



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP - 0006

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Eaton

Manufacturer's Technical Representative: George Gao

Mailing Address: 2900 Doc Bennett Road, Fayetteville, NC 28306

Telephone: 910-677-5251

Email: GeorgeGao@eaton.com

Product Information

Product Name: Freedom and Freedom FlashGard Motor Control Centers

Product Type: Low Voltage Motor Control Centers

Product Model Number: See Product Range Summary

(List all unique product identification numbers and/or part numbers)

General Description: Low Voltage Motor Control Assembly, NEMA 1, 600V, 3200A copper bussing.

Mounting Description: Rigid floor mounted - **Single unit installations are not allowed.** A minimum of 2 units must be structurally connected together (ganged) for all installations.

Applicant Information

Applicant Company Name: Eaton

Contact Person: Eddie Wilkie

Mailing Address: 175 Vista Blvd, Arden, NC 28704

Telephone: 828-651-0707

Email: eddiwilkie@eaton.com

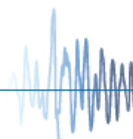
I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant: *Eddie Wilkie*

Date: 12/11/19

Title: Director of Engineering

Company Name: Eaton





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

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

Company Name: ISAT

Name: William V. Joerger California License Number: SE 4545

Mailing Address: 1020 Crews Road, Quite Q, Matthews, NC 28105

Telephone: 510-714-0216 Email: wvjoerger@isatsb.com

Supports and Attachments Preapproval

- Supports and attachments are preapproved under OPM- _____
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- Supports and attachments are not preapproved

Certification Method

- Testing in accordance with: ICC-ES AC156
- Other (Please Specify): _____

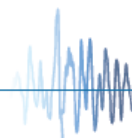
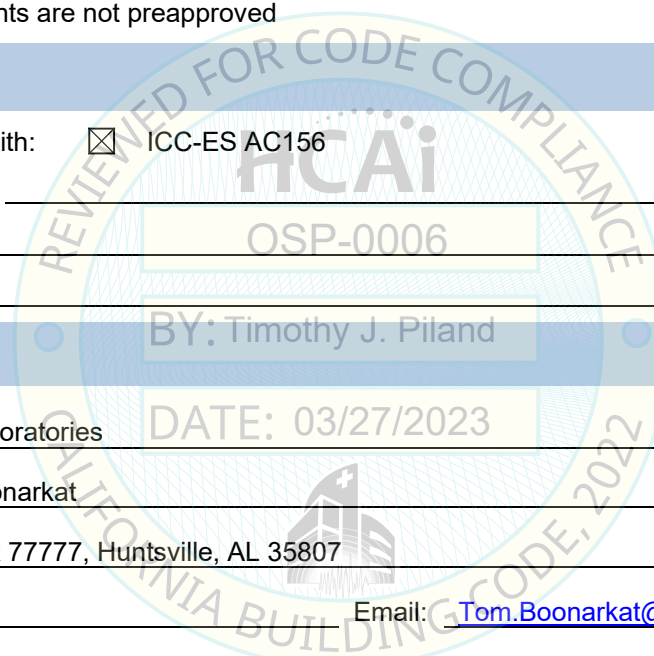
Testing Laboratory

Company Name: NTS Laboratories

Contact Name: Tom Boonarkat

Mailing Address: P.O. Box 77777, Huntsville, AL 35807

Telephone: 256-716-4291 Email: Tom.Boonarkat@nts.com





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: Yes No

Design Basis of Equipment or Components (F_p/W_p) = 1.59

S_{DS} (Design spectral response acceleration at short period, g) = 2.12

a_p (In-structure equipment or component amplification factor) = 2.5

R_p (Equipment or component response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1

Equipment or Component Natural Frequencies (Hz) = See Resonance Summary

Overall dimensions and weight (or range thereof) = See Product Range Summary

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: Yes No

Design Basis of Equipment or Components (V/W) = _____

S_{DS} (Design spectral response acceleration at short period, g) = _____

S_{D1} (Design spectral response acceleration at 1 second period, g) = _____

R (Response modification coefficient) = _____

Ω_0 (System overstrength factor) = BY: Timothy J. Piland

C_d (Deflection amplification factor) = _____

I_p (Importance factor) = 1.5

Height to Center of Gravity above base = _____

Equipment or Component Natural Frequencies (Hz) = _____

Overall dimensions and weight (or range thereof) = _____

Tank(s) designed in accordance with ASME BPVC, 2015: Yes No

List of Attachments Supporting Special Seismic Certification

Test Report(s) Drawings Calculations Manufacturer's Catalog

Other(s) (Please Specify): _____

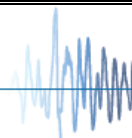
OSHPD Approval (For Office Use Only) – Approval Expires on March 27, 2029

Signature:  Date: March 27, 2023

Print Name: Timothy J Piland Title: SSE

Special Seismic Certification Valid Up to: S_{DS} (g) = 2.12 z/h = 1

Condition of Approval (if applicable): _____



Certified Product Range Summary
Freedom and Freedom Flashgard Motor Control Centers^{2,3}

