213900 - Controllers for Fire-Pump Drivers

Part Number / Options Selection Guide
XTJP / XTJY Jockey Pump Controllers

1. Verify physical size of cabinet will fit in the space available, and provide the manufacturers and the National Electrical Code (NEC) recommended clearance requirements,

XTJP
~~**XTJY**~~ 3/4 D L1 ____

Horsepower (KW)	
1/3	(0.25)
1/2	(0.373)
3/4	(0.56)
1	(0.75)
1.5	(1.1)
2	(1.5)
3	(2.25)
4	(2.94)
5	(3.75)
7.5	(5.6)
10	(7.5)
15	(11)
20	(15)
25	(18.6)
30	(22)
40	(30)
50	(37)

Voltage	
A =	200 - 208V 60 HZ
B =	220 - 240V 60 HZ
C =	380 - 50 / 60 HZ
D =	440 - 480V 60 HZ
E =	550 - 600V 60 HZ
F =	415 - 50 / 60 HZ
G1 =	120V Single Phase (XTJP only)
G2 =	240V Single Phase (XTJP only)

Options	
C1	Extra Contacts "Pump Run"
C2	Extra Contacts "AC Power Failure"
E1	NEMA 3R - Raintight Enclosure
E2	NEMA 4 - Watertight Enclosure
E3	NEMA 12 - Industrial Dust Tight Enclosure
E5	NEMA 4X - Stainless Steel Enclosure
E8	Tropicalization
E9	NEMA 4X - Painted Steel
E10	NEMA 4X - 316 Stainless Steel Enclosure
EX	Export Crating
POL	"Power-On" Light
PRL	"Pump Run" Light
P7	Low Suction Pressure Switch and Alarm Pilot Light
P8	Low Suction Shutdown (Requires P7)
P10	Pressure Switch (0-500psi) - Sea Water
R1	Space Heater (120 / 220V)
R2	Space Heater c/w Thermostat
R3	Space Heater c/w Humidistat
S	Sequential Start
T	Running Period Timer
Z	Elapsed Run Time Meter

Languages	
L1	English Language *
L2	French Language *
L5	Spanish Language *
L11	Turkish Language *

* Other languages available. Consult factory for details.

This submittal is to be forwarded to the Electrical Engineer for review of the electrical characteristics..

N. Y. C. APPROVED

XTJP / XTJY Jockey Pump Controllers

JOCKEY Touch™

Typical Jockey Pump Controller Specifications

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

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

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

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

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

The motor circuit protector shall be mechanically interlocked such that the enclosure door cannot be opened when the handle is in the on position except by a tool operated defeater mechanism.

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

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

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

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

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

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

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

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

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

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

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

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

Jockey Pump Controllers

Microprocessor Based with Color Touchscreen

Product Description

ACROSS THE LINE

JOCKEY PUMP CONTROLLERS

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

WYE-DELTA (Star-Delta)

JOCKEY PUMP CONTROLLERS

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

Product Features

Combination Motor Controllers

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

Sealed Rotary Handle Mechanism

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

XT Power Controls

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

Universal Supply Voltage

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

NEMA 2 Enclosures

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

Programmable Functions

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

Starting Methods

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

Diagnostics / Statistics

Eight diagnostics and seven statistics parameters can be monitored.

Alarm Setpoints

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

Color Touchscreen Display

The JOCKEY Touch - Jockey Pump Controllers are supplied with a microprocessor based, color touchscreen. The touchscreen display allows the user to monitor and program functions and values.
Pressure input is provided by a 4-20mA pressure sensor.

