



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0790

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: ABB - Branded for CAT

Manufacturer's Technical Representative: Dhirendra Tiwari

Mailing Address: 41 Woodford Ave, Plainville, CT 06062

Telephone: (860) 747-7935

Email: dhirendra.tiwari@us.abb.com

Product Information

Product Name: Emergency and Standby Power Systems

Product Type: Automatic Transfer Switches

Product Model Number: Service Entrance ATS

General Description: Transfer switches that provide manual / automatic power switching from a primary source to a backup power source.

Mounting Description: Rigid, Floor/Wall Mounted

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: _____

Contact Person: Travis Soppe

Mailing Address: P.O. 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

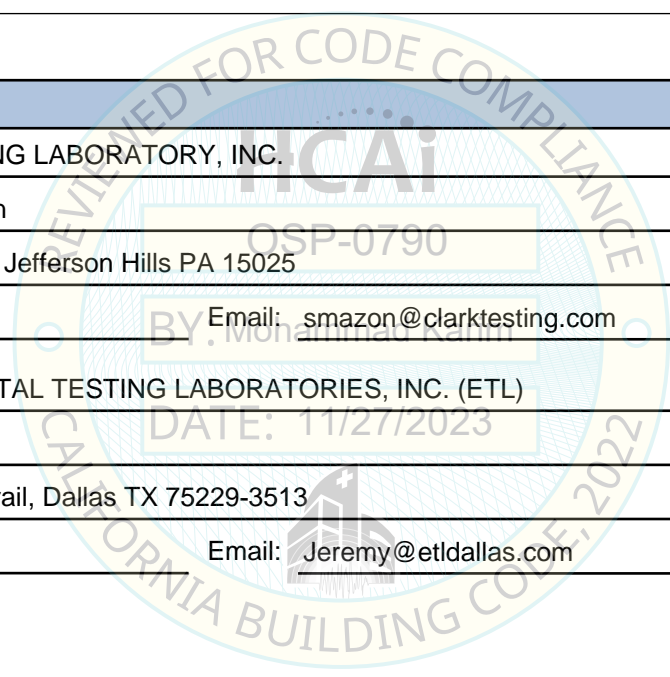
Certification Method

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

Testing Laboratory

Company Name: CLARK TESTING LABORATORY, INC.
Contact Person: Suzanne Mazon
Mailing Address: 1801 Route 51, Jefferson Hills PA 15025
Telephone: (412) 387-1001 Email: smazon@clarktesting.com

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)
Contact Person: Jeremy Lange
Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513
Telephone: (972) 247-9657 Email: Jeremy@etldallas.com





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.50 for SDS = 2.0 at z/h = 1 and 1.13 for SDS = 2.5 at z/h = 0

SDS (Design spectral response acceleration at short period, g) = 2.00 (z/h = 1.0) and 2.50 (z/h = 0.0)