Model/UUT Identifier ¹	Section Continuous Current Rating (Amps)	Bus Material	Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)	Maximum Vertical CG (in.)	S _{DS}	F _p /W _p	NEMA Enclosure Type	UUT Status
Freedom/STS060112-002B-8	N/A	N/A	4.5	21	90.5	149	45.9	2.12	1.59	1	8
Freedom	N/A	N/A	4	16-40	90	149	55.2			1	Interpolated
Freedom/STS060112-001A-1	600	Copper	21	23.5	90.5	384	50			1	1
Freedom/STS060112-001A-2	600	Copper	24	23.5	90.5	659	34.6			1	2
Freedom/STS060112-001A-3	600	Copper	21	23.5	90.5	494	54.7			1	3
Freedom/STS060112-001B-4	600	Copper	40.25	23.5	90.5	600	46.3			1	4
Freedom/STS060112-001B-5	600	Copper	20.25	23.5	90.5	250	55.2			1	5
Freedom	600	Copper	20-24	16-21	90	450	55.2			1	Interpolated
Freedom/STS060112-002A-7	800	Copper	24.38	28.5	90.5	655	43.5			1	7
Freedom/STS060112-002C-10	800	Copper	48.5	22.75	90.5	1320	45			1	10
Freedom/STS060112-002B-9	800	Copper	34.5	28	90.5	2982	33.7			1	9
Freedom	800	Copper	20-48	16-40	90	400	55.2			1	Interpolated
Freedom	1200	Copper	20-48	16-40	90	450	55.2			1	Interpolated
Freedom/STS060112-002A-6	1200	Copper	20.38	21	90.5	545	45.9			1	6
Freedom/STS-060112-003-12	1200	Copper	37.12	21	90.5	1215	51.7			1	12
Freedom	1600	Copper	20-48	16-40	90	500	55.2			1	Interpolated
Freedom	2000	Copper	20-48	16-40	90	550	55.2			1	Interpolated
Freedom	2500	Copper	20-48	16-40	90	600	55.2			1	Interpolated
Freedom	3200	Copper	20-48	16-40	90	600	55.2			1	Interpolated
Freedom/STS-060112-003-11	3200	Copper	29.12	41	90.5	1580	51.1			1	11

1 - Engineered to order product. Unique identifiers provided for each vertical section.

2 - Manufactured by Eaton.

3 - Certification applies to a minimum of (2) enclosures mechanically coupled.





Freedom and Freedom Flashgard Motor Control Center Certified Major Sub-Component Data

Certified Enclosures					
NEMA Type	Dimensions / Weights			Manufacturer	Test Status
	Width (in.)	Depth (in.)	Height (in.)		
Type 1, Low Carbon Steel	4.5	21	90.5	Eaton	UUT 8
Type 1, Low Carbon Steel	4	16, 21	54, 60, 66, 72, 78, 84, 90	Eaton	Interpolated
Type 1, Low Carbon Steel	8	16, 21	54, 60, 66, 72, 78, 84, 90	Eaton	Interpolated
Type 1, Low Carbon Steel	20	16, 21	54, 60, 66, 72, 78, 84, 90	Eaton	Interpolated
Type 1, Low Carbon Steel	20.25	23.5	90.5	Eaton	UUT 5
Type 1, Low Carbon Steel	20.38	21	90.5	Eaton	UUT 6
Type 1, Low Carbon Steel	21	23.5	90.5	Eaton	UUT 1,3
Type 1, Low Carbon Steel	24	16, 21	54, 60, 66, 72, 78, 84, 90	Eaton	Interpolated
Type 1, Low Carbon Steel	24	23.5	90.5	Eaton	UUT 2
Type 1, Low Carbon Steel	24.38	28.5	90.5	Eaton	UUT 7
Type 1, Low Carbon Steel	28	16, 21	54, 60, 66, 72, 78, 84, 90	Eaton	Interpolated
Type 1, Low Carbon Steel	28	40	90	Eaton	Interpolated
Type 1, Low Carbon Steel	29.12	41	90.5	Eaton	UUT 11
Type 1, Low Carbon Steel	32	16, 21	54, 60, 66, 72, 78, 84, 90	Eaton	Interpolated
Type 1, Low Carbon Steel	32,34	28	90	Eaton	Interpolated
Type 1, Low Carbon Steel	34.5	28	90.5	Eaton	UUT 9
Type 1, Low Carbon Steel	36	16, 21	54, 60, 66, 72, 78, 84, 90	Eaton	Interpolated
Type 1, Low Carbon Steel	37.12	21	90.5	Eaton	UUT 12
Type 1, Low Carbon Steel	40	16, 21	54, 60, 66, 72, 78, 84, 90	Eaton	Interpolated
Type 1, Low Carbon Steel	40.25	23.5	90.5	Eaton	UUT 4
Type 1, Low Carbon Steel	42	16, 21	54, 60, 66, 72, 78, 84, 90	Eaton	Interpolated
Type 1, Low Carbon Steel	48	16, 21	54, 60, 66, 72, 78, 84, 90	Eaton	Interpolated
Type 1, Low Carbon Steel	48.5	22.75	90.5	Eaton	UUT 10

