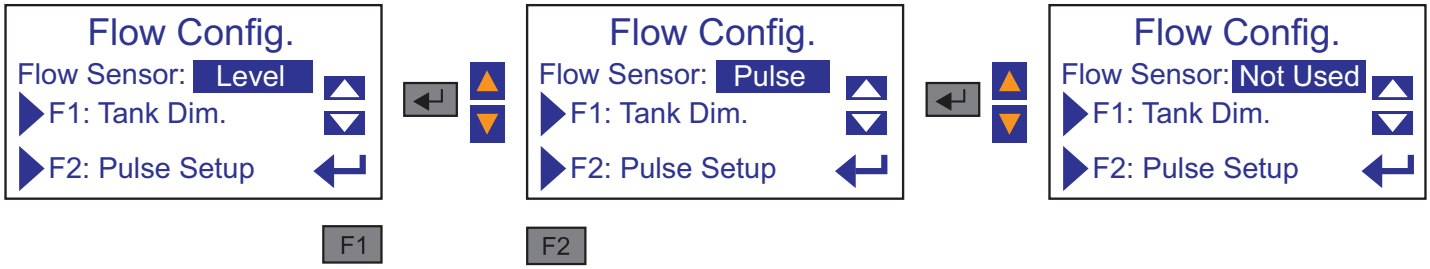
Transducer setup example: 0-10 psi range level transducer = 0-23.0 ft. (1 psi = 2.30 ft.) Set 20mA = 23.0 ft. Some transducers are already calibrated in feet. (e.g. Max value for 20mA is 99.9 ft)
When using a submersible pressure transducer, 0.0 ft. represents the level at the bottom of the transducer and not the wet well. If the transducer is mounted 2.0 ft off the bottom of the tank. Set the offset = 2.0 ft. (Max value - 10.0 ~ 10.0 ft)

Backup float switch operation:
Two (2) backup floats are strongly recommended when using a level transducer:
High level float: Activates the high level (float) alarm.
Low level float: Activates the low level (float) alarm.

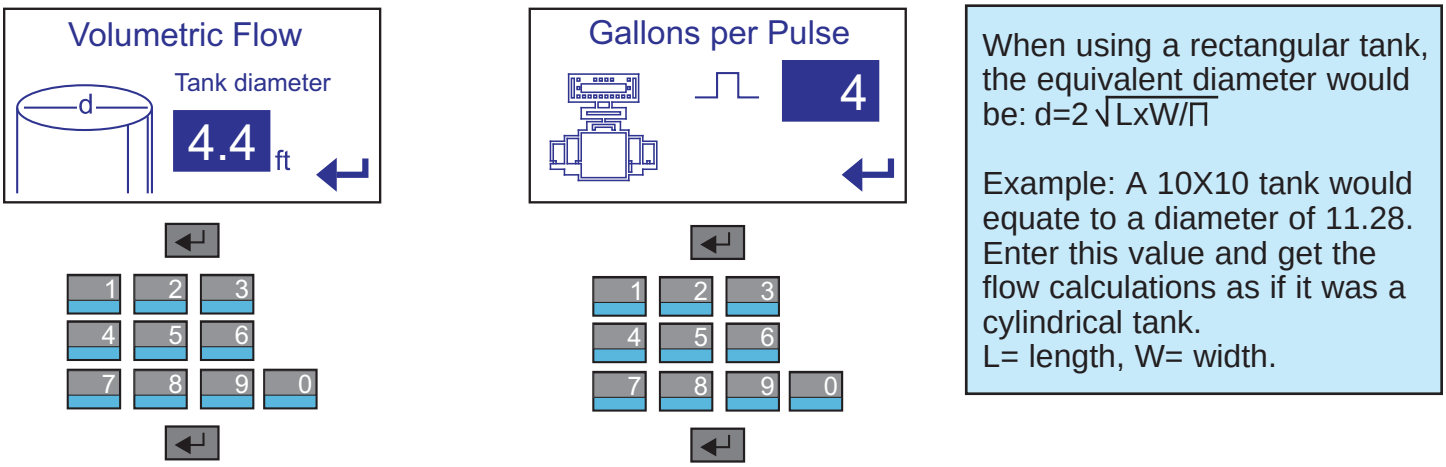
Press ESC to go back to the previous screen at any time.

FLOW SETUP

Volumetric flow measurement is available when a level transducer is used in a cylindrical tank. The controller calculates the volume of liquid based on the level. The flow is flow rate is calculated by using the volume and the fill/discharge times. The in-flow and the discharge flow is measured. The controller can also use the flow meter with a pulse output to measure the flow of the system. Alternatively, the flow measurements can be disabled.



F1 F2



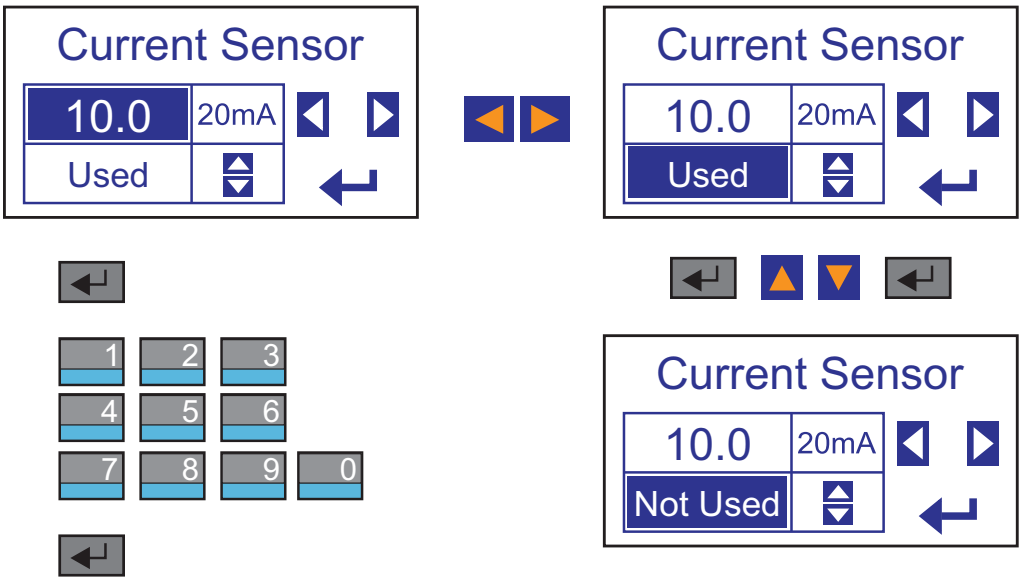
When using a rectangular tank, the equivalent diameter would be: $d=2\sqrt{LxW/\Pi}$

Example: A 10X10 tank would equate to a diameter of 11.28. Enter this value and get the flow calculations as if it was a cylindrical tank.
L= length, W= width.

Press ESC to go back to the previous screen at any time.

CURRENT SENSOR (AMP) SETUP

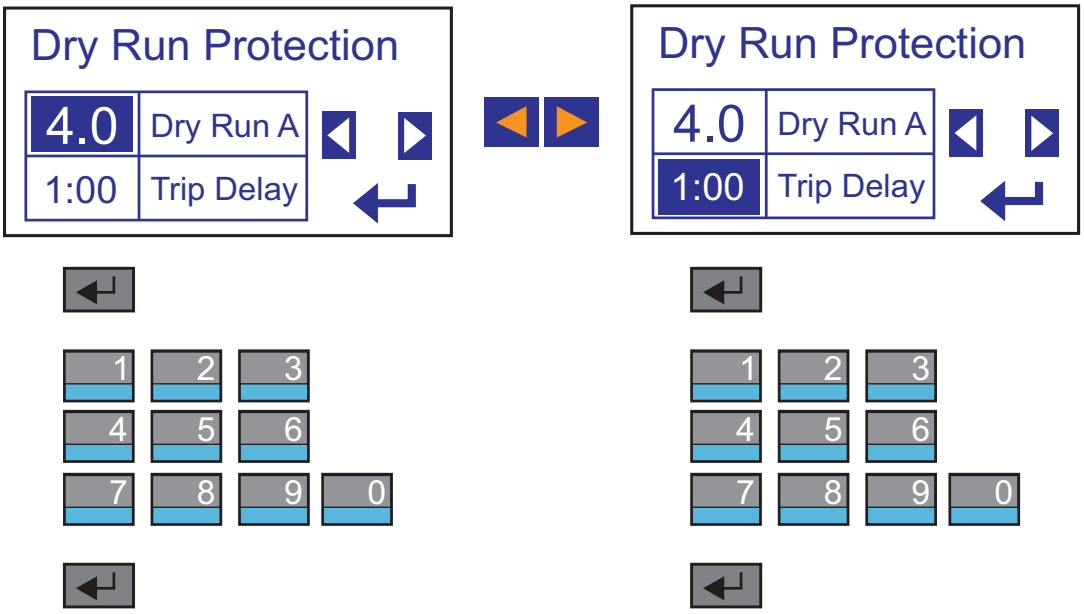
The controller is able to be used with a current transducer to measure the current draw of the pumps in the system. The current measurement can also be disabled.



Press ESC to go back to the previous screen at any time.

DRY RUN SETUP

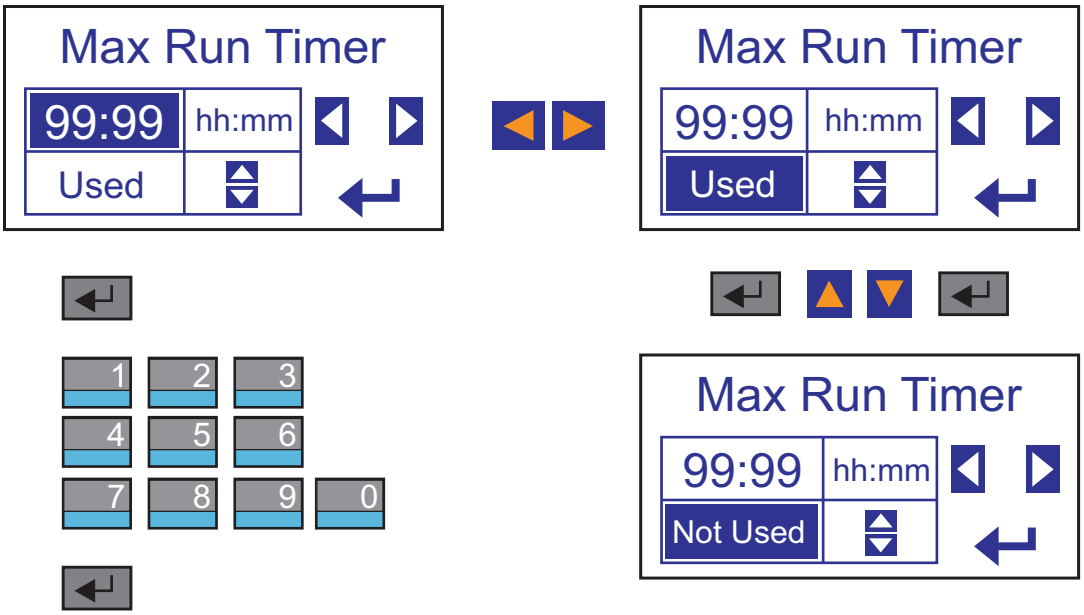
Dry Run indication uses the motor current measurement to determine whether a pump is running dry (no load). For a submersible pump, the current draw will typically drop 30% from normal when running dry. Please consult your pump manufacture for this value and test this fault if possible. The amp set value corresponds to the minimum amp value that the pump should draw during normal operation. If the current drops below this value for longer than the “Trip Delay” the remote telemetry unit will display a “Dry Run” fault. The “trip Delay” time is used to avoid nuisance tripping. The dry run fault automatically resets after 2 minutes. Set to “0.0 A” to disable this function.



