# APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

| OFFICE USE ONLY | |
|---|---|
| APPLICATION #: | OSP – 0014 |

## OSHPD Special Seismic Certification Preapproval (OSP)

**Type:** ☐ New ☒ Renewal

## Manufacturer Information

Manufacturer: Eaton

Manufacturer's Technical Representative: Josh Myers

Mailing Address: 221 Heywood Road

Telephone: 828-687-3171 Email: JoshuaDMyers@eaton.com

## Product Information

Product Name: Automatic Transfer Switches

Product Type: Transfer Switches

Product Model Number: See Product Range Summary
(List all unique product identification numbers and/or part numbers)

General Description: Automatic Transfer Switches for emergency power. NEMA 1 and 3R, 600V, 3200A, copper bussing, contactor, and breaker type. Labeled as Eaton or Generac. Seismic enhancements made to the test units and modifications required to address the anomalies observed during the tests shall be incorporated into the production units. **All units shall have a single secured door latch with padlock or other fastener and a permanent door label indicating: *OSHPD certification dependent upon a single secured door latch.***

Mounting Description: Rigid floor and rigid wall mounted.

## Applicant Information

Applicant Company Name: Eaton

Contact Person: Eddie Wilkie

Mailing Address: 175 Vista Blvd, Arden, NC 28704

Telephone: 828-651-0707 Email: eddiewilkie@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: 12/2/19

Title: Director of Engineering Company Name: Eaton

REVIEWED FOR CODE COMPLIANCE OSHPD OSP-0014 By:Timothy J Piland DATE:03/26/2021 CALIFORNIA BUILDING CODE, 2019

## 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):

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OSP-0014
BY: Timothy J Piland
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CALIFORNIA BUILDING CODE, 2019

## 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

## Seismic Parameters

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

Design Basis of Equipment or Components ($F_p/W_p$) = 1.62

$S_{DS}$ (Design spectral response acceleration at short period, g) = 2.16

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

$R_p$ (Equipment or component response modification factor) = 6.0

$\Omega_0$ (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) =

$\Omega_0$ (System overstrength factor) =

$C_d$ (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

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## 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 December 31, 2025

Signature: Timothy J. Piland Date: March 26, 2021

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to: $S_{DS}$ (g) = 2.16 z/h = 1

Condition of Approval (if applicable): **All units shall have a single secured door latch with padlock or other fastener and a permanent door label indicating: *OSHPD certification dependent upon a single secured door latch.***

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## Transfer Switch[4,5]
## Certified Product Range Summary

| Model (Model#) | Mounting | Ratings | | Enclosure Dimensions | | | Weight (lbs.) | $S_{DS}$ | $F_p/W_p$ | Maximum CG (Height) [in.] | Maximum Tension | Notes | UUT Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Amperes | Voltage | Width (in.) | Depth (in.) | Height (in.) | | | | | | | |
| ATC1C2X30100XRU | Wall | 100 | 480 | 19.00 | 13.50 | 39.00 | 154 | 2.16 | 1.62 | N/A | N/A | 2,3 | UUT 13 |
| ATC3C5C30200XSU | | 40-100 | 480 | 19.81 | 16.75 | 52.00 | 238 | | | | | 1,2,3 | UUT 2a |
| ATC/N** | | 40-100 | 600 | 18.31 | 13.34 | 38.68 | 164 | | | | | 1,2,3 | Interpolated |
| ATC/N** | | 150-200 | 480 | 18.31 | 13.34 | 38.68 | 164 | | | | | 1,2,3 | Interpolated |
| ATC/N** | | 100-200 | 600 | 18.81 | 13.84 | 48.70 | 260 | | | | | 1,2,3 | Interpolated |
| ATC/N** | | 225-400 | 480 | 18.81 | 13.84 | 48.70 | 260 | | | | | 1,2,3 | Interpolated |
| ATC/N** | | 600-1200 | 480 | 25.25 | 22.46 | 79.41 | 444 | | | | | 1,2,3 | Interpolated |
| CTC | | 40-100 | 600 | 25.00 | 17.18 | 52.74 | 210 | | | | | 1,2,3 | Interpolated |
| CTC | | 150-200 | 480 | 25.00 | 17.18 | 52.74 | 210 | | | | | 1,2,3 | Interpolated |
| CTC | | 100-200 | 600 | 33.61 | 14.72 | 71.02 | 420 | | | | | 1,2,3 | Interpolated |
| CTC | | 225-400 | 480 | 33.61 | 14.72 | 71.02 | 420 | | | | | 1,2,3 | Interpolated |
| ATHIFDA20150WSU | | 150 | 240 | 22.00 | 17.25 | 48.00 | 188 | | | | | 1,3 | UUT 16 |
| ATH/N**/M** | | 30-225 | 240 | 20.06 | 13.34 | 35.61 | 150 | | | | | 1,2,3 | Interpolated |
| ATH/N**/M** | | 30-225 | 480 | 20.81 | 17.22 | 47.74 | 240 | | | | | 1,2,3 | Interpolated |
| MBH | | 100-150 | 480 | 23.00 | 12.00 | 24.00 | 130 | | | | | 1,2,3 | Interpolated |
| ATV/N**/M** | | 150-300 | 480 | 20.81 | 18.40 | 56.00 | 305 | | | | | 1,2,3 | Interpolated |
| MBH | | 150-300 | 480 | 40.00 | 20.00 | 37.00 | 300 | | | | | 1,2,3 | Interpolated |
| ATV/N**/M** | | 400 | 480 | 25.81 | 18.40 | 53.00 | 425 | | | | | 1,2,3 | Interpolated |
| MBH | | 400-600 | 480 | 40.00 | 20.00 | 37.00 | 330 | | | | | 1,2,3 | Interpolated |
| ATV/N**/M** | | 600 | 600 | 25.81 | 18.40 | 64.00 | 444 | | | | | 1,2,3 | Interpolated |
| MBH | | 600-1000 | 480 | 40.00 | 20.00 | 51.00 | 444 | | | | | 1,2,3 | Interpolated |
| ATV/N**/M** | | 800-1000 | 600 | 25.81 | 19.50 | 76.74 | 444 | | | | | 1,2,3 | Interpolated |
| ATV3NBA31000ESU | | 1000 | 600 | 26.50 | 18.00 | 77.25 | 444 | | | | | 1,3 | UUT 17 |

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OSP-0014-10
BY: Timothy J Piland
DATE: 03/26/2021
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## Transfer Switch[4,5]
## Certified Product Range Summary

