

FIRE PUMP, JOCKEY PUMP & CONTROL PANELS

Customer Technical Offer

Customer	RFQ-For Quotes C&M	Pump Size / Stages	SD08LFK / 1
Item number	001	Pump speed	3500 rpm
Customer enquiry	Hiller Fire	Quote number	637808

Pumpset

Qty	Description
1	SD08LFK - 300 USgpm @ 60 psi Order Type Order Details Order For: Pumpset Site Details Site Mains voltage (for motor/ controllers/ Engine instrumentation): 200V or 208V / 60Hz Auxillary site Voltage (for Jockey pump / controller): 3 Phase / 60 Hz / 200-208V Site Suction pressure: Enter Suction pressure here (Mandatory for order processing): 49.99 psi Accessories: Required Start-up Please select: Not Included / Quoted Pump (PKKFL08D254ULFM1) (1FL0895111111111) Materials of Construction Design: Standard MOC (Material of Construction Code) Material Code (Casing / Impeller/ Shaft): X MOC - BRONZE FITTED-(C.I. / BR / High Tensile Steel) Pump casing material: GREY CAST IRON (124) Impeller material: LEADED GUNM. CAST (445) Construction Options Suction Flange Drilling Standard: ANSI B16.1 CL 125/150 FF Delivery Flange Drilling Standard: ANSI B16.1 CL 250 FF Sealing Arrangement: Gland Packing Stuffing box sealing / flushing: Self Sealing Driver (MW0202602-8064OYD1) Driver Type Driver Selection: Electric Motor (Catalog) Motor options Motor manufacturer: WEG Motor poles: 2 pole Motor mounting: Vertical Flange Motor Enclosure: Open Drip Proof (ODP) Supply Voltage With Variation: 208 Volts Frequency: 60 Hz Motor: Electric Motor, WEG, Vertical, 20Hp, 3600 rpm, 60 Hz, 254JP, ODP Enclosure, Class F, 40 Deg C Ambient 208 Volts / 60 Hz / Y/D Accessories Accessories menu Pump Gasket Kit (GSKTKTSD08LFK): Gasket Kit for Pump Flanges Gauges Delivery side Pressure gauge Pressure Gauge selected (GGDEL300WGLY1111): 4" Pump Discharge Gauge 0-300 PSI, 1/4" NPT - Liquid Filled Suction side Pressure gauge Compound Gauge selected (GGSUC300WGLY1111): 4" Pump Suction Gauge 30-0-300 PSI, 1/4" NPT - Liquid Filled QC/Testing Plans/Painting/Packing Testing Details Hydro Test: Required Hydro Test: Non-Witness Hydrotest Fix Speed Performance Test: Required Fix Speed Performance Test: Non-Witness Fixed Speed Performance NPSH Test: Not Required Noise Test: Not Required Vibration Test: Not Required Painting selection Painting selection: Standard Painting Packing selection: Standard Palletized Packing

Pump

Qty	Description
1	Order Type Order Details HazMat Certification: Not Required

Casing Relief Valve

Qty	Description
1	Accessories Accessories menu Casing Relief Valve (CRV3-4175111111): Casing Relief Valve, Bronze, UL/FM, 3/4", Adjustment range 20-200 psi

Main Fire Pump Controller

Qty	Description
1	Accessories Accessories menu Motor Controller Motor Controller Make: Any Starting Type: Wye-Delta Closed Voltage: Motor Voltage 200 V / 208 V Controller Enclosure (Cabinet): Nema 2 Standard Transfer Switch: TS Not Required Normal Source withstand rating: Controller standard Space Heater (Anti condensation Device): None Nameplate / Labels Language: English Labels (Standard) Motor Controller: Motor Controller, FT30-500-E, Wye-Delta Closed, No Transfer Switch

Jockey Pump

Qty	Description
1	Accessories Accessories menu Jockey Pump and / or Controller {JWNV6-760F311111} Enter the duty parameters for jockey pump Select the desired duty flow (usgpm): 5 Enter the desired Head (psi)70: 70 Jockey Pump / Controller Frequency: 60 Hz Jockey Pump: Jky Pump, Webtrol, NV6B7FE3T, 60 Hz, 0.75 HP, Flanged - Class 300, 208-230/460 V, 3 Phase Jockey Pump Gasket Kit(JPFLANGEKIT-1-1/4): 1-1/4" class 250 jockey pump flange kit

Jockey Pump Controller

Qty	Description
1	Accessories Accessories menu Jockey Pump and / or Controller {JWNV6-760F311111} Jockey Pump Controller (TJ50071931) Jockey Controller Make: Any Jockey Controller Phase: 3 Phase Jockey Controller Voltage: 460 V / 480 V Jockey PumpController Enclosure: Nema 2 Jockey Controller Labels: English Jockey Controller: Jky Cntrlr-XTJP-0.75-D 0.75Hp/460V/60Hz

Taper Spool Pieces

Qty	Description
1	Accessories Accessories menu Taper Spool Pieces for - SD08LFK - 3 Inch ANSI B16.1 CL 125/150 FF X 3 Inch ANSI B16.1 CL 250 FF Eccentric Decreaser (R040312111111111) End Type: Flanged Flange Rating: CL 125 X CL 125 Eccentric Suction Reducer: Ecc Suc Reducer, 4"x3", #125x125 Concentric Increaser (I030421111111111) End Type: Grooved Flange Rating: CL 250 X Grooved Concentric Discharge Increaser: Con Dis Increaser, 3"x4", 250xGrooved

Hose Header

Qty	Description
1	Accessories Accessories menu Hose Header (H040231111111111) Hose header: Hose Head with valves, 4", Grooved, 2 Outlet Hose Valves for Hose (Test) header: 2-1/2" Hose Valve with Cap and chain

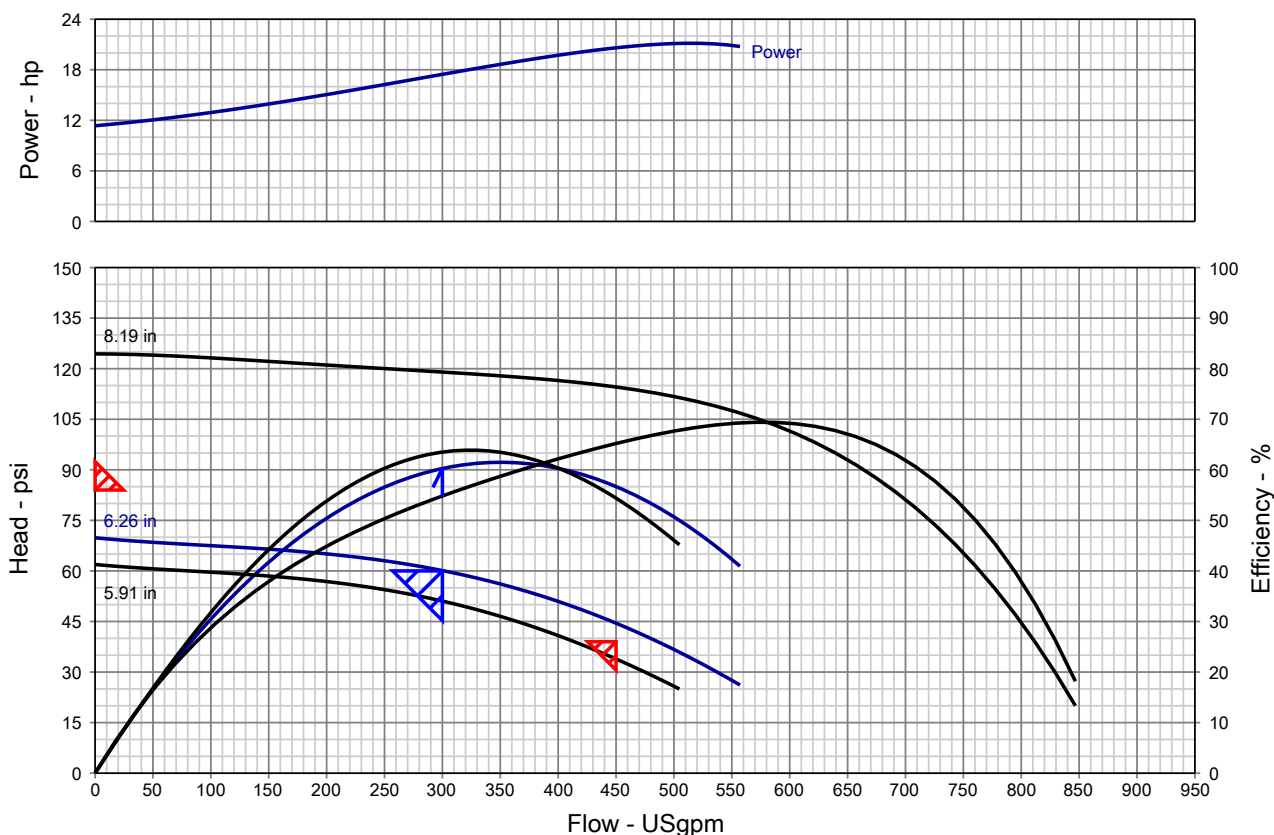
Freight

Qty	Description
1	Order Type Order Details Freight Freight Options: Freight Included (Delivered to site for Domestic USA shipments only)

Pump Performance Datasheet

Customer	: RFQ-For Quotes C&M	Quote number	: 637808
Customer enquiry	: Hiller Fire	Pump Size	: SD08LFK
Item number	: 001	Stages	: 1
Usage - Tertiary	:	Based on curve number	: KFL08D
Quantity	: 1	Date last saved	: 26 Sep 2025 00:06

Operating Conditions		Liquid	
Flow, rated	: 300.0 USgpm	Liquid Type/ Application	: Water
Differential Head (requested)	: 60.00 psi	Additional liquid description	:
Suction pressure, rated / max	: 50.00 / 50.00 psi.g	Temperature, max	: 68.00 deg F
NPSH available, rated	: Ample	Fluid density, rated / max	: 1.000 / 1.000 SG
Site Supply Frequency	: 60 Hz	Viscosity, rated	: 1.00 cP
NFPA Limits		Performance	
Flow, rated	: 300.0 USgpm	Speed, rated	: 3500 rpm
Head, rated	: 60.11 psi	Impeller diameter, rated (approx.)	: 6.26 in
Power, rated	: 17.46 hp	Impeller diameter, maximum	: 8.19 in
NPSHr, rated	: -	Impeller diameter, minimum	: 5.91 in
Efficiency, rated	: 60 %	Efficiency	: 60 %
Flow at 150%	: 450.0 USgpm	NPSH required / margin required	: - / 0.00 ft
Head at 150%, actual/limit	: 44.50 psi	Head, maximum, rated diameter (approx.)	: 69.83 psi
Efficiency at 150%	: 57 %	Diameter ratio (rated / max)	: 76.44 %
NPSHr at 150% flow	: -	Driver & Power Data (@Max density)	
Power required at 150% flow	: 20.60 hp	Power, hydraulic	: 10.52 hp
Peak power	: 21.15 hp	Power, rated	: 17.46 hp
Closed valve pressure	: 119.8 psi.g	Power, maximum, rated diameter	: 21.15 hp
140% Head at shutoff	: 84.00 psi	Material	
65% Head at 150% flow	: 39.00 psi	Material selected	: Code X - CI / BR /SS
Cooling flow (None)	: 0.00 USgpm	Selection status	
Pressure Data		FM/UL/cUL approved	: FM/UL
Maximum working pressure	: 119.8 psi.g	Near miss reasons	:
Maximum allowable working pressure	: 206.0 psi.g		
Maximum allowable suction pressure	: 75.00 psi.g		
Hydrostatic test pressure	: 250.0 psi.g		

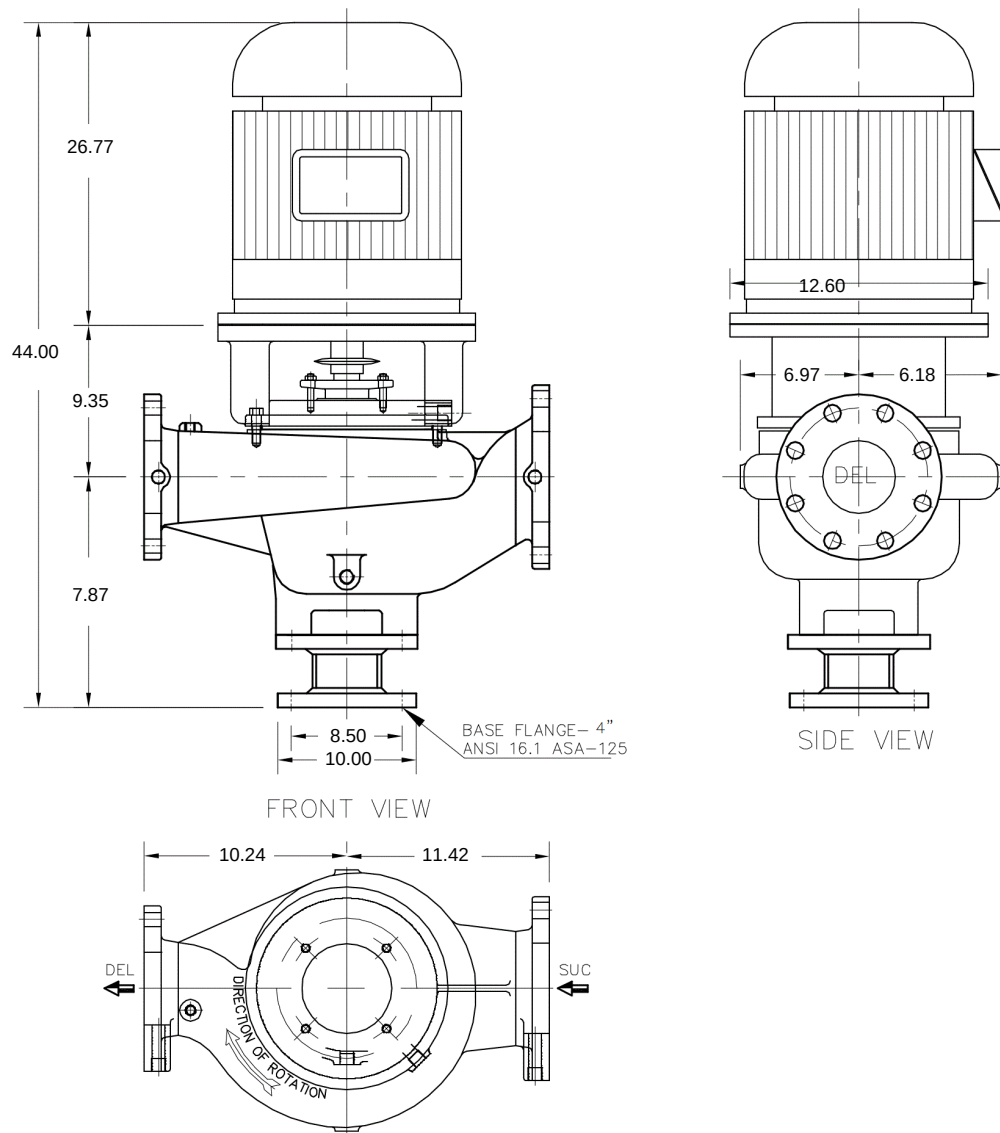


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Suction pressure, rated / max	: 50.00 / 50.00 psi.g	Temperature, max	: 68.00 deg F
NPSH available, rated	: Ample	Fluid density, rated / max	: 1.000 / 1.000 SG
Site Supply Frequency	: 60 Hz	Viscosity, rated	: 1.00 cP

Flow (USgpm)	Head (psi)	Pump Efficiency (%)	Power Required (hp)	NPSH required (ft)
0.00	69.83	0	11.35	-
69.64	68.08	22	12.38	-
139.3	66.70	40	13.71	-
208.9	64.75	52	15.26	-
278.5	61.48	59	16.94	-
348.2	56.30	61	18.60	-
417.8	48.81	59	20.07	-
487.5	38.78	52	21.03	-
557.1	26.15	41	20.76	-



PUMP DUTIES				FLANGE DRILLING STANDARD AND DETAILS		
Capacity	300.0 USgpm	Efficiency	60 %	BRANCH	Nom Size	Flange drilling std
Total Head	60.00 psi	Peak Power	60.26 %	Suction	3 Inch	ANSI B16.1 CL 125/150 FF
				Delivery	3 Inch	ANSI B16.1 CL 250 FF
Note1: This drawing is not to be used for installation purpose until it has been certified by Kirloskar Brothers Limited.						
Note2: All dimensions are in inches unless stated otherwise.						
Note3: Refer to the Kirloskar Brothers Limited installation guide for advice on pump installation.						
Note4: Dimensions without tolerances for welded parts are as per ISO13920-D.						

