



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0744

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Preferred Utilities Manufacturing Corp.

Manufacturer's Technical Representative: Marlon Maves

Mailing Address: 31-35 South Street, Danbury, CT 06810

Telephone: (203) 743-6741

Email: mmaves@preferred-mfg.com

Product Information

Product Name: Industrial Control Panels

Product Type: Fuel Systems Control Panels

Product Model Number: See attached certified component tables

General Description: Wall mounted Control Panels for the purpose of piping system Vacuum monitoring and Leak Detection. Fuel System Control Panels to monitor leaks and sensors to provide fuel to boilers and generators by the controlling of pumps, motors and valves. Controlling of Boilers and predictive metering combustion control.

Mounting Description: Rigid, Wall Mounted

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: Preferred Utilities Manufacturing Corp.

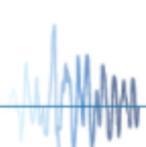
Contact Person: Marlon Maves

Mailing Address: 31-35 South Street, Danbury, CT 06810

Telephone: (203) 743-6741

Email: mmaves@preferred-mfg.com

Title: Design Engineer/Project Manager





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California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

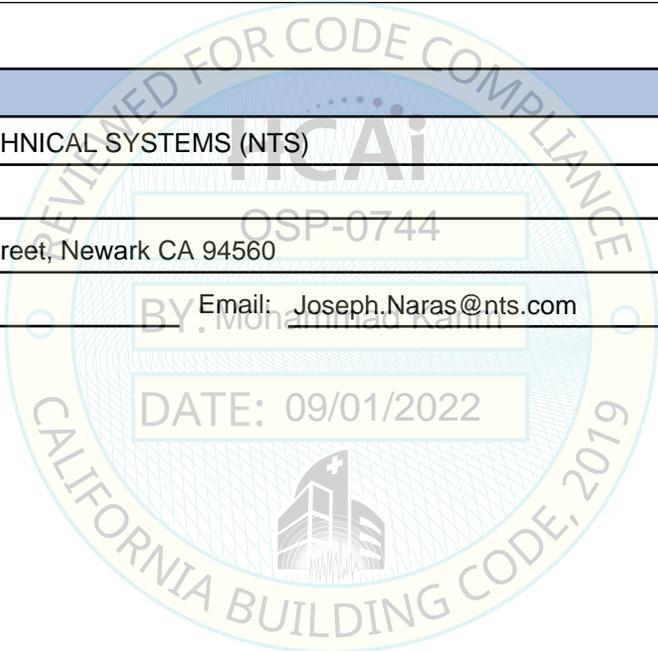
Company Name: FORELL / ELSESSER ENGINEERS, INC.
Name: Marco Scanu California License Number: S4454
Mailing Address: 160 Pine Street, Suite 600, San Francisco, CA 94111
Telephone: (415) 837-0700 Email: scanu@forell.com

Certification Method

GR-63-Core ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3
 Other (Please Specify): _____

Testing Laboratory

Company Name: NATIONAL TECHNICAL SYSTEMS (NTS)
Contact Person: Joseph Naras
Mailing Address: 38995 Cherry Street, Newark CA 94560
Telephone: (510) 578-3500 Email: Joseph.Naras@nts.com





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.93

SDS (Design spectral response acceleration at short period, g) = 2.57

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

HCAI Approval (For Office Use Only) - Approval Expires on 09/01/2028

Date: 9/1/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = 2.57 z/h = 1

Condition of Approval (if applicable): DATE: 09/01/2022



**Fuel Oil System Monitoring Equipment
Certified Components Tables**

Table 1: Fuel Oil System Monitoring Equipment

Equipment Name	Width	Depth	Height	Weight	Construction Material	Component No.	Model Number	Unit Under Test
Vaccum Leak Monitoring Controller	20.0"	10.0"	20.0"	60 lbs	STAINLESS STEEL ENCLOSURE	VLM-P-X	OIT 4X	EUT-1(a)
Vaccum Manifold Cabinet	10.0"	7.0"	10.0"	10 lbs	CARBON STEEL ENCLOSURE	VLM-P-4-100	VLM P-4-100	EUT-2(a)
Fuel System Controller	30.0"	10.0"	24.0"	100 lbs	CARBON STEEL ENCLOSURE	OSHPD-FOS-3	OIT 15X	EUT-3(a)
Plant Wide Controller Interna Enclosure 20"x25"x11"	20.0"	11.0"	35"	98 lbs	CARBON STEEL ENCLOSURE	PWCN4-CADHRO	PWC	UUT-1(c)
Plant Wide Controller with CPU, Display and Keyboard	20.0"	11.0"	35"	124 lbs	CARBON STEEL ENCLOSURE	PWCN4-2- CADHRO	PWC/OIT	UUT-2A(c)
Filtration PLC	20.0"	9.0"	20"	46 lbs	CARBON STEEL ENCLOSURE	KOYO D2-260 Filtration	KOYO/OIT	UUT-3(c)
Customized PLC	36.0"	13.0"	48.0"	226 lbs	CARBON STEEL ENCLOSURE	KOYO D2-260 Custom PLC	KOYO/OIT/TG	UUT-4(c)
Fuel System Controller	20.0"	11.0"	35"	130 lbs	CARBON STEEL ENCLOSURE	FSC-120-1	S16L8116	EUT-2(b)
Fuel System Filtration System - Upper	20.0"	11.0"	20"		CARBON STEEL ENCLOSURE	FSC-120-FILT-1	SE1100629	EUT-4(b)
Fuel System Filtration System - Lower	48.0"	12.0"	48.0"	459 lbs.	CARBON STEEL ENCLOSURE	FSC-120-FILT-2	SE1100629	EUT-4(b)
BMU Boiler Controller	36.0"	21.0"	60.0"	282. lbs	CARBON STEEL ENCLOSURE	BMU-2ZN0	S16R8137	EUT-1(b)
BMU Boiler Controller	30.0"	11.0"	24"	104 lbs	CARBON STEEL ENCLOSURE	BMU-00H0	S16L8117	EUT-3(b)

Notes: Please refer to Description of Unit Under Testing document for equipment manufacturer.

Table 2: Fuel Management System Cabinets

Equipment Name	Width	Depth	Height	Weight	Construction Material	Component No.	Model Number	Unit Under Test
Control Panels	20.0"	11.0"	35.0"	98 lbs	CARBON STEEL ENCLOSURE	PWCN4-CADHRO	PWC	UUT-1(c)
Control Panels	20.0"	11.0"	35.0"	124 lbs	CARBON STEEL ENCLOSURE	PWCN4-2- CADHRO	PWC/OIT	UUT-2A(c)
Control Panels	20.0"	11.0"	20.0"	56 lbs	CARBON STEEL ENCLOSURE	PWCN4-2- CADHRO	PWC/OIT	UUT-2B(c)
Control Panels	20.0"	9.0"	20.0"	46 lbs	CARBON STEEL ENCLOSURE	KOYO D2-260 Filtration	KOYO/OIT	UUT-3(c)
Control Panels	36.0"	13.0"	48.0"	226 lbs	CARBON STEEL ENCLOSURE	KOYO D2-260 Custom PLC	KOYO/OIT/TG	UUT-4(c)
Control Panels	20.0"	11.0"	35.0"	130 lbs	CARBON STEEL ENCLOSURE	FSC-120-1	S16L8116	EUT-2(b)
Control Panels	20.0"	11.0"	20.0"	459 lbs	CARBON STEEL ENCLOSURE	FSC-120-FILT-1	SE1100629	EUT-4A(b)
Control Panels	48.0"	12.0"	48.0"	459 lbs	CARBON STEEL ENCLOSURE	FSC-120-FILT-2	SE1100629	EUT-4B(b)

Notes: Please refer to Description of Unit Under Testing document for equipment manufacturer.

Table 3: Boiler Control Panel

Equipment Name	Width	Depth	Height	Weight	Construction Material	Component No.	Model Number	Unit Under Test
Control Panels	36.0"	21.0"	60.0"	282 lbs	CARBON STEEL ENCLOSURE	BMU-2ZN0	S16R8137	EUT-1(b)
Control Panels	30.0"	11.0"	24.0"	104 lbs	CARBON STEEL ENCLOSURE	BMU-00H0	S16L8117	EUT-3(b)

Notes: Please refer to Description of Unit Under Testing document for equipment manufacturer.

**Fuel Oil System Monitoring Equipment
Certified Subcomponent Tables**

Table 1: Fuel System Controller			
Sub Component	Manufacturer	Part or Model No.	Testing Status
CONTACTOR 5HP 3P 9A 100-250V-C	ABB	AF09-30-10-13	Test Report 147524-01 EUT-3(a)
AUX MMS SIDE MOUNT RIGHT 1NO-1NC	ABB	HK1-11	Test Report 147524-01 EUT-3(a)
LINKS MMS TO CONT AF09-AF16 (MS132-0.16-25A)	ABB	BEA16-4	Test Report 147524-01 EUT-3(a)
MANUAL MOTOR STARTER: 25HP-480 (ADJUSTABLE FLA:25-32)	ABB	MS132-32	Test Report 147524-01 EUT-3(a)
MANUAL MOTOR STARTER: 1/2 HP-480V (ADJUSTABLE FLA:63-1.0)	ABB	MS132-1.0	Test Report 147524-01 EUT-3(a)
CONTACTOR 15HP 3P 45A 100-250V-C	ABB	AF16-30-10-13	Test Report 147524-01 EUT-3(a)
LINKS MMS TO CONT AF26-AF38 (MS132-12-32A)	ABB	BEA38-4	Test Report 147524-01 EUT-3(a)
NON-FUSIBLE DISCONNECT SWITCH, 3 POLE, 100 AMP, 600VAC	ABB	OT100F3	Test Report 147524-01 EUT-3(a)
HANDLE FOR ABB DISCONNECT SW., PANEL MOUNT, PADLOCKABLE,	ABB	QHBS2A11	Test Report 147524-01 EUT-3(a)
SHAFT FOR ABB DISC SW, 12 DEEP PNL	ABB	OXS6X330	Test Report 147524-01 EUT-3(a)
AUX CONT FRONT MOUNT 1NO	ABB	CA4-10	Test Report 147524-01 EUT-3(a)
PUSHBUTTON, RED, 40MM MUSHROOM HEAD, TWIST-TO-RELEASE, 22MM W/1 N.C. CONTACT	AUTOMATION DIRECT	GXC1131	Test Report 147524-01 EUT-3(a)
AUTO DIRECT 22MM NO AUX CT (PKG OF 2)	AUTOMATION DIRECT	ECX-1040-2	Test Report 147524-01 EUT-3(a)
PUSHBUTTON, FLUSH, RED, MOMENTARY, 22MM ACTUATOR, W/O CONTACT	AUTOMATION DIRECT	GXC1101-SC	Test Report 147524-01 EUT-3(a)
SW, PUSHBUTTON, MOMENTARY, FLUSH RED HD, 1 N.O., NEMA 4/13	IDEC	ABD120NUR	Test Report 147524-01 EUT-3(a)
PUSHBUTTON, RED MUSHROOM HEAD, PUSH-PULL	IDEC	AYD302NUR	Test Report 147524-01 EUT-3(a)
30MM SW, 2 POS. SEL., NEMA 4/13, MAINT, STD KNOB, 1 N.O	IDEC	ASD210NU	Test Report 147524-01 EUT-3(a)
30MM SW, 3 POS. SEL., NEMA 4/13, MAINT, STD KNOB, 2 N.O	IDEC	ASD320NU	Test Report 147524-01 EUT-3(a)
LIGHT, 30mm PILOT, 120V, RED LENS, W/LAMP, FULL VOLTAGE LEC	IDEC	APD1QH2DNUR	Test Report 147524-01 EUT-3(a)
Cabinet Inner Sub Panel for Eclipse 30Hx24W Enclosures	HAMMOND MANUFACTURING	EP3024	Test Report 147524-01 EUT-3(a)
SONALERT, MALLORY, 48-120VAC/DC VOLTAGE/3300 HZ, NEMA 4X/12, 22.5MM PANEL HOLE	SONALERT	ZA120LACT	Test Report 147524-01 EUT-3(a)
CABINET: 30 IN H X 24 IN W X 10 IN DEEP HAMMOND	HAMMOND MANUFACTURING	EN4SD302410GY	Test Report 147524-01 EUT-3(a)
24VDC POWER SUPPLY, 2.5A OUTPUT, 120VAC INPUT	CARLO GARVASI	SPD24601	Test Report 147524-01 EUT-3(a)
RELAY, BLADE PLUG-IN, SPDT, 10 AMP CONTACTS 24VDC	IDEC	RH1B-UDC24V	Test Report 147524-01 EUT-3(a)
SOCKET, DIN RAIL MOUNT, FOR SPDT COMPACT BLADE TERMINAL RELAY	IDEC	SH1B-05	Test Report 147524-01 EUT-3(a)
Fuel System Controller, 120vac, 24 DIN, 10 ROUT, 8 AIN, 3 AOUT	PREFERRED UTILITIES	FSC-120	Test Report 147524-01 EUT-3(a)
OPERATOR INTERFACE TERMINAL, 15-INCH, NEMA 4X, WEB SERVER, DATA LOGGING - PROGRAMMING NOT INCLUDED	PREFERRED UTILITIES	OEMC3150	Test Report 147524-01 EUT-3(a)
Fuel Sentry Tank Gauge	PREFERRED UTILITIES	TG-EL-D4B-00-0-0	Test Report 147524-01 EUT-3(a)

Table 2: Vacuum Monitoring Controller			
Sub Component	Manufacturer	Part or Model No.	Testing Status
CABINET - 20" H X 20" W X 10" D - NEMA 4X	HAMMOND MANUFACTURING	EN4SD202010S5	Test Report 147524-01 UUT-1(a)
Cabinet Mounting Foot Kit for Eclipse Type Enclosures S.S. (qty 4 incl)	HAMMOND MANUFACTURING	ESSMFD	Test Report 147524-01 UUT-1(a)
Cabinet Inner Sub Panel for Eclipse 20Wx20H Enclosures	HAMMOND MANUFACTURING	EZPMFHD	Test Report 147524-01 UUT-1(a)
24VDC POWER SUPPLY, 5A OUTPUT, 120VAC	CARLO GAVAZZI	SPD241201N	Test Report 147524-01 UUT-1(a)
30mm Audible/Visual Alarm Light, Red, 12-24v	FEDERAL SIGNAL	PMC-012-024R	Test Report 147524-01 UUT-1(a)
Fuel System Controller, 120vac, 24 DIN, 10 ROUT, 8 AIN, 3 AOUT	PREFERRED UTILITIES	FSC-120	Test Report 147524-01 UUT-1(a)
OPERATOR INTERFACE TERMINAL 4 INCH WITH NEMA 4X FRONT	RED LION CONTROLS	OEMC1040	Test Report 147524-01 UUT-1(a)
Filter for Vacuum Pump, 1/4"	SMC	ZFCS5-B	Test Report 147524-01 UUT-1(a)
Vacuum Pump and Motor, 120VDC, 1/16 HP	GAST	MOA-P108-HB	Test Report 147524-01 UUT-1(a)
Vacuum Pressure Regulator	OHLHEISER CORPORATION	SMC IRV10-N07BG	Test Report 147524-01 UUT-1(a)

