

Firetrol MARK^{III+} Diesel Engine Fire Pump Controller

FTA1100J – 12 or 24 Volt

Specifications

1.0 Main Fire Pump Controller

The main fire pump controller shall be a factory assembled, wired and tested unit. The controller shall be of the combined manual and automatic type designed for diesel engine operation of the fire pump. The controller shall be rated for an Ambient Temperature Operating Range of 39°F (4°C) to 104°F (40°C).

1.1 Standards, Listings & Approvals

The controller shall conform to all the requirements of the latest editions of:

- NFPA 20
- UL (UL218 and CSA C22.2 No. 14)
- FM Global (Class 1321/1323)
- City of New York for fire pump service

1.2 Enclosure

The controller components shall be housed in a NEMA Type 2 (IEC IP22) drip-proof, wall mounted enclosure with bottom entry gland plate.

1.3 Operator Interface (HMI)

7.0" LCD capacitive type color touch screen (HMI technology) operator interface powered by an embedded microcomputer with software PLC logic. Included shall be keypad type push-buttons for Crank from Battery #1, Crank from Battery #2, Stop and run test.

The screen shall include menus for: *Home · Alarms · Configuration · History · Service · Manuals · Language.*

The HMI shall graphically display the following: *AC Power Present · Charger #1 & #2 Charging Mode · Battery #1 & #2 Voltage and Amperage · System Pressure · Cut In and Cut Out Pressure Settings · Starter #1 and #2 Cranking or Resting · Engine Running · Starting Cause · Fuel Valve Energized · Timers Operation · H-O-A Switch Position · Actuation Mode · Controller Type · Shutdown Mode · Time & Date · Pump Room Temperature · System Pressure*

System pressure shall be capable of being displayed as: *PSI, kPa, Bar, Feet of Head or Meters of Water.*

The HMI shall allow programming and display of: *Cut In & Cut Out Pressure Settings · Minimum Run Timer · Sequential Start Timer · Periodic Test Timer*

The HMI allows the user to select the language of the system and download the manual or view the manual on screen.

1.4 State and Alarm Visual Indication

The digital display shall visually indicate and color code by criticalness the following:

AC Fail · DC Fail · Battery 1/2 Fail · Charger 1/2 Fail · Engine Trouble · Pump Room Trouble · Controller Trouble · Service Required · Battery 1/2 Weak · Loss of Continuity with Starting Contactor 1/2 · Weekly Test Start Pressure Not Reached · Weekly Test Check Solenoid Valve · Faulty Pressure Transducer · Low Raw Water Flow · Engine Fail When Running · Engine Fail To Start · Engine Overspeed · Low Ambient Temp. · Pump On Demand · Invalid Cut-In · Overpressure · Underpressure · Battery 1/2 Overvoltage · Water Reservoir Low · Fuel Tank Leak · Low Fuel Level · High Fuel Level · Engine ECM In Alternate Position · Engine Fuel Injection Malfunction · Engine High Temperature · Engine Low Temperature · Engine ECM Warning · Engine ECM Fault · Engine Low Oil Pressure · High Raw Water Temperature · Low Suction Pressure · Engine Run · Main Switch In Auto · Pump Room Temperature · Periodic Test · Main Switch in Hand · Cranking Cycle · Main Switch In Off · AC Power Available

1.5 Pressure and Event Recording

The system shall be capable of logging pressure data and operational events with time/date stamp. The system shall display operational events for the lifetime of the controller and display the pressure data in text or graphical form. The controller shall log the Date/Time of the first start-up and the controller total power on time from that date. The controller shall log first and last statistics for: *First Setup · On Time · Engine On Time · Engine Start Count · Engine Last Start Time · Min/Max/Average System Pressure · Min/Max/Average Pump Room Temp · Jockey Pump On Time · Jockey Pump Start Count · Jockey Pump Last Start Time*

1.6 USB Host Controller

A USB port capable of accepting a USB Flash Memory Disk shall be provided for downloading pressure and event logs.

1.7 Serial Communications

The controller shall feature Modbus with TCP/IP frame format and a shielded female RJ45 connector.

1.8 Pressure Sensing / Wet Parts

The controller shall be supplied with a solid state pressure transducer with a range of 0-500 psi calibrated for 0-300 psi (0-20.7 bar) and a run test solenoid valve. The wet parts shall be externally mounted and include a protective cover. The pressure sensing line connection to the transducer shall be 1/2-inch FNPT. Provisions for a redundant pressure transducer shall be provided.

1.9 Seismic Certification

The controller shall be certified to meet or exceed the requirements of the 2018 International Building Code, the 2019 California Building Code and OSHPD Special Seismic Certification Preapproval - OSP. The controller test criteria shall be per ICC-ES AC156 and the Seismic Parameters per ASCE 7-10 Chapter 13.

2.0 Controller Operation

On a call to start, the controller will crank from battery 1 for 15 seconds then rest for 15 seconds before cranking on battery 2. This cranking cycle shall repeat 3 times. If a running signal is not received from the engine, the controller will alarm "Fail To Start".

The controller shall have the capability to schedule service reminders. The controller also provides for inputting of pump flow test data, generating and displaying the pump curve and permanently storing this data in memory.

Provisions shall be available for connection of external devices for Manual Remote Start, Automatic Remote Start and Deluge Valve Start.

DPDT dry contacts rated 8A - 250VAC shall be provided for remote indication of:
Engine Run · Main Switch in Hand or Off · Controller Trouble (common) · Engine Trouble (common) · Pump Room Trouble (common)

An audible alarm device shall be provided on the controller.

2.1 Manufacturer

The controller shall be a Firetrol brand.