



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0015

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Eaton

Manufacturer's Technical Representative: Craig Depas

Mailing Address: 175 Vista Blvd, Arden, NC 28704

Telephone: (414) 449-6037

Email: craighdepas@eaton.com

Product Information

Product Name: Enclosed Controls

Product Model Number(s): See attachments

Product Category: Electrical Control Panels on Life Safety/Critical Branch

Product Sub-Category: Lighting Control Panels

General Description: Low Voltage, unit mount enclosed control assemblies for lighting, machinery, industrial processes and commercial building systems per UL 508.

Mounting Description: Wall Mounted Rigid

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: WE Gundy & Associates, Inc

Contact Person: Travis Soppe

Mailing Address: PO Box 9121, Boise, ID 83707

Telephone: (208) 342-5989

Email: tsoppe@wegai.com

Title: President



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

Company Name: W.E. GUNDY & ASSOCIATES INC.

Name: Travis Soppe

California License Number: S6115

Mailing Address: P.O. Box 9121, Boise, ID 83707

Telephone: (208) 342-5989

Email: tsoppe@wegai.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: Tom Boonarkat

Mailing Address: 7800 Highway 20 West, Huntsville AL 35806

Telephone: (256) 837-4411

Email: tom.boonarkat@nts.com

BY: Mohammad Karim

DATE: 11/20/2025



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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) =	<u>2.22</u>
Sds (Design spectral response acceleration at short period, g) =	<u>2.95</u>
a_p (Amplification factor) =	<u>2.5</u>
R_p (Response modification factor) =	<u>6.0</u>
Ω_0 (System overstrength factor) =	<u>2.0</u>
I_p (Importance factor) =	<u>1.5</u>
z/h (Height ratio factor) =	<u>1</u>
Natural frequencies (Hz) =	<u>See Attachment</u>
Overall dimensions and weight =	<u>See Attachment</u>

HCAI Approval (For Office Use Only) - Approval Expires on 11/20/2031

Date: <u>11/20/2025</u>		
Name: <u>Mohammad Karim</u>	Title: <u>Supervisor, Health Facilities</u>	
Special Seismic Certification Valid Up to: Sds (g) = <u>2.95</u>	z/h = <u>1</u>	
Condition of Approval (if applicable): _____		

