RELIABLE
FIRE PROTECTION, LLC
32 Partin Rd.
Dunn, North Carolina 28334
Phone (910) 980-1234
Fax (919) 980-1235
North Carolina State License #26806-FS Class I
South Carolina State License #1520

FIRE SPRINKLER
FIRE PUMP SUBMITTAL
For
ERWIN ELEMENTARY
At
ERWIN, NORTH CAROLINA

RELIABLE FIRE PROTECTION
FOR
ERWIN ELEMENTARY SCHOOL

CONDITIONS: 500 GPM @ 40 PSI UL/FM APPROVED ELECTRIC MOTOR DRIVEN FIRE PUMP

XYLEM AC PUMP BULLETIN	AC 50702B
FIRE PUMP SETTING PLAN	FP 2.5 (PG. 205)
PREDICTED PUMP PERFORMANCE	CURVE
GAUGES	FP 2.7 (PG. 2)
CASING RELIEF VALVE	FP 2.7 (PG. 3)
HOSE HEADER	FP 2.7 (PG. 7)
HOSE VALVES WITH CAPS & CHAINS	FP 2.7 (PG. 13)
GERAND VENTURI TYPE FLOW METER	G-500-6 (2 PGS.)
CLA-VAL SUCTION CONTROL VALVE	50B-5KG (2 PGS.)
FIRETROL FIRE PUMP CONTROL	PD1350-61 Rev. A
CONTROL PANEL-SPECIFICATIONS	SP1350-61 (3 PGS)
GENERAL STARTING CONFIGURATION	GS1350-10 (2 PGS)
FIRE PUMP CONTROL-DIMENSIONS	DD1350-80
FIRE PUMP CONTROL-FIELD CONNECTIONS	FC1350- 60
WIRE SIZE & TERMINAL CAPACITY	FC1350-61
TRANSFER SWITCH-FIELD CONNECTIONS	FC950-65
CONTROL PANEL-SCHEMATIC	WS1350-80
TRANSFER SWITCH-WIRING SCHEMATIC	WS950-60
TYPICAL MOTOR CONNECTION	NS1300-01
GOULDS JOCKEY PUMP	3SV (2 PGS.)
FIRETROL JOCKEY PUMP CONTROL	PD550F-01 Rev. G
JOCKEY PUMP CONTROL-SPECIFICATIONS	SP550F-01 Rev. F (3 PGS.)
JOCKEY PUMP CONTROL-DIMENSIONS	DD550-01
JOCKEY PUMP CONTROL-SCHEMATIC	WS550-01

CERTIFIED BY: WADE LAUGHON
DATE: OCTOBER 26, 2020

JMP

Designed for commercial, industrial and institutional applications, the Vertical In-Line Fire Pump features:

- Compact design
- Easy installation
- Superior performance
- Wide range of sizes
- Quality construction

Series 1580
Vertical In-Line Pump

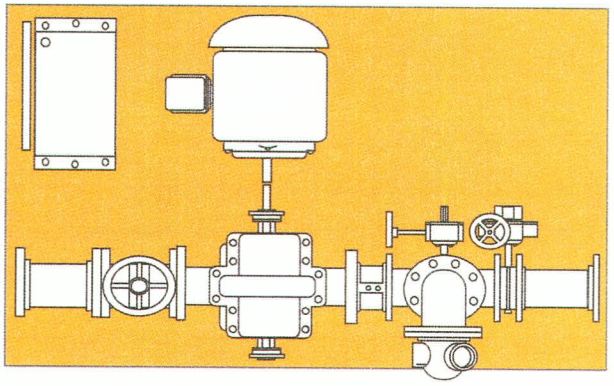
AC 50702B

AC FIRE PUMP
a xylem brand

Space-saving design.

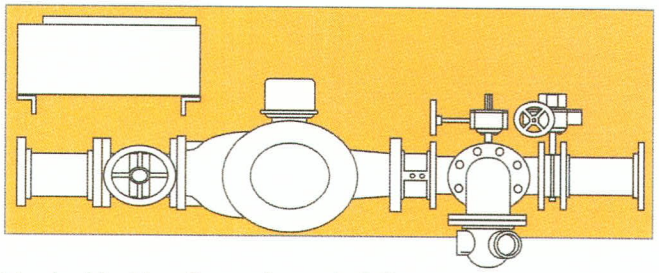
Compact, self-contained design requires 30 percent less space.

When it comes to space-saving efficiency, nothing beats the Vertical In-Line Pump from A-C Fire Pump. It allows you more flexibility to fit it into smaller spaces than similar horizontal split-case pumps.



Horizontal split-case pump

Requires
30% less space.



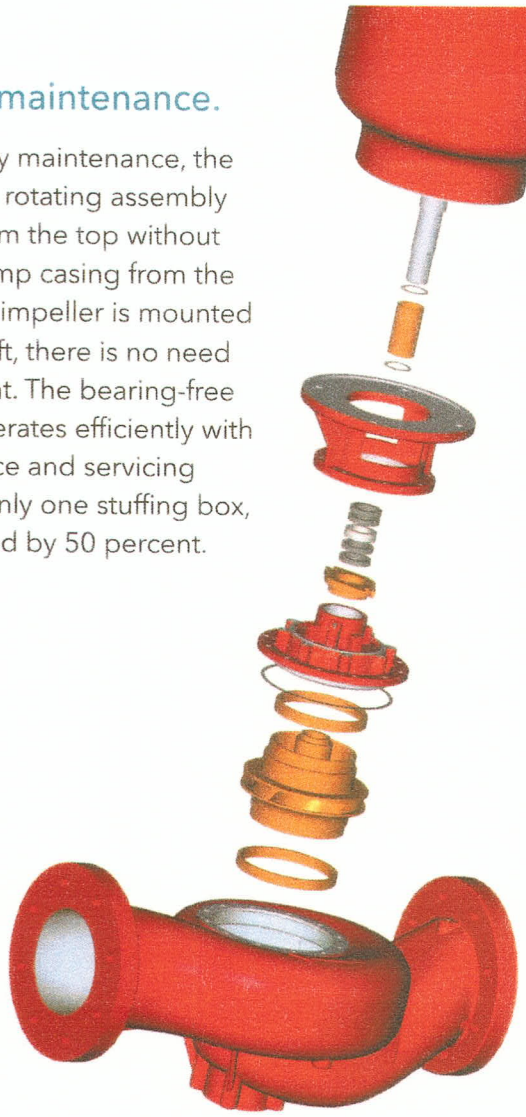
Vertical In-Line Pump from A-C Fire Pump

Easy to install.

Plenty of design features make this in-line pump easy to install. Its self-venting design requires no automatic air release valve. Suction and discharge flanges are on a common centerline, 180 degrees apart, and equally sized to simplify installation. The pump requires no base, coupling or guard, keeping material and installation costs lower. In-line mounting eliminates the need for special pads or foundations in most cases. Plus, you can rotate the motor position on the pump for better accessibility to the junction box.

Trouble-free maintenance.

Designed for easy maintenance, the motor and pump rotating assembly pull out easily from the top without removing the pump casing from the piping. Since the impeller is mounted on the motor shaft, there is no need for field alignment. The bearing-free pump design operates efficiently with fewer maintenance and servicing problems. With only one stuffing box, leakage is reduced by 50 percent.



Cost saving design.

- Compact, self-contained design fits in smaller spaces.
- Ideal for retrofit applications with limited space for a pump room.
- No base, coupling or guard reduces material and installation costs.
- Same-size suction and discharge simplifies piping and installation.
- Self-venting design eliminates need for an automatic air-release valve.
- Bearing-free pump design means fewer maintenance and servicing problems.
- One stuffing box reduces maintenance and leakage by 50 percent.

AC Vertical In-Line Pump Materials of Construction

Description	Basic Construction - Bronze-Fitted Pump
Motor/Pump shaft	Alloy steel
Casing	Cast iron ASTM A159
Impeller	Cast bronze ASTM B584 - Alloy 875
Shaft sleeve*	304 Stainless steel
Impeller key	304 Stainless steel
Impeller washer	Brass
Impeller lock washer	304 Stainless steel
Impeller capscrew	304 Stainless steel
Packed type, internal	
Packing	Impregnated braided yarn
Gland	Bronze
Lantern ring	Glass-filled TFE

*Note: Shaft sleeve material is bronze (ASTM B505 alloy C93200) for sizes:
6 x 6 x 9.5 F-L
6 x 6 x 11 F-S
6 x 6 x 11 F-L
8 x 8 x 9.5 F
8 x 8 x 13.5 F
8 x 8 x 18 F

Vertical In-Line Pump Ranges

Pump Size	UL Rated Capacity (GPM)	Pressure Range (PSI)	RPM
1.5 x 1.5 x 7F	35 50 75	40-70 40-70 50-65	3550
2.5 x 2.5 x 9.5F	50 100 150 200 250	90-164 90-164 90-165 90-160 85-160	3550
2.5 x 2.5 x 7F	100 150	40-85 40-85	3550
3 x 3 x 7F	200 250 300	40-85 40-85 40-80	3550
3 x 3 x 9.5F	300	85-160	3550
4 x 4 x 7F*	250 250 300 300 400 400 450 450 500 500	45-70 40-50 40-65 40-50 40-70 40-50 40-60 40-50 40-70 40-49	3550 2960 3550 2960 3550 2960 3550 2960 3550 2960
4 x 4 x 9.5F*	250 250 300 300 400 400 450 450 500 500	75-145 60-100 70-140 55-95 65-140 55-95 65-135 65-90 75-134 81-88	3550 2960 3550 2960 3550 2960 3550 2960 3550 2960
6 x 6 x 9.5F-L*	400 400 500 500 750 750	70-135 45-95 65-135 45-90 55-130 60-90	3550 2960 3550 2960 3550 2960
6 x 6 x 11F-S*	400 750	40-50 40-50	1780 1780
6 x 6 x 11F-L*	400 400 500 500 750	80-180 55-125 135-180 55-120 70-165	3550 2960 3550 2960 3550
8 x 8 x 9.5F*	750 1000 1000	40-55 50-120 40-75	2960 3550 2960
8 x 8 x 13.5F*	1250 1250 1500	69-83 44-53 66-80	1775 1450 1775
8 x 8 x 18F*	1250 1250 1500	84-130 60-81 81-124	1775 1450 1775

* FM approved.

Pump Specifications

A. Manufacturer

Contractor shall furnish and install an A-C Fire Pump system or approved equal - UL®- listed single stage, close-coupled 1580 Series Vertical In-Line Pump for fire suppression. The pump(s) shall conform to the standards of NFPA 20 latest edition for the installation of centrifugal fire pumps.

B. Single-stage, Close-coupled, Vertical In-Line Pump

1. The pump will provide a rated capacity of _____ GPM and a differential pressure of _____ PSI. At 150 percent of rated capacity, the pump shall develop at least 65 percent of its rated head and shall not exceed 140 percent of the rated head at zero capacity. The pump shall be tested at the factory and a test curve shall be submitted showing the performance and horsepower requirements based on this test before final acceptance.

2. The pump shall be a single-stage, close-coupled, vertical in-line design, in cast iron bronze fitted construction with packing bearing directly on a stainless steel or a bronze shaft sleeve. The pump internals shall be capable of being serviced without disturbing piping connections.

3. The pump casing shall be made of cast iron ASTM A278, Class 30 or 35, or ductile iron ASTM A536, Grade 65, with the suction and discharge flanges located on a common centerline, 180 degrees apart, for mounting in the pipeline. The standard pipe flanges shall be drilled for 125# per ANSI B16.1 standard.

4. The pump shall be rated for a minimum of 175 psi working pressure and a maximum of 370 psi (H6x6x11) with 250# discharge flanges and ductile iron casing.

5. The impeller will be of a cast bronze ASTM B584 - Alloy 875, enclosed type, balanced, keyed to the shaft and secured by a cap screw and lockwasher.

6. The casing wear rings shall be made of bronze and can be easily replaced.

7. The pump shall be direct coupled to the motor shaft for easy maintenance, to minimize impeller run out and reduce noise.

8. The pump shall have a vertical back pullout design that makes servicing simple and fast. The rotating element is easily removed without disturbing the piping.

9. The pump shall have split bronze packing glands for easy packing replacement.

10. The stuffing box shall be furnished with impregnated yarn packing, lantern ring and a catch basin for piping leakage to drain.

11. The pump shall have gauge tappings at the suction and discharge nozzles and vent and drain tappings at the top and bottom.

12. A rubber slinger will be installed on the shaft before the motor to prevent the passage of liquid to the motor.

13. The motor will be the JP frame type.

14. Nameplates and other data plates shall be all corrosion resistant and suitably secured to the pump.

15. Pump manufacturer shall be ISO 9001 certified.

C. Accessories

1. 1580 Series Vertical In-Line Fire Pump shall be furnished with the following fittings as standard:

- 3 1/2" dial suction and discharge gauges.
- 3/4" casing relief valve.

2. Other fittings and accessories may include the following, based on the specification:

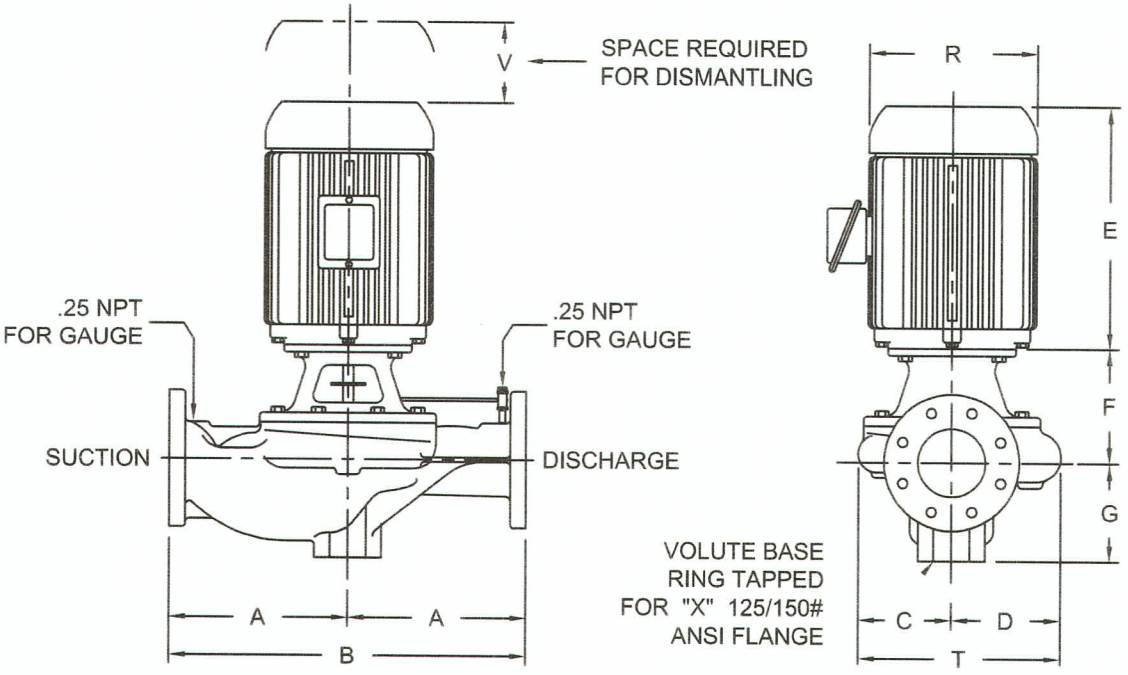
- Eccentric suction reducer (if required).
- Concentric discharge increaser (if required).
- Hose valve test header.
  (___) hose valve with 2 1/2" NST
  (___) caps and chains for the above hose valves
- Main relief valve.
- Closed waste cone.
- Flowmeter.
- Suction control valve.

FM APPROVED c UL us LISTED Member of HI

xylem
Let's Solve Water

Xylem Inc.
8200 N. Austin Avenue
Morton Grove, Illinois 60053
Phone: (847) 966-3700
Fax: (847) 965-8379
www.xyleminc.com/brands/acfirepump

Xylem Applied Water Systems
a division of Xylem Canada Company
55 Royal Road, Guelph, Ontario
N1H 1T1, Canada
Phone: (519) 821-1900
Fax: (519) 821-5316



NOTES
1. ALL DIMENSIONS ARE IN INCHES.
2. SUCTION AND DISCHARGE FLANGES DRILLED PER ANSI B16.1 CLASS 125#. HOLES IN FLANGE STRADDLE CENTER LINE SEE NOTE 5
3. MOTOR DIMENSIONS ARE APPROXIMATE FOR A GIVEN NEMA FRAME. CONSULT FACTORY IF SPACE IS LIMITED.
4. BOTH SUCTION AND DISCHARGE PIPES MUST BE SUPPORTED INDEPENDENTLY NEAR THE PUMP TO REDUCE STRAIN ON THE PUMP CASING EXPANSION JOINTS IF USED MUST NOT EXERT FORCE ON CASING
5. PUMPS OVER 175 PSI MAXIMUM WORKING PRESSURE WILL HAVE A DISCHARGE FLANGE DRILLED PER ANSI B16.1 CLASS 250# AND BE DESIGNATED WITH AN "H" PREFIX. ex. H6X6X11F

PUMP DIMENSIONS									
PUMP SIZE	A	B	C	D	F	G	T	V	X
1.5x1.5x7F	8.0	16.0	4.6	4.8	7.8	4.4	9.4	4.0	1
2.5x2.5x7F	9.0	18.0	5.0	5.6	8.0	5.3	10.6	4.5	2
2.5x2.5x9.5F	10.75	21.5	6.4	7.1	8.7	6.0	13.5	4.8	2
3x3x7F	9.5	19.0	5.3	6.3	8.8	5.5	11.5	4.5	2
3x3x9.5F	11.5	23.0	6.6	7.5	8.7	6.1	14.1	4.5	3
① 4x4x7F	13.32	26.63	5.9	7.4	9.0	8.0	13.3	4.0	3
① 4x4x9.5F	14.32	28.63	5.9	8.5	9.0	7.9	14.3	4.2	3
6x6x9.5F	16.75	33.5	8.3	10.0	9.4	8.75	18.3	5.4	3
6x6x11F	16.0	32.0	8.3	9.8	9.4	8.75	18.1	5.4	3
8x8x9.5F	18.0	36.0	8.5	11.0	9.4	10.25	19.5	6.5	3

① PUMP SUPPLIED WITH .75 NPT ON DISCHARGE NOZZLE FOR CASING RELEIF VALVE. ALL OTHER PUMPS SUPPLIED W/ .25 NPT ON VOLUTE BOTTOM NEAREST DISCHARGE NOZZLE.