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

HCAI Approval (For Office Use Only) - Approval Expires on 11/27/2029

Date: 11/27/2023

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = See Above z/h = See Above

Condition of Approval (if applicable): DATE: 11/27/2023

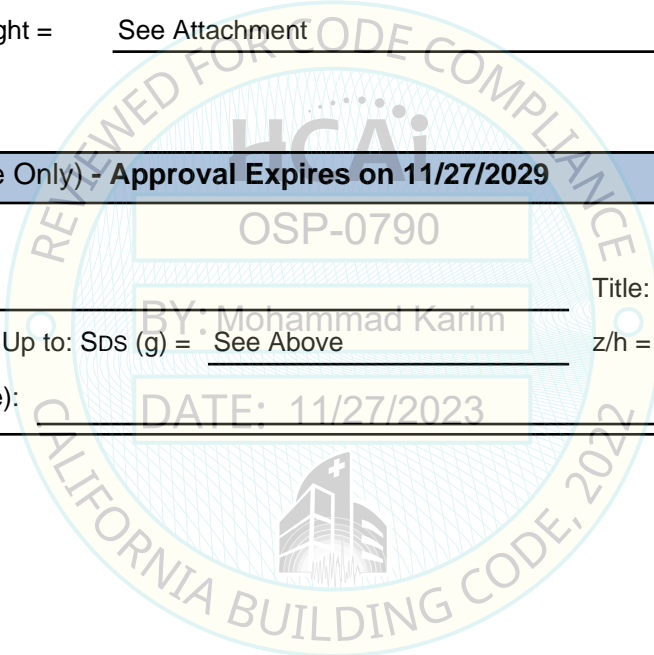


Table 1

**CATERPILLAR SERVICE ENTRANCE ATS
CERTIFIED PRODUCT LINE MATRICES**



ID/Catalog Number	Ampere rating	NEMA Rating	Equipment Dimensions (in)			Weight (lbs)	Representative UUT ³
			Width	Depth	Height		
Service Entrance ATS Product Line - Floor Mounted							
Seismic Certification Limits: S_{DS} = 2.0 at z/h = 1.0 : F_p = 1.50g and S_{DS} = 2.5 at z/h = 0 : F_p = 1.13g							
C3SSO0403M12Bxxxxxxx	260 - 400	1	28	20	58	291	UUT_y-6
CTX, CTG(D)(C), CTS(D)(C) Series	30 - 200	3R/4/12	28	20	58	394 - 403	extrapolated
CTX, CTG(D)(C), CTS(D)(C) Series	260 - 400	1	28	20	58	287 - 296	interpolated
CTX, CTG(D)(C), CTS(D)(C) Series	260 - 400	3R/4/12	28	20	58	399 - 407	interpolated
CTX, CTG(D)(C), CTS(D)(C) Series	600	1	40	20	74	463 - 479	interpolated
CTX, CTG(D)(C), CTS(D)(C) Series	600	3R/4/12	40	20	74	585 - 621	interpolated
CTX, CTG(D)(C), CTS(D)(C) Series	800 - 1200	1	36	37	92	1112 - 1142	interpolated
C4SGO1204M45Bxxxxxxx	800 - 1200	3R/4/12	40	41	94	1262	UUT_y-7
CTX, CTG(D)(C), CTS(D)(C) Series	800 - 1200	3R/4/12	40	43	94	1232 - 1262	interpolated
C5SGO1603M16Bxxxxxxx	1600 - 2000	1	36	48	90	1650	UUT_y-8
CTX, CTG(D)(C), CTS(D)(C) Series	1600 - 2000	1	36	48	90	1650 - 1755	interpolated
CTX, CTG(D)(C), CTS(D)(C) Series	1600 - 2000	3R/4/12	36	48	90	1770 - 1875	interpolated
CTX, CTG(D)(C), CTS(D)(C) Series	2500 - 3000	1	36	48	90	1842 - 1947	interpolated
CTX, CTG(D)(C), CTS(D)(C) Series	2500 - 3000	3R/4/12	36	48	90	1928 - 2033	interpolated
C5SGO2504M36Bxxxxxxx	2500 - 3000	3R/4/12	36	48	90	2033	UUT_y-9

Notes:

¹ All components are manufactured by ABB and branded for Caterpillar. The part numbers listed uniquely identify the type of component, manufacturer, and material of construction for each sub-component within the tested units.

² Enclosures are constructed of welded carbon steel. The enclosure design is identical for the 3R, 4, and 12 designs therefore the rating is listed as 3R/4/12.

³ Subscript indicates the test report in which the units were qualified: y - 16827, C - 19-00274

⁴ The CTX/CTG/CTS(D) service entrance series products are represented with the following ID numbers:

- CTX - CxSXxxxxxxxxxxxxxx
- CTG(D)(C) - CxSGxxxxxxxxxxxxxx
- CTS(D)(C) - CxSSxxxxxxxxxxxxxx

⁵ The CTX/CTG(D)/CTS(D) service entrance automatic transfer switches (ATS) are of nearly identical construction with minor differences listed below:

- CxSXO(D)(C) - CTX open, delayed, or closed transition with L2 / L3 / L4 controller
- CxSGO(D)(C) - CTG open, delayed, or closed transition with L2 / L3 / L4 controller
- CxSSO(D)(C) - CTS open, delayed, or closed transition with L2 / L3 / L4 controller


ID/Catalog Number	Ampere rating	NEMA Rating	Equipment Dimensions (in)			Weight (lbs)	Representative UUT ³
			Width	Depth	Height		
Table 1							
CATERPILLAR SERVICE ENTRANCE ATS CERTIFIED PRODUCT LINE MATRICES							
							
