



























**LISTEN • DEVELOP • LEAD**

**INSTALLATION AND MAINTENANCE MANUAL FOR  
DIESEL ENGINE FIRE PUMP CONTROLLERS  
AUTOMATIC CONTROLLER  
MODEL GPD**



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## Introduction

Diesel engine fire pump controllers are designed to automatically start a diesel engine driven fire pump upon detection of a pressure drop in the fire protection system. A diesel engine fire pump controller provides automatic & manual starting and stopping. An automatic start is controlled by a pressure transducer or by remote automatic devices such as a deluge valve. A manual start is controlled by remote manual button or by controller pushbutton. The automatic shutdown option provides a 30-minutes automatic stop after automatic start once all starting causes have returned to normal. The diesel engine fire pump controller includes two battery chargers to ensure the engine batteries are continuously charged.

### Types of Diesel Engine Fire Pump Controllers

FIRE PUMP CATALOG NUMBER

MODEL N° EXAMPLE: GPD-12-120

Model Prefix: GPD, GPDFM

Battery Voltage: 12=12v, 24=24v

Incoming Voltage: 120=110/120V 50/60Hz, 220=208/240V 50/60Hz

### Methods of starting/stopping

The controllers are available as combination automatic / non-automatic with provision for manual or automatic shutdown (automatic shutdown only possible after automatic start).

### METHODS OF STARTING

#### AUTOMATIC START

The controller will start automatically on low pressure detection by the pressure sensor when the pressure drops below the cut-in threshold.

#### MANUAL START

The engine can be started by pressing the CRANK 1 or and/or CRANK 2 push button, regardless of the system pressure, when the Main Selector switch is in the HAND position. The Fuel Solenoid Valve will open as soon as a CRANK button is pressed and will remain in this state.

#### REMOTE MANUAL START

The engine can be started from a remote location by momentarily closing a contact of a manual push button.

#### REMOTE AUTOMATIC START, DELUGE VALVE START

The engine can be started from a remote location by momentarily opening a contact connected to an automatic device. The controller must be in automatic mode.

#### SEQUENTIAL START

In case of a multiple pump application, it may be necessary to delay the starting of each motor when there is a water pressure drop to prevent simultaneous starting of all motors.

#### FLOW START, HIGH ZONE START

The controller can be started by opening/closing a contact on the FLOW/ZONE START/STOP input.

#### WEEKLY START

The engine can be started (and stopped) automatically at the preprogrammed time.

#### TEST START

The motor can be started automatically for a preprogrammed time by pressing the run test button.

### **METHODS OF STOPPING**

#### MANUAL STOP

Manual stop is done by pressing the STOP push button. Note that pressing the stop push button will stop the engine only if all starting causes have disappeared.

#### AUTOMATIC STOP

The automatic stop is possible only after an automatic start and this function has been activated. When this function is Enabled, the motor is automatically stopped 30 minutes (adjustable) after the restoration of the pressure (above the cut-out threshold) given that no other run cause is present.

#### FLOW STOP, HIGH ZONE STOP

If the controller has been started by the FLOW/ZONE START/STOP input and the signal has returned to normal, the motor will be stopped given that no other run cause is present.

#### EMERGENCY STOP

The emergency stop is always possible in any running condition and is done by positioning the main selector -switch to the OFF position.



## Installation

This diesel controller is UL listed and FM certified. The controller is built in accordance with the latest edition of the National Fire Protection Association standard for the Installation of Centrifugal Fire Pumps, NFPA No.20 (Centrifugal Fire Pumps 2013 Edition). The controller is intended to be installed in accordance to NFPA 20-2013 and

in the USA National Electrical Code NFPA 70

In Canada Canadian Electrical Code, Part 1

Others \* Local Electrical Codes \*

\* Only American and Canadian applicable codes have been considered during the design of the controllers and the selection of components.

Except in some cases, the controller is also seismic approved and has been tested in accordance with the ICC-ES AC156, IBC 2015 & CBC 2016 standards. Proper installation, anchoring and mounting is required to validate this compliance report. Refer to this manual and drawings to determine the seismic mounting requirements and location of the center of gravity (you may need to contact factory). The equipment manufacturer is not responsible for the specification and performance of anchorage systems. The structural engineer of record on the project shall be responsible for anchorage details. The equipment installation contractor shall be responsible for ensuring the requirements specified by the structural engineer of record are satisfied. If detailed seismic installation calculations are required, please contact the manufacturer for the performance of this work.

### **FCC Regulations and Radio Standards Specification (RSS) Rules**

To comply with FCC and Industry Canada RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all nearby persons. This device must not be co-located or operating in conjunction with any other antenna or transmitter.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

*CAN ICES-3 (A)/NMB-3(A)*

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to

part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

“Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.”

### **Location**

The controller shall be located as close as practical to the engine/motor it controls and shall be within sight of the engine/motor. The controller shall be located or protected such that it will not be damaged by water escaping from pump or pump connections. Current carrying parts of the controller shall be not less than 12 in. (305 mm) above the floor level.

Working clearances around controller shall comply with NFPA 70, National Electrical Code, Article 110 or C22.1, Canadian Electrical Code, Article 26.302 or other local codes.

The controller is suitable for use in locations subject to a moderate degree of moisture, such as a damp basement. The pump room ambient temperature shall be between 39°F (4°C) and 104°F (40°C) (If a temperature option is included, see the rating label for maximum temperature).

The standard controller enclosure is rated NEMA 2. It is the installer’s responsibility to insure that either the standard enclosure meets the ambient conditions or that an enclosure with an appropriate rating has been provided. Controllers must be installed inside a building and they are not designed for outside environment. The paint color may change if the controller is exposed to ultraviolet rays for a long period of time.

### **Mounting**

The fire pump controller shall be mounted in a substantial manner on a single incombustible supporting structure. Wall mounted controllers shall be attached to the structure or wall using all four (4) mounting ears provided on the controller with hardware designed to support the weight of the controller at a height not less than 12 in. (305 mm) above floor level. Floor mounted controllers shall be attached to the floor using all holes provided on the mounting feet with hardware designed to support the weight of the controller. The mounting feet provide the necessary 12 in. (305 mm) clearance for current carrying parts. For seismic applications, mounting arrangement should be rigid wall and base only. The structural engineer of record on the project shall be responsible for anchorage details.

### **Wiring and Connections**

#### **Water Connections**

The controller must be connected to the pipe system according to the latest edition of NFPA20 and also to a drain pipe. The water connections are on the left side of the controller. The connection to the system pressure is a Male ½ NPT. The connection to the drain is a tapered connection for plastic tubing.

#### **Electrical Wiring**

The electrical wiring between the power source and the diesel engine fire pump controller shall meet the NFPA 20, Chapter 12.3.5.1, 12.3.5.2 and 12.2.5.3, NFPA 70 National Electrical Code Article 695 or C22.1 Canadian Electrical Code, Section 32-200 or other local codes.



## **Electrical Connections**

A licensed electrician must supervise the electrical connections. The dimension drawings show the area suitable for incoming power and motor connections. No other location shall be used. Only watertight hub fittings shall be used when entering the cabinet to preserve the NEMA rating of the cabinet. The installer is responsible for adequate protection of the fire pump controller components against metallic debris or drilling chips. Failure to do so may cause injuries to personnel, damage the controller and subsequently void warranty.

## Energy Consumption

Diesel Controller with boost charger				
Model / State		120VAC	220/240VAC	VDC Output
12VDC / @	No charge	1.0A	1.0A	13.8V
12VDC / @	Full charge*	6A	4A	
24VDC / @	No charge	1.0A	0.5A	27.6V
24VDC / @	Full charge**	9A	6A	

\*12 amps through each battery

\*\*10 amps through each battery

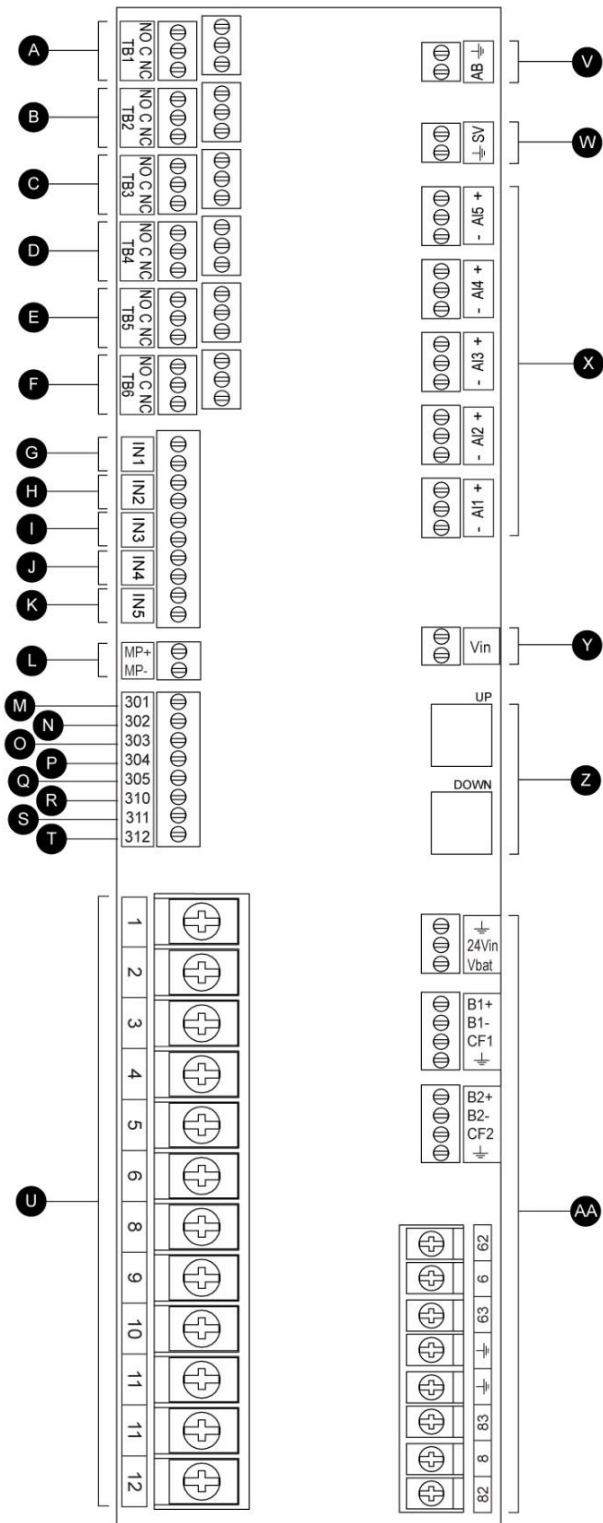
## Incoming Power Connections

Diesel engine driven fire pump controllers shall be powered by a dedicated source protected by a fuse or circuit breaker. Verify the label on the cabinet to select the correct protection. Always follow this procedure when connecting or disconnecting the controller: Connect both batteries before connecting the AC power. Disconnect the AC power before disconnecting the batteries. Disconnecting the batteries while the AC is connected may result in severe damage to the controller electronic boards.

## Circuit protection

CB1 protects battery charger 1 and CB2 protects battery charger 2. CB3 protects the control circuit from battery 1 and CB4 protects the control circuit from battery 2. Always follow this procedure when connecting or disconnecting the controller: Connect both batteries before connecting the AC power. Disconnect the AC power before disconnecting the batteries.

## Terminal Strips Descriptions



### A-F : Alarm Output Terminals

(DPDT Relay, 11/21:Common, 12/22:Normally Closed, 14/24:Normally Open):

- A Controller Trouble (Fail safe)
- B Engine Run
- C Main SS in Manual position
- D Main SS in OFF position
- E Engine Trouble
- F Pump Room Alarm

### G-T : Field Inputs Terminal

(Dry Contact Only: Voltage Free):

- G Low Fuel Level (NO)
- H Remote Automatic Start (NC)
- I Deluge Valve Start (NC)
- J Fuel Tank Leak (NO)
- K High Fuel Level (NO)
- L Engine RPM Magnetic Pickup
- M ECMS Elec. Ctrl. Switch in Alternate Position
- N FIM Fuel Injection Malfunction
- O ECMW Elec. Ctrl. Warning
- P ECMF Elec. Ctrl. Fault
- Q PLD Low Suction Pressure
- R High Raw Water Temperature
- S Low Raw Water Flow
- T LET Low Engine Temperature

### U : Engine Terminals :

The terminals are numbered according to the standard:

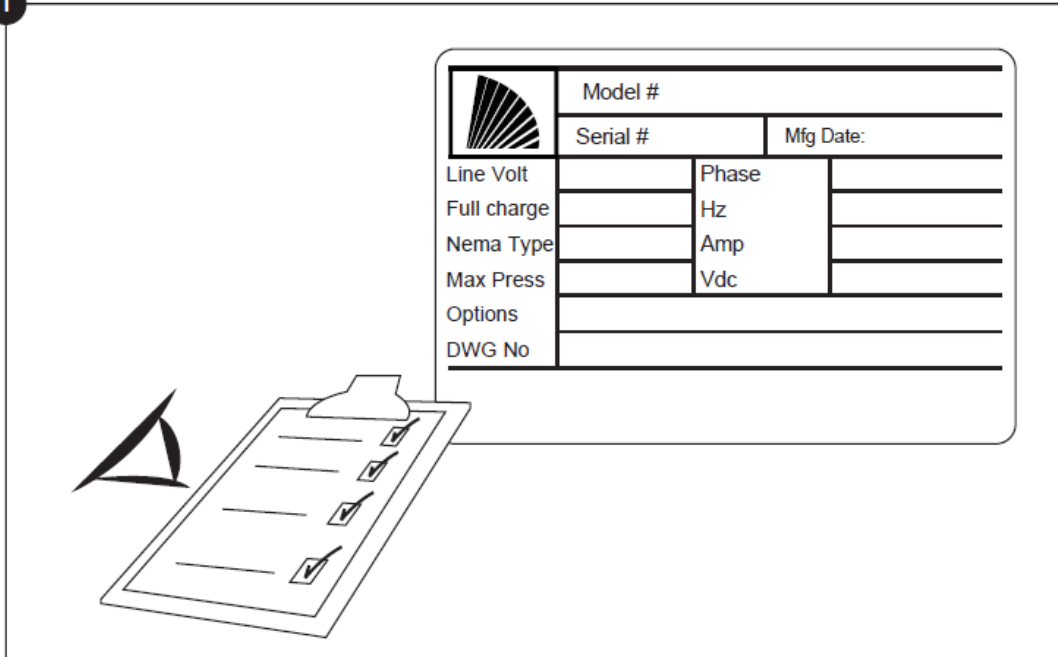
- 1 FS : Fuel Solenoid Valve  
(ETR - Energized To Run)
- 2 ER : Engine Run contact
- 3 OS : Engine Overspeed contact
- 4 OP : Engine Oil Pressure contact
- 5 WT : Engine Coolant Thermostat contact
- 6 B1 : Battery #1 positive
- 8 B2 : Battery #2 positive
- 9 C1 : Start Contactor #1
- 10 C2 : Start Contactor #2
- 11 GND : Ground
- 12 ST : Stop Fuel Solenoid Valve  
(ETS - Energized To Stop)

### V-AA : Bell / Solenoid Valve / Analog inputs

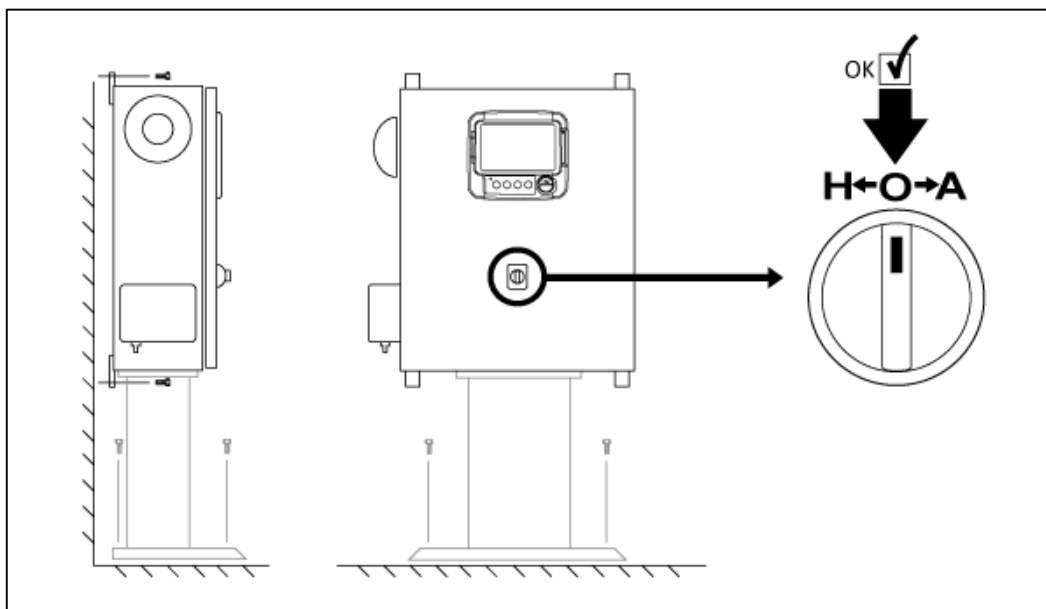
- V Bell output
- W Test Solenoid Valve
- X Analog inputs
  - A11 Discharge Pressure transducer
  - A12 Optional additional Discharge Pressure transducer
  - A13 Water Level or Suction Pressure transducer
  - A14 Fuel Level analog input
  - A15 Flow or Spare Temperature analog input
- Y AC monitoring
- Z CANBUS: UP to ViZiTouch, DOWN to Exp. IO board
- AA Factory reserved power connections