Table 3: Vacuum Manifold Cabinet

Sub Component	Manufacturer	Part or Model No.	Testing Status
VACUUM ZONE MANIFOLD, 4 ZONES	OHLHEISER CORPORATION	VDW-PREF-4-040921	Test Report 147524-01 UUT-2(a)
BALL VALVE-1/4" NPT-BRONZE 600 # CWP UL YR BX MHKZ YRPV & YSD1	APOLLO	80-101-27	Test Report 147524-01 UUT-2(a)
GAUGE, COMPOUND, 2 IN., RG. 30-0-30 PSI	ASHCROFT	1005-02L-30/30	Test Report 147524-01 UUT-2(a)
0 - (-14.7) psig / 4-20 mA Vacuum Transmitter	SETRA	AXD1Z01PV2M11A1FNN	Test Report 147524-01 UUT-2(a)
TUBING- SEAMLESS COPPER REFRIGERATION- 5/16" X .032 WALL	CAMBRIDGE	102202	Test Report 147524-01 UUT-2(a)
Low-Pressure Brass Threaded Pipe Fitting 1/4 Pipe Size, Tee	MCMASTER CARR	4429K251	Test Report 147524-01 UUT-2(a)
Standard-Wall Brass Threaded Pipe Nipple 1/4 Pipe Size X 3" Length	MCMASTER CARR	4568k135	Test Report 147524-01 UUT-2(a)
Standard-Wall Brass Threaded Pipe Nipple 1/4 Pipe Size X 1 1/2" Length	MCMASTER CARR	4568K132	Test Report 147524-01 UUT-2(a)
YOR-LOK STRAIGHT FITTING ADAPTER FOR 5/16" O.D. TUBE TO 1/4 NPT	MCMASTER CARR	5272K297	Test Report 147524-01 UUT-2(a)
Check Valve, 1/2" NPT	MCMASTER CARR	7768k680	Test Report 147524-01 UUT-2(a)
1/2" NPT, FLOAT VALVE, 1-AV	ARMSTRONG	ARM 1/2 1-AV	Test Report 147524-01 UUT-2(a)
Solenoid Valve, 1/4" NPT, 24VDC	ASCO	8262H320	Test Report 147524-01 UUT-2(a)

Table 4: Displays

Sub Component	Manufacturer	Part or Model No.	Testing Status
OPERATOR INTERFACE TERMINAL 4 INCH WITH NEMA 4 FRONT	RED LION CONTROLS	OEMG3H02 CUSTOM G304K	Test Report R93006 UUT-3 (c)
OPERATOR INTERFACE TERMINAL 4 INCH WITH NEMA 4X FRONT	RED LION CONTROLS	G306MS00	Extrapolated - Structurally identical from same manufacturer
OPERATOR INTERFACE TERMINAL 10.4 INCH WITH NEMA 4X FRONT	RED LION CONTROLS	OEMG3D34 CUSTOM G310C2	Test Report R93006 UUT-2A (c) & UUT-4(c)
OPTIONAL COMMUNICATIONS CARD FOR OIT-6 AND OIT-10	RED LION CONTROLS	G3RS0000	Test Report R93006 UUT-4(c)
OPERATOR INTERFACE TERMINAL 10.4 INCH WITH NEMA 4X FRONT - OUTDOOR RATED	RED LION CONTROLS	OEMG3D35 CUSTOM G310S2	Test Report PR052698.01 EUT-3 (b), Test Report R93006 UUT-4 (c)
OPERATOR INTERFACE TERMINAL 4 INCH WITH NEMA 4X FRONT	RED LION CONTROLS	OEMC1040	EUT-2(a) - TR-147524-01
OPERATOR INTERFACE TERMINAL 4 INCH, NEMA 4X, WEB SERVER, DATA LOGGING	RED LION CONTROLS	OEMC3040	INTERPOLATED
OPERATOR INTERFACE TERMINAL 7 INCH WITH NEMA 4X FRONT	RED LION CONTROLS	OEMC1070	INTERPOLATED
OPERATOR INTERFACE TERMINAL 7 INCH, NEMA 4X, WEB SERVER, DATA LOGGING	RED LION CONTROLS	OEMC0371	INTERPOLATED
OPERATOR INTERFACE TERMINAL 10 INCH WITH NEMA 4X FRONT	RED LION CONTROLS	OEMC1100	INTERPOLATED
OPERATOR INTERFACE TERMINAL 10 INCH, NEMA 4X, WEB SERVER, DATA LOGGING	RED LION CONTROLS	OEMC3101	INTERPOLATED
OPERATOR INTERFACE TERMINAL 15 INCH, NEMA 4X, WEB SERVER, DATA LOGGING	RED LION CONTROLS	OEMC3150	UUT-3(a) - TR-147524-01

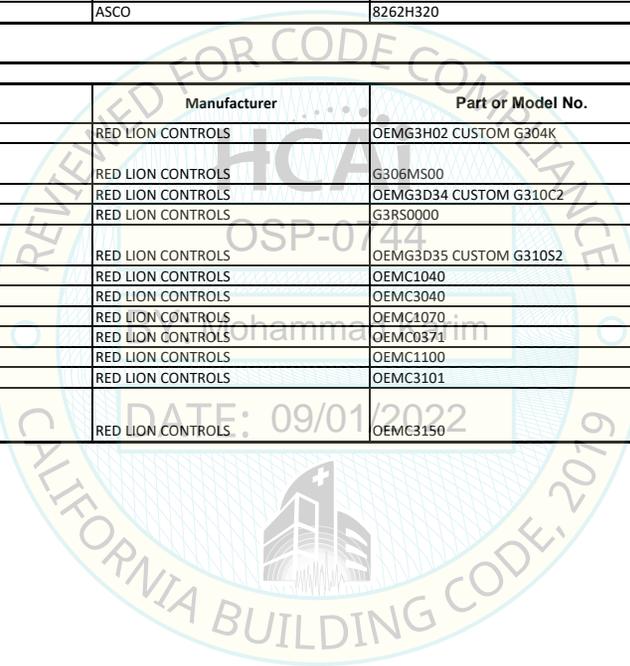


Table 5: Mortor Starters

Sub Component	Manufacturer	Part or Model No.	Testing Status
MANUAL MOTOR STARTERS: 1/2 HP-480V (ADJUSTABLE FLA:1.6-1.0)	GENERAL ELECTRIC	GPS1BHAE	Extrapolated - Structurally identical from same manufacturer
MANUAL MOTOR STARTERS: 3/4HP-480V (ADJUSTABLE FLA:1-1.6)	GENERAL ELECTRIC	GPS1BHAF	Test Report PR052698.01 EUT-2(b)
MANUAL MOTOR STARTERS: 1HP-480V (ADJUSTABLE FLA:1.6-2.5)	GENERAL ELECTRIC	GPS1BHAG	Interpolated
MANUAL MOTOR STARTERS: 2HP-480V (ADJUSTABLE FLA:2.5-4)	GENERAL ELECTRIC	GPS1BHAG	Test Report R93006 UUT-2B(c) & UUT-4 (c)
MANUAL MOTOR STARTERS: 3HP-480V (ADJUSTABLE FLA:4-6.3)	GENERAL ELECTRIC	GPS1BHAJ	Test Report R93006 UUT-4(c)
MANUAL MOTOR STARTERS: 5HP-480V (ADJUSTABLE FLA:6.3-10)	GENERAL ELECTRIC	GPS1BHAK	Test Report R93006 UUT-2B (c)
MANUAL MOTOR STARTERS: 7.5HP-480V (ADJUSTABLE FLA:9-13)	GENERAL ELECTRIC	GPS1BHAL	Extrapolated - Structurally identical from same manufacturer
MANUAL MOTOR STARTERS: 10HP-480V (ADJUSTABLE FLA:11-16)	GENERAL ELECTRIC	GPS1BHAM	Extrapolated - Structurally identical from same manufacturer
MANUAL MOTOR STARTERS: 10HP-480 (ADJUSTABLE FLA:14-20)	GENERAL ELECTRIC	GPS1BSAN	Extrapolated - Structurally identical from same manufacturer
MANUAL MOTOR STARTERS: 15HP-480 (ADJUSTABLE FLA:19-25), TOGGLE	GENERAL ELECTRIC	GPS1BHAP	Extrapolated - Structurally identical from same manufacturer
MANUAL MOTOR STARTERS: 20HP-480 (ADJUSTABLE FLA:24-32)	GENERAL ELECTRIC	GPS1BSAR	Extrapolated - Structurally identical from same manufacturer
MANUAL MOTOR STARTER WITH CONTACTOR: 30HP-480 (ADJUSTABLE FLA:35-50)	GENERAL ELECTRIC	GP22TA06JA	Extrapolated - Structurally identical from same manufacturer
MANUAL MOTOR STARTER: 1/2 HP-480V (ADJUSTABLE FLA:1.6-1.0)	ABB	MS132-1.0	Test Report 147524-01 EUT-3(a)
MANUAL MOTOR STARTER: 3/4 HP-480V (ADJUSTABLE FLA:1-1.6)	ABB	MS132-1.6	INTERPOLATED
MANUAL MOTOR STARTER: 1 HP-480V (ADJUSTABLE FLA:1.6-2.5)	ABB	MS132-2.5	INTERPOLATED
MANUAL MOTOR STARTER: 2 HP-480V (ADJUSTABLE FLA:2.5-4)	ABB	MS132-4.0	INTERPOLATED
MANUAL MOTOR STARTER: 5 HP-480V (ADJUSTABLE FLA:4-6.3)	ABB	MS132-6.3	INTERPOLATED
MANUAL MOTOR STARTER: 7 1/2 HP-480V (ADJUSTABLE FLA:6.3-10)	ABB	MS132-10	INTERPOLATED
MANUAL MOTOR STARTER: 7 1/2 HP-480V (ADJUSTABLE FLA:8-12)	ABB	MS132-12	INTERPOLATED
MANUAL MOTOR STARTER: 10 HP-480V (ADJUSTABLE FLA:10-16)	ABB	MS132-16	INTERPOLATED
MANUAL MOTOR STARTER: 15 HP-480V (ADJUSTABLE FLA:16-20)	ABB	MS132-20	INTERPOLATED
MANUAL MOTOR STARTER: 20 HP-480V (ADJUSTABLE FLA:20-25)	ABB	MS132-25	INTERPOLATED
MANUAL MOTOR STARTER: 25 HP-480V (ADJUSTABLE FLA:25-32)	ABB	MS132-32.0	Test Report 147524-01 EUT-3(a)

Table 6: Motor Contactors

Sub Component	Manufacturer	Part or Model No.	Testing Status
IEC 3 POLE CONTACTORS, MOTOR STARTER, 10 AMPS0701-B	GENERAL ELECTRIC	CL00A310TJ	Test Report R93006 UUT-1(c), UUT-3(c) & UUT-4(c), Test Report PR052698.01 EUT-2(b), EUT-4(b)
IEC 3 POLE CONTACTORS, MOTOR STARTER, 10 AMPS, 208V COIL	GENERAL ELECTRIC	CL00A310TL	Interpolated
IEC 3 POLE CONTACTOR, MOTOR STARTER, 13.8 AMPS	GENERAL ELECTRIC	CL01A310TJ	Interpolated
IEC 3 POLE CONTACTORS, MOTOR STARTER, 22 AMPS	GENERAL ELECTRIC	CL25A310TJ	Interpolated
IEC 3 POLE CONTACTORS, MOTOR STARTER, 22 AMPS, 208V COIL	GENERAL ELECTRIC	CL25A310TL	Interpolated
IEC 3 POLE CONTACTORS, MOTOR STARTER, 32 AMPS	GENERAL ELECTRIC	CL04A310MJ	Interpolated
IEC 3 POLE CONTACTOR, MOTOR STARTER, 34 AMPS	GENERAL ELECTRIC	CL45A310MJS	Interpolated
IEC 3 POLE CONTACTORS, MOTOR STARTER, 68 AMPS	GENERAL ELECTRIC	CL08A311MJS	Interpolated
SIDE MOUNTED AUXILIARY CONTACT BLOCKS	GENERAL ELECTRIC	BCLL11	Interpolated
SIDE MOUNTED AUXILIARY CONTACTS - (2) NO	GENERAL ELECTRIC	BCLL20	Interpolated
FRONT MOUNTED AUXILIARY CONTACT BLOCK (1 N.C.)	GENERAL ELECTRIC	BCLF01	Interpolated
FRONT MOUNTED AUXILIARY CONTACT BLOCK (1 N.O.)	GENERAL ELECTRIC	BCLF10	Interpolated
1NO 1NC AUXILIARY CONTACT FOR MMS - SIDE MOUNT	GENERAL ELECTRIC	GPAC11LRA	Test Report R93006 UUT-1(c), UUT-2B(c) & UUT-4(c), Test Report PR052698.01 EUT-2(b)
1NO 1NC AUXILIARY CONTACT FOR MMS - SIDE MOUNT	GENERAL ELECTRIC	GPAC11LRA	Test Report R93006 UUT-1(c), UUT-2B(c) & UUT-4(c), Test Report PR052698.01 EUT-2(b)
CONTACTOR 5HP 3P 9A 100-250V-C	ABB	AF09-30-10-13	Test Report 147524-01 EUT-3(a)
CONTACTOR 15HP 3P 45A 100-250V-C	ABB	AF16-30-10-13	Test Report 147524-01 EUT-3(a)

Table 7: Motor Circuit Breakers

Sub Component	Manufacturer	Part or Model No.	Testing Status
CIRC. BKR., 1 POLE, 15 AMP, 120/240 VAC, THERMAL-MAGNETIC	SQUARE D	QOU-115-SQUARE D	Test Report R93006 UUT-3(c)
CIRCUIT BREAKER - 15 AMP SINGLE POLE	WESTINGHOUSE	QC-1015	Test Report R93006 UUT-1(c), Test Report PR052698.01 EUT-4(b)
CIRCUIT BREAKER - 20 AMP SINGLE POLE	WESTINGHOUSE	QC-1020	Extrapolated - Structurally identical from same mfg.
CIRCUIT BREAKER - 30 AMP SINGLE POLE	WESTINGHOUSE	QC-1030	Extrapolated - Structurally identical from same mfg.
CIRCUIT BREAKER - 15 AMP TWO POLE	WESTINGHOUSE	QC-2015H	Extrapolated - Structurally identical from same mfg.
CIRCUIT BREAKER - 20 AMP TWO POLE	WESTINGHOUSE	QC-2020H	Extrapolated - Structurally identical from same mfg.
CIRCUIT BREAKER - 25 AMP TWO POLE	WESTINGHOUSE	QC-2025H	Extrapolated - Structurally identical from same mfg.
CIRCUIT BREAKER - 25 AMP TWO POLE	WESTINGHOUSE	QC-2040H	Extrapolated - Structurally identical from same mfg.
CIRCUIT BREAKER - 15 AMP THREE POLE	WESTINGHOUSE	QC-3015H	Extrapolated - Structurally identical from same mfg.
CIRCUIT BREAKER - 35 AMP THREE POLE	WESTINGHOUSE	QC-3035H	Extrapolated - Structurally identical from same mfg.
CIRCUIT BREAKER - 50 AMP THREE POLE	WESTINGHOUSE	QC-3050H	Extrapolated - Structurally identical from same mfg.
CIRCUIT BREAKER - 60 AMP THREE POLE	WESTINGHOUSE	QC-3060H	Extrapolated - Structurally identical from same mfg.
CIRCUIT BREAKER - 70 AMP THREE POLE	WESTINGHOUSE	QC-3070H	Extrapolated - Structurally identical from same mfg.
CIRCUIT BREAKER - 90 AMP THREE POLE	WESTINGHOUSE	QC-3090H	Extrapolated - Structurally identical from same mfg.

