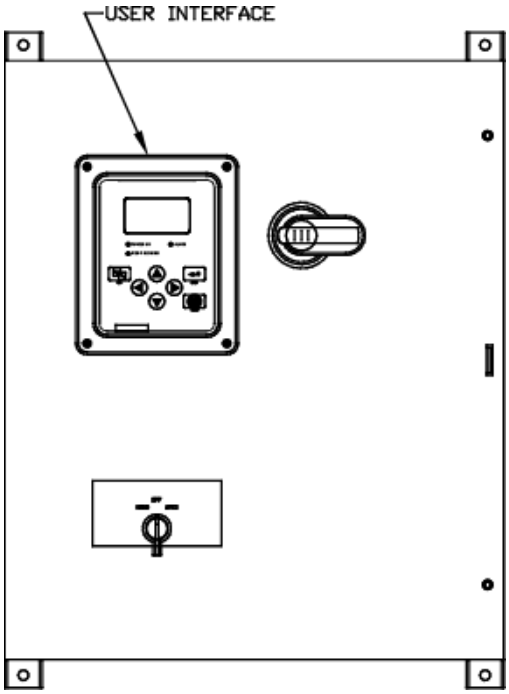
Jockey$_{XG}$ Pump Controllers

Project Information



(DRAWINGS INCLUDED IN THIS PACKAGE ARE FOR STANDARD CONTROLLERS. ACTUAL "AS BUILT" DRAWINGS MAY DIFFER FROM THOSE SEEN HERE).

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Publication SBP550E Rev. H

Firetrol Jockey$_{XG}$ Pump Controller

FTA550E - 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 (IEC IP22) painted steel, wall mounted enclosure (UL50E Construction).

1.3 Withstand Ratings (Short Circuit Current Ratings w/Circuit Breaker)

The jockey shall have standard short circuit current ratings of:
65kA @ 480 Volts Max. (3-Phase)
14kA @ 600 Volts (3-Phase)
5kA @ 240 Volts Max. (1-Phase)

1.4 Construction

The jockey pump controller shall be full voltage starting. The controller shall incorporate a circuit breaker and horsepower rated motor starter, 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 Data Logging

The digital display shall monitor the system and log the following data:

- Motor Calls/Starts
- Pump Total Run Time
- Pump Last Run Time
- Total Controller Pwr On Time
- Last Pump Start
- Min/Max System Pressure
- Last Phase Fail/Reverse
- Cycle Counts

1.9 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.

2.0 Serial Communications

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

2.1 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.

2.2 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.

2.3 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.

2.4 Manufacturer

The controller shall be a Firetrol brand.

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Firetrol™, Inc.

Publication SP550E-01 Rev. G

Product Description

FTA550E

Jockey$_{XG}$ Pump Controllers

Description—Firetrol® FTA550E Jockey$_{XG}$ 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 (IEC IP22) Painted Steel Enclosure
- Circuit Breaker
- Horsepower rated motor starter
- 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 (0-21 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: FTA550E XG Jockey Pump Controllers are available as standard in the voltage/horsepower combinations shown below. For other combinations and options, please consult your Firetrol representative or the factory.

VOLTAGE 3-PHASE (50/60 Hertz) Rating		MAX HP	Short Circuit Current
-H	200 - 208V	25	65kA
-A	220 - 240V	30	65kA
-F	380 - 415V	40	65kA
-B	440 - 480V	50	65kA
-C	550 - 600V	50	14kA

VOLTAGE 1-PHASE* (50/60 Hertz) Rating		MAX HP	Short Circuit Current
-D	110-120V	5	5kA
-T	200-208V	15	5kA
-E	220-240V	15	5kA

* Single phase units supplied standard with fusible disconnect switch and fuses

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

For Model # Information and Options & Modifications see Publication SD550E-01

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Publication PD550E-01 Rev. H

Model Number Selection Guide

FTA550E

Jockey^{XG} Pump Controllers

FTA550E JOCKEY^{XG} PUMP CONTROLLERS

FTA550E-A A _ _ _ _ - _ _ (Example: FTA550E-AA015B-T-BY)