MOTOR DIMENSIONS			
FRAME	E	R	S *
145	12.6	9.8	1.5
182 -184	15.3	11.8	1.0
213 -215	19.3	14.0	-
254 -256	24.1	17.0	-
284 -286	25.1	16.1	5.4
324 -326	26.0	18.1	6.9
364 -365	28.0	18.1	5.5
404 -405	31.5	21.0	6.0

* FOR TEFC MOTORS ADD S DIMENSION TO E.

NOT FOR CONSTRUCTION, INSTALLATION OR APPLICATION PURPOSES UNLESS CERTIFIED

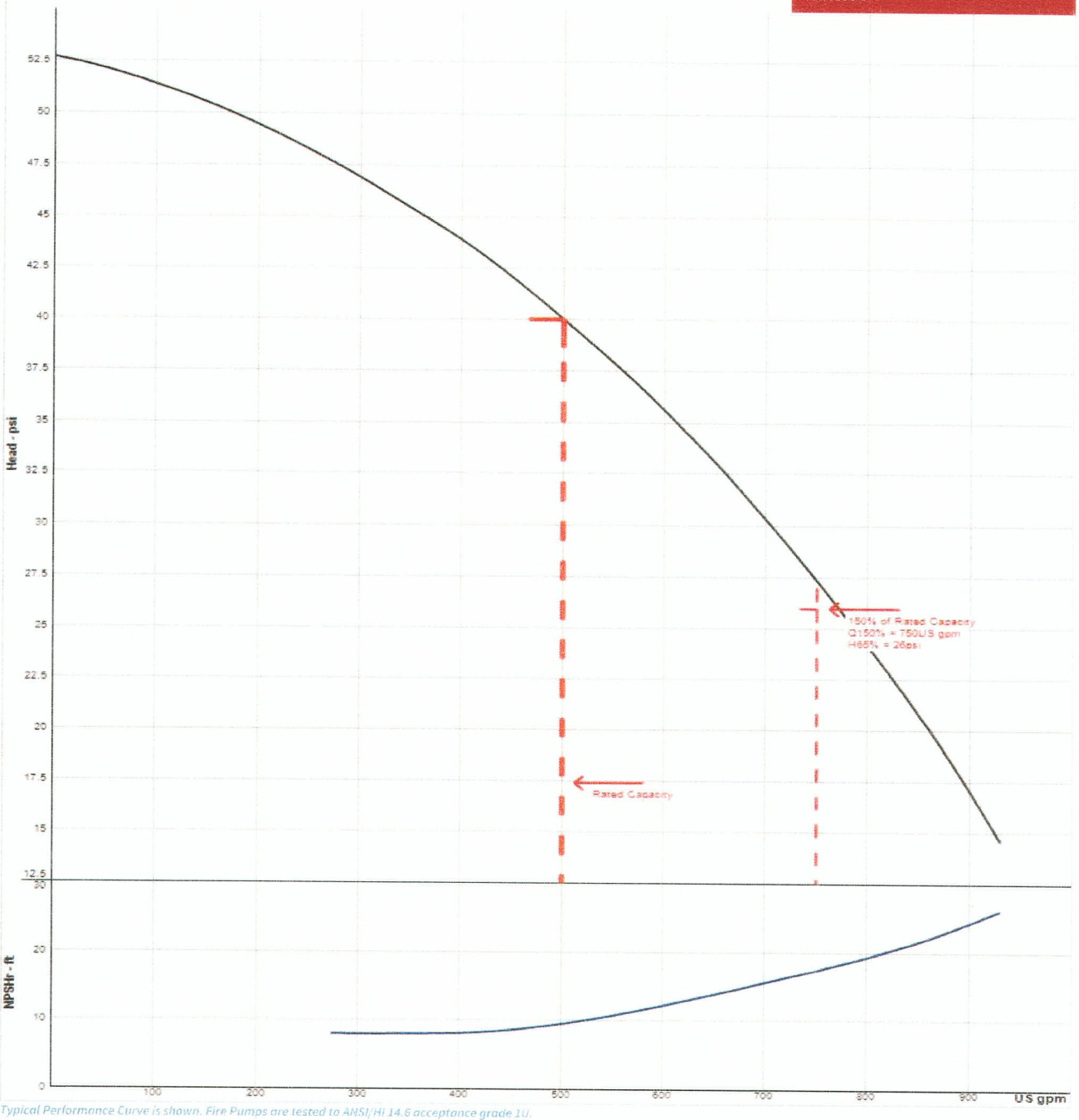
CERTIFIED FOR:	Reliable Fire Protection / Erwin Elementary School					APPROVAL	UL [X]	FM [X] ULC [ ]
CUSTOMER ORDER NO.:			TAG NO.				FLANGES	
PUMP DATA	SIZE	MODEL	CURVE NO.	GPM	HEAD	ROTATION	SUCTION	DISCH.
	4x4x7F	1580	-	500	40 psi	CW	125#	125#
MOTOR DATA	HP	RPM	VOLTS	PHASE	HERTZ	FRAME SIZE	ENCLOSURE	
	20	3550	480	3	60	254JP	ODP	
SHOP ORDER:			CERTIFIED BY:	Wade Laughon		DATE:	10/26/2020	

AC FIRE PUMP
a xylem brand

Performance Curve

140% Head of Rated Head 56PSI

1580
4x4x7F



Typical Performance Curve is shown. Fire Pumps are tested to ANSI/HI 14.6 acceptance grade 1U.
Rated Duty Point is guaranteed within the following tolerances: Flow 0% to + 10%, Head 0% to + 6%.
NO OTHER POINTS ARE GUARANTEED. PLEASE CONSULT FACTORY IF NEEDED.

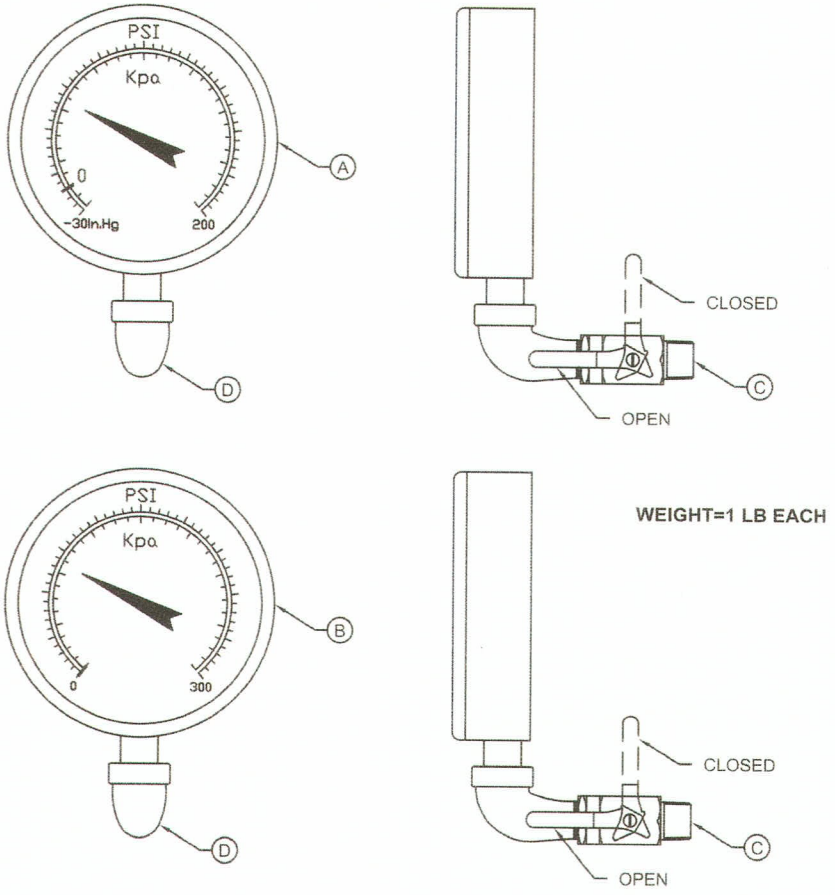
Pump Selection Summary

Pump Capacity	500 US gpm	**RPM**	3550
Pump Head	40 psi	**Impeller Diameter**	5.615 in
Duty point Power	17.2 bhp	**Motor HP**	
Fluid Type	Water	**Fluid Temperature**	85 °F
Max BHP	20 hp		

xylem
Let's Solve Water

Xylem Inc.
8200 N. Austin Avenue
Morton Grove, Illinois 60053
Phone: (847) 966-3700
Fax: (847) 965-8379
www.acfirepump.com

SUCTION AND DISCHARGE GAUGE ASSEMBLY



ITEM	DESCRIPTION
A	SUCTION PRESSURE GAUGE, 3.5 DIAL, 3-2-3% ACCURACY, RANGE -30-0-200
B	DISCHARGE PRESSURE GAUGE, 3.5 DIAL, 3-2-3% ACCURACY, RANGE 0-300 PSI
C	1/4" NPT TWO WAY BALL VALVE
D	1/4" NPT STREET ELBOW

NOT FOR CONSTRUCTION, INSTALLATION OR APPLICATION PURPOSES UNLESS CERTIFIED		
CERTIFIED FOR:		
CUSTOMER ORDER NO.:	TAG NO.	
SHOP ORDER:	CERTIFIED BY:	DATE:

DIMENSIONS IN INCHES (mm)

CASING RELIEF VALVE

Size 3/4" Threaded
Temperature Range Water, Air: to 180°F Max.
Materials
Body & Cover: Cast Bronze ASTM B62
Stainless Steel ASTM A743-CF-16Fa
Trim: Brass & Stainless Steel 303
Rubber: Buna-N® Synthetic Rubber

Flow Range: < 2500 GPM

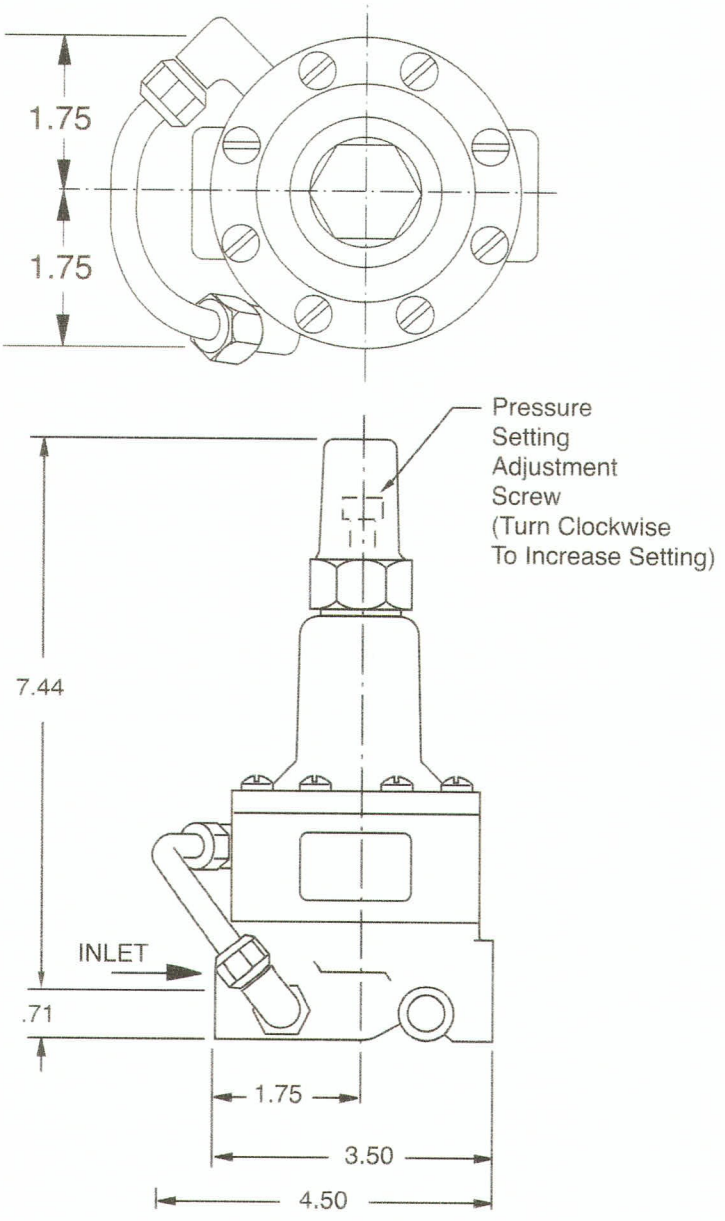
UL Listed 55L Range psi	Approximate Increase for Each Clockwise Turn of Adjusting Screw
20 to 175	28.0 psi

FM Approved 55L Range psi	Approximate Increase for Each Clockwise Turn of Adjusting Screw
0 to 75	8.5 psi
20 to 200	28.0 psi
100 to 300	18.0 psi

Pressure Ratings Cast Bronze 400 psi Max.
Stainless Steel 400 psi Max.

Adjustment Ranges 0 to 75 psi
20 to 200 psi
100 to 300 psi

WEIGHT = 6 LBS

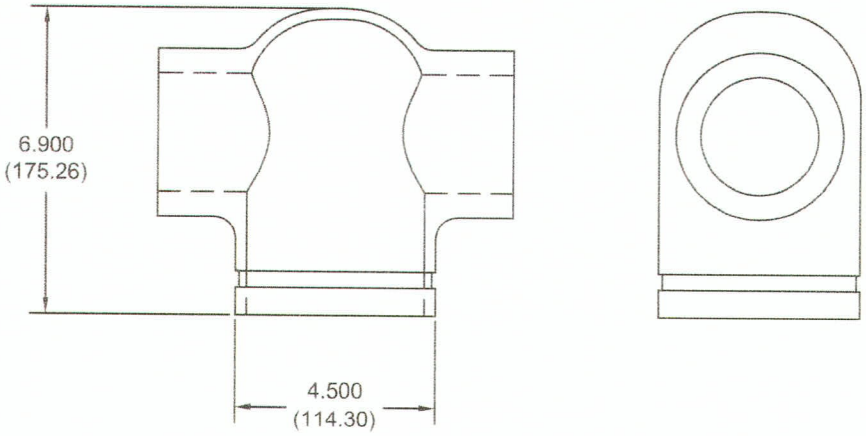


NOT FOR CONSTRUCTION, INSTALLATION OR APPLICATION PURPOSES UNLESS CERTIFIED		
CERTIFIED FOR:		
CUSTOMER ORDER NO.:	TAG NO.	
SHOP ORDER:	CERTIFIED BY:	DATE:

DIMENSIONS IN INCHES (mm)

HOSE HEADER

SIZE	4"
CONNECTION	GROOVED
VALVE CONNECTIONS	(2) 2-1/2" NPT
MAX NFPA FLOW	500 GPM
BODY MATERIAL	CAST STEEL ASTM A216 GR. WCB
MAX W.P.	300 PSI
WEIGHT	15 LBS

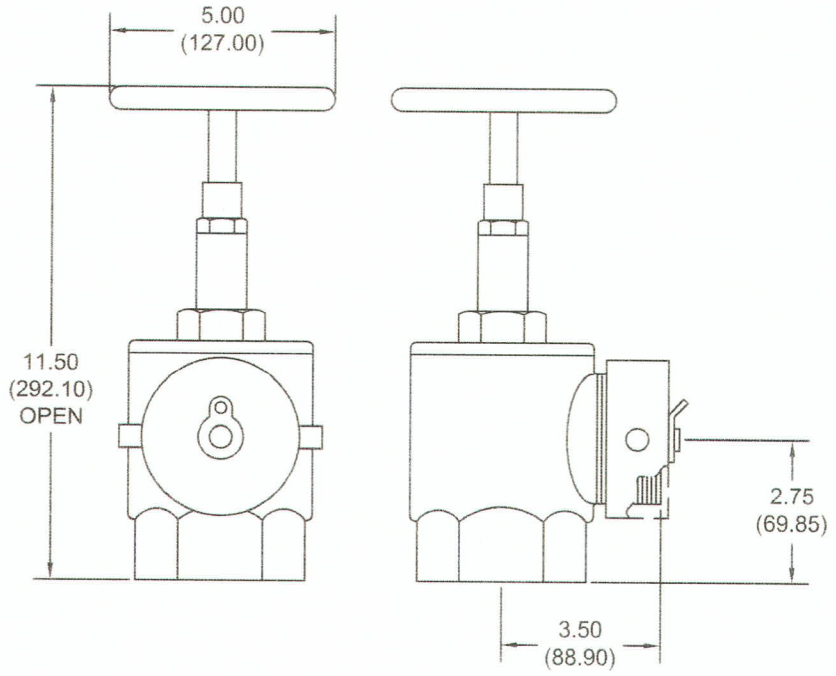


NOT FOR CONSTRUCTION, INSTALLATION OR APPLICATION PURPOSES UNLESS CERTIFIED		
CERTIFIED FOR:		
CUSTOMER ORDER NO.:	TAG NO.	
SHOP ORDER:	CERTIFIED BY:	DATE:

