



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0756

HCAI Special Seismic Certification Preapproval (OSP)

Type:  New  Renewal

Manufacturer Information

Manufacturer: ABB

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: RB3 / RB4 / RB5 Product Lines

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

Mounting Description: Rigid, Floor Mounted

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

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

Contact Person: Travis Soppe

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

Telephone: (208) 342-5989

Email: tsoppe@wegai.com

Title: President





**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
FACILITIES DEVELOPMENT DIVISION**

**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: Alex Rossman  
Mailing Address: 1801 Route 51, Jefferson Hills PA 15025  
Telephone: (412) 387-1676 Email: arossman@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





**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
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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) = 2.0 at z/h = 1 and 2.5 at z/h = 0

$a_p$  (Amplification factor) = 2.5

$R_p$  (Response modification factor) = 6.0

$\Omega_0$  (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 01/18/2030**

Date: 1/18/2024

Name: Timothy Piland Title: Senior Structural Engineer

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

Condition of Approval (if applicable): DATE: 01/18/2024



**TABLE 1**

**ABB, INC. ZTX / ZTG / ZTS ATS BYPASS  
CERTIFIED COMPONENTS TABLE**



ID/Catalog Number	Ampere rating	NEMA Rating	Equipment Dimensions (in)			Weight (lbs)	Representative UUT <sup>3</sup>
			Width	Depth	Height		
<b>R3B / R4B ATS BYPASS Product Line</b>							
ZSBD120WS1S5TBXX3X	600	1	40	35	86	1277	UUT <sub>y</sub> -2
ZTX, ZTG(D)(C), ZTS(D)(C)	100 - 600	1	40	35	86	1250 - 1300	interpolated
ZTX, ZTG(D)(C), ZTS(D)(C)	100 - 1200	1	36	38 - 50	92 - 94	1300 - 1730	interpolated
ZSBD120WS1S5TBXX4X	1200	1	36	38	92	1728	UUT <sub>z</sub> -1
ZSBD120WS1S5TBXX4X	1200	1	40	40	90	1923	UUT <sub>y</sub> -3
ZTX, ZTG(D)(C), ZTS(D)(C)	100 - 600	3R/4/5/12	40	42 - 57	94 - 96	1645 - 2110	interpolated
ZTX, ZTG(D)(C), ZTS(D)(C)	100 - 1200	3R/4/5/12	40	42 - 57	94 - 96	1845 - 2310	interpolated
ZSBD120WSCS5TBXX4X	1200	3R/4/5/12	40	60	92	2191	UUT <sub>y</sub> -4
ZSBD120WSDS5TBXX4X	1200	3R/4/5/12	40	57	96	2310	UUT <sub>z</sub> -2
<b>R5B ATS BYPASS Product Line</b>							
ZTX, ZTG(D)(C), ZTS(D)(C)	1000 - 3000	1	45.6	67.7	77.0 - 79.7	3020 - 3500	interpolated
ZSBO300WS1L6TBXXXX	3000	1	45.6	67.7	77.0	3490	UUT <sub>z</sub> -4
ZTX, ZTG(D)(C), ZTS(D)(C)	1000 - 3000	3R/4/5/12	45.9	70.6	77.0 - 79.7	3240 - 3820	interpolated
ZSBD300WS3L6TBXXXX	3000	3R/4/5/12	45.9	70.6	77.0	3820	UUT <sub>z</sub> -3

Notes:

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

<sup>2</sup> Enclosures are of made of carbon steel bolted / welded construction.

<sup>3</sup> Subscript indicates the test report in which teh units were qualified: <sub>y</sub> - 16827, <sub>z</sub> - 22-00885

<sup>4</sup> The ZTX/ZTG/ZTS(D) products are represented with the following ID numbers:  
 ZTX - ZXxxxxxxxxxxxxxx  
 ZTG(D)(C) - ZGxxxxxxxxxxxxxx  
 ZTS(D)(C) - ZSxxxxxxxxxxxxxx

<sup>5</sup> The ZTX/ZTG(D)/ZTS(D) automatic transfer switches (ATS) are of nearly identical construction in a withdrawable / fixed or withdrawable / withdrawable configuration and the controler software differences listed below:  
 ZXBO(D) - ZTX withdrawable / fixed bypass with open or delayed transition control  
 ZXDO(D) - ZTX withdrawable / withdrawable bypass with open or delayed transition control  
 ZGBO(D)(C) - ZTG withdrawable / fixed bypass with open or delayed or closed transition control  
 ZGDO(D)(C) - ZTG withdrawable / withdrawable bypass with open or delayed or closed transition control  
 ZSBO(D)(C) - ZTS withdrawable / fixed bypass with open or delayed or closed transition control  
 ZSDO(D)(C) - ZTS withdrawable / withdrawable bypass open or delayed or closed transition control

