

13-ULV200-R

200GPM Fire Pump Package

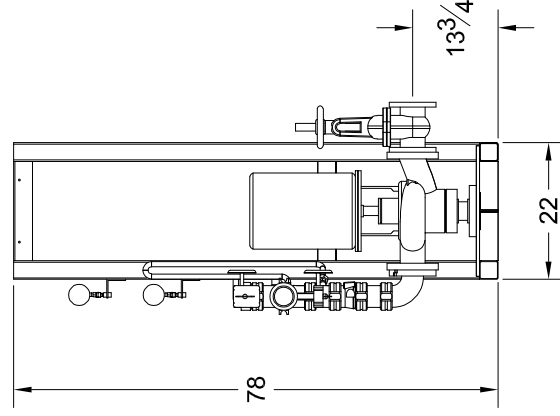
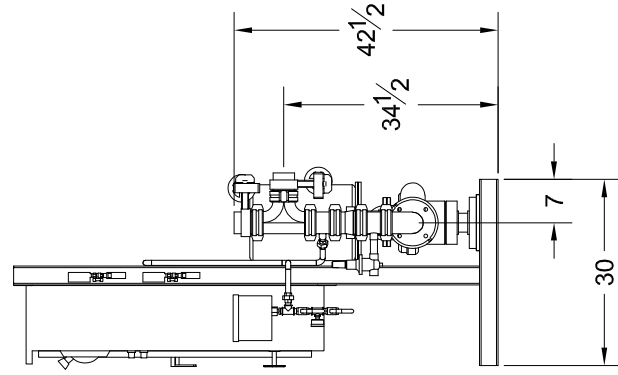
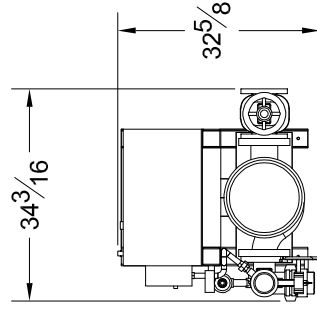
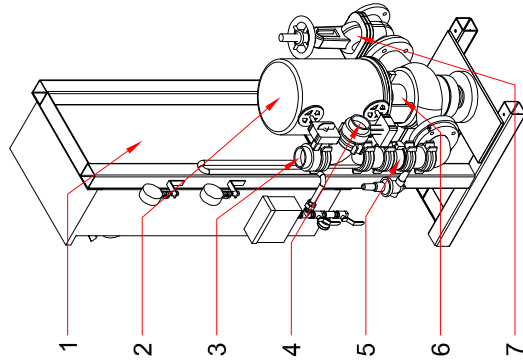
Submittal Packet

NFPA13R Packaged Fire Pump System UL/FM Fire Pump



13-ULV200-R

Compact Residential Package
Design Condition: 200GPM @ 50PSI



System Specifications:

Motor

- 10 Horsepower Electric
- 230 Volt, 46 Amp
- Single Phase
- 3450 RPM

Pump

- UL/FM Vertical Inline Fire Pump
- 3" Suction (Flanged)
- 3" Discharge (Grooved)
- 175 PSI max working pressure

System Components (UL Listed by Manufacturer)

- 1- Limited Service Fire Pump Controller
- 2- Electric Motor
- 3- Discharge Monitored Ball Valve
- 4- Test Connection Monitored Ball Valve
- 5- Check Valve
- 6- Vertical Inline Fire Pump
- 7- Suction OS&Y

Dimensions (Approximate)

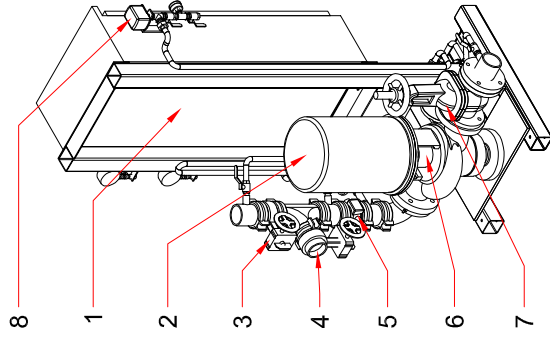
- 33" Depth
- 78" Height
- 35" Width



NFPA13R Packaged Fire Pump System UL/FM Fire Pump with Jockey Pump

13-ULV200-R

Compact Residential Package
 Design Condition: 200GPM @ 50PSI



System Specifications:

Motor

- 10 Horsepower Electric
- 230 Volt, 46 Amp
- Single Phase
- 3450 RPM

Pump

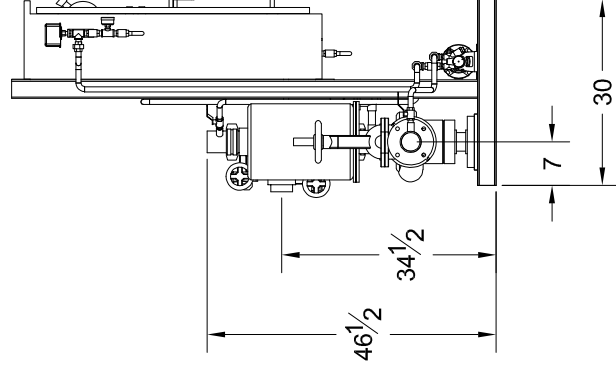
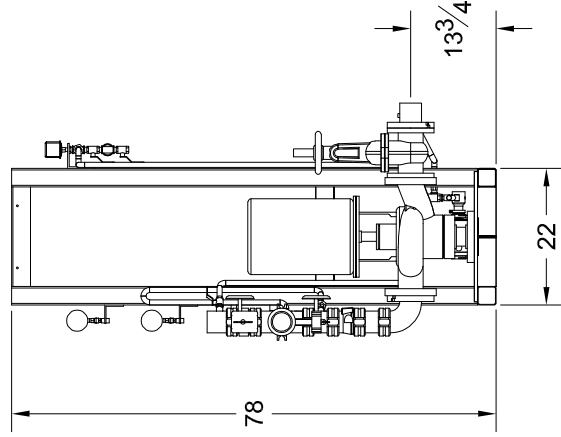
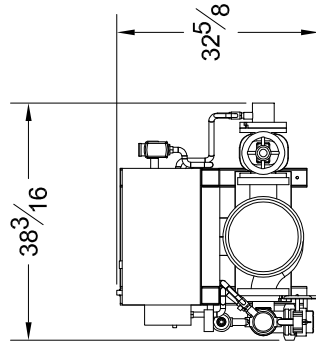
- UL/FM Vertical Inline Fire Pump
- 3" Suction (Grooved)
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- 175 PSI max working pressure

System Components (UL Listed by Manufacturer)

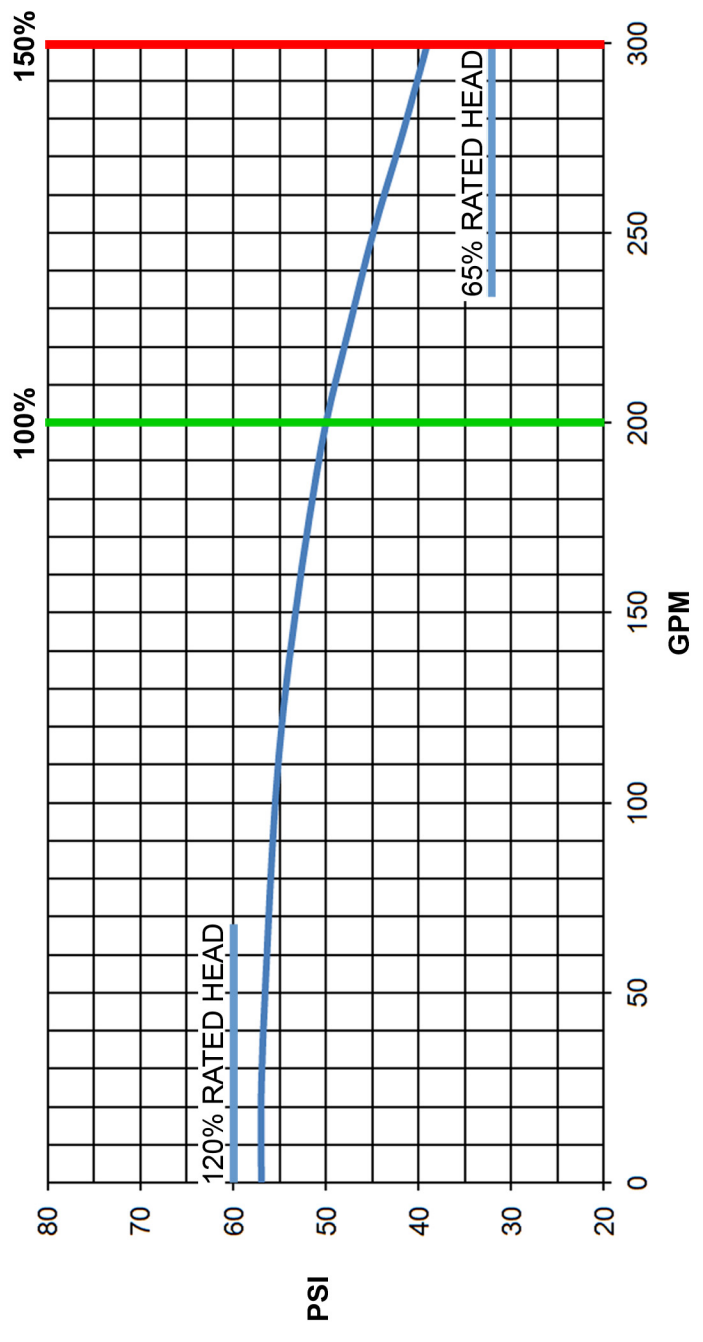
- 1- Limited Service Fire Pump Controller
- 2- Electric Motor
- 3- Discharge Monitored Ball Valve
- 4- Test Connection Monitored Ball Valve
- 5- Check Valve
- 6- Vertical Inline Fire Pump
- 7- Suction OS&Y
- 8- Pressure Switch (Jockey Control)

Dimensions (Approximate)

- 33" Depth
- 78" Height
- 39" Width



13-ULV200 200GPM @ 50PSI 10HP UL/FM VERTICAL INLINE FIRE PUMP



TALCO FIRE
SYSTEMS



RESIDENTIAL & COMMERCIAL FIRE PUMP SPECIALISTS

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Fire Pump Controller

Eaton EPCT Fire

Touchscreen based electric fire pump controllers



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Product Description

The EPCT Fire features an advanced, 7" color touchscreen that incorporates both the fire pump controller (FPC) and automatic transfer switch (ATS) functionality into one, intuitive display.

Designed solely with the consumer in mind, the EPCT Fire enables technicians to commission the fire pump controller faster; troubleshooting is made easier and is more effective through the use on-screen history filtering and diagnostic monitoring.

All full-service fire pump controllers can be offered in either full-voltage or reduced voltages starting methods:

- FD/FT20 - Limited service
- FD/FT30 - Across-the-line
- FD/FT40 - Part winding
- FD/FT50 - Primary resistor
- FD/FT60 - Autotransformer
- FD/FT70 - WYE-Delta (Star-Delta) open transition
- FD/FT80 - WYE-Delta (Star-Delta) closed transition
- FD/FT90 - Soft start

Product Features

Touchscreen Display

General

Speed of commissioning, configuration and troubleshooting are more critical to businesses today more than ever. Through the use of a 7" touchscreen, users can easily program all site specific setpoints through an intuitive menu structure, view all critical system information, and troubleshoot quickly and accurately via on-screen diagnostics.

Automatic Transfer Switch Integration

Going away from the multiple screen approach, the EPCT Fire touchscreen integrates both the Fire Pump Controller and Automatic Transfer Switch into one display enabling the user to effectively manage programming and operation from one source.

Commissioning Simplified

The Startup tab features all controller related commissioning tasks such as: Quick Setup, Setup Phase Reversal, Flow Test, Manual/Automatic Starts, and Test Alarms.

UL Type Rating

The touchscreen display has been tested in accordance with UL and achieves a type 4X rating.

Programming Menu

Startup tab

This tab system enables the user to complete all controller related commissioning tasks. Each sub-menu within the Startup tab guides the user through step-by-step, intuitive screens to quickly and effectively complete the startup and commissioning process.

Panel Setup tab

All variables relating to the panel, such as language, date and time, nominal voltage, etc., are located in the Panel Setup tab. For all programming points within the Panel Setup tab, refer to the instruction manual: MN124016EN.

Help tab

The help tab provides end users service contact information from the company that commissioned the unit (if programmed), factory contact information, and a QR code to download the instruction manual onto a mobile device.