Press ESC to go back to the previous screen at any time.

RUN TIMER SETUP

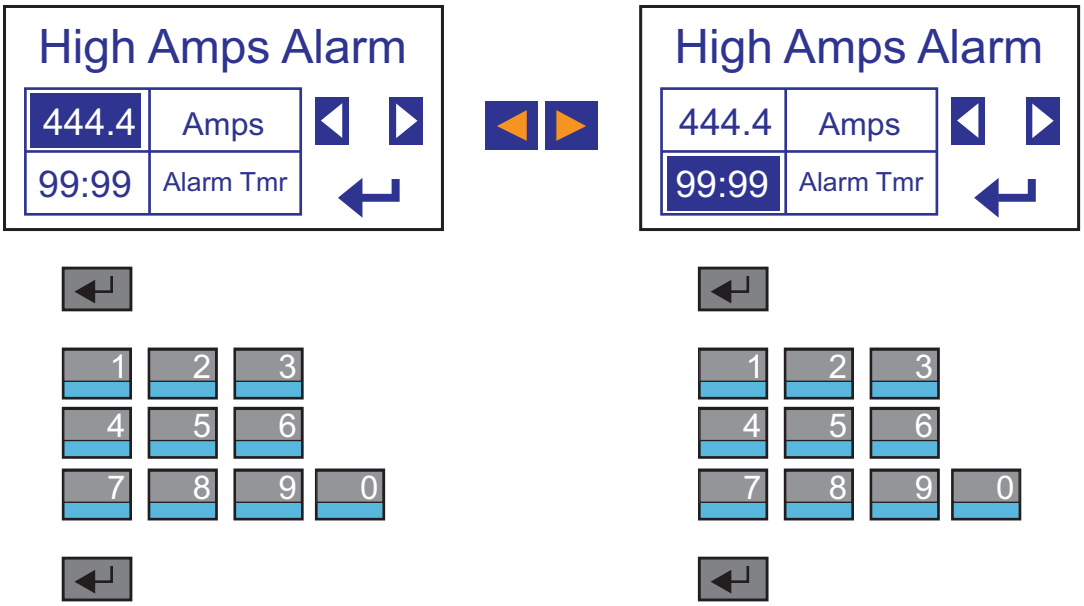
The controller is equipped with a maximum run time indicator. The unit can be configured to activate a message if a pre-determined maximum run time, per pump cycle, has been exceeded. This function can be disabled.



Press ESC to go back to the previous screen at any time.

HIGH AMP SETUP

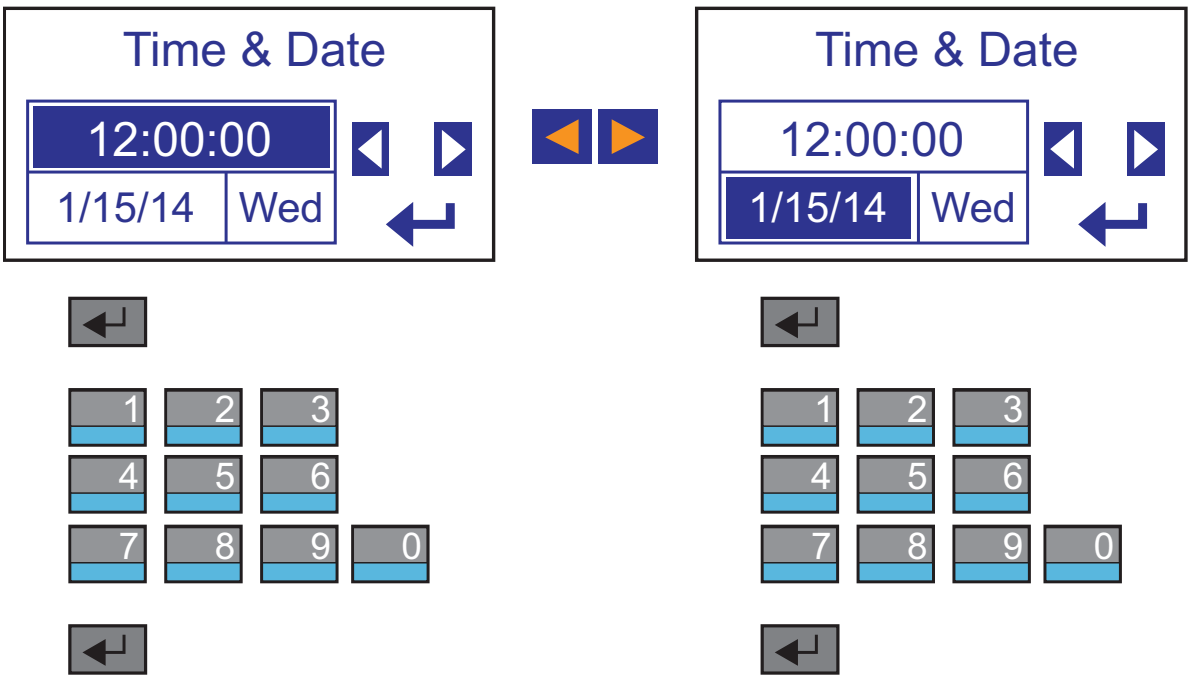
High Amp alarm uses the motor current measurement to determine if a pump is pulling a higher value than expected. This could be an indication of wear, clogging or changes in the head conditions in the pumping system. This value should be set lower than the motor starter overload trip setting. The detection delay time is used to avoid nuisance alarms. If a high amp alarm is triggered, it will display the fault on the screen. Set the value to 0.0 A to disable this alarm function.



Press ESC to go back to the previous screen at any time.

TIME & DATE SETUP

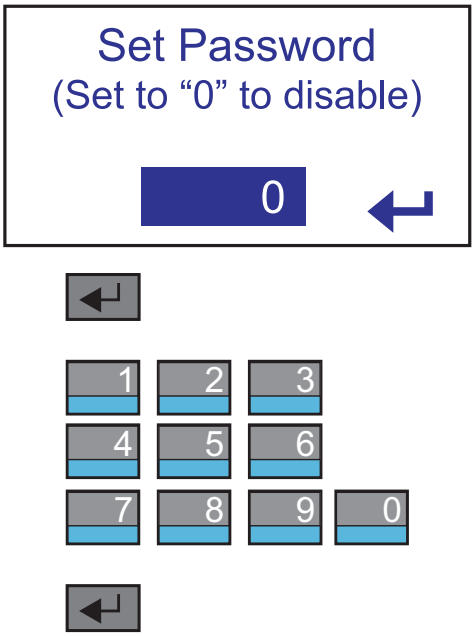
It is important that the correct time and date is entered for accurate logging and alarm data collection.



Press ESC to go back to the previous screen at any time.

PASSWORD SETUP

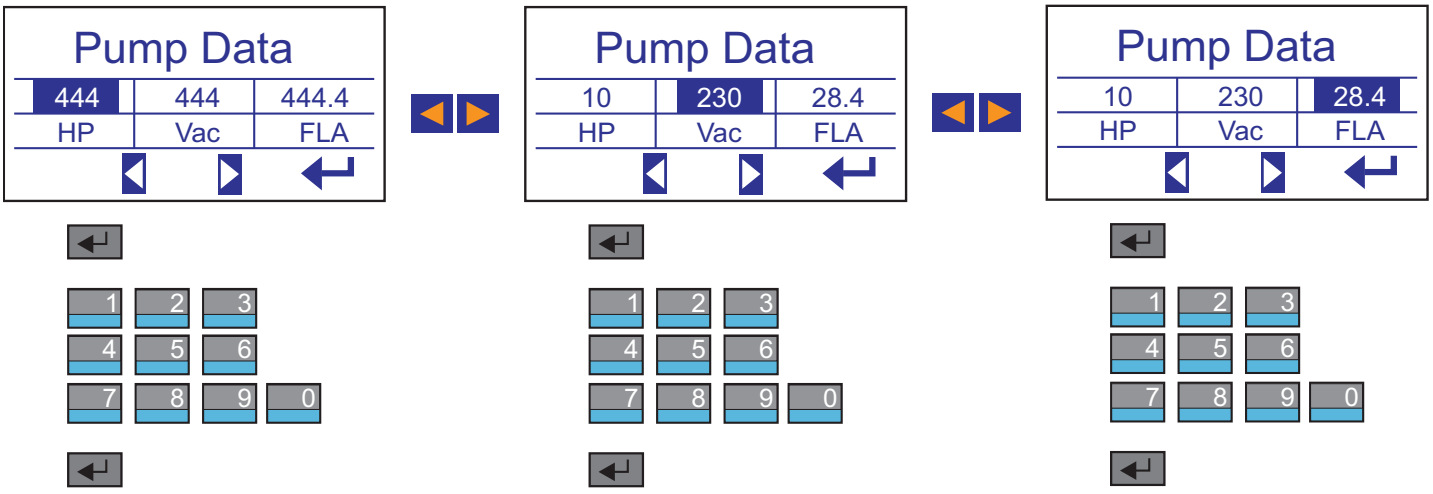
The password function is designed to prevent unauthorized access to the Menu. Set to “0” to disable this function. The password entry screen will appear when entering the menu if the password function is enabled.



Press ESC to go back to the previous screen at any time.