Pump	SD08LFK	Static load	567.5 lb
Driver Rating	20 Hp	Dynamic load	709.4 lb
Driver Size	254JP	GD2	0.00 lb.ft2
Rated Speed	3500RPM	Rotation	CLOCKWISE
Enquiry No/Date	Hiller Fire /	Quantity	1
Quotation No /	637808	Item no	-
Customer	RFQ-For Quotes C&M		
Project	Home2 Suites Greenwood		
Service	-		
		2905 PACIFIC DRIVE NORCROSS GA 30071 USA	

GENERAL ARRANGEMENT DRAWING

Eaton EPCT Fire

Touchscreen based electric fire pump controllers



Powering Business Worldwide

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/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.

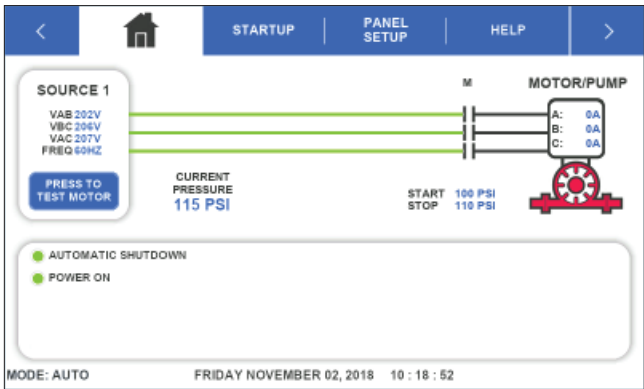
External USB Port

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.

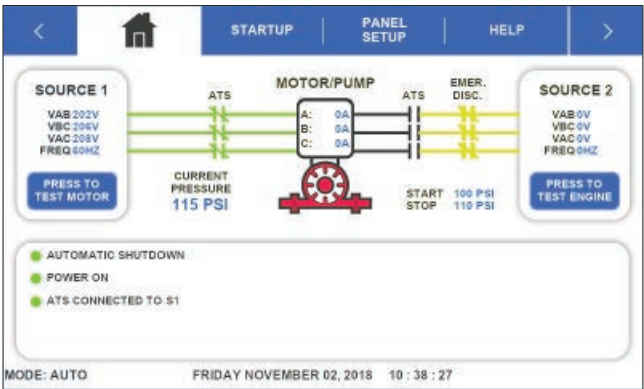
Enclosures

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.

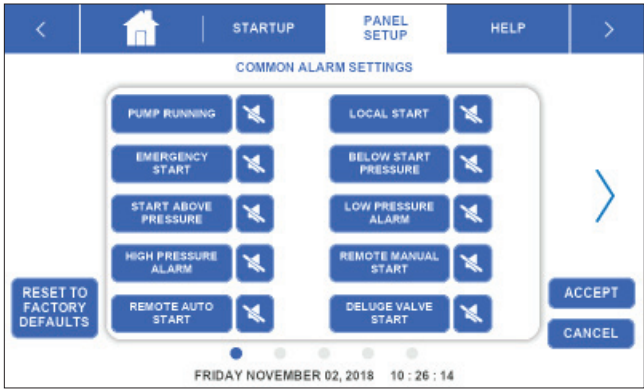
Display Screens



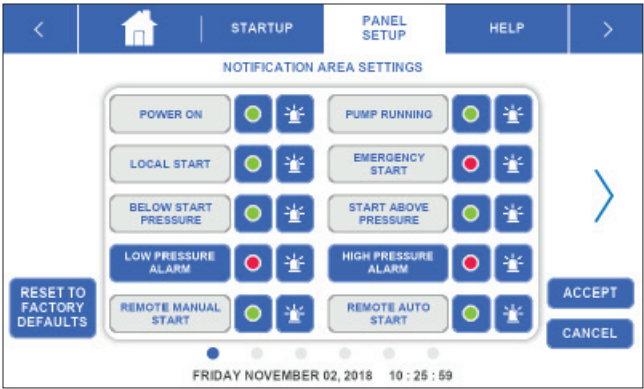
Home tab - without ATS



Home tab - with ATS



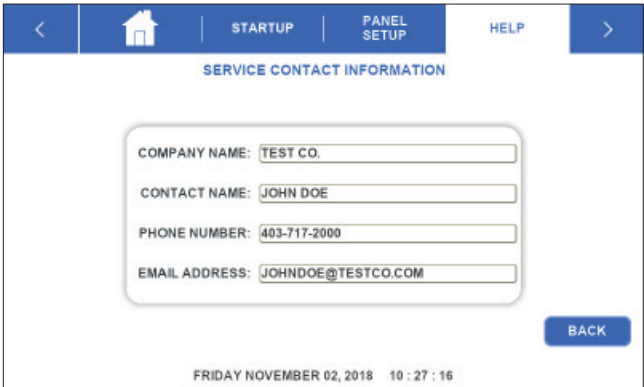
Common Alarm Settings



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/FT40 Part Winding	Reduced	65%	50%	6	220-240V	5-200	100,000
					380-415V	5-300	100,000
					440-480V	5-400	100,000
					575-600V	5-500	25,000
					200-208V	5-250	100,000
FD/FT50 Primary Resistor	Reduced	50%	42%	3	220-240V	5-300	100,000
					380-415V	5-500	100,000
					440-480V	5-600	100,000
					575-600V	5-700	25,000
					200-208V	5-150	100,000
FD/FT60 Autotransformer	Reduced	45%	42%	3	220-240V	5-200	100,000
					380-415V	5-300	100,000
					440-480V	5-400	100,000
					575-600V	5-500	25,000
					200-208V	5-250	100,000
FD/FT70 WYE-Delta (Star-Delta) Open Transition	Reduced	33%	33%	6	220-240V	5-300	100,000
					380-415V	5-500	100,000
					440-480V	5-600	100,000
					575-600V	5-700	25,000
					200-208V	5-250	100,000
FD/FT80 WYE-Delta (Star- Delta) Closed Transition	Reduced	33%	33%	6	220-240V	5-300	100,000
					380-415V	5-500	100,000
					440-480V	5-600	100,000
					575-600V	5-700	25,000
					200-208V	5-150	100,000
FD/FT90 Soft Start	Reduced	Adjustable	Adjustable	3	220-240V	5-200	100,000
					380-415V	5-300	100,000
					440-480V	5-400	100,000
					575-600V	5-500	25,000
					200-208V	5-150	100,000

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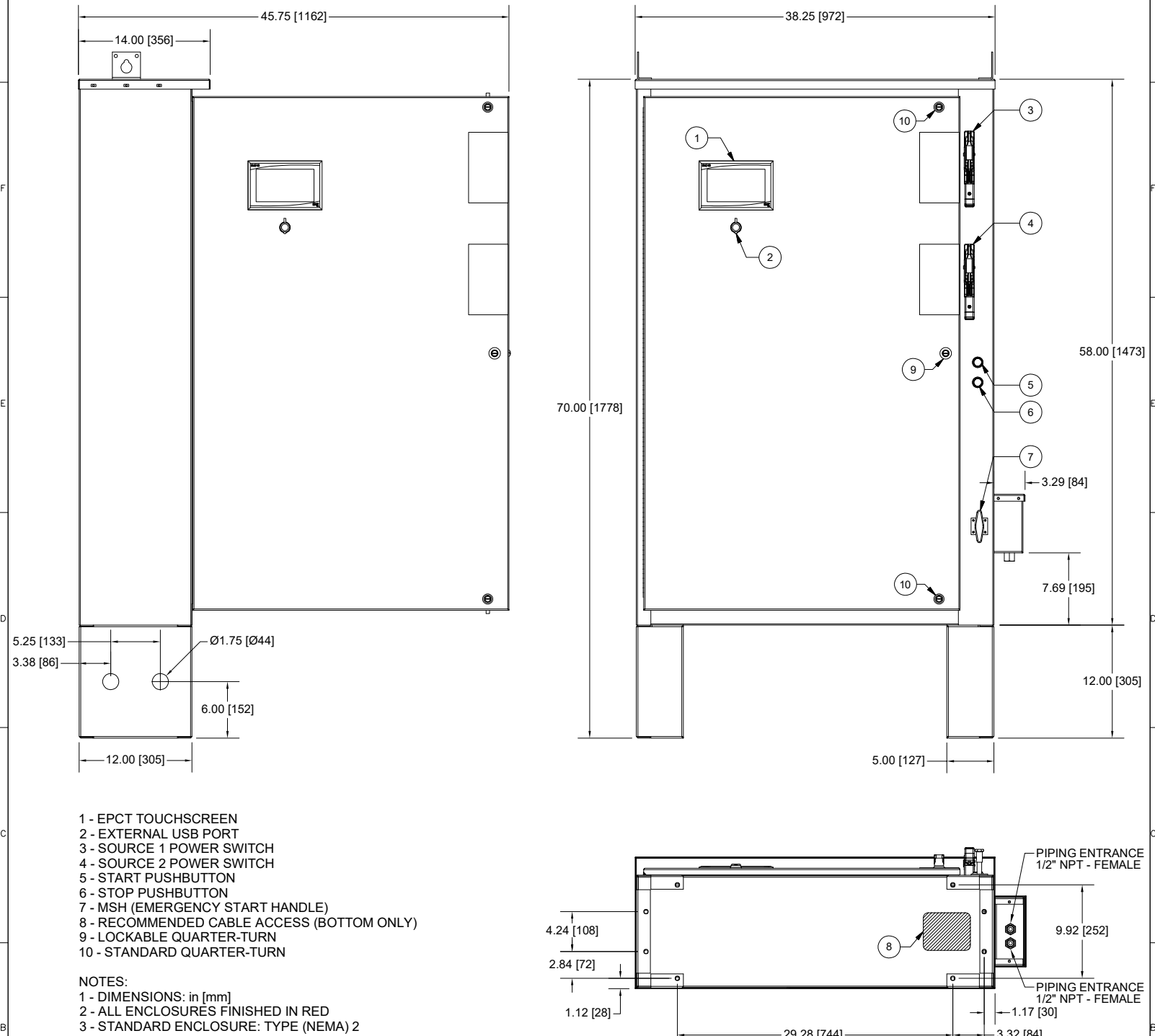
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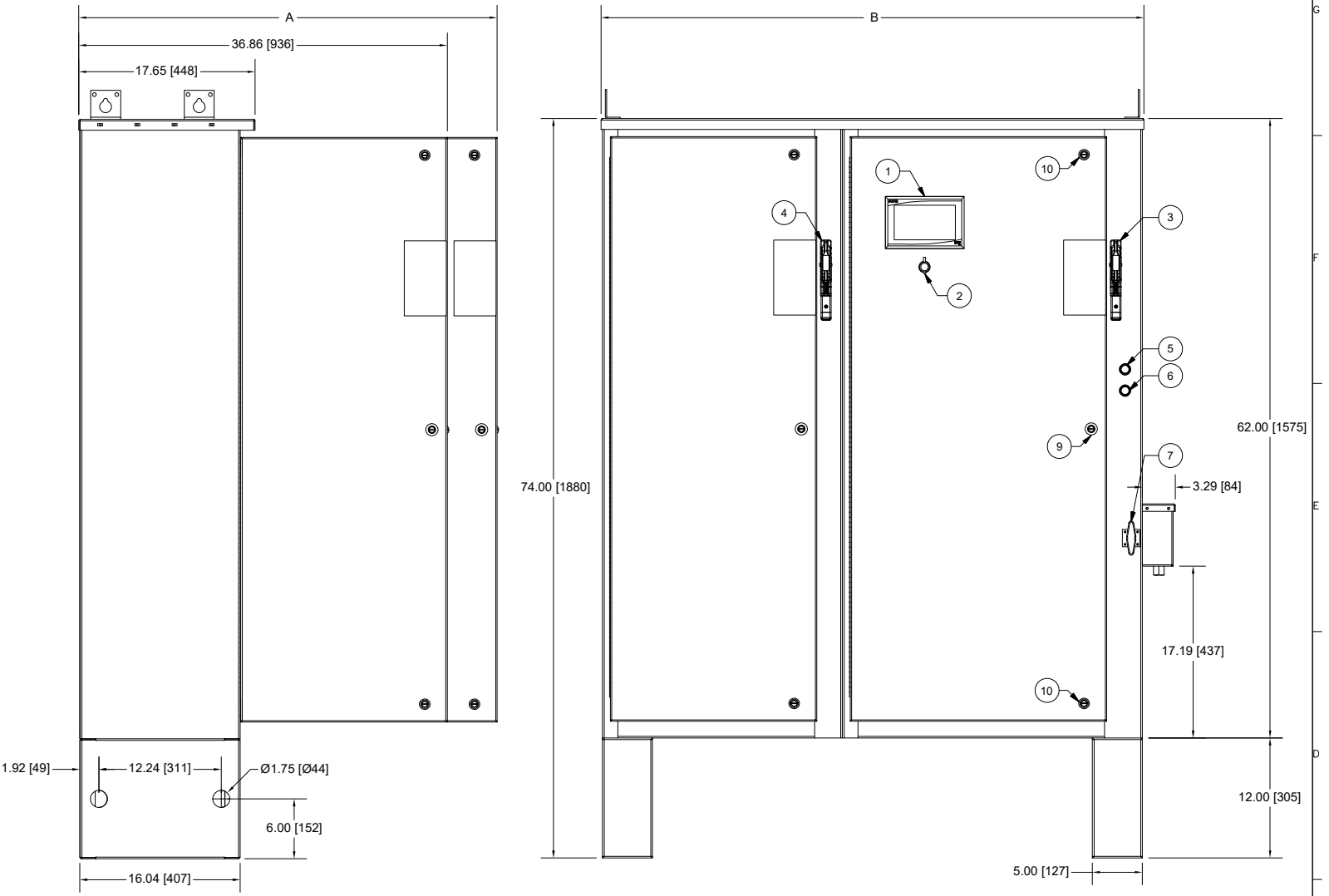
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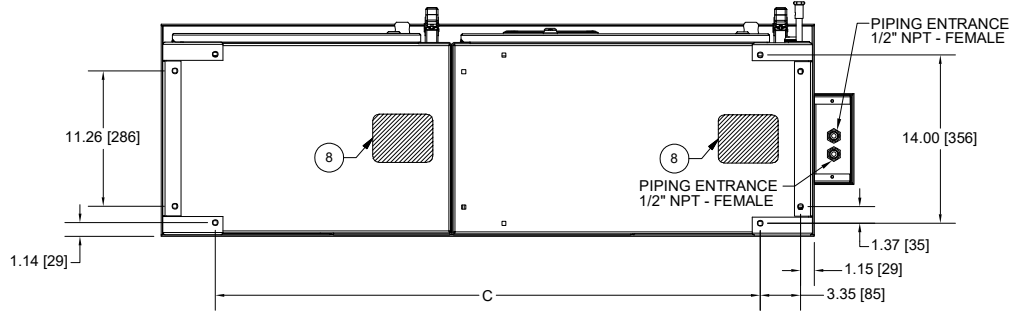


Motor HP	Line voltage	Withstand rating			Approximate weight Lbs. (Kg)
		Standard	Intermediate	High	
5 - 50	220 - 240V	100,000	150,000	200,000	315 (143)
5 - 75	380 - 415V				
5 - 100	440 - 480V				
5 - 100	550 - 600V	25,000	100,000		