DIMENSIONS IN INCHES (mm)

HOSE VALVE CAP & CHAIN

INLET	2-1/2" NPT
HOSE THREAD	2-1/2" NST (STD)
	OTHER_____
BODY MATERIAL	CAST BRASS
MAX W.P.	300 PSI
WEIGHT	20 LBS



NOT FOR CONSTRUCTION, INSTALLATION OR APPLICATION PURPOSES UNLESS CERTIFIED		
CERTIFIED FOR:		
CUSTOMER ORDER NO.:	TAG NO.	
SHOP ORDER:	CERTIFIED BY:	DATE:

DIMENSIONS IN INCHES (mm)

GERAND ENGINEERING

"MODEL G" FIRE PUMP TEST METERS

Accurate Pump Performance and Quality Service for 50 Years

NEW

BEST VALUE IN THE INDUSTRY

5 YEAR WARRANTY

MANUFACTURED IN THE USA

HIGH GRADE MATERIALS:

CARBON STEEL, STAINLESS STEEL, EPOXY AND MONEL

FM APPROVED

MODEL-G METERS

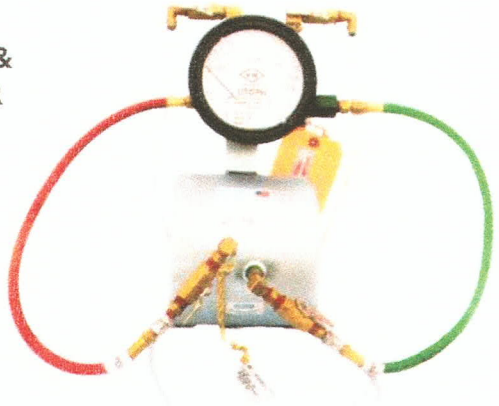
-- RATING 500 PSI --
(Buttweld, Grooved, 300# Flanged)

-- RATING 275 PSI --
(150# Flanged)

CALIBRATED VENTURI & ATTACHED GPM METER

4½" DIAL METER MOUNTS ON VENTURI BRACKET

FM APPROVED



ADDITIONAL SIZES LISTED AT WWW.GERAND.COM

PUMP GPM	PIPE SIZE	VENTURI STYLE	METER RANGE (GPM)	VENTURI LENGTH ~~(BUTTWELD OR~~ GROOVED)	VENTURI LENGTH (150# FLANGED)	VENTURI LENGTH (300# FLANGED)
50	2"	685	25-100	4¼" THREADED	-	-
100	2 1/2"	746	50-200	3" BUTTWELD 4" GROOVED	9½"	10"
250	4"	744	125-500	3½" BUTTWELD 3¾" GROOVED	9½"	10¾"
300	4"	744	150-600			
450	4"	744	225-900			
500	5"	715	250-1000	5"	12"	13¾"
500	6"	743	250-1000	6"	13"	14¼"
750	6"	743	375-1500			
1000	6"	743	500-2000			
1250	6"	743	625-2500			
1500	8"	750	750-3000	7"	15"	16¼"
2000	8"	750	1000-4000			
2500	8"	750	1250-5000			

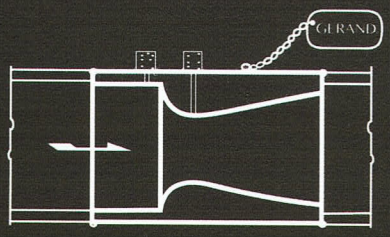
WWW.GERAND.COM FOR MORE INFORMATION

*Venturi available in Raised or Flat Face; Steel, Stainless Steel or Monel
**Dual LPM/GPM Scales Available

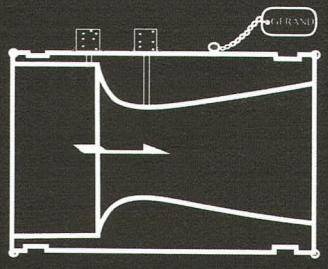
2300 EDGEWOOD AVE, MINNEAPOLIS, MN 55426 952.374.1320 WWW.GERAND.COM

VENTURI STYLES

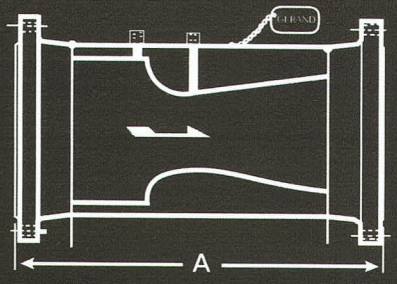
BUTTWELD



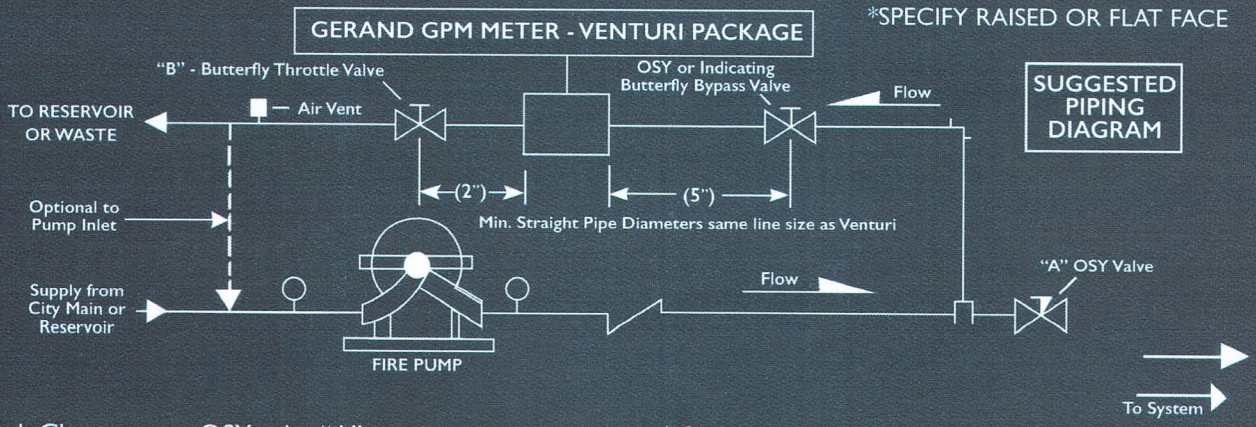
GROOVED



FLANGED



OPERATING INSTRUCTIONS



1. Close system OSY valve "A"
2. Open by-pass valve and "B" butterfly throttle valve
3. Purge meter, located on venturi, as follows:
   a) Open station shut-off valves on venturi & vent valves attached to meter. When a steady stream of water passes through hose, meter is purged of air.
   b) Close the vent valves after purging.
4. Start the fire pump, and read meter in GPM.
5. Refer to pump GPM requirement and adjust throttle valve to meet the requirement.
6. After the test, open valve "A" and close the by-pass and "B" valves.

MANUFACTURED IN U.S.A.

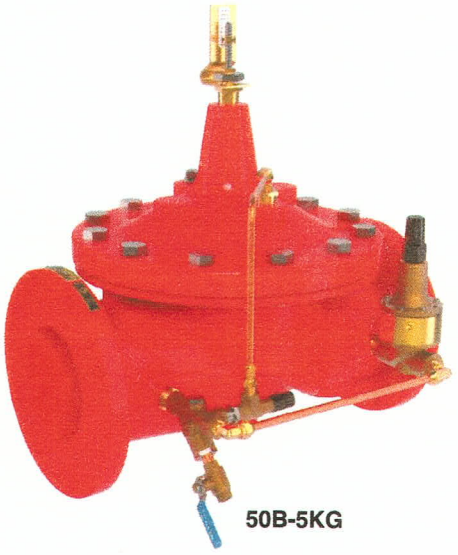
CERTIFIED ISO 9001:2008 COMPANY

FM APPROVED

CLA-VAL®

— MODEL — 50B-5KG

Pump Suction Control Valve



50B-5KG

FM APPROVED

Sizes 3" - 10"

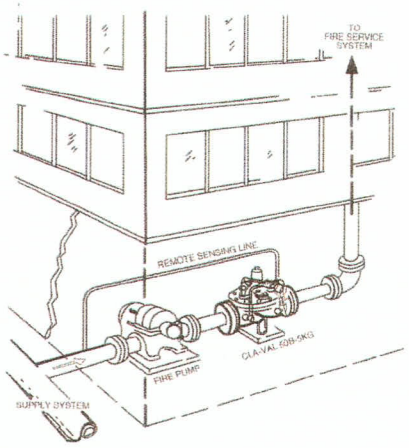
- **Adjustable Opening Speed For Pump Suction Protection**
- **Pilot Control Provides Wide Flow Range With Minimal Pressure Variations**
- **Controlled Closing For System Protection**
- **Modulates Within 5% of Setting for Accurate Pressure Control**
- **Pressure Setting Adjustable**
- **Pressure Setting Not Affected by Pressure at Valve Discharge**
- **Now Available in Grooved Ends Sizes 3"- 8"**

The Model 50B-5KG Pump Suction Control Valve is designed specifically for Fire Pump Suction Control Service. It modulates to maintain the pump discharge in relation to the suction head available, thus assuring that the suction head pressure does not fall below the pre-set minimum.
The 50B-5KG can be supplied with optional internal and external epoxy coating of the main valve wetted surfaces.

Typical Installation

When there is a demand in the Fire System, the pump is started, delivering water from the supply source to the area of demand. To assure that the fire pump draw does not exceed the available water supply, the Model 50B-5KG, sensing the pump suction, modulates to prevent suction pressure from dropping below a pre-set minimum.

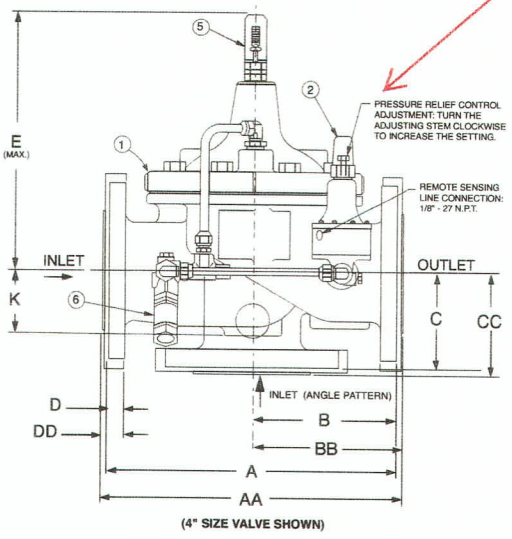
By maintaining minimum pressure requirements in the supply main, the main is protected from possible damage or backflow conditions. Also, a minimum supply pressure is provided for local fire apparatus.



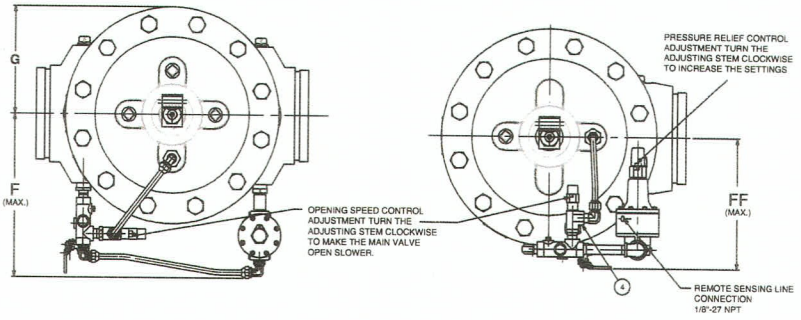
Specifications

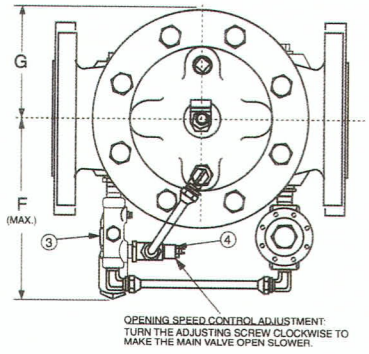
Sizes	*Globe:* 3" - 10" *Angle:* 3" - 10"
End Details	150 and 300 ANSI B16.42
Pressure Ratings	150 class - 250 psi Max. 300 class - 400 psi Max
Temperature Range	Water, to +180°F Max.
Materials	***Main valve body & cover*** Ductile Iron ASTM A-536 ***Main valve trim:*** Brass QQ-B-626 Bronze Seat ASTM B61 Stainless Steel Stem 303 Delrin Sleeved ***Pilot control system:*** Cast Bronze ASTM B62 with 303 Stainless Steel trim
Adjustment Range	Available in the following pressure range only: 5 to 25 psi Set at 10 psi

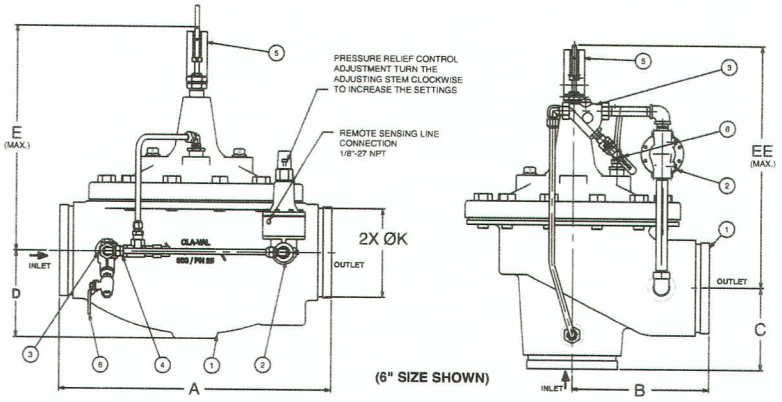
Dimensions (in Inches)



(4" SIZE VALVE SHOWN)







(6" SIZE SHOWN)

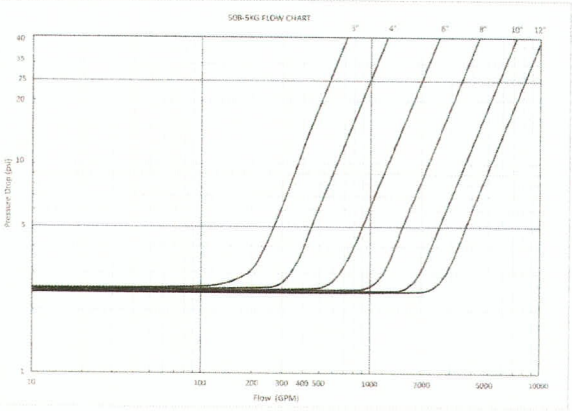
FM APPROVED

Sizes 3" - 10"

Valve Size	3"	4"	6"	8"	10"
A 150 Flanged	12.00	15.00	20.00	25.38	29.75
AA 300 Flanged	13.25	15.62	21.00	26.38	31.12
A Grooved End	12.50	15.00	20.00	25.38	--
B 150 Flanged	6.00	7.50	10.00	12.75	14.88
BB 150 Flanged	6.38	7.88	10.50	13.25	15.56
B Grooved End	6.00	7.50	10.00	--	--
C 150 Flanged	4.00	5.00	6.00	8.00	8.62
CC 150 Flanged	4.38	5.31	6.50	8.50	9.31
C Grooved End	4.25	5.00	6.00	--	--
D 150 Flanged (min.)	0.75	0.94	1.00	1.12	1.12
DD 150 Flanged (min.)	1.12	1.25	1.44	1.62	1.12
D Grooved End	3.62	4.50	6.31	7.81	--
E (max.)	15.75	17.75	20.25	23.00	--
E Grooved End (max.)	13.85	16.06	17.94	20.72	--
EE Grooved End (max.)	13.90	15.50	19.20	--	--
F (max.)	13.50	15.00	16.50	20.00	--
F Grooved End (max.)	9.90	10.75	12.05	13.40	--
FF Grooved End (max.)	8.38	9.00	9.75	--	--
G (max.)	4.62	5.75	7.88	10.00	--
G Grooved End	4.56	5.75	7.88	10.00	--
K	2.56	3.19	4.31	5.31	--
K Grooved End	3.344/3.326	4.334/4.314	6.455/6.433	8.441/8.416	--

Item No.	Description
1	100KCGVX Hytrol (Main Valve)
2	CRL5A Pressure Relief Control
3	X44A Strainer and Orifice Assembly
4	CV Flow Control (Opening)
5	X101C Valve Position Indicator
6	CK2 (Blow-Off Valve)

Flow Chart

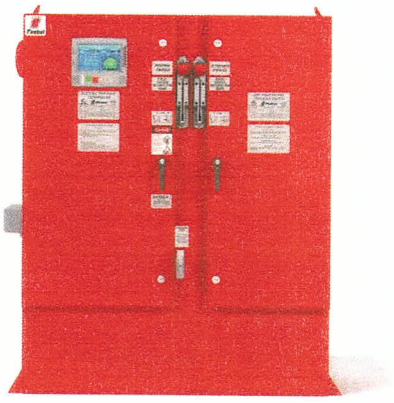


CLA-VAL 1701 Placentia Avenue • Costa Mesa CA 92627 • Phone: 949-722-4800 • Fax: 949-548-5441 • E-mail: info@cla-val.com • Website cla-val.com

Product Description

FTA1350 with FTA950 (Opt. -TSA)

MARK III Electric Fire Pump Controllers - Wye-Delta Closed Transition Starting with Power Transfer Switch



Description—Firetrol® FTA1350 Wye-Delta, Closed Transition Starting Fire Pump Controllers are used with delta-wound squirrel cage motors. FTA1350 controllers are of the closed circuit transition type in which the motor circuit remains closed during the transition from start to run. The controller monitors, displays and records fire pump system information. Actuating the controller via pressure, START push-button or deluge valve contact closes the start contactor connecting the motor to the line in the wye connection. The motor will draw approximately 33% of its normal inrush current and develop approximately 33% of its normal starting torque. After a time delay, the motor is automatically reconnected in delta, applying full voltage to the motor windings. During this transition, a resistor is connected to each phase, minimizing line disturbances and voltage drop during starting. These controllers are recommended especially for use with generator sets.