| Model (Model#) | Mounting | Ratings | | Enclosure Dimensions | | | Weight (lbs.) | $S_{DS}$ | $F_p/W_p$ | Maximum CG (Height) [in.] | Maximum Tension | Notes | UUT Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Amperes | Voltage | Width (in.) | Depth (in.) | Height (in.) | | | | | | | |
| ATC/N** | Floor[6] | 1600 | 480 | 46.00 | 29.00 | 90.00 | 600 | 2.16 | 1.62 | 43.42 | 418 | 1,3 | Extrapolated |
| ATC/N** | | 1600 | 480 | 46.00 | 48.00 | 90.00 | 600 | | | 46.4 | 381 | 2,3 | Extrapolated |
| BIC | | 100-200 | 600 | 30.00 | 29.30 | 78.00 | 625 | | | 39.83 | 542 | 1,3 | Extrapolated |
| BIC | | 100-400 | 480 | 30.00 | 29.30 | 78.00 | 625 | | | 39.83 | 542 | 1,3 | Extrapolated |
| CBC | | 100-200 | 600 | 30.00 | 29.30 | 78.00 | 625 | | | 39.83 | 542 | 1,3 | Extrapolated |
| CBC | | 100-400 | 480 | 30.00 | 29.30 | 78.00 | 625 | | | 39.83 | 542 | 1,3 | Extrapolated |
| BIC | | 100-400 | 480 | 30.00 | 47.60 | 78.00 | 834 | | | 39.83 | 515 | 2,3 | Extrapolated |
| CBC | | 100-400 | 600 | 30.00 | 47.60 | 78.00 | 834 | | | 39.83 | 515 | 2,3 | Extrapolated |
| BIC3C3X30400XSU | | 400 | 480 | 30.75 | 31.25 | 78.50 | 885 | | | 38.55 | 712 | 1,3 | UUT 19 |
| ATC | | 2000-3000 | 600 | 40.00 | 40.00 | 90.00 | 1080 | | | 45.52 | 799 | 1,2,3 | Interpolated |
| CTC | | 2000-3000 | 600 | 40.00 | 40.00 | 90.00 | 1080 | | | 45.52 | 799 | 1,2,3 | Interpolated |
| CTC8C3X31200ERU | | 1200 | 600 | 46.25 | 48.50 | 91.50 | 1090 | | | 48.48 | 716 | 2,3 | UUT 18 |
| ATVIMGA32000ESU | | 2000 | 600 | 33.00 | 51.75 | 91.00 | 1221 | | | 47.00 | 815 | 1,3 | UUT 14 |
| ATV-fixed/N** | | 200-2000 | 600 | 32.00 | 48.00 | 90.00 | 1250 | | | 47.00 | 887 | 1,3 | Interpolated |
| CTV-fixed | | 200-2000 | 600 | 32.00 | 48.00 | 90.00 | 1250 | | | 47.00 | 887 | 1,3 | Interpolated |
| BIC | | 100-200 | 600 | 46.00 | 38.00 | 90.00 | 1362 | | | 38.47 | 860 | 3 | Interpolated |
| BIC | | 100-400 | 600 | 46.00 | 38.00 | 90.00 | 1362 | | | 38.47 | 860 | 3 | Interpolated |
| BIC | | 100-200 | 600 | 46.00 | 38.00 | 90.00 | 1362 | | | 38.47 | 860 | 3 | Interpolated |
| CBC | | 100-200 | 600 | 46.00 | 38.00 | 90.00 | 1362 | | | 38.47 | 860 | 3 | Interpolated |
| CBC | | 100-400 | 480 | 46.00 | 38.00 | 90.00 | 1362 | | | 38.47 | 860 | 3 | Interpolated |
| ATC9C5C31600XRU | | 1600 | 480 | 40.38 | 66.50 | 90.00 | 1480 | | | 54.65 | 909 | 1.2.3 | UUT 2b |
| BIC | | 1600 | 480 | 46.00 | 40.00 | 90.00 | 1750 | | | 45.48 | 1254 | 1,3 | Interpolated |
| CBC | | 1600 | 480 | 46.00 | 40.00 | 90.00 | 1750 | | | 45.48 | 1254 | 1,3 | Interpolated |
| BIC | | 600-1200 | 600 | 46.00 | 47.60 | 90.00 | 1755 | | | 44.44 | 1074 | 2,3 | Interpolated |
| CBC | | 225-1200 | 600 | 46.00 | 47.60 | 90.00 | 1780 | | | 44.44 | 1089 | 2,3 | Interpolated |
| CBC8C3E31200ERU | | 1200 | 600 | 45.50 | 48.25 | 91.25 | 1780 | | | 44.44 | 1081 | 2,3 | UUT 20 |
| BIC | | 600-1200 | 600 | 46.00 | 47.60 | 90.00 | 1905 | | | 43.29 | 1135 | 3 | Interpolated |
| CBC | | 600-1200 | 600 | 46.00 | 47.60 | 90.00 | 1905 | | | 43.29 | 1135 | 3 | Interpolated |
| ATV-drawout/N** | | 2500-3200 | 600 | 50.00 | 79.00 | 90.00 | 2230 | | | 47.00 | 978 | 2,3 | Interpolated |
| CTV-drawout | | 2500-3200 | 600 | 50.00 | 79.00 | 90.00 | 2230 | | | 47.00 | 978 | 2,3 | Interpolated |
| ATV-fixed/N** | | 2500-3200 | 600 | 44.00 | 63.00 | 90.00 | 2282 | | | 46.50 | 1204 | 2,3 | Interpolated |
| CTV-fixed | | 2500-3200 | 600 | 44.00 | 63.00 | 90.00 | 2282 | | | 46.50 | 1204 | 2,3 | Interpolated |
| BIC9G5X33000ESU | | 3000 | 600 | 44.00 | 60.00 | 90.00 | 2751 | | | 47.03 | 1519 | 1,2,3 | UUT 3 |
| ATV-drawout/N** | | 2500-3200 | 600 | 44.00 | 60.00 | 90.00 | 2800 | | | 47.00 | 1545 | 1,3 | Interpolated |
| CTV-drawout | | 2500-3200 | 600 | 44.00 | 60.00 | 90.00 | 2800 | | | 47.00 | 1545 | 1,3 | Interpolated |
| BIV | | 200-2000 | 600 | 64.00 | 60.00 | 90.00 | 3700 | | | 44.50 | 1758 | 1,3 | Interpolated |
| CBV | | 200-2000 | 600 | 64.00 | 60.00 | 90.00 | 3700 | | | 44.50 | 1758 | 1,3 | Interpolated |
| BIV | | 200-2000 | 600 | 64.00 | 75.00 | 90.00 | 4182 | | | 47.00 | 1771 | 2,3 | Interpolated |
| CBV | | 200-2000 | 600 | 64.00 | 75.00 | 90.00 | 4182 | | | 47.00 | 1771 | 2,3 | Interpolated |
| BIV | | 2500-3200 | 600 | 71.25 | 63.40 | 91.00 | 4575 | | | 44.50 | 2034 | 1,3 | Interpolated |
| CBV | | 2500-3200 | 600 | 71.25 | 63.40 | 91.00 | 4575 | | | 44.50 | 2034 | 1,3 | Interpolated |
| BIV | | 2500-3200 | 600 | 71.25 | 79.75 | 91.00 | 4775 | | | 47.00 | 1880 | 2,3 | Interpolated |
| CBV | | 2500-3200 | 600 | 71.25 | 79.75 | 91.00 | 4775 | | | 47.00 | 1880 | 2,3 | Interpolated |
| CBVIMGE33200ERU | | 3200 | 600 | 71.25 | 79.75 | 91.00 | 4775 | | | 47.00 | 1880 | 2,3 | UUT 15 |

Notes:

1 NEMA 1
2 NEMA 3R, force resisting system common with NEMA 1 construction
3 Copper Bus
4 Manufactured by Eaton
5 Marked as either Eaton, CAT or Generac
6 Certification applies to a minimum of (1) enclosure.