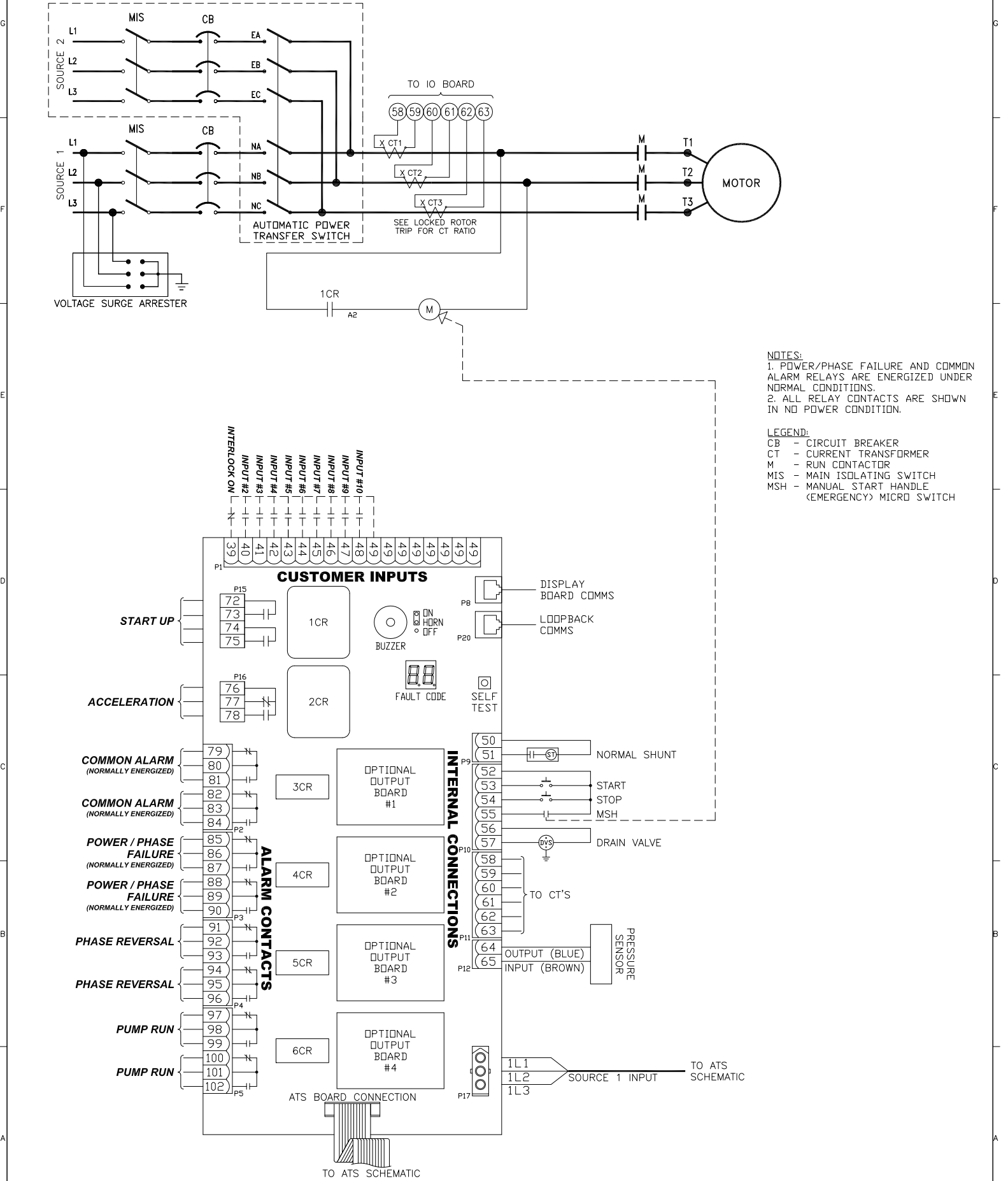


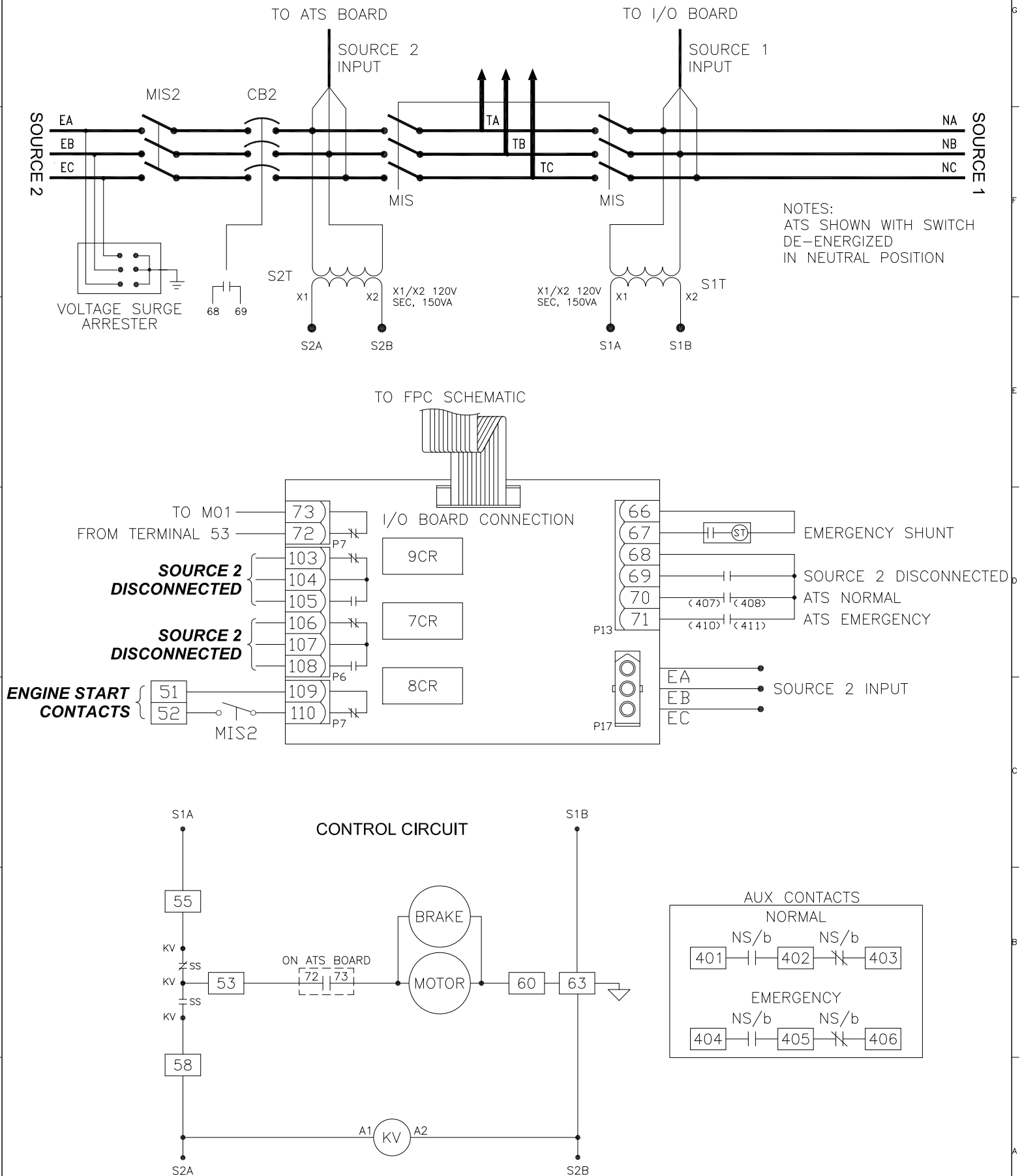
- 1 - EPCT TOUCHSCREEN
- 2 - EXTERNAL USB PORT
- 3 - SOURCE 1 POWER SWITCH
- 4 - SOURCE 2 POWER SWITCH
- 5 - START PUSHBUTTON
- 6 - STOP PUSHBUTTON
- 7 - MSH (EMERGENCY START HANDLE)
- 8 - RECOMMENDED CABLE ACCESS (BOTTOM ONLY)
- 9 - LOCKABLE QUARTER-TURN
- 10 - STANDARD QUARTER-TURN

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 Lbs. (Kg)	A	B	C
		Standard	Intermediate	High				
50 - 100	200 - 208V	100,000	150,000	200,000	515 (233)	41.83 [1062]	54.3 [1379]	39.15 [994]
60 - 125	220 - 240V							
100 - 200	380 - 415V							
125 - 250	440 - 480V							
125 - 300	550 - 600V	25,000	100,000		630 (286)	54.83 [1393]	67.30 [1709]	45.65 [1160]
125 - 150	200 - 208V	100,000	150,000	200,000				
150 - 200	220 - 240V							
250 - 300	380 - 415V							
300 - 400	440 - 480V							
350 - 400	550 - 600V	25,000	100,000					





Line Terminals Connections

Max HP	Line Voltage					Line Lugs (QTY.) & Cable Size per Ø	Service Ground Lugs (QTY.) & Cable Size per Ø
	200-208	220-240	380-415	440-480	575-600		
	25	30	40	60	75	(1) #14 - 1/0 (CU/AL)	(1) #14 - 2/0 (CU/AL)
	40	50	75	100	100	(1) #4 - 4/0 (CU)	(1) #4 - 350MCM (CU/AL)
	75	75	150	200	200	(1) #3 - 350MCM (CU/AL)	(1) #4 - 350MCM (CU/AL)
	100	125	200	250	300	(2) 3/0 - 350MCM (CU/AL)	(2) 1/0 - 750MCM (CU/AL)
	150	200	300	400	500	(2) 250 - 350MCM (CU/AL)	(2) 1/0 - 750MCM (CU/AL)

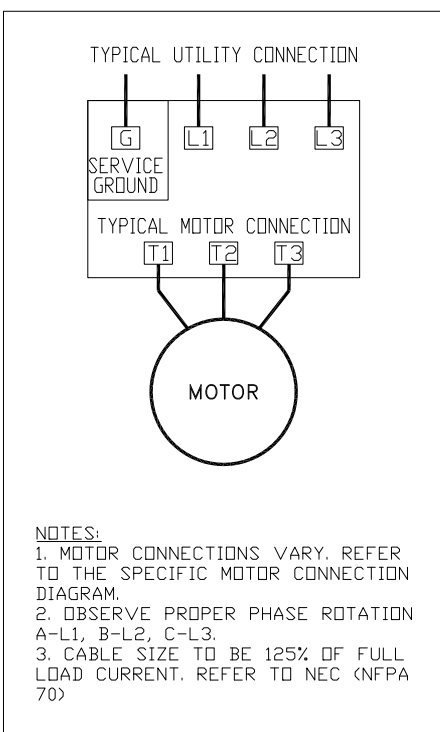
Load Terminals Connections

Max HP	Line Voltage					Single Run Cable Sizes	Double Run Cable Sizes
	200-208	220-240	380-415	440-480	575-600		
	10	10	15	20	25	#14 - #8 (CU/AL)	#14 - #8 (CU/AL)
	20	25	30	50	60	#14 - #1 (CU/AL)	#14 - #2 (CU/AL)
	40	60	75	125	100	#8 - 3/0 (CU/AL)	#8 - 2/0 (CU/AL)
	75	100	150	200	200	#2 - 750MCM (CU/AL)	1/0 - 250MCM (CU/AL)
	150	200	300	400	500	1/0 - 500MCM (CU/AL)	1/0 - 500MCM (CU/AL)

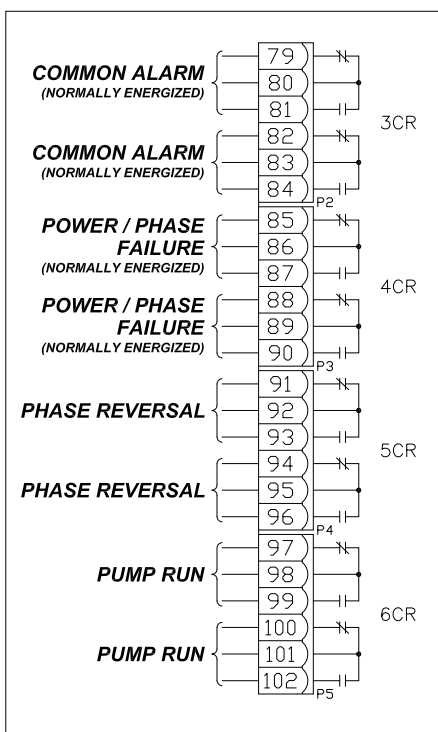
For ambient temperatures exceeding 30C (86F), the temperature rating of motor conductors is recommended to be a minimum of 90C (194F)

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

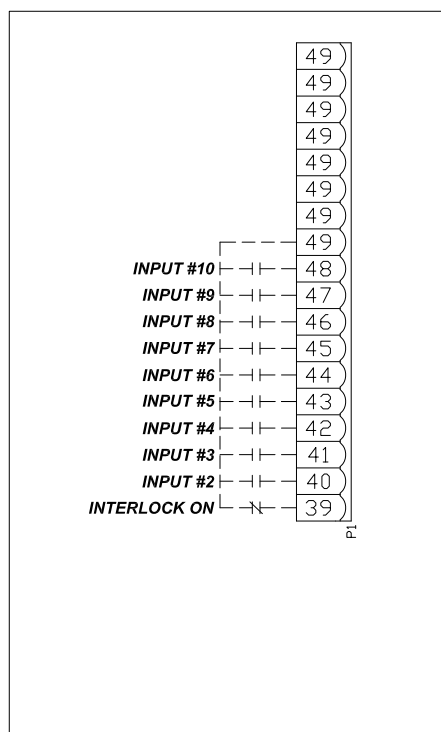
CONTROLLER CONNECTIONS



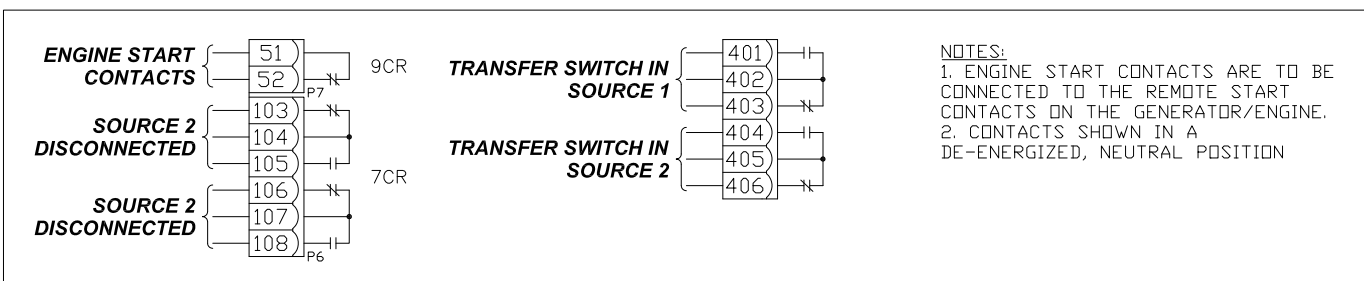
ALARM CONTACTS



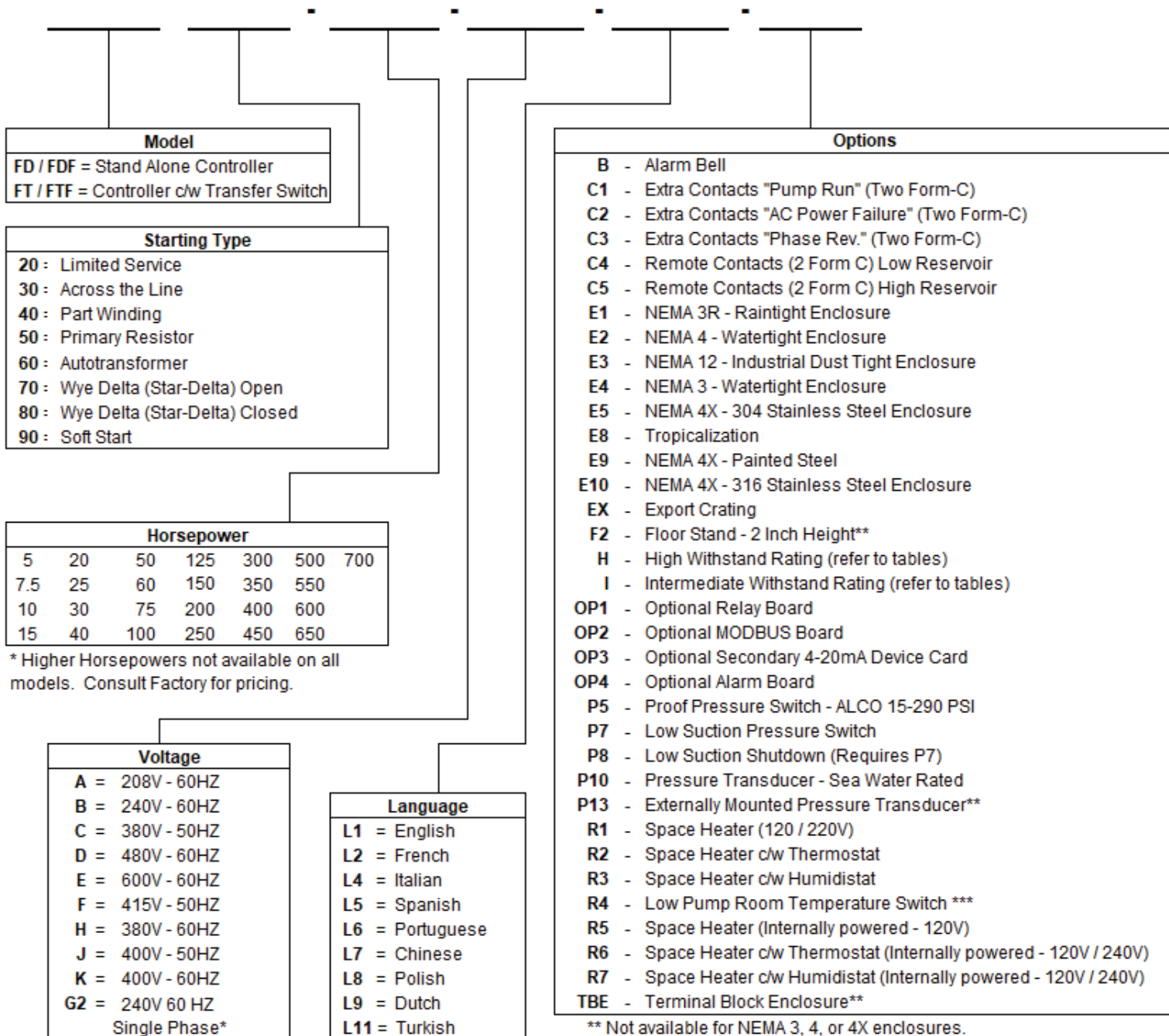
CUSTOMER INPUTS



TRANSFER SWITCH CONNECTIONS (IF EQUIPPED)



EPCT Fire option selection matrix



** Not available for NEMA 3, 4, or 4X enclosures.

*** When ordered with a NEMA 3, 4, or 4X enclosure, the temperature switch is shipped loose with 20 feet of wire.

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 [Limited Service - 1P or 3P] [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



Powering Business Worldwide

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.



