Diesel Engine Fire Pump Controllers
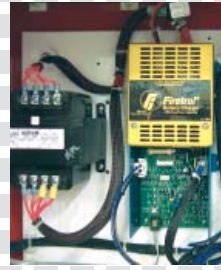

Firetrol®

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Network Power

Compatible with mechanical and electronic engine types.

Firetrol® combined automatic and manual Mark IIXG based diesel engine fire pump controllers are intended for starting and monitoring fire pump diesel engines. The controller monitors, displays and records fire pump system information. Diesel engine fire pump controllers are available in 12 or 24 volts, work with lead acid or Nickel-Cadmium batteries and are designed to operate seamlessly with either mechanical or electronic engine types.

Battery Chargers

The controllers are supplied with two fully automatic, 200 amp hour, 4 step battery chargers. The chargers feature Switching Technology and 10Adc Pulse-Width Modulated Output Current. The 4 step charging cycle is as follows:

Step 1 - Qualification Stage
> During this stage, the battery charger checks the batteries to insure they can accept a fast charge. It also checks for missing or defective batteries. If a missing or defective battery is detected, a fault will be given.
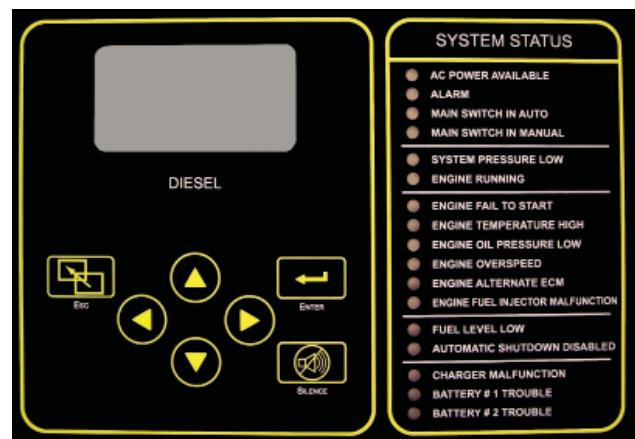
Step 2 - Fast Charge Stage
> Charges the batteries until they reach peak voltage.

Step 3 - Bulk Charge Stage
> Charges the batteries at a constant potential of peak voltage until current reaches 500mA.

Step 4 - Float Charge Stage
> Trickle charges the batteries to maintain peak potential.

Operator Interface

The fire pump controllers feature an operator interface with user keypad. The interface monitors and displays motor operating conditions, including all alarms, events, and pressure conditions. All alarms, events, and pressure conditions are displayed with a time and date stamp. The display is a 128x64 Backlit LCD capable of customized graphics and Cyrillic type character display. The display and interface are NEMA rated for Type 2, 3R, 4, 4X, and 12 protection and is fully accessible without opening the controller door. The user interface utilizes multiple levels of password protection for system security. A minimum of 3 password levels are provided.

Approvals

Firetrol fire pump controllers are listed by Underwriters' Laboratories, Inc., in accordance with UL218, *Standard for Fire Pump Controllers*, CSA, *Standard for Industrial Control Equipment*, and approved by Factory Mutual. They are built to meet or exceed the requirements of the approving authorities as well as NEMA and

the latest editions of NFPA 20, *Installation of Centrifugal Fire Pumps*, and NFPA 70, *National Electrical Code*.

Digital Status/Alarm Messages

The digital display indicates text messages for the stats and alarm conditions of:

- Engine Run
- Minimum Run Time / Off Delay Time
- Engine Fail to Start
- Low Suction Pressure
- Drive Not Installed
- Disk Error
- Disk Near Full
- Pressure Error
- Sequential Start Time
- Crank/Rest Time Cycle
- Remote Start
- System Battery Low
- Manual Engine Crank

The Sequential Start Timer and Minimum Run Timer/Off Delay Times are displayed as numeric values reflecting the value of the remaining time.