Power Transfer Switches are completely assembled with Firetrol Electric Fire Pump Controllers; full or reduced voltage types. The power transfer switches are built for use with generator set or 2nd utility use. The entire package of power transfer switch and controller is completely factory assembled, wired, tested and shipped as a complete unit for easy field connection to the power sources and the fire pump motor.

Approvals – Firetrol fire pump controllers are listed by Underwriters' Laboratories, Inc., in accordance with UL218, *Standard for Fire Pump Controllers*, CSA, *Standard for Industrial Control Equipment*, and approved by Factory Mutual. They are built to meet or exceed the requirements of the approving authorities as well as NEMA and the latest editions of NFPA 20, *Installation of Centrifugal Fire Pumps*, and NFPA 70, *National Electrical Code*.

The power transfer switches are listed by Underwriters' Laboratories, Inc., in accordance with UL218, *Standard for Fire Pump Controllers*; UL1008, *Automatic Transfer Switches*; UL508, *Industrial Control Equipment*, CSA, *Standard for Industrial Control Equipment*, and approved by Factory Mutual. They are built to meet or exceed the requirements of the approving authorities as well as NEMA and the latest editions of NFPA 20, *Installation of Centrifugal Fire Pumps*, and NFPA 70, *National Electrical Code*.

Controller Standard Features — The following are included as standard with each controller:

- Voltage surge protector
- Main Disconnect Switch sized for connected motor horsepower and voltage
- Fire pump Circuit Breaker
- Single Handle Isolating Disconnect Switch/Circuit Breaker mechanism
- Motor contactor

- Single Handle Emergency Manual Run Mechanism to mechanically close motor contactor contacts in an emergency condition
- Built-in Start and Stop push-buttons to bypass automatic start circuits
- Daylight Savings Time Option
- Elapsed Time Meter
- 7.0" LCD color touch screen (HMI technology) software upgradeable operator interface powered by an embedded microcomputer with software PLC logic.
- 500 PSI Pressure Transducer (calibrated for 300 PSI (20.7 Bar))and Test Solenoid for fresh water applications, externally mounted with protective cover
- Audible Alarm Bell
- Pump Room Ambient Temperature Switch, Display and Alarms
- Pressure and Event Recording with Date Stamp to System Memory Accessible VIA The User Interface and Downloadable to a USB Flash Drive
- Modbus Communications with TCP/IP frame format and a shielded female RJ45 connector
- NEMA Type 2 (IEC IP22) enclosure with bottom entry gland plate and lifting lugs
- Suitable for use as Service Equipment
- The controller supplies visual indication of the following: Power Available • Motor Run • Periodic Test • Manual Start • Deluge Valve Start • Remote Automatic Start • Remote Manual Start • Emergency Start • Pump On Demand (Automatic Start) • Pump Room Temp. • Lockout
- The controller displays visual indication for the following alarm conditions: Control Voltage Not Healthy • Invalid Cut-In • Lock Rotor Current • Loss of Power • Low Ambient Temp. • Low Water Level • Motor Trouble • Phase Reversal • Overcurrent • Overvoltage • Phase Loss L1 / L2 / L3 • Phase Unbalanced • Pressure Transducer Fault Detected • Pump On Demand • Pump Room Alarm • Service Required • Undercurrent • Undervoltage • Check Test Solenoid • Weekly Test Cut-In Reached
- Audible and Visible Indication for Fail To Start.
- DPDT 8A, 250VAC remote alarm contacts are provided for: Power Available • Phase Reversal • Motor Run • Common Pump Room Alarm (Overvoltage / Undervoltage / Phase Unbalance / Low Pump Room Temp. / High Pump Room Temp) • Common Motor Trouble (Overcurrent / Fail To Start / Undercurrent / Ground Fault)
- Field Adjustable Timers with Visual Countdown for Minimum Run (Off Delay), Sequential Start (On Delay) and Weekly Test
- Seismic Certification per IBC 2015, CBC 2016 (Consult Factory for Verification)

Transfer Switch Standard Features — The following are included as standard with each controller:

- Visual indication of the following: Alternate Power Lock Rotor Current • Alternate Power Phase Reversal • Automatic Transfer Switch Trouble
- Audible and Visible indication of: Alternate Power Circuit Breaker OFF or Tripped • Alternate Power Isolating Switch Tripped/Open
- Transfer Switch test push-button
- Bypass for re-transfer and generator shutdown
- The following adjustable time delays are provided: Momentary Normal Power Outage Override • Emergency Power Available Delay • Transfer Trouble Delay • Re-transfer to Normal • Generator Cooldown
- Remote Alarm Contacts For: Emergency Isolating Switch Off • Transfer Switch in Normal Position • Transfer Switch in Emergency Position

FOR MODEL # INFORMATION SEE PUBLICATION SD1000-61
FOR OPTIONS AND MODIFICATIONS SEE PUBLICATION OP1000-72

Firetrol, Inc.
3412 Apex Peakway
Apex, North Carolina 27502
P +1 919 460 5200
F +1 919 460 5250
www.firetrol.com

Publication PD1350-61 Rev. A

Firetrol MARK^{III} Electric Fire Pump Controller

FTA1350/FTA950 - Wye-Delta Closed Transition Starting with Power Transfer Switch

Specifications

1.0 Main Fire Pump Controller

The main fire pump controller shall be a factory assembled, wired and tested unit. The controller shall be of the combined manual and automatic type designed for full voltage starting of the fire pump motor having the horsepower, voltage, phase and frequency rating shown on the plans and drawings.

1.1 Standards, Listings & Approvals

The controller shall conform to all the requirements of the latest editions of:
NFPA 20, *Standard for the Installation of Stationary Pumps for Fire Protection*
NFPA 70, *National Electrical Code.*

The controller shall be listed by:
Underwriters Laboratories, Inc., in accordance with UL218, *Standard for Fire Pump Controllers* Canadian Standards Association CSA-C22.2, Standard for Industrial Control Equipment (cUL)
CE - Low Voltage Directive

The controller shall be approved by:
Factory Mutual (IEC 62091)
The City of New York for fire pump service

1.2 Enclosure

The controller components shall be housed in a NEMA Type 2 (IEC IP22) drip-proof, wall mounted enclosure.

1.3 Withstand Ratings (Short Circuit Current Ratings)

All controller components shall be front mounted, wired and front accessible for maintenance. The available short circuit current ratings are shown below. The ratings shall apply to the normal and emergency power components.

Code	200-208V 5-150 HP	220-240V 5-200 HP	380-415V 5-350 HP	440-480 5-400 HP	550-600 5-500 HP
M - Standard	100kA	100kA	100kA	100kA	N/A
N - Intermediate	150kA	150kA	150kA	150kA	N/A
P - High	200kA	200kA	200kA	200kA	N/A
Q - Intermediate	N/A	N/A	N/A	N/A	100kA
R - Standard	N/A	N/A	N/A	N/A	50kA

Code	200-208V 200 HP	220-240V 250-400 HP	380-415V 400-500 HP	440-480 450-500 HP
M - Standard	50A	50kA	50kA	50kA
N - Intermediate	N/A	N/A	N/A	N/A
P - High	100kA	100kA	100kA	100kA
Q - Intermediate	N/A	N/A	N/A	N/A
R - Standard	N/A	N/A	N/A	N/A

1.4 Power Components

The controller shall include a combination isolating disconnect switch/circuit breaker, rated for not less than 115% of the motor full load current, mechanically interlocked and operated with a single, externally mounted handle. The isolating disconnect switch/circuit breaker shall be mechanically interlocked so that the enclosure door cannot be opened with the handle in the ON position except by a hidden tool operated bypass mechanism. The isolating disconnect switch/circuit breaker shall be capable of being padlocked in the OFF position for installation and maintenance safety, and shall also be

capable of being locked in the ON position without affecting the tripping characteristics of the circuit breaker.
The controller will include a voltage surge arrestor and Wye-Delta Closed Transition motor starter.
The controller shall be equipped with a single handle, manually operated, emergency start mechanism capable of being latched in the ON position.
The controller shall include an Automatic Transfer Switch, electrically or manually operated, mechanically held.

1.5 Operator Interface (HMI)

The operator interface shall be a 7.0" LCD color touch screen (HMI technology) powered by an embedded microcomputer with software PLC logic. Included shall be keypad type push-buttons for START, STOP, RUN TEST and TRANSFER SWITCH TEST.
The screen shall include menus for: *Home · Alarms · Configuration · History · Service · Manuals · Language.*

The HMI shall graphically display the following: *Voltage and Amperage of all 3 phases simultaneously using true RMS Technology for both the Normal and Alternate Power Sources · Transfer Switch Status · Motor Stopped/Running · Starting Cause · Actuation Mode · Controller Type · Shutdown Mode · Date & Time · Pump Room Temp. · System Pressure*
System pressure shall be capable of being displayed as: *PSI, kPa, Bar, Feet of Head or Meters of Water.*

The HMI shall allow programming and display of: *Cut In & Cut Out Pressure Settings · Minimum Run Timer · Sequential Start Timer · Periodic Test Timer*

The HMI allows the user to select the language of the system and download the manual or view the manual on screen.

1.6 State and Alarm Indication

Visual indication shall be provided for the following:
Power Available • Motor Run • Periodic Test • Manual Start • Deluge Valve Start • Remote Automatic Start • Remote Manual Start • Emergency Start • Pump On Demand/Automatic Start • Pump Room Temperature • Lockout

The digital display shall visually indicate the following alarms:
Alternate Power Lock Rotor Current • Alternate Power Phase Reversal • Automatic Power Transfer Switch Trouble • Locked Rotor Current • Fail To Start • Under/Over Current • Under/Over Voltage • Phase Unbalance • Check Test Solenoid Valve • Weekly Test Cut-In Not Reached • Transducer Fault • Control Voltage Not Healthy • Motor Trouble • Pump Room Alarm • Invalid Cut-In • Phase Reversal • Power Loss • Phase Loss L1 / L2 / L3 • Low Water Level • Pump On Demand • Low Ambient Temp. • Service Required

Audible and visible alarm shall be provided for:
Fail To Start • Alternate Circuit Breaker Off or Tripped • Alternate Isolating Switch Tripped/Open •

Remote Alarm contacts shall be provided for:
Power Available • Phase Reversal • Motor Run • Common Pump Room Alarm (Overvoltage, Undervoltage, Phase Unbalance, Low/High Pump Room Temperature) • Common Motor Trouble (Overcurrent, Fail To Start, Undercurrent, Ground Fault) • Transfer Switch in Normal Position • Transfer Switch in Alternate Position • Alternate Power Isolating Switch Off

1.7 Pressure and Event Recording

The system shall be capable of logging pressure data and operational events with time/date stamp. The system shall display operational events for the lifetime of the controller and display the pressure data in text or graphical form. The controller shall log the Date/Time of the first start-up and the controller total power on time from that date. The controller shall log first and last statistics for: *First Setup · On Time · Start Count · Last Start Time · Min/Max/Average System Pressure · Min/Max/Average Pump Room Temp. · Jockey Pump On Time/Start Count/Last Start Time · Phase to Phase Voltages with Date Stamp · Amps Per Phase with Date Stamp*

1.8 USB Host Controller

A USB port capable of accepting a USB Flash Memory Disk shall be provided for downloading pressure and event logs.

1.9 Serial Communications

The controller shall feature Modbus with TCP/IP frame format and shielded female RJ45 connector

2.0 Pressure Sensing / Wet Parts

The controller shall be supplied with a solid state pressure transducer with a range of 0-500 psi calibrated for 0-300 psi (0-20.7 bar) and a run test solenoid valve. The wet parts shall be externally mounted and include a protective cover. The pressure sensing line connection to the transducer shall be 1/2-inch FNPT. Provisions for a redundant pressure transducer shall be provided.

2.1 Seismic Certification

The controller shall be certified to meet or exceed the requirements of the 2015 International Building Code, the 2016 California Building Code and OSHPD Special Seismic Certification Preapproval - OSP. The controller test criteria shall be per ICC-ES AC156 and the Seismic Parameters per ASCE 7-10 Chapter 13.

2.2 Controller Operation

The controller shall be capable of automatic starting via pressure drop, remote start signal from an automatic device or a deluge valve. The controller can be manually started via the START push-button, the RUN TEST push-button, or a remote signal from a manual device. Stopping can be achieved manually with the STOP push-button or automatically after expiration of minimum run timer or test timer. The minimum run timer (off delay), sequential start timer (on delay) and periodic test timer shall be field adjustable and include a visual countdown on the display. Adjustable timers shall be supplied for Momentary Normal Power Outage Override, Alternate Power Available Delay, Transfer Trouble Delay, Retransfer To Normal, Generator Cooldown.

2.3 Manufacturer

The controller shall be a Firetrol brand.

Firetrol, Inc.
3412 Apex Peakway
Apex, North Carolina 27502
P +1 919 460 5200
F +1 919 460 5250
www.firetrol.com