ATC - Contactor
CTC - Closed transition Contactor
BIC - Contactor Bypass Isolation Switch
CBC - Closed Transistion Contactor Bypass Switch
ATH, ATV and MBH - Wall - MCCB ATS
ATV and CTV-Floor Mount - Magnum ATS open and closed transition
BIV and CBV - Magnum Bypass Isolation open and closed transition
N** - Non Automatic version
M** - Manual version

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**Transfer Switch**
**Certified Major Component Summary**

| Certified Power Circuit Breakers - Magnum DS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Size (Amperes) | Model | Mounting | Voltage | Dimensions / Weights | | | | Manufacturer | Unit |
| | | | | Width (in.) | Depth (in.) | Height (in.) | Maximum Weight (lbs.) | | |
| 800 | MDS | Fixed/Draw-out | 600 | 16.15 | 14.64-20.82 | 16.76 | 245 | Eaton | Extrapolated |
| 1200 | MDS | Fixed/Draw-out | 600 | 16.15 | 14.64-20.82 | 16.76 | 245 | Eaton | Extrapolated |
| 1600 | MDS | Fixed/Draw-out | 600 | 16.15 | 14.64-20.82 | 16.76 | 245 | Eaton | Extrapolated |
| 2000 | MDS820 | Fixed | 600 | 16.15 | 14.64 | 16.76 | 273 | Eaton | UUT 14 |
| 2000 | MDS | Fixed/Draw-out | 600 | 16.15 | 14.64-20.82 | 16.76 | 273 | Eaton | Interpolated |
| 2500 | MDS | Fixed/Draw-out | 600 | 16.15 | 14.64-20.82 | 16.76 | 273 | Eaton | Interpolated |
| 3000 | MDS | Fixed/Draw-out | 600 | 16.15 | 14.64-20.82 | 16.76 | 273 | Eaton | Interpolated |
| 3200 | MDS | Fixed/Draw-out | 600 | 16.15 | 14.64-20.82 | 16.76 | 273 | Eaton | Interpolated |
| 3200 | MDS832 | Draw-out | 600 | 16.15 | 20.82 | 16.76 | 273 | Eaton | UUT 15 |

| Certified Molded Case Circuit Breakers (MCCB) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Size (Amperes) | Frame | Part # | Max Voltage | Poles | Dimensions / Weights | | | | Manufacturer | Unit |
| | | | | | Width (in.) | Depth (in.) | Height (in.) | Weight (lbs.) | | |
| 150 | F | 6639C01G01 | 600 | 3 | 4.12 | 3.38 | 6 | 4.50 | Eaton | UUT 16 |
| 30-225 | F | | 600 | 2,3,4 | 2.75 - 5.50 | 3.38 | 6 | 3-6 | Eaton | Interpolated |
| 160 | J | JGS316032GB2S2 | 480 | 3 | 4.13 | 3.57 | 4.13 | 6 | Eaton | 2a |
| 225-300 | K | | 600 | 2,3,4 | 5.50 - 7.22 | 4.31 | 10.13 | 10.0 - 13.0 | Eaton | Interpolated |
| 400-600 | L | | 600 | 2,3,4 | 8.25 - 11.00 | 4.06 | 10.75 | 18.0 - 25.0 | Eaton | Interpolated |
| 600-800 | M | | 600 | 2,3 | 8.25 | 4.06 | 16 | 26.5 - 30.0 | Eaton | Interpolated |
| 600-1000 | N | | 600 | 2,3 | 8.25 | 5.5 | 16 | 37-48 | Eaton | Interpolated |
| 1000 | N | 2610D83G04 | 600 | 3 | 8.25 | 5.5 | 16 | 48.00 | Eaton | UUT 17 |
| 1600 | R | 69D8093H06 | 480 | 3 | 15.5 | 9 | 16 | 102.00 | Eaton | 2b |

| Certified Contactors | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Size (Amperes) | Frame | Part # | Mounting | Max Voltage | Poles | Dimensions / Weights | | | | Manufacturer | Unit |
| | | | | | | Width (in.) | Depth (in.) | Height (in.) | Weight (lbs.) | | |
| 100 | A | 67C5239G02 | Fixed | 480 | 3 | 9.2 | 4.39 | 7.63 | 14.7 | Eaton | 13 |
| 100 | A | | Fixed | 480 | 2,3,4 | 10.6 | 4.39 | 7.63-22.67 | 8.62 - 20.77 | Eaton | Interpolated |
| 100 | B | | Fixed | 600 | 2,3,4 | 11.39 | 4.39 | 8.4-23.2 | 11.27 - 29.28 | Eaton | Interpolated |
| 200-260 | B | | Fixed | 480 | 2,3,4 | 11.39 | 4.39 | 8.4-23.2 | 11.27 - 29.28 | Eaton | Interpolated |
| 200 | C | | Fixed & Draw-out | 600 | 2,3,4 | 16.77 | 5.43-9.5 | 14.61-41.07 | 23.86 - 65 | Eaton | Interpolated |
| 400 | C | | Fixed & Draw-out | 480 | 2,3,4 | 16.77 | 5.43-9.5 | 14.61-41.07 | 23.86 - 65 | Eaton | Interpolated |
| 400 | C | 69C2990G08 | Fixed | 480 | 3 | 16.77 | 8.5 | 13.7 | 42.76 | Eaton | 19 |
| 400 | C | 69C2990G05 | Draw-out | 480 | 3 | 16.77 | 9.5 | 17.75 | 65 | Eaton | 19 |
| 600-1600 | E | | Fixed & Draw-out | 480 | 2,3,4 | 20.1-24.71 | 9.5-12.5 | 16.5-24.7 | 68.20 - 224.78 | Eaton | Interpolated |
| 1200 | D | 67C5241 | Fixed | 600 | 3 | 20.1 | 10.5 | 24.7 | 186 | Eaton | 18 |
| 1200 | D | 68C8259G04 | Draw-out | 600 | 3 | 24.71 | 10.5 | 21.4 | 224.78 | Eaton | 18, 20 |
| 3000 | F | 66A8206G23 | Draw-out | 600 | 2,3,4 | 22.3 | 15.1 | 23.8 | 195-255 | Eaton | 3 |

| Certified Controllers | | | | | | | |
|---|---|---|---|---|---|---|---|
| Description | Voltage | Dimensions / Weights | | | | Manufacturer | Unit |
| | | Width (in.) | Depth (in.) | Height (in.) | Weight (lbs.) | | |
| ATC100 | 120 | 5.75 | 3 | 7.75 | 4.45 | Eaton | 13 |
| ATC300+ | 120 | 5.75 | 3 | 7.75 | 4.45 | Eaton | 17,19 |
| ATC600 | 120 | 6.75 | 2.13 | 10.25 | 3.95 | Eaton | 14,16 |
| ATC800 | 120 | 6.75 | 2.13 | 10.25 | 3.95 | Eaton | 15,18,20 |
| ATC900 | 120 | 6.75 | 2.08 | 10.25 | 2.85 | Eaton | 21 |