Table 8: Switches

Sub Component	Manufacturer	Part or Model No.	Testing Status
SW, 2 POS. SEL., NEMA 4/13	IDEC	ASD210N	Test Report R93006 UUT-1(c), UUT-2A(c), UUT-3(c) & UUT-4(c)
SW, SEL, 3 POS.,MAINT,NEMA 4/13	IDEC	ASD320N	Test Report R93006 UUT-2A(c), UUT-3(c), UUT-4(c)
PUSHBUTTON, RED MUSHROOM HEAD, PUSH-PULL,	IDEC	AYD311N-R	Test Report R93006 UUT-4(c)
SW, 3 POS, 22MM, MAINTAINED, NEMA 4/13, STD KNOB, 2 N.O. 2N.C., 22.5MM ACTUATOR	AUTOMATION DIRECT	GXC1320-22	Test Report PR052698.01 EUT-2(b), EUT-4(b)
SW, 2 POS, 22MM, MAINTAINED, NEMA 4/13, STD KNOB, 1 N.O., 22.5MM ACTUATOR	AUTOMATION DIRECT	GXC1300	Test Report PR052698.01 EUT-2(b), EUT-4(b)
PUSHBUTTON, RED, 40MM MUSHROOM HEAD, TWIST-TO-RELEASE, 22MM W/1 N.C. CONTACT	AUTOMATION DIRECT	GXC1131	Test Report 147524-01 EUT-3(a)
PUSHBUTTON, FLUSH, RED, MOMENTARY, 22MM ACTUATOR, W/O CONTACT	AUTOMATION DIRECT	GXC1101-SC	Test Report 147524-01 EUT-3(a)

Table 9: Lights

Sub Component	Manufacturer	Part or Model No.	Testing Status
LIGHT, PILOT, 120V, WHITE LENS, W/LAMP, FULL VOLTAGE	IDEC	APD199N-2-120 IDEC	Test Report R93006 UUT-3(c)
CONTROL POWER ON LIGHT	IDEC	APD199N-W-120	Test Report R93006 UUT-4(c)
PILOT LIGHT-22 MM, METAL LED ILLUMINATED, WHITE LENS, 120 VAC	AUTOMATION DIRECT	GXC1236-120L	Test Report PR052698.01 EUT-4(b)
LIGHT, PILOT, 120V, BLUE LENS, W/ LAMP, FULL VOLTAGE	IDEC	APD199N-S-120	Test Report PR052698.01 EUT-1(b), EUT-3(b)
LIGHT, PILOT, 120V, AMBER LENS, W/LAMP, FULL VOLTAGE	IDEC	APD199N-A-120	Test Report PR052698.01 EUT-1(b), EUT-3(b)
LIGHT, PILOT, 120V, RED LENS, W/LAMP, FULL VOLTAGE	IDEC	APD199N-R-120	Test Report PR052698.01 EUT-1(b), EUT-3(b)
LIGHT, 30mm PILOT, 120V, RED LENS, W/LAMP, FULL VOLTAGE LEC	IDEC	APD1QH2DNUR	Test Report 147524-01 EUT-3(a)
LIGHT, 30mm PILOT, 120V, AMBER LENS, W/LAMP, FULL VOLTAGE LEC	IDEC	APD1QH2DNUA	Interpolated
LIGHT, 30mm PILOT, 120V, GREEN LENS, W/LAMP, FULL VOLTAGE LEC	IDEC	APD1QH2DNUG	Interpolated
LIGHT, 30mm PILOT, 120V, BLUE LENS, W/LAMP, FULL VOLTAGE LEC	IDEC	APD1QH2DNUS	Interpolated
LIGHT, 30mm PILOT, 120V, YELLOW LENS, W/LAMP, FULL VOLTAGE LEC	IDEC	APD1QH2DNUY	Interpolated
LIGHT, 30mm PILOT, 120V, WHITE LENS, W/LAMP, FULL VOLTAGE LEC	IDEC	APD1QH2DNUW	Interpolated

Table 10: Communication Devices

Sub Component	Manufacturer	Part or Model No.	Testing Status
MODBUS 485 TO BACNET MSTP CONVERTER	CONTROL SOLUTIONS	BB2-3010	Test Report R93006 UUT-1(c)
OIT TERMINAL ADAPTER KIT	PREFERRED UTILITIES	190777	Test Report R93006 UUT-2A (c)& UUT-4(c)
OPERATOR INTERFACE TERMINAL BLIND BRIDGE	RED LION CONTROLS	OEMDA000	Test Report R93006 UUT-2A (c)& UUT-4(c)
COMMUNICATION CABLE, G3 / MODULAR CONTROLLER TO KOYO MODEL 2XX	RED LION CONTROLS	CBLKOYO0	Test Report R93006 UUT-3(c)
CABLE ADAPTER - FOR OIT4, DB9 FEMALE TO RS232 FEMALE	RED LION CONTROLS	CBLADK03	Test Report R93006 UUT-3(c)
SCADA INTERFACE SHIELDED PIGTAIL CABLE D2-DSCBL-2	KOYO	D2-DSCBL-2	Test Report R93006 UUT-4(c)

Table 11: Transformers

Sub Component	Manufacturer	Part or Model No.	Testing Status
TRANSFORMER, 250 VA, 460/230/208 VAC PRIM., 115 VAC SEC.	HAMMOND	PH250MLI	Test Report R93006 UUT-2A(c) & UUT-2B(c), Test Report PR052698.01 EUT-4(b)
TRANSFORMER, 2000VA - 230/460 VAC PRIM. - 115 VAC SEC	HAMMOND	SP2000MQMJ	Test Report PR052698.01 EUT-2(b), EUT-4(b)
TRANSFORMER, 250 VA, 120 VAC PRI. / 24 VAC SEC, W/ SEC. FUSE CLIP	HAMMOND	PH250PG	Test Report PR052698.01 EUT-4(b)
TRANSFORMER, 250 VA, 415/380 VAC PRIM., 220/115 VAC SEC	HAMMOND	PH250MEMX	Test Report PR052698.01 EUT-4(b)
TRANSFORMER - 500 VA, 208V PRIMARY / 120V SECONDARY, OPEN TYPE	HAMMOND	PH500SP	Test Report PR052698.01 EUT-4(b)
TRANSFORMER, 500VA, 575,460,230V PRIMARY / 115/95V SECONDARY	HAMMOND	PH500MBMH	Test Report PR052698.01 EUT-4(b)
TRANSFORMER, 750 VA, 208/230/460v PRIMARY/120V SC	HAMMOND	PH750MLI	Test Report PR052698.01 EUT-4(b)
TRANSFORMER, 1000VA, 460,230,208V PRIMARY/120V SECONDARY	HAMMOND	PH1000MLI	Test Report PR052698.01 EUT-4(b)
TRANSFORMER, 1500VA, 575,460,230V PRIM/120V SEC	HAMMOND	PH1500MBMH	Test Report PR052698.01 EUT-4(b)
TRANSFORMER - 2000 VA, 208V PRIMARY / 120V SECONDARY	HAMMOND	PH2000SP	Test Report PR052698.01 EUT-4(b)

Table 12: Power Supply

Sub Component	Manufacturer	Part or Model No.	Testing Status
24 VDC POWER SUPPLY, 2.5A OUTPUT, 120VAC INPUT	CARLO GARVAZZI	SPD24601	Test Report R93006 UUT-1(c), UUT-2A(c) & UUT-3(c), Test Report 147524-01 UUT-3(a)
24VDC PWR SUPPLY, 5A OUTPUT, 120VAC	CARLO GARVAZZI	SPD241201	Test Report R93006 UUT-4(c), Test Report 147524-01 UUT-1(a)
RECEPTACLE, DUPLEX, 15A 125V, BROWN	HUBBELL	LEV CR15-BRN	Test Report R93006 UUT-1(c) & UUT-4(c)
JUNCTION BOX - 2WX4HX2-1/8D	T & B	58371-1/2	Test Report R93006 UUT-1(c) & UUT-4(c)

Table 13: Relays

Sub Component	Manufacturer	Part or Model No.	Testing Status
EMERGENCY TRANSFER RELAY - 120V COIL - 10 AMP	TELEMECANIQUE	CA2KN22F7	Test Report R93006 UUT-4(c)
EMERGENCY TRANSFER RELAY - 120V COIL - REVERSING	TELEMECANIQUE	LC2D25G7	Interpolated
EMERGENCY TRANSFER RELAY	TELEMECANIQUE	LC2D25O1L6	Interpolated
EMERGENCY TRANSFER RELAY - 120V COIL - 50 AMP	TELEMECANIQUE	LC1D50G6	Interpolated
EMERGENCY TRANSFER RELAY - 120V COIL - 62 AMPS	TELEMECANIQUE	LAR07AJS	Interpolated
EMERGENCY TRANSFER RELAY - 208V COIL - 7.5 HP@220V	TELEMECANIQUE	LC2D25LE7	Interpolated
EMERGENCY TRANSFER RELAY - 208v COIL - 10 HP @ 230V	TELEMECANIQUE	LAR04AL	Interpolated
EMERGENCY TRANSFER RELAY, 208V, 80 AMP	TELEMECANIQUE	LC2D80L6	Interpolated
EMERGENCY TRANSFER RELAY CONTACTOR MECH INTERLOCK FOR LC1D40	TELEMECANIQUE	LA9D4CM	Extrapolated - Structurally identical from same mfg.
RELAY, PLUG-IN, SPDT, 120VAC, 60HZ	MAGNECRAFT	W199AX-4	Extrapolated - Structurally identical from same mfg.
RELAY, PLUG-IN, DPDT, 10 AMP CONTACTS 120VAC, 60HZ	MAGNECRAFT	750XCXC-120A	Test Report R93006 UUT-1(c), UUT-2A(c), UUT-3(c) & UUT-4(c)
RELAY, PLUG-IN, TPD, 10 AMP CONTACTS 120VAC, 60HZ	MAGNECRAFT	750XCXC-120A	Test Report R93006 UUT-2A(c)
RELAY LATCHING DPDT, 10 AMP CONTACTS 120 VAC 60 HZ	IDEC	RR2KP-U-AC120V	Extrapolated - Structurally identical from same mfg.
RELAY, PLUG-IN, DPDT, 10 AMP CONTACTS 24VDC	IDEC	RH2B-U-DC24V	Test Report R93006 UUT-3(c)
RELAY, DPDT, 10A, 48 VDC COIL	IDEC	RH2B-U-DC48V	Interpolated
RELAY, PLUG-IN, 3PDT, 10A CONTACTS, 240VAC, 50/60HZ	IDEC	RR3PA-U-AC240V	Interpolated
RELAY, PLUG IN, 3PDT, 10A, 24VDC COIL	IDEC	RH3BUL-24VDC	Interpolated
RELAY, PLUG IN, 4PDT, 10A, 48VDC COIL	IDEC	RH4B-U-DC48V	Interpolated
RELAY, PLUG-IN, 4PDT, 10 AMP CONTACTS 120VAC, 60HZ	IDEC	RH4B-U-AC120V	Test Report R93006 UUT-4(c)
RELAY, PROGRAMMABLE TIME DELAY, 11 PIN,	SSAC	TRDU120A3	Test Report R93006 UUT-4(c)
RELAY, PLUG-IN, 3PDT, 10 AMP CONTACTS 120VAC, 60HZ	IDEC	RR3PA-UAC120V	Test Report PR052698.01 EUT-2(b), EUT-4(b)
RELAY, PLUG-IN, 3PDT, 10 AMP CONTACTS 120VAC, 60HZ	IDEC	RR3PA-UAC120V	Test Report PR052698.01 EUT-2(b), EUT-4(b)
RELAY, BLADE PLUG-IN, SPDT, 10 AMP CONTACTS 24VDC	IDEC	RH1B-U-DC24V	Test Report 147524-01 UUT-3(a)

Sub Component	Manufacturer	Part or Model No.	Testing Status
SOCKET, PLUG-IN TYPE, 8 PIN OCTAL BASE, SCREW TERMINALS	IDEC	SR2P-06	Test Report R93006 UUT-1(c), UUT-2A(c), UUT-3(c) & UUT-4(c)
SOCKET, PLUG-IN TYPE, 11 PIN BASE, SCREW TERMINALS	IDEC	SR3P-05	Test Report R93006 UUT-1(c), UUT-2A(c), UUT-3(c) & UUT-4(c)
SOCKET, DIN RAIL MOUNT, FOR DPDT COMPACT BLADE TERMINAL RELAY	IDEC	CON040WAL	Test Report R93006 UUT-3(c)
SOCKET, DIN RAIL MOUNT, FOR SPDT COMPACT BLADE TERMINAL RELAY	IDEC	SH1B-05	Test Report 147524-01 UUT -3(a)
SOCKET, 4PDT, BLADE TYPE, SNAP MOUNT	IDEC	SR4B-05	Test Report R93006 UUT-4(a)

Sub Component	Manufacturer	Part or Model No.	Testing Status
PLANT WIDE CONTROLLER WITH CPU, DISPLAY AND KEYBOARD	PREFERRED UTILITIES	PWCN4-CADHRO	Test Report R93006 UUT-1(c) & UUT-2A(c)
PWC EMPTY MODULE SLOT FILLER FACEPLATE	PREFERRED UTILITIES	90183	Test Report R93006 UUT-1 (c)
PWC STANDARD PUMP SET PANEL SINGLE PHASE WIRE HARNESS	PREFERRED UTILITIES	190141	Test Report R93006 UUT-1 (c)
PWC STANDARD PUMP SET PANEL THREE PHASE WIRE HARNESS	PREFERRED UTILITIES	190142	Test Report R93006 UUT-2A(c)
PWC DIN BOARD, 15 CH. 120 VAC DISCRETE INPUTS	PREFERRED UTILITIES	190608	Test Report R93006 UUT-1(c) & UUT-2A(c)
PWC AIN BOARD, 8 CH., UNIVERSAL ANALOG INPUTS	PREFERRED UTILITIES	190609	Test Report R93006 UUT-2A(c)
PWC HOA-ROUTBOARD, 5 CH. RELAY OUTPUT WITH HAND-OFF-AUTO BYPASS SWITCH	PREFERRED UTILITIES	190611	Test Report R93006 UUT-1 (c)
PWC ROUOT BOARD, 8 CH. RELAY OUTPUT BOARD	PREFERRED UTILITIES	190617	Test Report R93006 UUT-2A(c)
PWC A/M-AOUT BOARD, 5 CH. ANALOG OUTPUT WITH AUTO/MANUAL BYPASS STATION	PREFERRED UTILITIES	190613	Test Report R93006 UUT-2A(c)
PWC 4-20 MA OUTPUT DAUGHTER BOARD, FOR USE IN A/M-AOUT 190613	PREFERRED UTILITIES	190616	Test Report R93006 UUT-2A(c)

Sub Component	Manufacturer	Part or Model No.	Testing Status
DL 205 PLC, 4-SLOT BASE, INTERNAL 110/220 VAC POWER	KOYO	D2-04B-1	Test Report R93006 UUT-3 (c)
DL205 CPU260, 30.4K WORDS TOTAL MEMORY, FLASH MEMORY,	KOYO	D2-260	Test Report R93006 UUT-3(c) & UUT-4(c)
DL 205 PLC, INPUT MODULE, 8 PT, 110 VAC	KOYO	D2-08NA-1	Test Report R93006 UUT-3(c) & UUT-4(c)
DL 205 PLC, OUTPUT MODULE, 8 PT, RELAY	KOYO	D2-08TR	Test Report R93006 UUT-3(c) & UUT-4(c)
DL 205 PLC, 9 SLOT BASE, INTERNAL 110/220 VAC POWER	KOYO	D2-09B-1	Test Report R93006 UUT-4(c)
DL 205 PLC, MODULE, FILLER	KOYO	D2-FILL	Test Report R93006 UUT-3(c) & UUT-4(c)
DL 205 PLC, INPUT MODULE, 4PT, ANALOG	KOYO	F2-04AD-1	Test Report R93006 UUT-4(c)
DL 205 PLC, OUTPUT MODULE, 2PT, ANALOG	KOYO	F2-04DA-1	Test Report R93006 UUT-4(c)
EXPANSION BASE CONTROLLER MODULE D2-CM	KOYO	D2-CM	Test Report R93006 UUT-4(c)
BASE EXPANSION MODULE FOR LOCAL EXPANSION D2-EM	KOYO	D2-EM	Test Report R93006 UUT-4(c)
BASE EXPANSION CABLE D2-EXCBL-1	KOYO	D2-EXCBL-1	Test Report R93006 UUT-4(c)
ETHERNET COMMUNICATION MODULE, MASTER/SLAVE ON AN EHTERNET W/MODBUS TCP/IP	KOYO	H2-ECOM100	Test Report R93006 UUT-4(c)