PUMP DATA SETUP

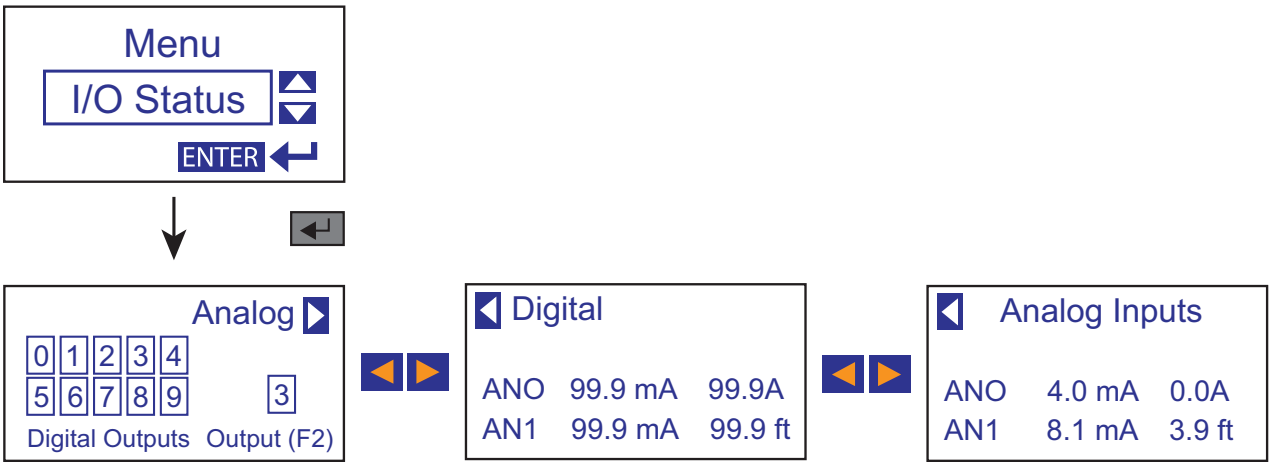
The Pump Data screen is for information only. It is a record on the pump HP, Volts, and FLA. This data can be viewed remotely when connected to the Pump Watch cellular monitoring system.



Press ESC to go back to the previous screen at any time.

I/O STATUS

These screens can be used to view all the digital and analog inputs and relay output status. These screens make troubleshooting simple. Digital inputs and output change color when ON. Digital Output “3” can be tested by pressing F2, only while the digital I/O screen is active.

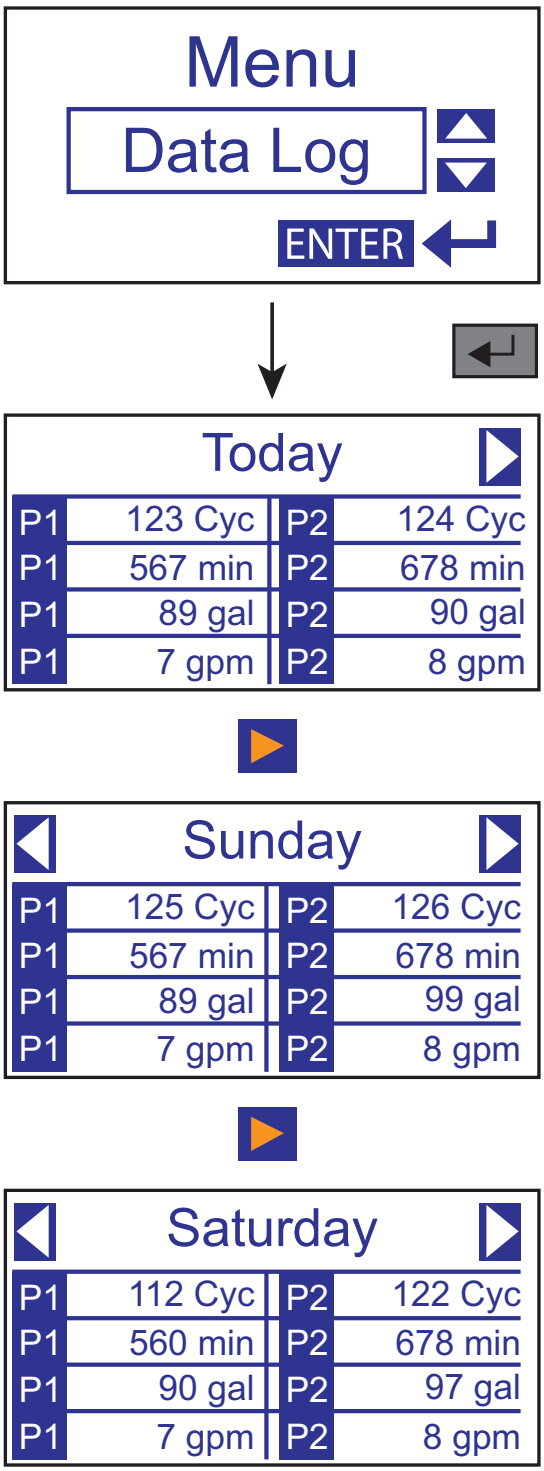


INPUT TERMINALS			
TERM	**INPUT**	**TYPE**	**DESCRIPTION**
15	I0	DIGITAL PNP	FLOWMETER (HIGH SPEED PULSED)
14	I1	DIGITAL PNP	PUMP 1 RUNNING
13	I2	DIGITAL PNP	PUMP 1 FAULT
12	I3	DIGITAL PNP	PUMP 2 RUNNING
11	I4	DIGITAL PNP	PUMP 2 FAULT
10	I5	DIGITAL PNP	PUMP 3 RUNNING
9	I6	DIGITAL PNP	PUMP 3 FAULT
8	I7	DIGITAL PNP	POWER FAIL
7	I8	DIGITAL PNP	LOW LEVEL (FLOAT)
6	I9	DIGITAL PNP	HIGH LEVEL (FLOAT)
5	AN1	4-20 mA	LEVEL TRANSDUCER
4	AN0	4-20 mA	MOTOR AMPS
3	GRND		GROUND
2	0V		POWER SUPPLY 0V
1	24V		POWER SUPPLY +24Vdc

OUTPUT TERMINALS			
TERM	**INPUT**	**TYPE**	**DESCRIPTION**
1	O0	RELAY C	NOT USED
2		RELAY NO	
3	O1	RELAY C	NOT USED
4		RELAY NO	
5	O2	RELAY C	NOT USED
6		RELAY NO	
7	O3	RELAY C	ALARM ACKNOWLEDGE
8		RELAY NO	
9	O4	RELAY C	NOT USED
10		RELAY NO	
11	O5	RELAY C	NOT USED
12		RELAY NO	
13	O6	TRANSISTOR	NOT USED
14	O7	TRANSISTOR	NOT USED

DATA LOG

The Station View™ RTU controller will log daily station data for 7 days + today's data since midnight. This data is very useful for tracking high in-flow events and pump performance.

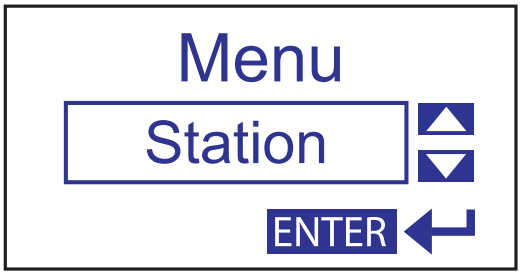


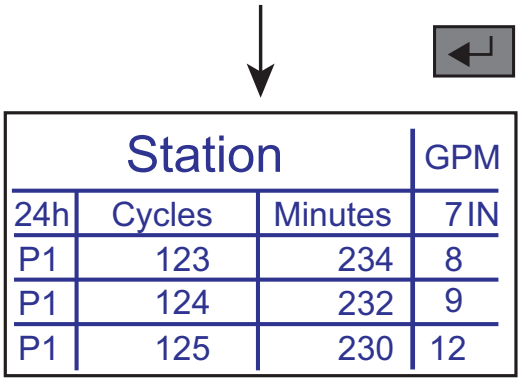
Cyc = number of cycles (pump starts)
min = pump run time in minutes
gal = gallons pumped (only available if a level transducer is used)
gpm = average GPM (only available if a level transducer is used)

Press ESC to go back to the previous screen at any time.

STATION LOG

The Station View™ RTU controller will log station data continually throughout the day. This data is very useful for tracking the current pump performance. The pumping cycles, run time, incoming flow, and current pump flow data is displayed.

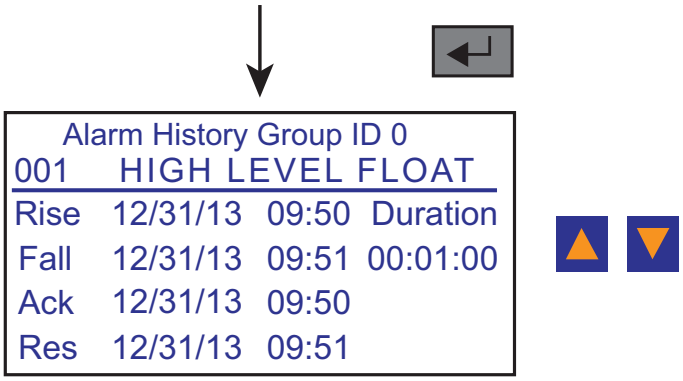




Press ESC to go back to the previous screen at any time.