**Freedom and Freedom Flashgard Motor Control Center
Certified Major Sub-Component Data**

Power Circuit Breakers - Magnum SB/DS/DN									
Size (Amperes)	Mounting Fixed (F)	Model	Voltage	Dimensions / Weights				Manufacturer	Test Status
				Width (in.)	Depth (in.)	Height (in.)	Maximum Weight (lbs.)		
800	F	MDNC08	600	12.51	14.64	16.76	245	Eaton	UUT 7
800	F/DO	MDN/MDS/MSB	600	12.51-16.15	14.64-20.82	16.76	245	Eaton	Interpolated
1200	F/DO	MDN/MDS/MSB	600	12.51-16.15	14.64-20.82	16.76	245	Eaton	Interpolated
1600	F/DO	MDN/MDS/MSB	600	12.51-16.15	14.64-20.82	16.76	245	Eaton	Interpolated
2000	F/DO	MDS/MSB	600	16.15	20.82	16.76	273	Eaton	Interpolated
2500	F/DO	MDS/MSB	600	16.15	20.82	16.76	273	Eaton	Interpolated
3000	F/DO	MDS/MSB	600	16.15	20.82	16.76	273	Eaton	Interpolated
3200	F/DO	MDS/MSB	600	16.15	20.82	16.76	336	Eaton	Interpolated
3200	DO	MDSC32	600	16.15	20.82	16.76	336	Eaton	UUT 11

MCC MAIN/FEEDER/Unit Disconnect								
Molded Case Circuit Breakers (MCCB) (3 Pole Data)								
(Model)/Frame	Size (Amps)	Voltage	Maximum Dimensions / Weights				Manufacturer	Test Status
			Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
(HMCPE030H1C)/F	30	600	3	2.99	5.5	3	Eaton	UUT 2
(EDH3125)/F	125	600	3	2.99	5.5	3	Eaton	UUT 1
(HFD3175)/F	175	600	4.13	3.38	6	4.5	Eaton	UUT 2
F	10-225	600	4.13	3.38	6	4.5	Eaton	Interpolated
HFD3225	225	600	4.13	3.38	6	4.5	Eaton	UUT 1
(HFDE3225)/F	225	600	4.13	3.38	6.00	4.5	Eaton	UUT 1
(IGH3250FAG)/JG	250	600	4.13	3.57	7	6	Eaton	UUT 2
JG	70-250	600	4.13	3.57	7	6	Eaton	Interpolated
J	70-250	600	4.13	4.06	10	13.5	Eaton	Interpolated
(HKD3400)/K	400	600	5.49	4.31	10.13	11.5	Eaton	UUT 5
K	70-400	600	5.49	4.31	10.13	11.5	Eaton	Interpolated
LG	125-600	600	5.48	4.09	10.13	16	Eaton	Interpolated
L	125-600	600	8.25	3.81	10.75	20	Eaton	Interpolated
M	300-800	600	8.25	4.06	16	30	Eaton	Interpolated
N	400-1200	600	8.25	5.5	16	45	Eaton	Interpolated
R	800-2500	600	15.5	9	16	135	Eaton	Interpolated
(RGH3200T32)/R	2000	600	15.5	9	16	135	Eaton	UUT 6

Miniature Circuit Breakers (MCB) (1 Pole Data*)								
(Model)/Frame	Size (Amps)	Maximum	Maximum Dimensions / Weights				Manufacturer	Test Status
			Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
(BABRSP1015)/BAB	15	240	1.00	2.91	3.13	0.38	Eaton	UUT 5
(BAB2125)/BAB	125	240	2.00	2.91	3.13	0.76	Eaton	UUT 5
BAB, QBHW, HBAX, HBAW	10-125	240	1*	2.91	3.13	0.38*	Eaton	Interpolated
(QBAF1020)/QBAF	20	240	1.00	2.38	3.19	0.25		UUT 5
QBAF, QBCGF, QBGF	15-20	240	1*	2.38	3.19	.25*	Eaton	Interpolated
QBHGF, QBGFEP, QBHGFEP	15-50	240	1*	2.38	3.19	0.58*	Eaton	Interpolated
(QBG2050)/QBG F	50	240	2.00	2.38	3.19	1.16	Eaton	UUT 5