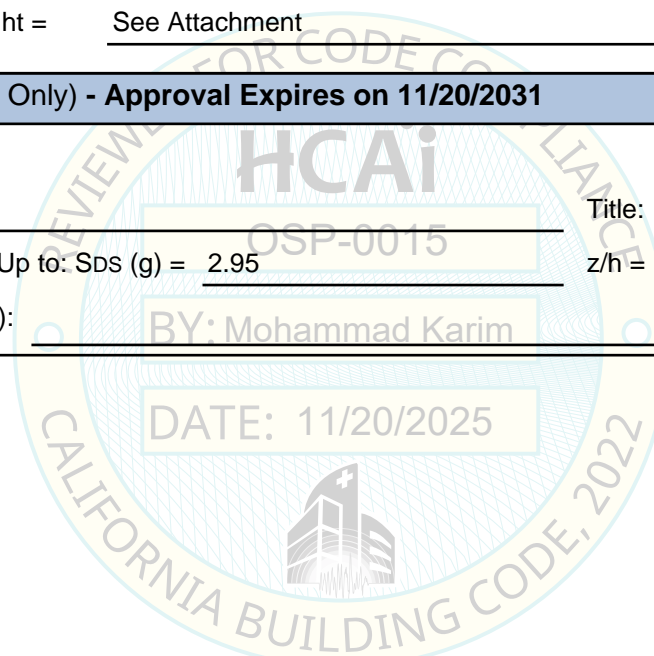




TABLE 1		EATON ENCLOSED CONTROLS CERTIFIED PRODUCT LINE MATRIX					 W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING	
Identification Number ¹	Current Rating (Amps)	Disconnect Rating (Amps)	NEMA Rating ²	Dimensions (in)			Max Weight (lbs)	UUT
				Width	Depth	Height		
ENCLOSED CONTROLS - Fusible / Non-Fusible Disconnect ECN01, ECN02, ECN05, ECN06, ECN07, ECN08, ECN16, ECN17, ECN54, ECL03, ECL12								
ECN1801CAC	18	30	1	10.75	10.50	27.25	35	UUT-24
ECN1801CAC-R63/B	18	30	1	10.75	10.50	27.25	35	UUT-25
ECN0101A3A	18	N/A	1	5.75	5.00	10.25	4.3	UUT-38
ECN180XXXX	18	30	1/3R/4/4X/12	29.50	15.25	62.00	224	Interpolated
ECN181XXXX	27	30	1/3R/4/4X/12	29.50	15.25	62.00	224	Interpolated
ECN182XXXX	45	60	1/3R/4/4X/12	29.50	15.25	62.00	224	Interpolated
ECN183XXXX	90	100	1/3R/4/4X/12	29.50	15.25	62.00	224	Interpolated
ECN184XXXX	135	200	1/3R/4/4X/12	29.50	15.25	62.00	224	Interpolated
ECN1841CAJ-R63/F	135	200	1	29.50	12.25	35.00	145	UUT-27
ECN185XXXX	270	400	1/3R/4/4X/12	28.00	15.25	62.00	224	Interpolated
ECN1851CAL	270	400	1	28.00	15.25	62.00	224	UUT-26
ENCLOSED CONTROLS - Circuit Breaker / Motor Circuit Protector ECN22, ECN23, ECN55, ECH22, ECH24, ECL14								
ECN2401CAC	18	7	1	10.75	10.50	27.25	34	UUT-22
ECN2401CAC-R63/B	18	7	1	10.75	10.50	27.25	34	UUT-23
ECN2401CAC-B10	18	7	1	10.75	10.50	27.25	35	UUT-37
ECN240XXXX	18	15	1/3R/4/4X/12	29.50	15.25	62.00	208	Interpolated
ECN241XXXX	27	30	1/3R/4/4X/12	29.50	15.25	62.00	208	Interpolated
ECN242XXXX	45	50	1/3R/4/4X/12	29.50	15.25	62.00	208	Interpolated
ECN243XXXX	90	100	1/3R/4/4X/12	29.50	15.25	62.00	208	Interpolated
ECN2431CAG	90	100	1	20.50	12.00	30.25	83	UUT-36
ECN244XXXX	135	150	1/3R/4/4X/12	29.50	15.25	62.00	208	Interpolated
ECN2441CAH-R63/F	135	150	1	20.50	12.00	31.00	100	UUT-29
ECN245XXXX	270	400	1/3R/4/4X/12	29.50	15.25	62.00	208	Interpolated
ECN2451CAJ	270	250	1	28.00	14.25	62.00	208	UUT-28
ENCLOSED LIGHTING CONTACTORS - Combination / Non-Combination ECL04								
ECC03C1A3A	30	N/A	1	7.75	6.00	13.25	10	UUT-30
ECCXXCXXXX	30	N/A	1/3R/4/4X/12	28.00	14.25	62.00	182	Interpolated
ECL15C1C3E-C1	30	30	1	10.75	10.50	27.25	37	UUT-31
ECL15CXXXX	30	30	1/3R/4/4X/12	28.00	14.25	62.00	182	Interpolated
ECL15DXXXX	60	60	1/3R/4/4X/12	28.00	14.25	62.00	182	Interpolated
ECL15EXXXX	100	100	1/3R/4/4X/12	28.00	14.25	62.00	182	Interpolated
ECL15FXXXX	200	200	1/3R/4/4X/12	28.00	14.25	62.00	182	Interpolated
ECL15F1C3H-C1	250	250	1	28.00	14.25	62.00	182	UUT-32