Sub Component	Manufacturer	Part or Model No.	Testing Status
FUEL SENTRY TANK GAUGE	PREFERRED UTILITIES	TG-EL-D4A-00-0-0	Test Report R93006 UUT-4(c)
PRINTER FOR USE WITH TG-EL-D4A, INCLUDES 120VPWR SUPPLY AND CONNECTOR	PREFERRED UTILITIES	TG-EL-D4A-PRINTER	Test Report R93006 UUT-4(c)

Sub Component	Manufacturer	Part or Model No.	Testing Status
BMU WITH BASIC CONTROL CHASSIS WITH SHIP LOOSE LCD TOUCH PAD	PREFERRED UTILITIES	BMU-00N0	Interpolated
BMU WITH BASIC CONTROL CHASSIS AND FLUSH MTD LCD TOUCH PAD	PREFERRED UTILITIES	BMU-00H0	Test Report PR052698.01 EUT-3(b)
BMU WITH BASIC CONTROL CHASSIS AND FLUSH MTD LCD TOUCH PAD	PREFERRED UTILITIES	BMU-00V0	Interpolated
BMU WITH BASIC CONTROL CHASSIS, OXYGEN TRIM AND SHIP LOOSE LCD TOUCH PAD	PREFERRED UTILITIES	BMU-02N0	Interpolated
BMU WITH BASIC CONTROL CHASSIS, OXYGEN TRIM AND FLUSH MTD LCD TOUCH PAD	PREFERRED UTILITIES	BMU-02H0, BMU-02V0	Interpolated
BMU WITH EXPANDED CONTROL CHASSIS AND SHIP LOOSE LCD TOUCH PAD	PREFERRED UTILITIES	BMU-10N0	Interpolated
BMU WITH EXPANDED CONTROL CHASSIS AND FLUSH MTD LCD TOUCH PAD	PREFERRED UTILITIES	BMU-10H0, BMU-10V0	Interpolated
BMU WITH EXPANDED CONTROL CHASSIS, OXYGEN TRIM AND SHIP LOOSE LCD TOUCH PAD	PREFERRED UTILITIES	BMU-12N0, BMU-12H0, BMU-12V0	Interpolated
BMU WITH PREDICTIVE METERING OPTIONS PLUS EXPANDED CONTROL CHASSIS WITH OXYGEN TRIM AND FLUSH MTD LCD TOUCH PAD	PREFERRED UTILITIES	BMU-22N0	Test Report PR052698.01 EUT-1(b)

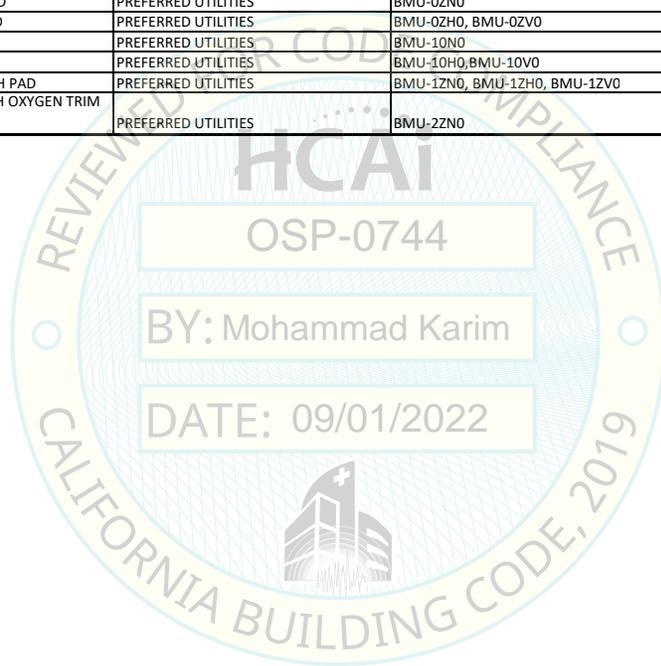


Table 19: Miscellaneous

Sub Component	Manufacturer	Part or Model No.	Testing Status
ALARM BELL, 120 V, 6 IN. DIA.	WHEELOK	43T-G6-115-5-23	Test Report R93006 UUT-1(c), UUT-2A(c) & UUT-4(c)
SONALERT, MALLORY, 30-120VAC VOLTAGE/2900 HZ	SONALERT	SC-110R	Test Report R93006 UUT-3(c)
SONALERT, MALLORY, 48-120VAC/DC VOLTAGE/3300 HZ, NEMA 4X/12, 22.5MM PANEL HOLE	MALLORY SONNALERT	ZA120LACT	Test Report PR052698.01 EUT-2(b), EUT-4(b)
DEVAR TEMPERATURE TRANSMITTER, SUBPLATE MOUNTED WITH BRACKET, RG 0 TO 300 DEG., F, SM SERIES	DEVAR INC.	SM-812-EC-0013-M31D	Test Report R93006 UUT-2A(c) & UUT-4(c)
SHAFT FOR ABB DISC SW, 12 DEEP PNL	ABB CONTROLS INC.	OX56X330	Test Report R93006 UUT-2B(c), Test Report PR052698.01 EUT-2(b)
CONVERSION MECHANISM FOR ABB DISC. SW	ABB CONTROLS INC.	OTZW8	Test Report R93006 UUT-2B(c)
DIODE, 1N4004, RECTIFIER, 400V, 1A	MOTOROLA	1N4004	Test Report R93006 UUT-3(c)
SIGNAL ISOLATOR, DC CURRENT OR VOLTAGE, 24VDC	WEIDMULLER	8594810000	Test Report R93006 UUT-4(c)
FUEL SYSTEM CONTROLLER, 120 VAC, 24 DIN, 10 ROUT, 8 AIN, 3 AOUT	PREFERRED UTILITIES	FSC-120	Test Report PR052698.01 EUT-2(b), EUT-4(b)
CONNECTOR ADAPTER, DB9 FEMALE TO 10 POINT SCREW TERMINAL	PREFERRED UTILITIES	92693	Test Report PR052698.01 EUT-2(b), EUT-4(b)
COVER FOR CL CONTACTORS (CLO0, CLO1, CLO2)	GENERAL ELECTRIC	GPF10C02	Test Report PR052698.01 EUT-2(b)
LINK FOR CONT. TO MMS (CLO0, CLO1, CLO2)	GENERAL ELECTRIC	GPF1L02AA	Test Report PR052698.01 EUT-2(b)
NON FUSIBLE DISC. SWITCH, 3 POLE, 40 AMP 600 VAC	ABB CONTROLS INC	OT40F3	Test Report PR052698.01 EUT-2(b)
HANDLE FOR ABB DISCONNECT SW., PANEL MOUNT, PADLOCKABLE,	ABB CONTROLS INC	QHBS2AJ1	Test Report PR052698.01 EUT-2(b)
BASE MOUNTING PLATE, FOR WH BREAKER	WESTINGHOUSE	207B513G01	Test Report PR052698.01 EUT-4(b)
RES 2.2K OHM, 2 W, 5 %, Metal Film, Axial, Flame Retardant	YAGEO	2.2KW-2-ND	Test Report PR052698.01 EUT-4(b)
PUMP & MOTOR ASSY - 1200 GPH #2 OIL @ 25 PSI FOR PF-305/405/505	VIKING PUMP	HJ475	Test Report PR052698.01 EUT-4(b)
PUMP SET LEAK DETECTOR	PREFERRED UTILITIES	PS-LDS	Test Report PR052698.01 EUT-4(b)
GAUGE, PRESSURE, 2-1/2 IN., RG. 0-100 PSI WITH FLUTTERGUARD W/LOGO	ASHCROFT	2-1/2" 1005H 1/4"L XSF 0/100#	Test Report PR052698.01 EUT-4(b)
GAUGE, COMPOUND, 2-1/2", RG. 30 IN HG - 0 -15 PSI W/FUTTERGUARD W/PREFERRED UTILITIES	ASHCROFT	5 1005 02L XSF VAC AND 15 PSI	Test Report PR052698.01 EUT-4(b)
SPECIAL LOGO	ASHCROFT	5 1005 02L XSF VAC AND 15 PSI	Test Report PR052698.01 EUT-4(b)
DIFFERENTIAL PRESSURE SWITCH/INDICATOR SET AT 15 PSI (NO TEXT)	MID-WEST INSTRUMENTS	522-0045	Test Report PR052698.01 EUT-4(b)
DIFFERENTIAL PRESSURE SWITCH/INDICATOR SET AT 2 PSI (NO TEXT)	MID-WEST INSTRUMENTS	522-0044	Test Report PR052698.01 EUT-4(b)
WATER PROBE ADAPTER FOR RVFS FILTERS	RACOR	71809	Test Report PR052698.01 EUT-4(b)
WATER PROBE ASS'Y RACOR FILTER	RACOR	RK30880E	Test Report PR052698.01 EUT-4(b)
VALVE, BALL, SIZE 1-1/2" NPT, SHORT HANDLE	APOLLO	70-107-15	Test Report PR052698.01 EUT-4(b)
VALVE, BALL, 1/4" MALE X 1/4" FEMALE NPT.	WEBSTONE	41687	Test Report PR052698.01 EUT-4(b)
COALESCING FUEL OIL FILTER - 25 GPM #2 OIL	RACOR	FBO-14	Test Report PR052698.01 EUT-4(b)
NIPPLE, 1/4 in. NPT, 1-1/2 in. Long, SCH 40	GENERIC	10697-.25	Test Report PR052698.01 EUT-4(b)
NIPPLE, 1.5 IN, NPT, 6 IN LG. SCH. 40 ASTM-106A .	GENERIC	10706-1.5	Test Report PR052698.01 EUT-4(b)
NIPPLE, 1.5 IN, NPT, 5.5 IN LG.	GENERIC	10705-1.5	Test Report PR052698.01 EUT-4(b)
NIPPLE, 1.5 IN NPT, 4 IN LG,	GENERIC	10702-1.5	Test Report PR052698.01 EUT-4(b)
NIPPLE, 1.5 in. NPT, 2 in. Long, SCH 40	GENERIC	10698-1.5	Test Report PR052698.01 EUT-4(b)
NIPPLE, 1.5 in. NPT, 2.5 in. Long, SCH 40	GENERIC	10699-1.5	Test Report PR052698.01 EUT-4(b)
NIPPLE, 1-1/2 in. IPS CLOSE LENGTH, SCH 40 ASTM 106	GENERIC	10685-1.5	Test Report PR052698.01 EUT-4(b)
ELBOW, 90 DEG., STREET, 1/4" NPT, 150# BLK	GENERIC	10683-.25	Test Report PR052698.01 EUT-4(b)
TEE, REDUCING, 1.5X1.5X1/2 NPT,150# BLK M.I.	GENERIC	10688-1.5X1.5X.5	Test Report PR052698.01 EUT-4(b)
TEE, REDUCING, 1-1/2" X 1/2" X 1-1/2" NPT	GENERIC	10688-1.5X.5X1.5	Test Report PR052698.01 EUT-4(b)
TEE, 1/4 IN NPT, 150# BLACK M.I.	GENERIC	10691-.25	Test Report PR052698.01 EUT-4(b)
TEE, REDUCING, 1.5X1.5X1/2 NPT,150# BLK M.I.	GENERIC	10688-1.5X1.5X.5	Test Report PR052698.01 EUT-4(b)
UNION, 1.5" NPT, 300# BLK M.I.	GENERIC	10686-1.5	Test Report PR052698.01 EUT-4(b)
TUBING- SEAMLESS COPPER REFRIGERATION- 5/16" X .032 WALL	GENERIC	KB280-T05-.032	Test Report PR052698.01 EUT-4(b)
BUSHING, 1/2 X 1/4 NPT, 150# BLACK M.I.	GENERIC	10687-.50X.25	Test Report PR052698.01 EUT-4(b)
FITTING, 5/16 IN. O.D. TUBE X 1/4 IN.	GENERIC	11300	Test Report PR052698.01 EUT-4(b)
STRAINER - SIMPLEX - 1-1/2" NPT WITH 100 MESH BASKETS	TITAN FLOW CONTROL	BS25I0150-100	Test Report PR052698.01 EUT-4(b)
CABINET INNER TOP SUB PANEL FOR FSC ENCLOSURE	HAMMOND	SE1400530	Test Report PR052698.01 EUT-4(b)
CABINET INNER SUB PANEL FOR DOUBLE DOOR ENCLOSURE 48"H 48"W FREESTANDING	HAMMOND	18P4533	Test Report PR052698.01 EUT-4(b)
CABINET INNER SUB PANEL FOR FSC ENCLOSURE	HAMMOND	EP2020	Test Report PR052698.01 EUT-4(b)
SURGE PROTECTOR - 20 AMP, 120 VAC, LED POWER INDICATION, DIN RAIL MTD	CONTROL CONCEPTS	70025969	Test Report PR052698.01 EUT-1(b), EUT-3(b)
ADAPTER, TYPE C DIN RAIL, QUICKLAG	EATON/CUTLER-HAMMER	QCDINADAPT	Test Report PR052698.01 EUT-1(b), EUT-3(b)
FLASHER, 120 VAC, 1.25 A TUNGSTEN LOAD MAX	INGRAM PRODUCTS	SSF150W	Test Report PR052698.01 EUT-1(b), EUT-3(b)
LIGHT, PANEL ALARM, FLASHING, RED GLOBE, NEMA 4X	INGRAM PRODUCTS	LX40F	Test Report PR052698.01 EUT-1(b), EUT-3(b)
ALARM HORN, 4" SQUARE, 120 VOLT W/ NEMA 4X MOUNTING KIT3	PREFERRED UTILITIES	11698-G	Test Report PR052698.01 EUT-1(b), EUT-3(b)

Width	Height	Depth	Weight	Manufacturer	Part Number	Tested
20.0 in	25.0 in	11.0 in	98.0 lbs	Preferred Utilities	90217	Test Report R93006 UUT-1(c)
20.0 in	35.0 in	10.0 in	98.0 lbs	Preferred Utilities	90218	Test Report R93006 UUT-1(c)
20.0 in	35.0 in	11.0 in	124.0 lbs	Preferred Utilities	90218-2	Test Report R93006 UUT-2A(c)