**Freedom and Freedom Flashgard Motor Control Center
Certified Major Sub-Component Data**

Contactors								
NEMA Frame	Size (Amps)	(Model#)/Model	Dimensions / Weights				Manufacturer	Test Status
			Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
00-1	27	(CN15DN3AB)/Freedom	2.56	4.44	5.05	3.10	Eaton	UUT 2
00-1	27	Freedom	2.56	4.44	5.05	3.10	Eaton	Interpolated
2	45	Freedom	2.56	4.44	5.05	3.10	Eaton	Interpolated
3	90	(CN15GN3AB)/Freedom	4.08	5.94	7.17	8.50	Eaton	UUT 3
3	90	Freedom	4.08	5.94	7.17	8.50	Eaton	Interpolated
4	135	Freedom	7.05	7.25	9.11	20.00	Eaton	Interpolated
4	135	(CN15NN3A)/Freedom	7.05	7.25	9.11	20.00	Eaton	UUT 1

Overload Relays								
NEMA Frame	Size (Amps)	(Model#)/Model	Dimensions / Weights				Manufacturer	Test Status
			Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
00-1	27	(C306GN3B)/C306	2.56	4.44	7.08	0.8	Eaton	UUT 2
00-1	27	C306	2.56	4.44	7.08	0.8	Eaton	Interpolated
2	45	C306	2.56	4.44	8.08	1.4	Eaton	Interpolated
3	90	C306	4.08	5.94	11.35	4	Eaton	Interpolated
3	90	(C306NN3)/C306	4.08	5.94	11.35	4	Eaton	UUT 1
4	135	C306	7.05	7.25	12.06	4	Eaton	Interpolated
00-1	27	(C440A1A045SF1)/C440	2.6	4.98	7.1	0.69	Eaton	UUT 2
00-1	27	C440	2.6	4.98	7.1	0.69	Eaton	Interpolated
2	45	C440	2.6	4.98	7.1	0.69	Eaton	Interpolated
3	90	(C440B1A100SF3)/C440	4.09	4.98	7.1	1.51	Eaton	UUT 3
3	90	C440	4.09	4.98	7.1	1.51	Eaton	Interpolated
4	135	(C440C1A140SF4)/C440	4.28	5.91	4.56	2.34	Eaton	UUT 3
4	135	C440	4.28	5.91	4.56	2.34	Eaton	Interpolated
00-1	27	(C4410109NOUI)/C441	3.9	3.9	4.9	1.81	Eaton	UUT 2
00-1	27	C441	3.9	3.9	4.9	1.81	Eaton	Interpolated
00-4	135	C441	3.9	3.9	4.9	1.81	Eaton	Interpolated
00-4	135	(C4410590NOUI)/C441	3.9	3.9	4.9	1.81	Eaton	UUT 3

Reduced Voltage Solid State Starters								
Frame	Size (Amps)	(Model#)/Model	Dimensions / Weights				Manufacturer	Test Status
			Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
N	66	N66N3S/S811	2.66	6.47	7.38	5.8	Eaton	UUT 1
N	66	S811	2.66	6.47	7.38	5.8	Eaton	Interpolated
R	135	S811	4.38	6.66	9.92	10.5	Eaton	Interpolated
T	304	S811	7.67	6.39	12.71	48	Eaton	Interpolated
U	500	S811	7.73	7.08	12.72	48	Eaton	Interpolated
V	1000	S811	11.02	7.35	16.57	103	Eaton	Interpolated
V	1000	V10NS/S811	11.02	7.35	16.57	103	Eaton	UUT 6

**Freedom and Freedom Flashgard Motor Control Center
Certified Major Sub-Component Data**

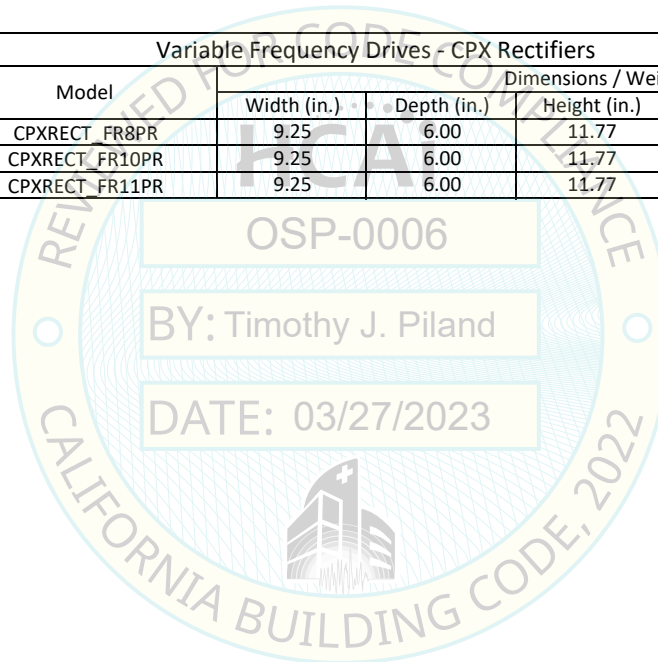
Variable Frequency Drives								
Frame	Size (Amps)	(Model#)/Model	Dimensions / Weights				Manufacturer	Test Status
			Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
FR4	12	SVX006A1-4A1B1/SVX	5.00	7.50	12.90	11.00	Eaton	UUT 5
FR4	12	SVX	5.00	7.50	12.90	11.00	Eaton	Interpolated
FR5	31	SVX	5.60	8.40	16.50	17.90	Eaton	Interpolated
FR6	61	SVX030A1-4A1B1/SVX	7.60	9.30	22.00	4.80	Eaton	UUT 4
FR6	61	SVX	7.60	9.30	22.00	4.80	Eaton	Interpolated
FR7	105	SVX	9.30	10.10	24.80	77.20	Eaton	Interpolated
FR8	105	SVX	13.50	11.50	30.10	127.00	Eaton	Interpolated
FR9	330	SVX	18.90	14.30	43.3	321.90	Eaton	Interpolated
FR10	520	SPX	19.70	19.90	45.90	518.00	Eaton	Interpolated
FR11	600	SPX	27.00	19.90	45.50	833.00	Eaton	Interpolated
FR11	600	SPX400A0-4A2B1V/SVX	27.00	19.90	45.50	833.00	Eaton	UUT 10