## Quick Start-Up Guide

1

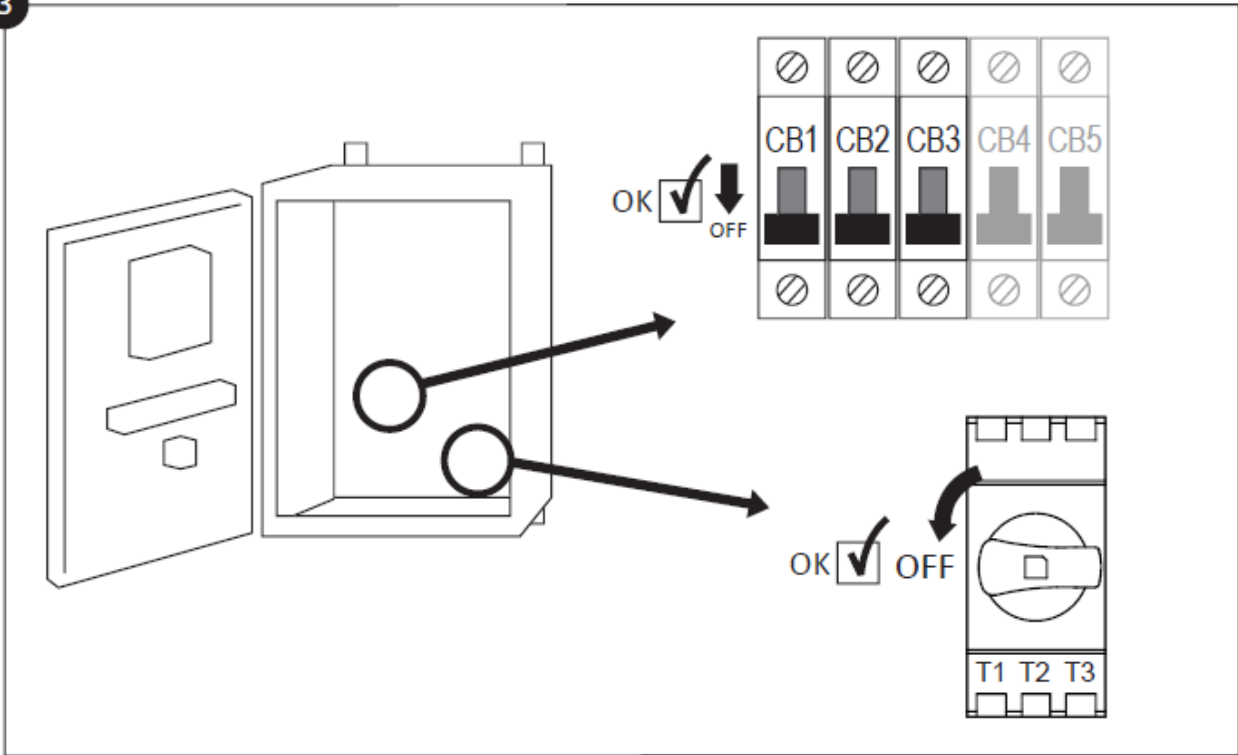


The rating label is the most important label. It must be read carefully to ensure the compatibility between the controller and the installation.



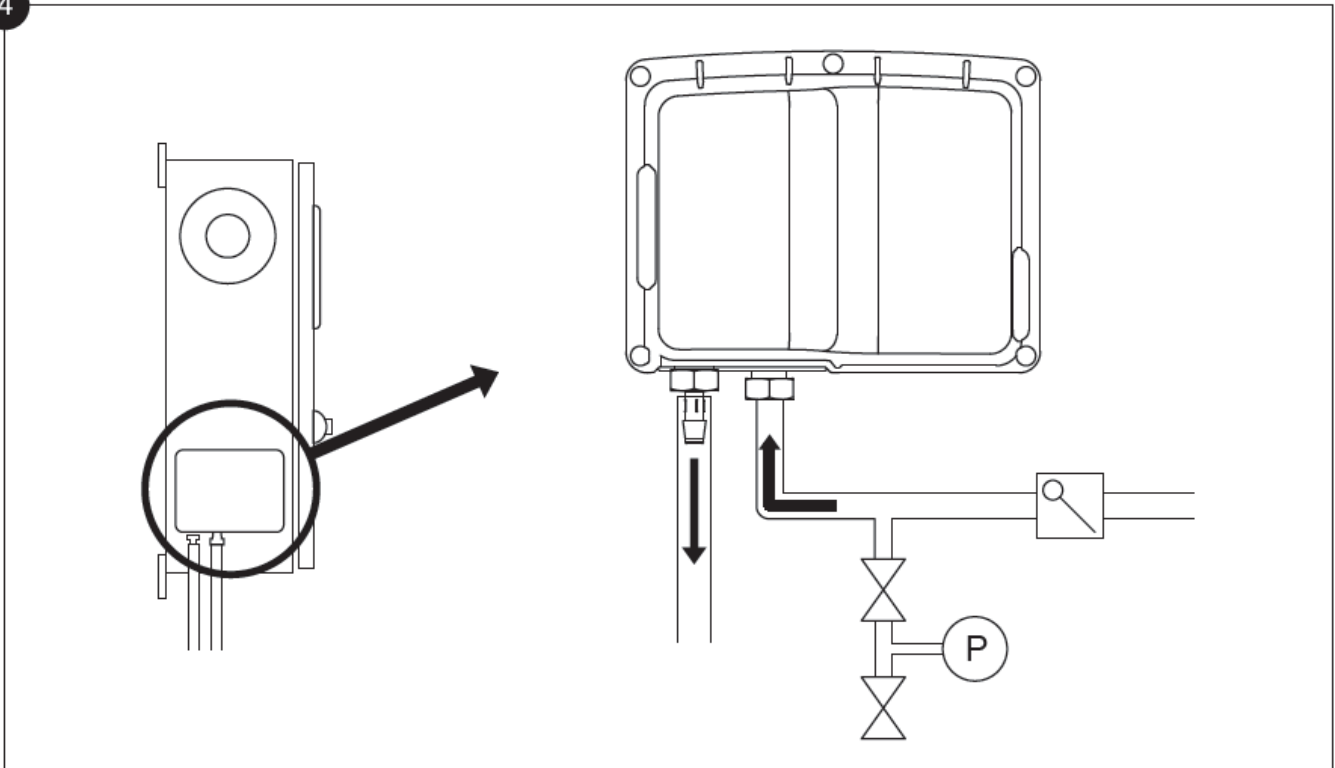
Verify that the controller is installed securely to the wall, or on the mounting stand (optional). Verify the Main Selector Switch is in the "OFF" position. This selector switch is also called the "HOA" and can be placed in 3 positions: "H" Hand/Manual, "O" OFF, "A" Automatic.

3

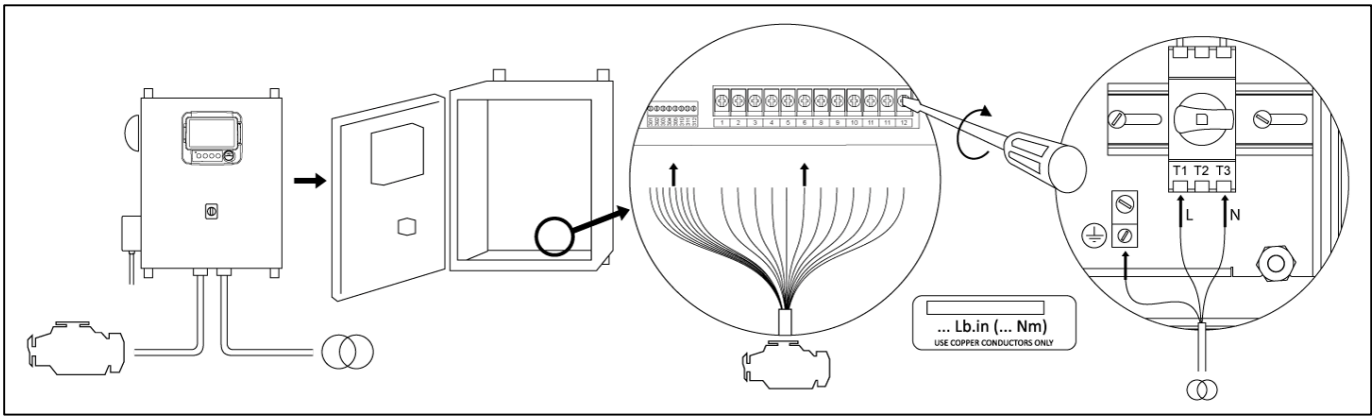


Open the controller's door and verify that the disconnect switch and all circuit breakers are in the "OFF" position.

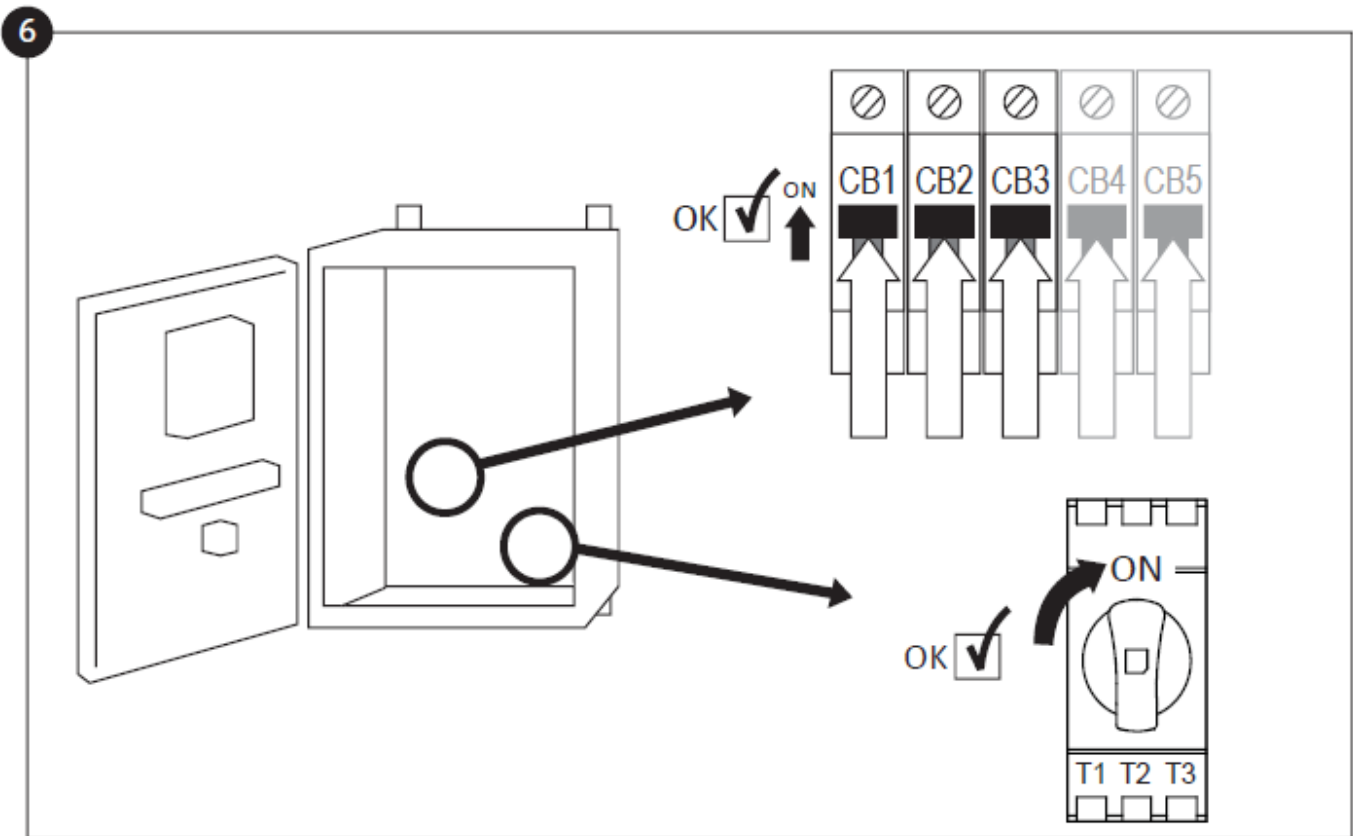
4



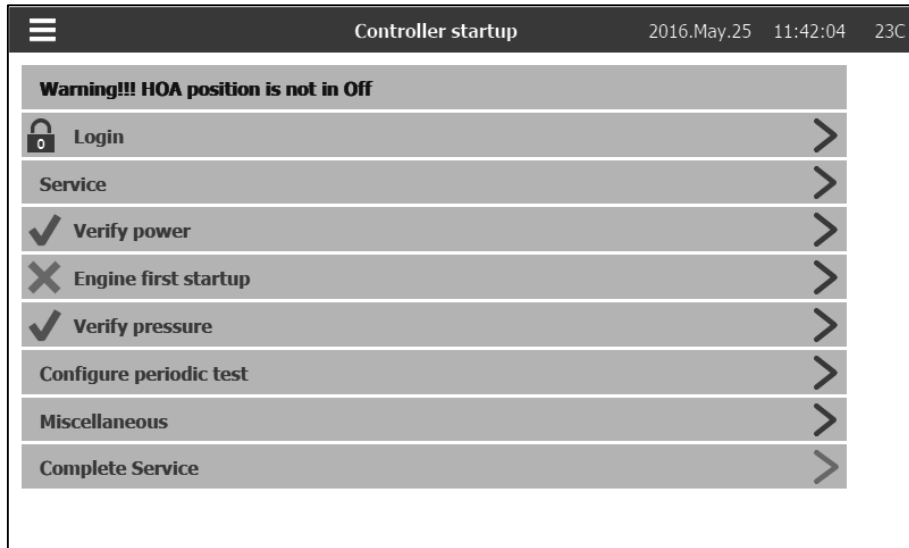
Verify and/or install the proper water connections for the water input and the drain. They must be securely installed and tightened. Refer to the silkscreen markings on the plastic cover.



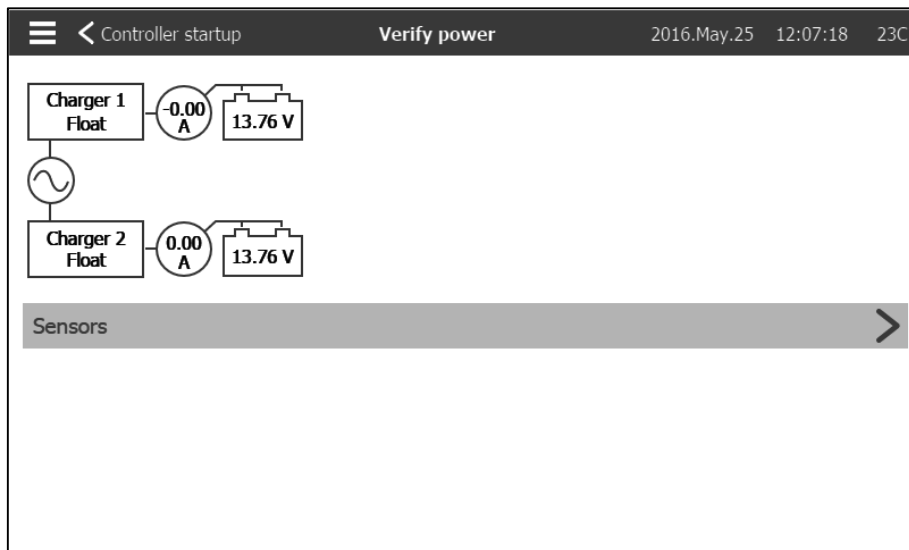
Connect all cables between the engine control panel and the controller engine terminals (Identified as “U” on the IO board diagram displayed in the Terminal Strips Descriptions in the manual). Secure with the appropriate torque as indicated on the torque label and verify all connections. Connect the AC main line and ground to the AC terminal in the controller.