Service Entrance ATS Product Line - Wall Mounted							
Seismic Certification Limits: $S_{DS} = 2.0$ at $z/h = 1.0$: $F_p = 1.50g$ and $S_{DS} = 2.5$ at $z/h = 0$: $F_p = 1.13g$							
CGOK3SX12	400	1	24	12	46	142	UUT_z-2
CTX, CTG(D)(C), CTS(D)(C) Series	30 - 200	1	24	12 - 14	46	142 - 156	interpolated
C2SSO0203M11Bxxxxxxx	200	1	24	14	46	151	UUT_y-5
Notes:							
¹ All components are manufactured by ABB and branded for Caterpillar. The part numbers listed uniquely identify the type of component, manufacturer, and material of construction for each sub-component within the tested units.							
² Enclosures are constructed of welded carbon steel. The enclosure design is identical for the 3R, 4, and 12 designs therefore the rating is listed as 3R/4/12.							
³ Subscript indicates the test report in which the units were qualified: y - 16827, C - 19-00274							
⁴ The CTX/CTG/CTS(D) service entrance series products are represented with the following ID numbers: CTX - CxSXxxxxxxxxxxxxxxxx CTG(D)(C) - CxSGxxxxxxxxxxxxxxxx CTS(D)(C) - CxSSxxxxxxxxxxxxxxxx							
⁵ The CTX/CTG(D)/CTS(D) service entrance automatic transfer switches (ATS) are of nearly identical construction with minor differences listed below: CxSXO(D)(C) - CTX open, delayed, or closed transition with L2 / L3 / L4 controller CxSGO(D)(C) - CTG open, delayed, or closed transition with L2 / L3 / L4 controller CxSSO(D)(C) - CTS open, delayed, or closed transition with L2 / L3 / L4 controller							

Table 2		CATERPILLAR SERVICE ENTRANCE ATS CERTIFIED SUBCOMPONENT MATRICES			 WEGAI <small>W.E. GUNDY & ASSOCIATES, INC.</small> <small>STRUCTURAL & EARTHQUAKE ENGINEERING</small>
Identification Number	Manufacturer	Description	Weight (lbs)	Representative UUT	
Service Entrance ATS Product Line - Wall Mounted Subcomponents					
Switch / Power Panels					
OXA200U3X3QB-ZE	ABB	200A 3P TruONE	32	UUT _y -5	
OXx260Uxxxxx-ZE		260A 2/3/4P TruONE	31 - 40	interpolated	
OXA400U3X3QB-ZE		400A 3P TruONE	43	interpolated	
OXA400U3S3QB-ZE		400A 4P TruONE	45	UUT _z -2	
Circuit Breaker					
1SDA074764R1	ABB	XT2	2	UUT _y -5	
Controller					
OXCO1 ¹	ABB	Controller	2	UUT _z -2	
Service Entrance ATS Product Line - Floor Mounted Subcomponents					
Switch / Power Panels					
OXA200U3X3QB-ZE	ABB	200A 3P TruONE	32	extrapolated	
OXx260Uxxxxx-ZE		260A 2/3/4P TruONE	31 - 40	extrapolated	
OXA400U3X3QB-ZE		400A 3P TruONE	43	UUT _y -6	
OXA400U3S3QB-ZE		400A 4P TruONE	45	interpolated	
OXx600Uxxxxx-ZE		600A 2/3/4P TruONE	38 - 48	interpolated	
OXx800-1200Uxxxxx-ZE		800A - 1200A 2/3/4P TruONE	96 - 125	interpolated	
OXA1200U3S3QB-ZE		1200A 4P TruONE	125	UUT _y -7	
70010426990A		1600A - 3000A R5 3P	189	UUT _y -8	
70010426262A		1600A - 3000A R5 4P	223	UUT _y -9	
Circuit Breaker					
1SDA074764R1	ABB	XT2	2	extrapolated	
1SDA075200R1		XT4	4	extrapolated	
1SDA102487R1		XT5	5	UUT _y -6	
1SDA102947R1		XT7	28	UUT _y -7	
1SDA077263R1		Emax 2.2	115	UUT _y -8	
1SDA077913R1		Emax 4.2	123	UUT _y -9	

Notes:
¹ OXCO1 is the primary controller identification number representative of the OXAMI1-L2, OXBMI1-L2, OXAMI1-L3, OXBMI1-L3, OXAMI1-L4, OXBMI1-L4 controller configurations with varied software.
² Subscript indicates the test report in which the units were qualified: y - 16827, z - 19-00274

Table 2	CATERPILLAR SERVICE ENTRANCE ATS CERTIFIED SUBCOMPONENT MATRICES			 WEGAI <small>W.E. GUNDY & ASSOCIATES, INC.</small> <small>STRUCTURAL & EARTHQUAKE ENGINEERING</small>
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Identification Number	Manufacturer	Description	Weight (lbs)	Representative UUT
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Service Entrance ATS Product Line - Floor Mounted Subcomponents