There when you need us most

NV SERIES VERTICAL BOOSTER PUMPS

304/316 Stainless Steel Booster Pumps



Space saving NV Series pumps provide you with reliable solutions for a variety of industrial, commercial, and agricultural applications.

The quality and performance you expect, along with industry best lead times and personalized service, only from Webtrol!

Features and Benefits

- In-line, space saving design, with suction and discharge on the same plane
- Maintenance-free cartridge type mechanical seals
- All wetted parts constructed of 304 or 316 stainless steel
- Drop-in replacement for existing installations
- Standard TEFC motor enclosure
- Meets NSF/ANSI 61 and 372 standards



Performance

HP Range: .5 - 60 HP, 60Hz.

Capacities to 600 GPM

Pressures to 380 PSI

Temperatures to 248 °F



Typical Services

- | | |
|-------------------|---------------------|
| • Water Supply | • Plants |
| • Reverse Osmosis | • Boiler Feed |
| • Water Boosting | • Hot & Cold Water |
| • Washing Systems | • Circulation |
| • Jockey Pump | • Irrigation |
| • Water Treatment | • Sprinkler Systems |
| • Filtration | • Heat Exchangers |

BOOSTER PUMPS

Construction & Design Features

Series	Stages	Max. Working Pressure	Stages	Max. Inlet Pressure
NV6	2 - 27	362	2 - 26	150
		362	27	220
NV12	2 - 25	362	2 - 15	150
			17 - 25	220
NV25	2 - 24	362	2 - 9	150
			10 - 24	220
NV45	1 - 10	232	1 - 5	118
	12 - 17	362	6 - 18	150
NV65	1 - 8	232	1 - 2	118
	9 - 12	362	3 - 12	150
NV85	1 - 7	232	1	118
	8 - 10	362	2 - 10	150
NV120	1 - 5	232	1 - 2	59
	6 - 10	465	3 - 6	150
			7 - 10	220
NV180	1 - 4	232	1	59
	5 - 7	465	2 - 3	150
			4 - 7	220
NV280	1 - 3	232	(1 - 1)	59
	4 - 5	465	1 - (2 - 1)	150
			2 - 5	220
NV400	1 - 3	232	1 - (2 - 2)	150
	4	465	(2 - 1) - 4	220

MODEL NO.: NV25B9FE3T

Series/Nominal Rated Flow (GPM)

Construction
B = 304SS S = 316SS

Number of Stages

Connection
F = Flanged V = Victaulic

Elastomers
E = EPDM V = Viton

Phase / Hz (PH)
1 = 1PH / 60Hz 3 = 3PH / 60Hz

Motor Enclosure
D = ODP T = TEFC

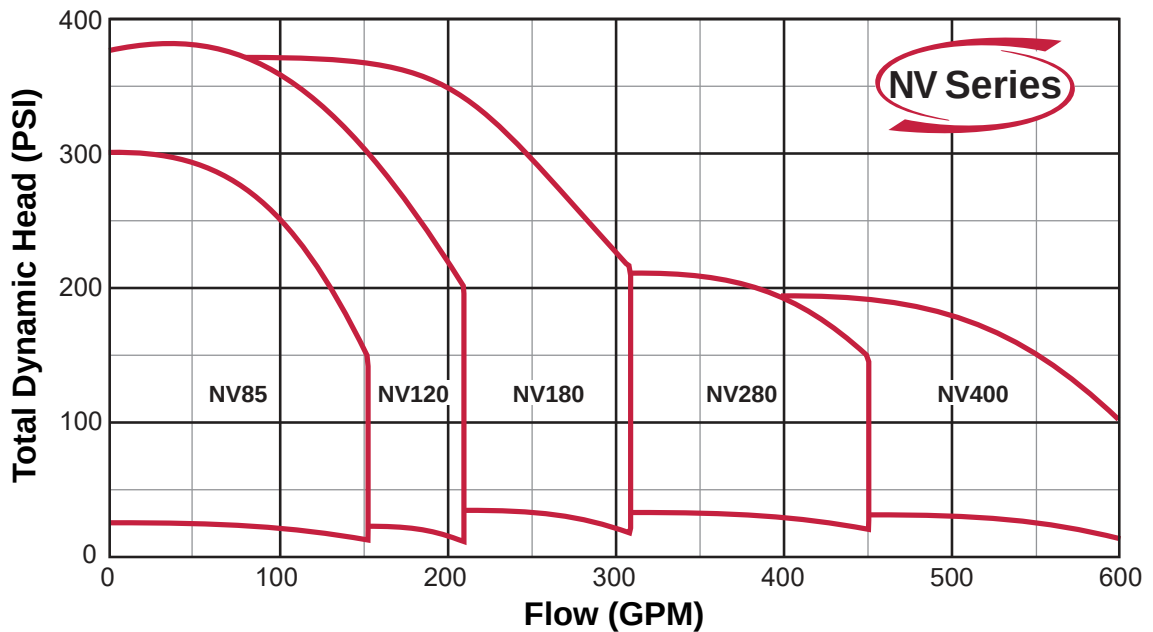
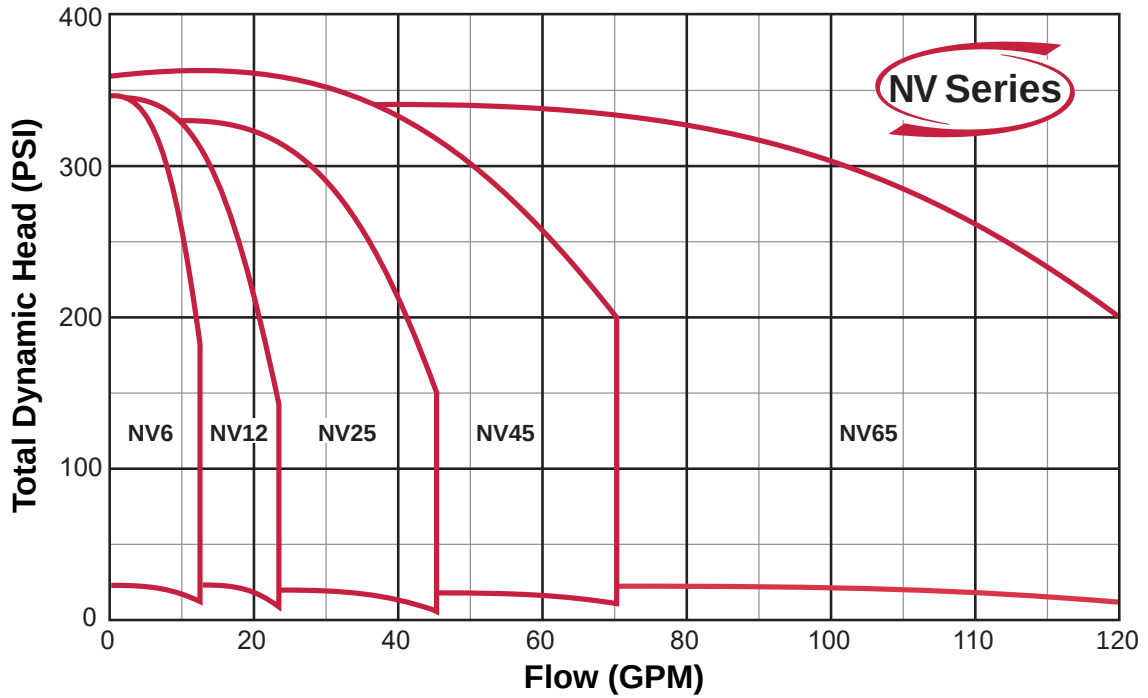


Component	304 SS Models		316 SS Models	
	NV6B thru NV85B	NV120B thru NV400B	NV6S thru NV85S	NV120S thru NV400S
Motor Bracket	Cast Iron	Cast Iron	Cast Iron	Cast Iron
Pump Head	304 SS	304 SS	316 SS	316 SS
Impeller	304 SS	304 SS	316 SS	316 SS
Diffuser	304 SS	304 SS	316 SS	316 SS
Neck Ring	Teflon	Carbon Reinforced Teflon	Teflon	Carbon Reinforced Teflon
Shaft	431 SS	431 SS	316 SS	316 SS
Casing	304 SS	304 SS	316 SS	316 SS
O-Ring	EPDM	EPDM	EPDM	EPDM
Pump Base	304 SS	304 SS	316 SS	316 SS
Base Plate	Cast Iron	Cast Iron	Cast Iron	Cast Iron
Mech Seal	Silicon Carbide/Silicon Carbide/EPDM			



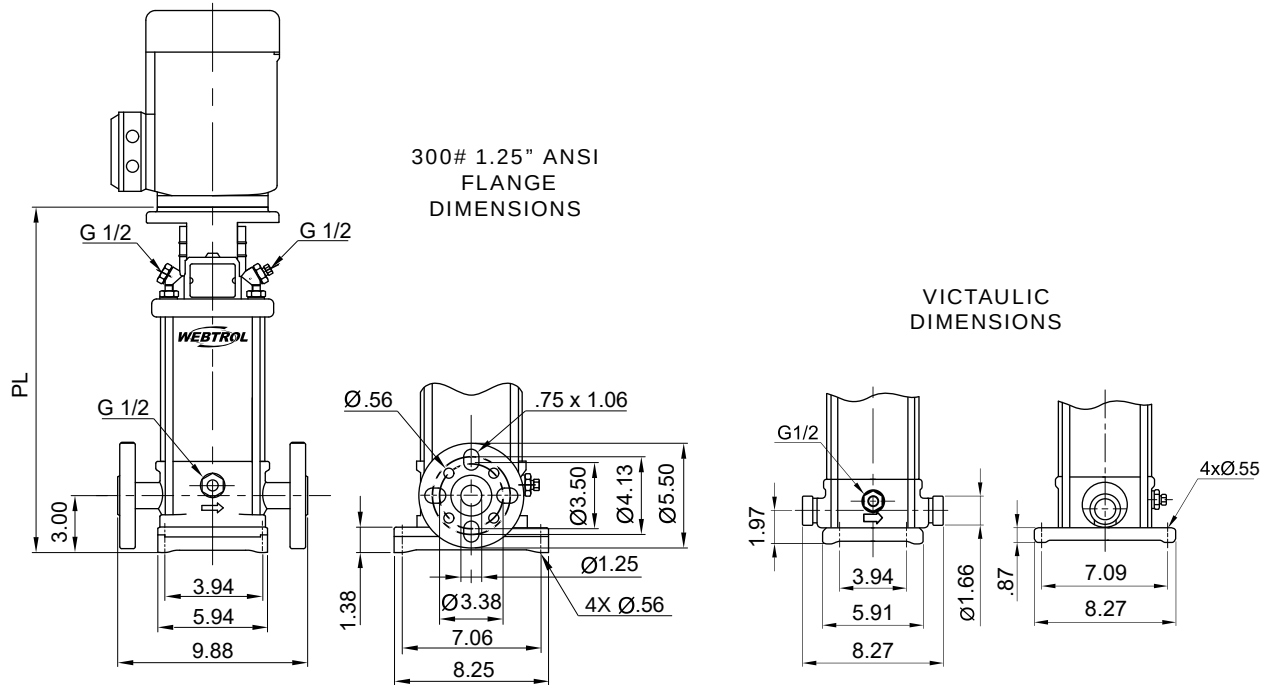
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SERIES FAMILY CURVES



Note:
NV Series curves in this catalog are based on 60 Hz 3450 rpm motors. 50 Hz 2875 rpm curves are available. These curves are for general guidance only, individual pump curves are available upon request. A certified curve may be requested for an additional cost. Webtrol will build pumps to fit your specific needs, contact factory for pricing.