REVIEWED FOR CODE COMPLIANCE
OSP-0014
By Timothy J Piland
DATE: 03/26/2021
CALIFORNIA BUILDING CODE 2019

Powering Business Worldwide

**Transfer Switch**
**Certified Major Component Summary**

| Certified Enclosure^ Matrix | | | | | | |
|---|---|---|---|---|---|---|
| Mounting Type | NEMA type rating | Dimensions | | | Maximum Weight | Unit |
| | | Width (in.) | Depth (in.) | Height (in.) | | |
| Wall | 1,3R,12 | 23.00 | 12.00 | 24.00 | 130 | Extrapolated |
| | 1,3R,12 | 20.06 | 13.34 | 35.61 | 150 | Extrapolated |
| | 3R | 19.00 | 13.50 | 39.00 | 154 | UUT 13 |
| | 1,3R,12 | 18.31 | 13.34 | 38.68 | 164 | Interpolated |
| | 1 | 22.00 | 17.25 | 48.00 | 188 | UUT 16 |
| | 1,3R,12 | 25.00 | 17.18 | 52.74 | 210 | Interpolated |
| | 1,3R,12 | 19.81 | 16.75 | 52.00 | 238 | UUT 2a |
| | 1,3R,12 | 20.81 | 17.22 | 47.74 | 240 | Interpolated |
| | 1,3R,12 | 18.81 | 13.84 | 48.70 | 260 | Interpolated |
| | 1,3R,12 | 40.00 | 20.00 | 37.00 | 300 | Interpolated |
| | 1,3R,12 | 20.81 | 18.40 | 56.00 | 305 | Interpolated |
| | 1,3R,12 | 40.00 | 20.00 | 37.00 | 330 | Interpolated |
| | 1,3R,12 | 33.61 | 14.72 | 71.02 | 420 | Interpolated |
| | 1,3R,12 | 25.81 | 18.40 | 53.00 | 425 | Interpolated |
| | 1,3R,12 | 25.25 | 22.46 | 79.41 | 444 | Interpolated |
| | 1,3R,12 | 25.81 | 18.40 | 64.00 | 444 | Interpolated |
| | 1,3R,12 | 25.81 | 19.50 | 76.74 | 444 | Interpolated |
| | 1 | 26.50 | 18.00 | 77.25 | 444 | UUT 17 |
| | 1,3R,12 | 40.00 | 20.00 | 51.00 | 444 | Interpolated |
| | | | | | | |
| Floor | 1 | 30.00 | 29.30 | 78.00 | 625 | Extrapolated |
| | 1 | 30.00 | 29.30 | 78.00 | 625 | Extrapolated |
| | 1 | 30.00 | 29.30 | 78.00 | 625 | Extrapolated |
| | 1, 3R | 30.00 | 29.30 | 78.00 | 625 | Extrapolated |
| | 3R | 30.00 | 47.60 | 78.00 | 834 | Extrapolated |
| | 3R | 30.00 | 47.60 | 78.00 | 834 | Extrapolated |
| | 1 | 30.75 | 31.25 | 78.50 | 885 | UUT 19 |
| | 1 | 32.00 | 48.00 | 90.00 | 1250 | Interpolated |
| | 1 | 33.00 | 51.75 | 91.00 | 1221 | UUT 14 |
| | 1 & 3R | 40.00 | 40.00 | 90.00 | 1080 | Interpolated |
| | 1 & 3R | 40.00 | 40.00 | 90.00 | 1080 | Interpolated |
| | 1 & 3R | 40.38 | 66.50 | 90.00 | 1480 | UUT 2b |
| | 3R | 44.00 | 63.00 | 90.00 | 2282 | Interpolated |
| | 1 & 3R | 44.00 | 60.00 | 90.00 | 2751 | UUT 3 |
| | 1 | 46.00 | 29.00 | 90.00 | 600 | Interpolated |
| | 3R | 46.00 | 48.00 | 90.00 | 600 | Interpolated |
| | 3R | 46.00 | 38.00 | 90.00 | 1362 | Interpolated |
| | 1,3 | 46.00 | 40.00 | 90.00 | 1750 | Interpolated |
| | 3R | 46.00 | 47.60 | 90.00 | 1905 | Interpolated |
| | 3R | 46.25 | 48.50 | 91.50 | 1090 | UUT 18 |
| | 3R | 50.00 | 79.00 | 90.00 | 2230 | Interpolated |
| | 1 | 64.00 | 60.00 | 90.00 | 3700 | Interpolated |
| | 3R | 64.00 | 75.00 | 90.00 | 4182 | Interpolated |
| | 1 | 71.25 | 63.40 | 91.00 | 4575 | Interpolated |
| | 3R | 71.25 | 79.75 | 91.00 | 4775 | UUT 15 |

^ - All enclosures made from carbon steel and manufactured by Eaton.
Type 12 enclosure common with type 3R with additional gasket material

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## UUT 2a (Unit Under Test) Summary Sheet

**Manufacturer:** Eaton Corporation

**Product Line: Automatic Transfer Switch (ATS)**

**Model Number:** ATC3C2C30100XSU

**Product Construction Summary:** Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating.

**Options/Component Summary:** Frame A contactor (67C5239G02), Frame J MCCB (JGS316032GB2S2), Controller ATC 900 (6D32428G01)

**UUT Properties (As Tested)**

| Weight (lbs.) | Enclosure Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Width | Depth | Height | Front-Back | Side-Side | Vertical |
| 238 | 19.81 | 16.75 | 52 | N/A | N/A | N/A |

**Seismic Test Parameters**

| Building Code | Test Criteria | C.G. Height (in.) | Sds | z/h | Ip | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---|---|---|---|---|---|---|---|---|---|
| CBC 2019 | ICC-ES AC156 | N/A | 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.

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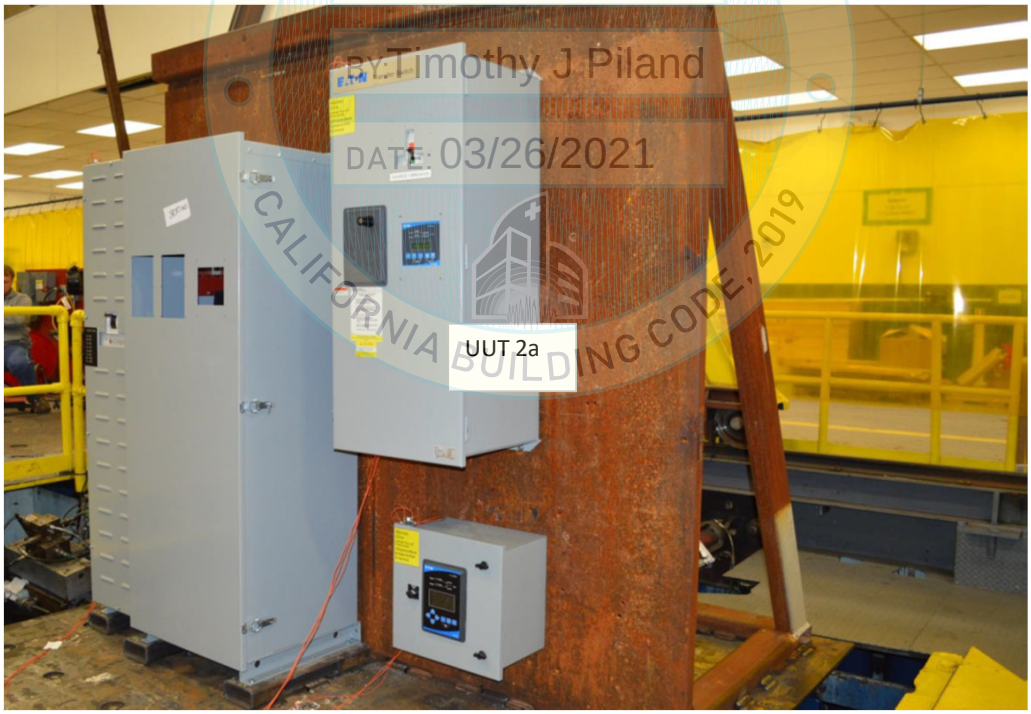


UUT 2a

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

PR072323

## UUT 2b (Unit Under Test) Summary Sheet

**Manufacturer:** Eaton Corporation

**Product Line: Automatic Transfer Switch (ATS)**

**Model Number:** ATC9C5C31600XRU

**Product Construction Summary:** Cabinet is constructed of powder-coated carbon steel, NEMA Type 3R enclosure rating.

**Options/Component Summary:** Frame E contactor (66A8167G02), Frame R MCCB (69D8093H06), Controller ATC 900 (6D32428G01)