TABLE 1	EATON ENCLOSED CONTROLS CERTIFIED PRODUCT LINE MATRIX						 W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING	
Identification Number ¹	Current Rating (Amps)	Disconnect Rating (Amps)	NEMA Rating ²	Dimensions (in)			Max Weight (lbs)	UUT
				Width	Depth	Height		
ENCLOSED CONTROL SSRV - Combination / Non-Combination ECS93, ECS92, ECS90								
ECS95Q1CAF-C34C46/J3	37	50	1	15.50	12.00	23.25	61	UUT-33
ECS95QXXXX	37	50	1/3R/4/4X/12	28.00	14.25	62.00	294	Interpolated
ECS95SXXXX	66	100	1/3R/4/4X/12	28.00	14.25	62.00	294	Interpolated
ECS95VXXXX	105	150	1/3R/4/4X/12	28.00	14.25	62.00	294	Interpolated
ECS95WXXXX	135	150	1/3R/4/4X/12	28.00	14.25	62.00	294	Interpolated
ECS95YXXXX	180	250	1/3R/4/4X/12	28.00	14.25	62.00	294	Interpolated
ECS95Y1CAJ-C34C46/J3	180	250	1	28.00	14.25	62.00	266	UUT-34
ECS95ZXXXX	240	250	1/3R/4/4X/12	28.00	14.25	62.00	294	Interpolated
ECS951XXXX	304	400	1/3R/4/4X/12	28.00	14.25	62.00	294	Interpolated
ECS952XXXX	360	400	1/3R/4/4X/12	28.00	14.25	62.00	294	Interpolated
ECS9521CAK-C34	360	400	4X	28.00	14.25	62.00	294	UUT-35
Notes: ¹ All components are manufactured by Eaton and the part numbers listed uniquely identify type of component, manufacturer, and material of construction for each sub-component within the tested unit. ² NEMA 1/3R/4/12 enclosures are constructed of carbon steel and NEMA 4X enclosure is constructed of stainless steel. NEMA 3R/4/12 enclosures are structurally identical to the NEMA 1 enclosure with the inclusion of gasket material for the door and seams. Enclosure dimensions exclude extraneous hardware and operator throw projection.								

UUT-22

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (3) 1/4" grade 5 bolts



Manufacturer: Eaton

Test Location: Wyle Lab, Huntsville AL

Product Line: Enclosed Controls

Test Date: June 18-22, 2012

Component: ECN2401CAC

Report Number: 70282R12

UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes

UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, Box A (Enclosure), HMCPE007C0C (7A Breaker), C0050E2AFB (50VA CPT), CN15BN3AB (Size 0 Contactor), and C306DN3B (Bi-metallic OL)

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
34	10.75	10.50	27.25	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-23

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (3) 1/4" grade 5 bolts



Manufacturer: Eaton	Test Location: Wyle Lab, Huntsville AL
Product Line: Enclosed Controls	Test Date: June 18-22, 2012
Component: ECN2401CAC-R63/B	Report Number: 70282R12
UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes	
UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, Box A (Enclosure), HMCPE007C0C (7A Breaker), C0050E2AFB (50VA CPT), CN15BN3AB (Size 0 Contactor), and C440A1A005SF0 (1-5A SSOL)	

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
34	10.75	10.5	27.25	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-24

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (3) 1/4" grade 5 bolts



Manufacturer: Eaton

Test Location: Wyle Lab, Huntsville AL

Product Line: Enclosed Controls

Test Date: June 18-22, 2012

Component: ECN1801CAC

Report Number: 70282R12

UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes

UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, Box A (Enclosure), 96-3692-15 (30A 600V Fusible DS), C0050E2AFB (50VA CPT), CN15BN3AB (Size 0 Contactor), and C306DN3B (Bi-metallic OL)

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
35	10.75	10.5	27.25	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-25

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (3) 1/4" grade 5 bolts



Manufacturer: Eaton	Test Location: Wyle Lab, Huntsville AL
Product Line: Enclosed Controls	Test Date: June 18-22, 2012
Component: ECN1801CAC-R63/B	Report Number: 70282R12
UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes	
UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, Box A (Enclosure), 96-3692-15 (30A 600V Fusible DS), C0050E2AFB (50VA CPT), CN15BN3AB (Size 0 Contactor), and C440A1A005SF0 (1-5A SSOL)	

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
35	10.75	10.5	27.25	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-26

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (4) 3/8" grade 5 bolts



Manufacturer: Eaton	Test Location: Wyle Lab, Huntsville AL
Product Line: Enclosed Controls	Test Date: June 18-22, 2012
Component: ECN1851CAL	Report Number: 70282R12
UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes	
UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, Box E (Enclosure), 96-3695-16 (400A 600V Fusible DS), C0300E2AFB (300VA CPT), CN15SN3A (Size 5 Contactor), and C306DN3B (Bi-metallic OL)	

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
224	28.0	15.25	62.0	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-27

