

MASTER model MCV, Variable Speed Electric Fire Pump Controllers automatically adjust the fire pump speed to maintain a truly constant output pressure from no-flow to full flow, regardless of the suction pressure.



### G4 Innovation



MODEL MCVA-150-46-XG4

#### Variable Speed Overview

This is the best fire controller for a fire sprinkler system since it provides smooth hydraulic operation and virtually eliminates water hammer. It also ramps up during starting and ramps down during stopping to dramatically reduce the starting inrush currents.

#### HMI Special Features

- Simultaneous display of 3 phase voltages and currents, System Pressure, Start/Reset, Manual/Auto, and Weekly/Monthly testing
- Starting sequence displayed
- Setup assistant
- Setup summary screen
- Start setting with auto 10 PSI increment for Reset setting
- Automatic weekly or monthly testing
- Transducer testing during weekly or monthly testing
- Remote alarm contact testing
- Annual testing reminder
- Service contact information displayed
- Alarm silence with auto re-sound
- Instant conversion from PSI to BAR for pressure settings
- Multiple passwords levels

#### Controller Special Features

- Data Recorder tracks 48 digital and 11 analog signals and outputs CSV file to USB adapter
- Waterproof USB adapter on outside
- PhaseSmart single phase protection in accordance with NFPA 20
- 3 second restart time delay
- HMI not needed for controller operation
- No water connections inside enclosure
- Protective bracket for external transducer
- Y-strainer to protect test valve solenoid
- 50 C ambient temperature rating

#### Standard Features

- Sequence start
- Remote/Deluge Start – normally closed
- Automatic stop
- Auto test valve solenoid
- Manual pressure drop test button
- High Zone delayed start
- Manual, Non-automatic operation
- Lockout when authorized by the AHJ
- 22mm mechanical Start/Stop pushbuttons
- Motherboard in steel chassis with latched connectors
- DC circuit breaker shunt trip
- Vertically mounted Isolating Switch and Circuit Breaker for safe separation

#### NEMA type 12 dusttight enclosure with external wet parts

Externally mounted transducer, test valve solenoid, and pressurized wet parts eliminate any chance of water spray on electrical parts.

#### 100,000 Short Circuit Current rating

Controllers are short circuit current rated for 100,000 amps @ 200–480 vac. If a transfer switch is provided, these ratings also apply to the Emergency side.

#### Combination Transfer Switch Controllers

Transfer switch controllers are built in accordance with NFPA 20 as a combination fire pump controller and transfer switch. To select, just add a “T” to the basic model number.

#### Standards and Approvals

Controllers are designed to the requirements of NFPA 20, Underwriters Laboratories, and Factory Mutual Approvals.

### Visual and Audible Alarms

- AC Failure
- AC Volts Low
- Bypass Mode
- CB Trip (requires SP1 or SP2)
- Drive Failure
- Failure to Start
- Load Shed
- Lockout
- Low Discharge Pressure
- Low Suction Pressure (83LT)
- Low Zone Start (On Demand)
- Motor Overload
- Overpressure
- Phase Reversal
- PhaseSmart

- Pump House Trouble Alarms 1-8
- Pump Running
- Single Phase Running
- Transducer Failure

### On transfer switch controllers:

- Normal Position
- Normal Power Available
- Emergency Position
- Emergency Power Available
- Emergency CB Open

### Voltage Free Remote Contacts

- Pump Running (2 sets)
- AC Failure
- Phase Reversal
- System Trouble
- Low Zone start (On Demand)

- Bypass Mode
- Overpress
- Drive Failure

### On transfer switch controllers:

- Normal Position
- Emergency Position
- Emergency CB Open
- Generator Start

### Additional Voltage Free Remote Contacts

5 programmable inputs and 5 programmable relay outputs. Contacts rated 6 amps at 30 vdc, 6 amps at 250 vac. UL pilot duty ratings R300 and B300. Relays can be programmed for any of the Visual and Audible Alarms.

MODEL NUMBER CONSTRUCTION						
MCVR or MCVRT	—	150	—	46	—	XG4
Basic Model		Horsepower		Voltage*		Modifications
MCVA	Across-the-Line Bypass	15, 20, 25, 30,		20 = 200v, 60 hz		Select from
MCVR	Primary Reactor Bypass	40, 50, 60, 75,		21 = 208v, 60 hz		Below
MCVS	Soft Start Bypass	100, 125, 150,		23 = 230-240v, 60 hz		
MCVAT	Transfer Switch with Across-the Line Bypass	200, 250, 300		38 = 380-400v, 50 hz		
MCVRT	Transfer Switch with Primary Reactor Bypass	350, 400		39 = 380-400v, 60 hz		
MCVST	Transfer Switch with Soft Start Bypass			41 = 415v, 50 hz		
				46 = 460-480v, 60 hz		
				57 = 575-600v, 60 hz		

\* Horsepowers limited to 150 @ 208V-240V, 350 @ 380V, 400 @ 480, and 400 @ 600V

### Modification Codes

- SP1** – Supervisory Power input – Provides 120 vac, 50/60 hz transformer to completely power control circuits even if the Circuit Breaker is Off. Includes Supervisory Power Fail start (when enabled).
- SP2** – Supervisory Power input – Provides 240 vac, 50/60 hz transformer to completely power control circuits even if the Circuit Breaker is Off. Includes Supervisory Power Fail start (when enabled).
- 3R** – NEMA Type 3R raintight enclosure
- 4** – NEMA type 4 watertight enclosure
- 4XB** – NEMA type 4X, 304 ss watertight enclosure
- 4XC** – NEMA type 4X, 316 ss watertight enclosure
- 8E** – CE declaration for European Community
- 15** – 300 PSI, 316 ss pressure transducer, test valve solenoid, and wet parts

- 15A** – 300 PSI, 300 series ss pressure transducer, test valve solenoid, and wet parts.
- 16A** – 500 PSI, pressure transducer, test valve solenoid, and wet parts.
- 19** – Space heater
- 20** – Space heater with thermostat
- 20A** – Space heater with humidistat
- 27** – 200,000 amp emergency short circuit current rating
- 32** – Low pump room temperature switch
- 33** – Auxiliary power output – (1 amp at 120 vac)
- 83LT** – Low suction transducer and wet parts externally mounted under protective bracket.
- 200** – 200,000 amp normal short circuit current rating