NV6 PUMP DIMENSIONS



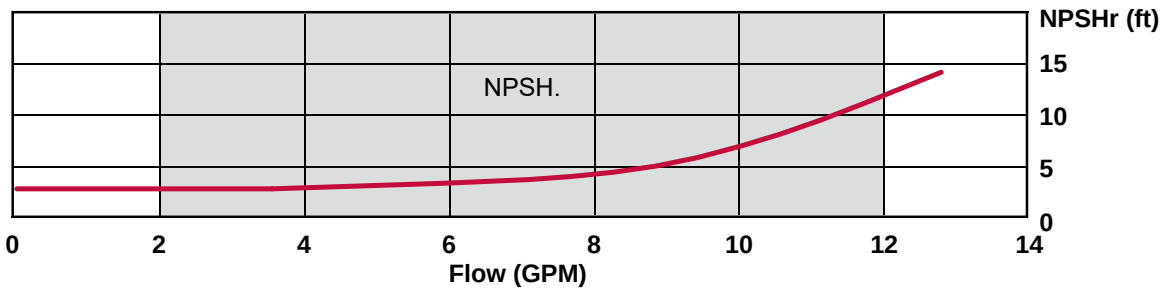
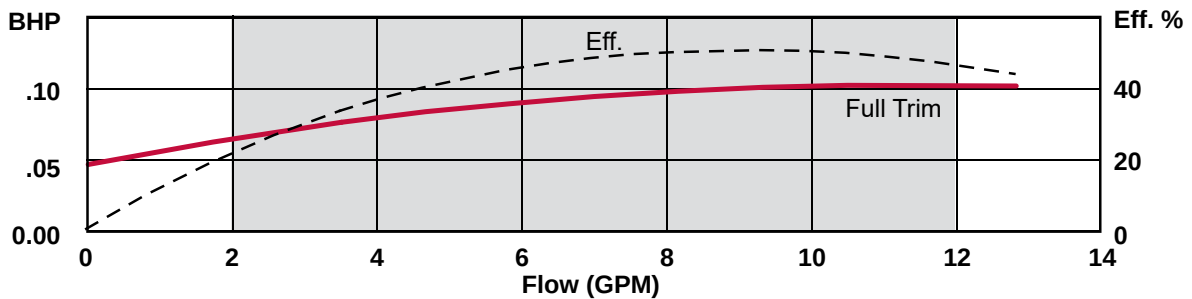
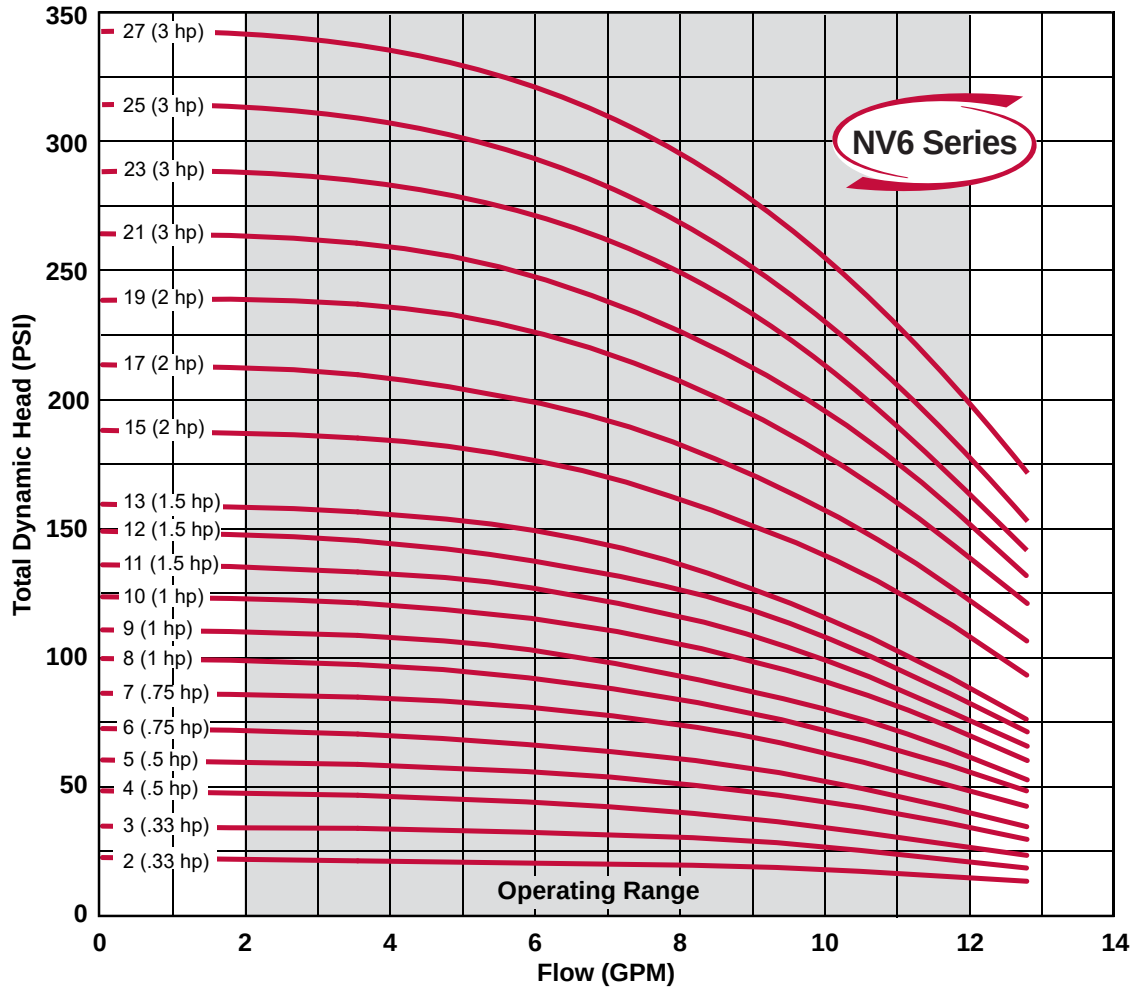
NOTES: All dimensions are in inches unless otherwise noted. Please contact factory for specific motor manufacturer dimensions

Model	HP	Motor Frame	Pump Length (PL) - in. Flange	Pump Length (PL) - in. Victaulic	Pump End Weight - lbs. Flange	Pump End Weight - lbs. Victaulic
NV6B2	.5	56C	12.05	11.06	33	31
NV6B3	.5	56C	12.05	11.06	34	32
NV6B4	.5	56C	12.76	11.77	34	32
NV6B5	.5	56C	13.46	12.48	35	33
NV6B6	.75	56C	14.17	13.19	36	34
NV6B8	1	56C	15.55	14.57	37	35
NV6B9	1	56C	16.26	15.28	38	36
NV6B10	1	56C	16.97	15.98	39	37
NV6B11	1.5	56C	17.68	16.69	40	38
NV6B12	1.5	56C	18.39	17.40	41	39
NV6B13	1.5	56C	19.09	18.11	42	39
NV6B15	2	56C	20.55	19.57	44	42
NV6B17	2	56C	21.97	20.98	45	43
NV6B19	2	56C	23.39	23.33	52	50
NV6B21	3	182TC	25.73	24.74	54	52
NV6B23	3	182TC	27.15	26.16	55	53
NV6B25	3	182TC	28.56	27.58	57	55
NV6B27	3	182TC	29.98	29.00	58	56



There when you need us most

NV6 SERIES GROUP CURVES





There when you need us most

(800) 769-7867

8417 New Hampshire Ave. | St. Louis, MO 63123

Web: webtrol.com | **E-mail:** customerservice@webtrol.com | **Fax:** (314) 631-3738

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Jockey Pump Controllers



Microprocessor Based with Color Touchscreen



Product Description

ACROSS THE LINE

JOCKEY PUMP CONTROLLERS

The JOCKEY Touch - Jockey Pump Controllers operate across-the-line. Full voltage is applied to the motor for starting by the use of a single motor starter. Starting inrush current is approximately 600% of rated full load amperes.

WYE-DELTA (Star-Delta)

JOCKEY PUMP CONTROLLERS

When six or twelve-lead delta connected jockey pump motors are started wye (star) connected, approximately 58% of line voltage is applied to each winding. The motor develops 33% of full-voltage starting torque and draws 33% of normal locked-rotor current from the line. After an adjustable time delay (during which the motor accelerates), it is reconnected for normal operation.

Product Features

Combination Motor Controllers

All JOCKEY Touch controllers are supplied with EATON combination motor controllers, which combine the circuit breaker and overload in one device.



Sealed Rotary Handle Mechanism

The rotary handle mechanism can be padlocked in the OFF position.

XT Power Controls

The JOCKEY Touch - Jockey Pump Controllers incorporate Eaton's XT Power Controls which are designed for the global marketplace. The XT controls carry global ratings, are small in size and are available in a wide variety of operating voltages. They are easy to install and maintain, due to their modular, plug-in design.

Universal Supply Voltage

The controllers will auto-detect three phase voltage supply from 200VAC to 600VAC, 50/60Hz and single phase from 110VAC to 240VAC, 50/60Hz, without the use of a control transformer.

NEMA 2 Enclosures

Enclosures have an oven baked powder paint finish and are supplied with NEMA 2 rating, unless otherwise ordered. Available options include: NEMA 3R, 4, 4X, 12.

Programmable Functions

Inputs, Outputs, Timers and Virtual LED's are programmable via the touchscreen display.

Starting Methods

There are four methods of starting the controller: Auto, Hand, Remote Start and Pump Start.

Diagnostics / Statistics

Eight diagnostics and seven statistics parameters can be monitored.

Alarm Setpoints

Four alarm setpoints can be programmed from the Alarm Setpoints sub-menu.

Color Touchscreen Display

The JOCKEY Touch - Jockey Pump Controllers are supplied with a microprocessor based, color touchscreen. The touchscreen display allows the user to monitor and program functions and values.

Pressure input is provided by a 4-20mA pressure sensor.



Technical Data

ACROSS-THE-LINE (Direct On Line)

JOCKEY PUMP CONTROLLERS

Line Voltage						
220-240V	380-415V	440-480V	550-600V	120V-1Ph	240V-1Ph	
Motor Horsepower						
1/3-20Hp	1/3-20Hp	1/3-40Hp	1/3-50Hp	1/3-50Hp	1/3-2Hp	1/3-5Hp

WYE-DELTA (Star-Delta)

JOCKEY PUMP CONTROLLERS

Line Voltage				
200-208V	220-240V	380-415V	440-480V	550-600V
Motor Horsepower				
1/3-40Hp (0.74-29.42Kw)	1/3-40Hp (0.74-29.42Kw)	1/3-50Hp (0.74-36.78Kw)	1/3-50Hp (0.74-36.78Kw)	1/3-50Hp (0.74-36.78Kw)

Standards & Certification

The JOCKEY Touch - Jockey Pump Controllers meet the requirements of the latest edition of NFPA 20 as well as meeting CE mark requirements. They meet or exceed the requirements of UL 508 [Underwriters Laboratories (UL)] and are approved by [Canadian Standards Association (CSA)].



Powering Business Worldwide

Microprocessor - Color Touchscreen Display

Supply Voltage

1 phase – 110VAC to 240VAC, 50/60Hz

True RMS measurement of 3 phase voltage inputs

Power Supply Output

Two 24VDC outputs

1Power the pressure sensor

2Energize the contactor coil

Ratings

NEMA 4 / 4X

Memory

Programmed settings saved in Non Volatile memory

Battery Backup

Real Time Clock kept intact during power failures

Ambient Temperature Rating

0C to 55C

Languages *

English

French

Spanish

Portuguese

Turkish

* Other languages available - consult factory for details

USB Port

Download Message History

Upload Firmware Updates

Programmable Inputs (2)

Each input can be programmed for one of seven different functions.

1Interlock

2Motor Overload

3Fail to Start

4Remote Start

5Pump Start

6Input = Output

7Disabled

Programmable Outputs (2)

Each output can be programmed for one of twenty three different functions

1Power On

2Pump Run

3Hand Mode

4Off Mode

5Auto Mode

6Low Pressure Alarm

7High Pressure Alarm

8Below Start Point

9Phase Reversal

10Phase Failure

11Fail to Start

12Undervoltage

13Overvoltage

14Transducer Failure

15Motor Overload

16Common Alarm

17Acceleration Timer

18Remote Start

19Pump Start

20Interlock On

21Input #1

22Input # 2

23Disabled

Timers (5)

Programmable Types	
1	Minimum Run Timer
2	Sequential Start Timer
3	Pump Run Restart Timer
4	Acceleration Timer
5	Fail to Start Timer

Virtual LED's (2)

Programmable Functions (22)			
1	Power On	12	Undervoltage
2	Pump Run	13	Overvoltage
3	Hand Mode	14	Transducer Failure
4	Off Mode	15	Motor Overload
5	Auto Mode	16	Common Alarm
6	Low Pressure Alarm	17	Remote Start
7	High Pressure Alarm	18	Pump Start
8	Below Start Point	19	Interlock On
9	Phase Reversal	20	Input #1
10	Phase Failure	21	Input # 2
11	Fail to Start	22	Disabled

Programmable Indication (5)

1	Red
2	Orange
3	Yellow
4	Green
5	Blue

Operation

Starting Methods (4)

1	Auto
2	Hand
3	Remote Start
4	Pump Start

Alarm Set Points (4)

1	Phase Reversal
2	Phase Failure
3	Over Voltage Alarm
4	Under Voltage Alarm

Message History (10K)

Messages time and date stamped

Diagnostics (8)

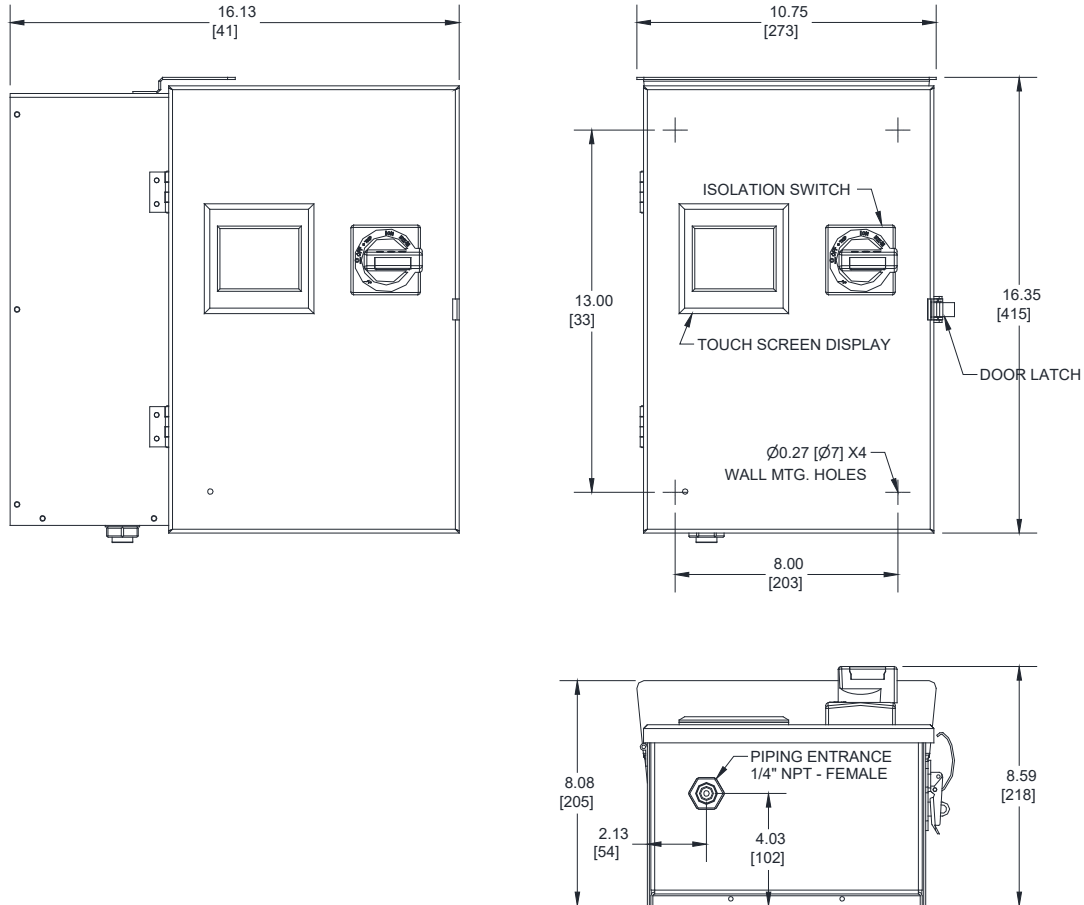
1	Firmware Version
2	Transducer Output
3	Transducer Current 1
4	Transducer Current 2
5	Input #1 Status
6	Input #2 Status
7	Relay #1 Status
8	Relay #2 Status
9	24VDC Output

Statistics (7)

1	Total Powered Time
2	Pump Run Total Time
3	Motor Starts
4	Minimum Voltage
5	Maximum Voltage
6	Minimum Pressure
7	Maximum Pressure