ALARMS

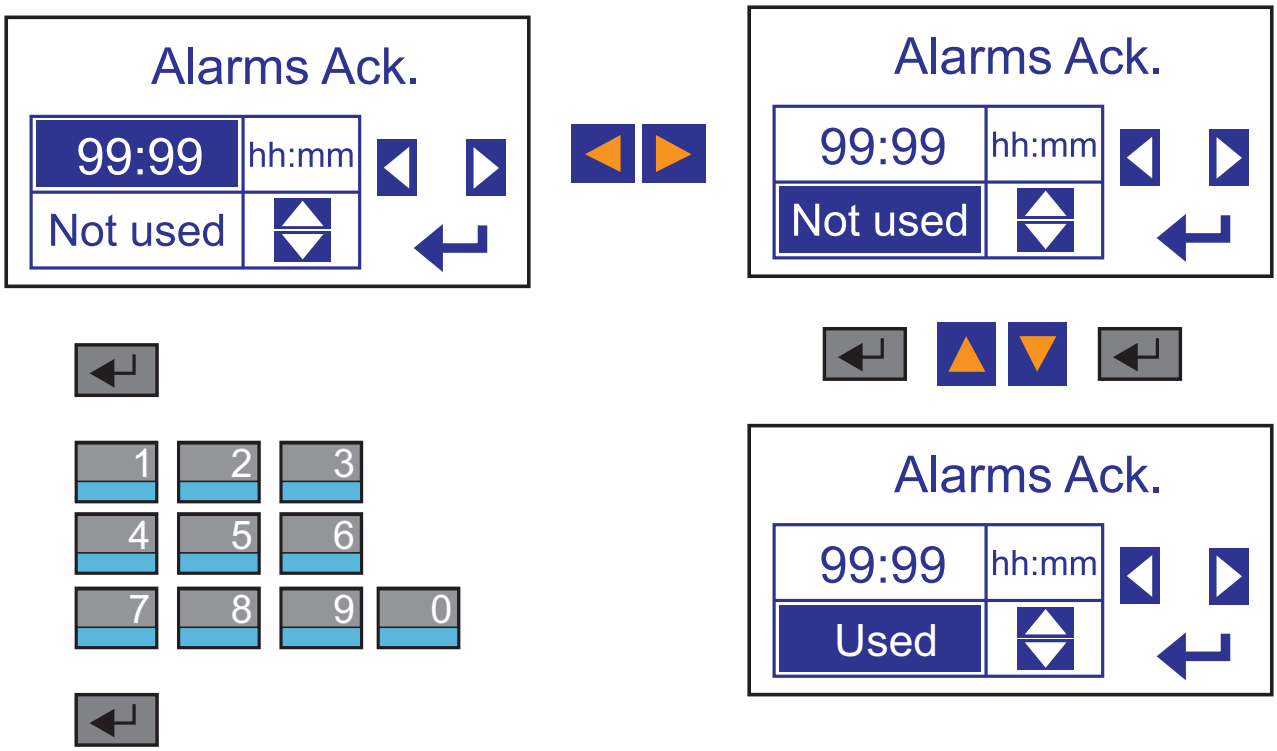
The Station View™ RTU controller will log station alarm data continually. This data is very useful for tracking any recurring abnormalities in the pumping system. The date and time of the activation of each alarm, when the alarm was cleared, when the alarm was acknowledged, and the total duration of the alarm can be viewed on this screen.



Press ESC to go back to the previous screen at any time.

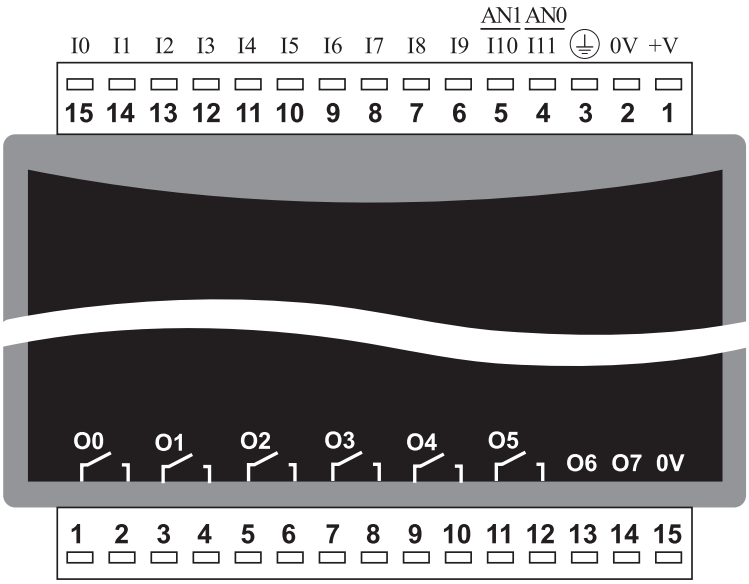
ALARMS ACKNOWLEDGE

The controller is equipped with an alarm acknowledge function. Upon a fault event, the user will be required to Acknowledge the fault by pressing F1 on the main screen or by remotely pressing the Ack button on the Pump Watch® web portal. When this function is enabled, the timer will start after a fault, and if not acknowledged before time out, a general fault will occur and notify other users. Disable if not needed.

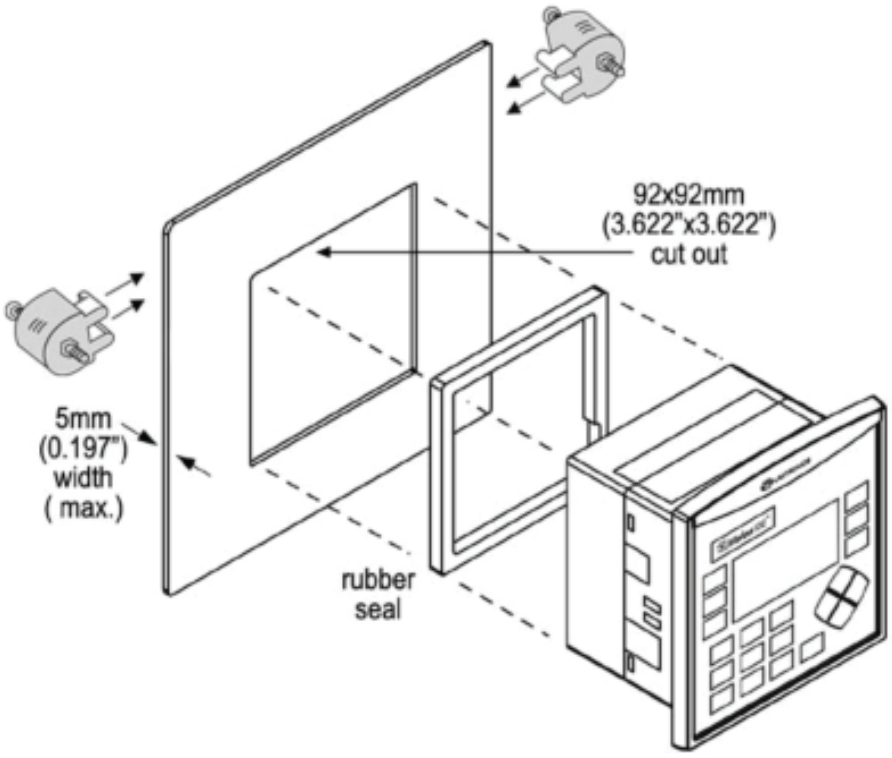


Press ESC to go back to the previous screen at any time.