Pressure Settings tab

Contains a variety of pressure settings that may be programmed to suit site requirements. Some key settings include: Start Pressure, Stop Pressure, Low Pressure Alarm, High Pressure Alarm, Low Suction Shutdown, Low Foam Shutdown, Pressure Units, and the ability to calibrate the transducer.

Timer Values tab

This tab system contains the programming point for all fire pump controller related timers. These timers are: Minimum Run Time, Acceleration Time, Sequential Start Time, Fail to Start Time, Fail to Stop Time, and Weekly Motor Test Timer.

ATS Settings tab (if equipped)

The ATS Settings tab will only be enabled on units equipped with an automatic transfer switch. Programming points within this tab only pertain to the operation of the transfer switch.

Alarm Setpoints tab

There are seven (7) programmable alarm points within this tab system: Phase Reversal, Phase Failure Alarm Setpoint, Motor Overload Setpoint, Transducer Fail Pump Start, Abort Motor Test on Low Voltage, Voltage Alarm Settings, and Frequency Alarm Settings.

Inputs/Outputs tab

The I/O board is capable of accepting ten (10) custom inputs that can be programmed for seventeen (17) predefined conditions. The output relays can be programmed for sixty-one (61) separate conditions. Additional relays can be added through the use of a single or multiple optional relay boards.

History/Statistics/Diagnostics tab

This tab system allows the customer/technician to view historical data, controller statistics, controller diagnostics, and startup information. To assist, the controller can filter for specific events or between certain dates to speed up troubleshooting.

I/O Board

Power Supply

The redesigned I/O board is equipped with a full voltage power supply capable of accepting voltage inputs between 200-600VAC three phase, or 240VAC single phase.

Customer Input Connections

Connection terminals are provided at the top of the I/O board for external customer connections that can be programmed through the touchscreen display.

Output Relays

The I/O board features four (4), 250VAC, 8A, 2 Form-C relays designated for the following: Common Alarm, Power/Phase Failure, Phase Reversal, and Pump Run. Each relay socket has a surface mount LED to indicate the relay's coil status.

Optional Boards

The controller can accept up to four (4) additional option boards: optional relay board, MODBUS communication board, secondary 4-20mA device board, and an alarm board. The controller has provisions to allow future optional boards to be added with plug-and-play functionality.

Other Components

Drain Valve Solenoid

All full-service EPCT Fire controllers are equipped with a drain valve solenoid used for manual or automatic motor tests.

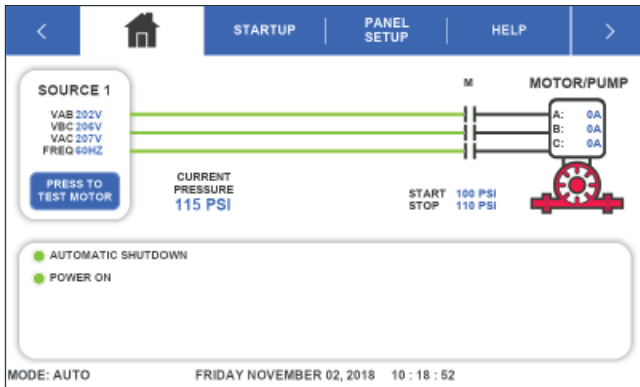
External USB Port

The USB port allows the user to download historical messages, statistics, diagnostic information, startup file, and current controller configuration to any USB device with FAT16 or FAT 32 formatting.

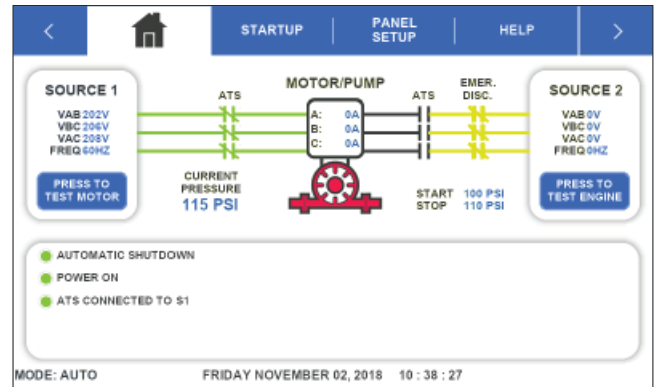
Enclosures

The EPCT Fire controllers come standard with UL type 2 (drip-proof) enclosures. Optional enclosures are available and include: type 3, 3R, 4, 4X, and 12.

Display Screens



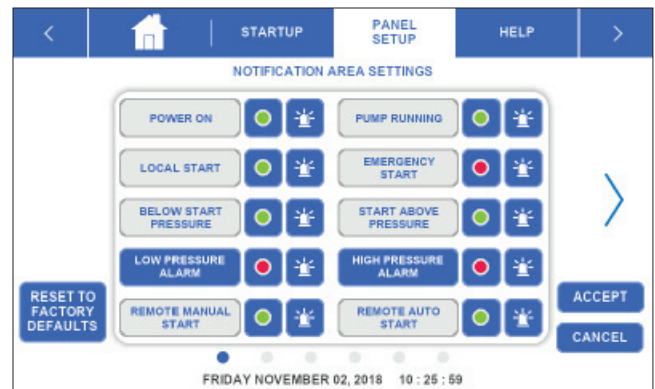
Home tab - without ATS



Home tab - with ATS



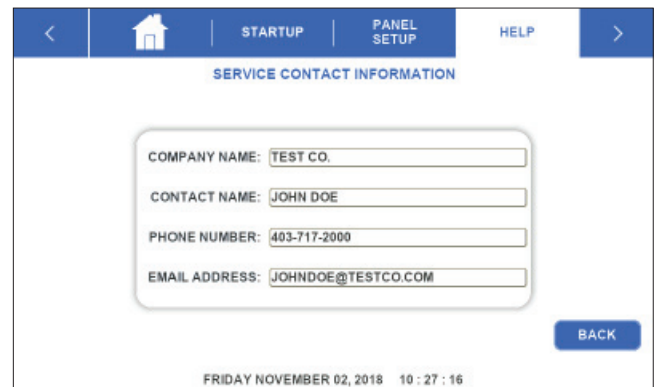
Common Alarm Settings



Notification Area Settings



Message History



Customer Service Contact

Emergency Start Operator

A mechanically operated emergency start handle (ESH) will mechanically activate the motor contactor(s) independently from any electrical control circuits.

Standards & Certifications

All EPCT Fire full-service, electric fire pump controllers meet or exceed the requirements of Underwriters Laboratories and Underwriters Laboratories Canada [UL218 and UL1008], Factory Mutual, the Canadian Standards Association, New York City building code, CE mark, U.B.C./C.B.C. seismic requirements, and are built to the latest edition of NFPA 20 standards. The EPCT Fire electric fire pump controllers are suitable for use as service entrance equipment - does not meet CEC requirements for Canada.

Quick Specification Overview

Starting Conditions					Withstand Ratings		
Starting Method	Starting Voltage	Starting Current	Starting Torque	Motor Connections	Voltage	HP	Short Circuit Withstand Rating
FD/FT20 Limited Service	Full	600%	100%	2 (SP) or 3	200-208V	5-30	25,000
					220-240V	5-30	25,000
					380-415V	5-30	25,000
					440-480V	5-30	25,000
					575-600V	5-30	18,000
					240V (SP)	5-15	10,000
FD/FT30 Across-the-Line	Full	600%	100%	3	200-208V	5-150	100,000
					220-240V	5-200	100,000
					380-415V	5-300	100,000
					440-480V	5-400	100,000
					575-600V	5-500	25,000
FD/FT40 Part Winding	Reduced	65%	50%	6	200-208V	5-250	100,000
					220-240V	5-300	100,000
					380-415V	5-500	100,000
					440-480V	5-600	100,000
					575-600V	5-700	25,000
FD/FT50 Primary Resistor	Reduced	50%	42%	3	200-208V	5-150	100,000
					220-240V	5-200	100,000
					380-415V	5-300	100,000
					440-480V	5-400	100,000
					575-600V	5-500	25,000
FD/FT60 Autotransformer	Reduced	45%	42%	3	200-208V	5-150	100,000
					220-240V	5-200	100,000
					380-415V	5-300	100,000
					440-480V	5-400	100,000
					575-600V	5-500	25,000
FD/FT70 WYE-Delta (Star-Delta) Open Transition	Reduced	33%	33%	6	200-208V	5-250	100,000
					220-240V	5-300	100,000
					380-415V	5-500	100,000
					440-480V	5-600	100,000
					575-600V	5-700	25,000
FD/FT80 WYE-Delta (Star- Delta) Closed Transition	Reduced	33%	33%	6	200-208V	5-250	100,000
					220-240V	5-300	100,000
					380-415V	5-500	100,000
					440-480V	5-600	100,000
					575-600V	5-700	25,000
FD/FT90 Soft Start	Reduced	Adjustable	Adjustable	3	200-208V	5-150	100,000
					220-240V	5-200	100,000
					380-415V	5-300	100,000
					440-480V	5-400	100,000
					575-600V	5-500	25,000

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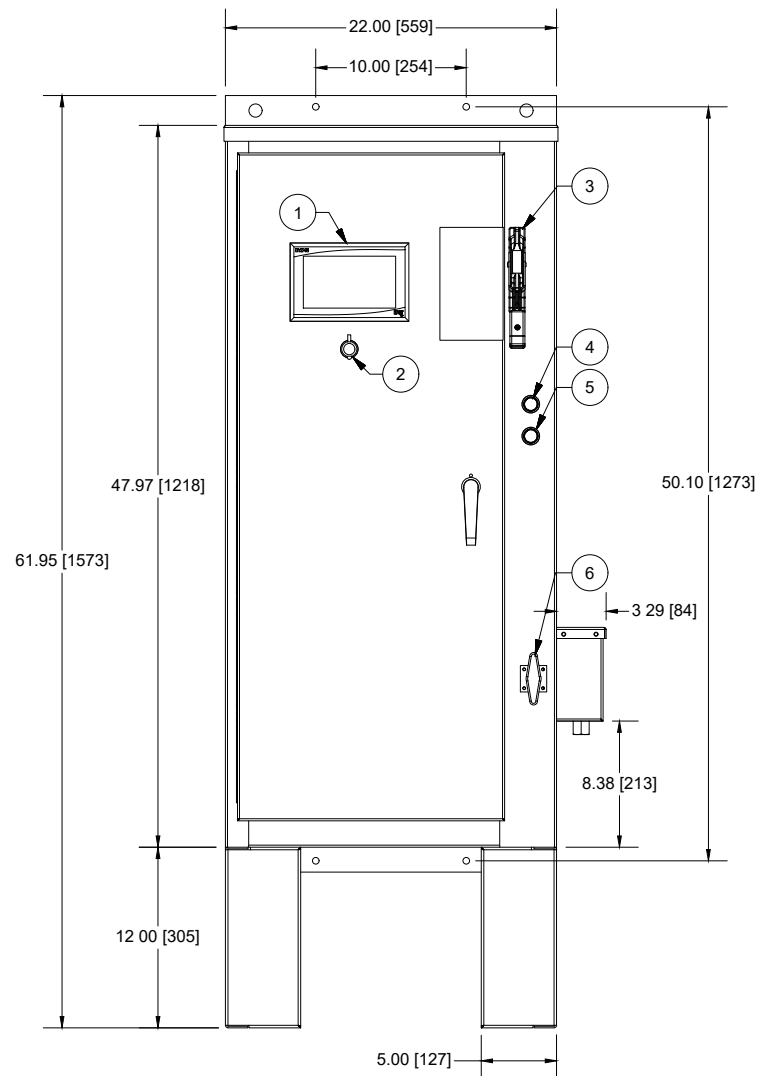
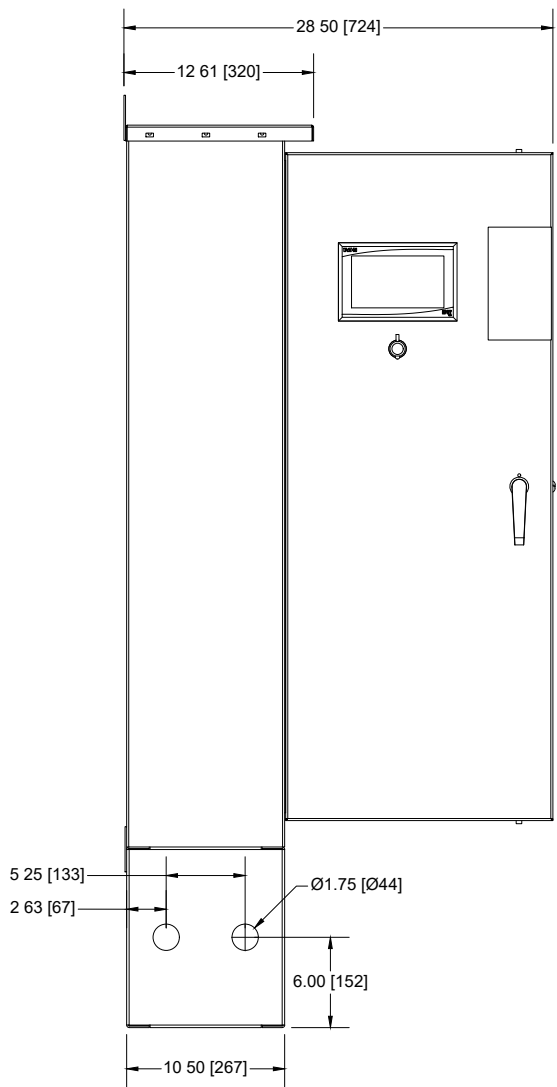
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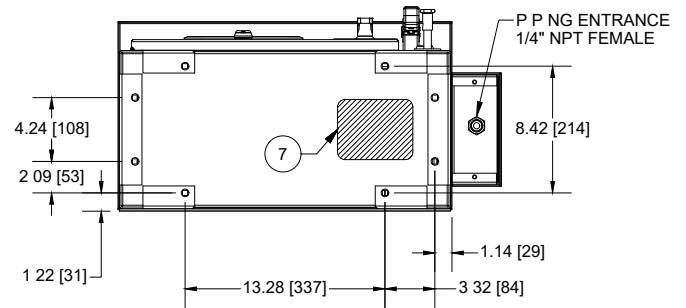