Note: All Enclosures constructed of cold formed carbon steel

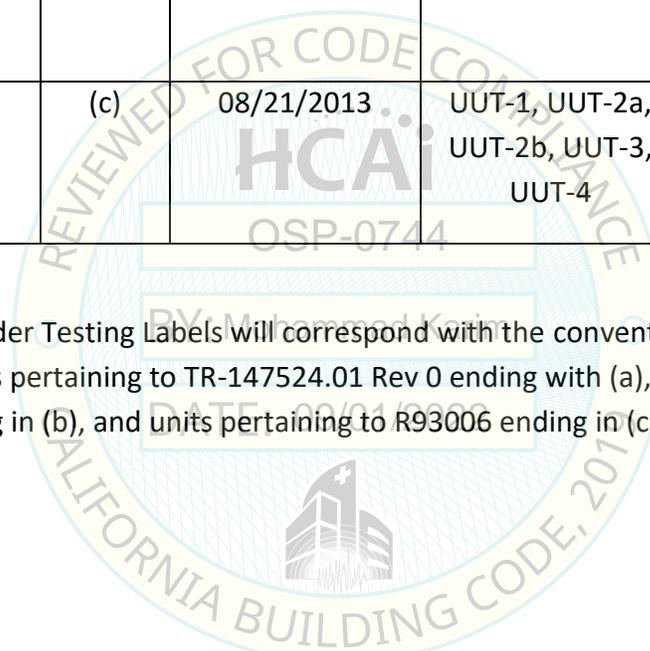
Width	Height	Depth	Weight	Manufacturer	Part Number	Tested
20.0 in	20.0 in	8.0 in	46.0 lbs	Hammond	EN45D20208GY	Test Report R93006 UUT-3(c)
24.0 in	20.0 in	8.0 in	459.0 lbs	Hammond	EN45D20248GY	Interpolated
20.0 in	24.0 in	8.0 in	459.0 lbs	Hammond	EN45D24208GY	Interpolated
24.0 in	24.0 in	8.0 in	459.0 lbs	Hammond	EN45D24248GY	Interpolated
30.0 in	24.0 in	8.0 in	459.0 lbs	Hammond	EN45D24308GY	Interpolated
20.0 in	30.0 in	8.0 in	459.0 lbs	Hammond	EN45D30208GY	Interpolated
24.0 in	30.0 in	8.0 in	459.0 lbs	Hammond	EN45D30248GY	Interpolated
30.0 in	30.0 in	8.0 in	459.0 lbs	Hammond	EN45D30308GY	Interpolated
36.0 in	30.0 in	8.0 in	459.0 lbs	Hammond	EN45D30368GY	Interpolated
24.0 in	36.0 in	8.0 in	459.0 lbs	Hammond	EN45D36248GY	Interpolated
30.0 in	36.0 in	8.0 in	459.0 lbs	Hammond	EN45D36308GY	Interpolated
36.0 in	36.0 in	8.0 in	459.0 lbs	Hammond	EN45D36368GY	Interpolated
24.0 in	42.0 in	8.0 in	459.0 lbs	Hammond	EN45D42248GY	Interpolated
30.0 in	42.0 in	8.0 in	459.0 lbs	Hammond	EN45D42308GY	Interpolated
36.0 in	42.0 in	8.0 in	459.0 lbs	Hammond	EN45D42368GY	Interpolated
24.0 in	48.0 in	8.0 in	459.0 lbs	Hammond	EN45D48248GY	Interpolated
30.0 in	48.0 in	8.0 in	459.0 lbs	Hammond	EN45D48308GY	Interpolated
36.0 in	48.0 in	8.0 in	459.0 lbs	Hammond	EN45D48368GY	Interpolated
20.0 in	20.0 in	11.0 in	459.0 lbs	Hammond	SQ1402337	Test Report PR052698.01 EUT-4(b)
20.0 in	20.0 in	11.0 in	56.0 lbs	Hammond	EN45D202010GY	Test Report R93006 UUT-2B(c)
24.0 in	20.0 in	10.0 in	130.0 lbs	Hammond	EN45D202410GY	Interpolated
20.0 in	24.0 in	10.0 in	130.0 lbs	Hammond	EN45D242010GY	Interpolated
24.0 in	24.0 in	10.0 in	130.0 lbs	Hammond	EN45D242410GY	Interpolated
20.0 in	30.0 in	10.0 in	130.0 lbs	Hammond	EN45D302010GY	Interpolated
24.0 in	30.0 in	10.0 in	130.0 lbs	Hammond	EN45D302410GY	Interpolated
30.0 in	30.0 in	10.0 in	130.0 lbs	Hammond	EN45D303010GY	Interpolated
20.0 in	35.0 in	11.0 in	130.0 lbs	Hammond	SE1400529	Test Report PR052698.01 EUT-2(b)
24.0 in	36.0 in	10.0 in	226.0 lbs	Hammond	EN45D362410GY	Interpolated
30.0 in	36.0 in	10.0 in	226.0 lbs	Hammond	EN45D363010GY	Interpolated
36.0 in	36.0 in	10.0 in	226.0 lbs	Hammond	EN45D363610GY	Interpolated
30.0 in	42.0 in	10.0 in	226.0 lbs	Hammond	EN45D423010GY	Interpolated
36.0 in	42.0 in	10.0 in	226.0 lbs	Hammond	EN45D423610GY	Interpolated
24.0 in	48.0 in	10.0 in	226.0 lbs	Hammond	EN45D482410GY	Interpolated
30.0 in	48.0 in	10.0 in	226.0 lbs	Hammond	EN45D483010GY	Interpolated
36.0 in	48.0 in	10.0 in	226.0 lbs	Hammond	EN45D483610GY	Interpolated
20.0 in	20.0 in	12.0 in	226.0 lbs	Hammond	EN45D202012GY	Interpolated
24.0 in	20.0 in	12.0 in	226.0 lbs	Hammond	EN45D242012GY	Interpolated
24.0 in	24.0 in	12.0 in	226.0 lbs	Hammond	EN45D242412GY	Interpolated
24.0 in	30.0 in	12.0 in	226.0 lbs	Hammond	EN45D302412GY	Interpolated
30.0 in	30.0 in	12.0 in	226.0 lbs	Hammond	EN45D303012GY	Interpolated
24.0 in	36.0 in	12.0 in	226.0 lbs	Hammond	EN45D362412GY	Interpolated
30.0 in	36.0 in	12.0 in	226.0 lbs	Hammond	EN45D363012GY	Interpolated
36.0 in	36.0 in	12.0 in	226.0 lbs	Hammond	EN45D363612GY	Interpolated
30.0 in	42.0 in	12.0 in	226.0 lbs	Hammond	EN45D423012GY	Interpolated
36.0 in	42.0 in	12.0 in	226.0 lbs	Hammond	EN45D423612GY	Interpolated
24.0 in	48.0 in	12.0 in	226.0 lbs	Hammond	EN45D482412GY	Interpolated
36.0 in	48.0 in	13.0 in	226.0 lbs	Hammond	EN45D483612GY	Test Report R93006 UUT-4(c)
48.0 in	48.0 in	12.0 in	459.0 lbs	Hammond	SE1100629	Test Report PR052698.01 EUT-4(b)
24.0 in	30.0 in	16.0 in	459.0 lbs	Hammond	EN45D302416GY	Extrapolated - Structurally identical from same mfg.
30.0 in	36.0 in	16.0 in	459.0 lbs	Hammond	EN45D363016GY	Extrapolated - Structurally identical from same mfg.
36.0 in	42.0 in	16.0 in	459.0 lbs	Hammond	EN45D423616GY	Extrapolated - Structurally identical from same mfg.
36.0 in	48.0 in	16.0 in	459.0 lbs	Hammond	EN45D483616GY	Extrapolated - Structurally identical from same mfg.
36.0 in	60.0 in	16.0 in	459.0 lbs	Hammond	EN45D603616GY	Extrapolated - Structurally identical from same mfg.
30.0 in	36.0 in	20.0 in	459.0 lbs	Hammond	EN45D363020GY	Extrapolated - Structurally identical from same mfg.
36.0 in	48.0 in	20.0 in	459.0 lbs	Hammond	EN45D483620GY	Extrapolated - Structurally identical from same mfg.

Note: All Enclosures constructed of cold formed carbon steel

Test Report Table

Test Report	Version	Report Date	Original UUT/EUT Labels	UUT/EUT Labels for this Application
TR-147524.01 Rev 0	(a)	5/31/2022	EUT-1, EUT-2, EUT-3	EUT-1(a), EUT-2(a), EUT-3(a)
PR052698.01	(b)	12/12/2016	EUT-1, EUT-2, EUT-3, EUT-4a, EUT-4b	EUT-1(b), EUT-2(b), EUT-3(b), EUT-4a(b), EUT-4b(b)
R93006	(c)	08/21/2013	UUT-1, UUT-2a, UUT-2b, UUT-3, UUT-4	UUT-1(c), UUT-2a(c), UUT-2b(c), UUT-3(c), UUT-4(c)

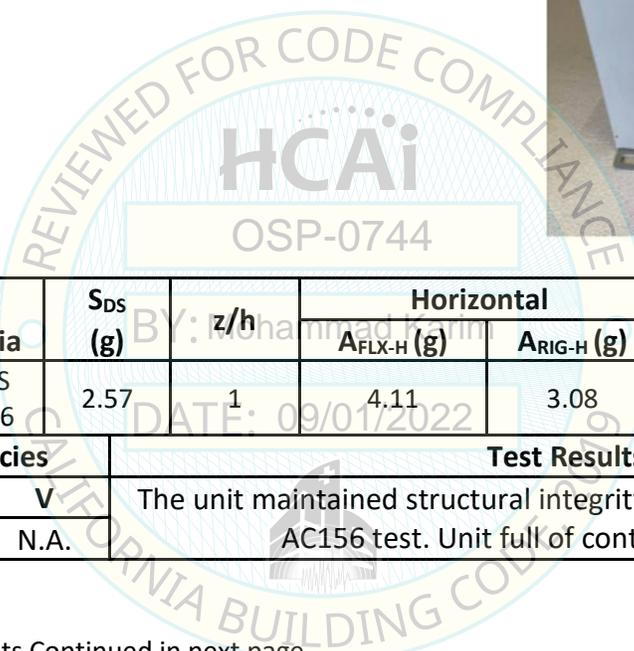
Unit/Equipment Under Testing Labels will correspond with the convention listed in the table above. With all units pertaining to TR-147524.01 Rev 0 ending with (a), units pertaining to PR052698.01 ending in (b), and units pertaining to R93006 ending in (c).



Test Report TR-147524.01 Rev 0
EUT-2(a)

Vacuum Manifold Cabinet
 (Part # VLM P-4-100 & Component # VLM P-4-100)
 10"W x 7"D x 10"H, 10 lbs,
 Wall mounted using (4) 3/8" dia bolts.

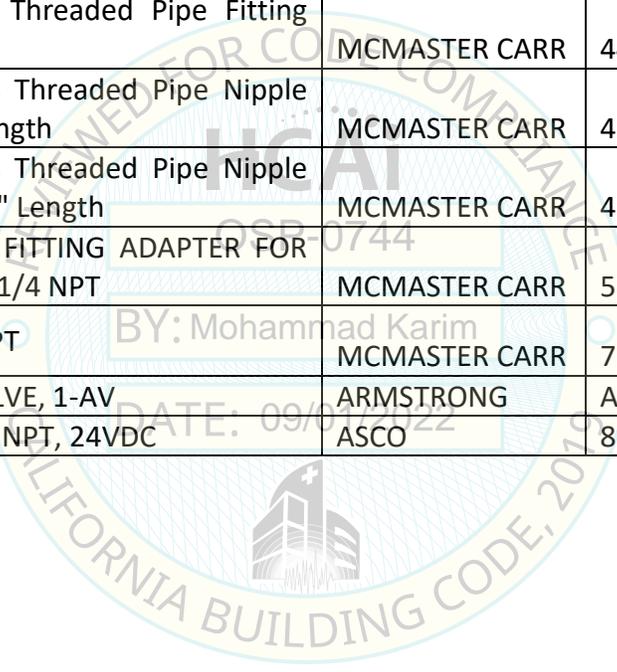
Carbon Steel Enclosure



Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-H} (g)
CBC 2022	ICC-ES AC 156	2.57	1	4.11	3.08	1.72	0.69
Natural Frequencies			Test Results				
F-B	S-S	V	The unit maintained structural integrity and functionality after the AC156 test. Unit full of contents during test.				
N.A.	N.A.	N.A.					

EUT-2(a) Subcomponents Continued in next page

Subcomponent	Manufacturer	Part #
VACUUM ZONE MANIFOLD, 4 ZONES	OHLHEISER CORPORATION	VDW-PREF-4-040921
BALL VALVE-1/4" NPT-BRONZE 600 # CWP UL YRBX MHKZ YRPV & YSDT	APOLLO	80-101-27
GAUGE, COMPOUND, 2 IN., RG. 30-0-30 PSI 0 - (-14.7) psig / 4-20 mA Vacuum Transmitter	ASHCROFT SETRA	1005-02L-30/30 AXD1Z01PV2M11A1FNN
TUBING- SEAMLESS COPPER REFRIGERATION- 5/16" X .032 WALL	CAMBRIDGE	102202
Low-Pressure Brass Threaded Pipe Fitting 1/4 Pipe Size, Tee	MCMASTER CARR	4429K251
Standard-Wall Brass Threaded Pipe Nipple 1/4 Pipe Size X 3" Length	MCMASTER CARR	4568k135
Standard-Wall Brass Threaded Pipe Nipple 1/4 Pipe Size X 1 1/2" Length	MCMASTER CARR	4568K132
YOR-LOK STRAIGHT FITTING ADAPTER FOR 5/16" O.D. TUBE TO 1/4 NPT	MCMASTER CARR	5272K297
Check Valve, 1/2" NPT	MCMASTER CARR	7768k680
1/2" NPT, FLOAT VALVE, 1-AV	ARMSTRONG	ARM 1/2 1-AV
Solenoid Valve, 1/4" NPT, 24VDC	ASCO	8262H320



**Test Report TR-147524.01 Rev 0
 EUT-1(a)**

Vacuum Leak Monitoring Controller
 (Part # OIT 4X & Component # VLM-P-X)

20"W x 10"D x 20"H, 60 lbs
 Wall mounted using (4) 3/8" dia bolts.

Stainless Steel Enclosure



Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				AFLX-H (g)	ARIG-H (g)	AFLX-V (g)	ARIG-H (g)
CBC 2022	ICC-ES AC 156	2.57	1	4.11	3.08	1.72	0.69
Natural Frequencies			Test Results				
F-B	S-S	V	The unit maintained structural integrity and functionality after the AC156 test. Unit full of contents during test.				
N.A.	N.A.	N.A.					

DATE: 09/01/2022

Subcomponent	Manufacturer	Part #
CABINET - 20" H X 20" W X 10" D - NEMA 4X	HAMMOND MANUFACTURING	EN4SD202010SS
Cabinet Mounting Foot Kit for Eclipse Type Enclosures S.S. (qty 4 incl)	HAMMOND MANUFACTURING	ESSMFHD
Cabinet Inner Sub Panel for Eclipse 20Wx20H Enclosures	HAMMOND MANUFACTURING	EZPMFHD
24VDC POWER SUPPLY, 5A OUTPUT, 120VAC	CARLO GAVAZZI	SPD241201N
30mm Audible/Visual Alarm Light, Red, 12-24V	FEDERAL SIGNAL	PMC-012-024R
Fuel System Controller, 120vac, 24 DIN, 10 ROUT, 8 AIN, 3 AOUT	PREFERRED UTILITIES	FSC-120
OPERATOR INTERFACE TERMINAL 4 INCH WITH NEMA 4X FRONT	RED LION CONTROLS	OEMC1040
Filter for Vacuum Pump, 1/4"	SMC	ZFC5D-B
Vacuum Pump and Motor, 120VDC, 1/16 HP	GAST	MOA-P108-HB
Vacuum Pressure Regulator	OHLHEISER CORPORATION	SMC IRV10-N07BG

Test Report TR-147524.01 Rev 0

EUT-3(a)

Fuel System Controller
 (Part # OIT 15X & Component # OSHPD-FOS-3)

30"W x 10"D x 24"H, 100 lbs
 Wall mounted using (4) 3/8" dia bolts.

Carbon Steel Enclosure



Building	Test	SDS	z/h	Horizontal		Vertical	
Code	Criteria	(g)		AFLX-H (g)	ARIG-H (g)	AFLX-V (g)	ARIG-H (g)
CBC 2022	ICC-ES AC 156	2.57	1	4.11	3.08	1.72	0.69
Natural Frequencies			Test Results				
F-B	S-S	V	The unit maintained structural integrity and functionality after the AC156 test. Unit full of contents during test.				
N.A.	N.A.	N.A.					