FTA NUMBER
FTA550E

TIMER OPTION
-A With Programmable Running Period Timer

MOTOR CURRENT PROTECTION
☐ -A Circuit Breaker
Suitable for Use as Service Equiment
Short Circuit Current Rating
200-480V - 65kA
550-600V - 14kA
○ -F Fusible Disconnect Switch w/ Fuses
Suitable for Use as Service Equiment
Short Circuit Current Rating
200-600V - 100kA (3-Phase)
110-240V - 5kA (1-Phase)

HORSEPOWER (KW)

☐ 014 - 1/4 HP (.18)	○ 004 - 4 HP (3)
○ 013 - 1/3 HP (.23)	○ 005 - 5 HP (3.7)
○ 012 - 1/2 HP (.37)	○ 006 - 5 1/2 HP(4)
○ 034 - 3/4 HP (.56)	○ 007 - 7 1/2 HP (5.5)
○ 001 - 1 HP (.75)	○ 010 - 10 HP (7.5)
○ 011 - 1 1/2 HP (1.1)	○ 015 - 15 HP (11)
○ 002 - 2 HP (1.5)	○ 020 - 20 HP (15)
○ 003 - 3 HP (2.2)	○ 025 - 25 HP (19)
	○ 030 - 30 HP (22)
	○ 040 - 40 HP (29)
	○ 050 - 50 HP (37)

(See Voltage Selection for Maximum HP/Voltage Combinations)

OPTIONS & MODIFICATIONS
(See below)

VOLTAGE 3-PHASE (50/60 Hertz)		MAX HP
☐ -H	200 - 208V	25
○ -A	220 - 240V	30
○ -F	380 - 415V WYE	40
○ -B	440 - 480V WYE	50
○ -C	550 - 600V WYE	50
VOLTAGE 1-PHASE * (50/60 Hertz)		**MAX HP**
○ -D	110-120 Volts	5
○ -T	200-208 Volts	15
○ -E	220-240 Volts	15

* Single phase units supplied standard with Fusible Disconnect Switch & Fuses
(Select Model FTA550E-AF....)

NOTE: For requirements not listed here please contact a Firetrol representative or the factory.

Options and Modifications

PRESSURE TRANSDUCERS

Option	Description
☐ ---	Wetted Parts Including Pressure Sensor, 300 PSI (21 bar), Fresh Water
○ -B	Wetted Parts Including Pressure Sensor, 600 PSI (42 bar), Fresh Water
○ -C	Wetted Parts Including Pressure Sensor, 300 PSI (21 bar), Sea Water
○ -D	Wetted Parts Including Pressure Sensor, 600 PSI (42 bar), Sea Water

SPECIAL ENCLOSURES

Option	Description
☐ ---	Enclosure, NEMA Type 2 (IEC IP22), Painted Steel (Standard)
○ -E	Enclosure, NEMA Type 4 (IEC IP66), Painted Steel
○ -F	Enclosure, NEMA Type 4X (IEC IP66), #304 Stainless Steel, Brushed Finish
○ -FD	Enclosure, NEMA Type 4X (IEC IP66), #316 Stainless Steel, Brushed Finish
○ -FDB	Enclosure, NEMA Type 4X (IEC IP66), #316 Stainless Steel, Seam Welded, Brushed Finish
○ -FDP	Enclosure, NEMA Type 4X (IEC IP66), #316 Stainless Steel, Painted Finish
○ -FXP	Enclosure, NEMA Type 4X (IEC IP66), #304 Stainless Steel, Painted Finish
○ -G	Enclosure, NEMA Type 12 (IEC IP54), Painted Steel
○ -T	Enclosure, NEMA Type 3R (IEC IP24), Painted Steel

ANTI-CONDENSATION SPACE HEATERS (power source by others)