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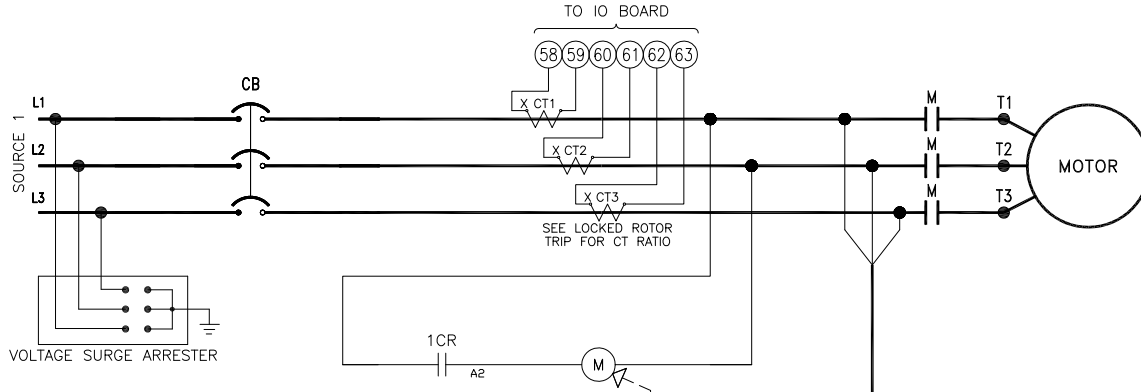


- 1 - EPCT TOUCHSCREEN
- 2 - EXTERNAL USB PORT
- 3 - MAIN POWER SWITCH
- 4 - START PUSHBUTTON
- 5 - STOP PUSHBUTTON
- 6 - MSH (EMERGENCY START HANDLE)
- 7 - RECOMMENDED CABLE ACCESS (BOTTOM ONLY)

NOTES:
 1 - DIMENSIONS: in [mm]
 2 - ALL ENCLOSURES FINISHED IN RED
 3 - STANDARD ENCLOSURE: TYPE (NEMA) 2

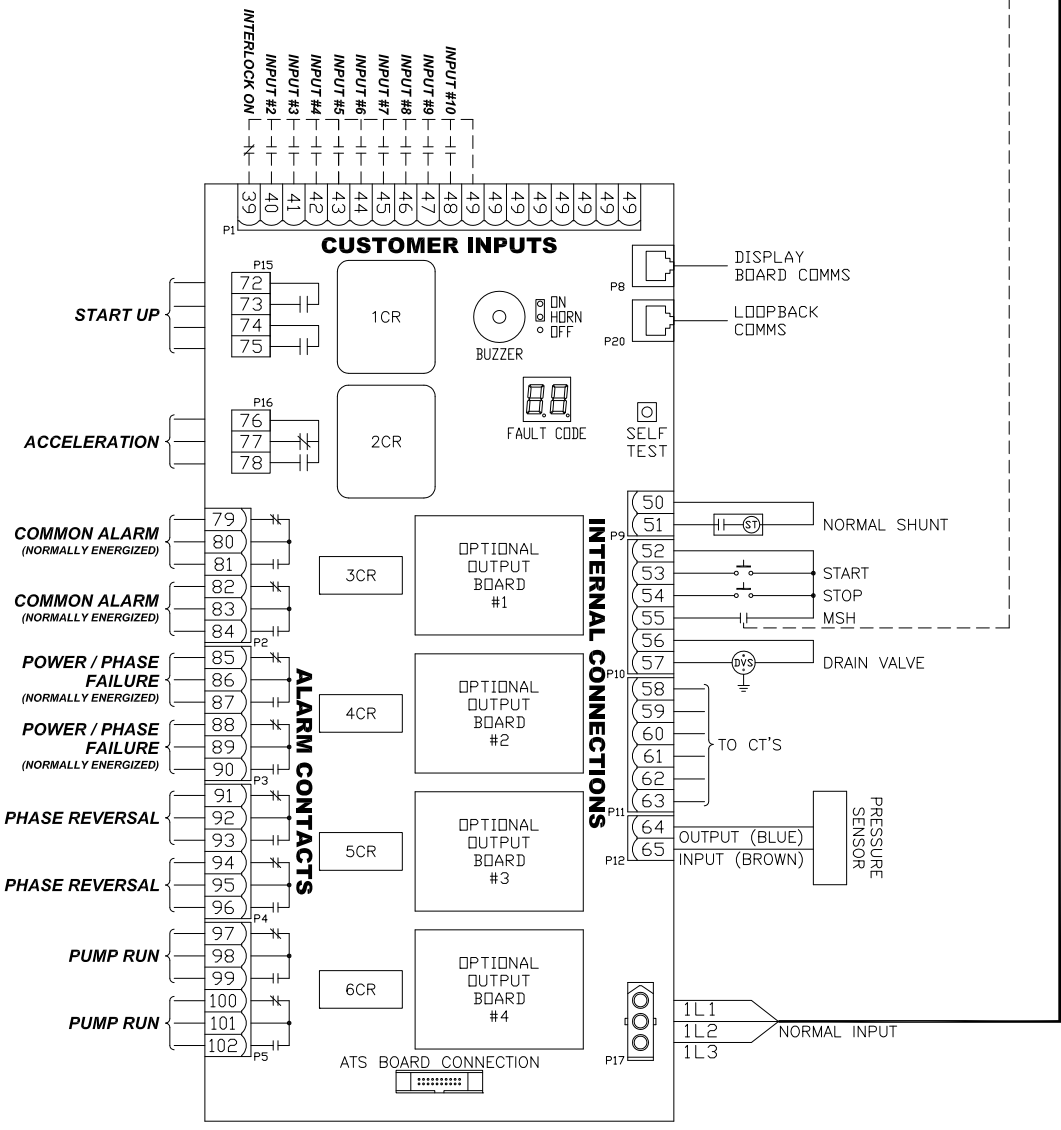


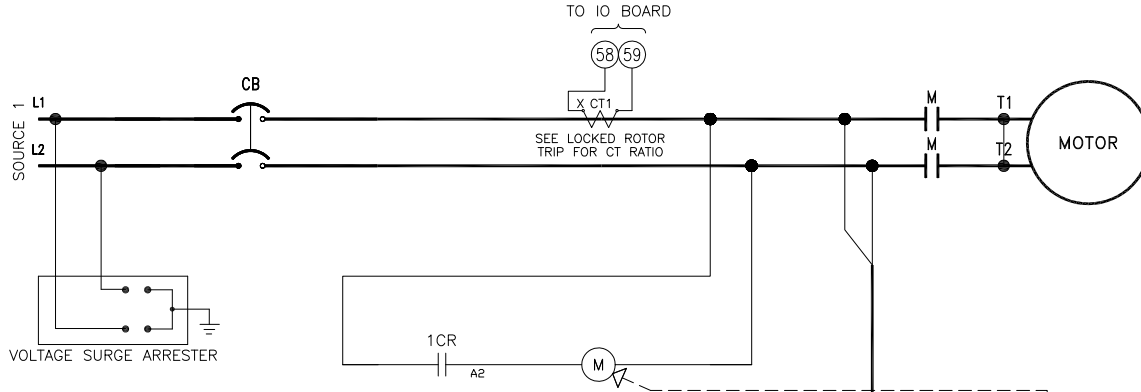
Motor HP	Line voltage	Withstand rating		Approximate weight
		Standard	Intermediate	Lbs. (Kg)
5 - 30	200 - 208V	25,000	65,000	180 (81)
5 - 30	220 - 240V			
5 - 30	380 - 415V *			
5 - 30	440 - 480V			
5 - 30	550 - 600V	18,000	25,000	
5 - 15	240V - S/P	10,000	65,000	



NOTES:
 1. POWER/PHASE FAILURE AND COMMON ALARM RELAYS ARE ENERGIZED UNDER NORMAL CONDITIONS.
 2. ALL RELAY CONTACTS ARE SHOWN IN NO POWER CONDITION.

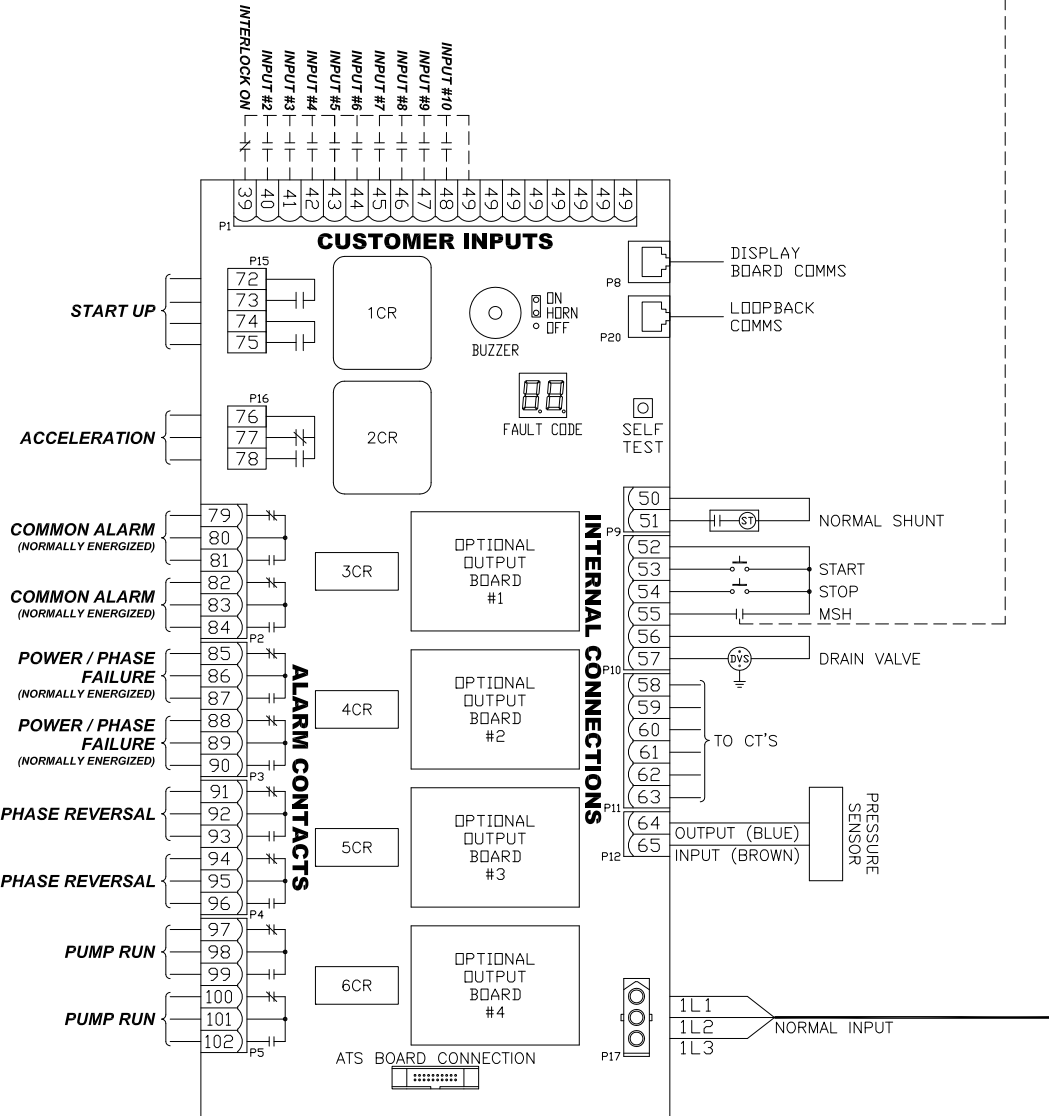
LEGEND:
 CB - CIRCUIT BREAKER
 CT - CURRENT TRANSFORMER
 M - RUN CONTACTOR
 MSH - MANUAL START HANDLE (EMERGENCY) MICRO SWITCH