I/O Configuration

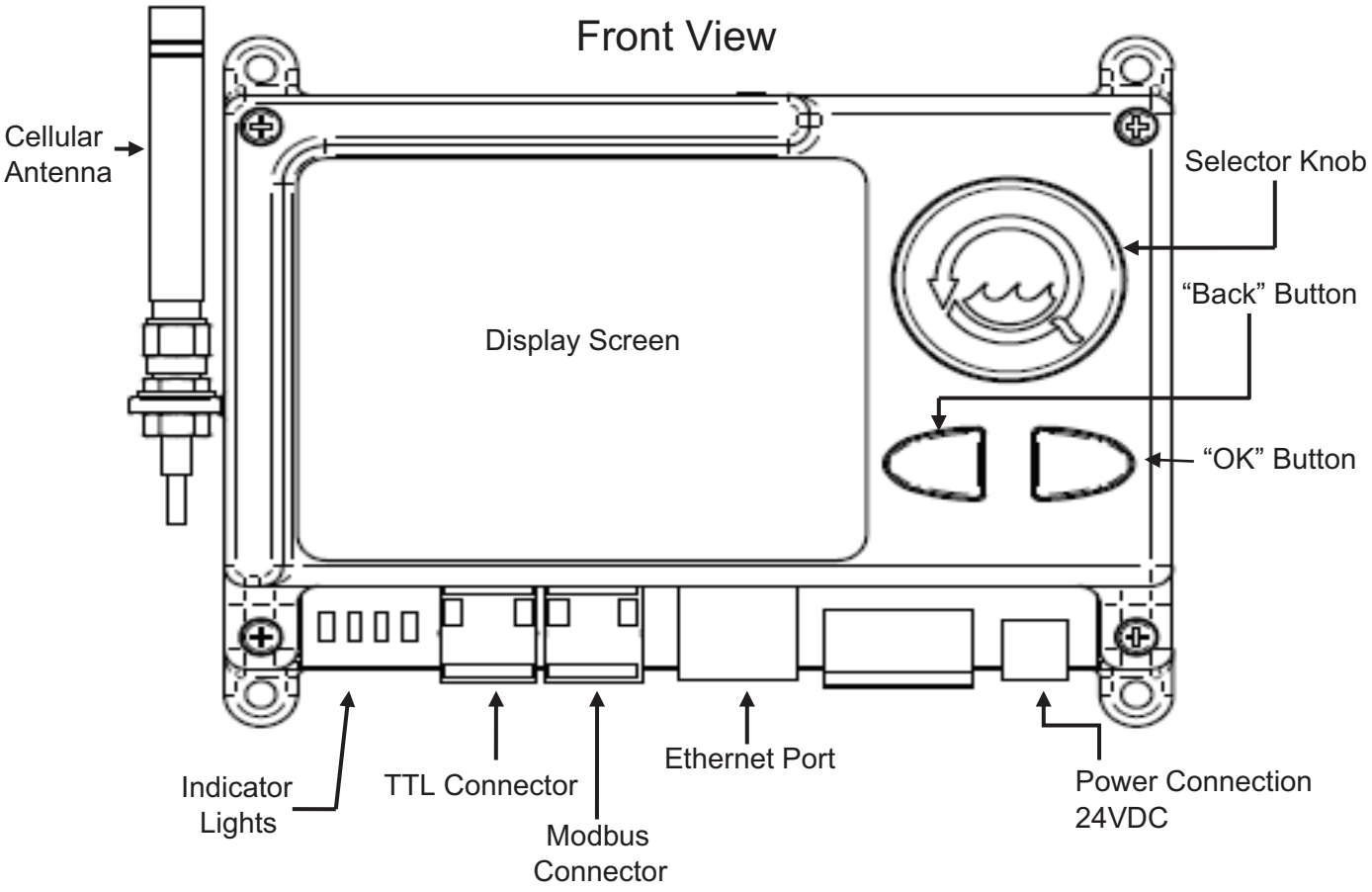


DIMENSIONS AND MOUNTING

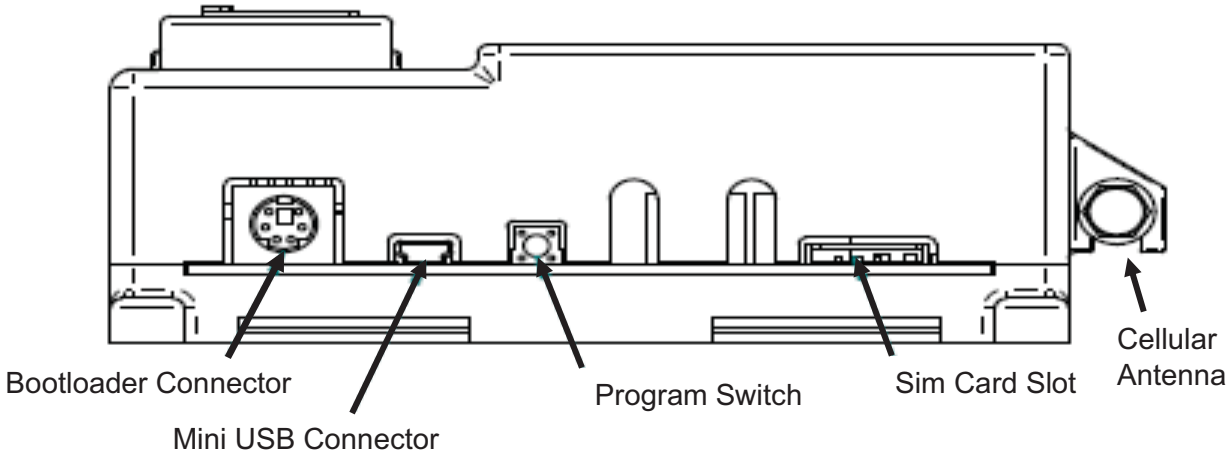


PUMP WATCH® GATEWAY FEATURES

Front View

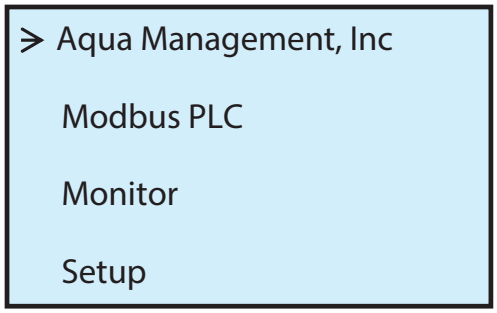


Top View



HOME SCREEN

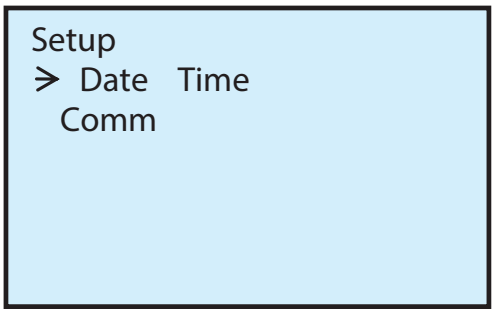
The Home screen displays four (4) different options and is your gateway to all features.



SYSTEM SETUP

DATE AND TIME

1. Turn the Select knob until the arrow is in fron of **Date Time** and click the **OK** button.
2. Turn the Select knob until the arrow is in front of **Hour** (military time) and click the **OK** button.
3. Turn the Select knob to reach desired hour and click the **OK** button to accept.
4. Repeat the process for **Hour**, **Second**, **Month**, **Day**, **Year** as necessary.
5. Click on the **Back** button to return to the **Setup** screen.

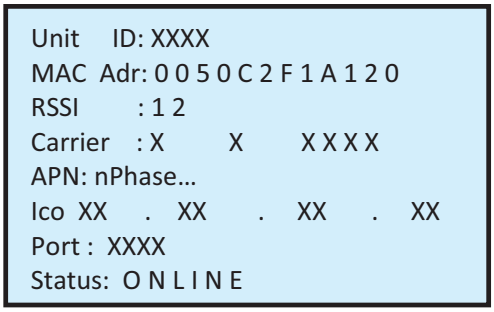


COMM

From the **Setup** screen, turn the Select knob until the arrow is in front of **Comm** and click the **OK** button.

This screen will give you the following information:

- Unit ID
- MAC Address
- RSSI (reception strength)
- Carrier
- APN
- IP Address
- Port
- Online/Offline Status

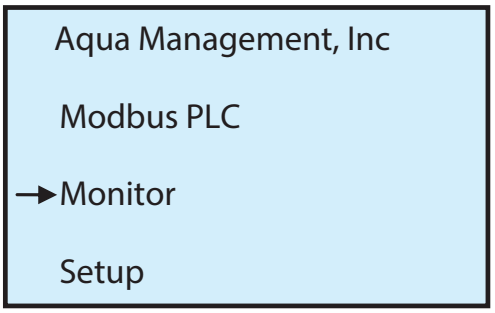


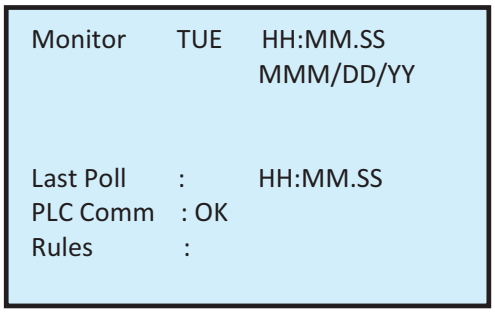
This screen will also give you the current application version and date of the most recent update.

PUMP WATCH® GATEWAY TROUBLESHOOTING

PLC COMMMUNICATION

If your device is not communicating with the external device you are connected to, you need to check the PLC connection. To check the status from the main screen, turn the Select knob until the arrow is in front of **Monitor**.





PLC Comm should read “OK” if the external device is communicating with the controller.

ERROR CODES

0X0100	TEMP_RULE_BIT
0X0200	ACTION_BIT
0X1000	MULTI1_BIT
0X2000	MULTI2_BIT
0X4000	MULTI3_BIT
0X8000	MULTI4_BIT

GATEWAY COMMUNICATION

If the Gateway is comminicating to the external device, the User is unable to view the data on the user interface or control device remotely, the connection may be disrupted. The user can check the Gateway’s signal strength (RSSI) on the Pump Watch® unit.

RSSI THRESHOLDS

RSSI is a measurement of the power present in a received radio signal (**R**eceived **S**ignal **S**trength **I**ndicator). The larger the number, the better the reception.

Below is a guideline to appropriate strength thresholds.

1-5 = very poor (no communication)
6-8 = poor (inconsistent communication)
9-11 = good (little to no communication issues)
>12 = best

SUPPORT

For additional support, contact the AMI support team at:

(888) 280-2060

support@aquamanagement.com

ACTIVATION AND SERVICE

All Pump Watch® systems are provided with 2 years of pre-paid cellular service. Activation of your account is required for the device to operate.

For activation, please call AMI (Aqua management Incorporated). Please specify that you are requesting activation of a Pump Watch® device.

Aqua Management Incorporated
6280 S. Valley View Blvd. Suite 212
Las Vegas, NV 89118
Telephone: (888) 280-2060
email: info@aquamanagement.com
http://www.aquamanagement.com/

Please have the following information available when calling:

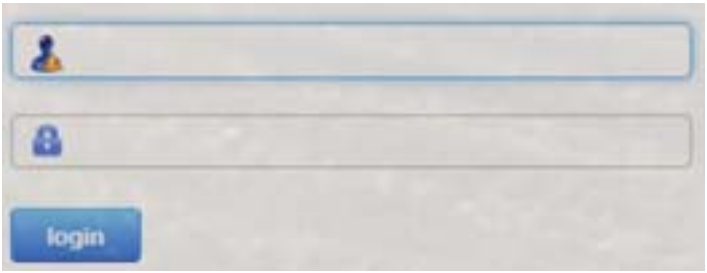
- Authorized contract person
- Emergency contact person
- Email address
- Phone number
- Physical address
- Pump Watch® Gateway ID number

CREATING A USERNAME AND PASSWORD

A Username will be given to you from AMI along with a generic password. Upon your first login, you will be prompted to enter in a new password, as well as verifying/updating contact information.

LOGGING IN

Click on the following link or type in the following URL in your browser to open the login screen.
http://www.ami-central.com/login/aspx



Google Chrome or Mozilla Firefox are the recommended web browsers.

CUSTOMER SERVICE AGREEMENT AND TERMS OF USE

This agreement outlines the agreement between AMI and the end User and must be agreed to before access to the cloud interface is allowed.

An automatic email is generated and sent to the email address you entered. Follow the link in the email to verify and activate your account.

After logging in again, you will need to agree to the Terms of Use. These steps only need to be completed during the initial setup and activation of your account.

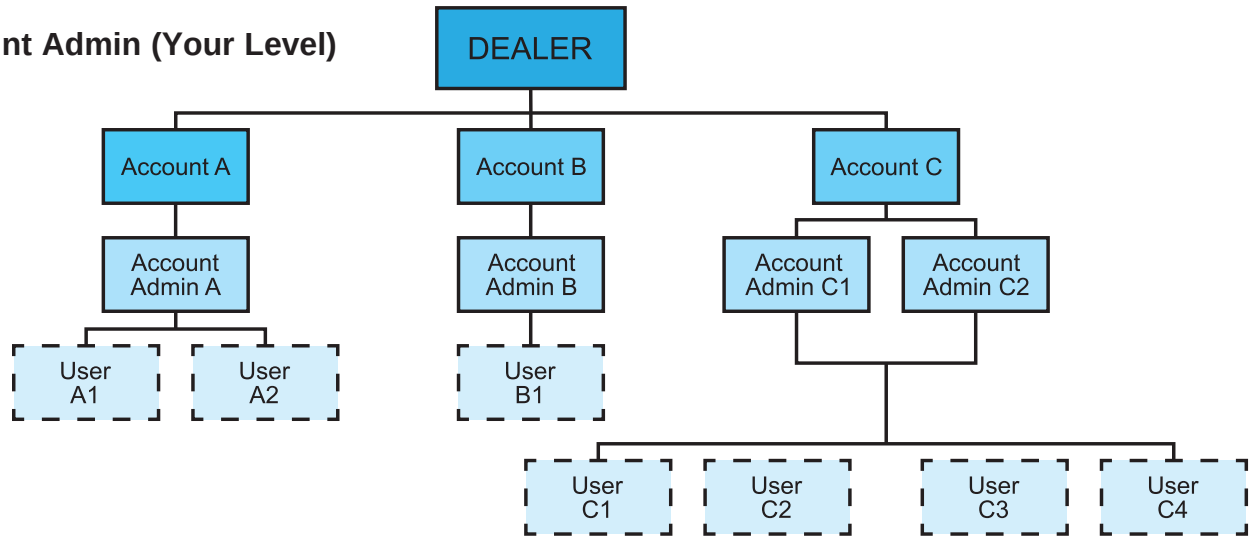
Notes:

The end User should activate this product. When the initial 2 year of cellular service comes to an end, AMI will contact you directly and review renewal options. The primary User (Account Admin) will be able to add additional Users for login and alarm notification. The cellular service plan provided with the Pump Watch® only covers text (SMS), and data for the Pump Watch® unit. It does not cover Text and Data service charges incurred for the use of your personal cell phone or tablet.