Option	Description
☐ None	
○ -H	Space Heater, 120V Externally Powered with Circuit Breaker
○ -J	Space Heater, 120V Externally Powered with Circuit Breaker & Thermostat
○ -K	Space Heater, 120V Externally Powered with Circuit Breaker & Humidistat
○ -L	Space Heater, 240V Externally Powered with Circuit Breaker
○ -M	Space Heater, 240V Externally Powered with Circuit Breaker & Thermostat
○ -N	Space Heater, 240V Externally Powered with Circuit Breaker & Humidistat

HIGHER SHORT CIRCUIT CURRENT RATING

Option	Description
☐ AF	Fusible Disconnect Switch with Fuses 200-600/3-100kA | 110-240/1-5kA

ALARMS

Option	Description
☐ -AC	Alarm Output Contacts, Pump Operating (2 Sets)
☐ -AG	Alarm, Audible/Visible, Reservoir Low
☐ -AM	Alarm Output Contacts, Fail To Start
☐ -AW	Alarm Output Contacts, Reservoir Low (Requires Option -AG)
☐ -BW	Alarm Output Contacts, Phase Failure/Phase Reversal
☐ -BY	Alarm Output Contacts, Pump Overload
☐ -CPL	Alarm Output Contacts, Overpressure
☐ -EF	Alarm Output Contacts, Main Switch Not In Auto (1 set)
☐ -HV	Alarm, Audible
☐ -KH	Alarm Output Contacts, Common Alarm
☐ -PE	Alarm Output Contacts, Low System Pressure

MISCELLANEOUS

Option	Description
☐ -AST	Input Terminals, Automatic Start
☐ -NZ	Input Terminals, Shutdown Interlock
☐ -S	Tropicalization
☐ -SEI	Marking, Seismic Certified
☐ -ZPA	Scheduled Service Message
☐ -ZPJ	Data Port, Serial Modbus RTU Over 2-Wire or 4-Wire RS485

*Export Packaging available for additional cost
NOTE: For requirements not listed here, please contact your Firetrol representative or the factory.

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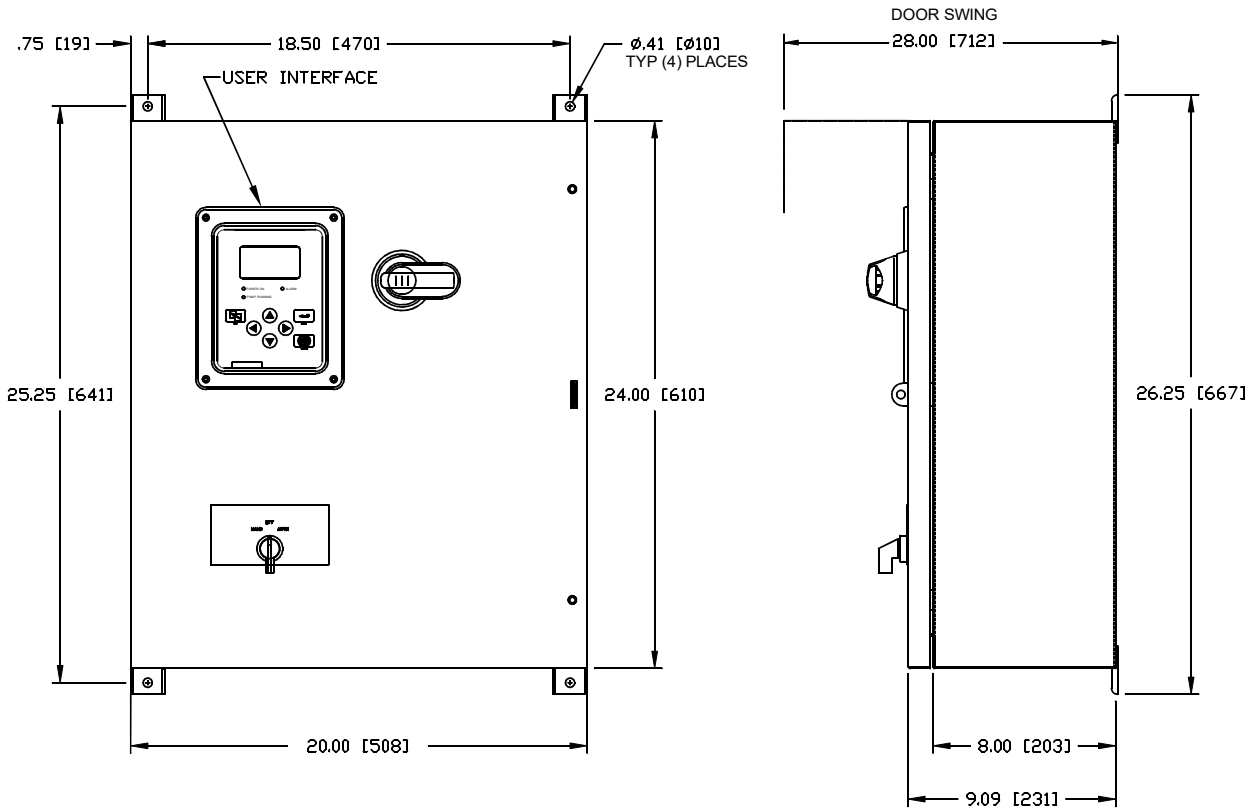
Publication SD550E-01 Rev. J