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Line Terminals Connections

Line Voltage

	200-208	220-240	380-415	440-480	575-600	Line Lugs (QTY.) & Cable Size per Ø	Service Ground Lugs (QTY.) & Cable Size per Ø
Max HP	25	30	30	30	30	(1) #14 - 1/0 (CU/AL)	(1) #14 - 2/0 (CU/AL)
	30	-	-	-	-	(1) #4 - 4/0 (CU)	(1) #14 - 2/0 (CU/AL)

Load Terminals Connections

Line Voltage

	200-208	220-240	380-415	440-480	575-600	Single Run Cable Sizes	Double Run Cable Sizes
Max HP	10	10	15	20	25	#14 - #8 (CU/AL)	#14 - #8 (CU/AL)
	20	25	30	30	30	#14 - #1 (CU/AL)	#14 - #2 (CU/AL)
	30	30	-	-	-	#8 - 3/0 (CU/AL)	#8 - 2/0 (CU/AL)

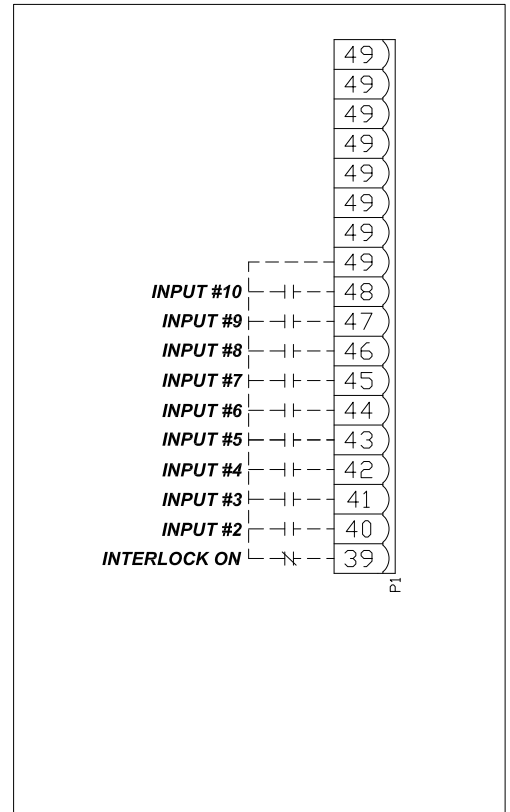
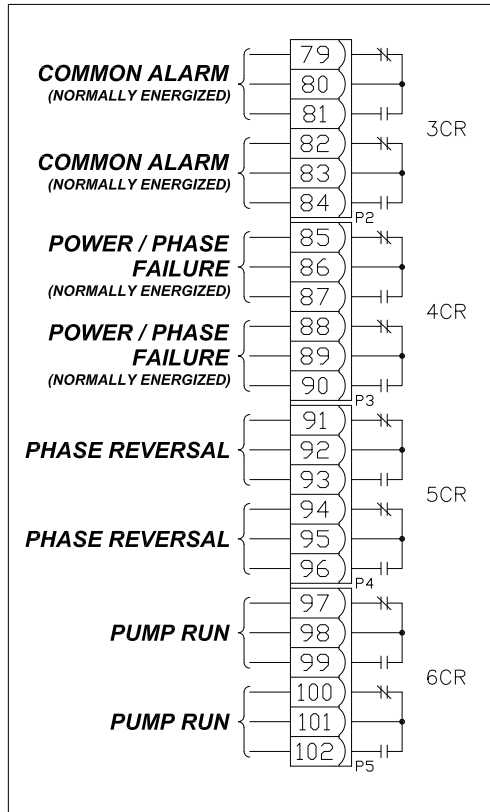
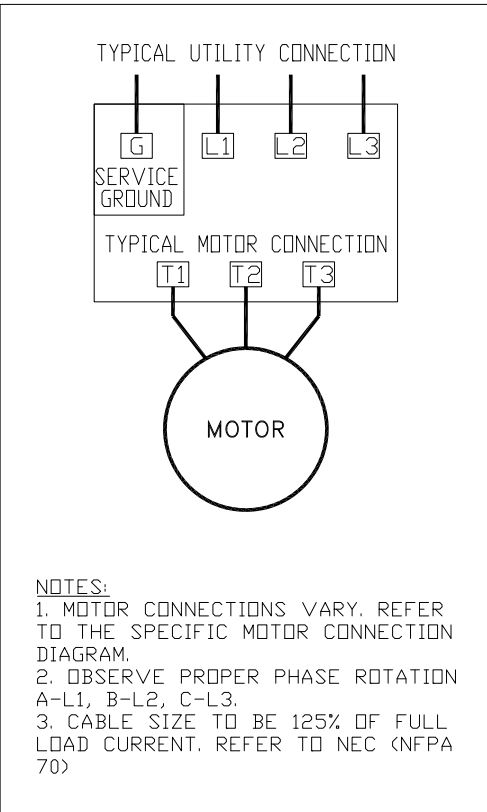
For ambient temperatures exceeding 30C (86F), the temperature rating of motor conductors is recommended to be a minimum of 90C (194F)

For proper cable size, refer to the National Electric Code (NEC - NFPA70)

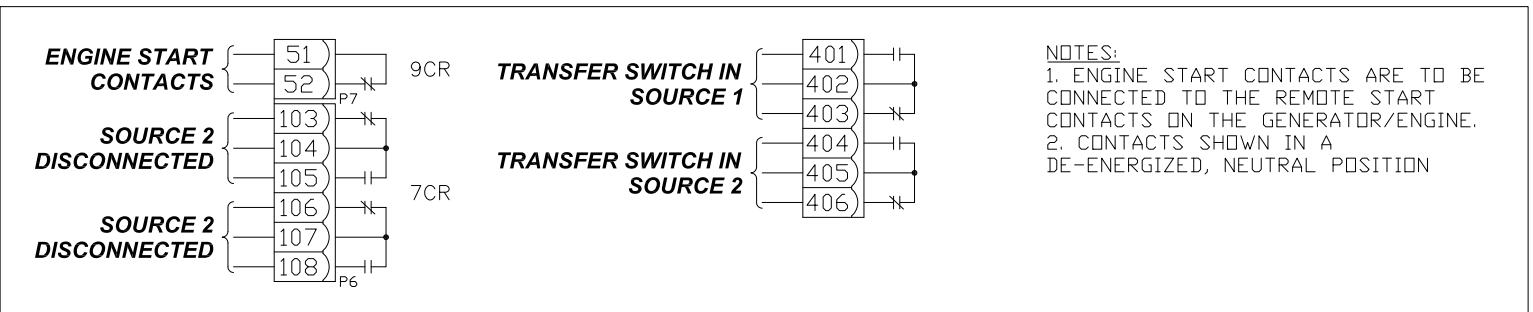
CONTROLLER CONNECTIONS

ALARM CONTACTS

CUSTOMER INPUTS



TRANSFER SWITCH CONNECTIONS (IF EQUIPPED)



Line Terminals Connections

Line Voltage

	200-208	220-240	380-415	440-480	575-600	Line Lugs (QTY.) & Cable Size per Ø	Service Ground Lugs (QTY.) & Cable Size per Ø
Max HP	-	10	-	-	-	(1) #14 - 1/0 (CU/AL)	(1) #14 - 2/0 (CU/AL)
	-	15	-	-	-	(1) #4 - 4/0 (CU)	(1) #14 - 2/0 (CU/AL)

Load Terminals Connections

Line Voltage

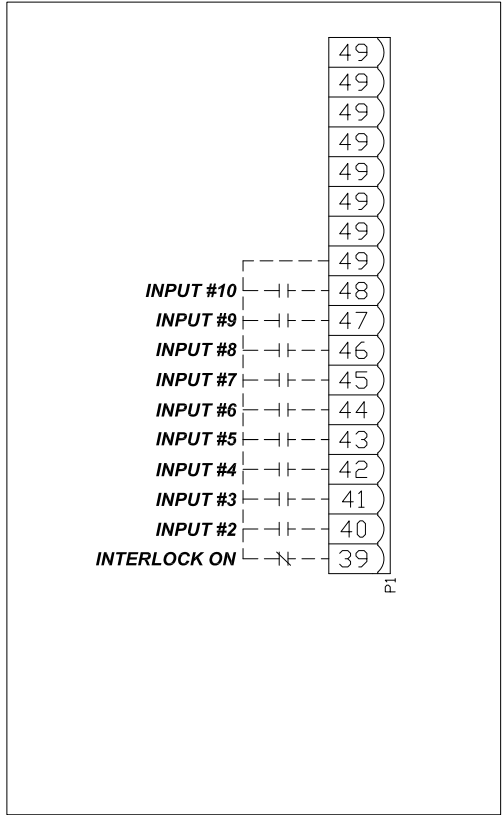
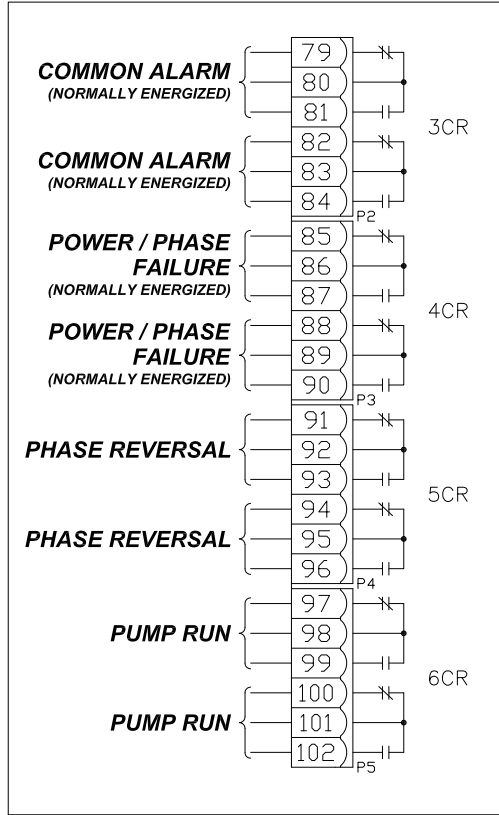
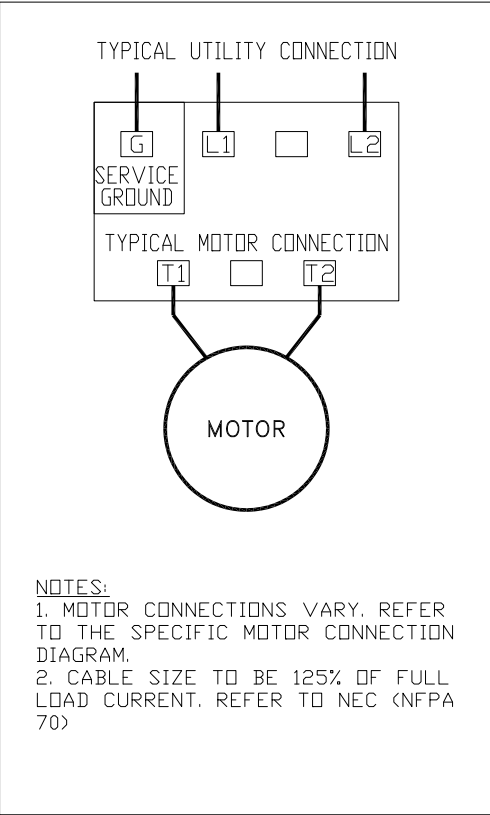
	200-208	220-240	380-415	440-480	575-600	Single Run Cable Sizes	Double Run Cable Sizes
Max HP	-	5	-	-	-	#14 - #8 (CU/AL)	#14 - #8 (CU/AL)
	-	15	-	-	-	#14 - #1 (CU/AL)	#14 - #2 (CU/AL)