ACCESS LEVELS

The (name for cloud service or www.ami-central.com) portal has three (3) levels of controls.

- Dealer
- **Account Admin (Your Level)**
- User



Note! You may have multiple Account Admins and Users per account, but each Account Admin or User can only be assigned to one Account.

	Create Accounts	Create Account Admins	Create Users	Assign Gateways to Accounts	Place Gateways on Map[1]	Configure Gateways[2]	Name Gateways	Search Gateways	View Gateway Data	Run Reports
Dealer	X	X	X	X	X	X	X	X	X	X
Account Admin[3]			X		X		X	X	X	X
User								X	X	X

[1] With privileges assigned
[2] with privileges assigned
[3] Accound Admin and User can work within assigned account only

VIEWING/SEARCHING FOR GATEWAYS

After you complete the registration procedure, you have access to your account and all of the controllers contained within. There are multiple ways to search for/find/select a controller.

- From Map
- From List
- From Tree View
- Search by Controller Name or ID
- Sort by Controller Name or ID

FROM MAP

When you log in, the interactive map appears on the main screen. If your controller(s) have already been located on the map, it will appear here (the next section explains how to place the controllers on the map). Hover your mouse over a controller to see the device ID and other pertinent information.

To select a controller, click on the controller icon.

FROM LIST

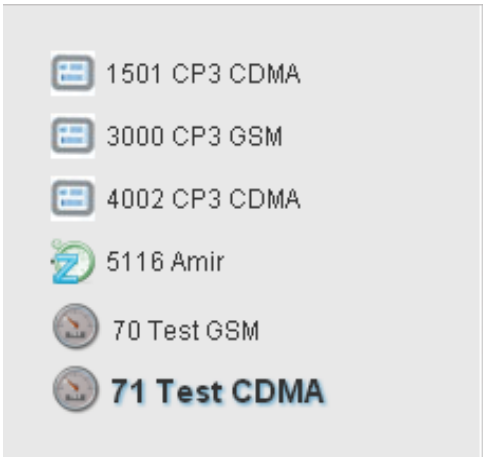
Clicking the List button on the top of the page displays the available controllers by icon only. Hover your mouse over a controller to see the device ID and other pertinent information.

To select a controller, click on the controller icon.

FROM TREE VIEW

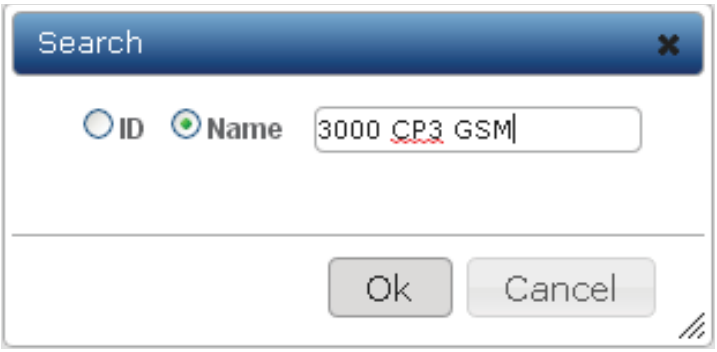
On the left side of the window, all controllers in the account are permanently displayed and can be clicked at any time to move from one controller to another.

To select a controller from the Tree View, click on the controller icon.



SEARCH BY CONTROLLER ID OR NAME

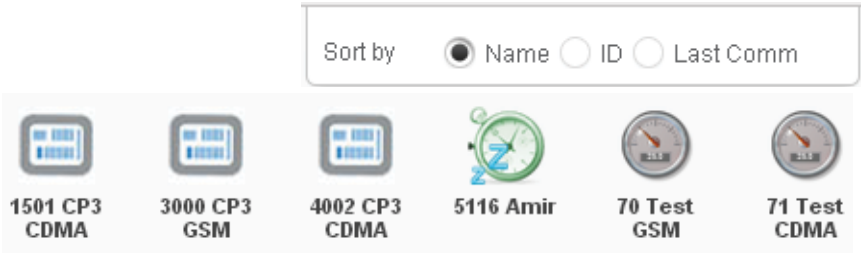
Clicking the  at the top of the main page brings up an additional box where you can search for a controller by the name or ID.

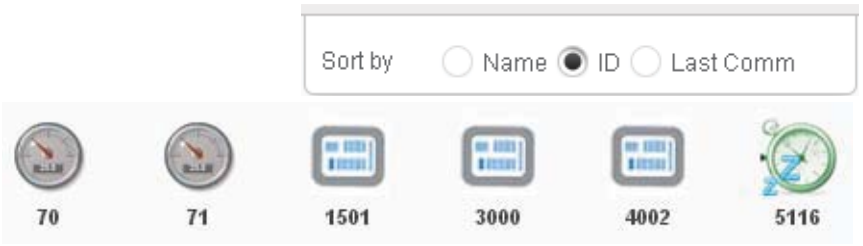


or

SORT BY CONTROLLER ID OR NAME

You may also sort your controllers by Name or ID by using the Sort by feature towards the top of the main page. Clicking on Name, places controllers in alphabetical order based on controller name. Clicking on ID, places controllers in numerical order based on the given ID of the unit (which cannot be changed).



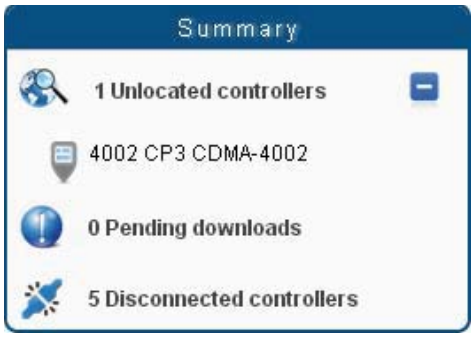


PLACING CONTROLLERS ON THE MAP

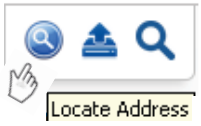
In AMI-central, Account Admins can place individual controllers on the map interface powered by Google Imagery.

PLACING A CONTROLLER ON THE MAP

- Click Map at the top of the main screen.
- Click on to expand the Unlocated controllers in Summary box.



- Click on the magnifying glass (Locate Address), or zoom in manually on the map.



- Zoom In or Out until desired location is clearly in the viewing window
- Click on the controller you want to place.
- Move the cursor to map location and right click.
- Click Save Position.

Note: Account Admins need special permissions to activate this feature. Contact AMI™ for assistance.

USER SETUP

As an Account Admin, you can create a standard User, but not other Account Admins. To set up additional Account Admins, you need to contact the Dealer level admin or AMI support.

NEW USER SETUP

- Click Users at the top of the page.
- Click New and fill out the form.
  - Login Name - Username
  - Password - password
  - Confirm Password - confirm password
  - Primary Email - Primary email address or cell phone number to send alerts.
  - Secondary Email - Secondary email address or cell phone number to send alerts. (Using Email to Test - see below)
  - Phone - optional
  - Fax - optional
  - Comments - optional
  - Access Level = USER
  - Account = your account name
  - Enable = check box
- Click Save to save the information and create the User.

EMAIL TO TEXT

AT&T - cellnumber@txt.att.net
Verizon - cellnumber@vtext.com
T-Mobile - cellnumber@tmomail.net
Sprint PCS - cellnumber@messaging.sprintpcs.com
Virgin Mobile - cellnumber@vmobl.com
US Cellular - cellnumber@email.uscc.net
Nextel - cellnumber@messaging.nextel.com
Boost - cellnumber@myboostmobile.com
Alltel - cellnumber@message.alltel.com

Example: If your phone number is 111-333-2222, and you are with Verizon, the email you should enter to receive a text for notification is: 1113332222@vtext.com

EDIT EXISTING USER

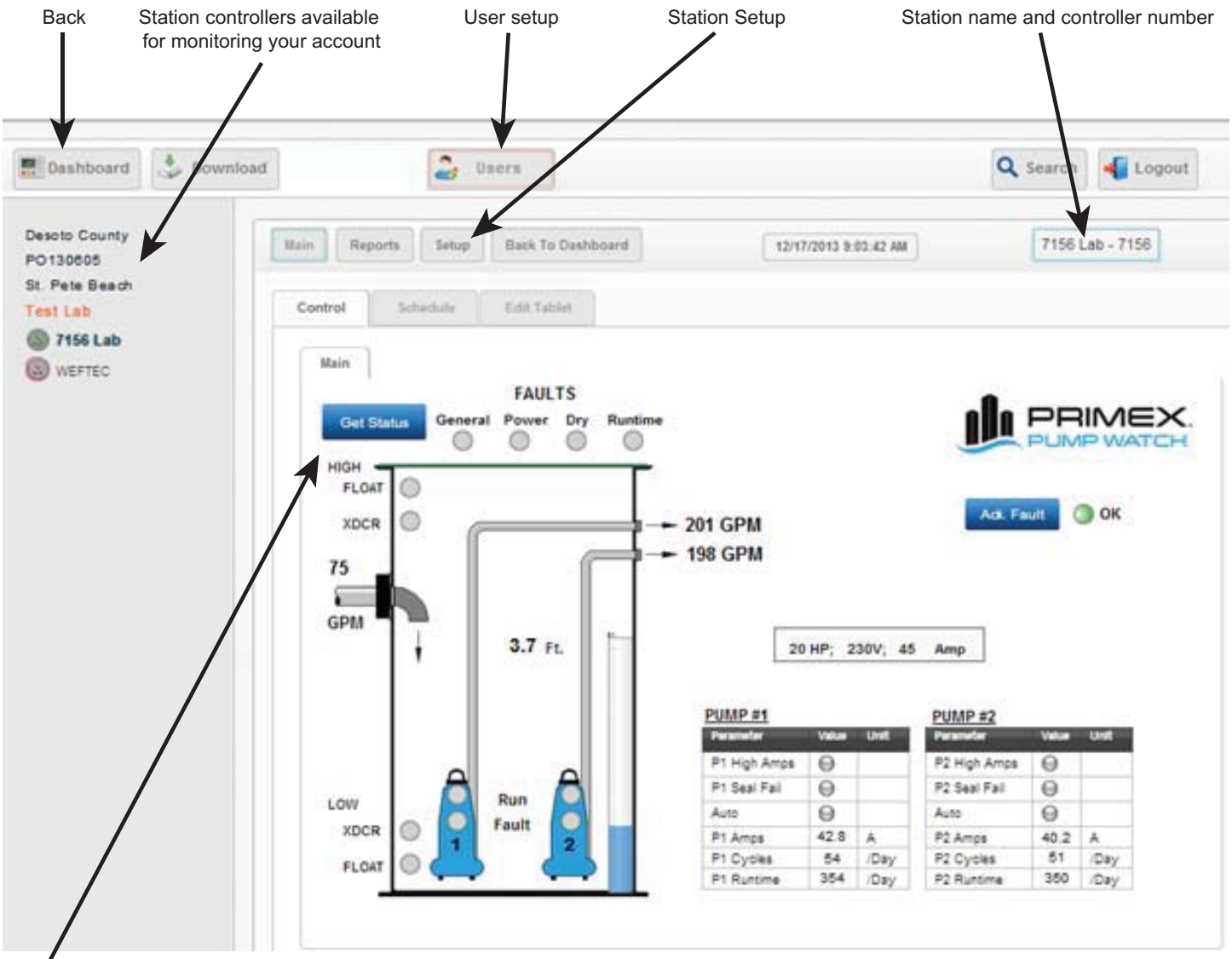
- Click Users at the top of the page.
- Click on the User you wish to change.
- Click Edit .
- Edit the fields you wish to change. (Note: You can **NOT** change the **Login Name**.)
- Click Save to save the information and update the User.