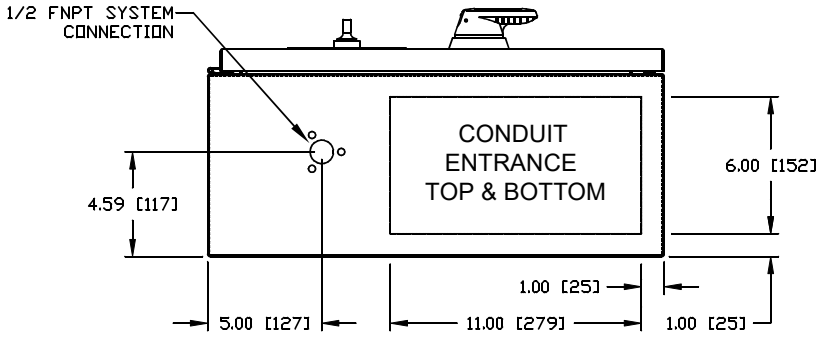
Dimensions and Shipping Weight

Firetrol

Jockey XG Pump Controllers

FTA550E





SHIPPING WEIGHT
APPROX. 45 [20.4]

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

NOTES:

FOR ADDITIONAL HORSEPOWER RATINGS CONSULT FACTORY.

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

DISCONNECT TYPE	MAXIMUM MOTOR HORSEPOWER				
	200-208V	220-240V	380-415V	440-480V	550-600V
CIRCUIT BREAKER OR FUSIBLE DISCONNECT	25	30	40	50	50

REVISION DESCRIPTION	REV	ECN NO	BY	APP	DATE
UPDATED ENCLOSURE DIMENSIONS	C	-	WH	WH	11/20/20
UPDATED ENCLOSURE MOUNTING	B	-	WH	WH	08/05/20
UPDATED TITLE BLOCK	A	280587	JMW	TEF	08-28-19

	SIZE	BY	DATE
THIRD ANGLE PROJECTION	A		
	DRAWN BY	CIR	4/25/12
	FINAL APPROVAL	TEF	4/25/12

Firetrol, Inc.