MCC - Variable Frequency Drives - Output Reactor (Copper Windings)							
Model	Size (Amps)	Dimensions / Weights				Manufacturer	Test Status
		Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
RL-00201	2	4.40	2.80	4.10	4.00	MTE	UUT 5
RL-00401	4	4.40	2.80	4.10	4.00	MTE	Interpolated
RL-00402	4	4.40	2.80	4.10	4.00	MTE	Interpolated
RL-00801	8	6.00	3.00	4.80	7.00	MTE	Interpolated
RL-00802	8	6.00	3.00	4.80	8.00	MTE	Interpolated
RL-01201	12	6.00	3.30	5.00	9.00	MTE	Interpolated
RL-01202	12	6.00	3.30	5.10	12.00	MTE	Interpolated
RL-01801	18	6.00	3.30	5.00	9.00	MTE	Interpolated
RL-01802	18	6.00	3.50	5.13	12.00	MTE	Interpolated
RL-02501	25	7.20	3.43	5.80	9.00	MTE	Interpolated
RL-02502	25	7.20	3.50	5.80	14.00	MTE	Interpolated
RL-03501	35	7.20	4.00	5.80	14.00	MTE	Interpolated
RL-03502	35	7.20	4.00	5.80	16.00	MTE	Interpolated
RL-04502	45	9.00	4.70	7.40	28.00	MTE	Interpolated
RL-05502	55	9.00	5.75	7.00	27.00	MTE	Interpolated
RL-08002	80	9.00	6.50	7.13	33.00	MTE	Interpolated
RL-10002	100	9.25	6.75	7.25	37.00	MTE	Interpolated
RL-13002	130	9.25	6.75	7.13	43.00	MTE	Interpolated
RL-13003	130	11.25	7.75	8.50	64.00	MTE	Interpolated
RL-16002	160	11.00	7.00	8.50	50.00	MTE	Interpolated
RL-20002	200	9.25	8.25	7.50	54.00	MTE	Interpolated
RL-25002	250	10.80	9.00	8.50	80.00	MTE	Interpolated
RL-40002	400	10.80	10.00	11.25	118.00	MTE	Interpolated
RL-50002	500	14.40	12.00	11.25	175.00	MTE	UUT 10

MCC - Variable Frequency Drives - CPX transformers/inductor (Copper Windings)								
Frame	Size (Amps)	Model	Dimensions / Weights				Manufacturer	Test Status
			Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
FR6	52	TR18460	17.5	9.26	14.38	250	Trenco	UUT 4
		TR18461	8.73	6.73	6.86	50		
FR7	96	TR18317	17.63	10.74	18.94	350	Trenco	Interpolated
		TR18318	10.25	6.57	9.25	75		
FR8	180	TR18326	21.13	12.07	20.94	600	Trenco	Interpolated
		TR18327	12.50	7.57	10.31	85		
FR9	302	TR20696	25.43	14.11	22.50	700	Trenco	Interpolated
		TR20435	17.00	10.31	11.31	135		
FR10, FR11	477	TR18347E	29.50	20.11	27.13	1505	Trenco	UUT 9
		TR18348	15.5	9.91	13.00	190		

**Freedom and Freedom Flashgard Motor Control Center
Certified Major Sub-Component Data**

Variable Frequency Drives - CPX Rectifiers								
Frame	Size (Amps)	Model	Dimensions / Weights				Manufacturer	Test Status
			Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
FR4 thru FR9	302	CPXRECT_FR8PR	9.25	6.00	11.77	11.50	Eaton	UUT 4
FR10	477	CPXRECT_FR10PR	9.25	6.00	11.77	12.50	Eaton	Interpolated
FR11	590	CPXRECT_FR11PR	9.25	6.00	11.77	13.00	Eaton	UUT 9



UUT 1 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage - Motor Control Center

Model Number: Freedom/Freedom FlashGard (STS060112-001A-1)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating. 600A, Copper Bus. Hook type latches (52-3466) required for securing unit doors (see graphic below).