Subcomponent	Manufacturer	Part #
CONTACTOR 5HP 3P 9A 100-250V-C	ABB	AF09-30-10-13
AUX MMS SIDE MOUNT RIGHT 1NO-1NC	ABB	HK1-11
LINKS MMS TO CONT AF09-AF16 (MS132-0.16-25A)	ABB	BEA16-4
MANUAL MOTOR STARTER: 25HP-480 (ADJUSTABLE FLA:25-32)	ABB	MS132-32
MANUAL MOTOR STARTER: 1/2 HP-480V (ADJUSTABLE FLA:.63-1.0)	ABB	MS132-1.0
CONTACTOR 15HP 3P 45A 100-250V-C	ABB	AF16-30-10-13
LINKS MMS TO CONT AF26-AF38 (MS132-12-32A)	ABB	BEA38-4
NON-FUSIBLE DISCONNECT SWITCH, 3 POLE, 100 AMP, 600VAC	ABB	OT100F3
HANDLE FOR ABB DISCONNECT SW., PANEL MOUNT, PADLOCKABLE,	ABB	OHBS2AJ1
SHAFT FOR ABB DISC SW, 12 DEEP PNL	ABB	OXS6X330
AUX CONT FRONT MOUNT 1NO	ABB	CA4-10
PUSHBUTTON, RED, 40MM MUSHROOM HEAD, TWIST-TO-RELEASE, 22MM W/1 N.C. CONTACT	AUTOMATION DIRECT	GCX1131

EUT – 3(a) Subcomponents Continued

Subcomponent	Manufacturer	Part #.
AUTO DIRECT 22MM NO AUX CT (PKG OF 2)	AUTOMATION DIRECT	ECX-1040-2
PUSHBUTTON, FLUSH, RED, MOMENTARY, 22MM ACTUATOR, W/O CONTACT	AUTOMATION DIRECT	GCX1101-SC
SW, PUSHBUTTON, MOMENTARY, FLUSH RED HD, 1 N.O., NEMA 4/13	IDEC	ABD120NUR
PUSHBUTTON, RED MUSHROOM HEAD, PUSH-PULL	IDEC	AYD302NUR
30MM SW, 2 POS. SEL., NEMA 4/13, MAINT, STD KNOB, 1 N.O.	IDEC	ASD210NU
30MM SW, 3 POS. SEL., NEMA 4/13, MAINT, STD KNOB, 2 N.O.	IDEC	ASD320NU
LIGHT, 30mm PILOT, 120V, RED LENS, W/LAMP, FULL VOLTAGE LED	IDEC	APD1QH2DNUR
Cabinet Inner Sub Panel for Eclipse 30Hx24W Enclosures	HAMMOND MANUFACTURING	EP3024
SONALERT, MALLORY, 48-120VAC/DC VOLTAGE/3300 HZ, NEMA 4X/12, 22.5MM PANEL HOLE	SONALERT	ZA120LACT
CABINET: 30 IN H X 24 IN W X 10 IN DEEP HAMMOND	HAMMOND MANUFACTURING	EN4SD302410GY
24VDC POWER SUPPLY, 2.5A OUTPUT, 120VAC INPUT	CARLO GARVASI	SPD24601
RELAY, BLADE PLUG-IN, SPDT, 10 AMP CONTACTS 24VDC	IDEC	RH1B-UDC24V
SOCKET, DIN RAIL MOUNT, FOR SPDT COMPACT BLADE TERMINAL RELAY	IDEC	SH1B-05
Fuel System Controller, 120vac, 24 DIN, 10 ROUT, 8 AIN, 3 AOUT	PREFERRED UTILITIES	FSC-120
OPERATOR INTERFACE TERMINAL, 15-INCH, NEMA 4X, WEB SERVER, DATA LOGGING - PROGRAMMING NOT INCLUDED	RED LION CONTROLS	OEMC3150
Fuel Sentry Tank Gauge	PREFERRED UTILITIES	TG-EL-D4B-00-0-0

Test Report PR052698.01

EUT – 1(b)

BMU Boiler Controller – S16R8137
 14 ga. Cold Formed Carbon Steel
 36"W x 21"D x 60"H, 282 lbs
 Wall mounted using: (4) - 3/8" bolts



Figure 1: EUT-1

Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-H}
CBC 2022	ICC-ES AC 156	2.84	1	4.54	3.41	1.90	0.76
Natural Frequencies			Test Results				
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT was full of operating content during test				
N.A.	N.A.	N.A.					

Subcomponents	Manufacturer	Part #
BMU WITH PREDICTIVE METERING OPTIONS PLUS EXPANDED CONTROL CHASSIS WITH OXYGEN TRIM AND FLUSH MTD LCD TOUCH PAD	PREFERRED UTILITIES	BMU-2ZN0
WALL MOUNT ENCLOSURE, NEMA 4. 60H x 36W x 20D.	HAMMOND	EN4SD603620GY
CIRCUIT BREAKER - 15 AMP, SINGLE POLE	WESTINGHOUSE	QC1015
SURGE PROTECTOR - 20 AMP, 120 VAC, LED POWER INDICATION, DIN RAIL MTD	COTROL CONCEPTS	70025969
RELAY, PLUG-IN, DPDT, 10 AMP CONTACTS 120VAC, 60HZ	IDEC	RR2P-UAC120V
SOCKET, PLUG-IN TYPE, 8 PIN OCTAL BASE, SCREW TERMINALS	IDEC	SR2P-06
ADAPTER, TYPE C DIN RAIL, Q UICKLAG	EATON/CUTLER-HAMMER	QCDINADAPT

EUT – 1(b) Subcomponents Continued

Subcomponents	Manufacturer	Part #
FLASHER, 120 VAC, 1.25 A TUNGSTEN LOAD MAX	INGRAM PRODUCTS	SSF150W
LIGHT, PANEL ALARM, FLASHING, RED GLOBE, NEMA 4X	INGRAM PRODUCTS	LX40F
LIGHT, PILOT, 120V, BLUE LENS, W/ LAMP, FULL VOLTAGE	IDEC	APD199N-S-120
LIGHT, PILOT, 120V, AMBER LENS, W/LAMP, FULL VOLTAGE	IDEC	APD199N-A-120
LIGHT, PILOT, 120V, RED LENS, W/LAMP, FULL VOLTAGE	IDEC	APD199N-R-120
SW, SEL, 3 POS.,MAINT,NEMA 4/13, STD KNOB, (2) N.O. CONTACTS	IDEC	ASD320N
ALARM HORN, 4~ SQUARE, 120 VOLT W/ NEMA 4X MOUNTING KIT3	PREFERRED UTILITIES	11698-G
PUSHBUTTON, RED MUSHROOM HEAD, PUSH-PULL	IDEC	AYD311N-R
OIT TERMINAL ADAPTER KIT	PREFERRED UTILITIES	190777
OPERATOR INTERFACE TERMINAL 10.4 INCH WITH NEMA 4X FRONT	RED LION CONTROLS	OEMG3D34 CUSTOM G310C2
24 VDC POWER SUPPLY, 2.5A OUTPUT, 120VAC INPUT	CARLO GARVAZZI	SPD24601
SW, 2 POS. SEL., NEMA 4/13, MAINT, STD KNOB, 1 N.O. AND 1 DUMMY BLK.	IDEC	ASD210N

Test Report PR052698.01

EUT-2(b)

Fuel System Controller – S16L8116
 14 ga. Cold Formed Carbon Steel
 20"W x 11"D x 35"H, 130 lbs
 Wall mounted using: (4) - 3/8" bolts



Figure 2: EUT-2

Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-H}
CBC 2022	ICC-ES AC 156	2.84	1	4.54	3.41	1.90	0.76
Natural Frequencies			Test Results				
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT was full of operating content during test				
N.A.	N.A.	N.A.					

Subcomponents	Manufacturer	Part #
CABINET, 35" X 20" X 10", FSC - NEMA 4 DUAL DOORS W/ CUTOUT - LESS INNER PANELS	HAMMOND	SE1400529
CABINET INNER TOP SUB PANEL FOR FSC ENCLOSURE	HAMMOND	SE1400530
CABINET INNER SUB PANEL FOR FSC ENCLOSURE	HAMMOND	EP2020
TRANSFORMER, 2000VA - 230/460 VAC PRIM. - 115 VAC SEC.	HAMMOND	SP2000MQMJ
FUEL SYSTEM CONTROLLER, 120 VAC, 24 DIN, 10 ROUT, 8 AIN, 3 AOUT	PREFERRED UTILITIES	FSC-120
OPERATOR INTERFACE TERMINAL 4 INCH WITH NEMA 4 FRONT	RED LION CONTROLS	OEMG3H09
CONNECTOR ADAPTER, DB9 FEMALE TO 10 POINT SCREW TERMINAL	PREFERRED UTILITIES	92693
COVER FOR CL CONTACTORS (CL00, CL01, CL02)	GENERAL ELECTRIC	GPF10C02

EUT – 2(b) Subcomponents Continued

Subcomponents	Manufacturer	Part #
IEC 3 POLE CONTACTORS, MOTOR STARTER, 10 AMPS0701-B	GENERAL ELECTRIC	CL00A310TJ
1NO 1NC AUXILIARY CONTACT FOR MMS - SIDE MOUNT	GENERAL ELECTRIC	GPAC11LRA
MANUAL MOTOR STARTERS: 3/4 HP-480V (ADJUSTABLE FLA:1-1.6)	GENERAL ELECTRIC	GPS1BHAF
LINK FOR CONT. TO MMS (CL00, CL01, CL02)	GENERAL ELECTRIC	GPF1L02AA
SW, 3 POS, 22MM, MAINTAINED, NEMA 4/13, STD KNOB, 2 N.O. 2N.C., 22.5MM ACTUATOR	AUTOMATION DIRECT	GCX1320-22
SW, 2 POS, 22MM, MAINTAINED, NEMA 4/13, STD KNOB, 1 N.O., 22.5MM ACTUATOR	AUTOMATION DIRECT	GCX1300
SONALERT, MALLORY, 48-120VAC/DC VOLTAGE/3300 HZ, NEMA 4X/12, 22.5MM PANEL HOLE	MALLORY SONNALERT	ZA120LACT
SHAFT FOR ABB DISC SW, 12 DEEP PNL	ABB CONTROLS INC	OXS6X330
NON FUSIBLE DISC. SWITCH, 3 POLE, 40 AMP 600 VAC	ABB CONTROLS INC	OT40F3
HANDLE FOR ABB DISCONNECT SW., PANEL MOUNT, PADLOCKABLE,	ABB CONTROLS INC	OHBS2AJ1
SOCKET, PLUG-IN TYPE, 11 PIN BASE, SCREW TERMINALS	IDEC	SR3P-05
RELAY, PLUG-IN, 3PDT, 10 AMP CONTACTS 120VAC, 60HZ	IDEC	RR3PA-UAC120V

Test Report PR052698.01

EUT- 3(b)

BMU Boiler Controller – S16L8117
 14 ga. Cold Formed Carbon Steel
 30"W x 11"D x 24"H, 104 lbs
 Wall mounted using: (4) - 3/8" bolts



Figure 3: EUT-3

Building Code	Test Criteria	S _{Ds} (g)	z/h	Horizontal		Vertical	
				AFLX-H	ARIG-H	AFLX-V	ARIG-H
CBC 2022	ICC-ES AC 156	2.84	1	4.54	3.41	1.90	0.76
Natural Frequencies			Test Results				
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT was full of operating content during test				
N.A.	N.A.	N.A.					

EUT -3(b) Subcomponents Continued in next page

Subcomponents	Manufacturer	Part #
BMU CONTROLLER WITH BASIC CONTROL CHASSIS AND LCD TOUCH SCREEN	PREFERRED UTILITIES	BMU-00H0
WALL MOUNT ENCLOSURE, NEMA 4. 24H x 30W x 10D.	HAMMOND	EN4SD243010GY
CIRCUIT BREAKER - 15 AMP, SINGLE POLE	WESTINGHOUSE	QC1015
SURGE PROTECTOR - 20 AMP, 120 VAC, LED POWER INDICATION, DIN RAIL MTD	COTROL CONCEPTS	70025969
RELAY, PLUG-IN, 4PDT, 10 AMP CONTACTS 120VAC, 60HZ	IDEC	RH4B-U-AC120V
SOCKET, 4PDT BLADE TYPE, SNAP MOUNT	IDEC	SH4B-05
ADAPTER, TYPE C DIN RAIL, QUICKLAG	EATON/CUTLER-HAMMER	QCDINADAPT
FLASHER, 120 VAC, 1.25 A TUNGSTEN LOAD MAX	INGRAM PRODUCTS	SSF150W
LIGHT, PANEL ALARM, FLASHING, RED GLOBE, NEMA 4X	INGRAM PRODUCTS	LX40F
LIGHT, PILOT, 120V, BLUE LENS, W/ LAMP, FULL VOLTAGE	IDEC	APD199N-S-120
LIGHT, PILOT, 120V, AMBER LENS, W/LAMP, FULL VOLTAGE	IDEC	APD199N-A-120
LIGHT, PILOT, 120V, RED LENS, W/LAMP, FULL VOLTAGE	IDEC	APD199N-R-120
SW, SEL, 3 POS.,MAINT,NEMA 4/13, STD KNOB, (2) N.O. CONTACTS	IDEC	ASD320N
ALARM HORN, 4~ SQUARE, 120 VOLT W/ NEMA 4X MOUNTING KIT3	PREFERRED UTILITIES	11698-G
PUSHBUTTON, RED MUSHROOM HEAD, PUSH-PULL	IDEC	AYD311N-R
OIT TERMINAL ADAPTER KIT	PREFERRED UTILITIES	190777
OPERATOR INTERFACE TERMINAL 10.4 INCH WITH NEMA 4X FRONT - OUTDOOR RATED	RED LION CONTROLS	OEMG3D35 CUSTOM G310S2
OPTIONAL COMMUNICATIONS CARD FOR OIT-6 AND OIT-10	RED LION CONTROLS	G3RS0000
24 VDC POWER SUPPLY, 2.5A OUTPUT, 120VAC INPUT	CARLO GARVAZZI	SPD24601
SW, 2 POS. SEL., NEMA 4/13, MAINT, STD KNOB, 1 N.O. AND 1 DUMMY BLK.	IDEC	ASD210N

Test Report PR052698.01

EUT-4a(b) [a-upper compartment]

EUT-4b(b) [b-lower compartment]

Fuel System Controller – SE1100629

14 ga. Cold Formed Carbon Steel

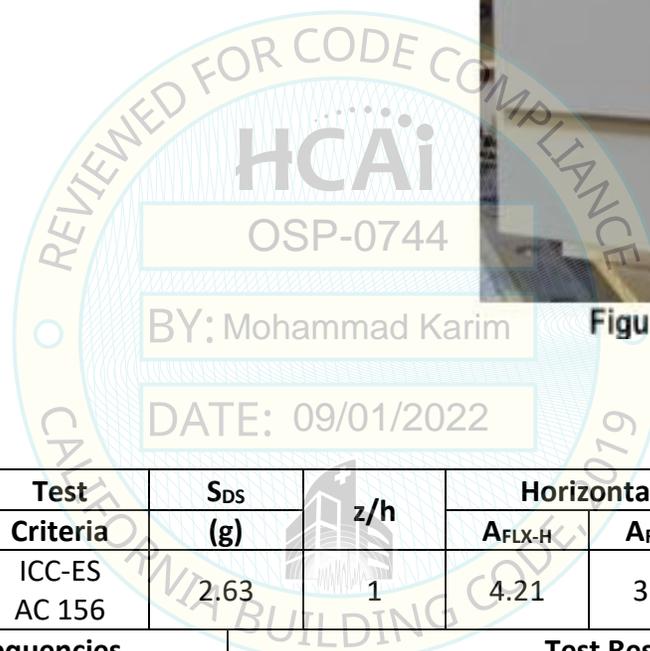
20"W x 11"D x 20"H Upper Compartment

48"W x 12"D x 48"H Lower Compartment, 459 lbs total

Wall mounted using: (4) - 3/8" bolts



Figure 4: EUT-4



Building Code	Test Criteria	S _{Ds} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-H}
CBC 2022	ICC-ES AC 156	2.63	1	4.21	3.16	1.76	0.70
Natural Frequencies			Test Results				
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT was full of operating content during test				
N.A.	N.A.	N.A.					