Activate the disconnect switch and all breakers by setting them to the ON position. The controller will boot up for the first time.

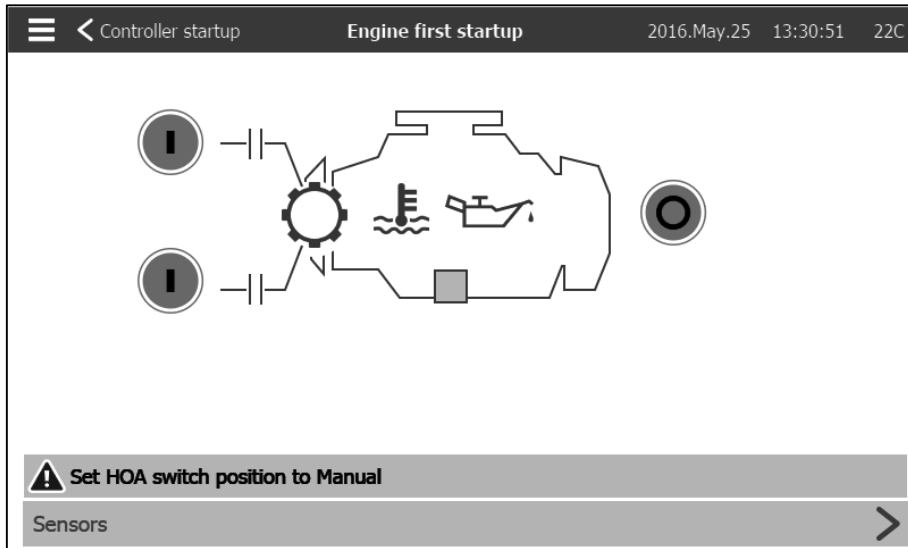


The “Controller Startup” page replaces the Homepage until the “First Setup” is done. To come back to this page, press the 3 lines in the top left corner and chose the House symbol. First, press on “Login” and enter a valid authorization code. Then, press “Service” and select the frequency of the “Service” needed. After that, press on “Verify power”.

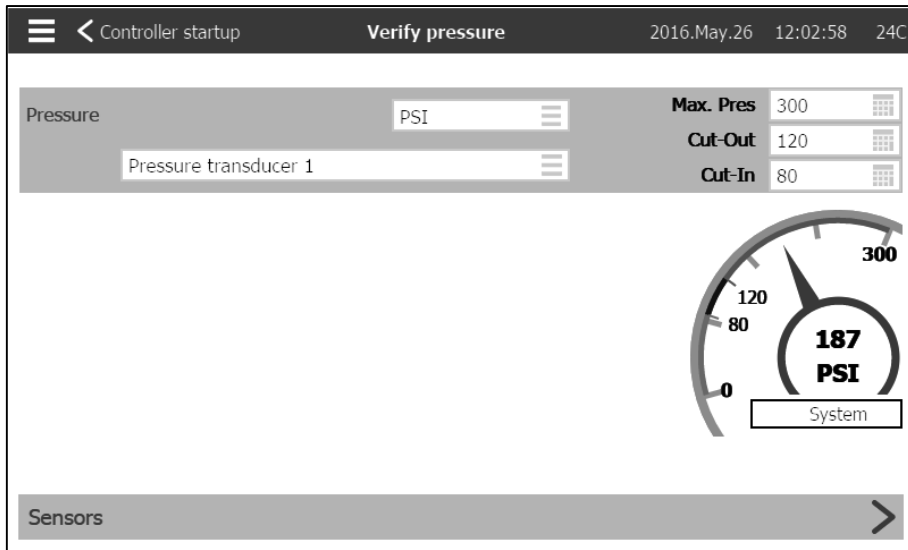


On this page, it’s possible to calibrate the voltage and curent. To do so, press on the “Sensors” button and follow the calibration instructions on section 6 Configuration>Sensors of the manual.

Press on the “Engine first Startup” and turn the Main Selector Switch to the “HAND” position.

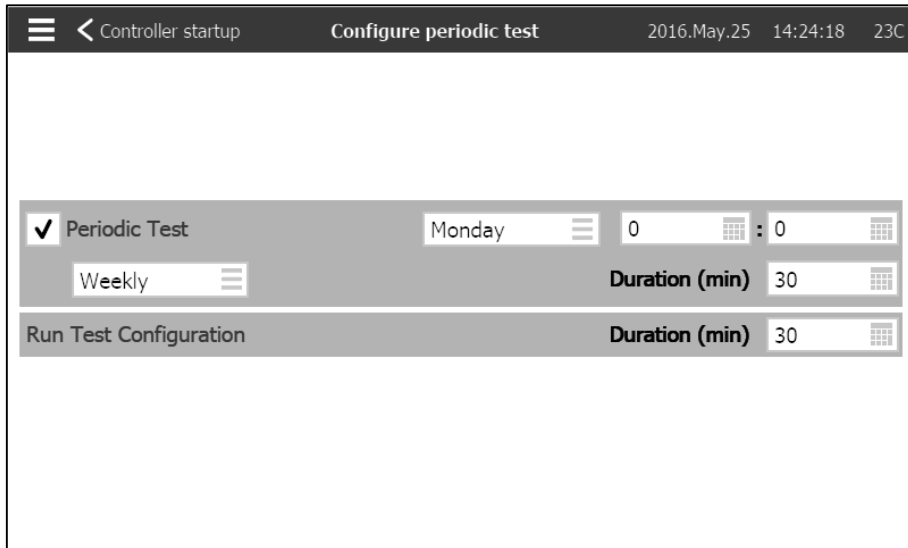


Before trying to start the engine, verify that the engine setup is complete (by an authorized engine representative or service dealer) and the exhaust pipe is connected properly. For the engine first startup, press on one or both of the green Crank buttons on the membrane. Verify that the engine has started and is running properly. Make sure there is no alarm is present and press the red stop button on the membrane. Go back to the controller startup page and press the “Verify pressure” button.

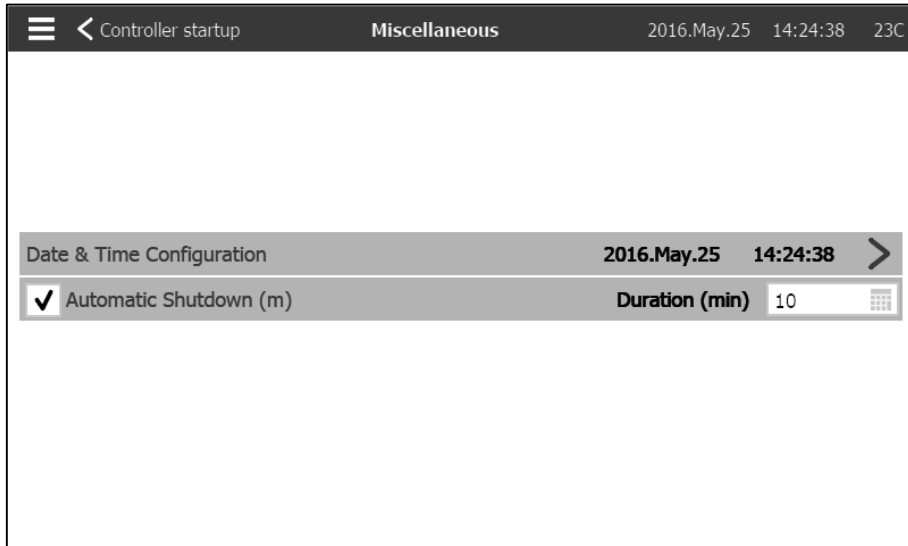


Select the controller pressure units, cut-in and cut-out. Verify that all other parameters on the setup page are correct. Go back to the controller startup page and press the “Configure periodic test” button.



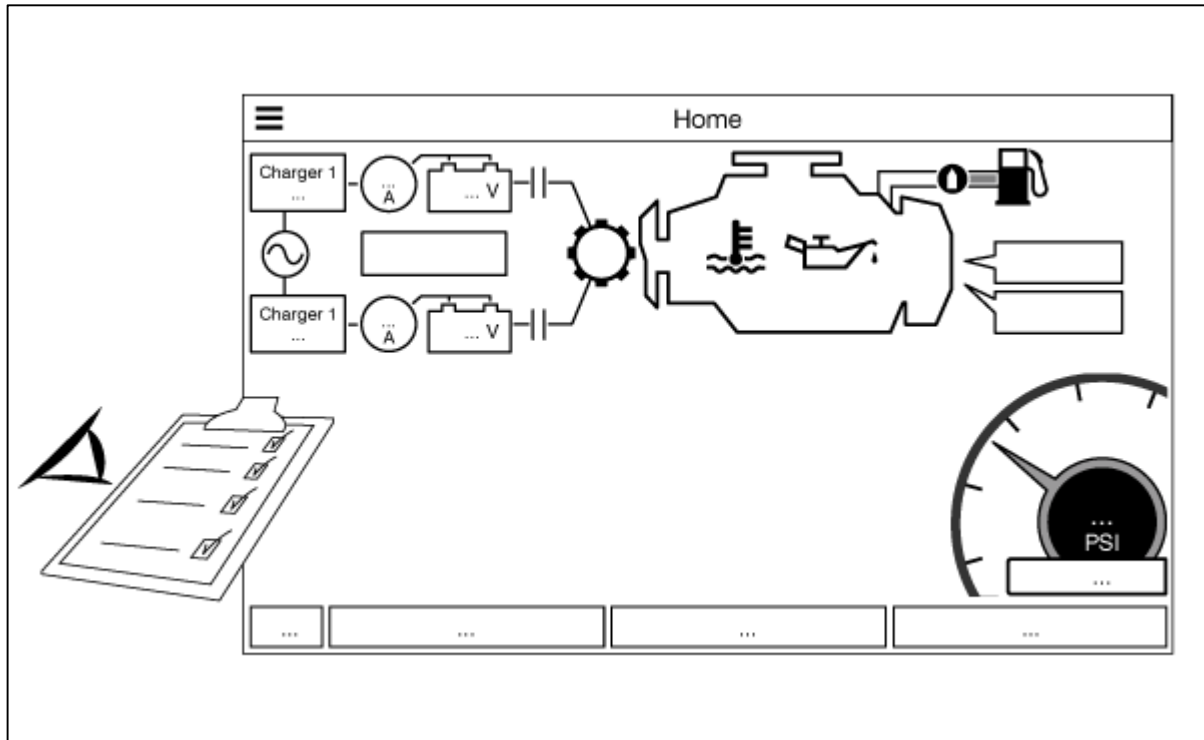


Select the frequency at which the periodic test will occur, the day of the week, the hour and the duration of the test. Also, enter the duration of the Manual Run Test. Go back to the controller startup page and press the “Miscellaneous” button.

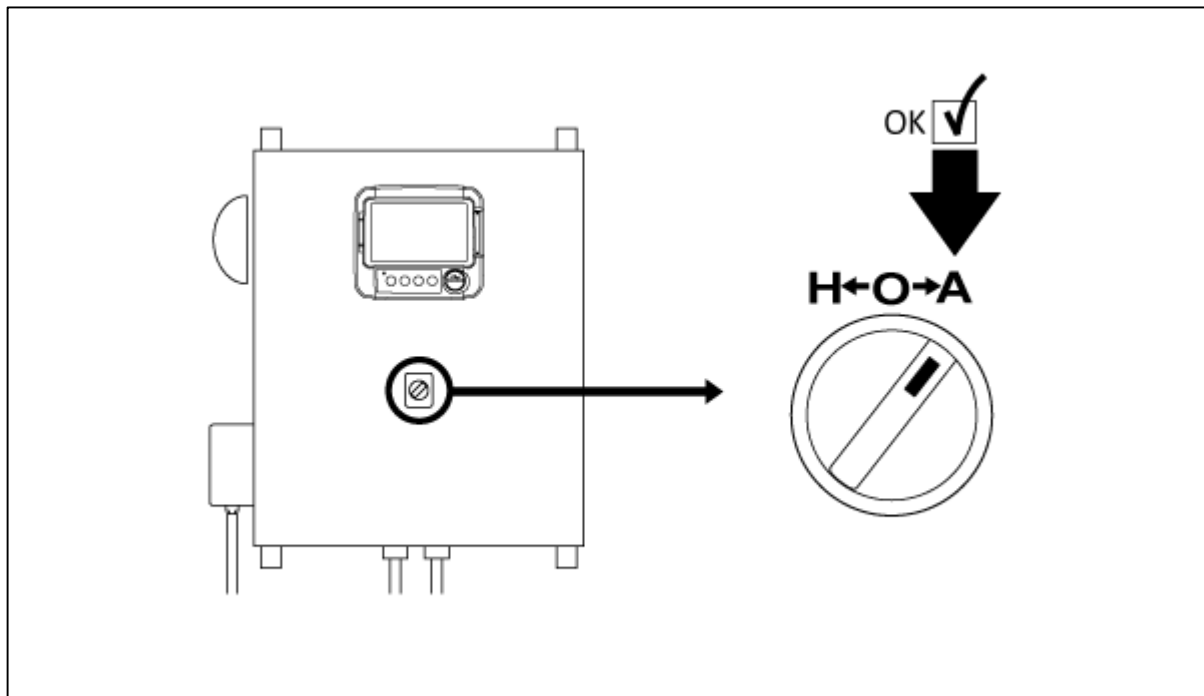


Enter the time and date. Select the “Automatic shutdown” and the duration the engine will keep running after the automatic stop.

When satisfied with the controller settings, go back to the controller startup page, acknowledge the changes by pressing the “Complete Service” button. If this button is unavailable (grey), ensure that a sufficient authorization code has been entered.



Verify that the displayed values are correct.



Turn the "Main Selector Switch" to the "AUTO" position. This is the preferred position and from now on, the "Main Selector Switch" should always remain in that position.

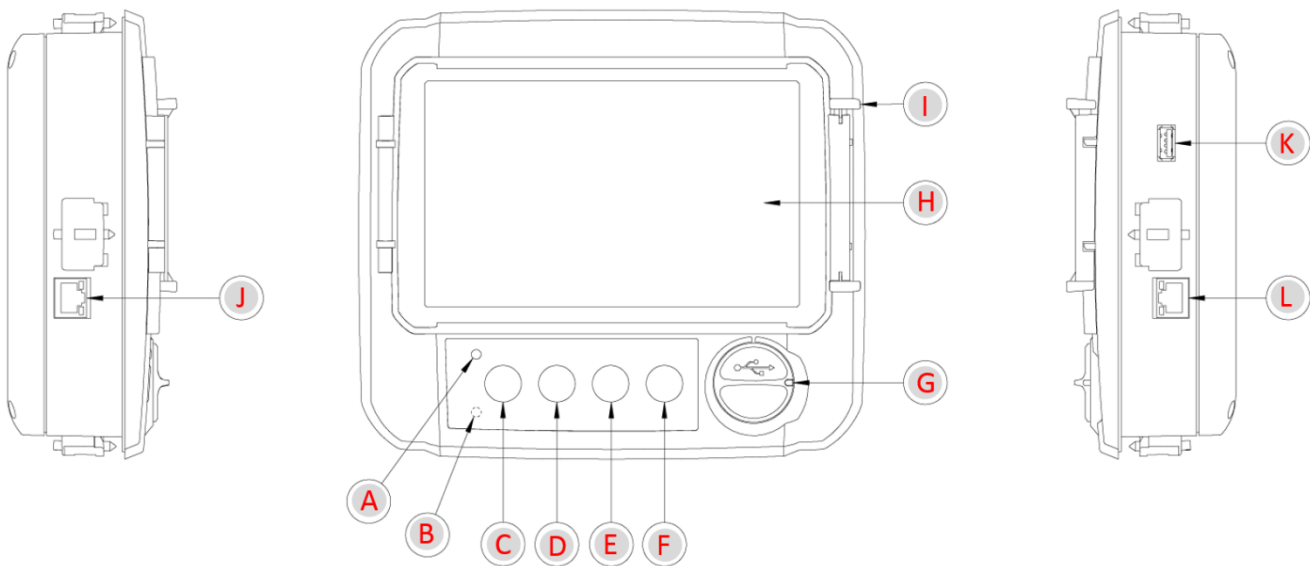


The first Setup is now completed. The controller is fully installed and configured.