DELETE EXISTING USER

- Click Users at the top of the page.
- Click on the User you wish to delete.
- Click Delete .
- Confirm in the pop up box.

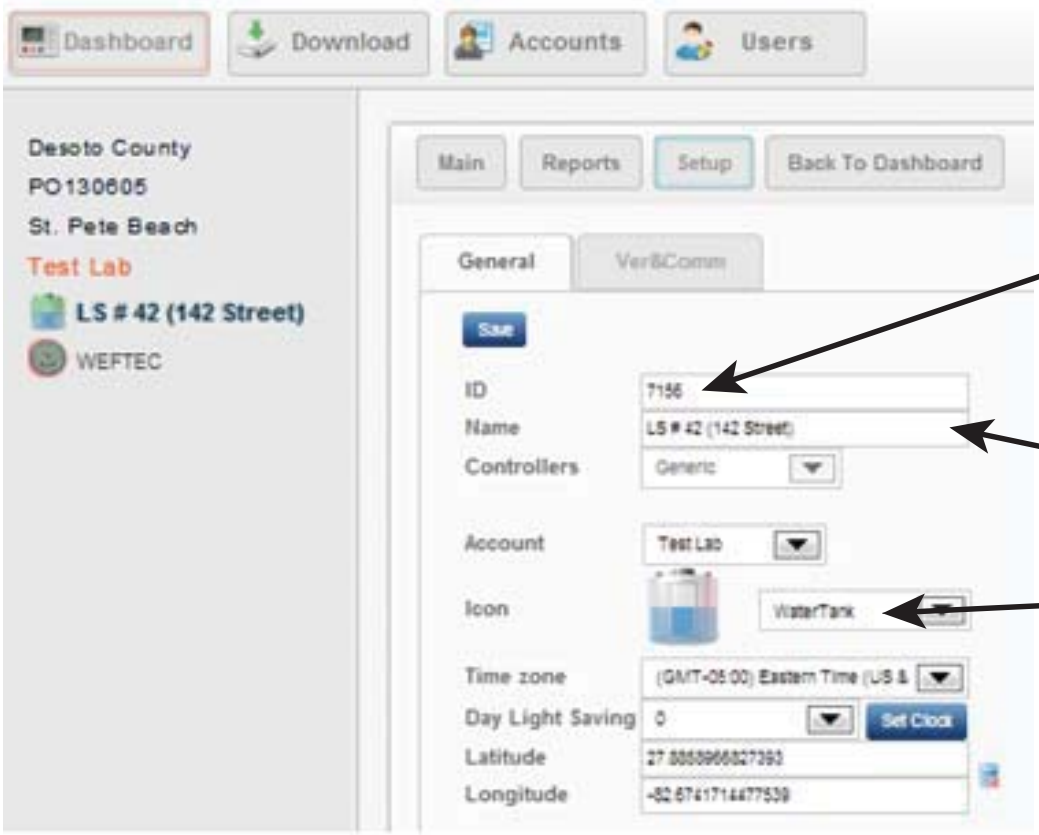
DASHBOARD

Ensure that the controller at the pump station has been properly configured. The functionality of this system is dependent on the setup of the remote controller. (See Pump Watch® Retro or Station View™ Controller User manual for more information.)



Update screen data with the latest values from the remote controller.
(The data on the screen may not contain the latest uploaded values when opening.)

STATION SETUP



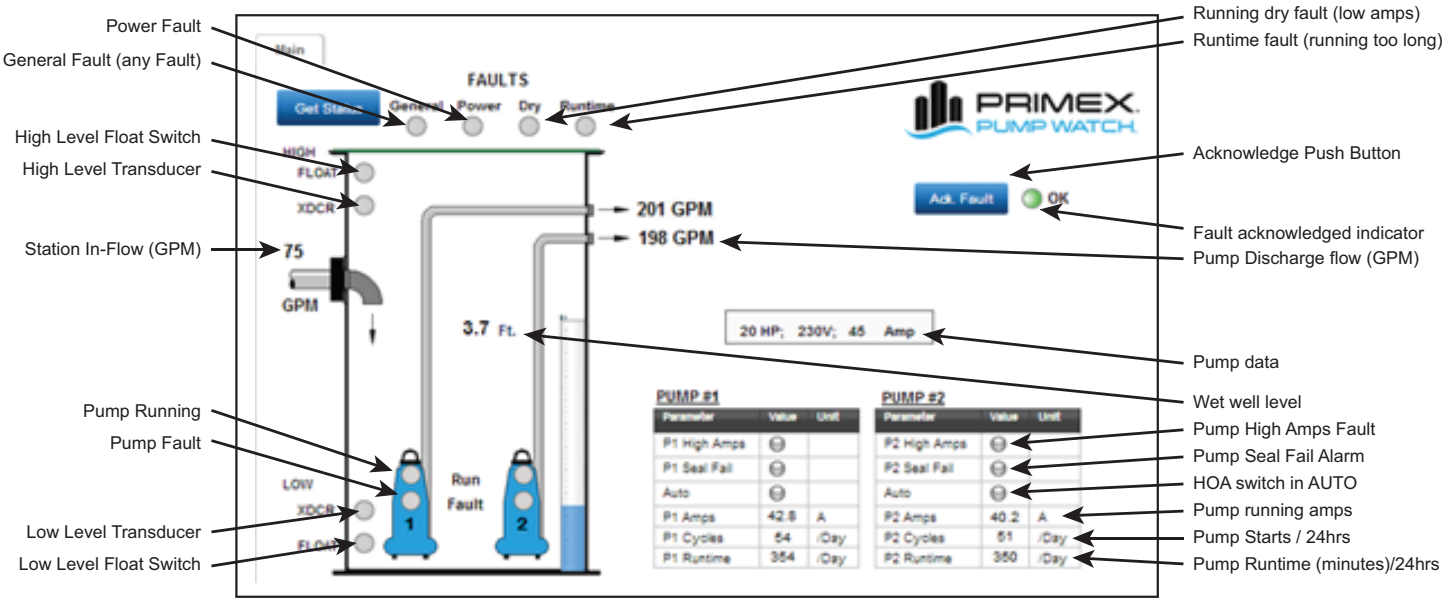
Station ID
(Cannot be edited)
This number is on the
Pump Watch® Gateway

Enter station designation
Example: LS#24A
(Lift Station 24A)

Change the Icon to WaterTank

STATION DATA VISUALIZATION

Use the Get Status button to retrieve the latest values from the remote controller.



STATION FAULTS

General Fault: If any fault is active, the general fault will turn on after a time delay if not acknowledged.

Power Fault: If power is lost or phase loss c.

Dry run Fault: Alarm on dry run condition: Low amps for a time delay.*

Runtime Fault: Alarm on runtime fault: Pump cycle was longer then timer preset value.*

LEVEL FAULTS

High Level Float Switch: The high level float switch is ON (tilted up).

High Level Transducer: The level in the wet well is higher than the High Level set point in the controller.

Low Level Transducer: The level in the wet well is lower than the Low Level set point in the controller.**

Low Level Float Switch: The low level float switch is ON (tilted down).

PUMP FAULTS

High Amp Fault: The pump running amps are higher than set point.*

Pump Seal Fail Alarm: Seal fail alarm input is activated.***

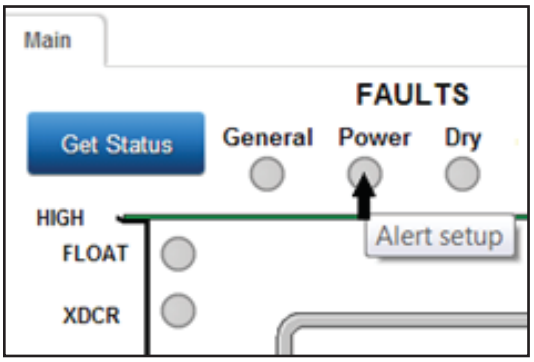
Pump in AUTO: If pump selector switch is in AUTO (green).***

Pump Fault: Pump Overload trip or Over temperature condition. (Verify electrical schematic for exact function.)

* This function must be enabled on the Station View™ controller.
** Pump Watch® Retro models only.
*** Not available on Pump Watch® Retro

ALARM NOTIFICATION SETUP

EMAIL/TEXT ALARM NOTIFICATIONS



Click on the alarm indicator to launch the “Led Alerts” dialog box.

Click on “Select Users” to select which User will be notified when the alarm goes ON (condition set Alert), and when the alarm goes OFF (condition reset alert). Multiple Users may be selected for notification. To create additional Users, see “NEW USER SETUP” on page 33.

Type in the Alert text message that will be delivered. You do not need to include the name of the station in the text as it is always sent as part of the notification. Wait a few seconds for the screen to update with the latest values from the cloud prior to making changes.