Options/Component Summary: NEMA 4 Contactor (CN15NN3A), NEMA 4 Overload Relay, Frame N Reduced Voltage Solid State Starter(N66N3S). MCCB E Frame (EDH3125), F Frame (HFD3225 & HFDE3225).

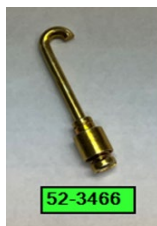
UUT Properties (As Tested)

Weight (lbs.)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
384	21	23.5	90.5	8.1	7.9	42

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S_{DS}	z/h	I_p	A_{fix-H}	A_{rig-H}	A_{fix-v}	A_{rig-v}
CBC 2019	ICC-ES AC156	50	2.16	1	1.5	3.46	2.59	1.45	0.58

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Hook type latch for securing unit doors.

UUT 1 was mounted to a rigid frame using (4) 3/8 bolts. The steel frame was welded to the shake table.

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UUT 2 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage - Motor Control Center

Model Number: Freedom/Freedom FlashGard (STS060112-001A-2)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating. 600A, Copper Bus. Hook type latches (52-3466) required for securing unit doors (see graphic below).

Options/Component Summary: MCCB E Frame (HMCPE030H1C), F Frame (HFD3175), JG Frame (JGH3250FAG). NEMA 00-1 Contactor (CN15DN3AB). C306 (C306GN3B), C440(C440A1A045SF1) & C441 (C4410109NOUI) Overload Relays , 45KVA Dry Type transformer (WF45E007).

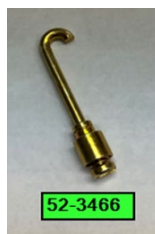
UUT Properties (As Tested)

Weight (lbs.)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
659	24	23.5	90.5	3.4	7.9	65

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S_{DS}	z/h	I_p	A_{fix-H}	A_{rig-H}	A_{fix-V}	A_{rig-V}
CBC 2019	ICC-ES AC156	34.6	2.16	1	1.5	3.46	2.59	1.45	0.58

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Hook type latch for securing unit doors.

UUT 2 was mounted to a rigid frame using (4) 3/8 bolts. The steel frame was welded to the shake table.

70461R12

UUT 3 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage - Motor Control Center

Model Number: Freedom/Freedom FlashGard (STS060112-001A-3)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating. 600A, Copper Bus. Hook type latches (52-3466) required for securing unit doors (see graphic below).

Options/Component Summary: NEMA 3 Contactor (CN15GN3AB), NEMA 3 (C440B1A100SF3) and 4 C440 (C440C1A140SF4) Overload relays,
NEMA 00-4 (C4410590N0UI) Overload relay.

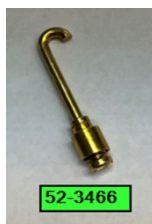
UUT Properties (As Tested)

Weight (lbs.)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
494	21	23.5	90.5	3.4	7.9	31

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S_{DS}	z/h	I_p	A_{fix-H}	A_{rig-H}	A_{fix-V}	A_{rig-V}
CBC 2019	ICC-ES AC156	54.7	2.16	1	1.5	3.46	2.59	1.45	0.58

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Hook type latch for securing unit doors.

UUT 3 was mounted to a rigid frame using (4) 3/8 bolts. The steel frame was welded to the shake table.

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UUT 4 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage - Motor Control Center

Model Number: Freedom/Freedom FlashGard (STS060112-001B-4)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating. 600A, Copper Bus. Hook type latches (52-3466) required for securing unit doors (see graphic below).

Options/Component Summary: FR6 SVX/SPX Variable Frequency Drive (SVX030A1-4A1B1), FR6 CPX Transformer/Inductor (TR18460 & TR18461), FR4-FR9 CPX Rectifier (CPXRECT_FR8PR)

UUT Properties (As Tested)

Weight (lbs.)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
600	40.25	23.5	90.5	8.2	7.4	25

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S_{DS}	z/h	I_p	A_{flx-H}	A_{rig-H}	A_{flx-V}	A_{rig-V}
CBC 2019	ICC-ES AC156	46.3	2.27	1	1.5	3.63	2.72	1.52	0.61

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Hook type latch for securing unit doors.

UUT 4 was mounted to a rigid frame using (6) 3/8 bolts. The steel frame was welded to the shake table.

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UUT 5 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage - Motor Control Center

Model Number: Freedom/Freedom FlashGuard (STS060112-001B-5)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating. 600A, Copper Bus. Hook type latches (52-3466) required for securing unit doors (see graphic below).