## Main Features

### The ViZiTouch



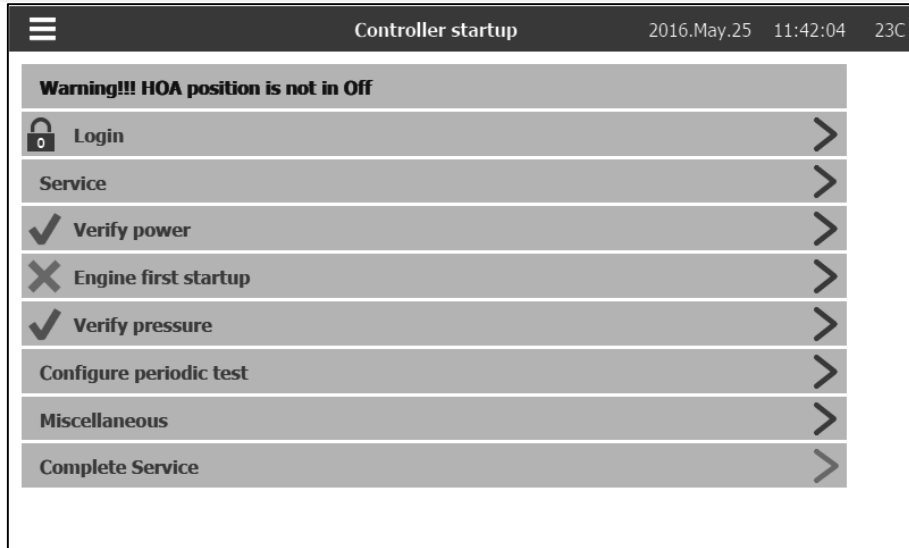
- A- Power LED 3 colors: Pulsing green if the ViZiTouch is properly powered.
- B- Temperature Sensor.
- C- Crank 1 button: Used to manually crank the starter from battery 1 while in “HAND” mode.
- D- Crank 2 button: Used to manually crank the starter from battery 2 while in “HAND” mode.
- E- Stop button: Used to stop the engine if all starting conditions are gone.
- F- Run Test button: Used to start the manual run test. Be aware that water will flow through the drain during the test.
- G- Front USB Connector: USB Device connector used for file download, software updates, service reports.
- H- Touch Screen: 7 inch color touch screen LCD with protective cover.
- I- Locking mechanism for the protective cover of the screen. Push to open.
- J- CANBUS connector for communication with IO board.
- K- Side USB connector.
- L- Ethernet connector.

### Alarm bell

The alarm bell is activated under the default condition stated by the NFPA20 standard. Other optional or user defined conditions can also activate the bell and can be configured by the user. See section 5 for more details. Any of these conditions will energize the alarm bell but may be silenced, except in some cases, by pressing on the the “Silence bell” button on the Alarms page. When silenced, the alarm bell will restart ringing if a new default occurs or if the alarm conditions remain unchanged after 24 hours. The alarm bell automatically stops ringing if

alarm conditions are not present anymore.

## First Setup



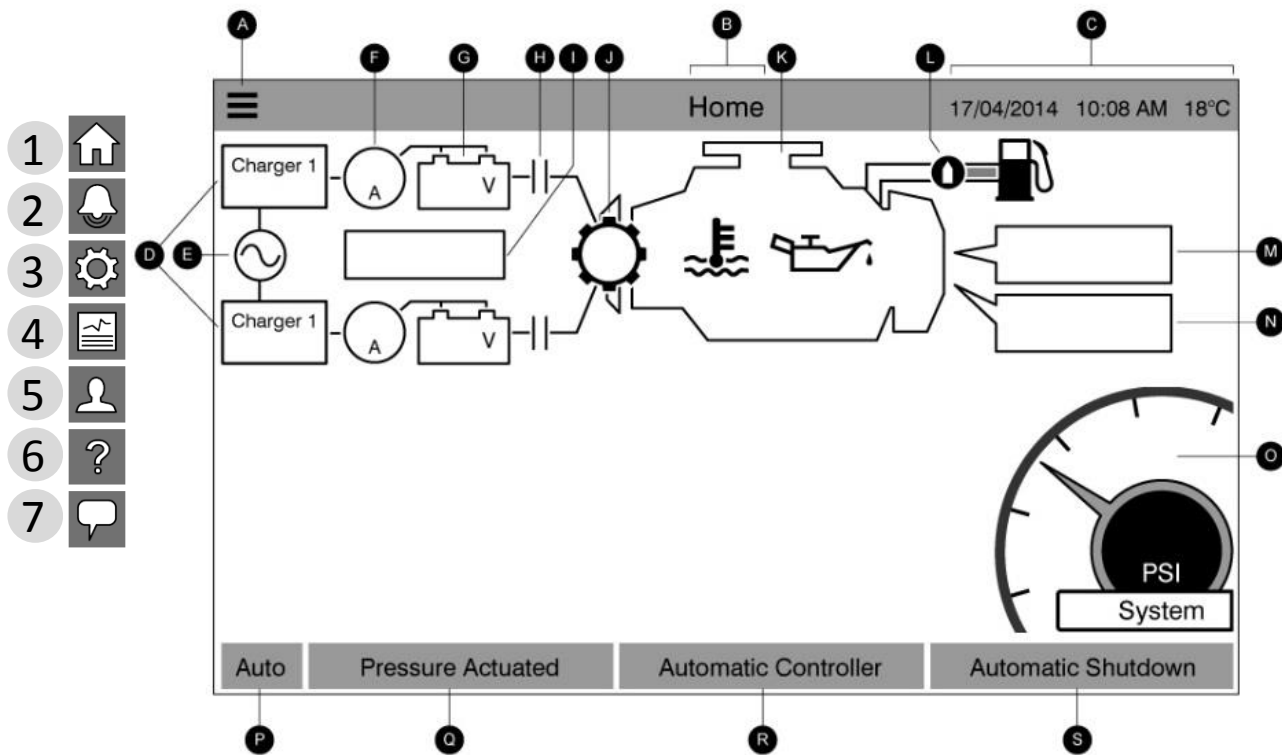
The First Setup must be done prior to using the controller. Completing the First Setup is the only way to access the homepage and enable the automatic mode of the controller. The complete procedure can be found in the "Quick Start-Up Guide" that can be download from the controller. A printed version is also supplied with the controller.



# Home

Home (Menu)

Home



The home page displays all controller statuses and important values of the controller. This includes all voltages, currents, pressure, engine state and status, as well as all timers and cranking sequences.

A- Navigation bar: Pressing this icon will open a navigation menu on the left side of the screen:

- 1-Home page
- 2-Alarms page
- 3-Configuration page
- 4-History page
- 5-Service Page
- 6-Manual Language selection page
- 7-Language page

Pressing on one of these buttons will redirect to the corresponding page.

B- Name of the page

C- Displays the date, time and exterior temperature.

D- The battery charger state: It may become one of three colors and also explicitly describes the current battery charger state.

POWER UP – Green  
BULK\* – Green  
OVER\_CHARGE – Green  
FLOAT – Green  
CHARGER\_FAIL – Red  
NO\_AC – Grey  
BOOST\_FAULT- Red

\*The Bulk charging mode enables the boost function on the charger, allowing higher voltage that shortens the charging time of the battery.

E- AC status: Red when there is a failure and green otherwise.

F- Amp meter: Displays the actual current between the charger and the battery in amps.

G- The battery: The battery will be red if it is in failure and green otherwise. The data shows the actual voltage of the battery and the charger in volts.

H- Starter contactor: Grey when non active (open) and green when they are activated (closed) during a crank.

I- Starter state window: This window only appears during a cranking cycle. The counter inside indicates the step timer, ranging from 15 to 0 seconds. As there are two cranking modes, “waiting for crank” and “cranking”, two symbols will alternate: a gear during cranking mode and an hourglass during the waiting mode.

J- The starter gear: Grey when non active and green when activated during cranking.

K- The diesel engine: It will be grey if the engine is stopped, green if an “Engine Run” signal is detected and red if a “Fail to start” occurred, after 6 unsuccessful cranking attempts. Inside the engine two major alarms are represented; the “low oil pressure” alarm and the “engine high temperature” alarm. These alarms will stop the engine only if it is running in test mode. When active, the appropriate alarm symbol will turn red.

L- Fuel solenoid valve: This valve controls the flow of fuel to the engine. When the fuel solenoid is activated, the valve will be horizontal, green and the yellow representation of the fuel will flow through the entire pipe. When the “Stop Solenoid valve” is activated, the valve will rotate vertically, become red and the yellow representation of the fuel will stop at the valve, indicating that the fuel does not flow through anymore.

M- Motor starting or stopping cause: A grey box will indicate the reason why the motor is running.

Starting reasons:

LOCAL: This start cause is triggered if the engine is locally started directly from its own control panel and the option is Enabled.

MANUAL: The controller receives a manual crank request from one or both of the manual crank membrane buttons while the selector switch is the “HAND” position.

REMOTE MANUAL: Manual engine starting is activated by a remote start contact.

DELUGE: Automatic engine starting is activated by a deluge valve.

AUTO: Automatic engine starting is activated by pressure drop.

REMOTE AUTO: Automatic motor starting is activated by remote equipment

FLOW: Automatic motor starting is activated by a signal in the FLOW/ZONE START/STOP input.

HIGH ZONE: Automatic motor starting is activated by a signal in the FLOW/ZONE START/STOP input.

WEEK TEST: Automatic motor starting is activated by a scheduled test.

MANUAL TEST: Automatic motor starting is activated by the run test pushbutton.

AC FAIL: AC Fail will count the time following an AC Failure and at the end of a predetermined time, will start the engine with an AC FAIL request.

A red rectangular box will indicate the reason why the engine is not running despite the fact that a request is being made. Possible choices are:

OVERSPEED: This start cause happens when the controller receives a request to start, but the engine sends an "Overspeed" signal, thus preventing its ability to effectively start the engine.

FAILSTART: This start cause happens when the controller receives a request to start, but a "Fail To Start" alarm is active after a cranking sequence failure, thus preventing its ability to effectively start the engine.

LOW ZONE: A not running lower zone controller prevents the motor from running. This functionality is optional.

LOCKED: An interlock signal is preventing the motor from running.

N- Operations timers: This includes the sequential start timer, the run period shutdown timer, the manual test timer, the weekly test timer and the AC Fail timer.

O- The pressure gage: It allows for a precise reading of the actual system pressure. The cut-in and cut-out are represented by a red and green line on the gage, allowing a quick comparison between the actual pressure and the set points. At the center of the gauge, a digital indicator shows the actual discharge pressure represented also by the needle of the gauge. Just under of the digital pressure indicator, the actual pressure unit is shown. The maximum allowable pressure is also indicated on the gauge and will scale the gauge accordingly.

P- HOA Indicator: Displays the current mode. Hand, Off, Automatic.

Q- Actuation Mode: Displays if the controller is Pressure Actuated or Non-Pressure Actuated.

R- Controller type: Displays if the controller is an Automatic or Non-Automatic type.

S- Shutdown mode: Displays if the shutdown on this controller is Automatic or Manual.

### **Screen Saver**

The screen saver's goal is to expand the lifetime of the LCD screen. The screen saver will be instantly deactivated if the engine is running or if an alarm is activated. To manually deactivate it, simply touch the screen or any membrane button. After deactivation, the screen saver will always redirect to the "Home" page. It will also log off any user by resetting the security level to 0.





# Alarms

## Alarms (Menu)

Alarms		2016.May.26	11:55:33	24C
2016.05.26	11:54:14	alarmIdx.HIGH_RAW_WATER_TEMPERATURE	ACTIVE	!
2016.05.26	11:54:09	Low Suction Pressure	ACTIVE	!
2016.05.26	11:54:08	Fuel Injection Malfunction	ACTIVE	!
2016.05.26	11:54:04	Pump Room Trouble	ACTIVE	!
2016.05.26	11:54:04	High Fuel Level	ACTIVE	!
2016.05.26	11:53:36	Engine Low Oil Pressure	OCCURRED	!
2016.05.26	11:53:32	High Engine Temperature	OCCURRED	!
2016.05.26	11:53:23	Engine Overspeed*	OCCURRED	!
2016.05.26	11:52:25	Engine Trouble	ACTIVE	!

Reset      Silence Bell

This page displays the list of currently active and occurred alarms. Alarms with adjustable parameter can be set in the Config > Advanced > Alarms pages (see section 6).

An alarm is called ACTIVE when its triggering condition is still valid.

An alarm is called OCCURRED when its triggering condition has been active, but is no longer true.

Alarms representing serious concerns will have a red triangle with an exclamation point in the center at the end of the alarm message.

Alarms representing simple warnings will have a yellow triangle with an exclamation point in the center at the end of the alarm message.

Pressing on the Bell Test button will ring the bell for three seconds.

To silence the bell, press the ALARM button or it will silence itself after the expiration of a factory set time.

Pressing on the RESET button will reset OCCURRED alarms only.

The table displays system events:

- Date and time stamp of the alarm in the YYYY.MM.DD format.
- Alarm message.
- State: OCCURRED or ACTIVE.
- Color Code Icon.
- Red: The event is an alarm.
- Yellow: The event is a warning.

Complete list of alarms:

Common Alarms:

Engine Trouble: A common alarm that is activated when one or more of these conditions are active :

- High Coolant Temperature (5)
- Engine Low Coolant Temperature (312)
- Engine Low Oil Pressure (4)
- Engine Fail to Start
- Engine Fail when Running
- Engine Overspeed\* (3)
- ECM Selector Switch in Alternate Position (301)
- ECM Fault (304)
- Engine Fuel Injection Malfunction (302)
- PLD Low Suction Pressure (305)
- High Raw Water Temperature (310)
- Low Raw Water Flow (311)
- Battery Failure 1-2
- DC Failure
- Over Pressure

Pump Room Trouble: A common alarm that is activated when one or more of these following events occur:

- Fuel Tank Leak
- Low Fuel Level
- High Fuel Level
- AC Failure
- Low Pump Room Temperature
- Low Suction Pressure
- Water Reservoir Low
- Water Reservoir Empty

CTRL Trouble: Important: this relay is normally energized when the controller is in normal condition. The relay is de-energized when controller trouble is detected (fail safe). The controller trouble common alarm is active when one or more of these conditions are active :

- Charger Failure 1-2
- DC failure
- Default Solenoid Valve
- Weekly Test Cut-In Not Reached

- AC Failure: Monitors the AC power and activates on a failure.

- DC Failure: Monitor the DC power from the batteries and activates if both batteries fail.

- Battery 1-2 Fail: Monitors the status of batteries and activates on a failure. This occurs when the battery is disconnected, is of the wrong type or is unable to be recharged.

- Charger 1-2 Fail: Monitors the state of battery chargers and activates on a failure. This occurs when the battery charger has a defect, is not properly powered, or is unable to provide the needed current. The charger will also change to Boost Fault mode if during a boost test, the voltage does not rise. A NC dry contact is also connected from the charger to the IO Board. The alarm will activated if this contact open for the time set on the Charger Fail alarm page. Charger readings are not updated during cranking and/or running, due to reading instability under load. As soon as the engine returns to an idle state, all readings and failure analysis are reactivated.

- Service Required: Activates when service is due for the controller. This occurs when the date set in the service page has passed, or if no service has ever been done.

- Weak Battery 1-2: Activates if the battery voltage falls below the weak battery factory set point.

- Loss of Continuity 1-2: Activates if the engine start contactors are disconnected from the controller.

- Weekly Test Cut-In Not Reached: Activates if the Cut-In is not reached during a manual or a weekly run test. At the end of the 255s timer, if the Cut-In is not reached, the test may still be successful at starting the engine if the pressure has dropped by at least 5 PSI.