For ambient temperatures exceeding 30C (86F), the temperature rating of motor conductors is recommended to be a minimum of 90C (194F)
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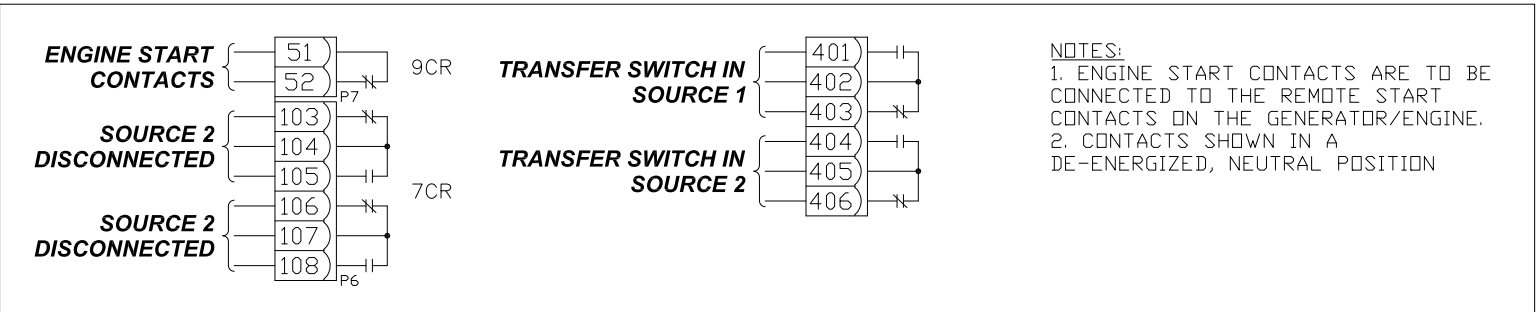
CONTROLLER CONNECTIONS

ALARM CONTACTS

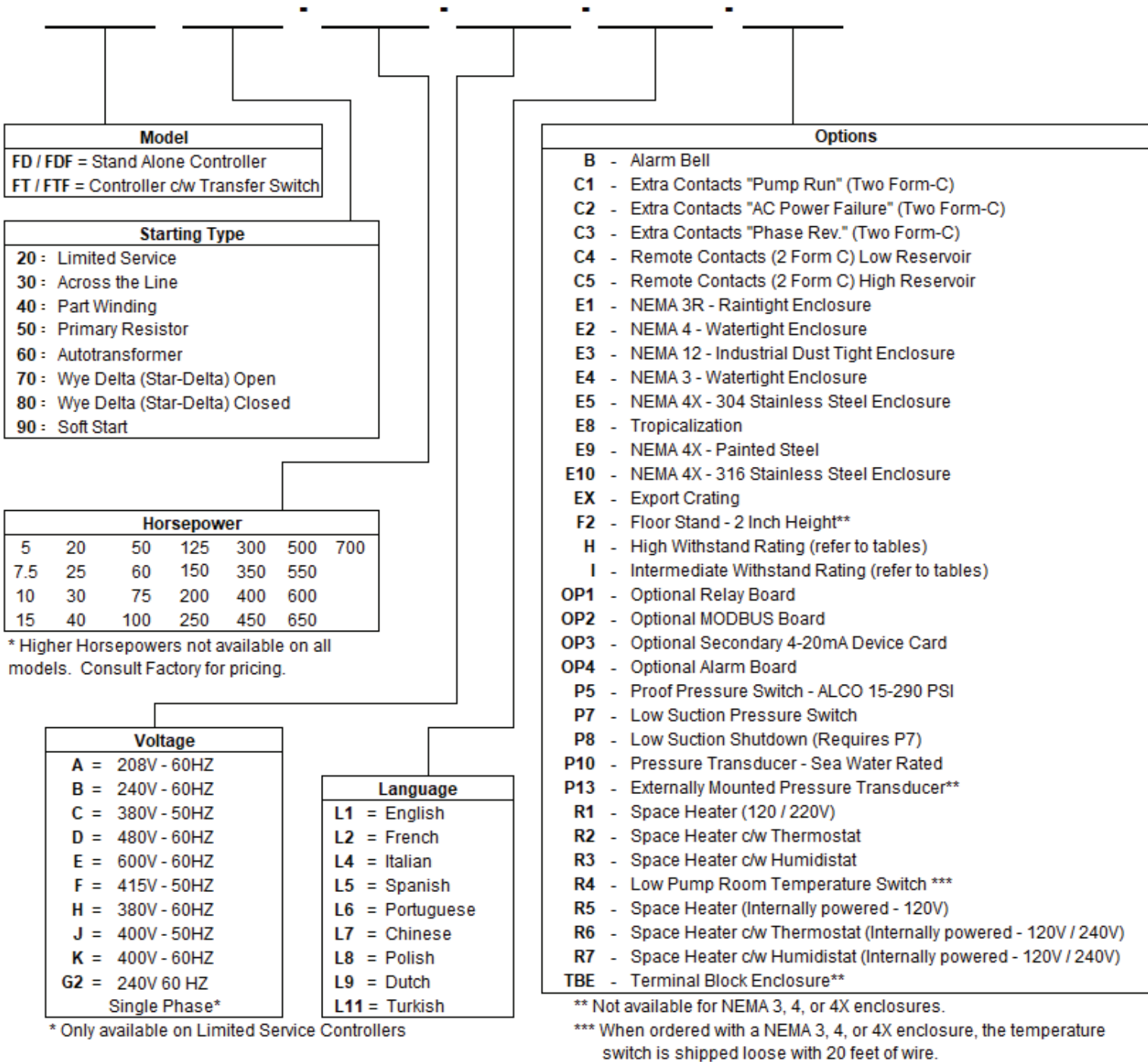
CUSTOMER INPUTS



TRANSFER SWITCH CONNECTIONS (IF EQUIPPED)



EPCT Fire option selection matrix



EPCT Fire electric fire pump controllers

Typical specifications

1. Approvals

- A. The Fire Pump Controller shall meet the requirements of the latest edition of NFPA 20 and shall be listed by [Underwriters Laboratories (UL)] and approved by [Factory Mutual Research (FM)] [Canadian Standards Association (CSA)] [New York Department of Buildings (NYSB)] and carry the CE marking for fire pump service.

2. Starting type

- A. The controller shall be of the combined manual and automatic type designed for [Full Voltage Starting] [Part Winding Starting] [Primary Resistor Starting] [Autotransformer Starting] [Wye-Delta (Star-Delta) Open Transition Starting] [Wye-Delta (Star-Delta) Closed Transition Starting] [Solid State Soft Start Starting]

3. Ratings

- A. The Controller shall have a withstand rating of 100,000 RMS symmetrical amperes @ [208V] [240V] [380V] [400V] [415V] [480V] [25,000 @ 600VAC].
- B. Temperature:
4 to +50 deg. C (39 to +122 deg. F)

4. Construction

- A. The controller shall include a motor rated combination isolating switch and circuit breaker, mechanically interlocked and operated with a single externally mounted handle.
- B. The isolating switch shall be rated to disconnect the motor load.
- C. The isolating switch/circuit breaker combination shall be mechanically interlocked such that the enclosure door cannot be opened when the handle is in the on position except by a tool operated defeater mechanism.
- D. The controller manufacturer shall manufacture the contactor, isolating switch, circuit breaker, pushbuttons, and enclosures. Brand-labeled components will not be accepted.

5. Enclosure

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

B. Optional enclosures:

1. Type 3R (IEC IP14) rain-tight enclosure
2. Type 3 (IEC IP55) water-resistant enclosure
3. Type 4 (IEC IP66) watertight enclosure
4. Type 4X (IEC IP66) watertight 304 stainless steel enclosure
5. Type 4X (IEC IP66) watertight 316 stainless steel enclosure
6. Type 4X (IEC IP66) watertight corrosion resistant enclosure
7. Type 12 (IEC IP52) dust-tight enclosure

6. Microprocessor control

- A. The controller shall come complete with a 7", 800x480, color touchscreen. The touchscreen shall be type 4X rated.
 1. Home tab capable of displaying system pressure, three phase voltage and amperage readings for both sources, system frequency, date, and time, configurable notifications in the notification area, displaying current start and stop set points, and visual representation of the transfer switch position, source 2 disconnect handle, and contactor.
 2. Virtual buttons to manually test the pump motor and/or the backup power supply engine.
 3. Controller statistics screen, including:
 - A. Total Powered Time
 - B. Total Motor Run Time
 - C. Last Motor Run Time
 - D. Calls to Start
 - E. Motor Starts
 - F. Maximum Starting Current A
 - G. Maximum Starting Current B
 - H. Maximum Starting Current C
 - I. Maximum Run Current A
 - J. Maximum Run Current B
 - K. Maximum Run Current C
 - L. Last LR Current A
 - M. Last LR Current B
 - N. Last LR Current C
 - O. Minimum System Pressure
 - P. Maximum System Pressure
 - Q. Minimum S1 Voltage AB



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Fire pump controllers Features

- R. Minimum S1 Voltage BC
 - S. Minimum S1 Voltage CA
 - T. Maximum S1 Voltage AB
 - U. Maximum S1 Voltage BC
 - V. Maximum S1 Voltage CA
 - W. Minimum S2 Voltage AB
 - X. Minimum S2 Voltage BC
 - Y. Minimum S2 Voltage CA
 - Z. Maximum S2 Voltage AB
 - AA. Maximum S2 Voltage BC
 - AB. Maximum S2 Voltage CA
 - AC. Minimum S1 Frequency
 - AD. Maximum S1 Frequency
 - AE. Minimum S2 Frequency
 - AF. Maximum S2 Frequency
 - AG. Last System Startup
 - AH. Last Motor Start
 - AI. Last Low Pressure Start
 - AJ. Last Locked Rotor Trip
 - AK. Last S1 Phase Failure
 - AL. Last S2 Phase Failure
 - AM. Last S1 Phase Reversal
 - AN. Last S2 Phase Reversal
 - AO. Last S1 Undervoltage
 - AP. Last S1 Overvoltage
 - AQ. Last S2 Undervoltage
 - AR. Last S2 Overvoltage
 - AS. Last S1 Under Frequency
 - AT. Last S1 Over Frequency
 - AU. Last S2 Under Frequency
 - AV. Last S2 Over Frequency
 - AW. Last Generator Start
 - AX. Last Generator Stop
 - AY. Last transfer to S1
 - AZ. Last transfer to S2
 - BA. Last S2 Disconnect
4. Controller diagnostics screen, including:
- A. Controller Serial Number
 - B. Logic Board Firmware Version
 - C. I/O Board Firmware Version
 - D. I/O Board Supply Voltage
 - E. I/O Board Communication
 - F. CT1 Secondary Amperage
 - G. CT2 Secondary Amperage
 - H. CT3 Secondary Amperage
 - I. Transducer Input Voltage
 - J. Transducer Output Current
 - K. Transducer Setpoint Current 2
 - L. Transducer Setpoint Current 1
- M. All Input Status (Open or Closed) (Can be selected to override for one minute and manually change the state of the input)
 - N. All Output Relay Status (Energized or De-energized) (Can be selected to override for one minute and manually energize or de-energize the relay)
 - O. Test the display board's communication.
5. Archive message screen that will display up to 65,000 alarms/messages stored in the controllers' memory
- B. The microprocessor logic board shall be available with a USB port for transference of message history, controller status, diagnostics, startup and statistic files and the ability to update firmware.
 - C. A Fail-to-Start alarm shall occur if the motor controller sees less than 20% of the motor full load amps after an adjustable time delay of 1-99 seconds.
 - D. Locked rotor protection shall be provided. After a trip condition and restoration of power, the display shall indicate the voltage, current, and date and time at the moment that the controller tripped.
 - E. A sequential start timer and weekly test timer shall be provided as standard.
 - F. A restart time delay of one (1) second shall be provided to allow the residual voltage of the motor to decay prior to re-starting the motor. In the event that the pump motor continues to run after a request to stop, then the controller must display a fail to stop message to indicate this condition.
 - G. Overvoltage (0-100%) and undervoltage (0-100%) sensing and alarming shall be provided as standard.
 - H. The controller shall be supplied with interlock and shutdown circuits as standard. A green LED in the notification area shall indicate an interlock on condition.
 - I. Where shutdown of the pump(s) due to low suction pressure is required, it shall be accomplished without the addition of a separate panel or enclosure. The display shall indicate low suction shutdown. Resetting of the condition shall be automatic or manual as selected by the user.
7. Programming Menu
- A. The programming menu shall have the ability to enable an entry password.
 - B. The controller shall have nine (9) languages as a standard: English, French, Spanish, Portuguese, Turkish, Italian, Dutch, Chinese, and Polish.
 - C. The programming menu shall be grouped into ten (10) tabs as follows:
 - 1. Home
 - 2. Startup
 - 3. Panel Setup
 - 4. Help
 - 5. Pressure Settings
 - 6. Timer Values

7. ATS Settings
8. Alarm Setpoints
9. Inputs/Outputs
10. History/Statistics/Diagnostics

8. Pressure sensor

- A. A solid-state 4-20mA pressure sensor shall be provided. The pressure Start and Stop points shall be adjustable in increments of one (1) PSI.