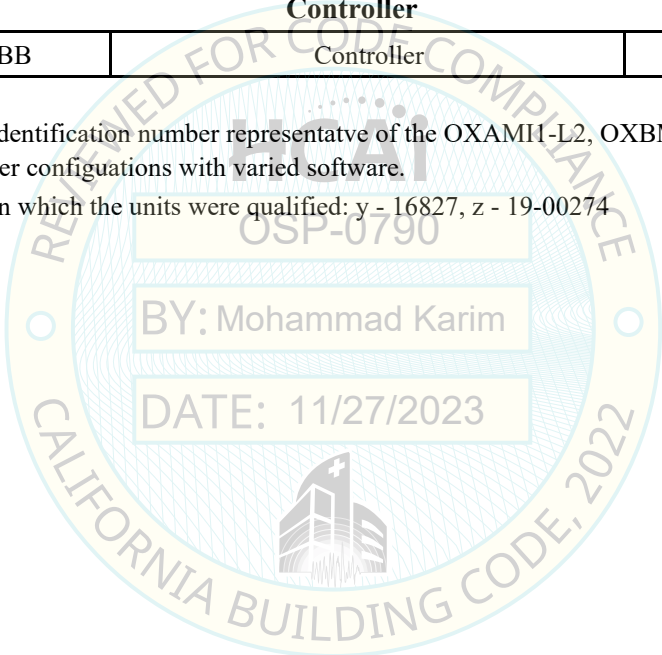
Bus Structure				
59P-2062	ABB	800 - 1200A, 3 Pole	127	extrapolated
59P-2063		800 - 1200A, 4 Pole	147	UUT _y -7
59P-2064		1600 - 2000A, 3 Pole	422	UUT _y -8
59P-2065		1600 - 2000A, 4 Pole	467	interpolated
59P-2066		2500A, 3 Pole	459	interpolated
59P-2067		2500A, 4 Pole	507	UUT _y -9

Controller

OXCO1 ¹	ABB	Controller	2	UUT _y -8 / UUT _y -9
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Notes:
¹ OXCO1 is the primary controller identification number representative of the OXAMI1-L2, OXBMI1-L2, OXAMI1-L3, OXBMI1-L3, OXAMI1-L4, OXBMI1-L4 controller configurations with varied software.

² Subscript indicates the test report in which the units were qualified: y - 16827, z - 19-00274



UUT_y-6

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with (4) 1/2" Grade 5 bolts



Manufacturer: Caterpillar (ABB)	Test Location: ETL (Dallas, TX)
Component: Service Entrance ATS	Test Date: December 2022
Model Number: C3SSO0403M12Bxxxxxxx (Z3SSO0403M12Bxxxxxxx)	Report Number: 16827
UUT Function: Automatic Transfer Switch and Main Disconnect	
UUT Description: NEMA 1 carbon steel enclosure with OXA400U3X3QB-ZE 400A TruONE switch / power panel and 1SDA102487R1 XT5 circuit breaker.	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
291	28	20	58	25.4	12.9	32.4

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	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0.0	1.5	-	-	1.67	0.67

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. The UUT is manufactured by ABB and branded Caterpillar. The first digit of the ID is "Z" for ABB and this is changed to "C" for the branded Caterpillar product.

UUT_y-7

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with (4) 1/2" Grade 5 bolts



Manufacturer: Caterpillar (ABB)	Test Location: ETL (Dallas, TX)
Component: Service Entrance ATS	Test Date: December 2022
Model Number: C4SGO1204M45Bxxxxxxx (Z4SGO1204M45Bxxxxxxx)	Report Number: 16827
UUT Function: Automatic Transfer Switch and Main Disconnect	
UUT Description: NEMA 3R carbon steel enclosure with 59P-2063 1200A bus, OXA1200U3S3QB -ZE 1200A TruONE switch / power panel and 1SDA102947R1 XT7 circuit breaker.	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,262	40	41	94	27.8	7.9	32.6

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{AFLX-H} (g)	A _{ARIG-H} (g)	A _{AFLX-V} (g)	A _{ARIG-V} (g)
CBC 2022 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0.0	1.5	-	-	1.67	0.67

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. The UUT is manufactured by ABB and branded Caterpillar. The first digit of the ID is "Z" for ABB and this is changed to "C" for the branded Caterpillar product.