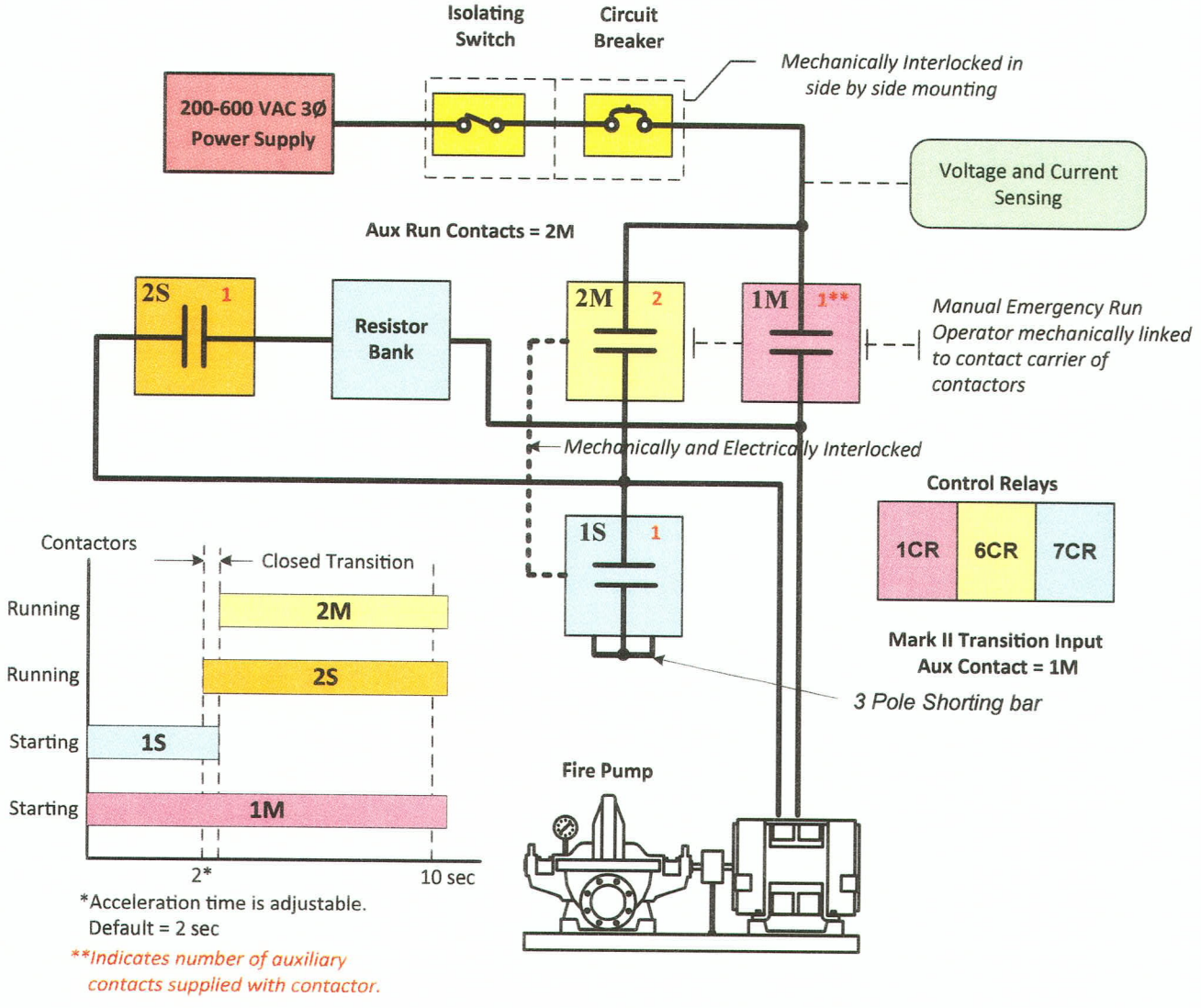
Publication SP1350-61

General Starting Configuration

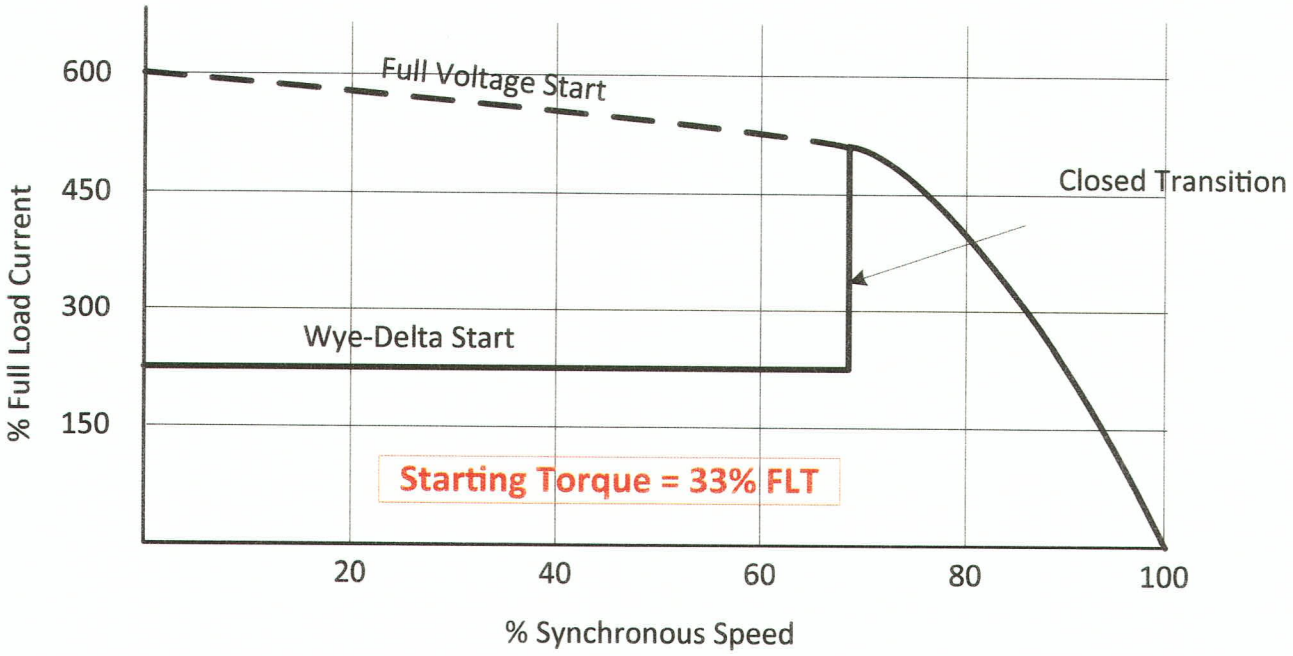
Firetrol

FTA1350

MARK III Electric Fire Pump Controllers - Wye-Delta Closed Transition Starting



General Starting Configuration



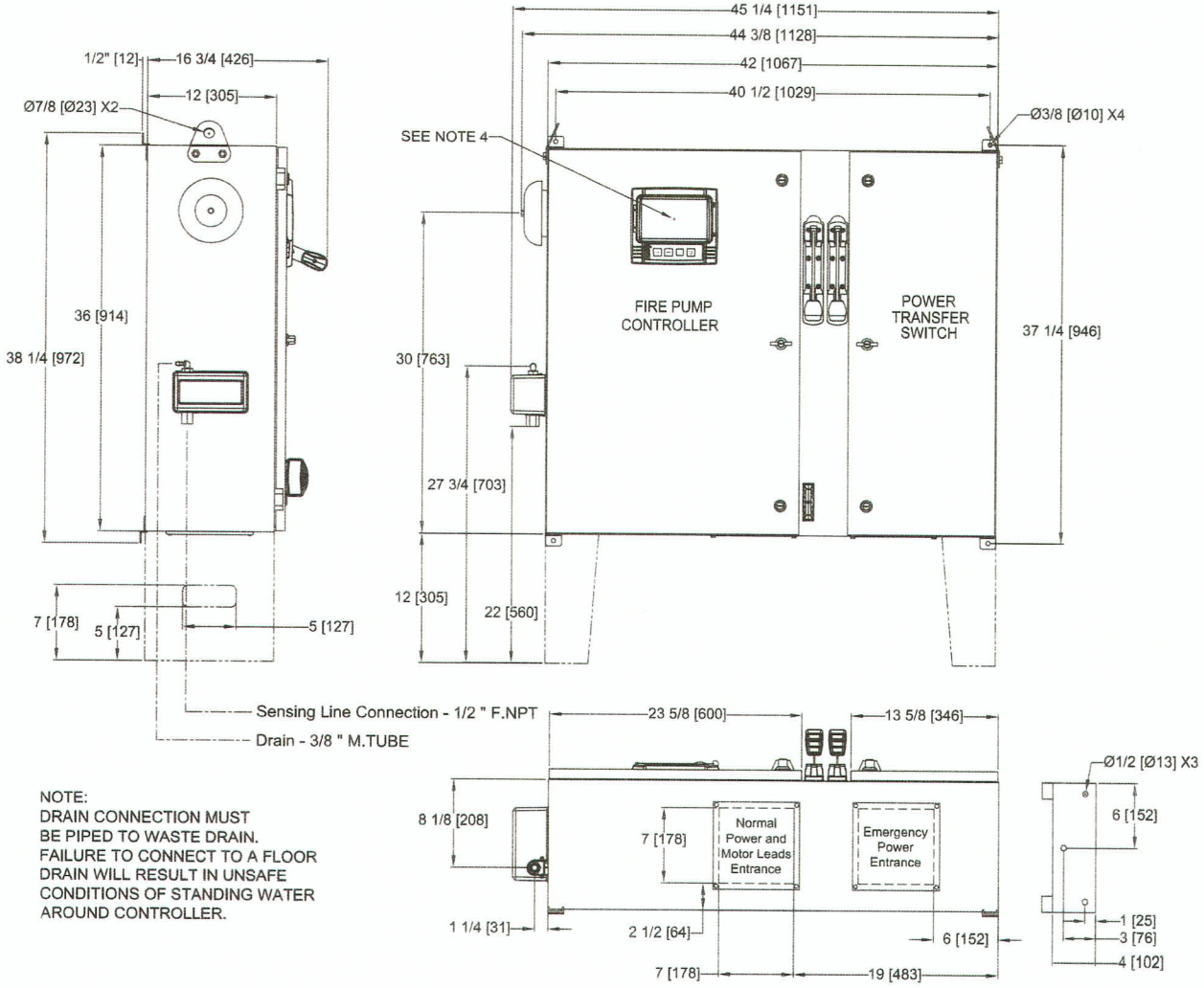
Firetrol, Inc.
3412 Apex Peakway
Apex, North Carolina 27502
P +1 919 460 5200
F +1 919 460 5250
www.firetrol.com

Publication GS1350-10

Dimensions and Shipping Weight

FTA1350/950

MARK III Electric Fire Pump Controllers - Wye-Delta Closed Transition Starting With Power Transfer Switch



NOTE:
DRAIN CONNECTION MUST BE PIPED TO WASTE DRAIN. FAILURE TO CONNECT TO A FLOOR DRAIN WILL RESULT IN UNSAFE CONDITIONS OF STANDING WATER AROUND CONTROLLER.

VOLTAGE/POWER TABLE	
LINE VOLTAGE	MOTOR HORSEPOWER
208	5-30
220-240	5-30
380-400-415	5-60
440-480	5-60
600	5-75
APPROX SHIPPING WT: 345 [156]	

NOTES:
1. STANDARD: NEMA 2
2. STANDARD PAINT: TEXTURED RED RAL3002
3. ALL DIMENSIONS IN INCHES [MILLIMETERS] SHIPPING WEIGHT IN POUNDS [KG]
4. CENTER OF MARK III SCREEN: 29 5/8 [751] FROM BOTTOM OF ENCLOSURE (NO FEET)
5. BOTTOM CONDUIT ENTRANCE THROUGH REMOVABLE GLAND PLATE RECOMMENDED
6. USE WATERTIGHT CONDUIT AND CONNECTOR ONLY
7. PROTECT EQUIPMENT AGAINST DRILLING CHIPS
8. DOOR SWING EQUAL TO DOOR WIDTH
9. DRAWINGS FOR CONSTRUCTION PURPOSES MUST BE OBTAINED FROM FIRETROL OR THE LOCAL FIRETROL REPRESENTATIVE
10. SEISMIC MOUNTING TO BE RIGID WALL AND BASE ONLY

THIRD ANGLE PROJECTION	SIZE A	BY	DATE	Firetrol, Inc.	RELEASED		-	-	CIR	CIR	11-5-19
	DRAWN BY	CIR	11-5-19		REVISION DESCRIPTION		REV	ECN NO	BY	APP	DATE
	FINAL APPROVAL	CIR	11-5-19	© Firetrol, Inc. Not for construction. Subject to change without notice.	DIMENSIONS AND SHIPPING WEIGT	FTA1350 WITH FTA950	DRAWING NUMBER DD1350-80				CDL
					CLOSED TRANSITION WYE DELTA FIRE PUMP CONTROLLER AND POWER TRANSFER SWITCH		DWG REV -	ECN NO -			SHEET 1 OF 1

Field Connections
Alarm & Control Terminals

FTA1350

MARK III Electric Fire Pump Controllers - Wye-Delta Closed Transition Starting

Control Terminals (EB1)

Terminals Wire Size:
24 - 12 AWG
0.5 Nm

Remote Manual Start	Close to start pump	IN1	J25
Lockout	Close to block start	IN2	J25
Remote Automatic Start	Open to start pump	J1* IN3	J25
Deluge Valve	Open to start pump	J2* IN4	J25

Alarm Inputs (EB1)

Terminals Wire Size:
24 - 12 AWG
0.5 Nm

Water Reservoir Low	Close to signal alarm	IN5	J25

Network Connection (VMB1)

Shielded Female Connector RJ45

Modbus TCP/IP — I/O

Remote Alarm Terminals (EB1)

Terminals Wire Size:
24 - 12 AWG
0.5 Nm

Motor Run	Normally open Closes to alarm / Normally closed Opens to alarm	J40 TB1
Power Available	Normally open Closes to alarm / Normally closed Opens to alarm	J42 TB2
Phase Reversal	Normally open Closes to alarm / Normally closed Opens to alarm	J37 TB3
Pump Room Alarm **	Normally open Closes to alarm / Normally closed Opens to alarm	J39 TB4
Motor Trouble **	Normally open Closes to alarm / Normally closed Opens to alarm	J41 TB5
(Field Programmable ***)	Normally open Closes to alarm / Normally closed Opens to alarm	J55 TB6

* Remove jumper to use this feature
** Re-assignable
*** Not available on FTA1930 models

Drawing for information only.
Manufacturer reserves the right to modify this drawing without notice.
Contact manufacturer for "As Built" drawing.

				RELEASED	-	-	CIR	CIR	11-11-19
				REVISION DESCRIPTION	REV	ECN NO	BY	APP	DATE
THIRD ANGLE PROJECTION	SIZE A	BY	DATE	FIELD CONNECTIONS / FTA1350	DRAWING NUMBER FC1350-60				CDL
	DRAWN BY	CIR	11-10-19	CLOSED TRANSITION WYE DELTA FIRE PUMP CONTROLLER	DWG REV -	ECN NO -			SHEET 1 OF 1
	FINAL APPROVAL	CIR	11-10-19						

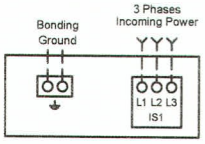
Firetrol, Inc.

Field Connections
Line & Motor Wire Terminal Capacity

FTA1350

MARK III Electric Fire Pump Controllers - Wye-Delta Closed Transition Starting

Line Terminals



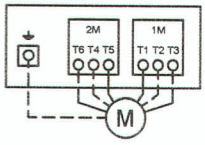
Notes:
1 - For proper wire sizing, refer to NFPA70 and NEC (USA) or CEC (Canada) or local code.
2 - Controller suitable for service entrance in USA.
3 - For more accurate motor connections refer to motor manufacturer or motor nameplate.
4 - Controller is phase sensitive. Incoming lines must be connected in ABC sequence.

COPPER CONDUCTORS for Isolating Switch (IS1).
Field Wiring According to Bending Space (AWG or MCM). Terminals L1 - L2 - L3

Bending Space	5 " (127 mm)							8 " (203 mm)		
HP / Voltage	5	7.5	10	15	20	25	30	40	50	60
208	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (2 to 1/0)	1x (1/0 to 250)	1x (3/0 to 250)	1x (4/0 to 250)
220 to 240	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (1 to 250)	1x (2/0 to 250)	1x (3/0 to 250)
380 to 416	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (3 to 1/0)
440 to 480	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)
600	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)

Bending Space	12 " (305 mm)				16 " (406 mm)						
HP / Voltage	75	100	125	150	200	250	300	350	400	450	500
208	1x (300 to 500)	1x (500)	2x (4/0 to 500)	2x (250 to 500)	2x (400 to 600)	—	—	—	—	—	—
220 to 240	1x (250 to 500)	1x (350 to 500)	2x (3/0 to 500)	2x (4/0 to 500)	2x (350 to 500)	2x (500 to 600)	—	—	—	—	—
380 to 416	1x (1/0 to 250)	1x (3/0 to 250)	1x (250)	1x (300 to 500)	2x (3/0 to 250)	2x (4/0 to 500)	2x (300 to 500)	2x (400 to 600) 2x (400 to 500)	2x (500 to 600)	2x (600)	—
440 to 480	1x (1 to 250)	1x (2/0 to 250)	1x (3/0 to 250)	1x (4/0 to 250)	1x (350 to 500)	2x (3/0 to 250)	2x (4/0 to 500)	2x (300 to 500)	2x (350 to 500)	2x (400 to 600)	2x (500 to 600)
600	1x (3 to 1/0)	1x (1 to 250)	1x (2/0 to 250)	1x (3/0 to 250)	1x (250 to 500)	1x (350 to 500)	2x (3/0 to 250)	2x (4/0 to 500)	2x (250 to 500)	2x (300 to 500)	2x (350 to 500)
Bending Space	5 " (127 mm)	8 " (203 mm)			12 " (305 mm)						

Motor Terminals



COPPER CONDUCTORS for Motor Connection (1M-2M).
Field Wiring According to Bending Space (AWG or MCM). Terminals T1-T2-T3-T4-T5-T6-T7-T8-T9

HP / Voltage	5	7.5	10	15	20	25	30	40	50	60
208	1x (14 to 10)	1x (12 to 10)	1x (10)	1x (8 to 2)	1x (8 to 2)	1x (6 to 2)	1x (6 to 1/0)	1x (4 to 2/0)	1x (2 to 3/0)	1x (1 to 2/0)
220 to 240	1x (14 to 10)	1x (12 to 10)	1x (10)	1x (8 to 2)	1x (8 to 2)	1x (6 to 2)	1x (6 to 1/0)	1x (4 to 2/0)	1x (3 to 2/0)	1x (2 to 2/0)
380 to 416	1x (14 to 10)	1x (14 to 10)	1x (14 to 10)	1x (12 to 10)	1x (10)	1x (10)	1x (8 to 2)	1x (6 to 2)	1x (6 to 2)	1x (4 to 1/0)
440 to 480	1x (14 to 10)	1x (14 to 10)	1x (14 to 10)	1x (12 to 10)	1x (12 to 10)	1x (10)	1x (10 to 2)	1x (8 to 2)	1x (6 to 2)	1x (6 to 2)
600	1x (14 to 10)	1x (14 to 10)	1x (14 to 10)	1x (14 to 10)	1x (12 to 10)	1x (12 to 10)	1x (10)	1x (10 to 2)	1x (8 to 2)	1x (8 to 2)

HP / Voltage	75	100	125	150	200	250	300	350	400	450	500
208	1x (2/0 to 3/0)	1x (3/0 to 300)	1x (250 to 300)	2x (1/0 to 300)	2x (3/0 to 350)	—	—	—	—	—	—
220 to 240	1x (1/0 to 2/0)	1x (3/0)	1x (4/0 to 300)	1x (300)	2x (2/0 to 300)	2x (4/0 to 350)	—	—	—	—	—
380 to 416	1x (4 to 2/0)	1x (2 to 2/0)	1x (1/0 to 2/0)	1x (2/0 to 3/0)	1x (4/0 to 300)	1x (300)	2x (2/0 to 300)	2x (3/0 to 300)	2x (4/0 to 350)	2x (4/0 to 350)	—
440 to 480	1x (4 to 2/0)	1x (3 to 2/0)	1x (2 to 2/0)	1x (1/0 to 3/0)	1x (2/0 to 3/0)	1x (4/0 to 300)	1x (300)	2x (1/0 to 300)	2x (2/0 to 300)	2x (3/0 to 350)	2x (4/0 to 350)
600	1x (6 to 2)	1x (4 to 2/0)	1x (3 to 2/0)	1x (2 to 3/0)	1x (1/0 to 3/0)	1x (2/0 to 3/0)	1x (4/0 to 300)	1x (250 to 300)	1x (300)	2x (1/0 to 300)	2x (2/0 to 300)

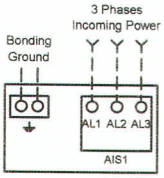
				RELEASED		-	-	CIR	CIR	11-11-19
				REVISION DESCRIPTION		REV	ECN NO	BY	APP	DATE
THIRD ANGLE PROJECTION	SIZE A	BY	DATE	Firetrol, Inc.	FIELD CONNECTIONS	FTA1350	DRAWING NUMBER FC1350-61			CDL
	DRAWN BY	CIR	11-10-19	© Firetrol, Inc. Not for construction. Subject to change without notice.	CLOSED TRANSITION WYE DELTA FIRE PUMP CONTROLLER LINE AND MOTOR FIELD WIRE TERMINAL CAPACITY		DWG REV -	ECN NO -		SHEET 1 OF 1
	FINAL APPROVAL	CIR	11-10-19							

Field Connections

FTA950

Power Transfer Switch For Use With MARK III Electric Fire Pump Controllers

Power Terminals



Notes:
1 - Controller is phase sensitive. Incoming lines must be connected in ABC sequence.