DIMENSIONS AND SHIPPING WEIGHT — FTA550E

FTA550E JOCKEY PUMP CONTROLLER

DRAWING NUMBER DD550-05

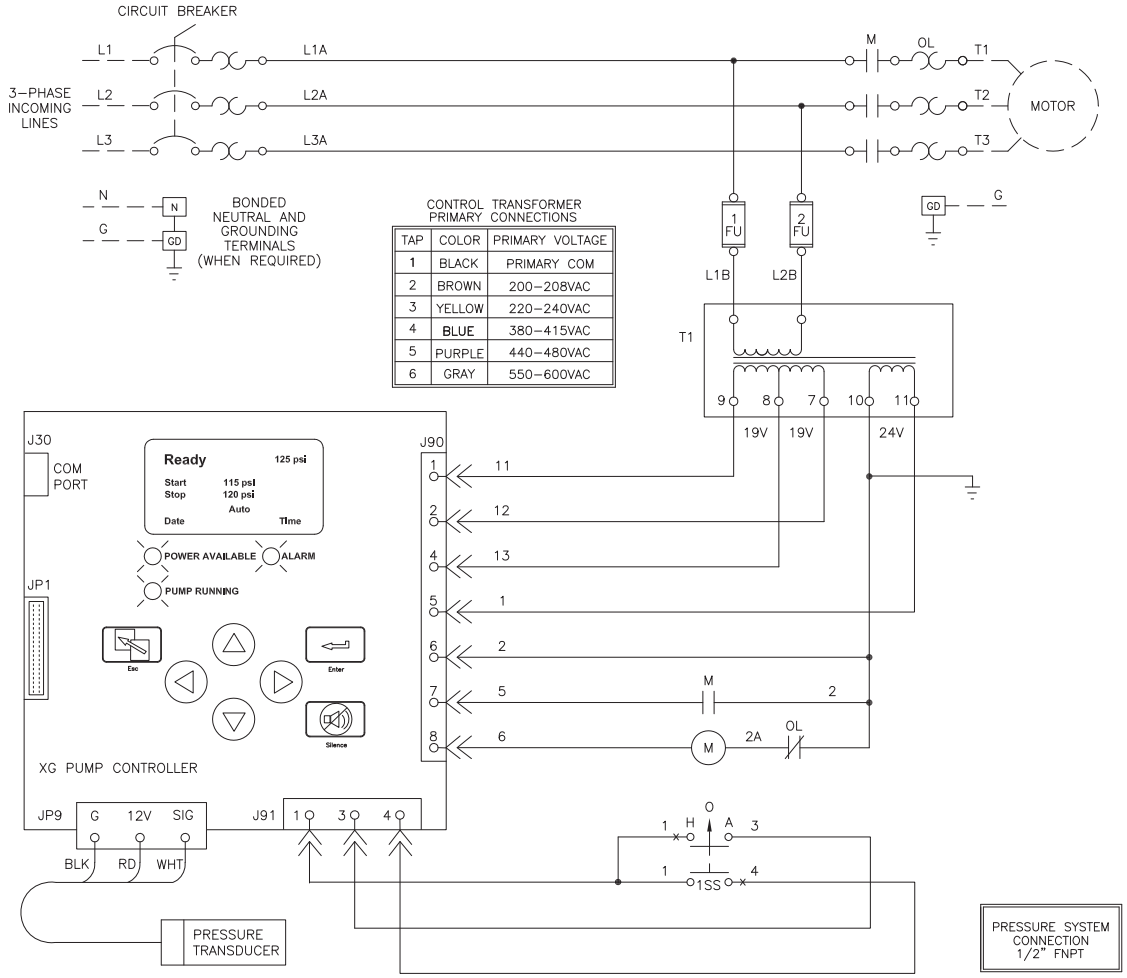
DWG REV C | ECN NO 280587 | SHEET 1 OF 1

Wiring Schematic

FTA550E

Firetrol

Jockey^{XG} Pump Controllers



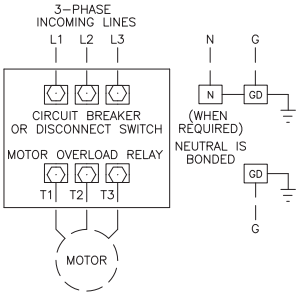
CONTROL TRANSFORMER PRIMARY CONNECTIONS

TAP	COLOR	PRIMARY VOLTAGE
1	BLACK	PRIMARY COM
2	BROWN	200–208VAC
3	YELLOW	220–240VAC
4	BLUE	380–415VAC
5	PURPLE	440–480VAC
6	GRAY	550–600VAC