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (3) 1/4" grade 5 bolts



Manufacturer: Eaton

Test Location: Wyle Lab, Huntsville AL

Product Line: Enclosed Controls

Test Date: June 18-22, 2012

Component: ECN1841CAJ-R63/F

Report Number: 70282R12

UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes

UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, Box D (Enclosure), 96-3694-17 (200A 600V Fusible DS), C0200E2AFB (200VA CPT), CN15NN3A (Size 4 Contactor), and C440C1A140SPX (28-140A SSOL)

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
145	29.5	12.25	35.0	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-28

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (4) 3/8" grade 5 bolts



Manufacturer: Eaton

Test Location: Wyle Lab, Huntsville AL

Product Line: Enclosed Controls

Test Date: June 18-22, 2012

Component: ECN2451CAJ

Report Number: 70282R12

UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes

UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, Box E (Enclosure), HMCP250W5C (250A Breaker), C0300E2AFB (300VA CPT), CN15SN3A95 (Size 5 Contactor), and C306DN3B (Bi-metallic OL)

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
208	28.0	14.25	62.0	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-29

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (3) 1/4" grade 5 bolts



Manufacturer: Eaton

Test Location: Wyle Lab, Huntsville AL

Product Line: Enclosed Controls

Test Date: June 18-22, 2012

Component: ECN2441CAH-R63/F

Report Number: 70282R12

UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes

UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, Box C (Enclosure), HMCP150U4C (150A Breaker), C0200E2AFB (200VA CPT), CN15NN3A (Size 4 Contactor), and C440C1A140SPX (28-140A SSOL)

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
100	20.5	12.0	31.0	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-30

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (3) 3/16" grade 5 bolts



Manufacturer: Eaton

Test Location: Wyle Lab, Huntsville AL

Product Line: Enclosed Controls

Test Date: June 18-22, 2012

Component: ECC03C1A3A

Report Number: 70282R12

UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes

UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, Box 2 (Enclosure), C30CNE20A0 (30A Lighting Contactor)

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
10	7.75	6.0	13.25	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-31

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (3) 1/4" grade 5 bolts



Manufacturer: Eaton

Test Location: Wyle Lab, Huntsville AL

Product Line: Enclosed Controls

Test Date: June 18-22, 2012

Component: ECL15C1C3E-C1

Report Number: 70282R12

UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes

UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, Box A (Enclosure), HFD3030 (30A Breaker), C0100E2AFB (100VA CPT), and A202K1CAM (30A Lighting Contactor)

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
37	10.75	10.5	27.25	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-32

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (4) 3/8" grade 5 bolts



Manufacturer: Eaton

Test Location: Wyle Lab, Huntsville AL

Product Line: Enclosed Controls

Test Date: June 18-22, 2012

Component: ECL15F1C3H-C1

Report Number: 70282R12

UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes

UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, Box E (Enclosure), HJD3250F (250A Breaker), C0200E2AFB (200VA CPT), and A202K4CAM (400A Lighting Contactor)

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
182	28.0	14.25	62.0	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-33

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (3) 1/4" grade 5 bolts



Manufacturer: Eaton

Test Location: Wyle Lab, Huntsville AL

Product Line: Enclosed Controls

Test Date: June 18-22, 2012

Component: ECS95Q1CAF-C34C46/J3

Report Number: 70282R12

UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes

UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, S811N37N3B (37A, RVSS), HMCPE050K2C (50A Breaker), C0250E2AFB (250VA CPT), CN15GN3AB (Size 2 Contactor), and C306GN3B (Bi-metallic OL)

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
61	15.5	12.0	23.25	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-34

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (4) 3/8" grade 5 bolts



Manufacturer: Eaton	Test Location: Wyle Lab, Huntsville AL
Product Line: Enclosed Controls	Test Date: June 18-22, 2012
Component: ECS95Y1CAJ-C34C46/J3	Report Number: 70282R12
UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes	
UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, Box E (Enclosure), S811T18N3B (180A, RVSS), HMCP250W5C, (250A Breaker), C0250E2AFB (250VA CPT), CN15SN3A (Size 5 Contactor), and C306DN3B (Bi-metallic OL)	

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
266	28.0	14.25	62.0	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-35