9. Custom inputs/outputs

- A. The controller shall come standard with ten (10) programmable inputs, four (4) programmed outputs with the ability to add up to another sixteen (16) outputs via optional relay boards.
- B. The user shall be able to program the inputs/outputs through the main programming menu.
- C. The inputs shall be selectable based on the following criteria:
 1. User selected message or seventeen (17) predetermined messages
 2. Link to a future relay and/or LED indicator
 3. Alarm latched until reset
 4. Normally open or closed input
 5. On and/or off-delay timer
- D. The future relays shall be selectable based on the following criteria:
 1. Output based on a minimum of sixty-one (61) predetermined alarms, controller status or a custom input
 2. Latched until reset
 3. Energized under normal conditions
 4. On and/or off delay timer on the output

10. Alarm relays

- A. All relays shall be soldered on the PCB. An LED on the relay panel shall indicate the energized state of the relay. All relay contacts shall be rated @ 8A, 277VAC/30VDC. Two (2) sets of Form-C contacts shall be provided for each of the following:
 1. Common Alarm
 2. Power/Phase Failure
 3. Phase Reversal
 4. Pump Run
- B. The Common Alarm and Power/Phase Failure relays shall be energized under normal conditions.

11. Audible alarm buzzer

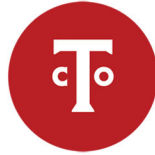
An audible alarm buzzer, capable of being heard

while the motor is operating, shall operate if Fail to Start, Hardware Malfunction or any Common Alarm condition exists.

12. Manufacturer

- A. The controller shall be of the EPCT Fire type as manufactured by Eaton Corporation.

TALCO FIRE
SYSTEMS



RESIDENTIAL & COMMERCIAL FIRE PUMP SPECIALISTS

6040 NE 112TH AVE. PORTLAND, OREGON 97220

PHONE: 800-878-8055 WWW.TALCOFIRE.COM

Jockey Pump

(Optional Equipment)

UTILITY DUTY GEAR PUMPS

The CEP series Utility Gear Pumps are a close tolerance, low flow, high pressure positive displacement pump. A standard in the fire sprinkler industry for excess pressure service.

APPLICATIONS

- Excess Pressure Pump
- Liquid Transfer/Circulation
- Small Booster Jockey Pump
- Spray Nozzles/Misting
- Hydraulic/Hydrostatic



FLOW: 0-4.6 GPM | 0-0.29 L/s | 0-1.04 m³/hr

PRESSURE: 0-150 PSI | 10.5 Bar | 0-346 Ft.

FEATURES

- Precision Spur Style Gears
- Self Priming due to close manufacturing tolerances
- Suction lift of up to 20 feet
- Pump housings are of bronze
- Pump shafts are of stainless steel
- Lip seals of Buna or Viton
- Carbon graphite shaft bearings
- Bearings never need lubrication
- Easy maintenance and service

SPECIFICATIONS

PORTS	3/8" NPT / 9.525 mm
CAPACITY	4.6 USGPM / 0.29 L/s (Max.)
PRESSURE	150 PSI / 10.5 Bar (Max.)
INLET PRESSURE	50 PSI / 3.5 Bar (Max.)
TEMPERATURE	225° F (100 C) (Buna Seal)

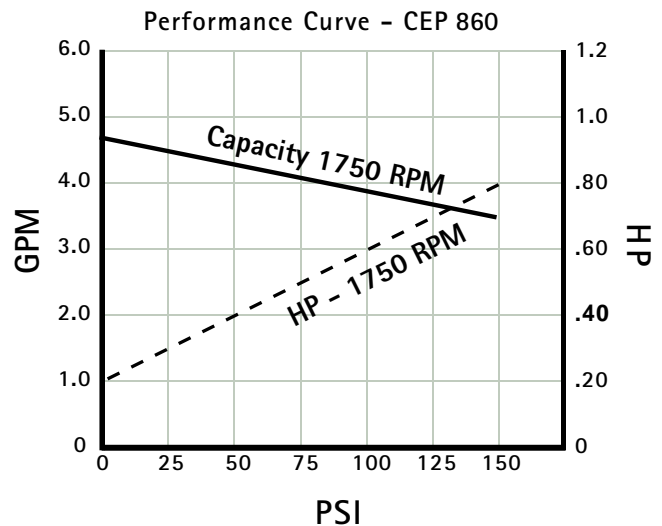
ROTATION

- Precision Spur Style Gears
- Self Priming due to close manufacturing tolerances
- Suction lift of up to 20 feet
- Pump housings are of bronze

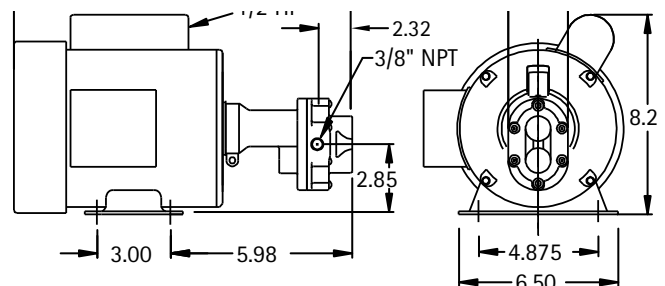
MAINTENANCE

To ensure a long life to this pump a strainer is always recommended in front of the pump inlet.

PERFORMANCE



DIMENSIONS



Commercial Pressure Switches

Electromechanical Square D Brand 9013

For power circuits, FRG, FHG, and G

Environmental characteristics

Pressure switch type		FRG	FHG	G
Conformity to standards		UL 508, NEC Article 430-84, ANSI /NSF Standard 61, FDA 21CFR.2600		
Product Certifications		UL File E12158 CCN NKPZ , CSA File LR 25490 Class 321106		
Protective treatment		N/A		
Ambient air temperature	°C	For operation, 0 °C (32 °F) min to 125 °C (257 °F) max For storage, -30 °C (-22 °F) min to 70 °C (158 °F) max		
Fluids controlled		Fresh water, or sea water (with Form Q)		
Materials		Cover: polypropylene, Noryl® thermoplastic resin or equivalent for Type 3R, Component material in contact with fluid: flange, zinc plated or equivalent (fluid entry), nitrile or equivalent rubber (diaphragm)		
Operating position		NEMA Type 1, and Type IP20 in any position, NEMA Type 3R in the vertical position only		
Vibration resistance		—		
Shock resistance		—		
Electric shock protection		—		
Degree of protection		NEMA Type 1, IP20 and NEMA Type 3R (some references) must be mounted in vertical position to maintain enclosure rating		
Operating rate	cycles/m	10		
Repeat accuracy		+/- 3 % of the range		
Fluid connection		1/8" NPSF internal, 1/4" NPSF internal, 1/2"NPT External, 1/4" Bayonet (barbed), 90 deg. Elbow 1/4" Bayonet, Four Way Flange, 3/8" NPSF (Internal), 1/4" Flare, other specials		
Electrical connection		2 open side entries, 3/4" diameter, with two flats		3 Conduit 1/2" Knockouts

Contact block characteristics

Type of contacts		One 2 pole, 2 N/C (4 terminal) contacts, snap action
Resistance across terminals	m Ω	< 25
Terminal referencing		N/A
Short-circuit protection	A	5,000
Connection		Screw clamp terminals. Clamping capacity up to #10 AWG (5.261 mm ²)
Electrical durability	cycles	100,000
Mechanical durability	cycles	300,000

Electrical Ratings

1 Pole		FRG			FHG ▲ ■			G			
	Voltage	~ 1-phase	~ 3-phase	≡	~ 1-phase	~ 3-phase	≡	~ 1-phase	~ 3-phase	≡	
Power ratings of controlled motors	32 V	—	—	—	—	—	—	—	—	—	
	115 V	0.75 kW (1 HP)	—	0.18 kW (.25 HP)	1.1 kW (1.5 HP)	1.5 kW (2 HP)	0.18 kW (.25 HP)	0.75 kW (1 HP)	—	0.37 kW (.50 HP)	
	230 V	0.75 kW (1 HP)	—	0.18 kW (.25 HP)	1.5 kW (2 HP)	2.2 kW (3 HP)	0.18 kW (.25 HP)	1.5 kW (2 HP)	—	0.37 kW (.50 HP)	
	460 / 575 V	—	—	—	—	0.75 kW (1 HP)	—	1.5 kW (2 HP)	—	—	
2 Pole	Voltage	~ 1-phase	~ 3-phase	≡	~ 1-phase	~ 3-phase	≡	~ 1-phase	~ 3-phase	≡	
	Power ratings of controlled motors	32 V	—	—	0.18 kW (.25 HP)	—	—	—	—	—	—
		115 V	0.75 kW (1 HP)	0.75 kW (1 HP)	0.18 kW (.25 HP)	1.5 kW (2 HP)	2.2 kW (3 HP)	0.37 kW (.50 HP)	1.5 kW (2 HP)	2.2 kW (3 HP)	0.75 kW (1 HP)
		230 V	0.75 kW (1 HP)	0.75 kW (1 HP)	0.18 kW (.25 HP)	2.2 kW (3 HP)	3.7 kW (5 HP)	0.37 kW (.50 HP)	2.2 kW (3 HP)	3.7 kW (5 HP)	0.75 kW (1 HP)
460 / 575 V		—	—	—	—	0.75 kW (1 HP)	—	3.7 kW (5 HP)	3.7 kW (5 HP)	—	

Note:
Type FRG and G are all Form H

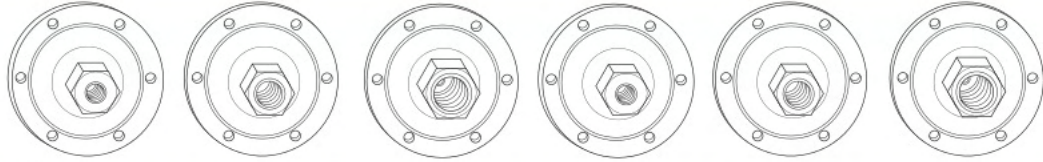
▲ Includes
FHG 2, 3, 4, 9, 12, 13, 14, 19, 42, 44, 49

■ Includes
FHG 22, 24, 29, 32, 33, 34, 39, 52, 54, 59

Commercial Pressure Switches

Electromechanical Square D Brand 9013
For power circuits G
2-pole 2 N/C contacts
Degree of protection IP20, NEMA Type 1, 7 & 9

Flange Style



Adjustable range of switching point
Contacts open on rising pressure
2 Pole

Fluid connections	1/8" NPSF internal	1/4" NPSF internal	3/8" NPSF internal	1/8" NPSF internal	1/4" NPSF internal	3/8" NPSF internal
--------------------------	--------------------	--------------------	--------------------	--------------------	--------------------	--------------------

References

NEMA Type 1, IP20	9013GHG1	9013GHG2	9013GHG3			
NEMA Type 7, NEMA Type 9				9013GHR1	9013GHR2	9013GHR3
Fluids / Pressure controlled	Water or Air	Water or Air	Water or Air	Water or Air	Water or Air	Water or Air
Pressure range						
Cut-Out PSIG (bar)	60-200	60-200	60-200	65-200	65-200	65-200
Cut-In PSIG (bar)	40-170	40-170	40-170	35-150	35-150	35-150
Weight lbs (kg)	2 lbs (0.91)	2 lbs (0.91)	2 lbs (0.91)	8 lbs (3.62)	8 lbs (3.62)	8 lbs (3.62)

Complementary characteristics not shown under general characteristics

Differential PSIG (bar)	20-40 (1.4-2.8)	20-40 (1.4-2.8)	20-40 (1.4-2.8)	30-50 (2.1-3.5)	30-50 (2.1-3.5)	30-50 (2.1-3.5)
Maximum permissible pressure PSIG (bar)	80 (5.5)	80 (5.5)	80 (5.5)	80 (5.5)	80 (5.5)	200 (13.8)
Mechanical life	300,000 operating cycles					
Cable entry	3 Conduit 1/2" Knockouts	3 Conduit 1/2" Knockouts	3 Conduit 1/2" Knockouts	2 3/4"-14 NPT	2 3/4"-14 NPT	2 3/4"-14 NPT
Pressure switch type	Diaphragm					

Ordering Information

Pressure Codes

Below is the pressure code table.
Existence of a code does not imply that the code is available for any or all devices.