Technical Data

ACROSS-THE-LINE (Direct On Line)

JOCKEY PUMP CONTROLLERS

Line Voltage						
200-208V	220-240V	380-415V	440-480V	550-600V	120V-1Ph	240V-1Ph
Motor Horsepower						
1/3-20Hp	1/3-20Hp	1/3-40Hp	1/3-50Hp	1/3-50Hp	1/3-2Hp	1/3-5Hp

WYE-DELTA (Star-Delta)

JOCKEY PUMP CONTROLLERS

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

Standards & Certification

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

Powering Business Worldwide

JOCKEY Touch™

Microprocessor - Color Touchscreen Display

Supply Voltage
3 phase – 200VAC to 600VAC, 50/60Hz
1 phase – 110VAC to 240VAC, 50/60Hz
True RMS measurement of 3 phase voltage inputs

Power Supply Output
Two 24VDC outputs

1	Power the pressure sensor
2	Energize the contactor coil

Ratings
NEMA 4 / 4X

Memory
Programmed settings saved in Non Volatile memory

Battery Backup
Real Time Clock kept intact during power failures

Ambient Temperature Rating
0C to 55C

Languages *
English
French
Spanish
Portuguese
Turkish
* Other languages available - consult factory for details

USB Port
Download Message History
Upload Firmware Updates

Programmable Inputs (2)
Each input can be programmed for one of seven different functions.

1	Interlock
2	Motor Overload
3	Fail to Start
4	Remote Start
5	Pump Start
6	Input = Output
7	Disabled

Programmable Outputs (2)
Each output can be programmed for one of twenty three different functions.

1	Power On	13	Overvoltage
2	Pump Run	14	Transducer Failure
3	Hand Mode	15	Motor Overload
4	Off Mode	16	Common Alarm
5	Auto Mode	17	Acceleration Timer
6	Low Pressure Alarm	18	Remote Start
7	High Pressure Alarm	19	Pump Start
8	Below Start Point	20	Interlock On
9	Phase Reversal	21	Input #1
10	Phase Failure	22	Input # 2
11	Fail to Start	23	Disabled
12	Undervoltage		

Timers (5)
Programmable Types

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

Virtual LED's (2)
Programmable Functions (22)

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

Programmable Indication (5)

1	Red
2	Orange
3	Yellow
4	Green
5	Blue

Operation
Starting Methods (4)

1	Auto
2	Hand
3	Remote Start
4	Pump Start

Alarm Set Points (4)

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

Message History (10K)
Messages time and date stamped

Diagnostics (8)

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

Statistics (7)