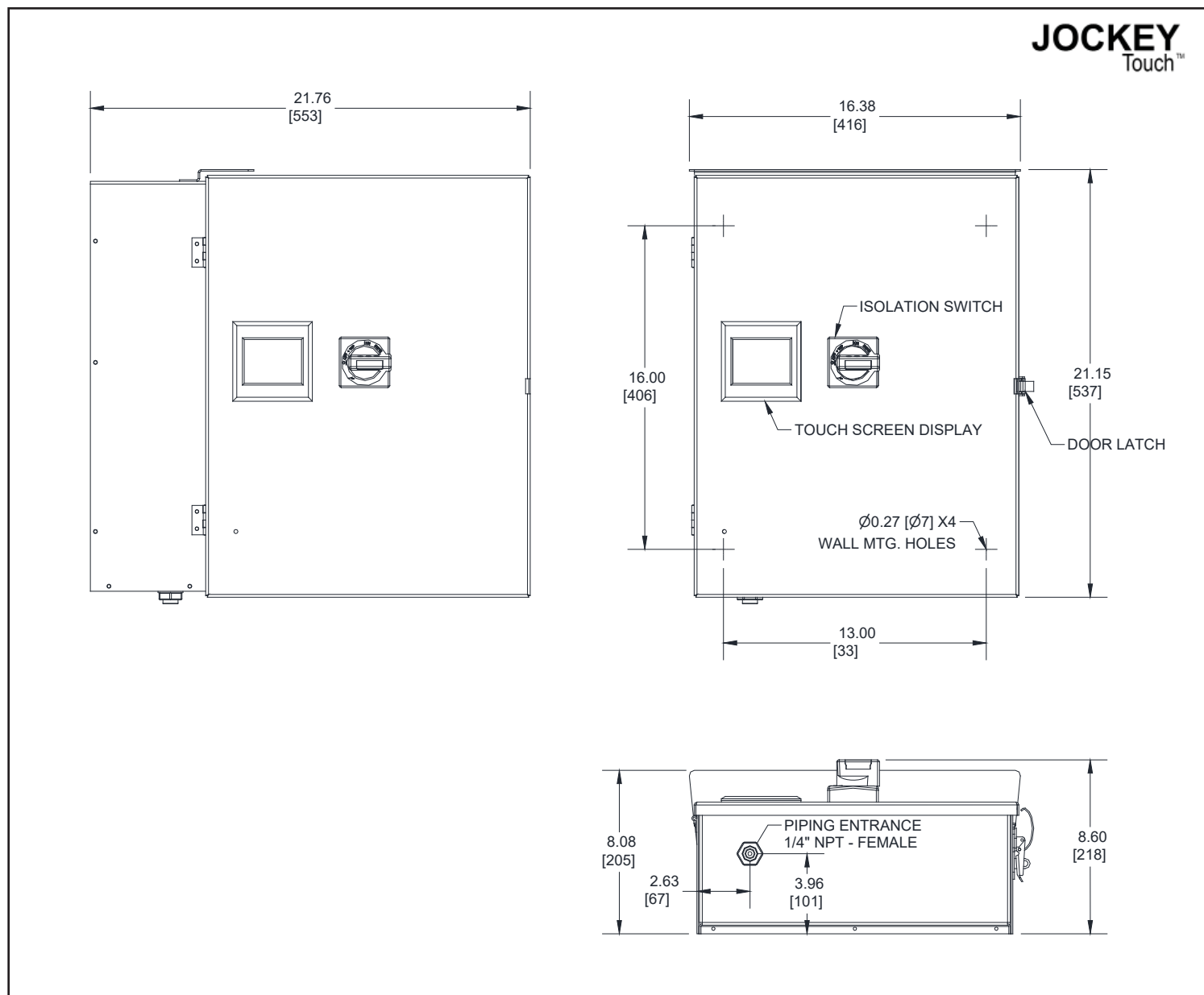
JOCKEY
Touch™



		220-240V		380-415V		440-480V		550-600V	
Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)
0.33 - 0.75	50	0.33 - 0.75	50	0.33 - 1.5	50	0.33 - 2	50	0.33 - 7.5	50
1 - 2	65	1 - 3	65	2 - 5	65	3 - 5	65	10 - 30	10 *
3 - 4	42	4 - 5	42	7.5	42	7.5 - 10	42		
5 - 10	18	7.5 - 10	18	10 - 15	18	15 - 20	18		

120V 1ph		208V 1ph		240V 1ph		Approx. Weight
Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)	Lbs (Kg)
0.33 - 0.5	65	0.33 - 1	65	0.33	50	18 (8)
0.75 - 1	42	1.5 - 2	42	0.5 - 1.5	65	
1.5 - 2	18	3 - 4	18	2	42	
				3 - 5	18	

NOTES:
1. * Upstream circuit breaker required to maintain kA rating.
2. All enclosures finished in FirePump red.
3. Cable Entrance either top or bottom.
4. Standard Enclosure type NEMA 2

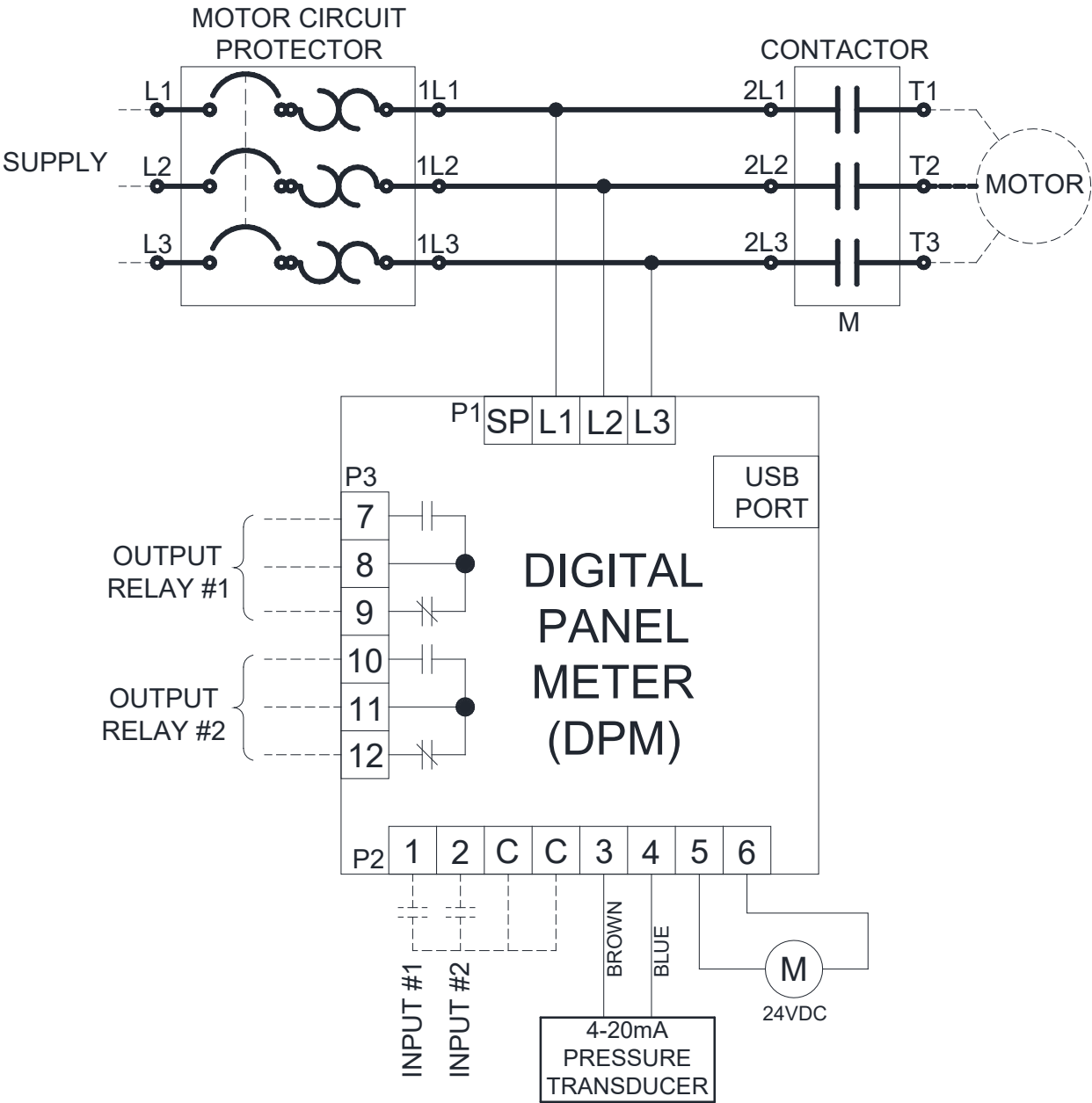


		220-240V		380-415V		440-480V		550-600V	
Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)
0.33 - 0.75	50	0.33 - 0.75	50	0.33 - 1.5	50	0.33 - 2	50	0.33 - 7.5	50
1 - 2	65	1 - 3	65	2 - 5	65	3 - 5	65	10 - 30	10 *
3 - 4	42	4 - 5	42	7.5	42	7.5 - 10	42		
5 - 10	18	7.5 - 10	18	10 - 15	18	15 - 20	18		

120V 1ph		208V 1ph		240V 1ph		Approx. Weight
Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)	Lbs (Kg)
0.33 - 0.5	65	0.33 - 1	65	0.33	50	18 (8)
0.75 - 1	42	1.5 - 2	42	0.5 - 1.5	65	
1.5 - 2	18	3 - 4	18	2	42	
				3 - 5	18	

- NOTES:
- * Upstream circuit breaker required to maintain kA rating.
 - All enclosures finished in FirePump red.
 - Cable Entrance either top or bottom.
 - Standard Enclosure type NEMA 2

JOCKEY
Touch™



JOCKEY
Touch™**XTJP**
XTJY

NOTE: To select a proper part number - refer to the current Eaton Pricing Guidelines for available combinations.

Amperage Range		Options	
Three Phase			
G01	0.6-1.0	C1	Extra Contacts "Pump Run"
G02	1.1-1.6	C2	Extra Contacts "AC Power Failure"
G03	1.7-2.5	CX	Extra Contacts (One Form-C; Specify Function)
G04	2.6-4.0	E1	NEMA 3R - Raintight Enclosure
G05	4.1-6.3	E2	NEMA 4 - Watertight Enclosure
G06	6.4-10.0	E3	NEMA 12 - Industrial Dust Tight Enclosure
G07	10.1-16.0	E5	NEMA 4X - 304 Stainless Steel Enclosure
G08	16.1-20.0	E8	Tropicalization
G09	20.1-25.0	E9	NEMA 4X - Painted Steel
G10	25.1-32.0	E10	NEMA 4X - 316 Stainless Steel Enclosure
G11	32.1-40.0	EX	Export Crating
G12	40.1-50.0	FTS	Extra Contacts "Fail to Start"
G13	50.1-65.0	LX	Virtual LED (Specify Description)
Single Phase		POL	"Power-On" Virtual LED
G14	2.6-4.0	PRL	"Pump Run" Virtual LED
G15	4.1-6.3	P7	Low Suction Pressure Switch & Alarm Virtual LED
G16	6.4-10.0	P8	Low Suction Shutdown (Requires P7)
G17	10.1-16.0	P10	Pressure Transducer - Sea Water Rated
G18	16.1-20.0	R1	Space Heater (120 / 220V) - Externally Powered
G19	20.1-25.0	R2	Space Heater c/w Thermostat - Externally Powered
G20	25.1-32.0	R3	Space Heater c/w Humidistat - Externally Powered
G21	32.1-40.0	USB	Externally Mounted USB Port
G22	40.1-50.0		
G23	50.1-65.0		
Horsepower (KW) *		Languages	
15	(11)	L1 = English	
20	(15)	L2 = French	
25	(18.6)	L5 = Spanish	
30	(22)	L6 = Portuguese	
40	(30)	L11 = Turkish	
50	(37)	Other Languages available. Consult factory for details.	
		Voltage *	
		A = 208V - 60HZ	
		B = 240V - 60HZ	
		C = 380V - 50HZ	
		D = 480V - 60HZ	
		E = 600V - 60HZ	
		F = 415V - 50HZ	
		H = 380V - 60HZ	
		J = 400V - 50HZ	
		K = 400V - 60HZ	

* NOTE: Voltage letter designations are only used when a Horsepower (KW) is selected.

/ XTJY Jockey Pump Controllers

Typical Jockey Pump Controller Specifications

Approvals

The Jockey Pump Controller shall meet the requirements of the latest edition of NFPA 20 as well as meeting CE mark requirements. It shall meet or exceed the requirements of UL 508 [Underwriters Laboratories (UL)] standards and be approved by [Canadian Standards Association (CSA)].

Starting Type

The controller shall be Across-the-Line or Wye-Delta (Star Delta) type designed for full voltage starting.

Ratings

The Controller shall have a minimum withstand rating of 10,000 symmetrical amperes @ [208V] [240V] [380V] [400V] [415V] [480V] [600V] [120V Single Phase] [240V Single Phase].

The horsepower rating of the controller shall not exceed 50Hp for three (3) phase units or 10Hp on single phase units.

Construction

The controller shall include a combination Circuit Breaker / Overload Motor Protector.

The motor circuit protector 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.

The controller manufacturer shall manufacture the contactor, motor circuit protector, touchscreen display, and enclosure. Brand-labeled components will not be accepted.

Supply Voltage

The jockey pump controller shall auto-detect three phase voltage supply from 200VAC to 600VAC, 50/60Hz and single phase from 110VAC to 240VAC, 50/60Hz, without the use of a control transformer.

Coil Voltages

The jockey pump controller shall have the following available coil voltages
120VAC 50/60 Hz or 24VDC

Enclosure

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

Optional Enclosures

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

Languages

The controller shall be available in a variety of languages including, but not limited to:
English, French, Spanish, Portuguese, Turkish.

Touchscreen Display

The controller shall be supplied with a color touchscreen display that shall indicate the following: Supply Voltage on all phases, Current Pressure, Start Pressure and Stop Pressure.

The touchscreen display shall be supplied with a solid-state 4-20mA pressure sensor. The pressure Start and Stop points shall be adjustable in increments of one (1) PSI or 0.1 BAR.

The touchscreen display shall be a door-mount type that permits exterior programming with the controller door secured.

Options

The jockey pump controller shall have provision to be supplied with the following options:

- C1 Extra Contacts " Pump Run"
- C2 Extra Contacts "AC Power Failure"
- CX Extra Contacts (One Form-C; Specify Function)
- E1 NEMA 3R – Raintight Enclosure
- E2 NEMA 4 – Watertight Enclosure
- E3 NEMA 12 – Industrial Dust Tight Enclosure
- E5 NEMA 4X – 304 Stainless Steel Enclosure
- E8 Tropicalization
- E9 NEMA 4X - Painted Steel
- E10 NEMA 4X - 316 Stainless Steel Enclosure
- EX Export Crating
- FTS Extra Contacts "Fail to Start"
- LX Virtual LED (Specify Description)
- POL "Power On" Virtual LED
- PRL "Pump Run" Virtual LED
- P7 Low Suction Pressure Switch and Alarm Virtual LED
- P8 Low Suction Shutdown (Requires P7)
- P10 Pressure Transducer – Sea Water
- R1 Space Heater (120 / 220V)
- R2 Space Heater c/w Thermostat
- R3 Space Heater c/w Humidistat

Manufacturer

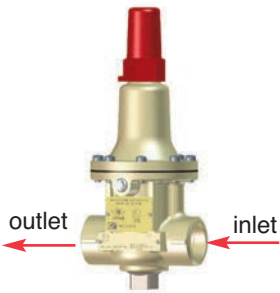
The controller shall be of the XTJP Across-the-Line or XTJY Wye Delta (Star-Delta) type as manufactured by EATON.



— MODEL — **55L-60**

Pressure Relief Valve/ Pump Casing Relief Valve

1/2" and 3/4"
Globe
Configuration

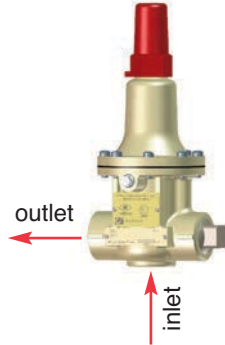


0-75 psi
20-200 psi
20-300 psi

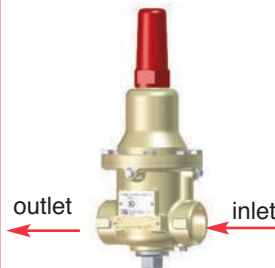


100-300 psi

1/2", 3/4" and 1"
Angle Configuration



1" Size
20-75 psi
40-200 psi
100-300 psi



more materials
available

- Sizes 1/2" and 3/4" are UL Listed and FM Approved for use as Fire Pump Casing Relief Valves
- The 1" model is UL Listed for use as a Fire Pump Casing Relief Valve
- Direct Acting - Precise Pressure Control
- Drip Tight Closure
- No Packing Glands or Stuffing Boxes
- Globe or Angle configurations available
- Sensitive to Small Pressure Variations
- Meets low lead requirements
- Available in Cast Bronze, 316 Stainless Steel, Monel & Super Duplex Stainless Steel

The Cla-Val Model 55L-60 (UL Listed, FM Approved) Pressure Relief Valve is a direct-acting, spring loaded, diaphragm type relief valve. The valve may be installed in any position and will open and close within very close pressure limits. The bottom plug may be removed and installed in the inlet to convert it to an angle pattern flow path.

The Model 55L-60 is normally held closed by the force of the compression spring above the diaphragm. When the controlling pressure applied under the diaphragm exceeds the spring setting, the disc is lifted off its seat, permitting flow through the control. When control pressure drops below the spring setting, the spring forces the control back to its normally closed position. The controlling pressure is applied to the chamber beneath the diaphragm through an internal passage. A gauge port is provided for accurate pressure setting.

Pressure adjustment is done by turning the adjusting screw to vary the spring load on the diaphragm. The 55L-60 is available in pressure ranges suited to agency approval tests. To prevent tampering, the adjustment cap can be wire sealed by using the lock wire holes provided in the cap and cover.