- Check Weekly Test Solenoid: Activates if the pressure does not drop a minimum of 5 PSI during the manual run test or the weekly test. Indicates a failure with the Test Solenoid Valve.
- Pressure Transducer fault detected: If an optional dual pressure sensor is installed, it will be activated if the two pressure transducers show different readings. Further investigation is advised to determine what caused the different readings. Note that the controller will always choose the lowest pressure reading to determine the actual system pressure. Also, if the voltage powering the transducer is below 0.5V or over 4.5V the alarm will be activated.
- Overpressure: Activates if the analog readout of the discharge pressure goes higher than the overpressure set point in the alarm page.
- Underpressure: Activates if the analog readout of the discharge pressure goes lower than the "Under Pressure" set point in the alarm page.
- Low Suction Pressure: Activates if the analog readout of the suction pressure is Enabled and goes lower than the low suction pressure set point in the alarm page.
- Water Reservoir Low: Activates if the "Water Reservoir Low" contact input is triggered or if the analog readout of the water reservoir is Enabled and is lower than the water reservoir low set point in the alarm page.
- Fuel Tank Leak: Activates if the "Fuel Tank Leak" contact input (IN4) is triggered.
- Low Fuel Level: Activates if the "Low Fuel Level" contact input (IN1) is triggered or if the analog readout of the fuel level is Enabled and goes lower than the low fuel level set point alarm.
- High Fuel Level: Activates if the "High Fuel Level" contact input (IN5) is triggered or if the analog readout of the fuel level is Enabled and goes higher than the high fuel level set point alarm.
- Engine Fail When Running: Activates if the "Engine Run" signal is lost while the engine is running. The engine will try to start the cranking sequence once again if the starting causes are not back to normal.
- Engine Fail to Start: Activates if the engine fail to start after the complete 6 attempts crank sequence. The engine will turn red.
- ECM Selector Switch in Alternate Position: Activates if the specific "ECM" (Electronic Control Module) input (301) is triggered on the engine connector strip.
- ECM Warning: Activates if the specific "ECM" input (303) is triggered on the engine connector strip.
- ECM Fault: Activates if the specific "ECM" input (304) is triggered on the engine connector strip.
- FIM: Activates if the specific FIM (Fuel Injection Malfunction) input (302) is triggered on the engine connector strip.
- PLD Low Suction Pressure: Activates if the specific PLD (Pressure Limiting Device) input (305) is triggered on the engine connector strip.
- High Raw Water Level: Activates if the specific input is (310) triggered on the engine connector strip.
- Low Raw Water Flow: Activates if the specific input (311) is triggered on the engine connector strip.
- Engine High Temperature: Activates if the specific "High Temp" input (5) is triggered on the engine connector strip and the engine is running. A 3 hour timer will start when the engine stops, and if the condition is still present, the alarm will be activated. This alarm will stop the engine only if triggered during a manual run test or a weekly test.
- Engine Low Temperature: Activates if the specific "Low Temp" input (312) is triggered on the engine connector strip.
- Engine Low Oil Pressure: Activates if the specific "Low Oil Pressure" input (4) is triggered on the engine connector strip and the engine is running. This alarm will stop the engine only if triggered during a manual run test or a weekly

test.

- Engine Overspeed\*: Activates if the specific "Overspeed" input (3) is triggered on the engine connector strip and the engine is running. This alarm will immediately stop the engine and cannot be reset by using the reset button on the alarm page. The alarm must be reset on the engine itself and the controller must be turned OFF and ON with the HOA selector switch to complete the reset procedure for this alarm.

- Battery1-2 Overvoltage: Activates if the voltage of the specific battery is higher than the specified overvoltage set point.

- Water Reservoir High: Activates if the optional "Water Reservoir High" contact input is triggered or if the analog readout of the water level is Enabled and goes higher than the "High Water Level" set point alarm page.

- IO Exp Comm Error: Activates if communication with the Expansion IO board could not be established for 15 seconds.

- Pump on demand: Activates when the pressure is below the cut-in set-point on an automatic pressure actuated controller.

- Cooling No Flow

- Auto Mode Bypass:

- Bell Silenced: Activates when a audible alarm has been silenced.

- Engine Run: Activates when the input "Engine Run" (2) is active on the engine strip of the IO card.

- Communication System Failure

- Invalid Cut-In: Activates when the Cut-In value is not acceptable. (0 or higher than the Cut-Out).

- Test Mode: Activates when a level 10 authorization code is entered.

- Incompatible Expansion IO Card

- Incompatible Diesel IO Card

- Incompatible ViziTouch PCB

- Disk Full

- User Alarm 1-20: Can be configured by the user. See section 6 Configuration>Alarms for more details.



# Configuration

Config (Menu)

Config

Pressure	
PSI	Max. Pres 300
Pressure transducer 1	Cut-Out 120
	Cut-In 80
<input checked="" type="checkbox"/> Periodic Test	Thursday 18 : 15
Monthly	Duration (min) 30
Run Test Configuration	Duration (min) 30
<input checked="" type="checkbox"/> Automatic Shutdown (m)	Duration (min) 10
Date & Time Configuration	2016.May.26 12:07:08
Advanced	
<input checked="" type="checkbox"/> User Login	

The main configuration page is used to setup all basic configuration parameters and provides a quick means of changing the most common settings.

There are seven (7) access parameter boxes; Pressure, Periodic Test, Run Test, Automatic Shutdown, Date & Time, Advanced and User Login. Each parameter requires a specific access level to set or change values.

## User Login:

The padlock icon indicates the current authorization level. A locked padlock indicates that only basic settings can be changed. Press on the padlock to enter an authorization code to unlock additional settings. An unlocked padlock showing an authorization number indicates that some settings are unlocked. Press on the padlock again when you have concluded your operation to logout and to save any changes made in the configuration.

## Pressure:

The main pressure parameters can be set inside the box at the top of the page.

- Pressure reading: Can be selected as PSI, kPa, bar, FoH, or mH2O.
- Input Device: Can be selected as Pressure transducer 1 or 2
- Maximum Pressure: Can be set between the Cut-Out value and 9999.
- Cut-Out: Can be set between the Cut-In value and the Maximum Pressure value. (The Cut-Out should -be set before the Cut-In)
- Cut-In: Can be set (between 0 and the Cut-Out value)

## Periodic Test:

The Periodic Test can be selected as “Weekly”, “Bi-Monthly” or “Monthly”. The day of the week, time of day for the test and test Duration can also be specified in this box.

### Run Test Configuration:

The Run Test Configuration box is where the duration of the run test time is set. A timer between 1 and 30 minutes can be selected.

### Automatic Shutdown:

If enabled, the Automatic Shutdown will automatically stop the engine after the demand disappears. A timer between 1 and 1440 minutes can be selected.

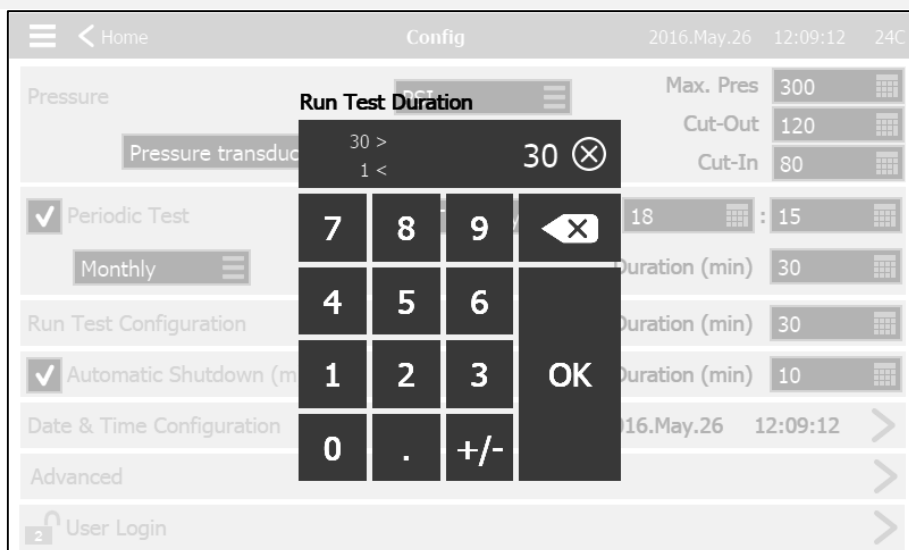
### Advanced:

Selecting the blue arrow at the right side of the Advanced box activates the advanced configuration pages.

### Date & Time Configuration:

Select to display the Date Time page.

## NumPad Page



The NumPad is activated every time the user presses on a white square box representing a number that can be set. On top of the NumPad, the current parameter is shown. The box at the top of the NumPad displays the Min and Max range of values accepted for that particular parameter. The box will turn red if the value entered is out of range. Pressing the "X" button in the circle will set the value to zero "0". Once a value that falls within the range is selected, the box will turn blue. The button with a blue "X" inside a white arrow is used as a "backspace". Pressing the "OK" button will enter the new value and the screen will return to the previous page.

## Date and Time Page

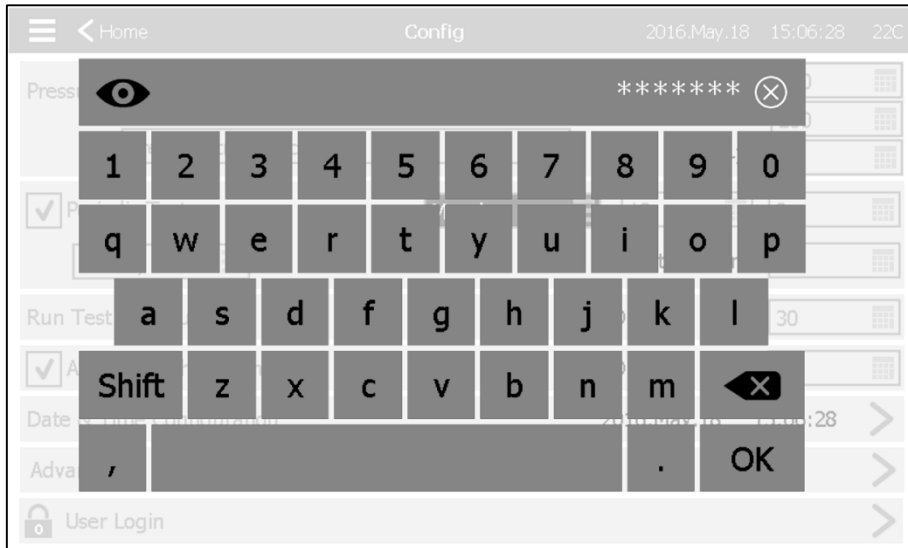
The screenshot shows the 'Date Time' configuration page. At the top, it displays the current date and time: '2016.May.26 12:11:05 24C'. Below this, there are two white boxes for selecting the year ('2016') and month ('May'). A calendar grid shows the days of the week (Sun. to Sat.) and dates from 24 to 31. The date '26' is highlighted. To the right of the calendar is a clock face. Below the clock are two white boxes for selecting the hour ('12') and minutes ('11'). A blue 'Update' button is positioned below these boxes. At the bottom right, there is a dropdown menu for the time zone, currently set to 'America/Montreal'.

This page is used to change the time and date. Using the two white boxes on top and the calendar, the year, month and the day can be chosen. The two white boxes under the clock are used to change the hour and minutes. Pressing the blue “Update” button will update the changes made. The time zone can also be changed using the box in the bottom-right corner.

The screenshot shows the 'Date Time' configuration page with a warning dialog box overlaid. The dialog box contains the text: 'Really update system date & time? This will have an effect on the logs chronology'. Below the text are two buttons: 'OK' and 'Cancel'. The background of the page is dimmed, showing the same calendar and clock interface as in the previous screenshot, but with the date '17' highlighted in the calendar and the clock set to '11:53'.

**WARNING :** Any change made on this page can have effects on the log chronology.

## User Login Page / Keypad Page



**User Login Keypad:**

This page allows the user to log into a higher security level by entering a password. If the password is valid, the text field will turn green and if it is invalid, the text field will turn red. An “X” button appears in the text field as soon as a character is entered, allowing for a quick erase of the written password.

Shortly after being entered, each character will be displayed as an “\*”. To view the whole password, press the eye on the top left corner.

If the password is invalid for a consecutive number of times, the user will be redirected to the “Service Dealer” page, allowing the user to communicate with the appropriate Service Dealer.

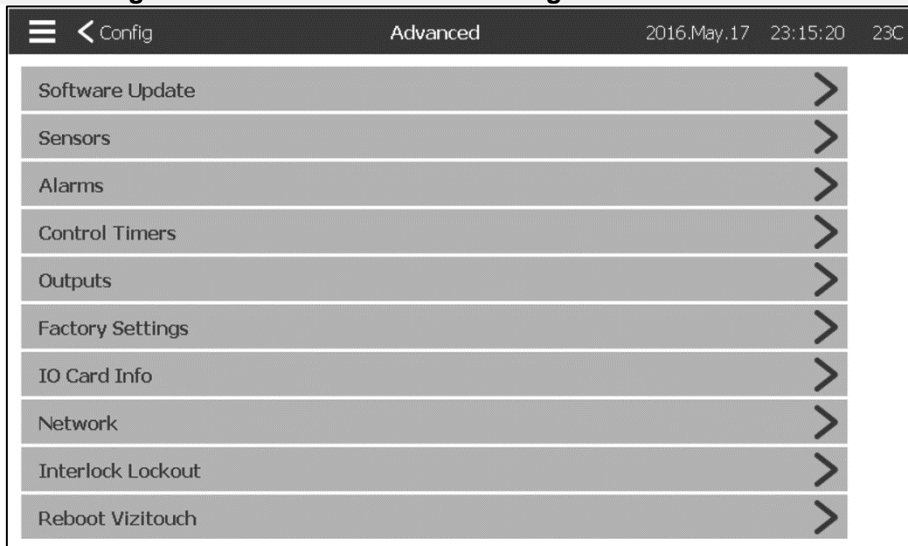
If the password is valid, the “Configuration” page will reload and the access security level will be shown inside the lock. To log off, click on the lock and the user security level will return to “0”

**Other Keypads:**

The Keypad is activated every time the user presses on a grey rectangle box with white text representing a text that can be set. The “X” button allows the user to cancel editing the value. The back arrow erases the last entered character. Simply click the “OK” button once the value is set. This type of text field is mostly used to generate a digital text indication for a custom alarm input.

**Advanced Configuration Page**

**Config > Advanced**

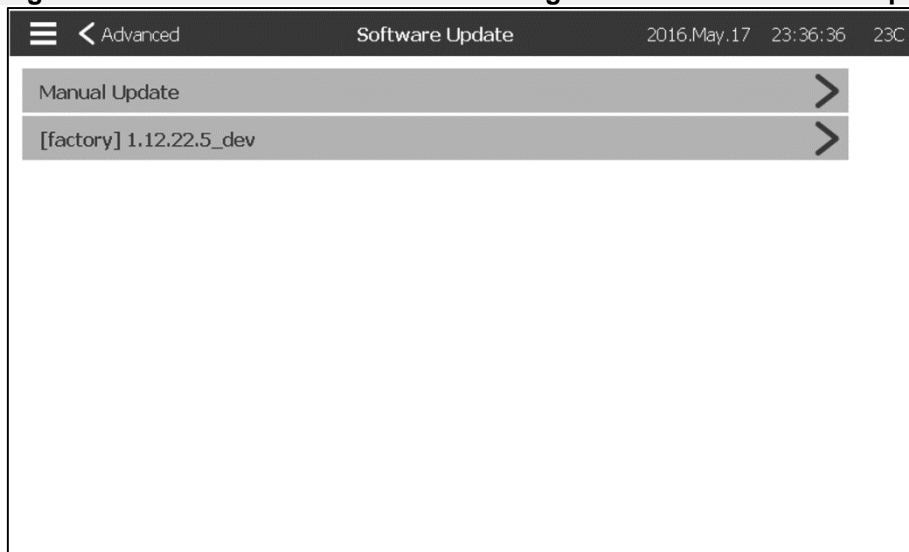




This page is the portal to all the advanced configuration parameters of the ViZiTouch. It leads to 10 other pages:

### Update Program Page

### Config > Advanced > Software Update



This page is used to update the controller software. A USB key or a network connection with the software update is needed. The controller cannot update to an older version.

### Sensor Selection

### Config > Advanced > Sensors



Five analogue sensors, an AC voltage sensor, two battery current sensors and two battery voltage sensors can be calibrated by accessing this page. The Analogue Input 1 is dedicated to the Pressure Transducer. The other Analog Input depends on the controller options.