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

EATON
Powering Business Worldwide

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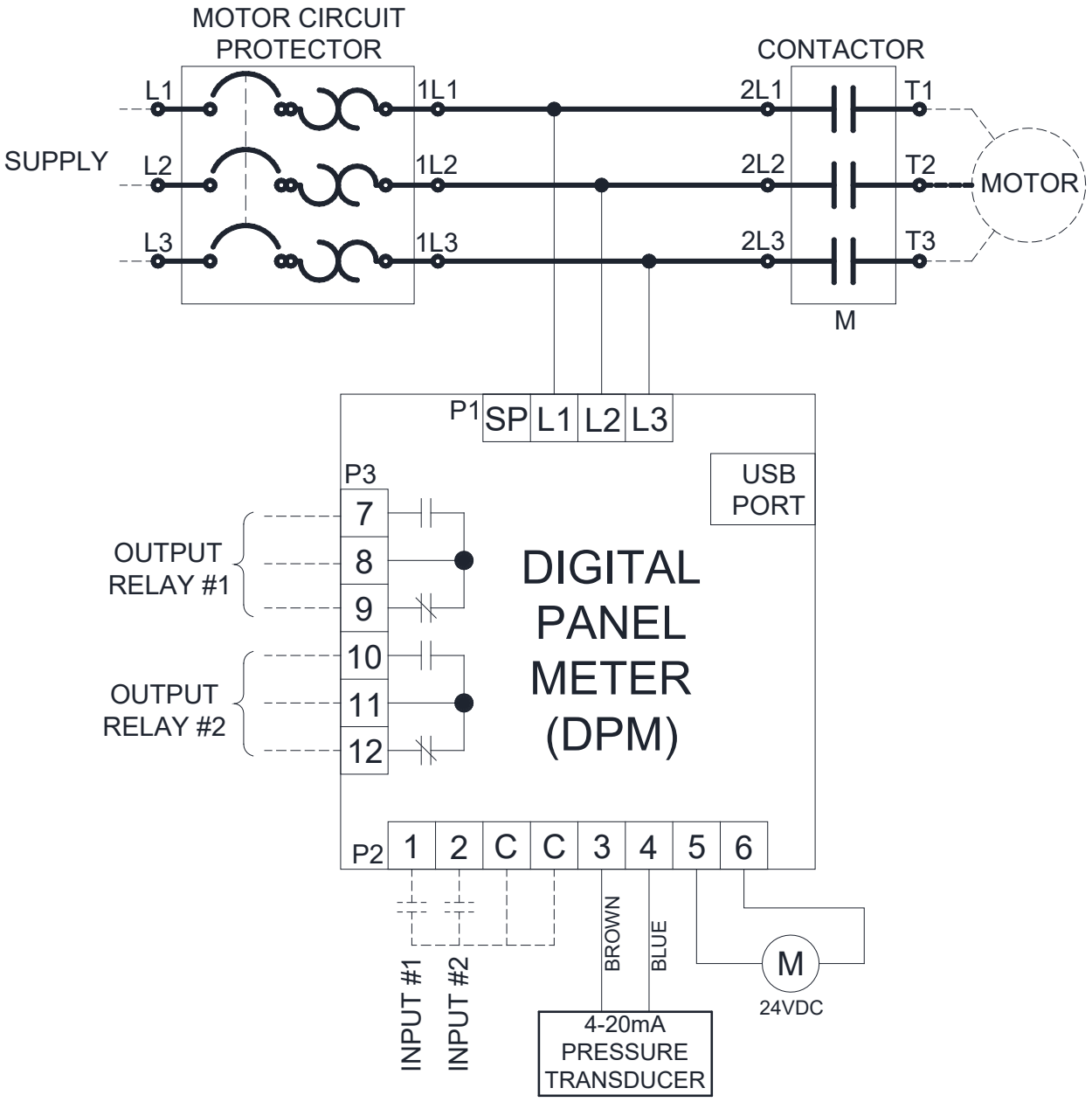
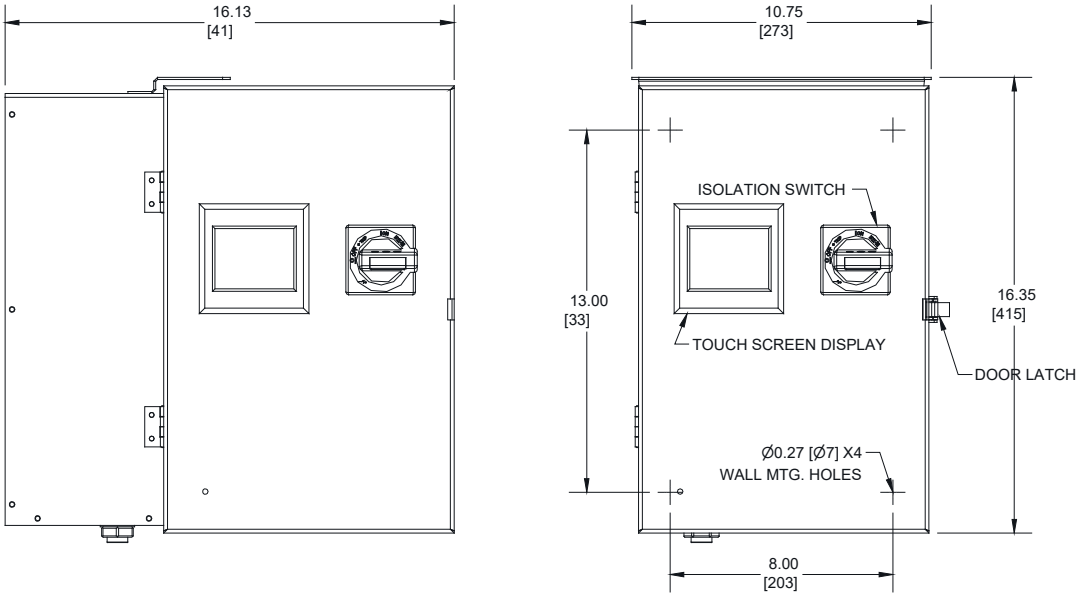
Calgary, AB T3N0A4
Canada
www.chfire.com