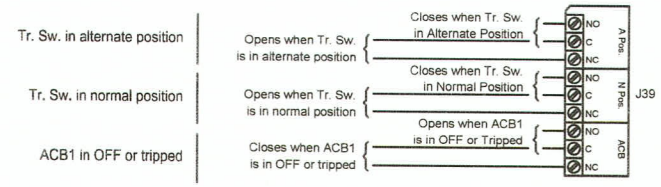
COPPER CONDUCTORS for Isolating Switch (AIS1).
Field Wiring According to Bending Space (AWG or MCM). Terminals AL1 - AL2 - AL3

Bending Space	5 " (127 mm)							8 " (203 mm)		
HP / Voltage	5	7.5	10	15	20	25	30	40	50	60
208	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (2 to 1/0)	1x (1/0 to 250)	1x (3/0 to 250)	1x (4/0 to 250)
220 to 240	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (1 to 250)	1x (2/0 to 250)	1x (3/0 to 250)
380 to 416	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)	1x (3 to 1/0)
440 to 480	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)	1x (3 to 1/0)
600	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (10 to 1/0)	1x (8 to 1/0)	1x (8 to 1/0)	1x (6 to 1/0)	1x (6 to 1/0)	1x (4 to 1/0)

Bending Space	12 " (305 mm)				16 " (406 mm)						
HP / Voltage	75	100	125	150	200	250	300	350	400	450	500
208	1x (300 to 500)	1x (500)	2x (4/0 to 500)	2x (250 to 500)	2x (400 to 600)	——	——	——	——	——	——
220 to 240	1x (250 to 500)	1x (350 to 500)	2x (3/0 to 500)	2x (4/0 to 500)	2x (350 to 500)	2x (500 to 600)	——	——	——	——	——
380 to 416	1x (1/0 to 250)	1x (3/0 to 250)	1x (250)	1x (300 to 500)	2x (3/0 to 250)	2x (4/0 to 500)	2x (300 to 500)	2x (400 to 600) / 2x (400 to 500)	2x (500 to 600)	2x (600)	——
440 to 480	1x (1 to 250)	1x (2/0 to 250)	1x (3/0 to 250)	1x (4/0 to 250)	1x (350 to 500)	2x (3/0 to 250)	2x (4/0 to 500)	2x (300 to 500)	2x (350 to 500)	2x (400 to 600)	2x (500 to 600)
600	1x (3 to 1/0)	1x (1 to 250)	1x (2/0 to 250)	1x (3/0 to 250)	1x (250 to 500)	1x (350 to 500)	2x (3/0 to 250)	2x (4/0 to 500)	2x (250 to 500)	2x (300 to 500)	2x (350 to 500)
Bending Space	5 " (127 mm)	8 " (203 mm)			12 " (305 mm)						

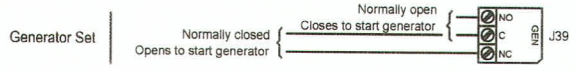
Remote Alarm Terminals (TSB1)

Terminals Wire Size:
24 - 12 AWG
0.5 Nm



Control Terminals (TSB1)

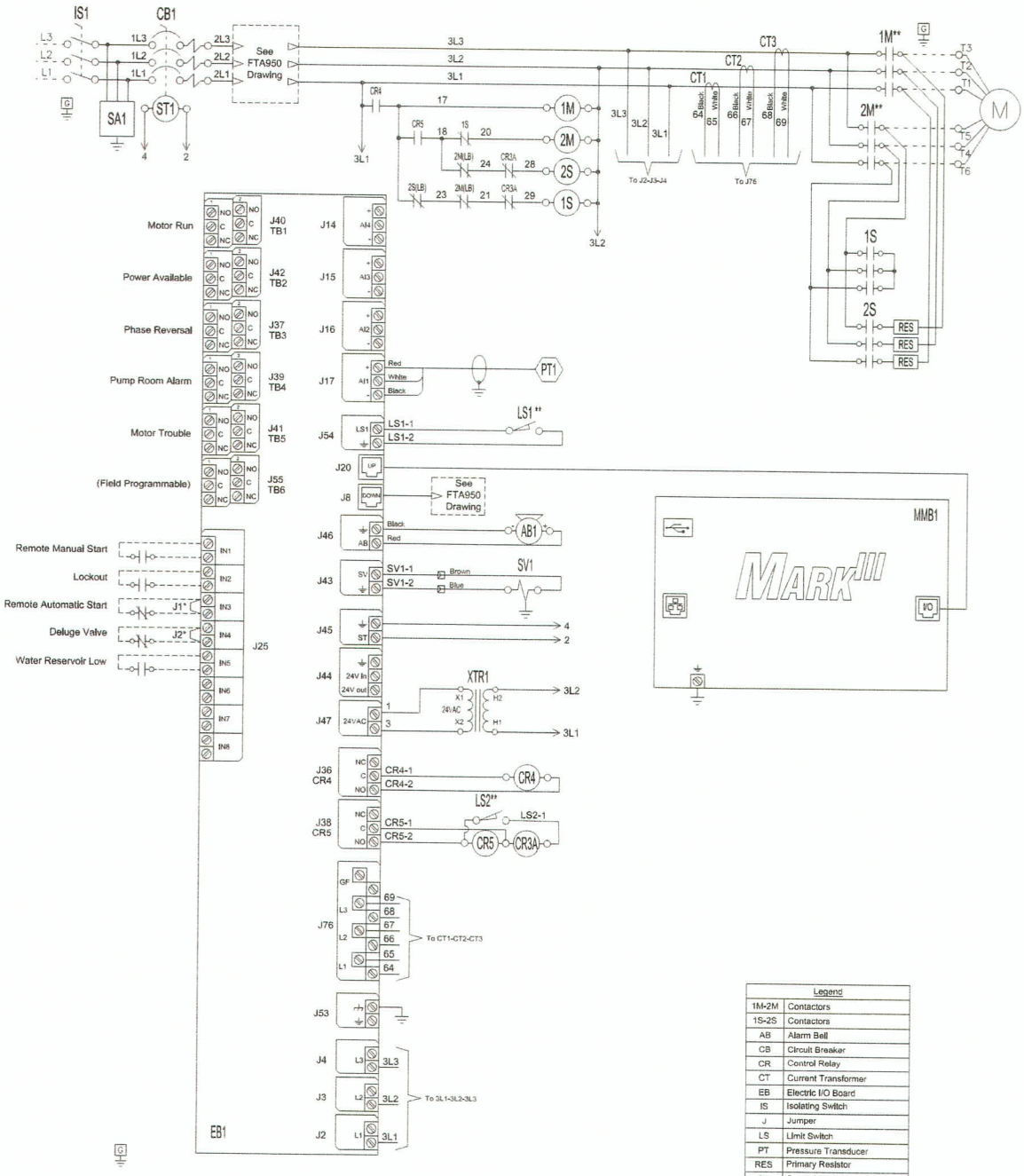
Terminals Wire Size:
24 - 12 AWG
0.5 Nm



Drawing for information only.
Manufacturer reserves the right to modify this drawing without notice.
Contact manufacturer for "As Built" drawing.

THIRD ANGLE PROJECTION	SIZE A	BY	DATE	Firetrol, Inc.	RELEASED		-	-	CIR	CIR	11-11-19
	DRAWN BY	CIR	11-10-19		REVISION DESCRIPTION		REV	ECN NO	BY	APP	DATE
	FINAL APPROVAL	CIR	11-10-19		FIELD CONNECTIONS	FTA950	DRAWING NUMBER FC950-65 CDL				
					POWER TRANSFER SWITCH FOR GENERATOR OR SECOND UTILITY POWER SOURCE		DWG REV -	ECN NO -	SHEET 1 OF 1		

MARK III Electric Fire Pump Controllers - Wye-Delta Closed Transition Starting With Power Transfer Switch



* Remove jumper to use this feature
** Contact closes when emergency start is in "ON" position

Legend	
1M-2M	Contactors
1S-2S	Contactors
AB	Alarm Bell
CB	Circuit Breaker
CR	Control Relay
CT	Current Transformer
EB	Electric I/O Board
IS	Isolating Switch
J	Jumper
LS	Limit Switch
PT	Pressure Transducer
RES	Primary Resistor
SA	Surge Arrester
ST	Shunt Trip
SV	Solenoid Valve
MMB	Mark III Main Board
XTR	Transformer

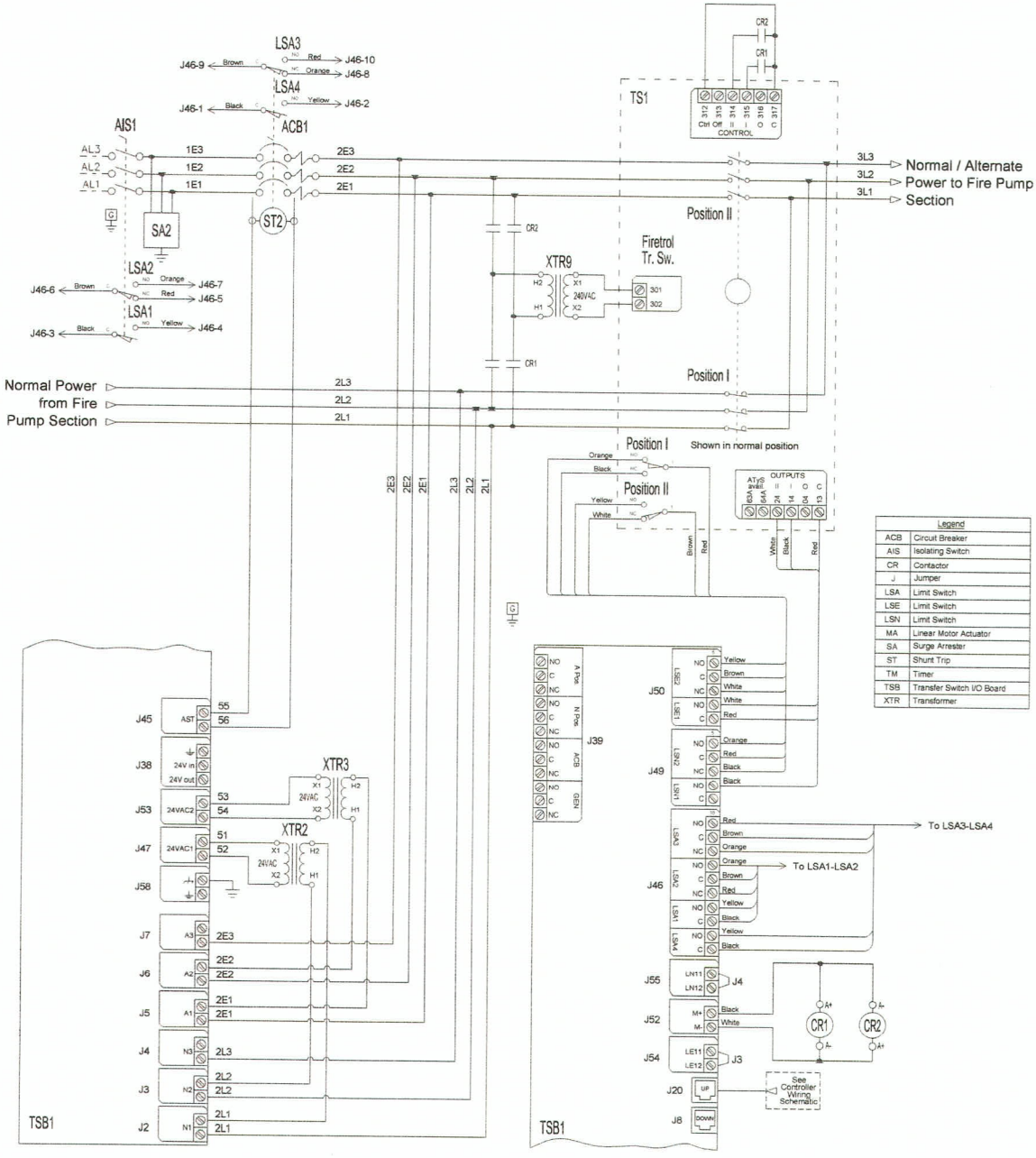
Drawing for information only.
Manufacturer reserves the right to modify this drawing without notice.
Contact manufacturer for "As Built" drawing.

THIRD ANGLE PROJECTION	SIZE B	BY	DATE	Firetrol, Inc.	REVISION DESCRIPTION		REV	ECN NO	BY	APP	DATE
	DRAWN BY	JMW	12-2-19	© Firetrol, Inc. Not for construction. Subject to change without notice.	WIRING SCHEMATIC	FTA1350 W/FTA950	DRAWING NUMBER WS1350-80				CDL
	FINAL APPROVAL	CIR	12-2-19		CLOSED TRANSITION WYE DELTA FIRE PUMP CONTROLLER WITH POWER TRANSFER SWITCH		DWG REV -	ECN NO -	SHEET 1 OF 1		

Wiring Schematic
380-600V

FTA950

Power Transfer Switch For Use With MARK III Electric Fire Pump Controllers



Legend	
ACB	Circuit Breaker
AIS	Isolating Switch
CR	Contactor
J	Jumper
LSA	Limit Switch
LSE	Limit Switch
LSN	Limit Switch
MA	Linear Motor Actuator
SA	Surge Arrester
ST	Shunt Trip
TM	Timer
TSB	Transfer Switch I/O Board
XTR	Transformer

Drawing for information only.
Manufacturer reserves the right to modify this drawing without notice.
Contact manufacturer for "As Built" drawing.

VOLTAGE/POWER TABLE	
LINE VOLTAGE	MOTOR HORSEPOWER
380-415	15-200
440-480	15-250
550-600	15-350

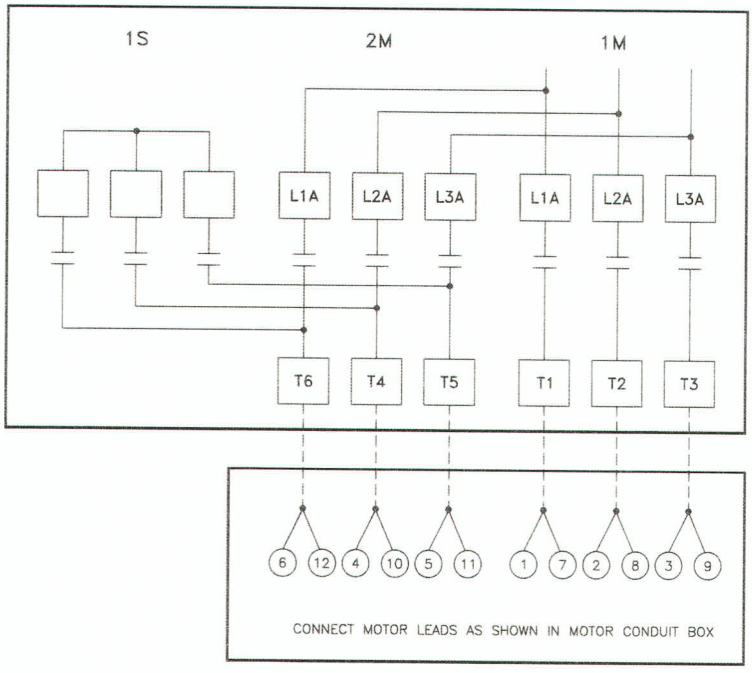
THIRD ANGLE PROJECTION	SIZE B	BY	DATE	Firetrol, Inc.	REVISION DESCRIPTION		REV	ECN NO	BY	APP	DATE
	DRAWN BY	CIR	12-9-19		WIRING SCHEMATIC	FTA950	DRAWING NUMBER WS950-60				CDL
	FINAL APPROVAL	CIR	12-9-19	© Firetrol, Inc. Not for construction. Subject to change without notice.	FIRE PUMP TRANSFER SWITCH FOR GEN SET AND SECOND UTILITY POWER SOURCE FOR 380-600V		DWG REV -	ECN NO -			SHEET 1 OF 1

Typical Motor Connection Diagram

Firetrol

FTA1300 / FTA1350

Mark III Electric Fire Pump Controllers - Wye-Delta Starting (12-Lead Motors)



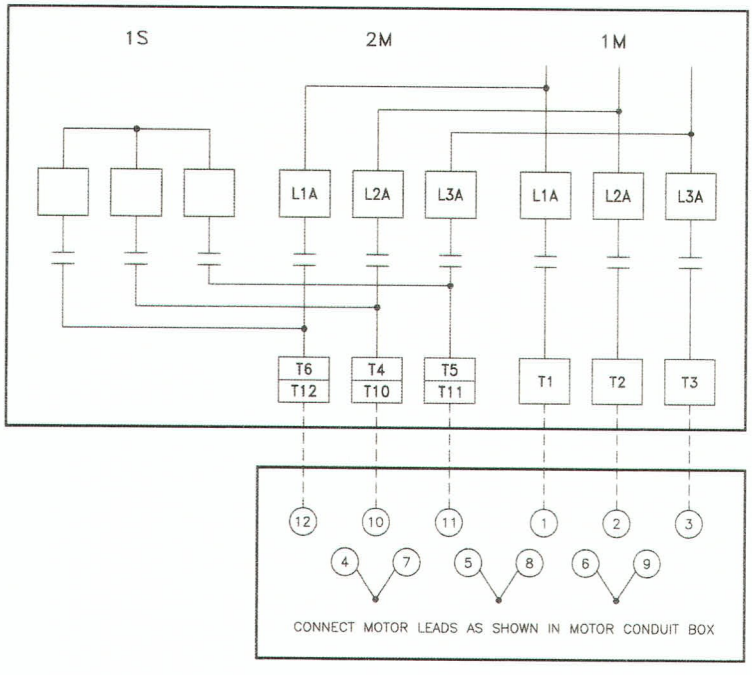
FOR SINGLE VOLTAGE 12-LEAD WYE-DELTA MOTORS

- OR -

FOR DUAL VOLTAGE WYE-DELTA MOTORS CONNECTED TO OPERATE ON THE ***LOWER*** OF THE TWO VOLTAGES 200-208 FOR 200/400V RATED MOTORS OR 220-240 FOR 230/460V RATED MOTORS.