**Sensor config**  
Analog input 1

2016.May.18 15:21:17 23C

Signal destination: Pressure transducer 1

Unit type: Pressure

Unit: PSI

Minimum value: 0 Maximum value: 9999

**Calibration**

	Desired value	Sensor value
Low	0	Sensor value 0
High	0	Sensor value 0

121 PSI = 531 \* 0.5906 + .193.11

Compute

Every sensor, except the AC Voltage can be calibrated the same way. The Signal destination, the Unit type, the Unit, the Min and Max value are variables that are set in factory but the calibration can be made in the field.

There are three ways of calibrating a sensor that can be chosen in the windows below "Sensor value".

-Sensor value: Use an external mean of measurement that is already calibrated. Bring the sensor to a low value and take a measurement with the calibrated instrument. Enter that value in the "Low" window below the "Desired value" and press the window on the right (with the circular arrow). Repeat with a higher value of the sensor. Then press compute.

-Theoretical voltage: Use a graphic of the theoretical sensor's voltage response (usually given in the datasheet of the sensor). Enter a low point (value, voltage) and a high point. Then press compute.

-Theoretical current: Same as the theoretical voltage, but with amperes.

For better results, use two points that are far apart, but in the normal range of the sensor.

For the AC voltage, only one point is needed.

## Alarms

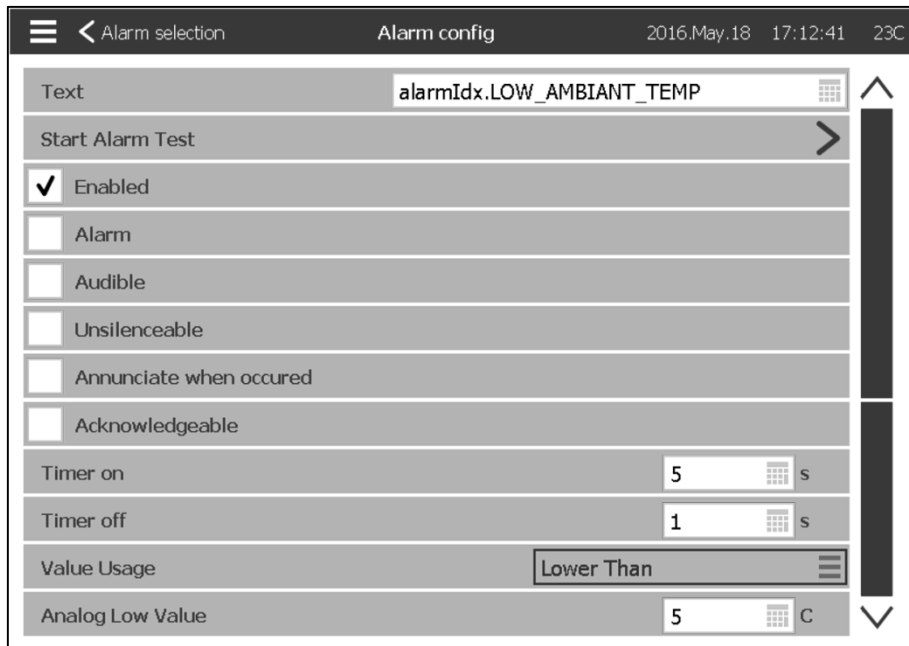
### Config > Advanced > Alarms

**Alarm selection**

2016.May.17 23:40:16 23C

- AC Failure
- DC Failure
- Battery 1 Fail
- Battery 2 Fail
- Charger 1 Fail
- Charger 2 Fail
- Engine Trouble
- Pump Room Trouble
- Controller Trouble
- Service Required

Most alarms are not configurable in the field, but some are with the appropriate password level. If it's configurable, the boxes will be in white. Otherwise the boxes will be grey. Also, the two last fields: Value Usage and Analog Value are not always visible.



**Text:** This field can be used to change the name of the alarm that will be displayed while this alarm is active.

**Start Alarm Test:** The alarm can be tested using this button.

**Enable:** Check this box to enable the Alarm and to make this signal an alarm (red display). Otherwise, it will be a warning (yellow display).

**Audible:** Check this box to make the bell ring while this alarm is active.

**Unsilenceable:** Check this box to make the bell unsilenceable while the alarm is active.

**Annunciate when occurred:** Check this box to create a new state for the alarm. After it has been "Active", the alarm will appear as "Occurred" in the alarm list when the condition triggering the alarm is no longer present.

**Acknowledgeable:** Check this box to make the alarm acknowledgeable. If an alarm is acknowledged, the bell will be silenced and the alarm IO board Output will stop being active. To acknowledge an alarm, go to the alarm list page and press the blue "Active" status on the right of the alarm. The "Active" status should change to "Acknowledge". Press again on the status to return to "Active".

**Timer on:** It is the time delay between the triggering of the condition and the activation of the alarm.

**Timer off:** It is the time delay between the stopping of the condition and the deactivation of the alarm.

**Value Usage, Analog Value:** It is used to describe the activation range of the alarm. "Lower Than", "Higher Than" and "Between" can be selected. The corresponding value has to be entered.

## Control Timers

### Config > Advanced > Control Timers

Timer Name	Value	Unit
Sequential Start Timer	0	s
Run Period Timer	10	m

This page is used to adjust the timers.

- Sequential Start Timer: The time delay between a demand becoming active and the starting of the engine. (Optional)
- Run Period Timer: The time the motor will keep running after the demand is resolved.

## Outputs

### Config > Advanced > Outputs

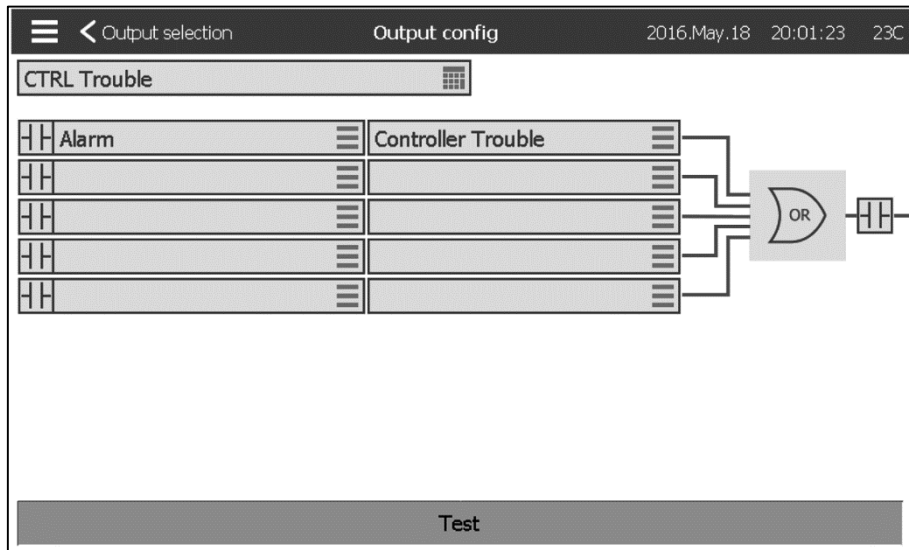
Signal Name	Action
Diesel Card J106 B1+	>
Diesel Card J107 B2+	>
CTRL Trouble	>
Engine Run	>
HOA in Auto	>
HOA in Manual	>
Engine trouble	>
Pump Room Trouble	>
Fuel Solenoid	>
Stop Solenoid	>

This page is used to choose the logic of the signals that will activate the Outputs on the IO board and to test those Outputs.

- Diesel Card (J106 B1+)
- Diesel Card (J107 B2+)
- CTRL Trouble (TB1)
- Engine Run (TB2)
- HOA in OFF (TB3)
- HOA in Manual (TB4)
- Engine Trouble (TB5)

- Pump Room Trouble (TB6)
- Fuel Solenoid (1)
- Stop Solenoid (12)
- Contactor 1 (9)
- Contactor 2 (10)
- Test Solenoid Valve
- Alarm Bell

Pressing on an Output will lead to this page:



The first box from the top is used to change the name of the Output. For the output's logic, a combination of 5 digital inputs can be selected. Each input can be an alarm or a signal from a list and can be inverted by pressing the NO/NC contact symbol at the left of the screen. A logical AND or OR can combine the chosen inputs and the exit can also be inverted by pressing the NO/NC contact symbol at the right of the screen.

## Factory Settings

### Config > Advanced > Factory Settings

The screenshot shows a mobile application interface for factory settings. At the top, there is a header with a menu icon, a back arrow, the text 'Advanced', the title 'Factory Settings', and the date/time '2016.May.17 23:46:06' and temperature '23C'. Below the header are several settings rows:
 

- Program Revision: Diesel Firepump 1.12.22.5\_dev
- Serial Number: RND\_Diesel\_000001
- Model: gpd-12-120
- Nominal Voltage: 0 V (with a menu icon next to the input field)
- Automatic Controller:
- Pressure Actuated Controller:
- Authorize All Clients:
- Reload Configuration: >

This page is used to visualize and modify the Factory Settings. The Program Revision, the Serial Number, the Model and the Nominal Voltage can be visualized.

- Automatic Controller: Uncheck this box to make the controller non-automatic. This means that the engine can only

be started with the manual crank pushbutton on the ViziTouch and with the “remote manual” function.

- Pressure Actuated Controller: Uncheck this box to make the controller non-pressure actuated. This means that the pressure transducer is no longer a starting cause of the engine.

- Authorize All Clients: Whenever someone is trying to gain remote access to the controller via the WebVizu, an authorization has to be made locally from the ViziTouch. If this box is checked, no authorization does not need to be made.

## IO Card Info

### Config > Advanced > IO Card Info

Item	Action
VIZI 2.0	>
Diesel Card	>
<input type="checkbox"/> Expansion Card - 1	
<input type="checkbox"/> Expansion Card - 2	
<input type="checkbox"/> Expansion Card - 3	
<input type="checkbox"/> Expansion Card - 4	

This page is used to visualize the ViziTouch and the Diesel IO card registers by pressing on the blue arrows on the right of the screen. Expansion Cards can also be installed via this page.

## Network

### Config > Advanced > Network

<input type="checkbox"/> Static IP Address	
IP Address	192.168.0.216
Netmask	255.255.252.0
DNS 1	192.168.0.115
DNS 2	192.168.0.24
DNS 3	
Apply Changes	>

This page displays the IP address, the Netmask and the DNS1-2-3 of the controller. The IP address can also be made Static by checking the box on the upper left corner. To apply the change, press on the blue arrow in the bottom right corner.

Advanced Interlock Lockout 2016.May.18 22:51:10 23C

Lockout

Priority

Enable in manual

Enable in auto

Enable in Remote Manual

Enable in Start Stop

Interlock

Engine Run Required

Enable in manual

Enable in auto

This page is used to configure the Lockout output and the Interlock input parameters. To be active those options need to be assigned to an Input or an Output on the IO board.

Lockout is an Input that disables the engine from starting.

- Priority: If enabled, the lockout signal will also act as a shutdown.
- Enable in manual: If checked, this option will prevent the Manual start.
- Enable in auto: If checked, this option will prevent the Automatic start.
- Enable in Remote Manual: If checked, this option will prevent the Remote Manual start.
- Enable in Start Stop: If checked, this option will prevent the Start Stop mode.

Interlock is an Output that prevents a second motor from starting.

- Engine Run Required: If enabled, the controller will wait to have Engine Run before putting Interlock Active.
- Enable in manual: If checked, this option will activate the output Interlock on a Manual start.
- Enable in auto: If checked, this option will activate the output Interlock on a Automatic start.
- Enable in Remote Manual: If checked, this option will activate the output Interlock on a Remote Manual start.
- Enable in Start Stop: If checked, this option will activate the output Interlock on a Start Stop mode.

### Reboot ViziTouch

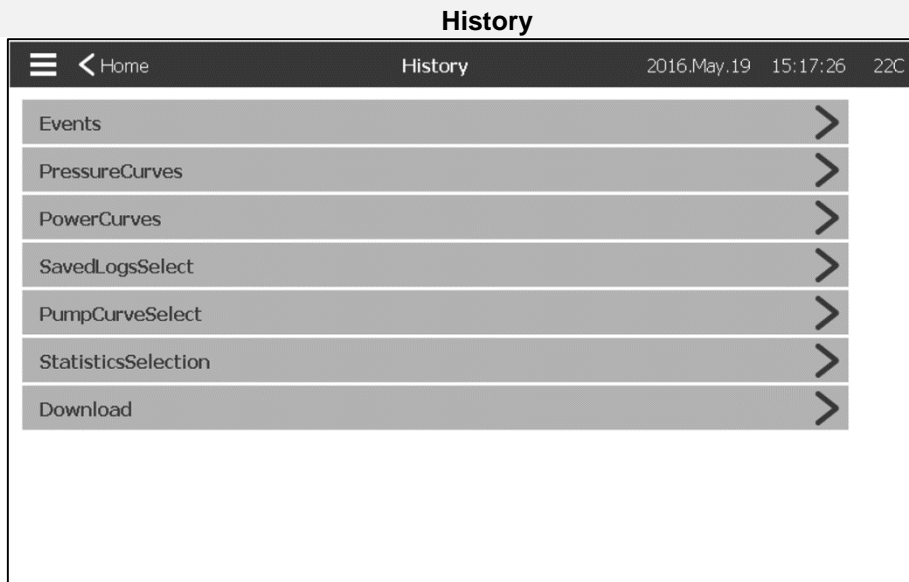
### Config > Advanced > Reboot Vizitouch

If this button is pressed, the ViziTouch will reboot. All unsaved changes will be lost.



# History

## History (Menu)



This page is used to access all data related to events, statistics, pressure history, power logs and the downloading of this information via one of the two USB ports.

-Events: This button leads to the “Events” page, which displays the most recent 500 events. Each event log contains the date and time of occurrence as well as a brief description of the event.

-Pressure/Power Curves: This button leads to the “Pressure Curves” / “Power Curves” page accordingly, which displays all relevant pressure/power information.

-SavedLogsSelect: This button leads to a page where past logs can be viewed.

-PumpCurveSelect: This button leads to the “Pump Curves” page.

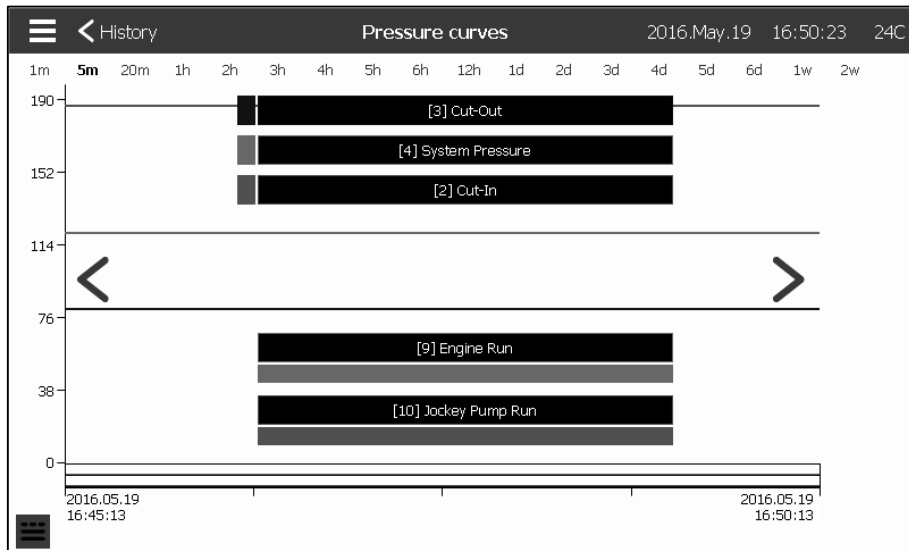
-StatisticsSelection: This button leads to the “StatisticsSelection” page, which leads to “All Time Statistics”, “First Service Statistic” and “Last Service Statistics” pages.

-Download: This button leads to the “Download” page, which allows the user to download information, including the user manual, drawings, logs, statistics and configuration.



History			Events	2016.May.19	15:37:58	23C
2016.05.19	15:37:10	Energize to Start Solenoid: OFF				^
2016.05.19	15:37:10	Engine Run: Stopped				
2016.05.19	15:37:10	Engine Fail When Running: OCCURRED				
2016.05.19	15:37:05	Engine Run: No				
2016.05.19	15:37:05	Engine Fail When Running: ACTIVE				
2016.05.19	15:36:59	Cooling No Flow: OCCURRED				
2016.05.19	15:36:52	Cooling No Flow: ACTIVE				
2016.05.19	15:36:35	Engine Trouble: OCCURRED				
2016.05.19	15:36:35	High Engine Temperature: OCCURRED				
2016.05.19	15:36:29	Engine Low Oil Pressure: OCCURRED				v

The Events Page shows the last events which occurred in chronological order. The last 500 Log Events are displayed. The first column is the date, the second one is the time of occurrence and the third column is the “Event message”. To obtain a log that is older than those events, visit the “SavedLogsSelect”.