Options/Component Summary: MCCB K Frame (HKD3400), Miniature Circuit Breakers (BAB2125,QBAF1020, QBGF2050, BABRSP1015). FR4 SVX/SPX Variable Frequency Drive (SVX006A1-4A1B1), Output Reactor (RL-00201)

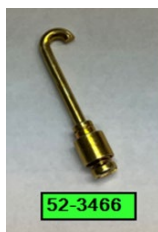
UUT Properties (As Tested)

Weight (lbs.)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
250	20.25	23.5	90.5	8.2	7.4	45

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S_{Ds}	z/h	I_p	A_{fix-H}	A_{rig-H}	A_{fix-V}	A_{rig-V}
CBC 2019	ICC-ES AC156	55.2	2.27	1	1.5	3.63	2.72	1.52	0.61

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Hook type latch for securing unit doors.

UUT 5 was mounted to a rigid frame using (4) 3/8 bolts. The steel frame was welded to the shake table.

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UUT 6 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage - Motor Control Center

Model Number: Freedom/Freedom FlashGard (STS060112-002A-6)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating. 1200A, Copper Bus. Hook type latches (52-3466) required for securing unit doors (see graphic below).

Options/Component Summary: Frame V Frame Reduced Voltage Solid State Starter 9V10NS), MCCB R Frame (RGH320000T32)

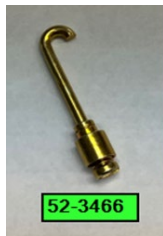
UUT Properties (As Tested)

Weight (lbs.)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
545	20.38	21	90.5	7.2	4.1	32

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S _{DS}	z/h	I _p	A _{flx-H}	A _{rig-H}	A _{flx-V}	A _{rig-V}
CBC 2019	ICC-ES AC156	45.9	2.16	1	1.5	3.46	2.59	1.45	0.58

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Hook type latch for securing unit doors.

UUT 6 was mounted to a rigid frame using (4) 3/8 bolts. The steel frame was welded to the shake table.

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UUT 7 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage - Motor Control Center

Model Number: Freedom/Freedom FlashGard (STS060112-002A-7)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating. 800A, Copper Bus. Hook type latches (52-3466) required for securing unit doors (see graphic below).

Options/Component Summary: Magnum Power Circuit Breaker (MDNC08)

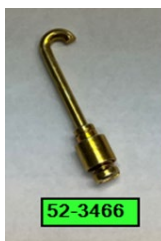
UUT Properties (As Tested)

Weight (lbs.)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
655	24.5	28.5	90.5	3.6	4.1	30

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S_{DS}	z/h	I_p	A_{fix-H}	A_{rig-H}	A_{fix-V}	A_{rig-V}
CBC 2019	ICC-ES AC156	43.5	2.16	1	1.5	3.46	2.59	1.45	0.58

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Hook type latch for securing unit doors.

UUT 7 was mounted to a rigid frame using (4) 3/8 bolts. The steel frame was welded to the shake table.

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UUT 8 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage - Motor Control Center

Model Number: Freedom/Freedom FlashGard (STS060112-002B-8)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating. Hook type latches (52-3466) required for securing unit doors (see graphic below).

Options/Component Summary:

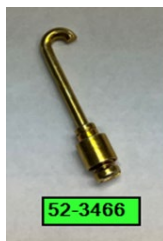
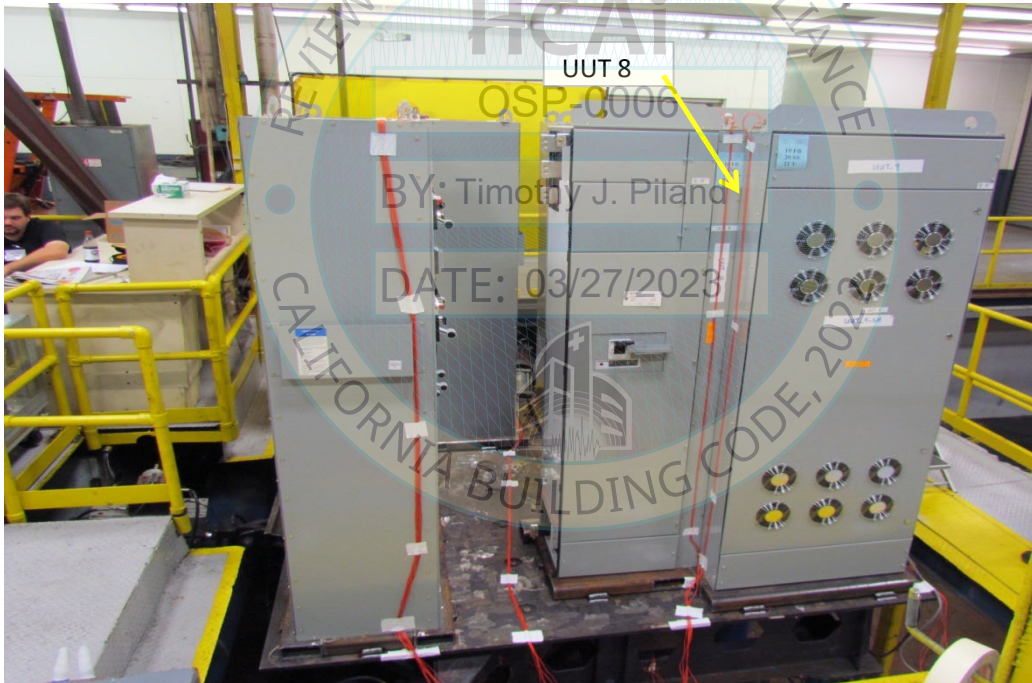
UUT Properties (As Tested)

