



**Specification
D- Series
Fire Pump Controller**

SPECIFICATION FOR “D” SERIES ELECTRIC FIRE PUMP CONTROL.

The Fire Pump Controller shall meet the requirements of the latest edition of NFPA-20 and shall be listed by UL (Underwriters Laboratories), and approved by FM (Factory Mutual) for fire pump service. ULC listed, and CE compliant.

The Controller shall be of the combined manual and automatic, multi-microprocessor type designed for Full Voltage Across-The-Line D10630, or Reduced Voltage Soft Start D10620, Reduced Voltage Autotransformer D10640, Reduced Voltage Primary Resistor D10650, Reduced Voltage Wye-Delta Closed Transition D10680, or Reduced Voltage Wye-Delta Open Transition D10690, starting of the Fire Pump Motor and having horsepower, voltage, phase and frequency rating as shown on the plans and drawings.

The Controller shall be completely assembled, wired and tested by controller manufacturer and housed in a NEMA 2 Enclosure with Drip Hood. The entire Controller shall be withstand rated for 100,000 RMS Symmetrical amperes up to 480 volts. The Controller shall include a single handle operator mounted in the exterior of the controller to sequentially operate both the Isolating Switch and the Circuit Breaker.

An Operator Interface, Microprocessor based, LCD Display/Power Alarm Module, shall be accessible without opening the door and capable of reading, simultaneously, all three phase to phase voltages, and all three phase currents. This Display/Alarm Module must be an independent unit capable of monitoring event history and real time events, and not be required for the normal operation of the controller. It is required to access Event History Records and Real Time Display, at the touch of a button, with the door closed, all of the following information:

Real Time Display, All 3 phase-to-phase Voltages and 3 phase currents (Simultaneously), Average Voltage, Average Current, Percent of Unbalance, Number and Type of Starts, Number and Types of Trips, Pending Faults and Time remaining before trip.

Event History Display, Last 2 locked rotor shunt trips (Date, Time, 3 Voltages, 3 Currents at time of shutdown), Date and time: for all Pump Starts (w/o Auto or Manual signal, Auto Start, Manual Start) For all Pump Stops, Power on, or return of good power, Power Loss due to: Loss of Building Power, Locked Rotor Trip, Locked Rotor Manual Test Trip. View Set-up Mode, Set-up Change Mode.

Communication, an RS485 serial port shall be provided to download event history, status and alarm conditions, to a computer.

The following LED'S shall be provided as standard, power available (green) flashing green, brownout condition detected, phases reversed (red) flashing red impending trip due to locked rotor. Real time data, fault history, set point, setup, change setup.

Locked Rotor Protection circuit shall include a "Two Tier Protection Curve", Tier One for Normal 3-phase supply voltage and Tier Two for a single phase condition that occurs while the motor is running. Testing of the Locked Rotor Protector, and Reversed Phase condition shall be accomplished without opening the door.

A Solid State Pressure Transducer shall be provided, rated for 300 or 600 psi with a +/-2% accuracy.

An Operator Interface, Microprocessor based, Fire Pump Pressure Recording Controller with a 10 inch, 7-day Chart and LCD Pressure Display shall be supplied as standard. This shall be an Independent unit, designed for the automatic starting (and stopping if required), of the Fire Pump Controller. Starting of the Fire Pump must be accomplished by the dropping out of a relay to give the controller a fail safe feature (ie. if the coil fails on the relay the Pump will start.) The pressure Cut-In and Cut-out differential shall never be allowed to be less than +1.0 psi. If the minimum differential is violated, the other setting will be adjusted automatically to maintain the +1.0 difference.

A Red Low Pressure LED shall light at low pressure, to indicate the starting cause, and a Green LED shall indicate when pressure is Normal. This Fire Pump Pressure Recording Controller shall include Running Period Timer and Red LED, Sequence Start Timer and Red LED, and Test Timer as standard. A means shall be provided to test the LED's (lamps) to ensure their functionality. Recorder must be accessible without opening the Fire Pump Controller door.

The Manual starting and stopping of the controller shall be accomplished via a start and stop pushbutton and a manual start relay independent of the automatic start relay as standard. Also included is a manual lift handle for emergency start.

The Controller Manufacturer shall manufacture all major components of the controller including enclosures, contactors, relays, surge arrestors, microprocessor based pressure recorder, pressure transducer. Etc.

The Controller shall be 10600 Type "D" as manufactured by Joslyn Clark Controls, and made in the USA.