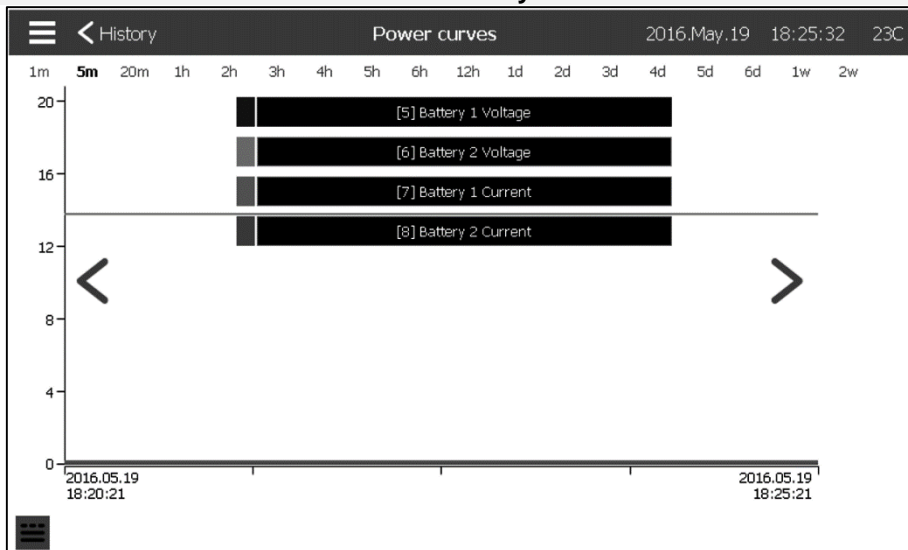
On this page, a graphic of the “System Pressure”, the “Cut-in”, the “Cut-Out”, the main pump “Engine Run” and the “Jockey Pump Run” through time can be viewed. By pressing on the screen, the caption will disappear or will be displayed. The time scale can be changed by pressing the time span desired on top of the screen (from 1 minute to 2 weeks). The blue arrows on both sides of the graphic are used to navigate through time. The blue button in the bottom left corner leads to the table used to generate this graph.

		[10] Jockey Pump Run					
		3	4	2	9	10	
2016.05.19	16:46:13	80 PSI	120 PSI	187 PSI	0	0	^
2016.05.19	16:46:13	80 PSI	120 PSI	187 PSI	0	0	
2016.05.19	16:46:12	80 PSI	120 PSI	187 PSI	0	0	
2016.05.19	16:46:12	80 PSI	120 PSI	187 PSI	0	0	
2016.05.19	16:46:12	80 PSI	120 PSI	187 PSI	0	0	
2016.05.19	16:46:12	80 PSI	120 PSI	187 PSI	0	0	
2016.05.19	16:46:08	80 PSI	120 PSI	187 PSI	0	0	
2016.05.19	16:46:08	80 PSI	120 PSI	187 PSI	0	0	
2016.05.19	16:46:07	80 PSI	120 PSI	187 PSI	0	0	
2016.05.19	16:46:07	80 PSI	120 PSI	187 PSI	0	0	
2016.05.19	16:46:07	80 PSI	120 PSI	187 PSI	0	0	v

This table allows viewing of the exact values used to generate the Pressure Curves with the precise time. Pressing the blue button on the top left corner will return to the graph page.

## Power Curves

### History > Power Curves



On this page, a graphic of the “Battery 1 Voltage”, the “Battery 2 Voltage”, the “Battery 1 Current” and the “Battery 2 Current” through time can be viewed. By pressing on the screen, the caption will disappear or will be displayed. The time scale can be changed by pressing the time span desired on top of the screen (from 1 minute to 2 weeks). The blue arrows on both sides of the graphic are used to navigate through time. The blue button in the bottom left corner leads to the table used to generate this graph.

History		Power curves				2016.May.19	18:27:04	23C
		[5] Battery 1 Voltage						
		5	6	7	8			
2016.05.19	18:22:02	13.8	13.8	0.1	0	^		
2016.05.19	18:22:02	13.8	13.8	0.1	0			
2016.05.19	18:22:02	13.8	13.8	0.1	0			
2016.05.19	18:22:02	13.8	13.8	0.1	0			
2016.05.19	18:22:02	13.8	13.8	0.1	0			
2016.05.19	18:22:02	13.8	13.8	0.1	0			
2016.05.19	18:22:01	13.8	13.8	0.1	0			
2016.05.19	18:22:01	13.8	13.8	0.1	0			
2016.05.19	18:22:01	13.8	13.8	0.1	0			
2016.05.19	18:22:01	13.8	13.8	0.1	0			
2016.05.19	18:22:01	13.8	13.8	0.1	0	v		

This table allows to viewing of the exact values used to generate the Power Curves with the precise time. Pressing the blue button on the top left corner will return to the graph page.

**Saved Logs Select**

**History > SavedLogsSelect**

History		Log File Selection		2016.May.19	11:35:49	23C
logs.2016.05.9.csv	>	^				
logs.2016.05.8.csv	>					
logs.2016.05.7.csv	>					
logs.2016.05.6.csv	>					
logs.2016.05.5.csv	>					
logs.2016.05.4.csv	>					
logs.2016.05.3.csv	>					
logs.2016.05.2.csv	>					
logs.2016.05.1.csv	>					
logs.2016.05.csv	>	v				

This page is used to access every past log files. Each log file is a CSV file containing the time, the date, the Cut-in, the Cut-out, the system pressure, the battery voltages and currents, the engine run signal, the jockey pump run signal and the log event message. Each file can contain 1 MB of data and the month and year is integrated in it's title. Each time a CSV file is full, a new one is created with an incremented number in the title. Press on the file to consult it's content.

2016.05.09		2	3	4	5	Log Messages
2016.05.09	15:05:28	121 PSI	80 PSI	100 PSI	13.8	Energize to Stop Solenoid: ON
2016.05.09	15:05:28	121 PSI	80 PSI	100 PSI	13.8	Energize to Start Solenoid: OFF
2016.05.09	15:05:28	121 PSI	80 PSI	100 PSI	13.8	Engine Run: Stopped
2016.05.09	15:05:28	121 PSI	80 PSI	100 PSI	13.8	
2016.05.09	15:05:28	121 PSI	80 PSI	100 PSI	13.8	
2016.05.09	15:05:28	121 PSI	80 PSI	100 PSI	13.8	
2016.05.09	15:05:28	121 PSI	80 PSI	100 PSI	13.8	
2016.05.09	15:05:28	121 PSI	80 PSI	100 PSI	13.8	Cranking 1 (Manually): OFF
2016.05.09	15:05:28	121 PSI	80 PSI	100 PSI	13.8	
2016.05.09	15:05:28	121 PSI	80 PSI	100 PSI	13.8	Energize to Stop Solenoid: OFF
2016.05.09	15:05:28	121 PSI	80 PSI	100 PSI	13.8	Energize to Start Solenoid: ON

The logs are arranged chronologically. To select the displayed data, press on the filter icon in the center top of the screen.

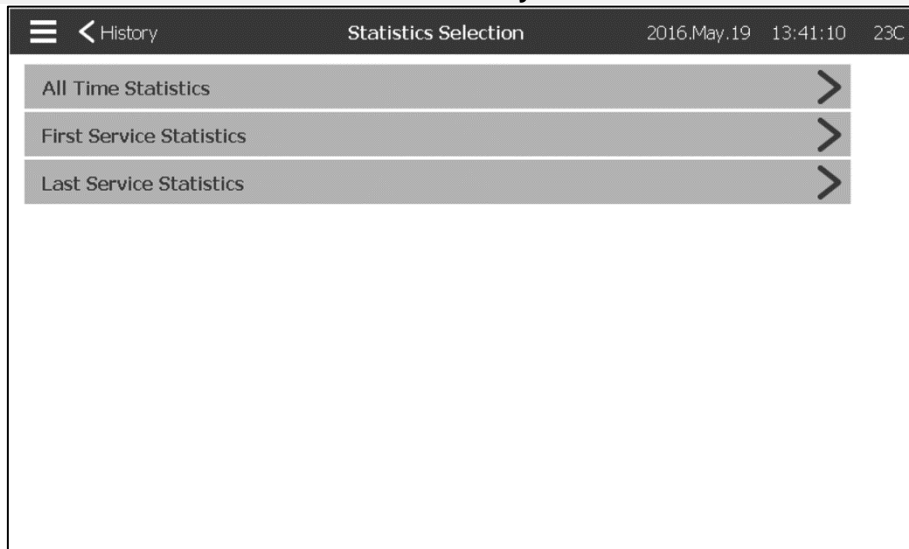
Saved Logs Filter	
<input checked="" type="checkbox"/>	Events
<input checked="" type="checkbox"/>	2: System Pressure
<input checked="" type="checkbox"/>	3: Cut-In
<input checked="" type="checkbox"/>	4: Cut-Out
<input type="checkbox"/>	5: Battery 1 Voltage
<input type="checkbox"/>	6: Battery 2 Voltage
<input type="checkbox"/>	7: Battery 1 Current
<input type="checkbox"/>	8: Battery 2 Current
<input type="checkbox"/>	9: Engine Run
<input type="checkbox"/>	10: Jockey Pump Run

From this page, the selected values will be displayed. Press on “Log File” at the top left of the screen to go back to the logs table.

### Pump Curve Selection

### History > PumpCurveSelect

This page is intended to help the customer generate the pump performance curve of the pump. In Auto mode, the controller will sampled the water flow exiting the pump, the system pressure and the suction at the entrance of the pump. The right sensor has to be installed for this mode to work. Each time the variation of a variable is important enough, the controller will record the values and ring the bell. In manual mode, the user can enter manually the values to generate the pump curve.



This page leads to 3 other Statistics pages: “All Time Statistics”, “First Service Statistics” and “Last Service Statistics”.



The “All Time Statistics” contains two parameters: The date the controller has been powered for the first time and the amount of time it’s been ON for.

Statistics Selection		Statistics	2016.May.19	13:42:05	23C
First Service Statistics					
Statistics From					
Since	2016.05.09 13:36:04				
On Time	7-06:43:16				
Engine Statistics					
On Time	0-01:28:08				
Start Count	28				
Last Started On	2016.05.19 16:43:10				
Pressure					
Minimum value	0 PSI				

This page allows the user to view the "First Setup Statistics". The parameters are:

Statistics From:

- Since: Date of the first setup
- ON Time: Time the controller spent ON, in DAYS-HOURS:MINUTES-SECONDS

Engine Statistics:

- ON Time: Time the engine spent ON, in DAYS-HOURS:MINUTES-SECONDS
- Start Count: Number of times the engine has started
- Last Started on: Last time the engine started

Pressure

- Minimum value: Smallest pressure value
- Minimum occurred: on Date the smallest value happened
- Maximum: Biggest pressure value
- Maximum occurred on: Date the biggest value happened
- Average Value: Average pressure since first startup

Temperature

- Minimum value: Smallest temperature value
- Minimum occurred on: Date the smallest value happened
- Maximum: Biggest temperature value
- Maximum occurred on: Date the biggest value happened
- Average Value: Average temperature since first startup

Jockey Pump Running

- ON Time: Time the Jockey Pump spent ON, in DAYS-HOURS:MINUTES-SECONDS
- Start Count: Number of times the Jockey Pump has started
- Last Started on: Last time the Jockey Pump started

Statistics		2016.May.19	13:42:26	23C
Last Service Statistics				
Statistics From				
Since	2016.05.18 20:27:37			
On Time	1-00:11:47			
Engine Statistics				
On Time	0-00:01:27			
Start Count	3			
Last Started On	2016.05.19 16:43:10			
Pressure				
Minimum value	0 PSI			

This page allows the user to view the “Last Setup Statistics”. The parameters are the same as the ones from the “First Setup Statistics” page but from the “Last Service”.

**Download**

History > Statistics Selection > Download

This page is used to download Statistics, PCB informations, name plate information, logs, the manual, the factory settings and the current settings. A USB key needs to be inserted in the USB slot prior to entering this page in order to be able to download.



## Language

The language displayed on the ViZiTouch can be selected on this page.





# Service

## Service

**TORNATECH**  
info@tornatech.com

The Americas  
+1 800 363 8448  
+1 514 334 0523  
Middle East  
+971 (0)4 887 0615

Asia  
+65 6795 8114  
+65 6795 7823  
Europe  
+32 (0) 1084 4001

Commissioning Date	2016.05.19 14:47:55
Last Service	2016.05.19 14:56:41
Service Interval	OFF
Next Service	2016.05.19 14:56:16

- Complete Service
- Live View
- Nameplate Info

Information on how to reach Tornatech support can be viewed on this page. Also, information on the commissioning date, on the last service date and on the next service due date is available. The service interval can be selected from these options: OFF, ½ year, 1 year, 1 ½ years, 2 years and 3 years. The next service will be determined using the last service and the chosen service interval.

The “Complete Service” will be available only by the authorized person after a service is completed.

The “Live View” page is where the user can grant or refuse the remote access demands.

The “Nameplate Info” page contains all the information found on the nameplate.



## Manuals

This section is used to access a simplified version of the Manual. Select a language to have access to the chapters. Select a chapter to consult it.



## Technical Documents

### How to Test:

#### Charger 1 Fail

Switch Circuit breaker 1 (CB1) in Off position.

#### Charger 2 Fail

Switch Circuit breaker 1 (CB2) in Off position.

#### DC Failure

Switch Circuit Breaker 3 (CB3) and Circuit Breaker 4 (CB4) in Off position or disconnect #6 and #8 engine wires (See drawing for more details).

#### Faulty Pressure Transducer

Disconnect the Pressure Transducer. Depending of your sensor type, put a jumper between positive pin (left) or negative pin (right) and signal pin (middle) of this connector (See drawing for more details).

#### Weekly Test Check Solenoid Valve

Disconnect the Solenoid Valve. Switch the HOA selector switch to the Auto position. Press the Run Test button (Yellow button on the membrane). Wait until the test ends. (Note: The engine will start.)

#### Controller Trouble

To activate this common alarm, at least one of the following alarms must be active: Charger Failure 1, Charger Failure 2, DC Failure, Faulty Pressure Transducer or Weekly Test Check Solenoid Valve.

#### Low Fuel Level

Put a jumper between Low Fuel Level input and ground (See drawing for more details).

#### High Fuel Level

Put a jumper between High Fuel Level input and ground (See drawing for more details).

#### Fuel Tank Leak

Put a jumper between Fuel Tank Leak input and ground (See drawing for more details).

#### AC Failure

Make sure both batteries are connected and all circuit breakers are in the ON position. Switch the disconnect switch to "OFF" position.

#### Low Ambient Temperature

You need to be logged in to modify these settings. Go to Config>Advanced>Alarms>Low Ambient Temp. Change the Low Ambient Temperature setpoint to maximum allowable.

#### High Ambient Temperature

You need to be logged in to modify these settings. Go to Config>Advanced>Alarms>High Ambient Temp. Change

the High Ambient Temperature setpoint to the minimum allowable.

#### **Low Suction Pressure**

Disconnect Suction Pressure connector. Depending of your sensor type, put a jumper between positive pin (left) or negative pin (right) and signal pin (middle) of this connector (See drawing for more details). Start the engine.

#### **Water Reservoir Empty**

Put a jumper between Water Reservoir Empty input and ground (See drawing for more details).

#### **High Water Level**

Put a jumper between High Water Level input and ground (See drawing for more details).

#### **Water Reservoir Low**

Put a jumper between Water Reservoir Low input and ground (See drawing for more details).

#### **Pump Room Alarm**

To activate this common alarm, at least one of the following alarms must be active: Low Fuel Level, High Fuel Level, Fuel Tank Leak, AC Fail, Low Ambient Temperature, High Ambient Temperature, Low Suction Pressure, Water Reservoir Empty, High Water Level or Water Reservoir Low.

#### **Fail to Start**

Disconnect #1, #9, #10 and #12 engine wires (See drawing for more details). Start the cranking sequence (Example: Remove Remote Automatic Start jumper). Wait until the cranking sequence ends.

#### **Overspeed**

If your engine has an overspeed switch, switch it to the ON position. If not, disconnect #3 engine wire (See drawing for more details) and put a jumper between #3 and #6. (Note: You don't need to start the engine to activate this alarm.)