JOCKEY Touch™



JOCKEY Touch™



200-208V		220-240V		380-415V		440-480V		550-600V	
Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)	Motor Hp	Withstand Rating (kA)
0.33 - 0.75	50	0.33 - 0.75	50	0.33 - 1.5	50	0.33 - 2	50	0.33 - 7.5	50
1 - 2	65	1 - 3	65	2 - 5	65	3 - 5	65	10 - 30	10 *
3 - 4	42	4 - 5	42	7.5	42	7.5 - 10	42		
5 - 10	18	7.5 - 10	18	10 - 15	18	15 - 20	18		

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

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

WM TAO & ASSOCIATES
CONSULTING ENGINEERS

Shop Drawing Submittal Review

Transmitted To: Cannon Design

Date: December 20, 2016

Attention: **stl-cac@cannondesign.com**

Contact Person / WTA Field Inspector: Patrick Garner

Project Name: Webster University-**ISB**

Reviewed by: Mike Whitworth (WES)
Joe Krussel (Tao/Elec)

Project No. WT 14127.01
WES 607

[ ] UPS [ ] Courier [X] **Email**

Copies	No.	Description
1 PDF	213900F01	(Submittal No.'s:)
		(Cannon #213900-001) - (Paric #15051-0359) – (WES #607)
		➢ **Controllers for Fire Pump Drivers Product Data**

*Remarks: See Submittal Review from Webb Enginnering.

c: **Kelvin Patel**
Kpatel@cannondesign.com

[X] ***Reviewed**

[X] ***No Exceptions Taken**

[ ]

[X] ***Amend and Resubmit**

Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for review of general conformance with the design concept of project and general compliance with information given in contract documents. Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.

WEBB
ENGINEERING
SERVICES INC.

1400 S. 3rd Street, Suite 201
St. Louis, Missouri 63104
Phone: (314) 588-0600
Fax: (314) 588-0604

Letter of Transmittal

To: wtashop@wmtao.com

From: Mike Whitworth

Date: December 14, 2016

Re: Webster University ISB

WES No: 607

☐ For your Files ☐ For Review ☐ Please Comment ☐ Please Reply

Item No.	Description	No. of Copies	Date
1	Shop Drawing Review – (213900-001) 213900 Controllers for Fire Pump Drivers	1	12/14/16

•Signature: Mike Whitworth

WEBB ENGINEERING SERVICES INC.
1400 S. 3rd Street, Suite 201 • St. Louis, Missouri 63104 • 314.588.0600 • *fax* 314.588.0604
www.webb-engineering.com

The review of this submittal is limited to the general conformance with the designated design concept and intent of this project and with the general compliance of the information provided in the contract documents. All comments, remarks and notations made on the submittal(s) as a result of this review do not relieve the contractor from full compliance with requirements of the contract documents. Approval for a specific item shall not include approval of an assembly of which the item is not a component. The contractor is solely responsible for rough-in and installation confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordination of this work with that of other trades on this project; and in a safe and satisfactory manner. All work shall be installed in full compliance with the manufacturer's recommendation, Federal, State and Local rules and regulation and the Authority Having Jurisdiction (AHJ) and applicable adopted codes and standards.

PROJECT NAME:	Webster University ISB
LOCATION:	St. Louis Missouri
CLIENT PROJ. NO.:	N/A
WES PROJ. NO.:	607
SPECIFICATION SECTION:	213900 Controllers for Fire Pump Drivers
SUBMITTAL ITEM:	See Below -

CONTRACTOR:	J.F. Ahern Co.
CTR. SUBMITTAL #:	21 3900-001
SUBMITTAL DATE:	November 30, 2016
DATE RECEIVED:	December 07, 2016
RECEIVED VIA:	E-Mail
RECEIVED FROM:	WTA
DATE RETURNED:	DECEMBER 14, 2016
RETURNED VIA:	E-MAIL
RETRURNED TO:	WTASHOP@WMTAO.COM

STATUS KEY:

NO EXCEPTION TAKEN
MAKE CORRECTIONS NOTED, NO RESUBMITTAL:
AMEND AND RESUBMIT
REJECTED, SEE REMARKS:
REVIEWED ONLY

NEC	MCN	AAR	REJ	REV	ITEM	REMARKS
This submittal is to be forwarded to the Electrical Engineer for review of the electrical characteristics..						
		X			Fire Pump Controller Eaton Model – FT-70-40-D-L1	1. Refer to specification section 213900, Part 2.1, paragraphs H, I & J. Verify components and options listed are included in package. Indicate such on resubmittal. 2. Verify physical size of cabinet will fit in the space available, and provide the manufacturers and the National Electrical Code (NEC) recommended clearance requirements,
X					Jockey Pump Controller Eaton Model – XTJP -3/4-D-L!	1. Verify physical size of cabinet will fit in the space available, and provide the manufacturers and the National Electrical Code (NEC) recommended clearance requirements,

REVIEWED BY: Michael R. Whitworth DATE: December 14, 2016

THESE COMMENTS ARE TO BE ATTACHED TO ALL COPIES OF THE SHOP DRAWING REFERENCED ABOVE.

CANNONDESIGN

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

WEBSTER UNIVERSITY ISB
PROJECT NAME

8274 BIG BEND BLVD
ADDRESS

NUMBER

WEBSTER UNIVERSITY
OWNER

CANNON DESIGN
ARCHITECT / ENGINEER

Joe Voypick
SUBMITTED BY

213900-001
CONTRACTOR / CM SUBMITTAL NO.

CANNON DESIGN SUBMITTAL NO.

DRAWING / DETAIL REFERENCE

213900
SPECIFICATION SECTION / PARAGRAPH

Ahern Fire Protection
MANUFACTURER / SUPPLIER

ITEM / PRODUCT ID

REQUIRED DATE

PRIORITY

◯ CRITICAL

ITEM BEING SUBMITTED (check only one)

- ◯ Shop Drawings
- ◯ Samples (_____ copies)
- ◯ LEED Submittal
- ◯ Certification / Qualifications
- ◉ Record Documents
- ◯ Product Data
- ◯ Coordination Drawing
- ◯ Calculations
- ◯ Schedules
- ◯ O&M Manuals
- ◯ Other _____

ITEM BEING SUBMITTED FOR (check only one)

◉ Action ◯ Information Only ◯ Record

REMARKS OR DEVIATIONS

CONTRACTOR / CM CERTIFICATION
(SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)

PARIC

PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

By:
Devin D. Gates

Joe Voypick
REVIEWED BY

11/30/16
DATE

To be completed by Reviewer

21 3900-001
CANNON DESIGN SUBMITTAL NUMBER

11/30/16
RECEIVED DATE

- ◯ A. No Exceptions Taken
  No further review of submittal is required.
- ◯ B. Make Corrections Noted
  Incorporate corrections in work; resubmission is not required.
- ◯ C. Revise and Resubmit
  Revise as noted, and resubmit for review.
- ◯ D. Rejected
  Submittal is not in compliance with Contract Documents; provide new submittal.
- ◯ E. For Record / Information Only
  Submittal was reviewed for Record / Information purposes only.
- ◯ F. Not Required for Review
  Submittal is not required by Contract Documents and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

A/E COMMENTS ◯ See attached sheet(s) for additional comments

REVIEWED BY

DATE

77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0359

Paric Corporation

PROJECT: 15051-Webster University Interdisciplinary Science Building

DATE: 11/30/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

Fax;
314-241-2203

RE: Controllers for Fire-Pump Drivers Product Data

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☑ Approval	☐ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	**SENT VIA:**	☐ Returned
☐ Specifications	☐ Attached	☐ Returned for Corrections
☑ Other: Product Data	☐ Separate Cover Via:	☐ Due Date:

Item	*Package*	*Code*	*Rev.*	*Copies*	*Date*	*Description*	*Status*
Submittal		213900-001	1		11/30/2016	Controllers for Fire-Pump Drivers Product Data	Submitted

NOTES:

CC:

Signed: _____

Devin Gates