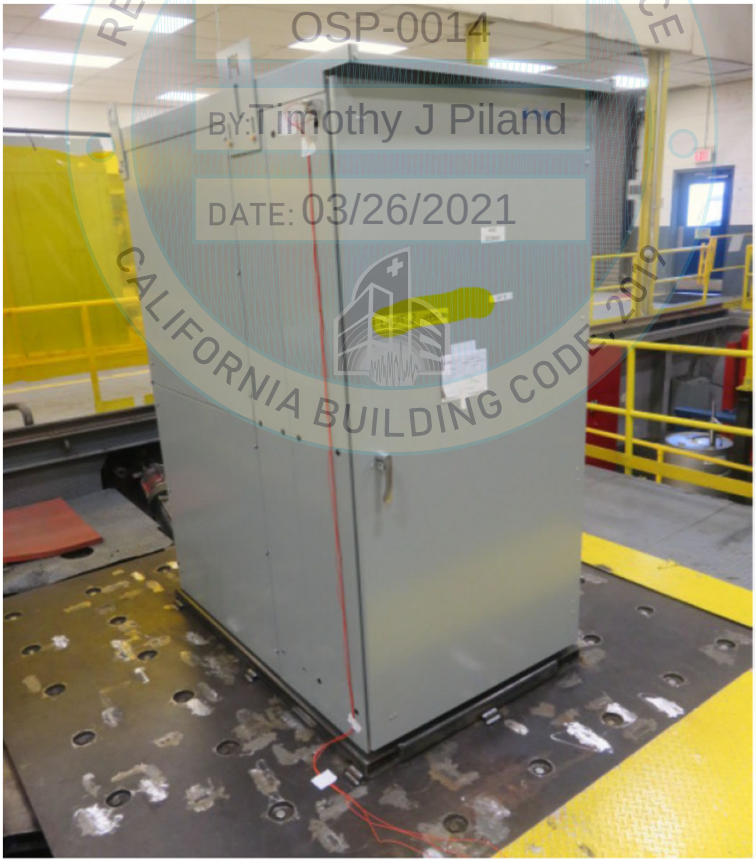
**UUT Properties (As Tested)**

| Weight (lbs.) | Enclosure Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Width | Depth | Height | Front-Back | Side-Side | Vertical |
| 1480 | 40.38 | 66.5 | 91 | 13.5 | 6 | >33 |

**Seismic Test Parameters**

| Building Code | Test Criteria | C.G. Height (in.) | Sds | z/h | Ip | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---|---|---|---|---|---|---|---|---|---|
| CBC 2019 | ICC-ES AC156 | 54.65 | 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.



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UUT 2b was mounted to a rigid frame using (12) 5/8 bolts. The frame was welded to the shake table.

PR087462

## UUT 3 (Unit Under Test) Summary Sheet

**Manufacturer:** Eaton Corporation

**Product Line: Automatic Transfer Switch (ATS)**

**Model Number:** BIC9F5E33000ESU

**Product Construction Summary:** Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating.

**Options/Component Summary:** Frame F contactor (66A8206G23)

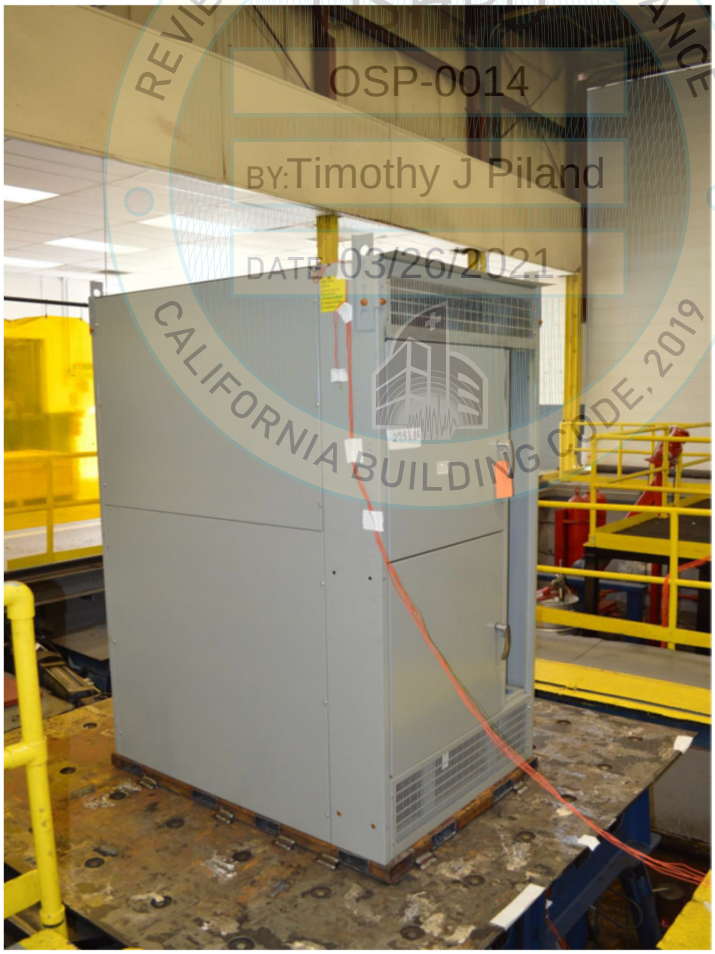
**UUT Properties (As Tested)**

| Weight (lbs.) | Enclosure Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Width | Depth | Height | Front-Back | Side-Side | Vertical |
| 2751 | 44 | 60 | 90 | 10.95 | 6.31 | >33 |

**Seismic Test Parameters**

| Building Code | Test Criteria | C.G. Height (in.) | Sds | z/h | Ip | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---|---|---|---|---|---|---|---|---|---|
| CBC 2019 | ICC-ES AC156 | 47.03 | 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.



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UUT 3 was mounted to a rigid frame using (12) 5/8 bolts. The frame was welded to the shake table.

PR072323

## UUT 13 (Unit Under Test) Summary Sheet

**Manufacturer:** Eaton Corporation

**Product Line: Automatic Transfer Switch (ATS)**

**Model Number:** ATC1C2X30100XRU

**Product Construction Summary:** Cabinet is constructed of powder-coated carbon steel, NEMA Type 3R enclosure rating.

**Options/Component Summary:** Frame A contactor 100A (67C5239G02), ATC 100 Controller (6D32377G03)

**UUT Properties (As Tested)**

| Weight (lbs.) | Enclosure Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Width | Depth | Height | Front-Back | Side-Side | Vertical |
| 154 | 19 | 13.5 | 39 | N/A | N/A | N/A |

**Seismic Test Parameters**

| Building Code | Test Criteria | C.G. Height (in.) | Sds | z/h | Ip | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---|---|---|---|---|---|---|---|---|---|
| CBC 2019 | ICC-ES AC156 | 19.33 | 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.

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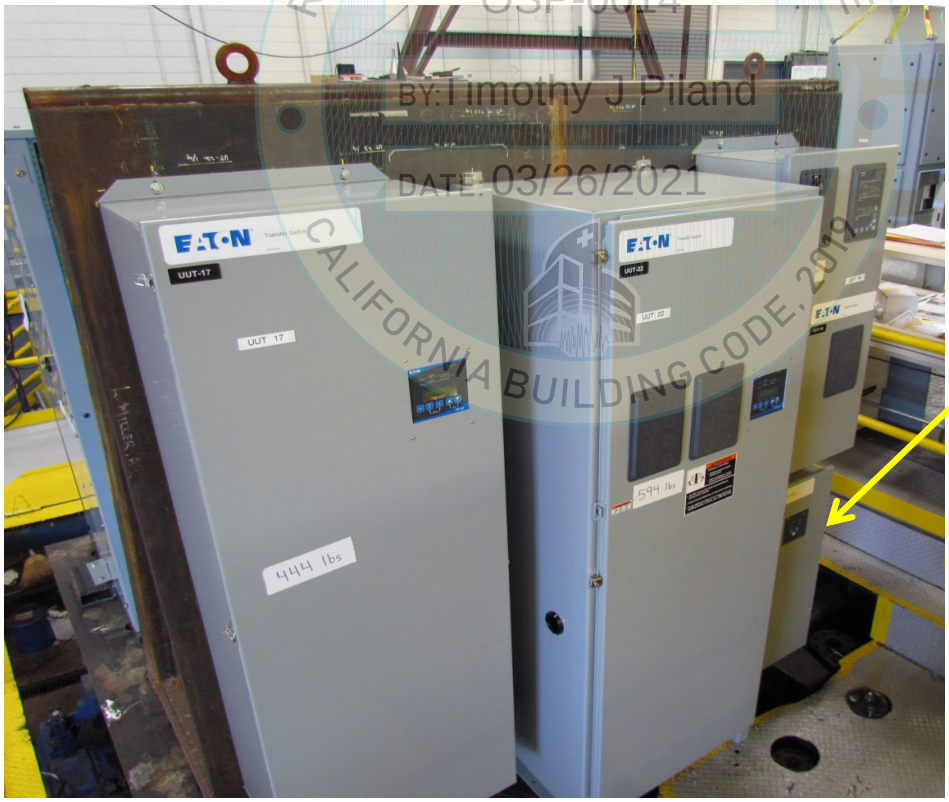


UUT 13 was mounted to a rigid wall frame using (4 ) 3/8 bolts. The wall frame was welded to the shake table.