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (4) 3/8" grade 5 bolts



Manufacturer: Eaton	Test Location: Wyle Lab, Huntsville AL
Product Line: Enclosed Controls	Test Date: June 18-22, 2012
Component: ECS9521CAK-C34	Report Number: 70282R12
UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes	
UUT Description: Enclosed control configuration in wall mounted NEMA 4X enclosure, Box E (Enclosure), S811V36N3B (360A, RVSS), HMCP400X5W (400A Breaker), and C0250E2AFB (250VA CPT)	

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
294	28.0	14.25	62.0	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-36

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (3) 1/4" grade 5 bolts



Manufacturer: Eaton

Test Location: Wyle Lab, Huntsville AL

Product Line: Enclosed Controls

Test Date: June 18-22, 2012

Component: ECN2431CAG

Report Number: 70282R12

UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes

UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, Box C (Enclosure), HMCPE100R3C (100A Breaker), C0150E2AFB, (150VA CPT), CN15KN3A (Size 3 Contactor), and C306KN3 (Bi-metallic OL)

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
83	20.5	12.0	30.25	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-37

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (3) 1/4" grade 5 bolts



Manufacturer: Eaton	Test Location: Wyle Lab, Huntsville AL
Product Line: Enclosed Controls	Test Date: June 18-22, 2012
Component: ECN2401CAC-B10	Report Number: 70282R12
UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes	
UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, Box A (Enclosure), HMCP007C0C (7A Breaker), C0050E2AFB (50VA CPT), CN15BN3AB (Size 0 Contactor), and C306DN3B (Bi-metallic OL)	

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
35	10.75	10.5	27.25	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-38

UNIT UNDER TEST (UUT) SUMMARY SHEET



Mounting Details: Rigid wall mounted with (3) 3/16" grade 5 bolts



Manufacturer: Eaton	Test Location: Wyle Lab, Huntsville AL
Product Line: Enclosed Controls	Test Date: June 18-22, 2012
Component: ECN0101A3A	Report Number: 70282R12
UUT Function: Low voltage control assemblies for lighting, machinery, and industrial processes	
UUT Description: Enclosed control configuration in wall mounted NEMA 1 enclosure, Box 1 (Enclosure), CN15BN3AB (Size 0 contactor)	

UUT PROPERTIES

Weight (lb)	Enclosure Box Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
4.3	5.75	5.0	10.25	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022 / ICC-ES AC156	2.95	1	1.5	4.72	3.54	1.98	0.80

Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

Eaton Enclosed Controls Product Numbering System

EC N 22 2 1 A A E -

Design
N = Freedom NEMA
Z = A200 P = Pump Panel

Modification Codes
See Tab 15

Class	Page
01 = Non-reversing contactor—three-pole	V10-T2-7
Non-reversing contactor—two-pole	V10-T2-9
Non-reversing contactor—four-pole	V10-T2-11
Non-reversing contactor—five-pole	V10-T2-12
02 = Reversing contactor—three-pole	V10-T2-13
05 = Non-combination non-reversing starter	V10-T2-15
06 = Non-combination reversing starter	V10-T2-17
07 = Non-combination non-reversing starter with CPT	V10-T2-19
08 = Non-combination single-phase non-reversing starter	V10-T2-20
16 = Combination non-reversing starter—fusible disconnect	V10-T2-21
Combination non-reversing starter—non-fusible disconnect	V10-T2-23
Special enclosure combination non-reversing starter—fusible/non-fusible disconnect	V10-T2-25
17 = Combination reversing starter—fusible disconnect	V10-T2-27
Combination reversing starter—non-fusible disconnect	V10-T2-29
18 = Combination non-reversing starter—fusible disconnect with CPT	V10-T2-31
Combination reversing starter—non-fusible disconnect with CPT	V10-T2-33
22 = Combination non-reversing starter—circuit breaker	V10-T2-35
Special enclosure combination non-reversing starter—circuit breaker	V10-T2-38
23 = Combination reversing starter—circuit breaker	V10-T2-40
24 = Combination non-reversing starter—circuit breaker with CPT	V10-T2-43
54 = Type 3R Pump Panel - Fusible	V10-T6-2

NEMA Size		
A = Size 00	3 = Size 3	7 = Size 7
0 = Size 0	4 = Size 4	8 = Size 8
1 = Size 1	5 = Size 5	9 = Size 9
2 = Size 2	6 = Size 6	