UUT_y-8

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with (4) 1/2" Grade 5 bolts



Manufacturer: Caterpillar (ABB)	Test Location: ETL (Dallas, TX)
Component: Service Entrance ATS	Test Date: December 2022
Model Number: C5SGO1603M16Bxxxxxxx (Z5SGO1603M16Bxxxxxxx)	Report Number: 16827
UUT Function: Automatic Transfer Switch and Main Disconnect	
UUT Description: NEMA 1 carbon steel enclosure with 59P-2064 2000A bus, 70010426990A 1600A-3000A R5 3P switch / power panel and 1SDA077913R1 Emax 2.2 circuit breaker, and OXCO1 controller.	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,650	36	48	90	12.7	5.9	13.5

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	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0.0	1.5	-	-	1.67	0.67

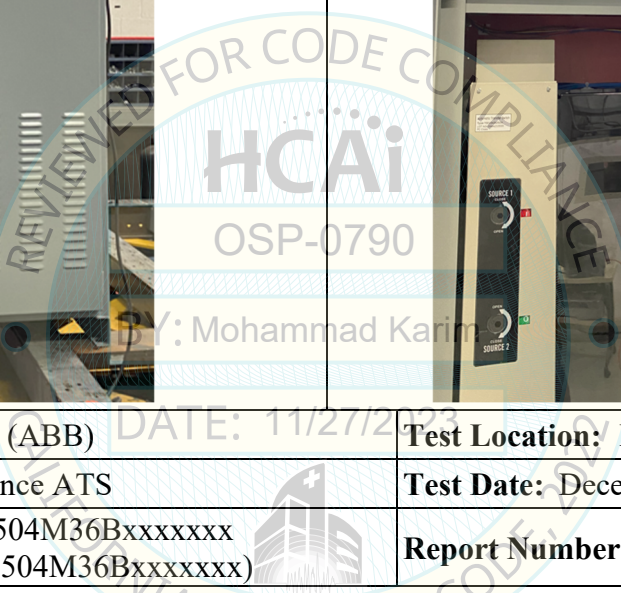
Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test. The UUT is manufactured by ABB and branded Caterpillar. The first digit of the ID is "Z" for ABB and this is changed to "C" for the branded Caterpillar product.

UUT_y-9

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with (4) 1/2" Grade 5 bolts



Manufacturer: Caterpillar (ABB)	Test Location: ETL (Dallas, TX)
Component: Service Entrance ATS	Test Date: December 2022
Model Number: C5SGO2504M36Bxxxxxxx (Z5SGO2504M36Bxxxxxxx)	Report Number: 16827
UUT Function: Automatic Transfer Switch and Main Disconnect	
UUT Description: NEMA 3R carbon steel enclosure with 59P-2067 2500A bus, 70010426262A 1600A-3000A R5 4P switch / power panel and 1SDA077913R1 Emax 4.2 circuit breaker, and OXCO1 controller.	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
2,033	36	48	90	8.3	5.3	10.8

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{AFLX-H} (g)	A _{ARIG-H} (g)	A _{AFLX-V} (g)	A _{ARIG-V} (g)
CBC 2022 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0.0	1.5	-	-	1.67	0.67

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. The UUT is manufactured by ABB and branded Caterpillar. The first digit of the ID is "Z" for ABB and this is changed to "C" for the branded Caterpillar product.

UUT_{Z-2}

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid wall mounted with (4) 1/2" Grade 5 bolts



Manufacturer: Caterpillar (ABB) **Test Location:** Clark Testing (Pittsburgh, PA)

Component: Automatic Transfer Switch **Test Date:** May 2019

Model Number: CGOK3SX12 (ZGOK3SX12) **Report Number:** 19-00274 Rev 0

UUT Function: Automatic Transfer Switch and Main Disconnect

UUT Description: NEMA 1 carbon steel enclosure with OXA400U3S3QB-ZE TruONE switch / power panel and OXCO1 controller.

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
142	24	12	46	n/a	n/a	n/a

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	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0.0	1.5	-	-	1.67	0.67

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. The lab report identified the system using the internal component number, OXA400U3S3QB-ZE, not the complete system component identification number, ZGOK3SX12. The UUT is manufactured by ABB and branded Caterpillar. The first digit of the ID is "Z" for ABB and this is changed to "C" for the branded Caterpillar product.

UUT_y-5

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



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



Manufacturer: Caterpillar (ABB)	Test Location: ETL (Dallas, TX)
Component: Service Entrance ATS	Test Date: December 2022
Model Number: C2SSO0203M11Bxxxxxxx (Z2SSO0203M11Bxxxxxxx)	Report Number: 16827
UUT Function: Automatic Transfer Switch and Main Disconnect	
UUT Description: NEMA 1 carbon steel enclosure with OXA200U3X3QB-ZE 200A TruONE switch / power panel and 1SDA074764R1 XT2 circuit breaker.	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
151	24	14	46	n/a	n/a	n/a

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{AFLX-H} (g)	A _{ARIG-H} (g)	A _{AFLX-V} (g)	A _{ARIG-V} (g)
CBC 2022 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0.0	1.5	-	-	1.67	0.67

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. The UUT is manufactured by ABB and branded Caterpillar. The first digit of the ID is "Z" for ABB and this is changed to "C" for the branded Caterpillar product.