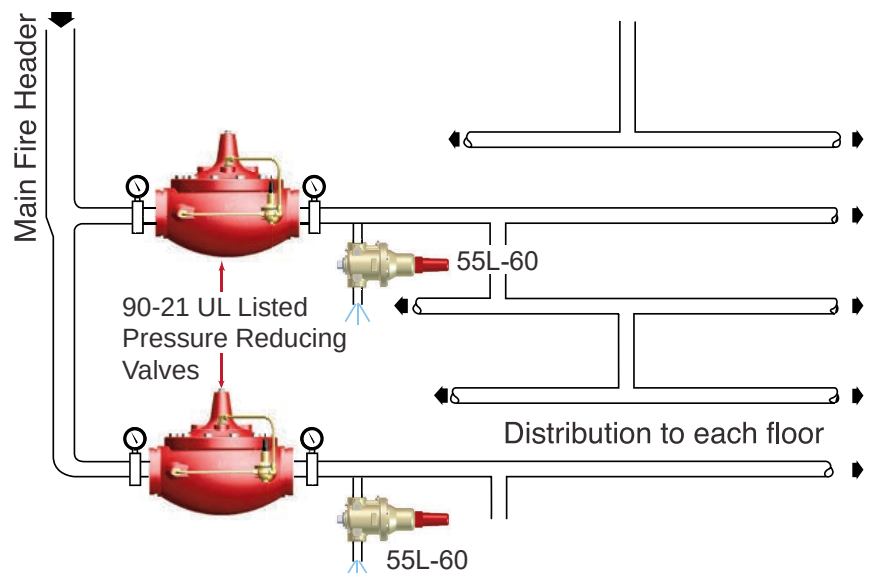
Fire Protection System Service

The **Model 55L-60** is typically used in a fire protection system to trim water pressure, thus preventing pressure build-up whenever line pressure exceeds the setting of the spring.

The 55L-60 will relieve excess pressure to atmosphere to prevent damage to the distribution network.

NOTE: Model 55L-60 is not suitable for discharging the full-rated pump capacity of a fire pump. See Model 50B-4KG1 Fire Pump Relief Valve for such applications.

Typical Application for Fresh Water or Seawater Service



Specifications

Size	1/2", 3/4" and 1" Threaded NPT
Temperature Range	Water, Air: to 180°F Max.
Materials	
Body & Cover:	Cast Bronze UNS C87850 -Standard Stainless Steel ASTM A743-CF-16F Monel Super Duplex Stainless Steel
Trim:	303 Stainless Steel Monel
Rubber:	Buna-N® Synthetic Rubber
Pressure Ratings	Cast Bronze 400 psi Max. Stainless Steel 400 psi Max.
Other Materials	Available on special order
Adjustment Ranges UL Listed	10 to 75 psi • 20 to 200 psi • 20 to 300 psi • 100 to 300 psi
Adjustment Ranges FM Approved	0 to 75 psi • 20 to 200 psi • 20 to 300 psi • 100 to 300 psi

Pressure Drop Chart (Full Open Valve)

Valve Size	C _v Factor	Max Flow (GPM)
1/2"	6	25
3/4"	10	40
1"	12.8	65

Standard Factory Set Points* (1/2", 3/4", 1")

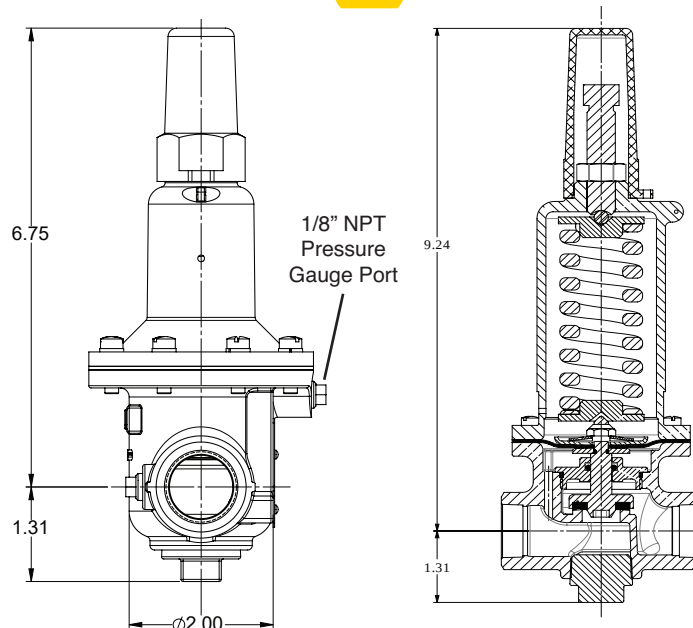
0 - 75 psi	20 - 300 psi	100 - 300 psi
50 psi	60 psi	100 psi

* Custom set points available upon request

When Ordering, Please Specify

1. Catalog No. 55L-60
2. Valve Size
3. Adjustment Range Desired
4. Optional Materials

Dimensions (1/2" and 3/4")



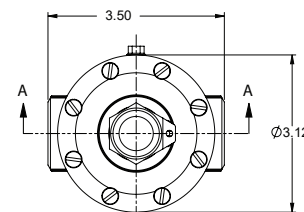
0 to 75 psi

100 to 300 psi

20 to 300 psi

(applies to both configurations)

dimensions shown in inches



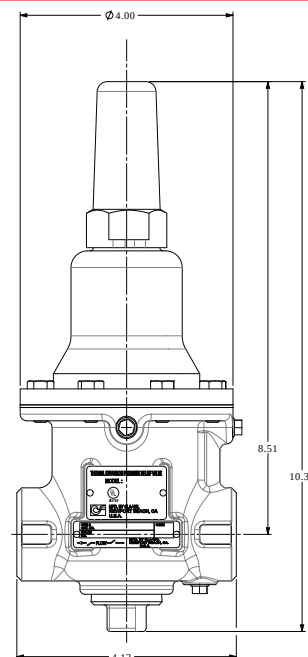
Dimensions (1"):

Spring Range:

20-75

40-200

100-300



E-55L-60 (R-03/2021)

CLA-VAL

1701 Placentia Avenue • Costa Mesa CA 92627
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CLA-VAL ASIA PACIFIC
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Phone: 64-39644860
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E-mail: info@cla-valpacific.com

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— MODEL — **TH Series** Test Headers



- Manufactured in Accordance with NFPA 20 Requirements
- Developed for UL/FM Approved Fire Systems
- Available in sizes 6", 8" and 10"
- Designed to allow 250 gpm per test connection
- Use with



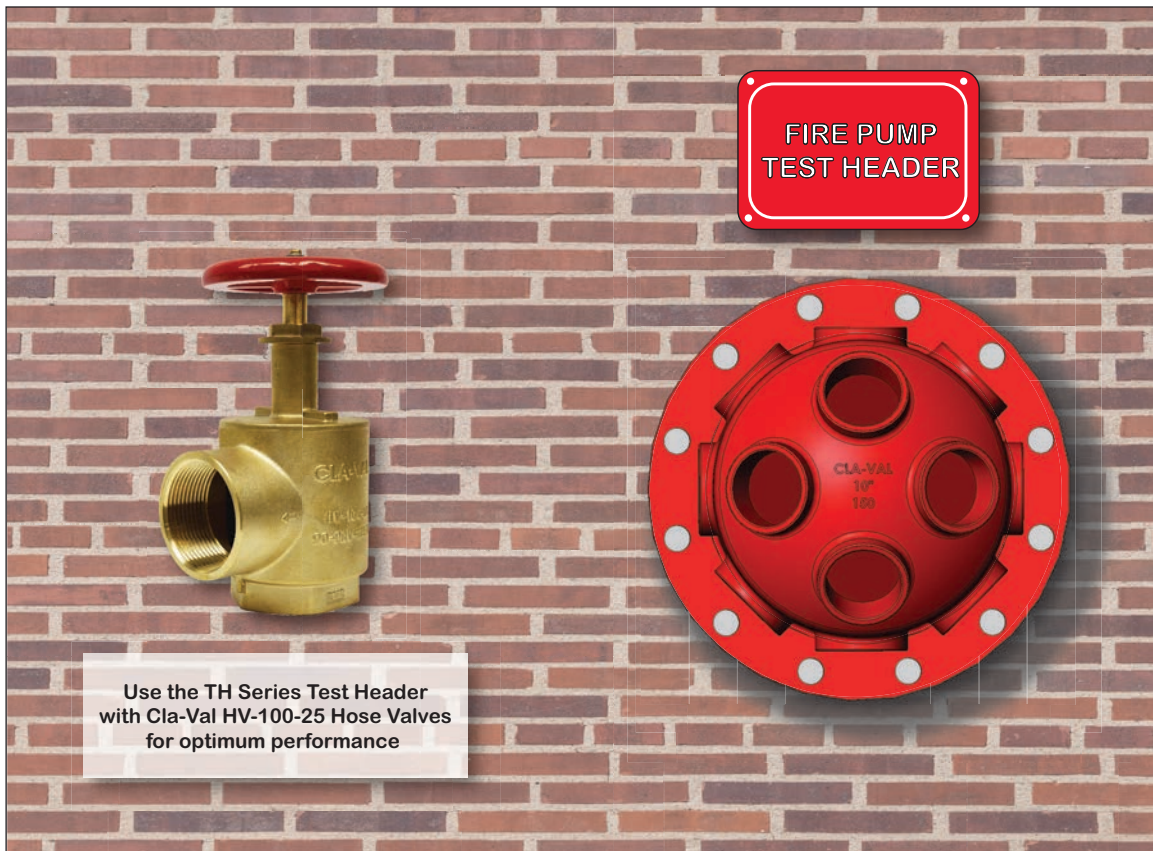
Specifications

- Fusion Bonded Red Epoxy Coated
- Ductile Iron - ASTM A536-65
- Single Body Casting (No Welding)

Flanges

- 150# Class (FF Standard)
- 300# Class (RF Standard)
- Grooved Ends

Typical Application: Fire Pump Test Connections



TH Series Test Header Dimensions

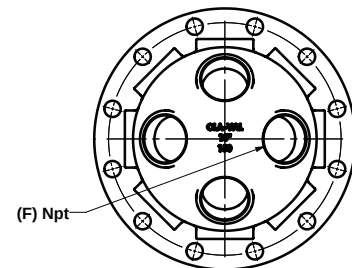
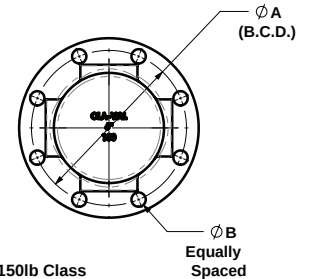
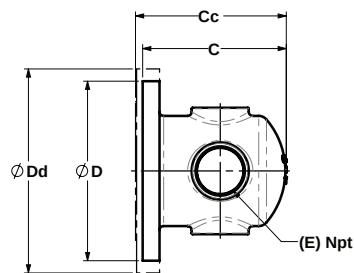
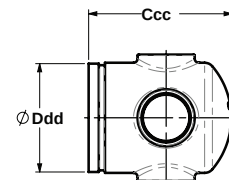
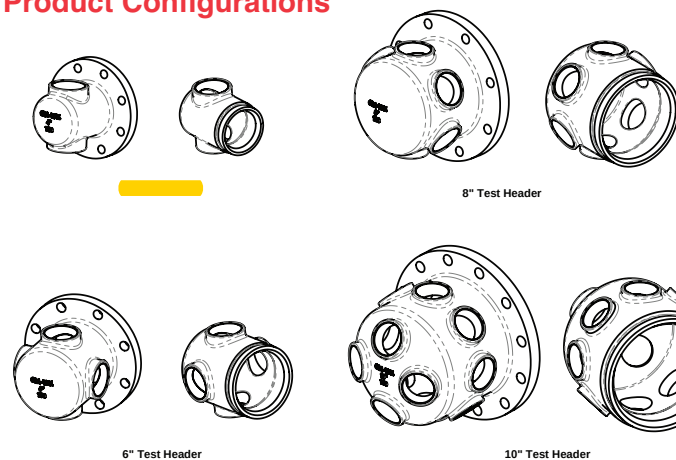
Size (inches)	Pressure Class	ØA (B,C,D)	B		C	Cc	Ccc	ØD	ØDd	ØDdd	E		F		Weight (lbs.)
			# of Holes	Ø Hole							# of Ports	NPT	# of Ports (10" only)	NPT (10" only)	
4	150lb Flat Face	7.500	8	.750	7.16	-	-	9.00	-	-	2	2 1/2" - 8	-	-	22
	300lb Raised Face	-	-	-	-	-	7.16	-	-	4.545/4.469	2	2 1/2" - 8	-	-	12
6	150lb Flat Face	9.500	8	.875	8.80	-	-	11.00	-	-	4	2 1/2" - 8	-	-	34
	300lb Raised Face	10.625	12	.875	-	9.24	-	-	12.50	-	4	2 1/2" - 8	-	-	50
	300lb Grooved	-	-	-	-	-	8.80	-	-	6.688/6.594	4	2 1/2" - 8	-	-	20
8	150lb Flat Face	11.750	8	.875	10.06	-	-	13.50	-	-	6	2 1/2" - 8	-	-	56
	300lb Raised Face	13.000	12	1.000	-	10.56	-	-	15.00	-	6	2 1/2" - 8	-	-	79
	300lb Grooved	-	-	-	-	-	10.06	-	-	8.688/8.594	6	2 1/2" - 8	-	-	33
10	150lb Flat Face	14.2250	12	1.000	12.22	-	-	16.00	-	-	8	2 1/2" - 8	4	2 1/2" - 8	98
	300lb Grooved	-	-	-	-	-	12.25	-	-	10.813/10.719	8	2 1/2" - 8	4	2 1/2" - 8	73

Pressure Ratings (Recommended Maximum Pressure - psi)

Test Headers		Pressure Class				
		Flanged			Grooved	Threaded
Grade	Material	ANSI Standards*	150 Class	300 Class	300 Class	End† Details
ASTM A536	Ductile Iron	B16.42	250	400	400	400
ASTM A216-WCB	Cast Steel	B16.5	285	400	400	400
UNS 87850	Bronze	B16.24	225	400	400	400

Note: * ANSI standards are for flange dimensions only.
Flanged products are available faced but not drilled.
† End Details machined to ANSI B2.1 specifications.

Product Configurations



E-TH Series (03-2019)

CLA-VAL

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E-mail: cla-val@cla-val.ch

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Kent TN11 2 DH England
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E-mail: info@cla-val.co.uk

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E-mail: cla-val@cla-val.fr

CLA-VAL PACIFIC
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www.cla-valpacific.com
E-mail: info@cla-valpacific.com

UNDERGROUND VALVES & FITTINGS

**THE FOLLOWING IS PROVIDED BY THE
UNDERGROUND CONTRACTOR
(USE FOR HYDRAULIC REFERENCE ONLY)**

Engineering Specification

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

Series 709DCDA

Double Check Detector Assemblies

3" – 10"

Series 709DCDA Double Check Detector Assemblies are designed exclusively for use in accordance with water authority containment requirements. The series is mandatory to prevent the reverse flow of fire protection system substances, such as glycerin wetting agents, stagnant water, and water of non-potable quality from being pumped or siphoned into the potable water line. The valve body is fused with ArmorTek™ coating technology to resist corrosion due to microbial induced corrosion (MIC) or exposed metal substrate. All sizes are standardly equipped with resilient seated OSY shutoff valves, $\frac{5}{8}$ " x $\frac{3}{4}$ " meter, and ball type test cocks.

Benefits

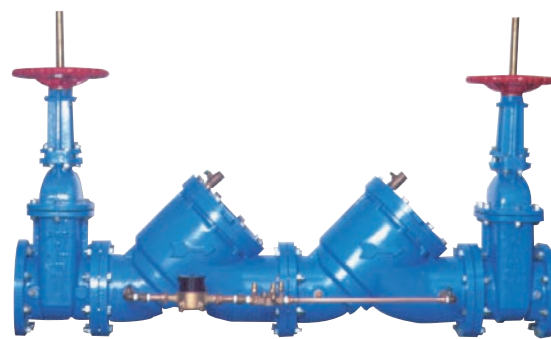
- Detects leaks, with emphasis on the cost of unaccountable water
- Incorporates a meter allowing the water utility to (1) detect leaks underground that historically create great annual cost due to waste and (2) provide a detection point for unauthorized use, helping locate illegal taps
- Modular check design concept facilitates maintenance and assembly access.