## UUT 14 (Unit Under Test) Summary Sheet

**Manufacturer:** Eaton Corporation

**Product Line:** Automatic Transfer Switch (ATS)

**Model Number:** ATVIMGA32000ESU

**Product Construction Summary:** Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating.

**Options/Component Summary:** Magnum 2000A Breaker (MDS8203VEA), Controller atc 600 (2D7858G50)

**UUT Properties (As Tested)**

| Weight (lbs.) | Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Width | Depth | Height | Front-Back | Side-Side | Vertical |
| 1221 | 33 | 51.75 | 91 | 6.8 | 7.5 | 33 |

**Seismic Test Parameters**

| Building Code | Test Criteria | C.G. Height (in.) | Sds | z/h | Ip | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---|---|---|---|---|---|---|---|---|---|
| CBC 2019 | ICC-ES AC156 | 47 | 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.

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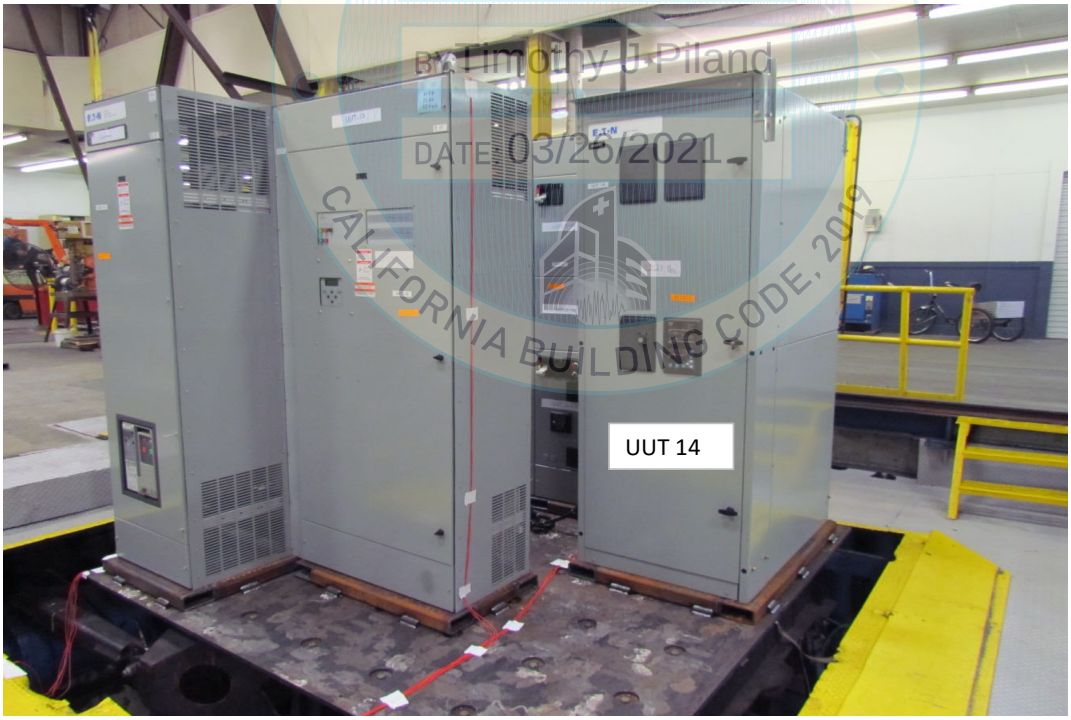


UUT 14 was bolted to a rigid frame using (8) 1/2" bolts. The frame was welded to the shake table.

## UUT 15 (Unit Under Test) Summary Sheet

**Manufacturer:** Eaton Corporation

**Product Line:** Automatic Transfer Switch (ATS)

**Model Number:** CBVIMGE33200ERU

**Product Construction Summary:** Cabinet is constructed of powder-coated carbon steel, NEMA Type 3R enclosure rating.

**Options/Component Summary:** Magnum 3200A Breaker (MDS8323WEA), Controller ATC 800 (2D78580G60). UUT mounted with external mounting brackets front (2x), Eaton part # 1A32112H01 and rear (2x), Eaton part # CE23310H01 & CE23310H02, (4) locations in total.

**UUT Properties (As Tested)**

| Weight (lbs.) | Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Width | Depth | Height | Front-Back | Side-Side | Vertical |
| 4775 | 71.25 | 79.75 | 91 | 8.2 | 5 | 25 |

**Seismic Test Parameters**

| Building Code | Test Criteria | C.G. Height (in.) | Sds | z/h | Ip | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---|---|---|---|---|---|---|---|---|---|
| CBC 2019 | ICC-ES AC156 | 47 | 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.

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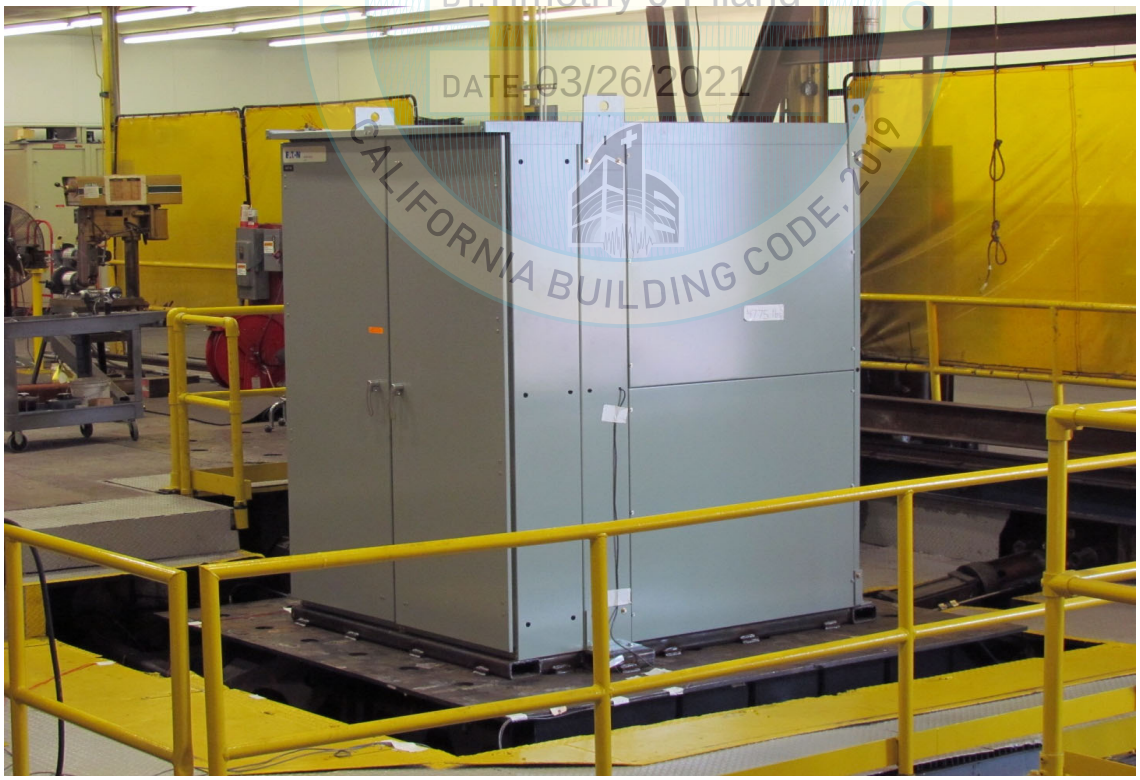


UUT 15 was bolted to a rigid frame using (12) 1/2" bolts. The frame was welded to the shake table.