Settings	Code
20-40 PSI	J20
30-50 PSI	J21
40-20 PSI	J23
40-60 PSI	J24
60-80 PSI	J25
70-90 PSI	J26
70-100 PSI	J28
75-100 PSI	J29
80-100 PSI	J30
90-120 PSI	J31
100-80 PSI	J51
100-125 PSI	J53
110-125 PSI	J54
110-150 PSI	J56
120-150 PSI	J57
125-150 PSI	J58
125-175 PSI	J60
130-175 PSI	J61
140-170 PSI	J66
140-175 PSI	J62
145-175 PSI	J63
150-120 PSI	J64
150-175 PSI	J67
215-250 PSI	J65
Specify pressure settings	J99

- Specify Class 9013 Type G.
- Select pressure code and add code designation to end of type number. Be sure that pressure code falls within the limits of the device as shown in the device listings.
- If special features are desired, add the appropriate Form letter to the Class and Type. Arrange Form letters in alphabetical sequence when ordering more than one special feature.
- Place packaging code at end of sequence with other forms when ordering. If no packaging code is indicated, devices will be shipped individually packaged.
For standard pack of 10 devices per box C10
Available on GHG, GHG, GSB, and GSG

See page 25 for Form C10.

TALCO FIRE
SYSTEMS



RESIDENTIAL & COMMERCIAL FIRE PUMP SPECIALISTS

6040 NE 112TH AVE. PORTLAND, OREGON 97220

PHONE: 800-878-8055 WWW.TALCOFIRE.COM

Valves & Fittings

For Commercial, Institutional and Industrial Applications

Job Name _____
 Job Location _____
 Engineer _____
 Approval _____

Contractor _____
 Approval _____
 Contractor's P.O. No. _____
 Representative _____

Series 530C Calibrated Pressure Relief Valves

Sizes: 1/2" or 3/4" (15 or 20mm)

Series 530C Calibrated Pressure Relief Valves are spring operated brass valves designed for use only as protection from the build up of excessive pressure in systems containing water, oil or air. Series 530C valves incorporate a calibrated adjustment feature for setting the valve to the relief pressure required. These valves are ideally suited for bypass thermal expansion relief.

Features

- Calibrated adjustment feature for setting valve to relief pressure required
- Adjustable range 50 – 175psi (3.4 – 12.1 bar)
- All brass construction
- All stainless steel spring
- Buna-N disc on machined body seat
- Inlet (bottom), male NPT threaded
- Outlet (side), female NPT threaded

Pressure – Temperature

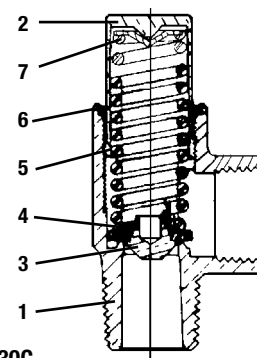
Maximum Temperature: 180°F (82°C)

Spring Ranges

1/2" or 3/4" (15 or 20mm): 50 – 175psi (3.4 – 12.1 bar)
 3/4" (20mm): 100 – 300psi (6.9 – 20.7 bar)

Application Note: The Watts Series 530C are not ASME approved safety relief valves and should not be used in system application with this requirement.

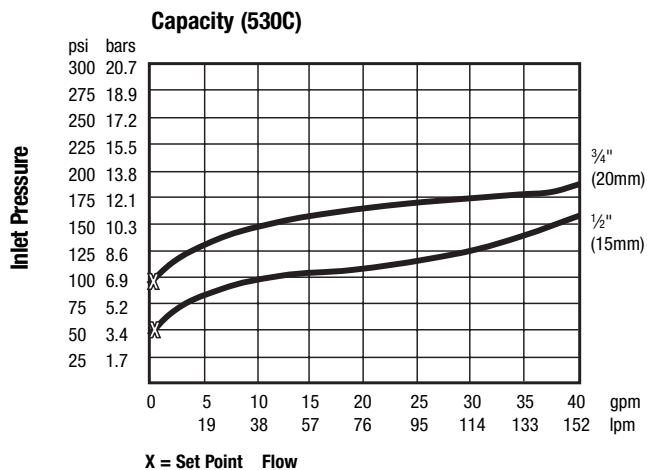
MODEL	SIZE (DN)		DIMENSIONS				WEIGHT	
	in.	mm	Height		Width		lbs.	kg.
530C	1/2 or 3/4	15 or 20	3	76	1 3/8	41	.37	0.17



Model 530C

Materials

- | | |
|-----------------------------|------------------|
| 1. Body | Brass |
| 2. Bonnet | Brass |
| 3. Disc Holder | Brass |
| 4. Disc | Buna-N (Nitrile) |
| 5. Adjustable Spring | Stainless Steel |
| 6. O-ring | Buna-N (Nitrile) |
| 7. Spring Washer | Brass |



Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.



Water Safety & Flow Control Products

USA: 815 Chestnut St., No. Andover, MA 01845-6098; www.watts.com
Canada: 5435 North Service Rd., Burlington, ONT. L7L 5H7; www.wattscanada.ca

□ R-2360-6: O.S.&Y. RESILIENT WEDGE GATE VALVE WITH FLANGE ENDS

- 2-1/2", 3", 4", 6", 8", 10" AND 12" SIZES
- MEETS OR EXCEEDS ALL APPLICABLE REQUIREMENTS OF UL 262 AND FM 120/1130 SPECIFICATIONS AND COMPLIES WITH NSF-61
- IRON BODY WITH MUELLER® PRO-GARD™ FUSION EPOXY COATED INTERIOR & EXTERIOR SURFACES
- OUTSIDE SCREW AND YOKE (O.S.&Y.)
- FLANGED END DIMENSIONS AND DRILLING
- RUBBER ENCAPSULATED IRON WEDGE
- ADJUSTABLE PACKING
- HANDWHEEL – OPEN LEFT OR OPEN RIGHT
- 200 PSIG (1379KPA) MAXIMUM WORKING PRESSURE
400 PSIG (2758 KPA) STATIC TEST
- EPOXY COATING MEETS OR EXCEEDS ANSI/AWWA C550 AND COMPLIES WITH NSF-61

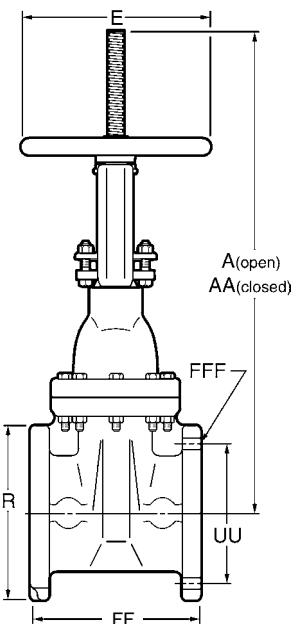
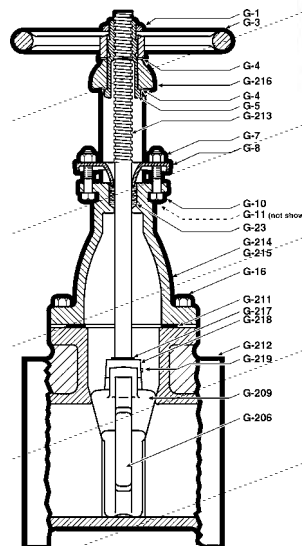
Options

- STAINLESS STEEL FASTENERS: TYPE 304 OR 316
- ASTM B98-C66100/H02 STEM



PARTS LIST

Catalog Part No.	Description	Material	Material Standard
G-1	Cap Nut	Bronze	ASTM B62
G-3	Hand Wheel	Cast Iron	ASTM A126 CL.B
G-4	Washer	Brass	
G-5	Bush Nut	Bronze	ASTM B584
G-7	Gland Nut	Bronze	ASTM B21 Alloy 464
G-8	Packing Gland	Ductile Iron	ASTM A536 Grade 65-45-12
G-10	Gland Bolt	Stainless Steel	Type 304
G-11††	Yoke Bolt & Nut	Stainless Steel	Type 304
G-16	Bonnet Bolts & Nuts	Stainless Steel	Type 304
G-23	Stem Packing	Lubricated Flax	
G-206	Guide Cap Bearings	Celcon	
G-209	Wedge, Rubber Encapsulated	Cast Iron**	ASTM A126 CL.B
G-211	Bonnet Gasket	Rubber	ASTM D2000
G-212	Body	Cast Iron	ASTM A126 CL.B
G-213	Stem	Bronze	ASTM B138
G-214†	Bonnet & Yoke w/Bushing	Cast Iron	ASTM A126 CL.B
G-215††	Bonnet	Cast Iron	ASTM A126 CL.B
G-216††	Yoke	Cast Iron	ASTM A126 CL.B
G-217	O-ring	Nitrile	ASTM D2000
G-218	Disc Nut	Bronze	ASTM B62
G-219	Stem Nut Pin	Stainless Steel	Type 304



DIMENSIONS

Dimension*	Size						
	2-1/2"	3"	4"	6"	8"	10"	12"
A	19.50"	19.25"	23.68"	31.38"	38.50"	47.00"	53.50"
AA	15.75"	15.50"	19.00"	24.50"	29.50"	35.75"	40.50"
E	7.00"	7.00"	10.00"	12.00"	14.00"	16.00"	16.00"
R	7.00"	7.50"	9.00"	11.00"	13.50"	16.00"	19.00"
FF	7.50"	8.00"	9.00"	10.50"	11.50"	13.00"	14.00"
UU	5.50"	6.00"	7.50"	9.50"	11.75"	14.25"	17.00"
FFF (number and size of holes)	4--.75"	4--.75"	8--.75"	8--.88"	8--.88"	12--1"	12--1"
Turns to open	11	11	14	20.5	27	33.5	39
Weight (lbs.)*	68	72	130	194	289	448	596

See page B-1-22 for ordering instructions.

*All dimensions are in inches. All weights are in pounds and are approximate.

** Fully encapsulated in molded rubber with no iron exposed.

† 2-1/2" - 6" sizes have a one-piece bonnet & yoke.

†† 8" - 12" sizes have a two-piece bonnet & yoke.

PROJECT INFORMATION		APPROVAL STAMP	
Project:		<input type="checkbox"/> Approved	
Address:		<input type="checkbox"/> Approved as noted	
Contractor:		<input type="checkbox"/> Not approved	
Engineer:		Remarks:	
Submittal Date:			
Notes 1:			
Notes 2:			

FireLock® Butterfly Valve



SERIES 705W WITH WEATHERPROOF ACTUATOR

The Series 705W butterfly valve features an approved weatherproof actuator housing approved for indoor or outdoor use. It has a ductile iron body and disc with EPDM disc coating. The body is coated with a heat fused polyphenylene sulfide blend to meet FM requirements. Designed for fire protection services only. Series 705W valve is UL Listed and FM Approved for 300psi/2065 kPa service. Contact Victaulic for details of agency approvals.

WEATHERPROOF ACTUATOR

Supervisory switches that monitor the valve in the fully open position for valves are available 2½ – 12”/65 – 300mm pre-wired (PW).

OPTIONAL SUPPLY-SIDE TAP

Series 705W valves are available with a ½” NPT supply side tap designed to allow direct water supply connection to Victaulic FireLock actuated fire protection valves. See separate drawings below. This is an optional feature and must be clearly noted on all orders.



MATERIAL SPECIFICATIONS

Body: Ductile iron conforming to ASTM A-536, coated with polyphenylene sulfide blend.

Disc: Ductile iron conforming to ASTM A-536, various grades, EPDM coated.

Disc Coating:

- **Grade “E” EPDM**

EPDM (Green color code). Temperature range –30°F to +230°F/–34°C to +110°C. Recommended for cold and hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. UL classified in accordance with ANSI/NSF 61 for cold +86°F/+30°C and hot +180°F/+82°C potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES.

Stem Bearings: Teflon impregnated fiberglass with stainless steel backing.

Stem Bearing Nuts: Type 416 Stainless Steel.

Tap Plug: Carbon steel, plated.

O-Ring: EPDM

Bracket: Carbon steel, painted.

Actuator:

- 2½ – 8”/65 – 200mm: Bronze traveling nut on a steel lead screw, in a ductile iron housing.
- 10 – 12”/250 – 300mm: Steel worm and cast iron quadrant gear, in a cast iron housing.