SIX (6) WIRES REQUIRED BETWEEN MOTOR AND CONTROLLER.

IMPORTANT:
THIS DRAWING IS FOR GENERAL INFORMATION ONLY. REFER TO MOTOR CONNECTION DIAGRAM FOR SPECIFIC WIRING ARRANGEMENT.



FOR DUAL VOLTAGE WYE-DELTA MOTORS CONNECTED TO OPERATE ON THE ***HIGHER*** OF THE TWO VOLTAGES 440-480 FOR 230/460V RATED MOTORS OR 380-415 FOR 200/400V RATED MOTORS.

SIX (6) WIRES REQUIRED BETWEEN MOTOR AND CONTROLLER.

NOTES:

1. THREE (3) LEAD AND NINE (9) LEAD MOTORS ***CANNOT*** BE USED FOR WYE-DELTA STARTING.
2. TWELVE (12) LEAD PART WINDING MOTORS ***CANNOT*** BE USED FOR WYE-DELTA STARTING AT 240/230V.

REV	ECN NO	BY	APP	DATE
B	280820	JMW	TEF	09-12-19
A	-	TEF	TEF	11-22-00

REVISION DESCRIPTION
UPDATED TITLE BLOCK
ADDED SINGLE VOLTAGE, 12 LEAD, Y-D MOTORS

SIZE	BY	DATE
A		
DRAWN BY	JMW	09-12-95
FINAL APPROVAL	TEF	09-12-95

THIRD ANGLE PROJECTION

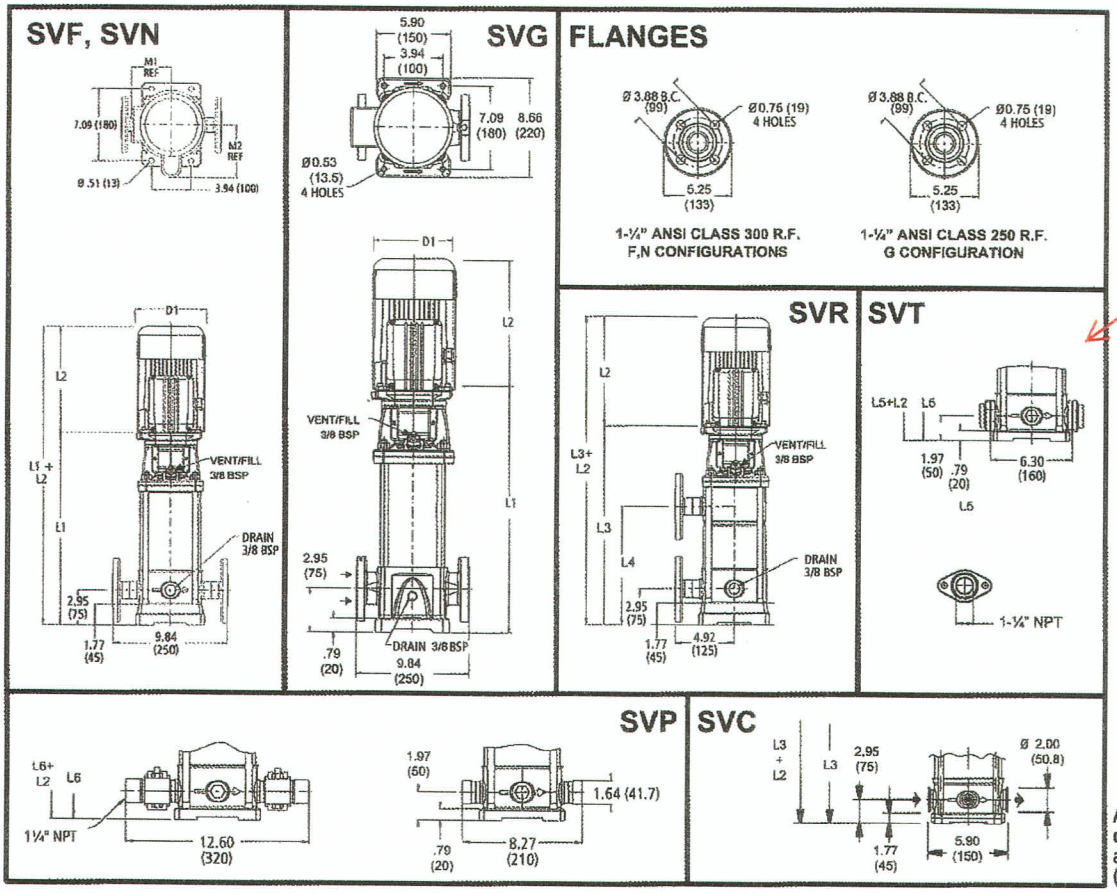
Firetrol, Inc.

MOTOR CONNECTIONS — FTA1300 / FTA1350

OPEN/CLOSED TRANSITION WYE-DELTA FIRE PUMP CONTROLLERS

DRAWING NUMBER NS1300-01

DWG REV B | ECN NO 280820 | SHEET 1 OF 1

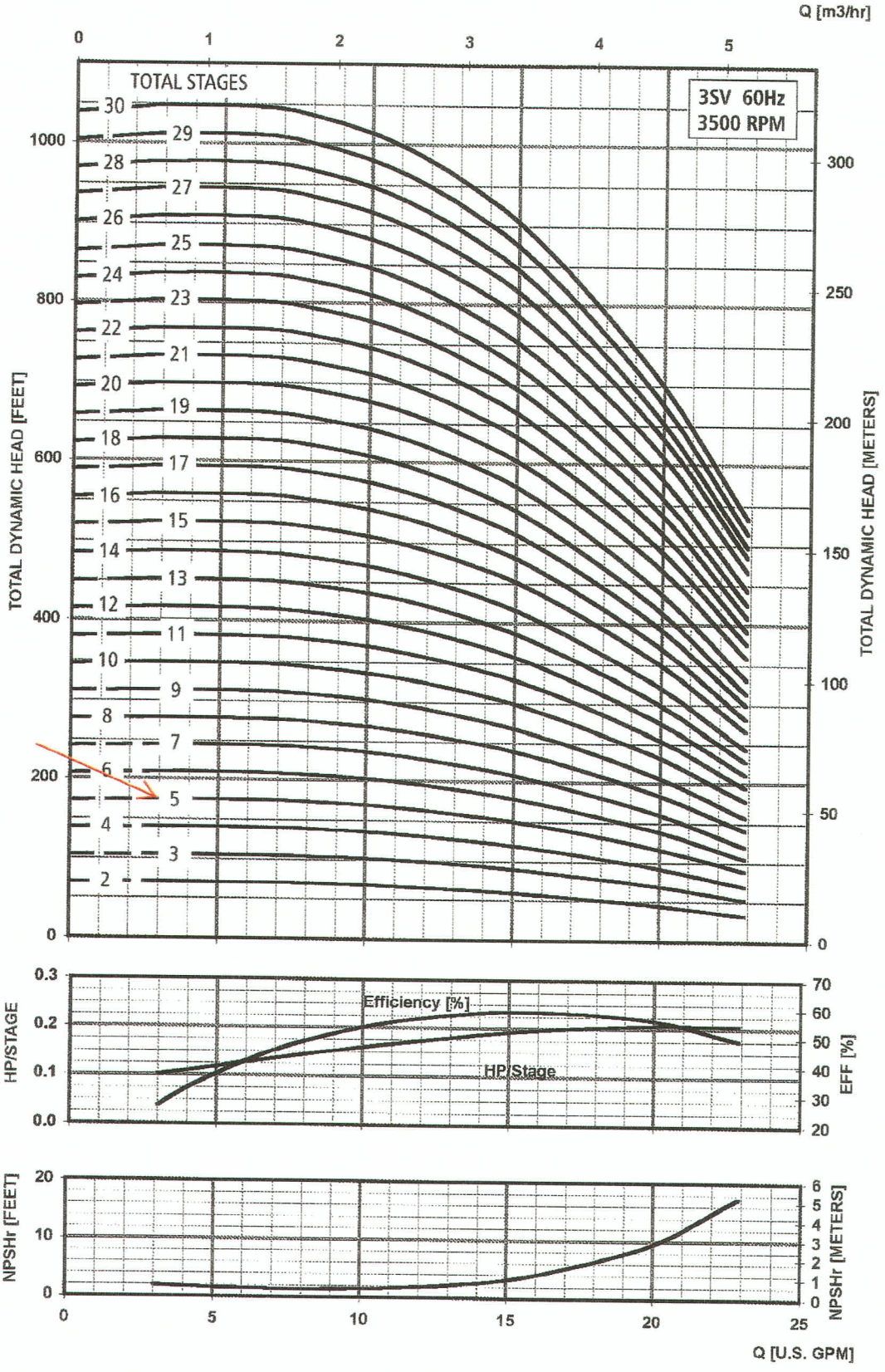


All dimensions are in inches (mm).

PUMP DIMENSIONS AND WEIGHTS - 3SV SERIES — 60Hz, 3500 RPM ODP/TEFC Enclosures

Pump Type Stages	Motor HP	Motor NEMA Frame ODP 1Ø	TEFC 1Ø	ODP 3Ø	TEFC 3Ø	Dimensions (in) L1	L2 ODP 1Ø	L2 TEFC 1Ø	L2 ODP 3Ø	L2 TEFC 3Ø	L3	L4	L5	L6	M (Ref.)	D1 (max.) ODP 1Ø	D1 TEFC 1Ø	D1 ODP 3Ø	D1 TEFC 3Ø	D2	Weight (lbs.) Pump Only	Motor ODP 1Ø	Motor TEFC 1Ø	Motor ODP 3Ø	Motor TEFC 3Ø	Pump/Motor ODP 1Ø	Pump/Motor TEFC 1Ø	Pump/Motor ODP 3Ø	Pump/Motor TEFC 3Ø
3SV-02	0.5					13.27	9.16	9.29	9.16	9.29	-	-	12.29	12.29	5.19	6.19	6.19	6.19	6.19	4.13	24	21	21	19	19	45	45	43	43
3SV-03						13.27	9.16	9.29	9.16	9.29	-	-	12.29	12.29	5.19	6.19	6.19	6.19	6.19	4.13	25	21	21	19	19	46	46	44	44
3SV-04	0.75					14.06	10.79	9.91	9.16	9.29	-	-	13.07	13.07	5.19	6.19	6.19	6.19	6.19	4.13	26	27	29	21	21	53	55	47	47
3SV-05	1					14.85	10.66	11.19	9.16	9.29	-	-	13.86	13.86	5.74	6.19	7.19	6.19	6.19	4.13	27	32	40	23	23	59	67	50	50
3SV-06						15.63	10.67	11.19	10.66	9.91	-	-	14.65	14.65	5.74	6.19	7.19	6.19	6.19	4.72	28	32	40	30	28	60	68	58	56
3SV-07	1.5					16.42	10.67	11.19	10.66	9.91	-	-	15.44	15.44	5.74	6.19	7.19	6.19	6.19	4.72	30	32	40	30	28	62	70	60	58
3SV-08						17.21	10.67	11.19	10.66	9.91	17.21	8.94	16.22	16.22	5.74	6.19	7.19	6.19	6.19	4.72	31	32	40	30	28	63	71	61	59
3SV-09						18.00	11.18	12.06	11.16	10.79	18.00	9.72	17.01	17.01	5.74	7.19	7.19	6.19	6.19	4.72	32	43	51	32	33	75	83	64	65
3SV-10	2					18.78	11.18	12.06	11.16	10.79	18.78	10.51	17.80	17.80	5.74	7.19	7.19	6.19	6.19	4.72	33	43	51	32	33	76	84	65	66
3SV-11						19.57	11.18	12.06	11.16	10.79	19.57	11.30	18.59	18.59	5.74	7.19	7.19	6.19	6.19	4.72	34	43	51	32	33	77	85	66	67
3SV-12						20.36	11.57	13.44	11.18	11.16	20.36	12.09	19.37	19.37	5.75	6.50	7.19	7.16	7.19	5.51	35	49	64	41	44	84	99	76	79
3SV-13						21.14	11.57	13.44	11.18	11.16	21.14	12.87	20.16	20.16	5.75	6.50	7.19	7.16	7.19	5.51	36	49	64	41	44	85	100	77	80
3SV-14	3					21.93	11.57	13.44	11.18	11.16	21.93	13.66	20.95	20.95	5.75	6.50	7.19	7.16	7.19	5.51	37	49	64	41	44	86	101	78	81
3SV-15						22.72	11.57	13.44	11.18	11.16	22.72	14.45	-	21.74	5.75	6.50	7.19	7.16	7.19	5.51	38	49	64	41	44	87	102	79	82
3SV-16						23.51	11.57	13.44	11.18	11.16	23.51	15.24	-	22.52	5.75	6.50	7.19	7.16	7.19	5.51	39	49	64	41	44	88	103	80	83
3SV-17						24.99	13.93	15.43	12.55	13.93	24.99	16.02	-	24.01	6.87	8.88	8.86	9.02	8.86	5.51	42	81	92	62	69	123	134	104	111
3SV-18						25.78	13.93	15.43	12.55	13.93	25.78	16.81	-	24.80	6.87	8.88	8.86	9.02	8.86	5.51	43	81	92	62	69	124	135	105	112
3SV-19						26.57	13.93	15.43	12.55	13.93	26.57	17.60	-	25.59	6.87	8.88	8.86	9.02	8.86	5.51	43	81	92	62	69	124	135	105	112
3SV-20						27.36	13.93	15.43	12.55	13.93	27.36	18.39	-	26.37	6.87	8.88	8.86	9.02	8.86	5.51	44	81	92	62	69	125	136	106	113
3SV-21						28.14	13.93	15.43	12.55	13.93	28.14	19.17	-	27.16	6.87	8.88	8.86	9.02	8.86	5.51	45	81	92	62	69	126	137	107	114
3SV-22	5	184TC		182TC	184TC	28.93	13.93	15.43	12.55	13.93	28.93	19.96	-	27.95	6.87	8.88	8.86	9.02	8.86	5.51	46	81	92	62	69	127	138	108	115
3SV-23						29.72	13.93	15.43	12.55	13.93	29.72	20.75	-	28.73	6.87	8.88	8.86	9.02	8.86	5.51	47	81	92	62	69	128	139	109	116
3SV-24						30.51	13.93	15.43	12.55	13.93	-	-	-	29.52	6.87	8.88	8.86	9.02	8.86	5.51	48	81	92	62	69	129	140	110	117
3SV-25						31.29	13.93	15.43	12.55	13.93	-	-	-	30.31	6.87	8.88	8.86	9.02	8.86	5.51	49	81	92	62	69	130	141	111	118
3SV-26						32.08	13.93	15.43	12.55	13.93	-	-	-	31.10	6.87	8.88	8.86	9.02	8.86	5.51	50	81	92	62	69	131	142	112	119
3SV-27						32.47	13.93	15.43	12.55	13.93	-	-	-	31.49	6.87	8.88	8.86	9.02	8.86	5.51	52	81	92	62	69	133	144	114	121
3SV-28						33.26	13.88	15.53	13.93	15.43	-	-	-	32.28	8.05	8.89	10.62	8.88	8.86	5.51	53	100	120	75	85	153	173	128	138
3SV-29	7.5	213TC		184TC		34.44	13.88	15.53	13.93	15.43	-	-	-	33.46	8.05	8.89	10.62	8.88	8.86	5.51	54	100	120	75	85	154	174	129	139
3SV-30						35.23	13.88	15.53	13.93	15.43	-	-	-	34.25	8.05	8.89	10.62	8.88	8.86	5.51	55	100	120	75	85	155	175	130	140

3SV Curve 3500 RPM

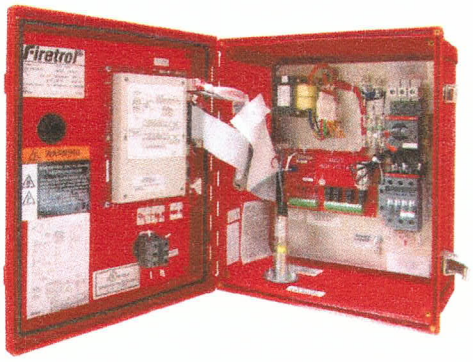


MINIMUM FLOW RATE: 3 GPM [.68 m³/hr]

Product Description

FTA550F

Limited Option Jockey^{XG} Pump Controllers



Description—Firetrol® FTA550F XG Jockey Pump Controllers are intended for use with fire pump systems. They are used for pressure maintenance in fire pump installations to prevent unnecessary operation of the main fire pump.