## UUT 16 (Unit Under Test) Summary Sheet

**Manufacturer:** Eaton Corporation

**Product Line:** Automatic Transfer Switch (ATS)

**Model Number:** ATHIFDA20150WSU

**Product Construction Summary:** Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating.

**Options/Component Summary:** Molded Case Breaker F Frame 150A (6639C01G01), Controller ATC 600 (2D78580G50)

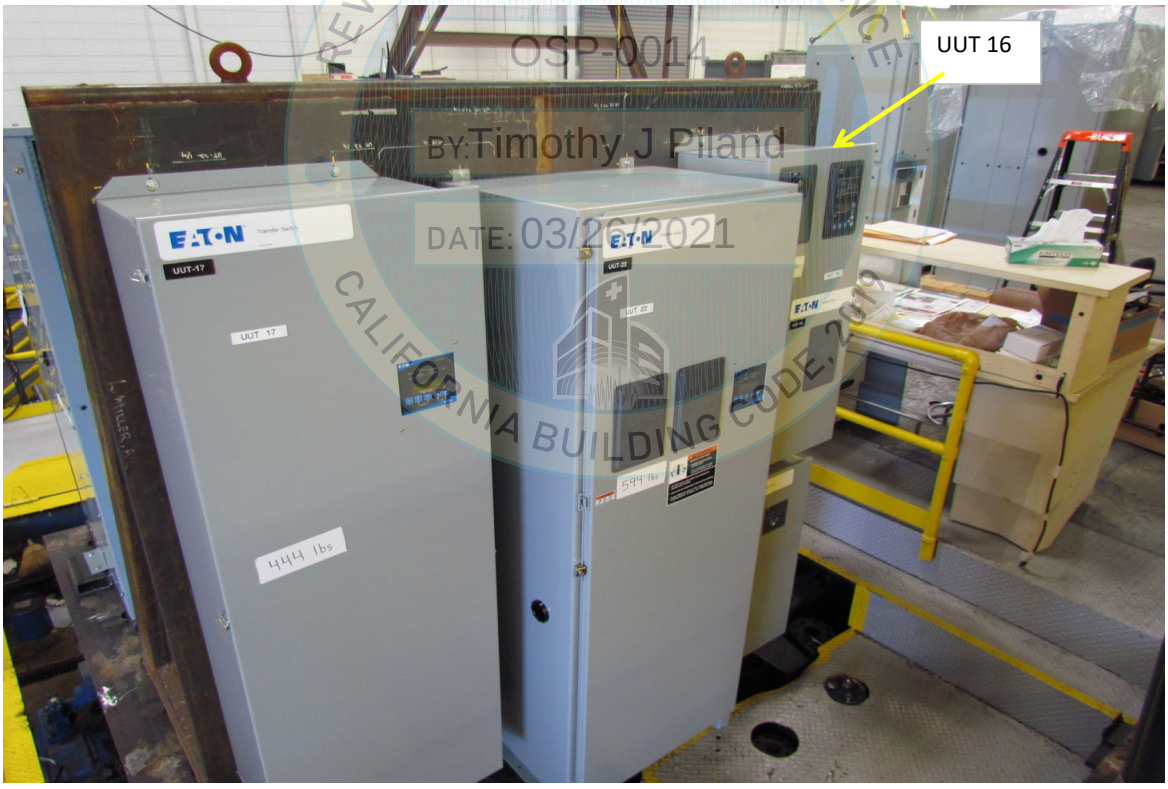
**UUT Properties (As Tested)**

| Weight (lbs.) | Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Width | Depth | Height | Front-Back | Side-Side | Vertical |
| 188 | 22 | 17.25 | 48 | N/A | N/A | N/A |

**Seismic Test Parameters**

| Building Code | Test Criteria | C.G. Height (in.) | Sds | z/h | Ip | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---|---|---|---|---|---|---|---|---|---|
| CBC 2019 | ICC-ES AC156 | 23.9 | 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.

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UUT 16 was mounted to a rigid wall frame using (4 ) 3/8 bolts. The wall frame was welded to the shake table.

## UUT 17 (Unit Under Test) Summary Sheet

**Manufacturer:** Eaton Corporation

**Product Line:** Automatic Transfer Switch (ATS)

**Model Number:** ATV3NBA31000ESU

**Product Construction Summary:**

Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating.

**Options/Component Summary:** Molded Case Breaker NB Frame (2610D83G04), Controller ATC 300+ (6D32360G42)

**UUT Properties (As Tested)**

| Weight (lbs.) | Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Width | Depth | Height | Front-Back | Side-Side | Vertical |
| 444 | 26.5 | 18 | 77.25 | N/A | N/A | N/A |

**Seismic Test Parameters**

| Building Code | Test Criteria | C.G. Height (in.) | Sds | z/h | Ip | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---|---|---|---|---|---|---|---|---|---|
| CBC 2019 | ICC-ES AC156 | 37.9 | 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.

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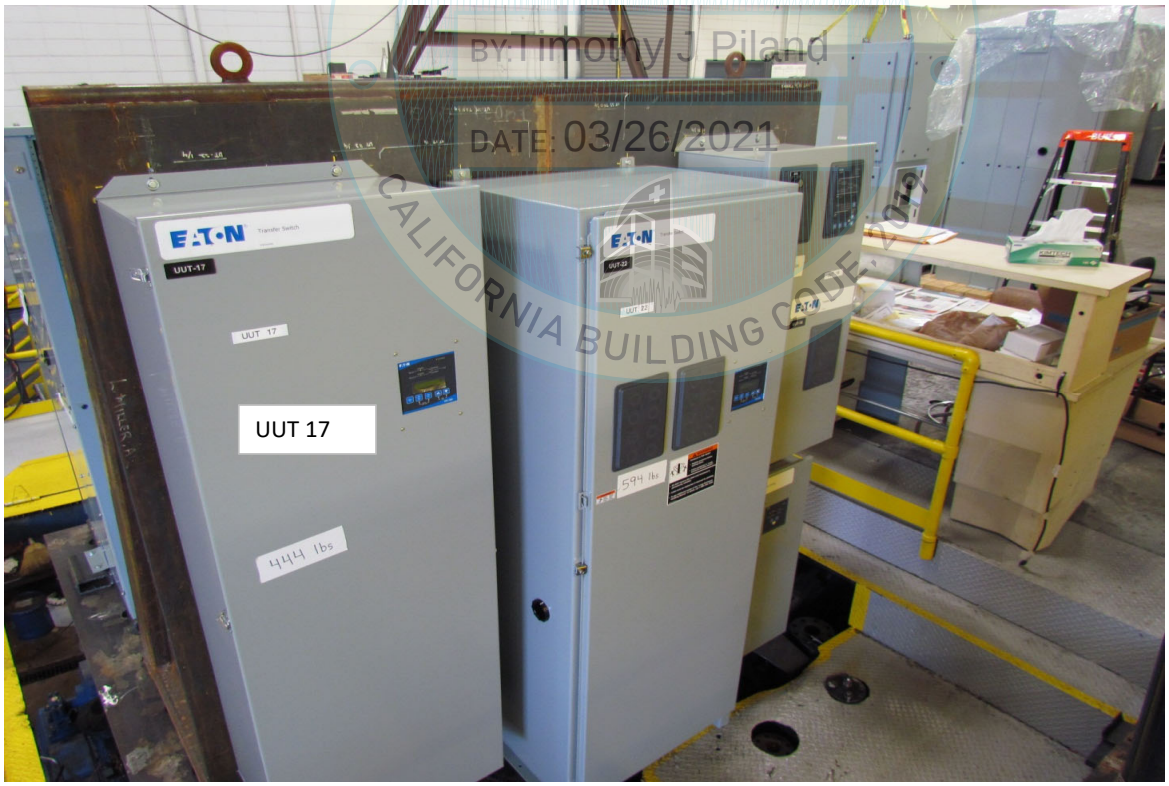


UUT 17 was mounted to a rigid wall frame using (4 ) 3/8 bolts. The wall frame was welded to the shake table.