EUT-4a(b) & EUT-4b(b) Subcomponents Continued in next page

FSC Controller

Subcomponents	Manufacturer	Part #
CABINET - 20" H X 20" W X 10" D - NEMA 4 PRECUT WITH OIT-4 & (4) 22.5mm HOLES	HAMMOND	SQ1402337
CABINET INNER SUB PANEL FOR FSC ENCLOSURE	HAMMOND	EP2020
FUEL SYSTEM CONTROLLER, 120 VAC, 24 DIN, 10 ROUT, 8 AIN, 3 AOUT	PREFERRED UTILITIES	FSC-120
CONNECTOR ADAPTER, DB9 FEMALE TO 10 POINT SCREW TERMINAL	PREFERRED UTILITIES	92693
SW, 3 POS, 22MM, MAINTAINED, NEMA 4/13, STD KNOB, 2 N.O. 2N.C., 22.5MM ACTUATOR	AUTOMATION DIRECT	GCX1320-22
SW, 2 POS, 22MM, MAINTAINED, NEMA 4/13, STD KNOB, 1 N.O., 22.5MM ACTUATOR	AUTOMATION DIRECT	GCX1300
PILOT LIGHT-22 MM, METAL LED ILLUMINATED, WHITE LENS, 120 VAC	AUTOMATION DIRECT	GCX1236-120L
IEC 3 POLE CONTACTORS, MOTOR STARTER, 10 AMPS0701-B	GENERAL ELECTRIC	CL00A310TJ
CIRCUIT BREAKER - 15 AMP, SINGLE POLE	WESTINGHOUSE	QC-1015
BASE MOUNTING PLATE, FOR WH BREAKER	WESTINGHOUSE	207B513G01
RES 2.2K OHM, 2 W, 5 %, Metal Film, Axial, Flame Retardant	YAGEO	2.2KW-2-ND
SOCKET, PLUG-IN TYPE, 11 PIN BASE, SCREW TERMINALS	IDEC	SR3P-05
RELAY, PLUG-IN, 3PDT, 10 AMP CONTACTS 120VAC, 60HZ	IDEC	RR3PA-UAC120V
SONALERT, MALLORY, 48-120VAC/DC VOLTAGE/3300 HZ, NEMA 4X/12, 22.5MM PANEL HOLE	MALLORY SONNALERT	ZA120LACT
PILOT LIGHT-22 MM, METAL LED ILLUMINATED, WHITE LENS, 120 VAC	HAMMOND	SQ1402337
IEC 3 POLE CONTACTORS, MOTOR STARTER, 10 AMPS0701-B	HAMMOND	EP2020
CIRCUIT BREAKER - 15 AMP, SINGLE POLE	WESTINGHOUSE	QC-1015

FILTRATION SYSTEM

Subcomponents	Manufacturer	Part #
CABINET - 48" H X 48" W X 12" D, NEMA 4, DOUBLE DOOR, FREESTANDING WITH 36" DOORS	HAMMOND	SE1100629
CABINET INNER SUB PANEL FOR DOUBLE DOOR ENCLOSURE 48"H 48"W FREESTANDING	HAMMOND	18P4533
PUMP & MOTOR ASSY - 1200 GPH #2 OIL @ 25 PSI FOR PF-305/405/505	VIKING PUMP	HJ475
PUMP SET LEAK DETECTOR	PREFERRED UTILITIES	PS-LDS

EUT-4a(b) & EUT-4b(b) Subcomponents Continued

DISCHARGE MANIFOLD FOR PF-400 SERIES FILTRATION UNITS

Subcomponents	Manufacturer	Part #
GAUGE, PRESSURE, 2-1/2 IN., RG. 0-100 PSI WITH FLUTTERGUARD W/LOGO	ASHCROFT	2-1/2" 1005H 1/4"L XSF 0/100#
DIFFERENTIAL PRESSURE SWITCH/INDICATOR SET AT 15 PSI (NO TEXT)	MID-WEST INSTRUMENTS	522-0045
WATER PROBE ADAPTER FOR RVFS FILTERS	RACOR	71809
WATER PROBE ASS'Y RACOR FILTER	RACOR	RK30880E
VALVE, BALL, SIZE 1-1/2" NPT, SHORT HANDLE	APOLLO	70-107-15
VALVE, BALL, 1/4" MALE X 1/4" FEMALE NPT.	WEBSTONE	41687
COALESCING FUEL OIL FILTER - 25 GPM #2 OIL	RACOR	FBO-14
NIPPLE, 1/4 in. NPT, 1-1/2 in. Long, SCH 40	GENERIC	10697-.25
NIPPLE, 1.5 IN, NPT, 5.5 IN LG.	GENERIC	10705-1.5
NIPPLE, 1.5 IN NPT, 4 IN LG,	GENERIC	10702-1.5
NIPPLE, 1.5 in. NPT, 2.5 in. Long, SCH 40	GENERIC	10699-1.5
NIPPLE, 1-1/2 in. IPS CLOSE LENGTH, SCH 40 ASTMA 106	GENERIC	10685-1.5
ELBOW, 90 DEG., STREET, 1/4" NPT, 150# BLK	GENERIC	10683-.25
TEE, REDUCING, 1-1/2" X 1/2" X 1-1/2" NPT,	GENERIC	10688- 1.5X.5X1.5
TEE, 1/4 IN NPT, 150# BLACK M.I.	GENERIC	10691-.25
TEE, REDUCING, 1.5X1.5X1/2 NPT, 150# BLK M.I.	GENERIC	10688- 1.5X1.5X.5
UNION, 1.5" NPT, 300# BLK M.I.	GENERIC	10686-1.5
TUBING- SEAMLESS COPPER REFRIGERATION- 5/16~ X .032 WALL	GENERIC	KB280- T05-.032
BUSHING, 1/2 X 1/4 NPT, 150# BLACK M.I.	GENERIC	10687-.50X.25
FITTING, 5/16 IN. O.D. TUBE X 1/4 IN.	GENERIC	11300

EUT-4a(b) & EUT-4b(b) Subcomponents Continued

SUCTION MANIFOLD FOR PF-504/PF-505

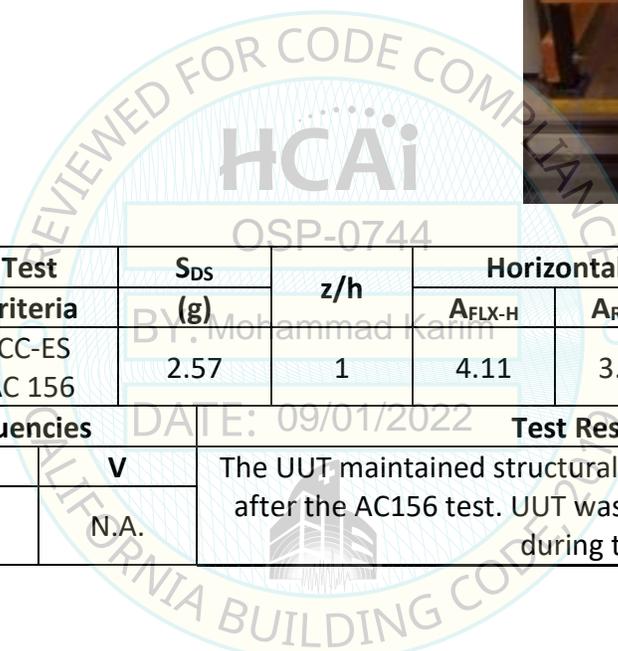
Subcomponents	Manufacturer	Part #
DIFFERENTIAL PRESSURE SWITCH/INDICATOR SET AT 2 PSI (NO TEXT)	MID-WEST INSTRUMENTS	522-0044
GAUGE, COMPOUND, 2-1/2", RG. 30 IN HG - 0 -15 PSI W/FUTTERGUARD W/PREFERRED UTILITIES SPECIAL LOGO	ASHCROFT	5 1005 02L XSF VAC AND 15 PSI
STRAINER - SIMPLEX - 1-1/2" NPT WITH 100 MESH BASKETS	TITAN FLOW CONTROL	BS25I0150-100
VALVE, BALL, SIZE 1-1/2" NPT, SHORT HANDLE	APOLLO	70-107-15
VALVE, BALL, 1/4" MALE X 1/4" FEMALE NPT.	WEBSTONE	41687
ELBOW, 90 DEG., STREET, 1/4" NPT, 150# BLK	GENERIC	10683-.25
NIPPLE, 1/4 in. NPT, 1-1/2 in. Long, SCH 40	GENERIC	10697-.25
NIPPLE, 1.5 IN, NPT, 6 IN LG. SCH. 40 ASTM-106A	GENERIC	10706-1.5
NIPPLE, 1-1/2 in. IPS CLOSE LENGTH, SCH 40 ASTMA 106	GENERIC	10685-1.5
NIPPLE, 1.5 in. NPT, 2 in. Long, SCH 40	GENERIC	10698-1.5
TEE, REDUCING, 1.5X1.5X1/2 NPT,150# BLK M.I.	GENERIC	10688-1.5X1.5X.5
TEE, REDUCING, 1-1/2" X 1/2" X 1-1/2" NPT,	GENERIC	10688-1.5X.5X1.5
TEE, 1/4 IN NPT, 150# BLACK M.I.	GENERIC	10691-.25
UNION, 1.5" NPT, 300# BLK M.I.	GENERIC	10686-1.5
TUBING- SEAMLESS COPPER REFRIGERATION- 5/16~ X .032 WALL	GENERIC	KB280-T05-.032
BUSHING, 1/2 X 1/4 NPT, 150# BLACK M.I.	GENERIC	10687-.50X.25
FITTING, 5/16 IN. O.D. TUBE X 1/4 IN.	GENERIC	11300

Test Report R93006

UUT-1

UUT – 1(c)

14 ga. Cold Formed Carbon Steel
 20"W x 11"D x 35"H, 98 lbs
 Wall mounted using: (4) - 3/8" bolts



Building Code	Test Criteria	S _{Ds} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-H}
CBC 2022	ICC-ES AC 156	2.57	1	4.11	3.08	1.72	0.69
Natural Frequencies			Test Results				
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT was full of operating content during test				
N.A.	N.A.	N.A.					

UUT-1(c) Subcomponents continued in next page

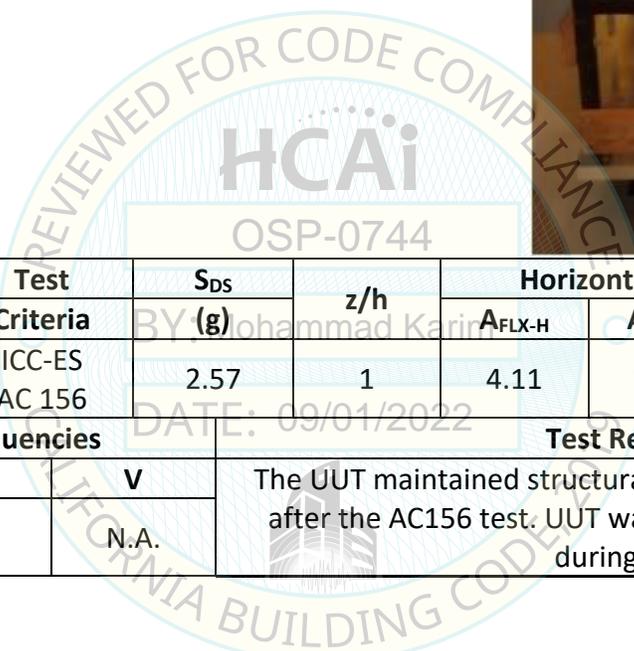
Subcomponents	Manufacturer	Part #
PLANT WIDE CONTROLLER WITH CPU, DISPLAY AND KEYBOARD	PREFERRED UTILITIES	PWCN4-CADHRO
PLANT WIDE CONTROLLER INTERNAL ENCLOSURE 20"X25"x11"	PREFERRED UTILITIES	90217
PLANT WIDE CONTROLLER EXTERNAL ENCLOSURE 35"X20"X10"	PREFERRED UTILITIES	90218
PWC DIN BOARD, 15 CH. 120 VAC DISCRETE INPUTS	PREFERRED UTILITIES	190608
PWC HOA-ROUTBOARD, 5 CH. RELAY OUTPUT WITH HAND-OFF-AUTO BYPASS SWITCH	PREFERRED UTILITIES	190611
PWC EMPTY MODULE SLOT FILLER FACEPLATE	PREFERRED UTILITIES	90183
PWC STANDARD PUMP SET PANEL SINGLE PHASE WIRE HARNESS	PREFERRED UTILITIES	190141
CIRCUIT BREAKER, 15 AMP SINGLE POLE	WESTINGHOUSE	QC-1015
IEC 3 POLE CONTACTORS, MOTOR STARTER, 10 AMPS0701-B	GENERAL ELECTRIC	CL00A310TJ
MOTOR STARTER AUX. CONTACTOR	GENERAL ELECTRIC	GPAC11LRA
RELAY, PLUG-IN, DPDT, 10 AMP CONTACTS 120VAC, 60HZ	MAGNECRAFT	750XBXC-120A
SOCKET, PLUG-IN TYPE, 8 PIN OCTAL BASE, SCREW TERMINALS	IDEC	SR2P-06
SW, 2 POS. SEL., NEMA 4/13	IDEC	ASD210N
MODBUS 485 TO BACNET MSTP CONVERTER	CONTROL SOLUTIONS	BB2-3010
24 VDC POWER SUPPLY, 2.5A OUTPUT, 120VAC INPUT	CARLO GARVAZZI	SPD24601
RECEPTACLE, DUPLEX, 15A 125V, BROWN	HUBBELL	LEV CR15-BRN
JUNCTION BOX - 2WX4HX2-1/8D	T & B	58371-1/2
ALARM BELL, 120 V, 6 IN. DIA.	WHEELOK	43T-G6-115-S-23

Test Report R93006

UUT-2a/2b

UUT – 2a(c)

14 ga. Cold Formed Carbon Steel
 20"W x 11"D x 35"H, 124 lbs
 Wall mounted using: (4) - 3/8" bolts



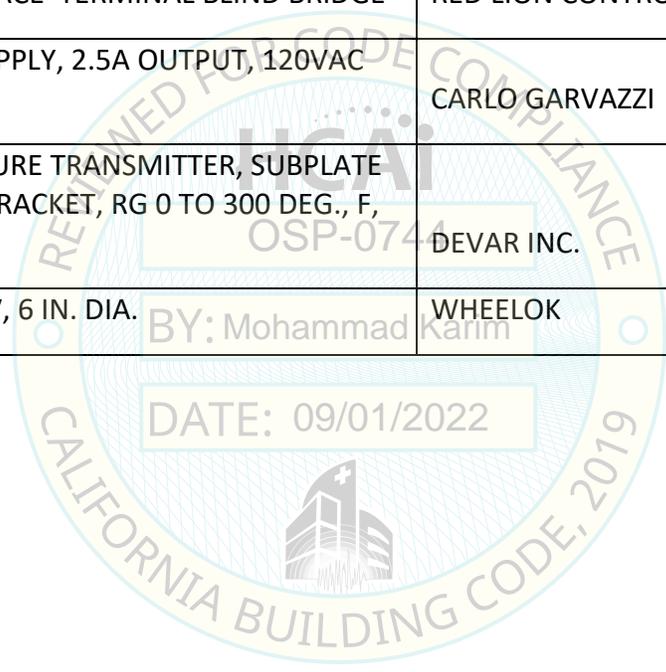
Building Code	Test Criteria	S _{ds} (g)	z/h	Horizontal		Vertical	
				A _{FLEX-H}	A _{RIG-H}	A _{FLEX-V}	A _{RIG-H}
CBC 2022	ICC-ES AC 156	2.57	1	4.11	3.08	1.72	0.69
Natural Frequencies			Test Results				
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT was full of operating content during test				
N.A.	N.A.	N.A.					