FOR ADDITIONAL OPTIONS AND MODIFICATIONS, REFER TO DRAWING WS550–06

LINE TERMINALS–WIRE CAPACITY AND QUANTITY (CU) (1)
–FUSIBLE DISCONNECT OPTION

MAXIMUM MOTOR HORSEPOWER					WIRE SIZE (CU) PER PHASE	WIRE SIZE (CU) NEUTRAL AND GROUND TERMINALS
200–208V	220–240V	380–415V	440–480V	550–600V		
5	7 1/2	10	15	20	(1) #14 AWG–#6 AWG (1) 2 MM^2–13 MM^2	(1) #14 AWG–#6 AWG (1) 2.5 MM^2–16 MM^2
15	15	25	30	50	(1) #10 AWG–#6 AWG (1) 6 MM^2–16 MM^2	(1) #14 AWG–#6 AWG (1) 2.5 MM^2–16 MM^2
25	30	40	50	– –	(1) #12 AWG–#1 AWG (1) 16 MM^2–42 MM^2	(2) #14 AWG–#1/0 AWG (2) 2.5 MM^2–50 MM^2



MOTOR TERMINALS–WIRE CAPACITY AND QUANTITY (CU) (1)

MAXIMUM MOTOR HORSEPOWER					WIRE SIZE (CU) PER PHASE
200–208V	220–240V	380–415V	440–480V	550–600V	
3	5	7.5	10	10	(1) #14 AWG–#10 AWG (1) 2.5 MM^2– 6 MM^2
7.5	10	15	20	25	(1) #14 AWG–#8 AWG (1) 2.5 MM^2–10 MM^2
20	20	30	40	50	(1) #14 AWG–#2 AWG (1) 2.5 MM^2–35 MM^2
25	30	40	50	–	(1) #10 AWG–#1 AWG (1) 4 MM^2–42 MM^2

LINE TERMINALS–WIRE CAPACITY AND QUANTITY (CU) (1)
–CIRCUIT BREAKER OPTION

MAXIMUM MOTOR HORSEPOWER					WIRE SIZE (CU) PER PHASE
200–208V	220–240V	380–415V	440–480V	550–600V	
25	30	40	50	50	(1) #14 AWG–#1 AWG (1) 2.5 MM^2– 42 MM^2

(1) FOR CORRECT WIRE SIZING, REFER TO *NATIONAL ELECTRICAL CODE*, NFPA 70.

REVISION DESCRIPTION	REV	ECN NO	BY	APP	DATE
UPDATED TITLE BLOCK	B	280587	JMW	TEF	08-28-19
UPDATE FOR SCHNEIDER COMPONENTS	A	277127	TDC	TDC	02-08-19

THIRD ANGLE PROJECTION

	SIZE	BY	DATE
DRAWN BY	A	TEF	05-14-12
FINAL APPROVAL		TEF	05-14-12

Firetrol, Inc.

WIRING SCHEMATIC — FTA550E

JOCKEY XG PUMP CONTROLLER

DRAWING NUMBER WS550-05

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

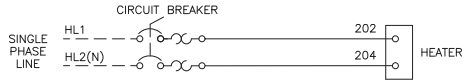
Wiring Schematic
Options & Modifications

Firetrol

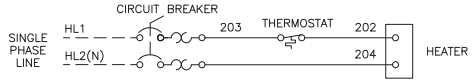
FTA550E

Jockey^{XG} Pump Controllers

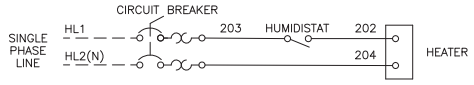
☐ MODIFICATION H – SPACE HEATER, 110–120VAC
☐ MODIFICATION L – SPACE HEATER, 220–240VAC



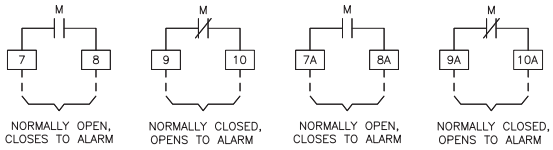
☐ MODIFICATION J – SPACE HEATER, 110–120VAC (WITH THERMOSTAT)
☐ MODIFICATION M – SPACE HEATER, 220–240VAC (WITH THERMOSTAT)