Weight (lbs.)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
149	4.5	21	90.5	6	8.1	>33

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S_{DS}	z/h	I_p	A_{flx-H}	A_{rig-H}	A_{flx-V}	A_{rig-V}
CBC 2019	ICC-ES AC156	45.9	2.16	1	1.5	3.46	2.59	1.45	0.58

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Hook type latch for securing unit doors.

UUT 8 was mounted to a rigid frame using (2) 3/8 bolts. The steel frame was welded to the shake table.

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UUT 9 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage - Motor Control Center

Model Number: Freedom/Freedom FlashGard (STS060112-002B-9)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating. 800A, Copper Bus. Hook type latches (52-3466) required for securing unit doors (see graphic below).

Options/Component Summary: FR10, FR11 CPX Transformer/Inductor (TR18347E & TR18348), FR11 CPX Rectifier (CPXRECT_FR11PR)

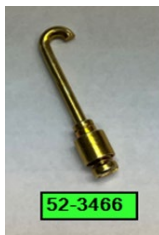
UUT Properties (As Tested)

Weight (lbs.)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
2982	34.5	28	90.5	6	8.1	>33

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S_{DS}	z/h	I_p	A_{flx-H}	A_{rig-H}	A_{flx-V}	A_{rig-V}
CBC 2019	ICC-ES AC156	33.7	216	1	1.5	345.60	259.20	144.72	58.32

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Hook type latch for securing unit doors.

52-3466

UUT 9 was mounted to a rigid frame using (8) 3/8 bolts. The steel frame was welded to the shake table.

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UUT 10 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage - Motor Control Center

Model Number: Freedom/Freedom FlashGard (STS060112-002C-10)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating. 800A, Copper Bus. Hook type latches (52-3466) required for securing unit doors (see graphic below).

Options/Component Summary: FR11 SVX/SPX Variable Frequency Drive (SPX400A0-4A2B1V), Output Reactor (RL-50002)

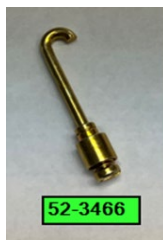
UUT Properties (As Tested)

Weight (lbs.)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
1320	48.5	22.75	90.5	5.2	8	34

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S_{DS}	z/h	I_p	A_{flx-H}	A_{rig-H}	A_{flx-V}	A_{rig-V}
CBC 2019	ICC-ES AC156	45	2.16	1	1.5	3.46	2.59	1.45	0.58

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Hook type latch for securing unit doors.

UUT 10 was mounted to a rigid frame using (4) 3/8 bolts. The steel frame was welded to the shake table.

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UUT 11 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage - Motor Control Center

Model Number: Freedom/Freedom FlashGard (STS060112-003-11)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating. 3200A, Copper Bus. Hook type latches (52-3466) required for securing unit doors (see graphic below).

Options/Component Summary: Magnum Power Circuit Breaker (MDSC32)

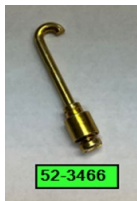
UUT Properties (As Tested)

Weight (lbs.)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
1580	29.12	41	90.5	6.9	5.7	26

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S_{DS}	z/h	I_p	A_{flx-H}	A_{rig-H}	A_{flx-v}	A_{rig-v}
CBC 2019	ICC-ES AC156	51.1	2.27	1	1.5	3.63	2.72	1.52	0.61

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Hook type latch for securing unit doors.

UUT 11 was mounted to a rigid frame using (8) 3/8 bolts. The steel frame was welded to the shake table.

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UUT 12 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage - Motor Control Center

Model Number: Freedom/Freedom FlashGard (STS060112-003-12)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating. 1200A, Copper Bus. Hook type latches (52-3466) required for securing unit doors (see graphic below).

Options/Component Summary: 1000A H frame Automatic Transfer Switch (H7ACTS31000N5)

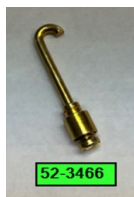
UUT Properties (As Tested)

Weight (lbs.)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
1215	37.12	21	90.5	6.9	5.7	43

Seismic Test Parameters

Building Code	Test Criteria	C.G. Height (in.)	S _{DS}	z/h	I _p	A _{flx-H}	A _{rig-H}	A _{flx-V}	A _{rig-V}
CBC 2019	ICC-ES AC156	51.7	2.27	1	1.5	3.63	2.72	1.52	0.61

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Hook type latch for securing unit doors.

UUT 12 was mounted to a rigid frame using (4) 3/8 bolts. The steel frame was welded to the shake table.

70461R12