UUT-2a(c) Subcomponents continued in next page

Subcomponents	Manufacturer	Part #
PLANT WIDE CONTROLLER WITH CPU, DISPLAY AND KEYBOARD	PREFERRED UTILITIES	PWCN4-2-CADHRO
PLANT WIDE CONTROLLER INTERNAL ENCLOSURE 21" X 18"	PREFERRED UTILITIES	90217
PLANT WIDE CONTROLLER EXTERNAL ENCLOSURE 35" X 20" X 11"	PREFERRED UTILITIES	90218-2
PWC DIN BOARD, 15 CH. 120 VAC DISCRETE INPUTS	PREFERRED UTILITIES	190608
PWC ROUT BOARD, 8 CH. RELAY OUTPUT BOARD	PREFERRED UTILITIES	190617
PWC AIN BOARD, 8 CH., UNIVERSAL ANALOG INPUTS	PREFERRED UTILITIES	190609
PWC A/M-AOUT BOARD, 5 CH. ANALOG OUTPUT WITH AUTO/MANUAL BYPASS STATION	PREFERRED UTILITIES	190613
PWC 4-20 MA OUTPUT DAUGHTER BOARD, FOR USE IN A/M-AOUT 190613	PREFERRED UTILITIES	190616
PWC STANDARD PUMP SET PANEL THREE PHASE WIRE HARNESS	PREFERRED UTILITIES	190142
EMERGENCY TRANSFER RELAY - 460V COIL - 15 HP@460V	TELEMECANIQUE	LC2D25T7
TRANSFORMER, 250 VA, 460/230/208 VAC PRIM., 115 VAC SEC.	HAMMOND	PH250MLI
SW, 2 POS. SEL., NEMA 4/13	IDEC	ASD210N
SW, SEL, 3 POS.,MAINT,NEMA 4/13	IDEC	ASD320N
RELAY, PLUG-IN, DPDT, 10 AMP CONTACTS 120VAC, 60HZ	MAGNECRAFT	750XBXC-120A
RELAY, PLUG-IN, 3PDT, 10 AMP CONTACTS 120VAC, 60HZ	MAGNECRAFT	750XCXC-120A
SOCKET, PLUG-IN TYPE, 8 PIN OCTAL BASE, SCREW TERMINALS	IDEC	SR2P-06

UUT-2a(c) Subcomponents continued

Subcomponents	Manufacturer	Part #
SOCKET, PLUG-IN TYPE, 11 PIN BASE, SCREW TERMINALS	IDEC	SR3P-05
OPERATOR INTERFACE TERMINAL 10.4 INCH WITH NEMA 4X FRONT	RED LION CONTROLS	OEMG3D34 CUSTOM G310C2
OIT TERMINAL ADAPTER KIT	PREFERRED UTILITIES	190777
OPERATOR INTERFACE TERMINAL BLIND BRIDGE	RED LION CONTROLS	OEMDA000
24 VDC POWER SUPPLY, 2.5A OUTPUT, 120VAC INPUT	CARLO GARVAZZI	SPD24601
DEVAR TEMPERATURE TRANSMITTER, SUBPLATE MOUNTED WITH BRACKET, RG 0 TO 300 DEG., F, SM SERIES	DEVAR INC.	SM-812-EC-0013- M31D
ALARM BELL, 120 V, 6 IN. DIA.	WHEELOK	43T-G6-115-S-23



Test Report R93006

UUT-2a/2b

UUT – 2b(c)

Motor starter

14 ga. Cold Formed Carbon Steel

20"W x 11"D x 20"H, 56 lbs

Wall mounted using: (4) - 3/8" bolts



Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-H}
CBC 2022	ICC-ES AC 156	2.57	1	4.11	3.08	1.72	0.69
Natural Frequencies			Test Results				
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT was full of operating content during test				
N.A.	N.A.	N.A.					

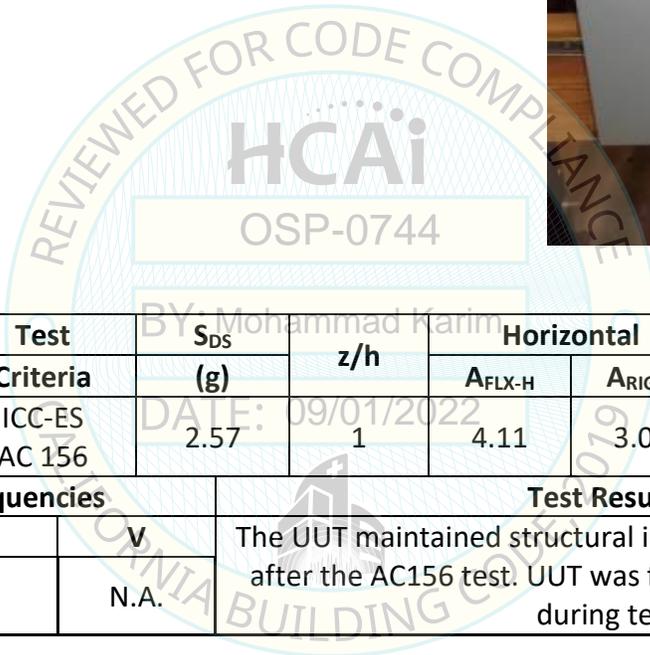
Subcomponents	Manufacturer	Part #
CABINET - 20" H X 20" W X 10" D - NEMA 4	HAMMOND	EN4SD202010GY
MANUAL MOTOR STARTERS: 2HP-480V (ADJUSTABLE FLA:2.5-4)	GENERAL ELECTRIC	GPS1BHAH
MANUAL MOTOR STARTERS: 5HP-480V (ADJUSTABLE FLA:6.3-10)	GENERAL ELECTRIC	GPS1BHAK
1NO 1NC AUXILIARY CONTACT FOR MMS - SIDE MOUNT	GENERAL ELECTRIC	GPAC11LRA
SHAFT FOR ABB DISC SW, 12 DEEP PNL	ABB CONTROLS INC.	OX56X330
CONVERSION MECHANISM FOR ABB DISC. SW	ABB CONTROLS INC.	OTZW8
EMERGENCY TRANSFER RELAY - 460V COIL - 15 HP@460V	TELEMECANIQUE	LC2D25T7
TRANSFORMER, 250 VA, 460/230/208 VAC PRIM., 115 VAC SEC.	HAMMOND	PH250MLI

Test Report R93006

UUT-3

UUT – 3(c)

Standard Filtration System PLC
 14 ga. Cold Formed Carbon Steel
 20"W x 9"D x 20"H, 46 lbs
 Wall mounted using: (4) - 3/8" bolts



Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-H}
CBC 2022	ICC-ES AC 156	2.57	1	4.11	3.08	1.72	0.69
Natural Frequencies			Test Results				
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT was full of operating content during test				
N.A.	N.A.	N.A.					

UUT-3(c) Subcomponents continued in next page

Subcomponents	Manufacturer	Part #
FILTRATION CABINET, 20"HX20"WX8"D, NEMA 4	HAMMOND	EN4SD20208GY
CIRC. BKR., 1 POLE, 15 AMP, 120/240 VAC, THERMAL-MAGNETIC	SQUARE D	QOU-115-SQUARE D
IEC 3 POLE CONTACTORS, MOTOR STARTER, 10 AMPS0701-B	GENERAL ELECTRIC	CL00A310TJ
SW, 2 POS. SEL., NEMA 4/13, MAINT, STD KNOB, 1 N.O. AND 1 DUMMY BLK.	IDEC	ASD210N
SW, SEL, 3 POS.,MAINT,NEMA 4/13, STD KNOB, (2) N.O. CONTACTS	IDEC	ASD320N
LIGHT, PILOT, 120V, WHITE LENS, W/LAMP, FULL VOLTAGE	IDEC	APD199N-2-120 IDEC
DL 205 PLC, 4-SLOT BASE, INTERNAL 110/220 VAC POWER	KOYO	D2-04B-1
DL205 CPU260, 30.4K WORDS TOTAL MEMORY, FLASH MEMORY,	KOYO	D2-260
DL 205 PLC, INPUT MODULE, 8 PT, 110 VAC	KOYO	D2-08NA-1
DL 205 PLC, OUTPUT MODULE, 8 PT, RELAY	KOYO	D2-08TR
DL 205 PLC, MODULE, FILLER	KOYO	D2-FILL
OPERATOR INTERFACE TERMINAL 4 INCH WITH NEMA 4 FRONT	RED LION CONTROLS	OEMG3H02 CUSTOM G304K
COMMUNICATION CABLE, G3 / MODULAR CONTROLLER TO KOYO MODEL 2XX	RED LION CONTROLS	CBLKOYO0
CABLE ADAPTER - FOR OIT4, DB9 FEMALE TO RS232 FEMALE	RED LION CONTROLS	CBLADK03
RELAY, PLUG-IN, DPDT, 10 AMP CONTACTS 120VAC, 60HZ	MAGNECRAFT	750XBXC-120A
SOCKET, PLUG-IN TYPE, 8 PIN OCTAL BASE, SCREW TERMINALS	IDEC	SR2P-06
RELAY, DPDT, 10 A, 24 VDC COIL, PLUG-IN BLADE TERMINAL	IDEC	RH2B-U-DC24V
SOCKET, DIN RAIL MOUNT, FOR DPDT COMPACT BLADE TERMINAL RELAY	IDEC	CON040WAL
DIODE, 1N4004, RECTIFIER, 400V, 1A	MOTOROLA	1N4004
24 VDC POWER SUPPLY, 2.5A OUTPUT, 120VAC INPUT	CARLO GARVAZZI	SPD24601
SONALERT, MALLORY, 30-120VAC VOLTAGE/2900 HZ	SONALERT	SC-110R

Test Report R93006

UUT-4

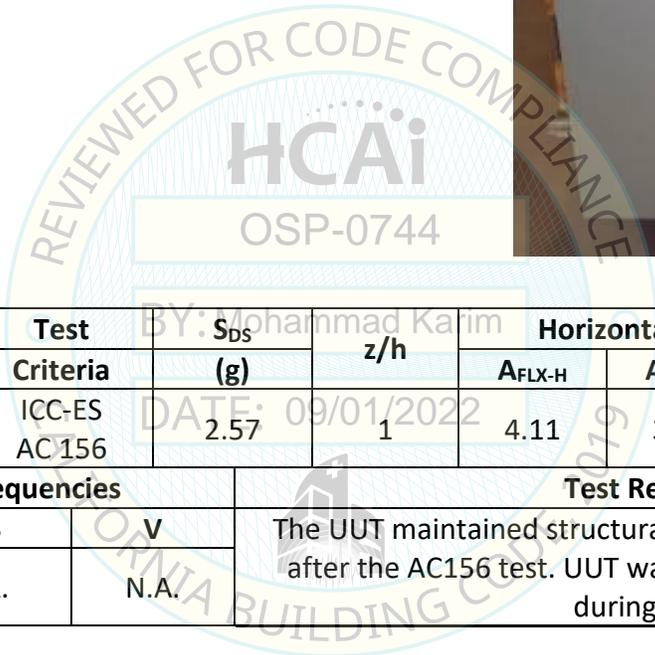
UUT – 4(c)

Customized PLC

14 ga. Cold Formed Carbon Steel

36"W x 13"D x 48"H, 226 lbs

Wall mounted using: (4) - 3/8" bolts



Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-H}
CBC 2022	ICC-ES AC156	2.57	1	4.11	3.08	1.72	0.69
Natural Frequencies			Test Results				
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT was full of operating content during test				
N.A.	N.A.	N.A.					

Subcomponents	Manufacturer	Part #
CABINET, 48"HX36"WX12"D, NEMA 4	HAMMOND	EN4SD483612GY
MANUAL MOTOR STARTERS: 2HP-480V (ADJUSTABLE FLA:2.5-4)	GENERAL ELECTRIC	GPS1BHAH
MANUAL MOTOR STARTERS: 3HP-480V (ADJUSTABLE FLA:4-6.3)	GENERAL ELECTRIC	GPS1BHAJ
IEC 3 POLE CONTACTORS, MOTOR STARTER, 10 AMPS0701-B	GENERAL ELECTRIC	CL00A310TJ
1NO 1NC AUXILIARY CONTACT FOR MMS - SIDE MOUNT	GENERAL ELECTRIC	GPAC11LRA
EMERGENCY TRANSFER RELAY - 120V COIL - 10 AMP	TELEMECANIQUE	CA2KN22F7
RELAY, PLUG-IN, DPDT, 10 AMP CONTACTS 120VAC, 60HZ	MAGNECRAFT	750XBXC-120A

UUT-4(c) Subcomponents Continued

Subcomponents	Manufacturer	Part #
RELAY, PROGRAMMABLE TIME DELAY, 11 PIN,	SSAC	TRDU120A3
RELAY, PLUG-IN, ENCLOSED, 4PDT, 120V.60HZ., V	IDEC	RH4B-U-AC120V
SOCKET, PLUG-IN TYPE, 8 PIN OCTAL BASE, SCREW TERMINALS	IDEC	SR2P-06
SOCKET, PLUG-IN TYPE, 11 PIN BASE, SCREW TERMINALS	IDEC	SR3P-05
SOCKET, 4PDT, BLADE TYPE, SNAP MOUNT	IDEC	SR4B-05
PUSHBUTTON, RED MUSHROOM HEAD, PUSH-PULL,	IDEC	AYD311N-R
SW, SEL, 3 POS., MAINT, NEMA 4/13	IDEC	ASD320N
SW, 2 POS. SEL., NEMA 4/13	IDEC	ASD210N
CONTROL POWER ON LIGHT	IDEC	APD199N-W-120
24VDC PWR SUPPLY, 5A OUTPUT, 120VAC	CARLO GARVAZZI	SPD241201
DL 205 PLC, 9 SLOT BASE, INTERNAL 110/220 VAC POWER	KOYO	D2-09B-1
KOYO DL205 CPU260, 30.4K WORDS TOTAL MEMORY, FLASH MEMORY,	KOYO	D2-260
DL 205 PLC, INPUT MODULE, 8 PT, 110 VAC	KOYO	D2-08NA-1
DL 205 PLC, OUTPUT MODULE, 8 PT, RELAY	KOYO	D2-08TR
DL 205 PLC, INPUT MODULE, 4PT, ANALOG	KOYO	F2-04AD-1
DL 205 PLC, OUTPUT MODULE, 2PT, ANALOG	KOYO	F2-04DA-1
ETHERNET COMMUNICATION MODULE, MASTER/SLAVE ON AN EHTERNET W/MODBUS TCP/IP	KOYO	H2-ECOM100
DL 205 PLC, MODULE, FILLER	KOYO	D2-FILL
EXPANSION BASE CONTROLLER MODULE D2-CM	KOYO	D2-CM
BASE EXPANSION MODULE FOR LOCAL EXPANSION D2-EM	KOYO	D2-EM
BASE EXPANSION CABLE D2-EXCBL-1	KOYO	D2-EXCBL-1
OPERATOR INTERFACE TERMINAL 10.4 INCH WITH NEMA 4X FRONT	RED LION CONTROLS	OEMG3D34 CUSTOM G310C2
OPTIONAL COMMUNICATIONS CARD FOR OIT-6 AND OIT-10	RED LION CONTROLS	G3RS0000
OIT TERMINAL ADAPTER KIT	PREFERRED UTILITIES	190777
OPERATOR INTERFACE TERMINAL BLIND BRIDGE	RED LION CONTROLS	OEMDA000
SCADA INTERFACE SHIELDED PIGTAIL CABLE D2-DSCBL-2	KOYO	D2-DSCBL-2

UUT-4(c) Subcomponents Continued

Subcomponents	Manufacturer	Part #
DEVAR TEMPERATURE TRANSMITTER, SUBPLATE MOUNTED WITH BRACKET, RG 0 TO 300 DEG., F, SM SERIES	DEVAR INC.	SM-812-EC-0013-M31D
FUEL SENTRY TANK GAUGE	PREFERRED UTILITIES	TG-EL-D4A-00-0-0
PRINTER FOR USE WITH TG-EL-D4A, INCLUDES 120VPWR SUPPLY AND CONNECTOR	PREFERRED UTILITIES	TG-EL-D4A-PRINTER
JUNCTION BOX - 2WX4HX2-1/8D **MUST HAVE UL STAMP**	T & B	58371-1/2
RECEPTACLE, DUPLEX, 15A 125V, BROWN	HUBBELL	LEV CR15-BRN
ALARM BELL, 120 V, 6 IN. DIA.	WHEELOK	43T-G6-115-S-23
SIGNAL ISOLATOR, DC CURRENT OR VOLTAGE, 24VDC	WEIDMULLER	8594810000