#### **Electronic Control Module Selector Switch in Alternate Position (301)**

Disconnect #301 engine wire. Put a jumper between #301 input and ground (See drawing for more details).

#### **Fuel Injection Malfunction (302)**

Disconnect #302 engine wire. Put a jumper between #302 input and ground (See drawing for more details).

#### **Electronic Control Module Warning ( 303 )**

Disconnect #303 engine wire. Put a jumper between #303 input and ground (See drawing for more details).

#### **Electronic Control Module Fault ( 304 )**

Disconnect #304 engine wire. Put a jumper between #304 input and ground (See drawing for more details).

#### **Low Engine Temperature (312)**

Disconnect #312 engine wire. Put a jumper between #312 input and ground (See drawing for more details).

#### **Low Oil Pressure**

Disconnect #4 engine wire (See drawing for more details). Put a jumper between #4 and ground. Start the engine.

#### **High Engine Temperature**

Disconnect #5 engine wire (See drawing for more details). Put a jumper between #5 and ground. Start the engine.

#### **Battery 1 Failure**

Disconnect #6 engine wire (See drawing for more details) and disconnect Charger CB.

#### **Weak Battery 1**

You need to be logged in to modify these settings. Go to Config>Advanced>Alarms>WeakBattery1. Change the Weak Battery 1 setpoint to the maximum allowable.

#### **Battery 2 Failure**

Disconnect #8 engine wire (See drawing for more details) and disconnect Charger CB.

### **Weak Battery 2**

You need to be logged in to modify these settings. Go to Config>Advanced>Alarms>WeakBattery2. Change the Weak Battery2 setpoint to the maximum allowable.

### **Battery 1 Overvoltage**

You need to be logged in to modify these settings. Go to Config>Advanced> Alarms>Battery1Overvoltage. Change the Overvoltage Battery 1 setpoint to the minimum allowable.

### **Battery 2 Overvoltage**

You need to be logged in to modify these settings. Go to Config>Advanced> Alarms>Battery2Overvoltage. Change the Overvoltage Battery 2 setpoint to the minimum allowable.

### **Loss of Continuity 1**

Disconnect #9 engine wire (See drawing for more details). Wait 1-2 minutes.

### **Loss of Continuity 2**

Disconnect #10 engine wire (See drawing for more details). Wait 1-2 minutes

### **Underpressure**

You need to be logged in to modify these settings. Go to Config>Advanced> Alarms>Underpressure. Change the Underpressure setpoint to the maximum allowable.

### **Overpressure**

You need to be logged in to modify these settings. Go to Config>Advanced> Alarms>Overpressure. Change the Overpressure setpoint to the minimum allowable.

### **Low Pneumatic Pressure**

Put a jumper between the Low Pneumatic Pressure input and ground (See drawing for more details). Take note that this alarm will stop the pneumatic cranking sequence.

### **Engine Trouble**

To activate this common alarm, at least one of the following alarms must be active: Fail to start, Overspeed, Electronic Control Module Selector Switch in Alternate Position (301), Fuel Injection Malfunction (302), Electronic Control Module Warning (303), Electronic Control Module Fault (304), Low Engine Temperature (312), Low Oil Pressure, High Engine Temperature, Battery 1 Failure, Battery 2 Failure, Loss of Continuity 1, Loss of Continuity 2, Overpressure or Low Pneumatic Pressure

### **Low Spare Temperature**

Disconnect the Spare Temperature connector. Depending of your sensor type, put a jumper between positive pin (left) or negative pin (right) and signal pin (middle) of this connector (See drawing for more details).

### **WT CI Not Reached**

You need to be logged in to modify these settings. Go to the Config page. Change Cut-In to 0. Press Run Test button (Yellow button of the membrane). Wait until the test ends.

### **Flow Start**

Put a jumper between the Flow Start input and ground (See drawing for more details).

### **Cooling No Flow**

Put a jumper between the Cooling No Flow input and ground (See drawing for more details).

### **Flow Meter On**

Put a jumper between the Flow Meter On input and ground (See drawing for more details).

### **Engine Fail When Running**

Start the engine. Depending of your engine type, disconnect #1 or put a jumper between #12 and #6 to stop the

engine. (See drawing for more details).

**IO Diesel Communication Error**

Press Reset button of the Diesel IO Board (Small button close to the phone jack)

**IO Expansion 1 Communication Error**

Press the Reset button of the Expansion 1 IO Board (Small button close to the phone jack)

**IO Expansion 2 Communication Error**

Press the Reset button of the Expansion 2 IO Board (Small button close to the phone jack)

**IO Expansion 3 Communication Error**

Press the Reset button of the Expansion 3 IO Board (Small button close to the phone jack)

**IO Expansion 4 Communication Error**

Press the Reset button of the Expansion 4 IO Board (Small button close to the phone jack)

**Low Pump Room Temperature**

Put a jumper between Low Pump Room Temperature input and ground (See drawing for more details).

**Main Relief Valve Open**

Put a jumper between Main Relief Valve Open input and ground (See drawing for more details).

**Pump on Demand**

Open the pressure line to simulate a pressure drop. The engine will start and the Pump On Demand warning will appear.

**Invalid Cut-In**

You need to be logged in to modify these settings. Go to the Config page. Change the Cut-In to 0. (Note: The engine will start.)

**Pneumatic Fail to Start**

Disconnect the TB6 relay connector. Disconnect #1, #9, #10 and #12 engine wires (See drawing for more details). Start cranking sequence (Example: Remove Remote Automatic Start jumper). Wait until cranking sequence ends.

**Hydraulic Fail to Start**

Disconnect the TB6 relay connector. Disconnect #1, #9, #10 and #12 engine wires (See drawing for more details). Start cranking sequence (Example: Remove Remote Automatic Start jumper). Wait until cranking sequence ends.

**TORNATECH MODEL GPD DIESEL FIRE PUMP CONTROLLER  
PRE- FIELD ACCEPTANCE TEST  
CHECK LIST**

**Note: This document should be an official indication of whether or not the installation and general condition of the equipment is adequate for a field acceptance test. This document should also aid the individual responsible for executing the field acceptance test in his decision to carry out or not the field acceptance test of the equipment.**

<b>Installation Check List:</b>		<b>YES</b>	<b>NO</b>
1	Verify that the nameplate voltages of the Fire Pump Controller corresponds with the AC voltage available and the DC starting voltage of the engine.		
2	Visual inspection for any damage to the exterior of the Fire Pump Controller. Make sure the enclosure, alarm bell, selector switch, membrane and display are not damaged.		
3	Verify that the Fire Pump Controller has been installed within sight of the pump and engine.		
4	Verify that the Fire Pump Controller has been installed not less than 12 inches from the floor of the mechanical room.		
5	Verify that all electrical connections to the Fire Pump Controller are done using liquid tight conduit and connectors.		
6	With the Fire Pump Controller door open, visually inspect for any drill chips, dirt or foreign objects in the bottom of the enclosure, loose wires, broken components and general proper electrician workmanship.		
7	Verify that the correct AC voltage is supplied to the controller by taking a voltage reading at the L1 & N (120V) or L1 & L2 (220-240) terminals.		
8	Verify that the terminal connections between the Fire Pump Controller and the engine (1 to 11 and 12 for Caterpillar engines) are properly done (optionally 301,302,303,304,305,310,311,312).		
9	Verify that wiring to terminals #6, #8 (batteries) and #11 (ground) are of the appropriate gauge size. See label inside controller.		
10	Verify proper grounding of the Fire Pump Controller.		

<b>Initial Power-Up Check List:</b>		<b>YES</b>	<b>NO</b>
1	Verify the selector switch is in the "OFF" position		
2	With the Fire Pump Controller door open, turn to "ON" circuit breakers CB3 and CB4 (DC) then CB1 and CB2 (AC), then DS1. This sequence is very important.		
3	Close the Fire Pump Controller door. Verify on the ViZiTouch Homepage that the correct battery voltage appears.		
4	Place the selector switch in the "HAND" position. Verify that no alarms are displayed on the screen.		
5	Place the selector switch in the "AUTO" position. Verify that no alarms are displayed on the screen.		

<b>Manual and Automatic Start Check List:</b>		<b>YES</b>	<b>NO</b>
1	Place the selector switch in the "Hand" position.		
2	Verify the starting of the engine by pressing the "Battery # 1 Manual Crank" membrane button.		
3	Stop engine by placing the selector switch to the "OFF" position.		
4	Verify the starting of the engine by pressing the "Battery # 2 Manual Crank" membrane button.		
5	Stop engine by placing the selector switch to the "OFF" position.		
6	Set the Cut-Out and Cut-In settings by following the quick start up guide or referring to the ViZiTouch documentation. You need to be logged in to modify these settings. Verify automatic start by dropping the system pressure below Cut-In setting.		
7	Stop the engine by pressing the "Stop" pushbutton. Note: The engine will only stop if the system pressure is above the Cut-Out setting.		

Tornatech Controller S/N: \_\_\_\_\_

Installation address: \_\_\_\_\_

\_\_\_\_\_

Check list completed? \_\_\_\_\_ Yes \_\_\_\_\_ No

Check list completed by: \_\_\_\_\_

Company: \_\_\_\_\_

Date: \_\_\_\_\_

Witnessed By: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**TORNATECH MODEL GPD  
DIESEL ENGINE FIRE PUMP CONTROLLER  
FIELD ACCEPTANCE TEST REPORT**

**Note:** This document is the Tornatech official Field Acceptance Test report which follows the latest NFPA 20 requirements of article 14.2.6 Controller Acceptance Test pertinent to diesel engine driven fire pump controllers. Tornatech strongly recommends that a pre-field acceptance verification (Tornatech document GPD-PREFAT-001-E Pre-Field Acceptance Test Check List) be completed before this official field acceptance test.

**Complete this first section if it was not completed during the Pre-Field Acceptance test**

<b>Manual and Automatic Start Check List:</b>		<b>YES</b>	<b>NO</b>
1	Place the selector switch in the "Hand" position.		
2	Verify the starting of the engine by pressing the "Battery # 1 Manual Crank" membrane button.		
3	Stop engine by placing the selector switch to the "OFF" position.		
4	Verify the starting of the engine by pressing the "Battery # 2 Manual Crank" membrane button.		
5	Stop engine by placing the selector switch to the "OFF" position.		
6	Set the Cut-Out and Cut-In settings by following the quick start up guide or referring to the ViZiTouch documentation. You need to be logged in to modify these settings. Verify automatic start by dropping the system pressure below Cut-In setting.		
7	Stop the engine by pressing the "Stop" pushbutton. Note: The engine will only stop if the system pressure is above the Cut-Out setting.		
<b>Battery # 1</b>		<b>YES</b>	<b>NO</b>
1	3 manual starts		
2	3 automatic starts		
3	1 RUN TEST start		
4	1 remote/deluge valve start		
5	Start and Run the engine at full speed after 1 crank cycle		
<b>Battery # 2</b>		<b>YES</b>	<b>NO</b>
1	3 manual starts		
2	3 automatic starts		
3	1 RUN TEST start		
4	1 remote/deluge valve start		
5	Start and Run the engine at full speed after 1 crank cycle		
<b>Visual/Audible Alarm Verification</b>		<b>YES</b>	<b>NO</b>
1	Battery failure: - At the terminal strip, turn CB1 OFF, disconnect wire #6 for battery #1. Then reconnect wire 6 and put CB1 to ON. - At the terminal strip, turn CB2 OFF, disconnect wire #8 for battery #2. Then reconnect wire 8 and put CB2 to ON. - Audible and visual alarm will appear for battery failure and controller trouble Note: it is important to return the wires back to their original place and reset the alarms in order to continue the tests.		
2	Charger failure: - Switch either circuit breaker #1 (CB1) or circuit breaker #2 (CB2) to the OFF position to test either charger. - Audible and visual alarm will appear for charger failure and controller trouble Warning: Do not switch both CB1 and CB2 off at the same time. Note: it is important to return the circuit breaker back to its original position and reset the alarms in order to continue the tests.		
3	Engine high coolant temperature: - Start the engine either manually or automatically. - With the engine running, place a jumper between terminals 5 & 11 or simulate		

	<p>high coolant signal coming from the engine.</p> <ul style="list-style-type: none"> <li>- If the engine was started manually, a visual and audible alarm will be present and the engine will not shutdown. To shutdown, turn the selector switch to the OFF position.</li> <li>- If the engine was started automatically, a visual and audible alarm will be present and the engine will not shutdown. To shutdown, turn the selector switch to the OFF position.</li> <li>- Note: Please remove the jumpers and reset the alarm in order to continue to the next simulation.</li> </ul>		
4	<p>Engine low oil pressure:</p> <ul style="list-style-type: none"> <li>- Start the engine either manually or automatically.</li> <li>- With the engine running, place a jumper between terminals 4 &amp; 11 or simulate engine low oil pressure from the engine. The alarm will annunciate after 8 seconds.</li> <li>- If the engine was started manually, a visual and audible alarm will be present and the engine will not shutdown. To shutdown, turn the selector switch to the OFF position.</li> <li>- If the engine was started automatically, a visual and audible alarm will be present and engine will not shutdown. To shutdown, turn the selector switch to the OFF position.</li> </ul> <p>Note: Please remove the jumpers and reset the alarm in order to continue to next simulation.</p>		
5	<p>Engine Overspeed:</p> <ul style="list-style-type: none"> <li>- Start the engine either manually or automatically.</li> <li>- With the engine running, place a jumper between terminals 6 &amp; 3 or simulate overspeed from the engine.</li> <li>- An audible and visual alarm will be present and the engine will shutdown whether it was started manually or automatically.</li> </ul> <p>Note: Please remove jumpers and reset the alarm in order to continue to next simulation.</p> <p>Note: The speed switch must be reset on the engine itself.</p>		
6	<p>Engine fail to start:</p> <ul style="list-style-type: none"> <li>- At the terminal strip, disconnect wires #9 and #10</li> <li>- Place the controller selector switch to Auto and initiate automatic engine start or start engine by pressing the Run Test Button</li> </ul> <p>The controller will go through its cranking cycle as follows:</p> <ul style="list-style-type: none"> <li>- 15 second cranking from battery #1</li> <li>- 15 second rest</li> <li>- 15 second cranking from battery #2</li> <li>- 15 second rest</li> <li>- This cycle will repeat itself three times per battery, hence six times.</li> <li>- Audible and visual alarm for engine fail to start will appear.</li> <li>- Switch the engine control panel back to OFF position and reset the alarm.</li> </ul>		
7	<p>Stop the engine by pressing the "Stop" pushbutton. Note: The engine will only stop if the system pressure is above the Cut-Out setting.</p>		

**Field Settings:**

Cut-Out Pressure: \_\_\_\_\_

Cut-In Pressure: \_\_\_\_\_

Minimum run period timer activated?

Yes: \_\_\_\_\_ Set at \_\_\_\_\_ minutes.      No: \_\_\_\_\_

Sequential Start Timer?

Yes: \_\_\_\_\_ Set at \_\_\_\_\_ seconds.      No: \_\_\_\_\_

Weekly Test Enabled?

Yes: \_\_\_\_\_ Start (date and time) \_\_\_\_\_ No: \_\_\_\_\_  
Stop (date and time) \_\_\_\_\_

**Alarm Contacts Connections:**

Selector switch in OFF or HAND connected? \_\_\_\_\_ Yes \_\_\_\_\_ No

Engine Run connected? \_\_\_\_\_ Yes \_\_\_\_\_ No

Engine Trouble connected? \_\_\_\_\_ Yes \_\_\_\_\_ No

Controller Trouble connected? \_\_\_\_\_ Yes \_\_\_\_\_ No

Other contacts supplied and connected?

Yes: \_\_\_\_\_

No: \_\_\_\_\_

Tornatech Controller S/N: \_\_\_\_\_

Installation address: \_\_\_\_\_

Field Acceptance Test completed? \_\_\_\_\_ Yes \_\_\_\_\_ No

Field Acceptance completed by: \_\_\_\_\_

Company: \_\_\_\_\_

Date: \_\_\_\_\_

Witnessed By: \_\_\_\_\_

Company: \_\_\_\_\_

The undersigned witness has been made aware of the NFPA20 article 14.4 Periodic Inspection, Testing and Maintenance which stipulates that "Fire pumps shall be inspected tested and maintained in accordance with NFPA25 – Standard for the Inspection, Testing and Maintenance of Water Based Fire Protection Systems"

Comments: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



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