Example of alarm notification

Email:

Subject: Alert Controller # [7156] LS # 42 (142 Street)
From: alerts@aquamanagement.com
Date: Thu 01/23/2014 9:09 PM
To: XXXXXXX
#3 Power fail

SMS (text)

From: alerts@aquamanagement.com
Alert Controller # [7156] LS # 42
(142 Street)
#3 Power fail

ACKNOWLEDGE FAULT FUNCTION

The Acknowledge Fault function must be enabled at the RTU of Station View™ screen at the station. When enabled, a timer value must be entered (1min to 24h range). When disabled, the General fault alarm occurs immediately after any alarm.

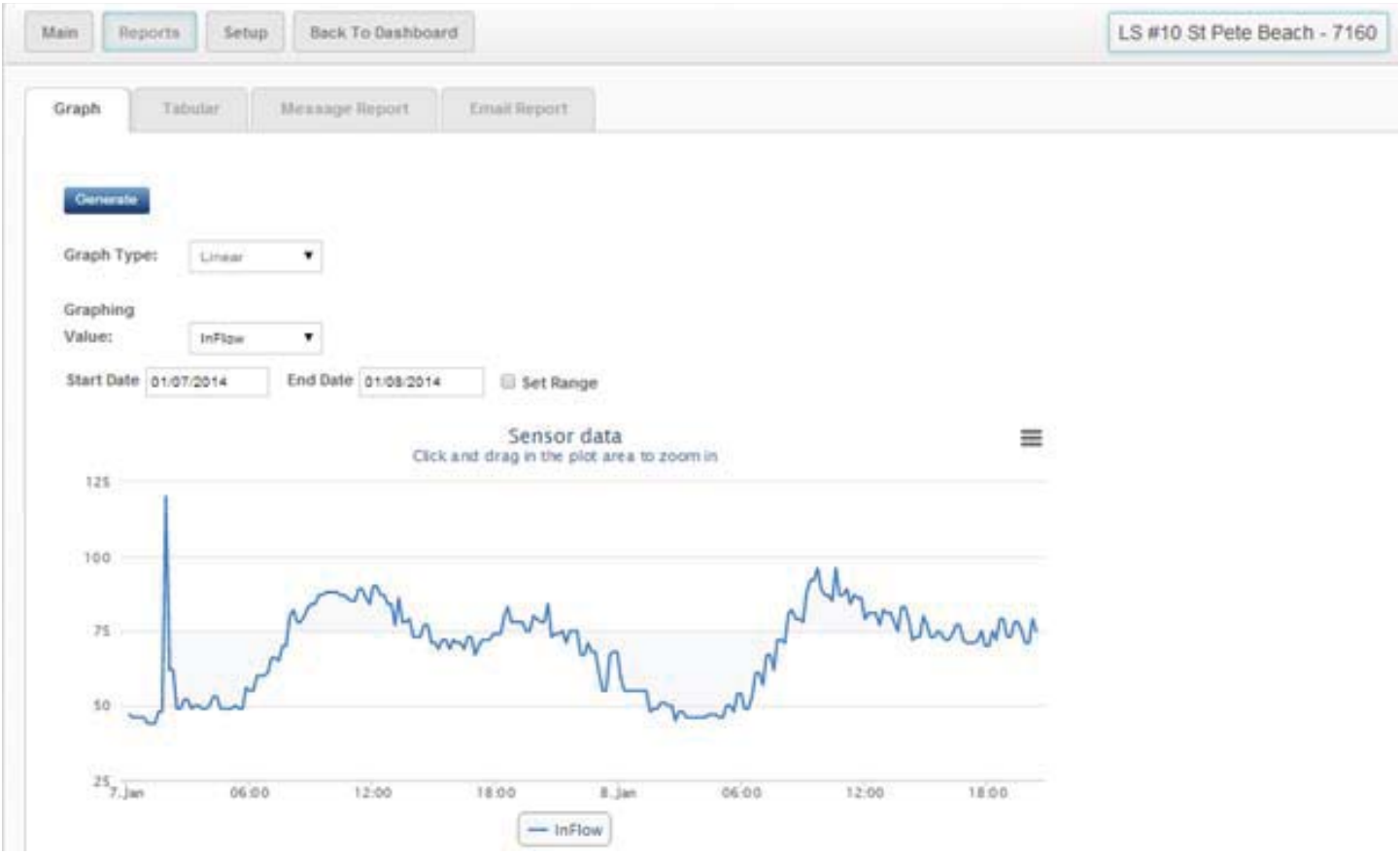
If any fault occurs, the OK indicator will turn red. The User must press the Ack Fault button before the timer set in the RTU times out. IF not pressed in time, the General alarm will be activated. This alarm can be set to notify back up personnel, as alarms are active but not acknowledged in time. When the alarm is acknowledged, a notification message is sent via email and/or SMS (text).

REPORTS & TRENDING

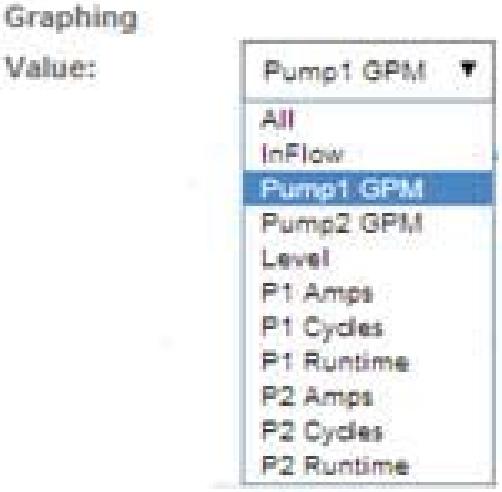
Reports, data logging, and trending are available for visualization and downloading. These are very useful tools for evaluating the health of the pumps and for detecting sudden invents that may alter the normal operation of the station. Example: High inflow from water infiltration from a storm or other event.

ACCESSING THE REPORT SCREEN

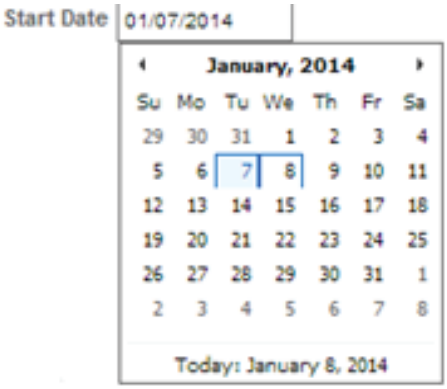
Click Reports at the top of the page.



To select which value to trend, select from the drop down menu:



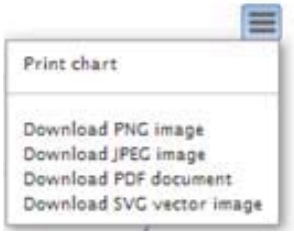
To select the time frame, click on Start Date.



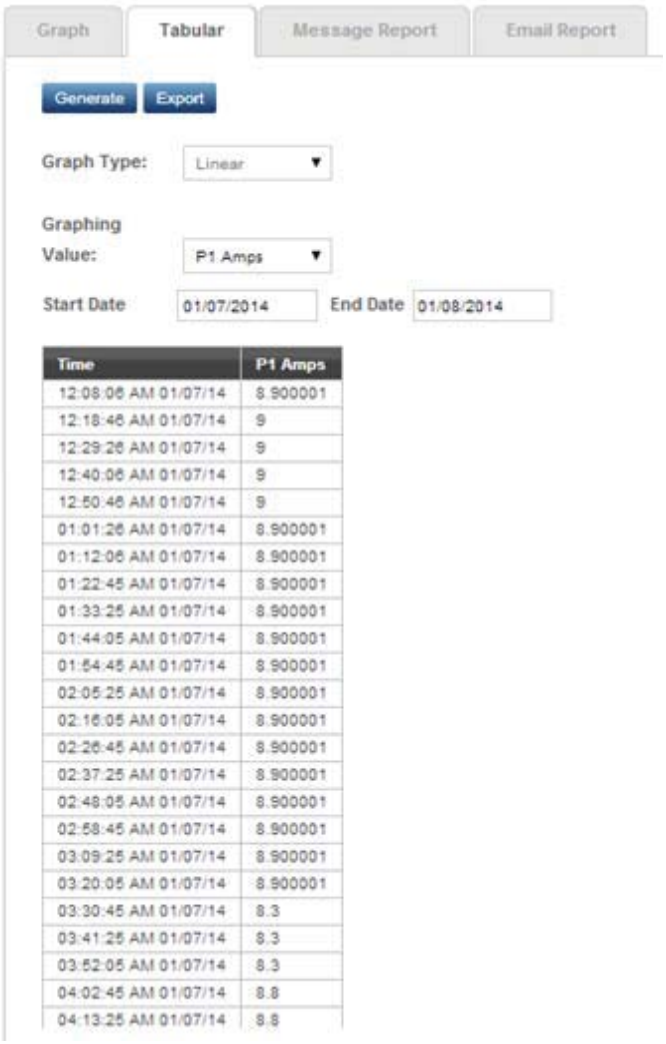
Click on  to create the graph.

To view a particular time frame, use the Zoom function. Simply click and drag on the graph. Use your mouse to view and follow the graph to view specific point value.

Click on  to view export options.



To view the data in tabular format, click on Tabular .



To view Email notifications sent to Users, click on .

All notifications sent are logged and can be viewed in a tabular format. The table can be exported to an Excel spreadsheet. (See sample below.)

MessageTime	DeliveredTime	ToAddress	Subject	TextPart
1/10/2014 8:57	1/10/2014 8:57	youremail@server.com	Alert Controller # [7160] LS #10 St Pete Beach	#8 High level Float - Reset
1/10/2014 8:52	1/10/2014 8:50	youremail@server.com	Alert Controller # [7160] LS #10 St Pete Beach	#4 Power Fail - Reset
1/10/2014 8:50	1/10/2014 8:50	youremail@server.com	Alert Controller # [7160] LS #10 St Pete Beach	#8 High level Float
1/10/2014 8:36	1/10/2014 8:26	youremail@server.com	Alert Controller # [7160] LS #10 St Pete Beach	#1 Fault Acknowledged
1/10/2014 8:29	1/10/2014 8:29	youremail@server.com	Alert Controller # [7160] LS #10 St Pete Beach	#3 Power Fail

When you are finished with your session, please logout of the system.

Click Logout .

PRIMEX™

MUNICIPAL WATER CONTROL SOLUTIONS

WWW.PRIMEXCONTROLS.COM

Ashland, OH	800-363-5842
Clearwater, FL	800-349-1905
Detroit Lakes, MN	888-342-5753
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