## UUT 18 (Unit Under Test) Summary Sheet

**Manufacturer:** Eaton Corporation

**Product Line:** Automatic Transfer Switch (ATS)

**Model Number:** CTC8C3X31200ERU

**Product Construction Summary:**

Cabinet is constructed of powder-coated carbon steel, NEMA Type 3R enclosure rating.

**Options/Component Summary:** Frame D Contactor 1200A (67C5241), Controller ATC 800 (2D78580G70).
UUT mounted with external mounting brackets front (2x), Eaton part # 1A32112H01 and rear (2x), Eaton part # CE23310H01 & CE23310H02, (4) locations in total.

**UUT Properties (As Tested)**

| Weight (lbs.) | Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Width | Depth | Height | Front-Back | Side-Side | Vertical |
| 1090 | 46.25 | 48.5 | 91.5 | 8 | 6.1 | 31 |

**Seismic Test Parameters**

| Building Code | Test Criteria | C.G. Height (in.) | Sds | z/h | Ip | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---|---|---|---|---|---|---|---|---|---|
| CBC 2019 | ICC-ES AC156 | 48.48 | 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.


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UUT 18 was bolted to a rigid frame using (10) 1/2" bolts. The frame was welded to the shake table.

## UUT 19 (Unit Under Test) Summary Sheet

**Manufacturer:** Eaton Corporation

**Product Line:** Automatic Transfer Switch (ATS)

**Model Number:** BIC3C3X30400XSU

**Product Construction Summary:**

Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating.

**Options/Component Summary:** C Frame Contactor 400A (Fixed-69C2990G08, Draw-out - 69C2990G05)

Controller ATC 300+ (6D32360G42)

**UUT Properties (As Tested)**

| Weight (lbs.) | Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Width | Depth | Height | Front-Back | Side-Side | Vertical |
| 885 | 30.75 | 31.25 | 78.5 | 9.7 | 9.5 | 64 |

**Seismic Test Parameters**

| Building Code | Test Criteria | C.G. Height (in.) | Sds | z/h | Ip | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---|---|---|---|---|---|---|---|---|---|
| CBC 2019 | ICC-ES AC156 | 38.55 | 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.

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UUT 19 was bolted to a rigid frame using (8) 1/2" bolts. The frame was welded to the shake table.

## UUT 20 (Unit Under Test) Summary Sheet

**Manufacturer:** Eaton Corporation

**Product Line:** Automatic Transfer Switch (ATS)

**Model Number:** CBC8C3E31200ERU

**Product Construction Summary:**
Cabinet is constructed of powder-coated carbon steel, NEMA Type 3R enclosure rating.

**Options/Component Summary**: Frame D Contactor 1200A (68C8259G04), Controller ATC 800 (2D78580G70)
UUT mounted with external mounting brackets located approximatley at the mid point on the left and right sides Eaton part # 1A32112H01 (2x).

**UUT Properties (As Tested)**

| Weight (lbs.) | Dimensions (inches) | | | Lowest Natural Frequency (Hz) | | |
|---|---|---|---|---|---|---|
| | Width | Depth | Height | Front-Back | Side-Side | Vertical |
| 1780 | 45.5 | 48.25 | 91.25 | 8.3 | 6.4 | 9.1 |

**Seismic Test Parameters**

| Building Code | Test Criteria | C.G. Height (in.) | Sds | z/h | Ip | Aflx-H | Arig-H | Aflx-V | Arig-V |
|---|---|---|---|---|---|---|---|---|---|
| CBC 2019 | ICC-ES AC156 | 44.44 | 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.

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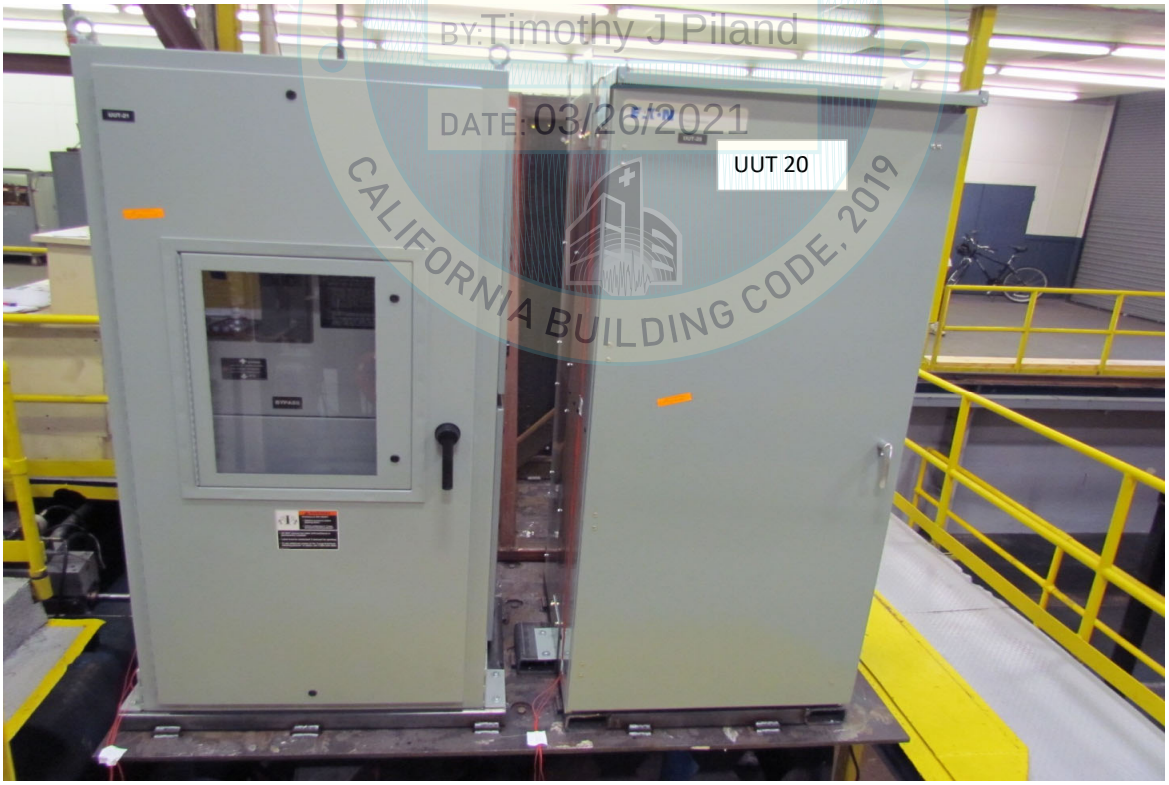


UUT 20 was bolted to a rigid frame using (8) 1/2" bolts. The frame was welded to the shake table.