Approvals—Firetrol jockey pump controllers are listed by Underwriters' Laboratories, Inc., in accordance with UL508A, *Standard for Industrial Controls*, and CSA, *Standard for Industrial Control Equipment*. They are built to meet or exceed the requirements of the approving authorities as well as NEMA and the latest edition NFPA 70, *National Electrical Code*.

Standard Features—The following are included as standard with each controller:

- NEMA Type 2/12 (IEC IP22/IP54) Polycarbonate enclosure (UL50E Construction)
- Horsepower rated motor circuit protector and starting contactor
- Suitable for use as service equipment
- HAND-OFF-AUTO selector switch
- Minimum run timer
- On-Delay timer
- Pump Restart Timer
- Control circuit transformer with 24VAC secondary
- 0-300 psi (0-20.7 bar) stainless steel solid state pressure transducer
- Overpressure indication
- Low Pressure indication
- Failed to start indication
- Main switch not in "Auto" alarm
- Pressure recording
- Event log (3000 events stored in controller memory)
- Data log (including cycle counter)
- Door mounted display/user interface featuring a 128 x 64 pixel backlit LCD Graphical Display, Membrane Type User Controller Push-buttons and LED indication for:
  - Power ON
  - Pump Running
  - Alarm
- 2 lines of user selectable display information

NOTE: FTA550F XG Jockey Pump Controllers are only available in the voltage/horsepower combinations shown below and with the options shown on the reverse side. For other combinations and options, see documentation for FTA550E series XG Jockey Pump Controllers.

VOLTAGE 3-PHASE (50/60 Hertz) Rating		MAX HP (MCP)	Short Circuit Current
-H	200-208	7.5	30kA
-A	220-240	1030kA	
-F	380-415V-WYE	15	30kA
-B	440-480V-WYE	20	30kA
-C	550-600V-WYE	20	18kA

VOLTAGE 1-PHASE (50/60 Hertz) Rating		MAX HP (MCP)	Short Circuit Current
-D	110-120 Volts	2	5kA
-T	200-208 Volts	3	5kA
-E	220-240 Volts	5	5kA

NOTE: Firetrol Brand Jockey Pump controllers DO NOT CONTAIN MERCURY filled pressure switches.

For Model # Information and Options & Modifications see Publication SD550F-01

Firetrol, Inc.
3412 Apex Peakway
Apex, North Carolina 27502
P +1 919 460 5200
F +1 919 460 5250
www.firetrol.com

Publication PD550F-01 Rev. G

Firetrol Limited Option Jockey^{XG} Pump Controller

FTA550F - Full Voltage Starting

Specifications

1.0 Main Fire Pump Controller

The auxiliary jockey pump controller, if required and specified on the plans and specifications, shall be factory assembled, wired, and tested and specifically designed for this type of service. This controller shall be of the same manufacturer as the main fire pump controller.

1.1 Standards, Listings & Approvals

The controller shall conform to all the requirements of the latest editions of:
NFPA 70, *National Electrical Code*.

The controller shall be listed by:
Underwriters Laboratories, Inc., in accordance with UL508A, *Standard for Industrial Controls*
Canadian Standards Association CSA-C22.2, *Standard for Industrial Control Equipment* (cUL)

1.2 Enclosure

The controller components shall be housed in a NEMA Type 2/12 (IEC IP22/IP54) polycarbonate, wall mounted enclosure (UL50E Construction).

1.3 Withstand Ratings (Short Circuit Current Ratings)

The jockey shall have standard short circuit current ratings of:
30kA @ 480 Volts Max. (3-Phase)
18kA @ 600 Volts (3-Phase)
5kA @ 240 Volts Max. (1-Phase)

1.4 Construction

The jockey pump controller shall be full voltage starting, rated for wye-connected power systems above 240V. The controller shall incorporate a horsepower rated manual circuit protector and starting contactor, control circuit transformer with 24VAC secondary and 200-600V multi-tap primary, main disconnect switch, HAND-OFF-AUTOMATIC selector switch and a 0-300 psi (0-20.7 bar) stainless steel solid state pressure transducer.

1.5 Operator Interface

The fire pump controller shall feature an operator interface with user keypad. The interface shall monitor and display motor operating conditions, including all alarms, events, and pressure conditions. All alarms, events, and pressure conditions shall be displayed with a time and date stamp. The display shall be a 128x64 Backlit LCD capable of customized graphics. The display and interface shall be NEMA rated for Type 2, 3R, 4, 4X, and 12 protection and shall be fully accessible without opening the controller door. The display and user interface shall utilize multiple levels of password protection for system security. A minimum of 3 password levels shall be provided.

1.6 Digital Status/Alarm Messages

The digital display shall indicate text messages for the status and alarm conditions of:

- Pump Running
- Low System Pressure
- Automatic Start
- Main Switch Position
- Sequential Start Time
- Pump Restart Timer
- System Overpressure
- User Selectable #2[1]
- Minimum Run Time
- Fail to Start
- User Selectable #1[1]

[1] User may choose from the following to be shown on main display (stop pressure setting, start pressure setting, cycles/period, cycles/month, cycles/day, cycles/hour, total cycle count, pump total run time)

The Sequential Start Timer, Minimum Run Timer/Off Delay Timer and Pump Restart Timer shall be displayed as numeric values reflecting the value of the remaining time.

1.7 LED Visual Indicators

LED indicators, visible with the door closed, shall indicate:

- Power ON
- Alarm
- Pump Running

1.8 Event Recording

Memory - The controller shall record all operational and alarm events to system memory. All events shall be time and date stamped and include an index number. The system memory shall have the capability of storing 3000 events and allow the user access to the event log via the user interface. The user shall have the ability to scroll through the stored messages in groups of 1 or 10.

1.9 Serial Communications

The controller shall feature a RS485 serial communications port for use with 2 or 4 wire Modbus RTU communications.

2.0 Solid State Pressure Transducer

The controller shall be supplied with a solid state pressure transducer with a range of 0-300 psi (0-20.7 bar) ±1 psi. The solid state pressure switch shall be used for both display of the system pressure and control of the fire pump controller. Systems using analog pressure devices or mercury switches for operational control will not be accepted.
The START, STOP and SYSTEM PRESSURE shall be digitally displayed and adjustable through the user interface. The pressure transducer shall be mounted inside the controller to prevent accidental damage. The pressure transducer shall be directly pipe mounted to a bulkhead pipe coupling without any other supporting members. Field connections shall be made externally at the controller coupling to prevent distortion of the pressure switch element and mechanism.

2.1 Seismic Certification

The controller shall be certified to meet or exceed the requirements of the 2012 International Building Code and the 2013 California Building Code for Importance Factor 1.5 Electrical Equipment for Sds equal to 1.88 or less severe seismic regions. Qualifications shall be based upon successful tri-axial shake-table testing in accordance with ICC-ES AC-156. Certification without testing shall be unacceptable. Controller shall be clearly labeled as rated for installation in seismic areas and a Certificate of Conformance shall be provided with the controller.

2.2 Controller Operation

A digitally set On Delay (Sequential Start) timer shall be provided as standard. Upon a call to start, the user interface shall display a message indicating the remaining time value of the On Delay timer.
The controller shall include a Minimum Run Timer to allow the motor to run for a set period of timer after starting. The timer shall be programmable through the user interface.

A pump restart delay timer shall be provided to allow the residual voltage of the motor to decay prior to restarting the motor and to prevent severe short cycling of the motor. The timer shall be programmable through the user interface.
A Lamp Test feature shall be included. The user interface shall also have the ability to display the status of the system inputs and outputs.
An Audible Test feature shall be included to test the operation of the audible alarm device (if supplied).
The disconnect switch shall be mechanically interlocked so that the enclosure door cannot be opened with the handle in the ON position except by a hidden tool operated defeater mechanism. The disconnect switch shall be capable of being padlocked in the OFF position for installation and maintenance safety.

2.3 Manufacturer

The controller shall be a Firetrol brand.

3412 Apex Peakway
Apex, North Carolina 27502
P +1 919 460 5200
F +1 919 460 5250
www.firetrol.com

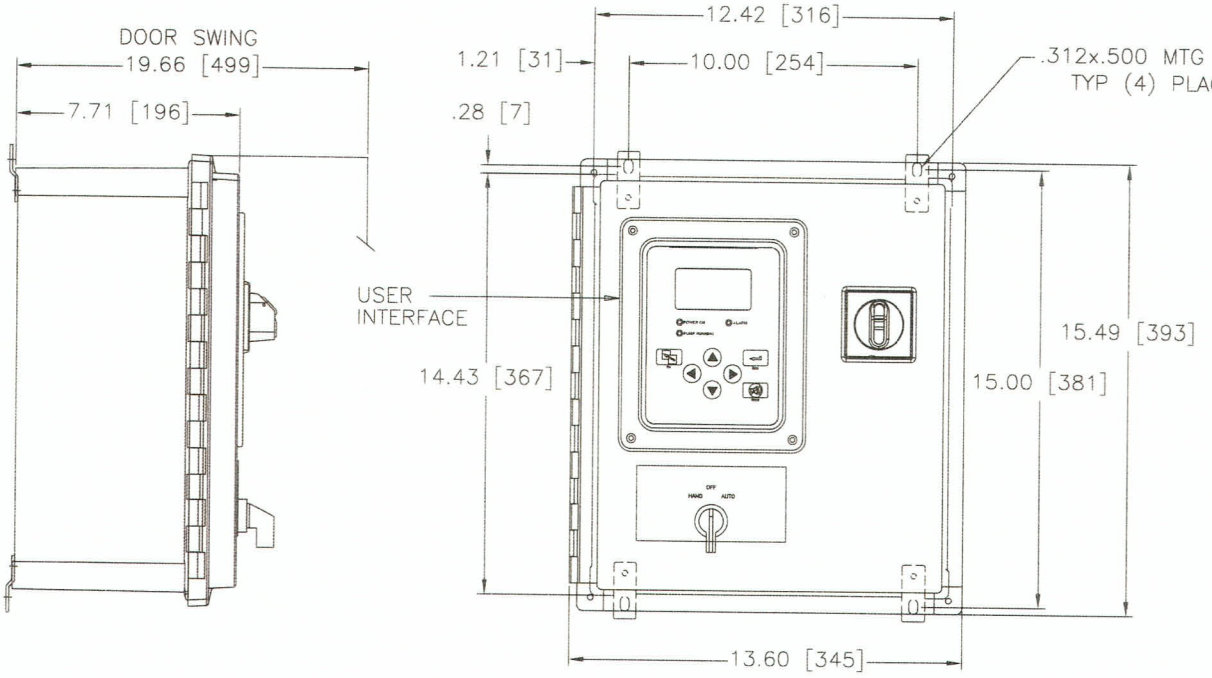
Firetrol™, Inc.

Publication SP550F-01 Rev. F

Dimensions and Shipping Weight

FTA550F

Limited Option Jockey$_{XG}$ Pump Controllers



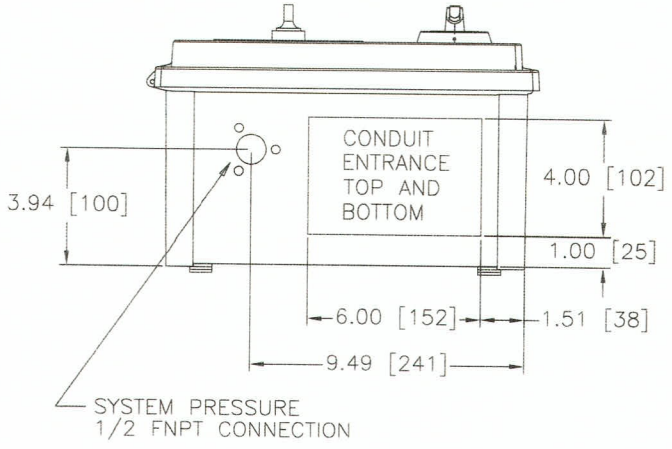
NOTE

CONDUIT ENTRANCE TOP AND BOTTOM ONLY DO NOT ENTER FROM SIDES.

CAUTION

BONDING BETWEEN CONDUIT CONNECTIONS IS NOT AUTOMATIC AND MUST BE PROVIDED AS PART OF THE INSTALLATION.

DIMENSIONS SHOWN ON THIS DRAWING ARE APPLICABLE FOR NEMA TYPES 2/3R/4/4X/12



SHIPPING WEIGHT
APPROX. 15 [6.8]

ALL DIMENSIONS – INCHES [MM]
SHIPPING WEIGHT – POUNDS [KG]

MAXIMUM MOTOR HORSEPOWER				
200–208V	220–240V	380–415V	440–480V	550–600V
7 1/2	10	15	20	20

SIZE A	BY	DATE	
DRAWN BY	TEF	02-29-12	
FINAL APPROVAL	TEF	02-29-12	

THIRD ANGLE PROJECTION

Firetrol, Inc.

REV	ECN NO	BY	APP	DATE
A	280587	JMW	TEF	08-28-19

UPDATED TITLE BLOCK

REVISION DESCRIPTION

DIMENSIONS & SHIPPING WEIGHT | FTA550F

JOCKEY XG PUMP CONTROLLER (POLYCARBONATE)

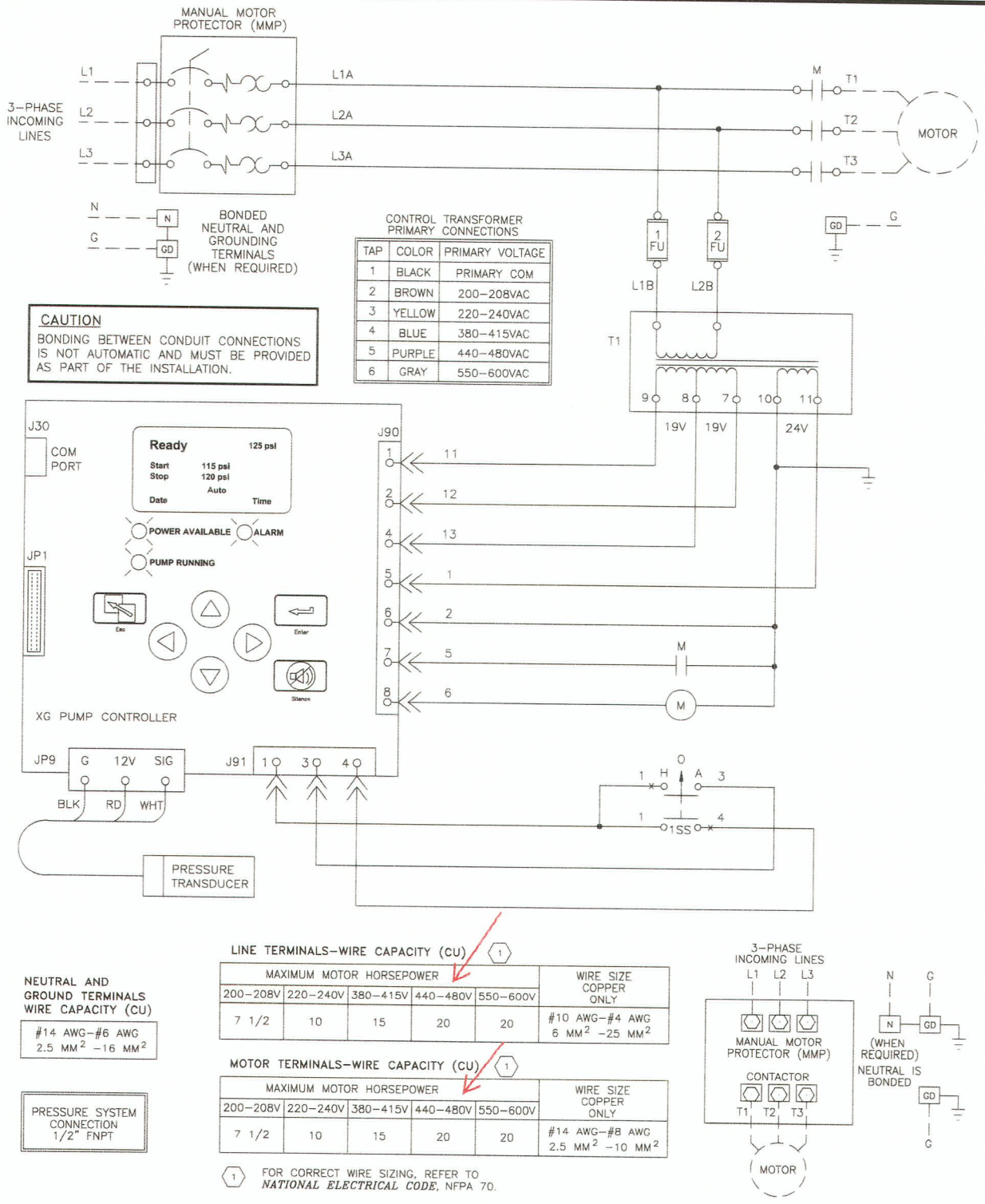
DRAWING NUMBER DD550-01

DWG REV A | ECN NO 280587 | SHEET 1 OF 1

Wiring Schematic

FTA550F

Limited Option Jockey^{XG} Pump Controllers with MMP



THIRD ANGLE PROJECTION	SIZE A	BY	DATE
	DRAWN BY	TEF	02-27-12
	FINAL APPROVAL	TEF	02-29-12

Firetrol, Inc.

WIRING SCHEMATIC

REVISION DESCRIPTION

WIRING SCHEMATIC | FTA550F

JOCKEY XG PUMP CONTROLLER WITH MANUAL MOTOR PROTECTOR

REV	ECN NO	BY	APP	DATE
A	280587	JMW	TEF	08-28-19

DRAWING NUMBER WS550-01

DWG REV A | ECN NO 280587 | SHEET 1 OF 1