

FTA1100 Diesel Engine Fire Pump Controllers Specifications

Diesel Engine Fire Pump Controller

The fire pump controller shall be a factory assembled, wired and tested unit and shall conform to all the requirements of the latest edition of NFPA 20, *Standard for the Installation of Stationary Pumps for Fire Protection* and NFPA 70, *National Electrical Code*.

The controller shall be listed by Underwriters Laboratories, Inc., in accordance with UL218, *Standard for Fire Pump Controllers*, CSA, and Canadian Standards Association CSA-C22.2, *Standard for Industrial Control Equipment (cULus)* and approved by Factory Mutual.

The controller shall be:

- 12 Volt
- 24 Volt

and shall be compatible with either mechanical or electronic type engines.

The controller components shall be housed in a NEMA Type 2 (IEC IP11) drip-proof, wall mounted enclosure.

Operator Interface

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

Digital Status/Alarm Messages

The digital display shall indicate text messages for the status and alarm conditions of:

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

The Sequential Start Timer, Minimum Run Timer/Off Delay Timer and Crank/Rest time shall be displayed as numeric values reflecting the value of the remaining time.

LED Visual Indicators

- LED indicators, visible with the door closed, shall indicate:
- 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

Data Logging

The digital display shall monitor the system and log the following data:

- Motor Calls/Starts
- Pump Total Run Time
- Last Pump Run time
- Controller Power On Time
- Last Pump Start
- Minimum System Pressure
- Maximum System Pressure
- Last High Temp.
- Last Low Oil Pressure
- Last Engine Overspeed
- Last Low Fuel Level
- Last Charger Fail
- Last Battery Trouble
- Last Overspeed
- Battery #1 Volts (Min., Now, Max.)
- Battery #2 Volts (Min., Now, Max.)
- Battery #1 Amps (Min., Now, Max.)
- Battery #2 Amps (Min., Now, Max.)

Event Recording

Memory - The controller shall record all operational and alarm events to system memory. All events shall be time and date stamped and include an index number. The system memory shall have the capability of storing 3000 events and allow the user access to the event log via the user interface. The user shall have the ability to scroll through the stored messages in groups of 1, 10.

USB Host Controller

The controller shall have a built-in USB Host Controller. A USB port capable of accepting a USB Flash Memory Disk shall be provided. The controller shall save all operational and alarm events to the flash memory on a daily basis. Each saved event shall be time and date stamped. The total amount of historical data saved shall solely depend on the size of the flash disk utilized. The controller shall have the capability to save settings and values to the flash disk on demand via the user interface.

Solid State Pressure Transducer

The controller shall be supplied with a solid state pressure transducer with a range of 0-300 psi (0-20.7 bar) ± 1 psi. The solid state pressure switch shall be used for both display of the system pressure and control of the fire pump controller. Systems using analog pressure devices or mercury switches for operational control will not be accepted.

The START, STOP and SYSTEM PRESSURE shall be digitally displayed and adjustable through the user interface. The pressure transducer shall be mounted inside the controller to prevent accidental damage. The pressure transducer shall be directly pipe mounted to a bulkhead pipe coupling without any other supporting members. Field connections shall be made externally at the controller coupling to prevent distortion of the pressure switch element and mechanism.

Operation

A digitally set On Delay (Sequential Start) timer shall be provided as standard. Upon a call to start, the user interface shall display a message indicating the remaining time value of the On Delay timer.

The controller shall be field programmable for manual stop or automatic stop. If set for automatic stopping, the controller shall allow the user to select either a Minimum Run Timer or an Off Delay Timer. Both timers shall be programmable through the user interface.

The controller shall include an AC Power Loss start timer to start the engine in the event of AC Power failure.

A weekly test timer shall be provided as standard. The controller shall have the ability to program the time, date, and frequency of the weekly test. In addition, the controller shall have the capability to display a preventative maintenance message for a service inspection. The message text and frequency of occurrence shall be programmable through the user interface.

A Lamp Test feature shall be included. The user interface shall also have the ability to display the status of the system inputs and outputs.

An Audible Test feature shall be included to test the operation of the audible alarm device.

Seismic Certification

The controller shall be certified to meet or exceed the requirements of the 2006 International Building Code and the 2007 California Building Code for Importance Factor 1.5 Electrical Equipment for Sds equal to 1.88 or less severe seismic regions. Qualifications shall be based upon successful tri-axial shake-table testing in accordance with ICC-ES AC-156. Certification without testing shall be unacceptable. Controller shall be clearly labeled as rated for installation in seismic areas and a Certificate of Conformance as well as a Center of Gravity drawing shall be provided with the controller.

Battery Chargers

The controller shall include two fully automatic, 200 amp hour, 4 step battery chargers. The chargers shall feature a qualification stage, in which the batteries are examined by the charger to insure that they are not defective and are capable of accepting a charge. The battery charger shall feature:

- Selectable AC Power Voltage
- Selectable Battery Voltage
- Selectable Battery Type
- Charge Cycle Reset Push-button

The controller shall be a Firetrol brand.

SP1100-50

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