Disconnect Fuse Clip Ratings		
A = None	G = 100A/600V R	N = 800A/600V R
B = 30A/250V R	H = 200A/250V R	P = 800A/600V R
C = 30A/600V R	J = 200A/600V R	Q = 1200A/600V R
D = 60A/250V R	K = 400A/250V R	R = 1000A/600V R
E = 60A/600V R	L = 400A/600V R	S = 2000A/600V R
F = 100A/250V R	M = 800A/250V R	T = By description

Circuit Breaker Ratings		
A = None	H = 150A	N = 800A
B = 3A	J = 250A	T = By description
C = 7A	K = 400A	5 = 3A Ⓢ
D = 15A	L = 600A	6 = 7A Ⓢ
E = 30A	M = 800A	7 = 15A Ⓢ
F = 50A	N = 1000A	8 = 30A Ⓢ
W = 70A	P = 1200A	9 = 50A Ⓢ
G = 100A	Q = 2000A	I = 100A Ⓢ

Cover Control
Type 1 non-comb., Page V10-T2-5
All others, Page V10-T2-6
Contactor
3 = Three poles

Coil Voltage and/or Control Transformers
See code tables below

Enclosure Type
1 = Type 1—General purpose
2 = Type 3R—Rainproof
3 = Type 4—Watertight (painted steel)
4 = Type 4X—Watertight (304-Grade stainless steel)
5 = Type 4X—Corrosion (non-metallic)
6 = Type 7/8—Bolted hazardous location
7 = Type 7/8—Wired hazardous location
8 = Type 12—Dust-tight
9 = Type 4X—316-Grade stainless steel

EC L 12 D 1 A 3 E - X

Design
L = CN35 or A202 lighting contactor
C = C30CN lighting contactor

Modification Codes
(See V10-T4-4 and Tab 15)

Class	Page
03 = Non-combination electrically held lighting contactor	V10-T4-5
04 = Non-combination mechanically held/magnetically latched lighting contactor	V10-T4-5, V10-T4-8
12 = Combination electrically held lighting contactor—fusible disconnect	V10-T4-10
13 = Combination magnetically latched lighting contactor—fusible disconnect	V10-T4-10
14 = Combination electrically held lighting contactor—thermal magnetic circuit breaker	V10-T4-11
15 = Combination magnetically latched lighting contactor—thermal magnetic circuit breaker	V10-T4-11

Ampere Size ①		
A = 10A	D = 60A	G = 300A
B = 20A	E = 100A	H = 400A
C = 30A	F = 200A	J = 600A

Disconnect Fuse Clip Ratings	
A = None	J = 200A/600V R
B = 30A/250V R	K = 400A/250V R
C = 30A/600V R	L = 400A/600V R
D = 60A/250V R	M = 800A/600V R
E = 30A/600V R	N = 800A/600V R
F = 100A/250V R	P = 800A/600V R
G = 100A/600V R	T = By description
H = 200A/250V R	

Thermal-Magnetic Breaker Ratings			
A = None	F = 60A	J = 300A	M = 800A
D = 20A	G = 100A	K = 400A	T = By description
E = 30A	H = 200A	L = 600A	

Number of Poles ②
1, 2, 3, 4, 5, 6, 7, 8, 9 = Poles required
A = 10 poles
B = 12 poles
C = 20 poles
Combination Devices = Three-pole only

Coil Voltage		
A = 120/60 110/50	K = 240/50	T = 24/60
B = 240/60 220/50	L = 380/50	U = 24/50
C = 480/60 440/50	M = 415/50	V = 32/50
D = 600/60 550/50	P = 12 Vdc	W = 48/60
E = 208/60	Q = 24 Vdc	X = 104–120/60
G = 550/50	R = 48 Vdc	Y = 48/50
H = 277/60	S = 125 Vdc	Z = By description
J = 208–240/60		

Enclosure Types
1 = Type 1—General purpose
2 = Type 3R—Rainproof
3 = Type 4—Watertight (painted)
4 = Type 4X—Watertight (304-Grade stainless steel)
5 = Type 7/8—Explosion proof
8 = Type 12—Dust-tight
9 = Type 4X—Watertight (316-Grade stainless steel)

Eaton Enclosed Controls Product Numbering System