LED Visual Indicators

LED indicators, visible with the door closed, indicate:

• AC Power Available • Alarm • Main Sw. in Auto • Main Sw. in Manual • System Pressure Low • Engine Running • Engine Fail to Start • Engine Temperature High • Engine Oil Pressure Low • Engine Overspeed • Engine Alternate ECM • Engine Fuel Injector Malfunction • Fuel Level Low • Automatic Shutdown Disabled • Charger Malfunction • Battery #1 Trouble • Battery #2 Trouble

Standard features include:

- **AC Line and Battery Circuit Breakers**
- **Manual-Off-Auto Selector Switch**
- **Manual Test Push-Button**
- **Two (2) Manual Crank Push-Buttons**
- **Two (2) 10 Amp Battery Chargers with 4 stage charging cycle, selectable AC voltage (110/220), selectable DC voltage (12/24) and selectable battery type (Lead Acid, Ni-Cad 9/18 Cell, Ni-Cad 10/20 Cell**
- **Minimum Run Timer/Off Delay Timer**
- **Programmable Daylight Saving Time Option**
- **Weekly Test Timer**
- **Engine Run Time Meter**
- **Digital Pressure Display**
- **Solid State Pressure Transducer**
- **Door mounted display/interface panel featuring a 128 x 64 pixel backlit LCD Graphical Display, Membrane Type User Control Push-buttons and easy to read LED Indicators for:**
  - **AC POWER AVAILABLE**
  - **ALARM**
  - **MAIN SWITCH IN AUTO**
  - **MAIN SWITCH IN MANUAL**
  - **SYSTEM PRESSURE LOW**
  - **ENGINE RUNNING**
  - **ENGINE FAIL TO START**
  - **ENGINE TEMPERATURE HIGH**
  - **ENGINE OIL PRESSURE LOW**
  - **ENGINE OVERSPEED**
  - **ENGINE ALTERNATE ECM**
  - **ENGINE FUEL INJECTOR MALFUNCTION**
  - **FUEL LEVEL LOW**
  - **AUTOMATIC SHUTDOWN DISABLED**
  - **CHARGER MALFUNCTION**
  - **BATTERY #1 TROUBLE**
  - **BATTERY #2 TROUBLE**
- **USB Host Controller and Port**
- **Data Log**
- **Event Log (3000 Events)**
- **Simultaneous Display of Battery Voltages, Charging Rates, AC Volts, System Pressure and Alarm Messages**
- **Disk Error message**
- **Disk Near Full message**
- **Pressure Error message**
- **Fail To Start message**
- **Low Suction Pressure message**
- **Crank Cycle Status Indication (Displays Cranking Battery, Number of Starting Attempts and Crank/Rest Time Remaining**
- **300 psi (20.7 bar) wet parts (solid state pressure transducer, solenoid valve, plumbing) for fresh water applications**
- **NEMA Type 2 enclosure**
- **Suitable for use as Service Equipment**
- **Each standard controller comes with user configurable options for:**
  - **AC Power Loss Start**
  - **Low Pressure Audible**
  - **Main Switch Mis-Set**
  - **Pump Run Alarm**
  - **User Defined Input**
  - **Low Pump Room Temp**
  - **Relief Valve Open**
  - **High Reservoir**
  - **Interlock Alarm**
  - **Low Suction Pressure**
  - **Manual Test**
  - **Remote Start**
  - **Weekly Test Setup**
  - **Low Reservoir**
  - **High Fuel Level**

Data Logging

The user interface monitors the system and logs the following data:
• Number Calls/Starts • Engine Total Run Time • Last Run Time • Controller Power On Time • Last Start • Minimum System Pressure • Maximum System Pressure • Last High Temperature • Last Low Oil Pressure • Last Engine Overspeed • Last Low Fuel Level • Last Charger Fail • Last Battery Trouble • Battery #1 Volts • Battery #2 Volts • Battery #1 Amps • Battery #2 Amps

Event Recording

Memory - The controller records all operational and alarm events to system memory. All events are time and date stamped and include an index number. The system memory has the capability of storing 3000 events and allows the user access to the event log via the user interface. The user can scroll through the stored messages in groups of 1 or 10.

USB Host Controller

The controller is equipped with a built-in USB Host Controller. A USB port capable of accepting a USB Flash Memory Disk is provided. The controller saves all operational and alarm events to the flash memory on a daily basis. Each saved event is time and date stamped. The total amount of historical data saved depends on the size of the flash disk utilized. The operator can save settings and values to the flash disk on demand via the user interface.

USB Host Port and Flash Disk

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