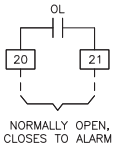
☐ MODIFICATION K – SPACE HEATER, 110–120VAC (WITH HUMIDISTAT)
☐ MODIFICATION N – SPACE HEATER, 220–240VAC (WITH HUMIDISTAT)



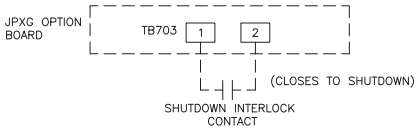
☐ MODIFICATION AC – PUMP OPERATING ALARM CONTACTS



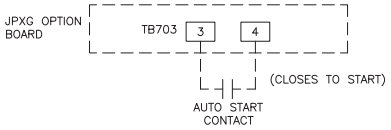
☐ MODIFICATION BY – PUMP OVERLOAD REMOTE ALARM CONTACT



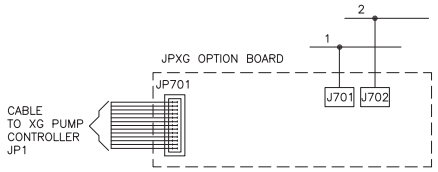
☐ MODIFICATION NZ – INTERLOCK SHUTDOWN IN AUTO



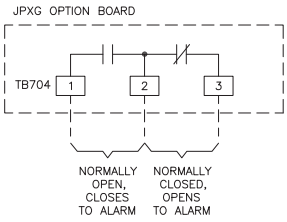
☐ MODIFICATION AST – REMOTE AUTO START INPUT



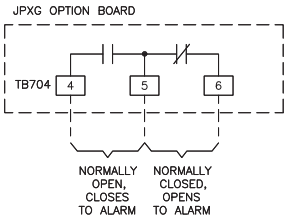
WIRING REQUIRED WHEN JPXG OPTION BOARD IS USED



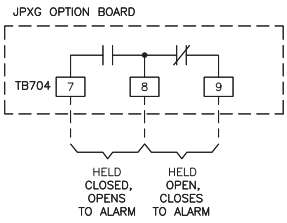
☐ MODIFICATION AM – PUMP FAILED TO START REMOTE ALARM CONTACTS



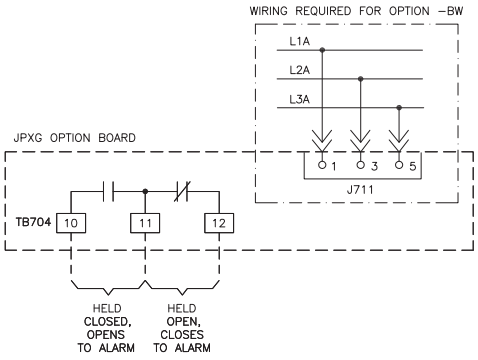
☐ MODIFICATION EF – SWITCH NOT IN AUTO REMOTE ALARM CONTACTS



☐ MODIFICATION KH – COMMON TROUBLE REMOTE ALARM CONTACTS



☐ MODIFICATION BW – PHASE FAILURE/REVERSAL REMOTE ALARM CONTACTS



CONTROL AND ALARM TERMINAL WIRE CAPACITY	
JPXG OPTION BOARD TERMINALS	#18–12 AWG [.75–4 MM^2]
PUMP OPERATING TERMINALS	#14–12 AWG [2.5–4 MM^2]
CIRCUIT BREAKERS	#14–4 AWG [2.5–25 MM^2]

NOTE:
TERMINAL NUMBERS SUBJECT TO CHANGE

	SIZE	BY	DATE
THIRD ANGLE PROJECTION	A		
	DRAWN BY	TEF	05-14-12
	FINAL APPROVAL	TEF	05-14-12

Firetrol, Inc.

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

UPDATED TITLE BLOCK

REVISION DESCRIPTION

WIRING SCHEMATIC | FTA550E

JOCKEY XG PUMP CONTROLLER
OPTIONS AND MODIFICATIONS

DRAWING NUMBER
WS550-06

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