Features

- Body construction fused epoxy coated cast iron
- Replaceable bronze seats
- Maximum flow at low pressure drop
- Compact for economy combined with performance
- Design simplicity for easy maintenance
- Advanced ArmorTek™ coating technology to resist corrosion of internals
- Furnished with $\frac{5}{8}$ " x $\frac{3}{4}$ " bronze meter
- No special tools required for servicing

Specification

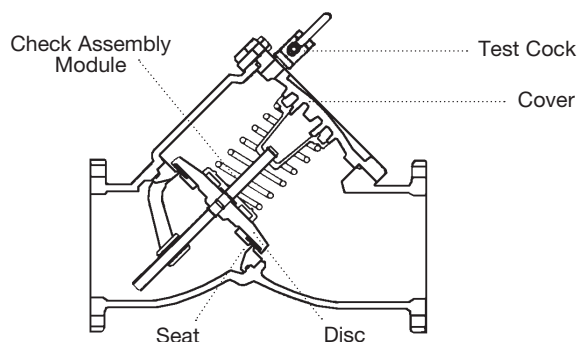
A Double Check Detector Assembly shall be installed on fire protection systems when connected to a potable water supply. Degree of hazard present is determined by the local authority having jurisdiction. The unit shall be a complete assembly including UL Listed resilient seated OSY shutoff valves and test cocks. The unit shall be UL Classified and FM Approved with UL Classified and FM Approved OSY shutoff valves. The auxiliary line shall consist of an approved backflow preventer and water meter. The assembly shall meet the basic requirements of ASSE 1048; AWWA Std. C510 for Double Check Valves. The valve body shall utilize a coating system with built-in electrochemical corrosion inhibitor and microbial inhibitor. Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California. Assembly shall be a Watts Series 709DCDA.



709DCDAOSY

Check Assembly Module

The check assembly features a modular design concept that facilitates complete maintenance and assembly by retaining the spring load. The first and second check valve spring modules are not interchangeable.



Now Available
WattsBox Insulated Enclosures
 For more information, download ES-WB.

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Inquire with governing authorities for local installation requirements.

Materials

Body:	Epoxy coated cast iron
Seat:	Bronze
Disc Holder:	Bronze
Trim:	Stainless steel
Check Valve Discs:	Rubber
Test Cocks:	Bronze
Coating:	ArmorTek™

Models

Suffix:

OSY	UL Classified and FM Approved outside stem and yoke resilient seated gate valves
CFM	Cubic feet per minute meter
GPM	Gallons per minute meter
LF	4" – 10" without shutoff valves

Pressure – Temperature

Temperature Range: 33°F – 110°F (0.5°C – 43°C) continuous,
140°F (60°C) intermittent
Maximum Working Pressure: 175 psi (12.1 bar)

Standards

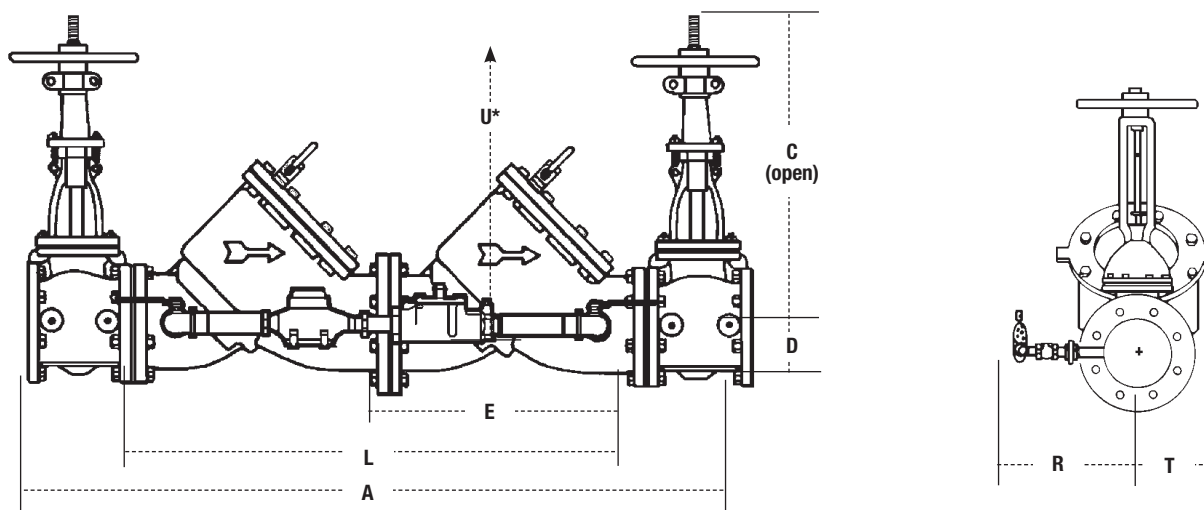
AWWA Standard C510

Approvals



Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.
Sizes 4" – 10" approved for horizontal and vertical "flow up."
Size 3" approved for horizontal only.
FM Approved 4" – 10" vertical "flow up."

Dimensions – Weights



SIZE			DIMENSIONS												WEIGHT			
In.	A		C		D		E		L		R		T		U*		W/OSY† gates	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
3	40	1016	18 ⁷ / ₈	479	3 ¹ / ₂	89	12	305	24	610	14	356	3	76	14	356	190	86
4	52	1321	22 ³ / ₄	578	3 ³ / ₄	95	17	432	34	864	15	381	6	152	14	356	403	183
6	62 ¹ / ₂	1588	30 ¹ / ₈	765	4 ¹ / ₂	114	21	533	41 ¹ / ₂	1054	16	406	7 ¹ / ₂	191	16	406	727	330
8	75	1905	37 ³ / ₄	959	5 ¹ / ₂	140	26	660	52	1321	17	432	9	229	21	533	1327	602
10	90	2286	45 ³ / ₄	1162	6 ¹ / ₂	165	32	813	64	1626	18	457	10 ¹ / ₄	260	25	635	2093	949

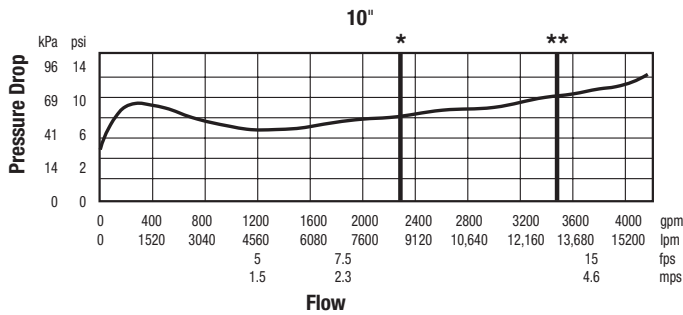
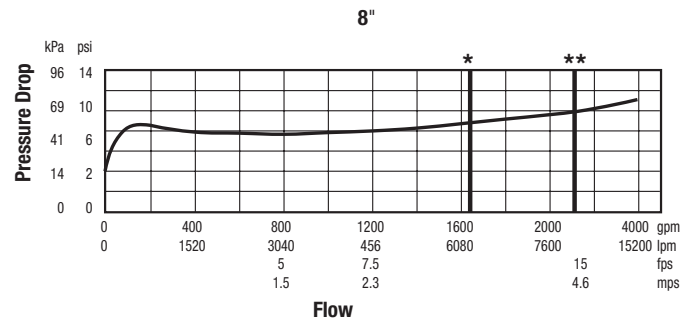
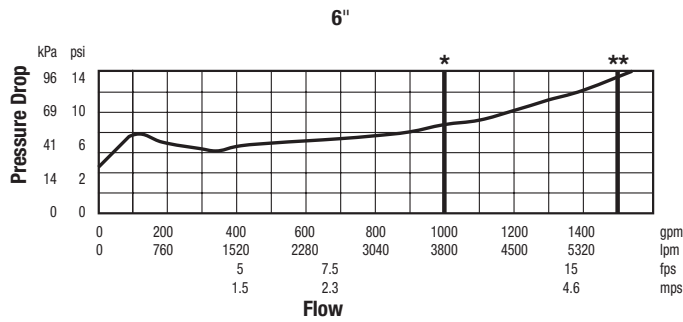
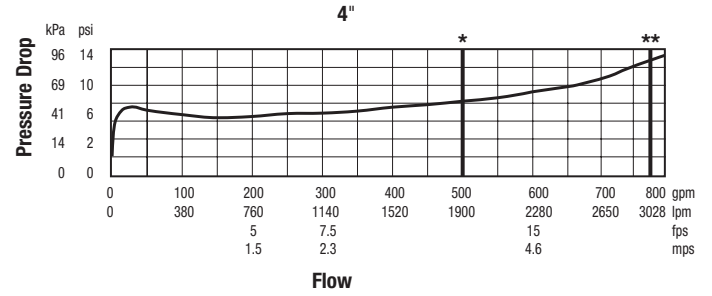
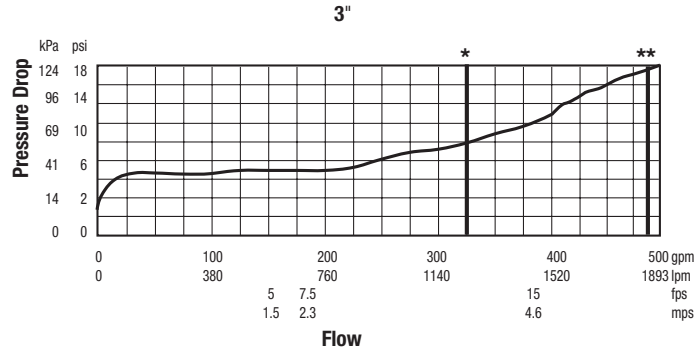
* Service clearance for check assembly from center.

†UL Classified and FM Approved backflow preventers must include UL Classified and FM Approved OSY.

Capacity

*Rated flow

**UL rated flow



USA: T: (978) 689-6066 • Watts.com

Canada: T: (888) 208-8927 • Watts.ca

Latin America: T: (52) 55-4122-0138 • Watts.com

Engineering Specification

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

LEAD FREE*

Series IBR In-Building Risers Customizable

Sizes: 4" – 10"

Series IBR In-Building Risers are used to connect the main fire supply to the building overhead fire system. The fitting passes under the foundation without joints and extends up through the floor. Provided with installation tabs, the unit has a CIPS (Cast Iron Pipe Size) coupler for easy connection to the underground supply (AWWA C900 PVC and Ductile Iron Pipe) and industry standard grooved-end connection (AWWA C606) on the building side for easy connection to the overhead fire sprinkler system. The IBR features Lead Free* construction to comply with Lead Free* installation requirements.

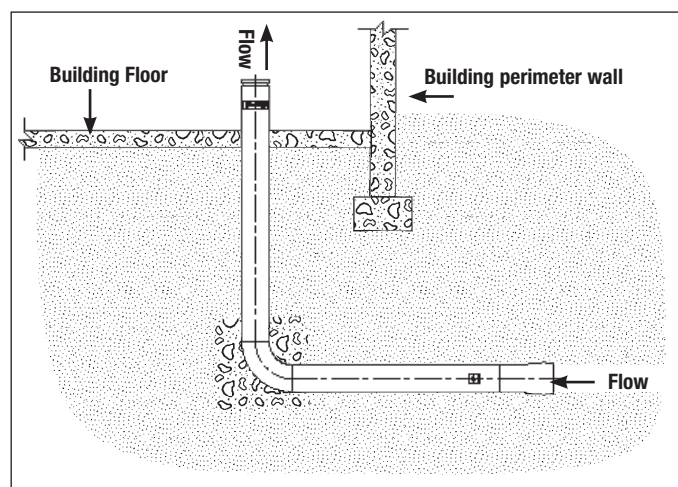
Ames In-Building Risers are precision engineered and manufactured to provide exceptional reliability and reduce installation time & labor costs associated with field assembly. In accordance with NFPA 24, the UL/FM approved In-Building Risers replace numerous fittings, elbows & spools and reduces the possibility of leaks or failure in comparison to traditional installation methods and materials. Factory tested integrity ensures the highest quality installation. The use of stainless steel significantly increases the reliability and life of the riser.

Features

- Cost savings
- Corrosion resistant stainless steel construction, type 304
- Ease of installation and light weight allows one person to position and handle the riser
- Minimal site preparation; joint restraint one-piece construction reduces time and labor; no missing parts, no leaks; easily identifiable for approvals
- Includes Test Cap and Coupler
- UL/FM approved
- Sizes: available in 4" – 10" with various lengths to meet local requirements
- Designed to meet NFPA 24
- AWWA C900 Inlet/DIP
- AWWA C606 Outlet



6'x6' standard length
(custom lengths from 3' – 20' available)



*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

Ames Fire & Waterworks product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Ames Fire & Waterworks Technical Service. Ames Fire & Waterworks 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 Ames Fire & Waterworks products previously or subsequently sold.

AMES
FIRE & WATERWORKS
A WATTS Brand

Specifications

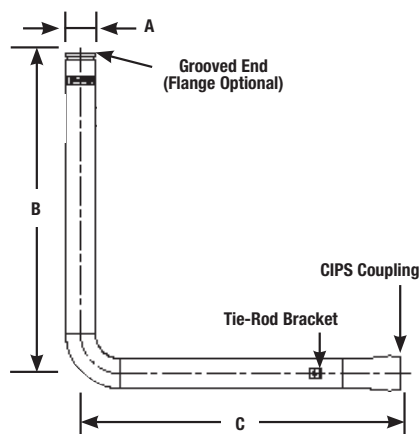
In-Building Riser shall be installed as indicated on the plans. Riser shall be composed of a single extended 90 degree fitting of fabricated ASTM A312 304 stainless steel tubing, maximum working pressure 200psi (14 bar). The fitting shall have a grooved-end connection on the outlet (building) side and a CIPS coupler on the inlet (underground) side. The grooved end shall include a coupler and cap to facilitate testing of the underground piping. The In-Building Riser shall be an Ames Fire & Waterworks Series IBR.

Approvals

Fittings FM class 1920
UL HKQA (4"-10")



Dimensions – Weights



SIZE				WEIGHT			
	A (OD)		B		C		
in.	in.	mm	ft.	cm	ft.	cm	lbs. kg
4	4½	114	6	183	6	183	71 32
4	4½	114	8'-6"	183	6	183	85 39
4	4½	114	9	274	6	183	88 40
4	4½	114	5	152	7	213	71 32
6	6¾	168	6	183	6	183	98 44
6	6¾	168	8'-6"	259	6	183	122 56
6	6¾	168	9	274	6	183	127 58
6	6¾	168	5	152	7	213	98 44
8	8¾	219	6	183	6	183	129 59
8	8¾	219	8'-6"	259	6	183	163 74
8	8¾	219	9	274	6	183	170 77
8	8¾	219	5	152	7	213	129 59
10	10¾	273	6	183	6	183	202 92
10	10¾	273	9	274	6	183	258 117
10	10¾	273	5	152	7	213	202 92

**Each B (vertical) and C (horizontal) leg is customizable from 3' to 20' with UL/FM approvals. Consult with your factory representative for details.



A WATTS Brand

Standards

NFPA — Designed to allow the contractor to conform to NFPA 24

Where a riser is close to building foundations, underground fittings of proper design and type shall be used to avoid pipe joints being located under the foundations.

End Connections

Horizontal End: Mates with Ductile Iron Pipe and AWWA C900 Pipe (PVC Pipe with Ductile Iron Pipe Equivalent OD's)

Utilizes Gasket conforming to UL 157 with "Lock in" gasket configuration

SIZE	MATING PIPE OD	
	in.	mm
4	4.8	122
6	6.9	175
8	9.1	230
10	11.1	282

Vertical End:

Meets AWWA C-606 dimensions for roll grooved pipe
Meets AWWA C-207 class D for flanges

Ratings

Meets AWWA C-900 pressure class 200, DR 14 Pipe

Testing

Welds are 100% leak tested at the factory

NOTICE

Inquire with governing authorities for local installation requirements

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

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USA: Control Valves Tel: (713) 943-0688 • Fax: (713) 944-9445 • AmesFireWater.com
Canada: Tel: (905) 332-4090 • Fax: (905) 481-2316 • AmesFireWater.ca
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