



SPECIFICATIONS FOR MODEL GPL LIMITED SERVICE FULL VOLTAGE ACROSS THE LINE STARTER ELECTRIC FIRE PUMP CONTROLLER

LISTING AND APPROVAL

The electric fire pump controller shall meet the latest NFPA 20 requirements, be listed with UL (in accordance with UL218 and CSA C22.2 No. 14 Industrial Control Equipment) and by the City of New York for fire pump service.

STARTING METHOD

The electric fire pump controller shall be a limited service combined manual and automatic type suitable for full voltage across the line starting of the electric fire pump motor.

SHORT CIRCUIT WITHSTAND RATING

The short circuit withstand rating of the electric fire pump controller shall be 25kA RMS at 200V - 480V or 18kA RMS at 600V.

ENCLOSURE

The standard enclosure shall be NEMA type 2.

POWER CIRCUIT COMPONENTS

The electric fire pump controller shall be supplied with the following power components:

- Voltage surge arrestor
- One thermo-magnetic circuit breaker rated between 150% and 250% of the motor full load current
- An across the line electric motor starter

OPERATIONAL COMPONENTS

The electric fire pump controller shall be supplied with the following externally door mounted components approved to match the NEMA rating of the enclosure:

- One thermo-magnetic circuit breaker operating handle mechanically interlocked with the enclosure door to prohibit access to the interior in the "ON" position. The handle shall have a hidden interlock defeater and be lockable in the "OFF" position.
- One "Emergency Start" mechanism latchable in the "ON" position

TOUCH SCREEN OPERATOR INTERFACE

The electric fire pump controller shall be supplied with a 4.2" LCD color touch screen (HMI technology) operator interface powered by an embedded microcomputer with software PLC logic. The operator interface's touch screen shall allow navigation through the various operating screens.

The following keypad type pushbuttons shall be provided:

- Start
- Stop
- Run test
- Navigation

- Help
- Home
- Alarms
- Settings/Configuration
- History/Statistics

The touch screen operator interface shall graphically display:

- Voltage and amperage readings of all three phases simultaneously and independently displayed with true RMS technology.
- Motor starting transition
- Motor stopped / running
- Type of starting cause
- Actuation mode
- Type of controller
- Method of shutdown
- Time and date
- Pump room temperature (°F or °C)
- System pressure in 5 different user selectable units of measure;
 - PSI
 - kPA
 - Bar
 - Feet of head
 - Meter of water

The touch screen operator interface shall allow for the programming and display of:

- Cut-In and Cut-Out pressure settings
- Minimum run period timer
- Sequential start timer
- Periodic test timer

The user shall be able to select the language of operation on-site.

Contextual HELP screens shall be accessible to the user while navigating through the operator interface in the chosen language.

CONDITION AND ALARM VISUAL INDICATORS

The touch screen operator interface shall visually indicate the following alarms and differentiate the criticalness by color code:

- Normal power phase reversal
- Normal power phase loss
- Normal power loss
- Locked rotor
- Fail to start
- Service required
- Undercurrent
- Overcurrent
- Under voltage
- Overvoltage
- Phase unbalance
- Low water level
- Low system (discharge) pressure
- Periodic test cut-in not reached



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- Run test solenoid valve check
- Faulty pressure transducer
- Pump on demand
- Over pressure
- Under pressure
- Low pump room temperature

PRESSURE AND EVENT RECORDING

The fire pump controller's touch screen operator interface shall be capable of logging pressure data and operational events with time and date stamp. It shall be able to display the last 500 operational events and display the pressure data in text and/or graphic form. Pressure data and operational events shall be stored in memory for the lifetime of the controller. The data shall also be retrievable and downloadable to a flash memory disk via the USB port accessible to the user without having to open the controller door. General system information, events and alarms include the following:

- Last service statistics
 - Powered since
 - On time
 - Motor last run
 - Motor run time
 - Motor start count
 - Minimum, maximum, average system pressure
 - Minimum, maximum, average pump room temperature
- All time statistics
 - First power up
 - First start up
 - On time
- Power statistics
 - Voltage between phases with date stamp
 - Amperage between phases with date stamp

WETTED PARTS

The electric fire pump controller shall be supplied with a pressure transducer. The pressure sensing line connection to the pressure transducer shall be ½" FNPT. Provision for a redundant pressure transducer shall be provided. The pressure transducer shall be rated for 500psi working pressure.

SERVICE/FLOW TESTING CAPABILITIES

The electric fire pump controller's touch screen operator interface shall have the capability of scheduling maintenance reminders. It shall also have the capability of inputting pump flow test data, generate and display the pump curve and

store this information in memory for the lifetime of the controller.

CONNECTION FOR EXTERNAL DEVICES

The electric fire pump controller shall provide terminals for the connection for the following external devices:

- Manual remote start device
- Automatic remote start device
- Deluge valve start

ALARM CONTACTS FOR REMOTE INDICATION

SPDT dry alarm contacts rated for 8A – 250VAC for remote indication shall be provided for the following conditions;

- Power or phase failure and/or circuit breaker in open position
- Phase reversal
- Pump run (X2)
- Common pump room alarm
- Common motor trouble

Removable alarm contact terminals shall be provided.

AUDIBLE ALARM

A 4" alarm bell rated for 85dB at 10ft (3m) shall sound during boot up and internal communication error.

MANUFACTURER

The electric fire pump controller shall be a Model GPL with ViZiTouch operator interface as manufactured by Tornatech Inc.