

Typical Specifications

1. Approvals

- A. The Fire Pump Controller and Transfer Switch combination shall meet the requirements of the latest edition of NFPA 20 and shall be listed by [Underwriters Laboratories (UL)] and approved by [Factory Mutual] (FM) **, [Canadian Standards Association (CSA)] and [New York Department of Buildings (NYSB)] for fire pump service.
- B. The transfer switch shall meet UL 1008 and shall be regularly subjected to Endurance, Interrupting Capacity, and Dielectric Voltage-Withstand test as outlined by UL 489 standards.

2. Ratings

- A. The transfer switch shall be suitable for the available short circuit current at the line terminals of the controller.
- B. The transfer switch shall have an ampere rating not less than 115% of the motor full-load current.

3. Construction

- A. The transfer switch shall be installed in a barriered compartment of the fire pump controller. The complete assembly, controller and transfer switch, shall be shipped as a single unit.
- B. A single uni-gear motor shall electrically operate the transfer mechanism. It shall also be capable of being operated manually and shall have suitable provisions for readily disengaging the gear motor when necessary.
- C. The transfer switch shall be mechanically and electrically interlocked so that it shall not be possible for the load circuits to be connected to normal and emergency sources simultaneously, regardless of whether the switch is electrically or mechanically operated. The switch shall have a manual neutral.
- D. The alternate side shall be provided with an isolation switch sized to a minimum of 115% of the motor full-load current and a circuit breaker having a continuous current rating not less than 115% of the motor full load amps. The isolation switch shall have overcurrent sensing elements of the non-thermal type, and instantaneous short-circuit overcurrent protection. (This does not apply to FPATS Stand Alone and FT20 Limited Service Transfer Switch Controllers.)
The isolating switch and circuit breaker shall be mechanically interlocked and operated by a single handle. (This does not apply to FT20 Limited Service Transfer Switch Controllers.)
The isolating switch shall be supervised to indicate when it is opened by audible and visual alarms.
- E. An auxiliary contact shall be provided to prevent sending of the signal for starting of the alternate source generator when the transfer switch commands it, if the isolation switch on the alternate source side of the transfer switch is open.
- F. The transfer switch shall be provided with locked rotor overcurrent protection. The locked rotor protector shall be calibrated and set to a minimum of 300% of the motor full-load current and have a tripping time between 8 and 20 seconds. (This does not apply to FT20 Limited Service Transfer Switch controllers.)

4. Enclosure

- A. The controller shall be housed in a NEMA Type 2 (IEC IP11) drip-proof, powder baked finish, freestanding enclosure.

5. Microprocessor Control

- A. A solid state sensing and control logic panel shall be separately mounted from the power-switching portion of the transfer switch. The two sections shall be connected together by control cables and plug-in connectors. The control section shall be capable of being isolated from the power section for maintenance.
- B. The normal power source shall be set to pickup at 95% and drop out at 85% of nominal supply. The voltage sensing on the alternate supply shall be set to pickup at 95% of nominal voltage.
- C. All voltage sensing, frequency sensing, and timer set points shall be field adjustable.
- D. The transfer switch shall automatically transfer its load circuit to an emergency or alternate power supply upon failure of the normal or original supply. In order to override momentary fluctuations in the system, a time delay transfer from normal to alternate power supply shall be adjustable up to 1800 seconds. Upon restoration of the normal supply, the transfer switch shall automatically retransfer its load circuits to the normal supply. Mechanically held transfer mechanisms shall be energized only momentarily during transfer or retransfer.
- E. If the emergency / standby power should fail while carrying the load, transfer to the normal supply shall be made instantaneously upon restoration of the normal source to satisfactory conditions.
- F. The transfer switch shall come complete with five LED's to provide visual indication of the unit status, source 1 available, source 1 connected, source 2 available, and source 2 connected.
- G. An engine test button shall be provided that will initiate an engine test.
- H. A silence alarm button shall be provided that will silence the alarm buzzer.

6. Alarm Relays

- A. 1 Form-C contact shall be provided for remote indication for source 1 connected or source 2 connected.
- B. 2 Form-C contacts shall be provided for remote indication for the alternate source-isolating switch open.

7. Manufacturer

- A. The manufacturer of the assembly shall be the manufacturer of major components and control modules installed within the assembly.
- B. The Transfer Switch Fire Pump Controller shall be of the LMR Plus type as manufactured by Eaton Industries (Canada) Company.
- C. Models:
FT20 Limited Service
FT30 Across the Line
FT40 Part Winding
FT50 Primary Resistor
FT60 Autotransformer
FT70 Wye-Delta (Star Delta) Open Transition
FT80 Wye-Delta (Star Delta) Closed Transition
FT90 Soft Start
FPATS Stand Alone Transfer Switch

** NOTE: FPATS Stand Alone and FT20 Limited Service Transfer Switch controllers, do not carry FM Approval.