JOB/OWNER

System No. _____
Location _____

CONTRACTOR

Submitted By _____
Date _____

ENGINEER

Spec Sect _____ Para _____
Approved _____
Date _____

FireLock® Butterfly Valve

**SERIES 705W
WITH WEATHERPROOF ACTUATOR**

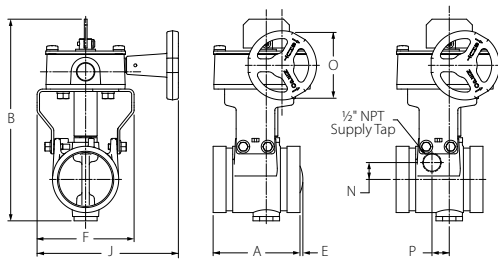


Size		Dimensions – inches/millimeters								Aprx. Wgt. Each
Nominal Size inches mm	Actual Outside Diameter inches mm	End to End "A"	Hgt. "B"	"E"	"F"	"J"	"O"	"N" ‡	"P" ‡	lbs/kg
2½ 65	2.875 73.0	3.77 95.6	8.76 222.5	—	4.21 106.9	6.08 154.4	3.00 76.2	0.00 * 0.0 *	0.75 19.1	8.3 3.8
76.1 mm	3.000 76.1	3.77 95.6	8.76 222.5	—	4.21 106.9	6.08 154.4	3.00 76.2	0.00 * 0.0 *	0.75 19.1	8.3 3.8
3 80	3.500 88.9	3.77 95.6	9.40 238.8	0.08 2.0	4.21 106.9	6.08 154.4	3.00 76.2	0.00 * 0.0 *	0.75 19.1	8.9 4.0
4 100	4.500 114.3	4.63 117.6	10.84 275.3	0.07 1.8	6.01 152.7	6.98 177.3	3.00 76.2	0.73 18.5	1.13 28.7	14.9 6.8
139.7 mm	5.500 139.7	5.88 149.4	12.38 314.5	0.43 10.9	6.01 152.7	8.57 217.7	4.50 114.3	—	—	21.0 9.5
5 125	5.563 141.3	5.88 149.4	12.38 314.5	0.43 10.9	6.01 152.7	8.57 217.7	4.50 114.3	—	—	21.0 9.5
165.1 mm	6.500 165.1	5.88 149.4	13.41 340.6	1.00 25.4	7.51 190.8	9.32 236.7	4.50 114.3	1.60 40.6	1.88 47.8	26.5 12.0
6 150	6.625 168.3	5.88 149.4	13.41 340.6	1.00 25.4	7.51 190.8	9.32 236.7	4.50 114.3	1.60 40.6	1.88 47.8	26.5 12.0
8 200	8.625 219.1	5.33 135.4	16.50 419.1	1.27 32.3	9.65 245.1	10.98 278.9	6.30 160.0	0.00 * 0.0 *	0.68 17.3	43.0 19.5
10 250	10.750 273.0	6.40 162.6	19.14 486.2	1.72 43.7	12.20 309.9	16.19 411.2	9.00 228.6	—	—	80.0 36.3
12 300	12.750 323.9	6.50 165.1	21.54 547.1	2.66 67.6	14.25 362.0	17.22 437.4	9.00 228.6	—	—	102.0 46.3

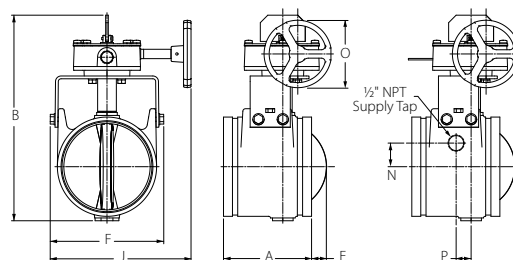
* On Centerline

‡ These dimensions apply only to a Series 705W Butterfly Valve with a ½-inch NPT, supply-side tap

1. To prevent rotation of valves, it is recommended that Series 705W be installed with Victaulic Style 07 Zero-Flex®, Style 005 FireLock, Style 009/009V FireLock EZ, or Style HP-70 Rigid Couplings. If Victaulic flexible couplings are used, additional support may be required.
2. Valve must not be installed with disc in full open position. Disc must be partly closed so that no part is protruding beyond end of valve body.
3. Victaulic grooved end butterfly valves are permitted for use with grooved end pipe (IPS) only. Not permitted for use with plain end (IPS) pipe.
4. Series 705W valves are designed for ambient weather conditions as opposed to submersible service.



2½ – 4-INCH/65 – 100-MM SIZES



5 – 12-INCH/125 – 300-MM SIZES

FireLock® Check Valves



SERIES 717

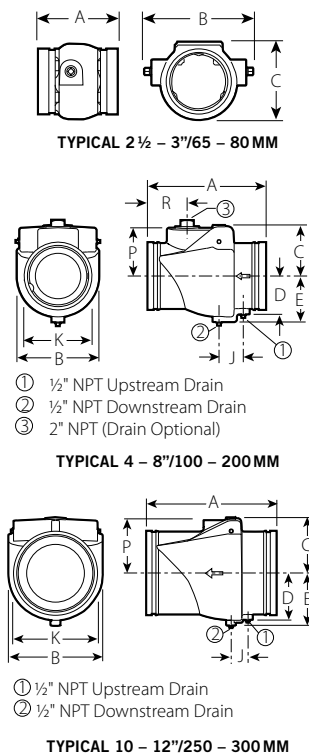
Series 717 FireLock check valve is a CAD-developed design that is hydrodynamically efficient. A totally rubber encapsulated disc on 4 – 12”/100 – 300mm sizes provides superior corrosion resistance. This single disc design incorporates a spring assisted feature for non-slamming operation. For systems requiring a Riser Check option refer to section 10.09.

The 4”/100mm and larger sizes are provided with upstream and downstream drains and a welded-in nickel seat design. All sizes of Series 717 can be installed in the vertical or horizontal position to provide leak-free sealing under conditions as low as five feet of head. Each valve is factory tested to 500 psi/3440 kPa. The 2 ½ and 3”/65 and 80mm sizes are UL/ULC Listed and 4”/100mm sizes and larger are UL/ULC Listed and FM Approved for services up to 250 psi/1725 kPa. Sizes 4 – 8”/100 – 200mm (except 165.1 mm size) are VdS approved.

Grooved ends allow fast, easy installation with just two Victaulic couplings or the valve may be mounted to flanged (ANSI CL.150) equipment using either to Victaulic Style 741 Vic-Flange® or Style 744 FireLock flange adapters on either end.



DIMENSIONS



Size		Dimensions- Inches/millimeters										Approx. Wgt. Ea.
Nominal Size Inches mm	Actual Outside Diameter Inches mm	E to E A	B	C	D	E	J	K	P	R	Lbs. kg	
2 ½ 65	2.875 73.0	3.88 99	4.26 108	3.57 91	—	—	—	—	—	—	3.6 1.6	
76.1 mm	3.000 76.1	3.88 99	4.26 108	3.57 91	—	—	—	—	—	—	3.6 1.6	
3 80	3.500 88.9	4.25 108	5.06 129	4.17 106	—	—	—	—	—	—	4.5 2.0	
4 † 100	4.500 114.3	9.63 245	6.00 152	3.88 99	2.75 70	3.50 89	2.00 51	4.50 114	3.50 89	3.35 85	20.0 9.1	
5 † 125	5.563 141.3	10.50 267	6.80 173	4.50 114	—	4.17 106	2.15 55	5.88 149	4.08 104	3.98 101	27.0 12.3	
139.7 mm †	5.500 139.7	10.50 267	6.80 173	4.50 114	—	4.17 106	2.15 55	5.88 149	4.08 104	3.98 101	27.0 12.3	
6 † 150	6.625 168.3	11.50 292	8.00 203	5.00 127	—	4.50 114	2.38 61	6.67 169	4.73 120	3.89 99	38.0 17.2	
165.1 mm	6.500 165.1	11.50 292	8.00 203	5.00 127	—	4.50 114	2.38 61	6.67 169	4.73 120	3.89 99	38.0 17.2	
8 † 200	8.625 219.1	14.00 356	9.88 251	6.06 154	5.05 128	5.65 144	2.15 55	8.85 225	5.65 144	5.75 146	64.0 29.0	
10 250	10.750 273.0	17.00 432	12.00 305	7.09 180	5.96 151	6.69 170	2.15 55	10.92 277	6.73 171	—	100.0 45.4	
12 300	12.750 323.9	19.50 495	14.00 356	8.06 205	6.91 176	7.64 194	2.51 64	12.81 925	7.73 196	—	140.0 63.5	

† VdS Approved

JOB/OWNER

System No. _____
Location _____

CONTRACTOR

Submitted By _____
Date _____

ENGINEER

Spec Sect _____ Para _____
Approved _____
Date _____

FireLock® Check Valves

SERIES 717

MATERIAL SPECIFICATIONS

Body: Ductile iron conforming to ASTM A-536, grade 65-45-12. Ductile iron conforming to ASTM A-395, grade 65-45-15, is available upon special request. 2½ – 3"/65 – 80mm sizes PPS coated. 4 – 12"/100 – 300mm sizes painted black enamel.

Body Seat: 2½ – 3"/65 – 80mm sizes PPS coated. 4 – 12"/100 – 300mm integrally welded on nickel alloy.

Disc Seal or Coating:

- **Grade "E" EPDM**

EPDM (Green color code). Temperature range –30°F to +230°F/–34°C to +110°C.

Recommended for cold and hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. UL classified in accordance with ANSI/NSF 61 for cold +86°F/+30°C and hot +180°F/+82°C potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES.

* Services listed are General Service Recommendations only. It should be noted that there are services for which these gaskets are not recommended. Reference should always be made to the latest Victaulic Gasket Selection Guide for specific gasket service recommendations and for a listing of services which are not recommended.

Discs:

- 2½ – 3"/65 – 80mm Aluminum bronze conforming to ASTM B-148 with Grade "E" Seal.
- 4 – 12"/100 – 300mm ductile iron conforming to ASTM A-536, grade 65-45-12, fully encapsulated in Grade "E" elastomer.

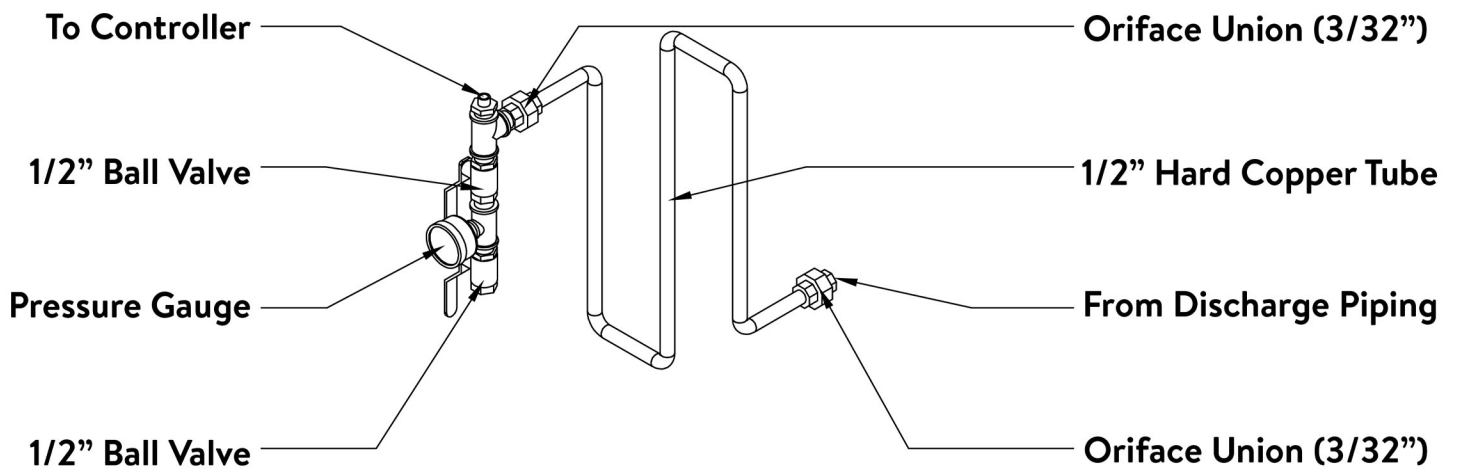
Shaft: 2½ – 3"/65 – 80mm Type 416 stainless steel. 4 – 12"/100 – 300mm Type 316 stainless steel.

Spring: All sizes Type 302/304 stainless steel.

Shaft Plug: 2½ – 3"/65 – 80mm only; SAE Hex Socket Type conforming to ASTM A-576, cadmium plated to military specifications QQ-P-416A, class 3 type 2. 4 – 12"/100 – 300mm only; carbon steel zinc plated to ASTM B-633.

Pipe Plug: 4 – 12"/100 – 300mm only; carbon steel zinc plated to ASTM B-633.

NFPA20 Sensing Line Detail



Pressure Sensing Lines constructed in accordance with NFPA 20:
All brass or copper components, orifice unions at connections to
both discharge piping & controller valve assembly, minimum 60"
hard copper tubing between unions.