TABLE 2	ABB, INC. ATS BYPASS CERTIFIED SUBCOMPONENT MATRICES			 W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING
Identification Number	Manufacturer	Description	Weight (lbs)	Representative UUT
<b>R3B / R4B ATS BYPASS Product Line Subcomponents</b>				
<b>Switch / Power Panel</b>				
OXB0600U3S4QBY	ABB	R3B Switch 3P	43	UUT <sub>y</sub> -2
OXB1200U3E4QBY		R4B Switch 3P	97	interpolated
OXB1200U3O4QBY		R4B Switch 4P (Overlap Neutral)	126	interpolated
OXB0600U3O4QBY		R3B Switch 4P (Overlap Neutral)	48	interpolated
OXB0600U3S4QBY		R3B Switch 4P	48	interpolated
OXB1200U3S4QBY		R4B Switch 4P	126	UUT <sub>z</sub> -1/UUT <sub>z</sub> -2 UUT <sub>y</sub> -3 / UUT <sub>y</sub> -4
<b>Bus Structure</b>				
OXYB0600TU4CU	ABB	R3B Bus 3 Pole	151	UUT <sub>y</sub> -2
OXYB0600TU4CU		R3B Bus 4 Pole	173	extrapolated
OXYB1200TU4CU	ABB	R4B Bus 3 Pole	260	extrapolated
OXYB1200TU4CU		R4B Bus 4 Pole	310	UUT <sub>z</sub> -1/UUT <sub>z</sub> -2 UUT <sub>y</sub> -3 / UUT <sub>y</sub> -4
<b>Control Panel and Controller</b>				
OXYJ2	ABB	R3B / R4B 3P & 4P	66	UUT <sub>z</sub> -1 / UUT <sub>z</sub> -2 UUT <sub>y</sub> -3 / UUT <sub>y</sub> -4
OXCO1 <sup>1</sup>		Controller	2	UUT <sub>z</sub> -1 / UUT <sub>z</sub> -2 UUT <sub>y</sub> -3 / UUT <sub>y</sub> -4
<b>R5B ATS BYPASS Product Line Subcomponents</b>				
<b>Switch / Power Panel</b>				
2TFC360012R1001	ABB	ATSE / MTSE Panel 3P Open	2676	extrapolated
2TFC360012R1003		ATSE / MTSE Panel 3P Delayed/Closed	2690	extrapolated
2TFC360012R1002		ATSE / MTSE Panel 4P Open	2896	UUT <sub>z</sub> -4
2TFC360012R1004		ATSE / MTSE Panel 4P Delayed	2910	UUT <sub>z</sub> -3
<b>Bus Structure</b>				
2TFR360297A1806	ABB	750MCM (1600-4000A)	467	UUT <sub>z</sub> -4
2TFR360297A18XX		500 to 750MCM (1600-4000A)	88-511	Interpolated
2TFR360297A1808		750MCM (1600-4000A )	511	UUT <sub>z</sub> -3
<b>Controller</b>				
OXCO1 <sup>1</sup>	ABB	Controller	2	UUT <sub>z</sub> -3 / UUT <sub>z</sub> -4
<b>Notes:</b> <sup>1</sup> 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.				

UUT<sub>z-1</sub>

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



**Mounting Details:** Rigid floor mounted with (4) ½" diameter grade 5 bolts



<b>Manufacturer:</b> ABB, Inc.	<b>Test Location:</b> Clark Testing (Pittsburgh, PA)
<b>Component:</b> R3B / R4B ATS BYPASS	<b>Test Date:</b> August 2022
<b>Model Number:</b> ZSBD120WS1S5TBXX4X	<b>Report Number:</b> JID 22-00885 REV.1
<b>UUT Function:</b> Manual/Automatic power switching from utility to emergency power	
<b>UUT Description:</b> 1200A 4-Pole Automatic Transfer Switch with OXB1200U3E4QBY power panel, OXYJ2 control panel, and OXCO1 HMI in a NEMA 1 welded enclosure construction	

**UUT PROPERTIES**

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,728	36	38	92	7.7	7.9	31.1

**SEISMIC TEST PARAMETERS**

Building Code / Test Criteria	S <sub>DS</sub> (g)	z / h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIg-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIg-V</sub> (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.

UUT<sub>Z-2</sub>

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



**Mounting Details:** Rigid floor mounted with (4) ½" diameter grade 5 bolts



<b>Manufacturer:</b> ABB, Inc.	<b>Test Location:</b> Clark Testing (Pittsburgh, PA)
<b>Component:</b> R3B / R4B ATS BYPASS	<b>Test Date:</b> August 2022
<b>Model Number:</b> ZSBD120WSDS5TBXX4X	<b>Report Number:</b> JID 22-00885 REV.1
<b>UUT Function:</b> Manual/Automatic power switching from utility to emergency power	
<b>UUT Description:</b> 1200A 4-Pole Automatic Transfer Switch with OXB1200U3E4QBY power panel, OXYJ2 control panel, and OXCO1 HMI in NEMA 3R welded enclosure construction	

**UUT PROPERTIES**

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
2,310	40	57	94	16.8	8.7	>33 Hz

**SEISMIC TEST PARAMETERS**

Building Code / Test Criteria	S <sub>DS</sub> (g)	z / h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (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.

UUT<sub>Z-3</sub>

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



**Mounting Details:** Rigid floor mounted with (4) ½" diameter grade 5 bolts



<b>Manufacturer:</b> ABB, Inc.	<b>Test Location:</b> Clark Testing (Pittsburgh, PA)
<b>Component:</b> R5B ATS BYPASS	<b>Test Date:</b> August 2022
<b>Model Number:</b> ZSBD300WS3L6TBXXXX	<b>Report Number:</b> JID 22-00885 REV.1
<b>UUT Function:</b> Manual/Automatic power switching from utility to emergency power	
<b>UUT Description:</b> 3000A 4-Pole Automatic Transfer Switch with 2TFC360012R1004 delayed transition power panel and OXCO1 HMI in NEMA 3R bolted / welded enclosure construction	

**UUT PROPERTIES**

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
3,820	45.9	70.6	77.0	10.3	8.0	28.8

**SEISMIC TEST PARAMETERS**

Building Code / Test Criteria	S <sub>DS</sub> (g)	z / h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (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. Seismic enhancements made to the test units shall be incorporated into the production units.

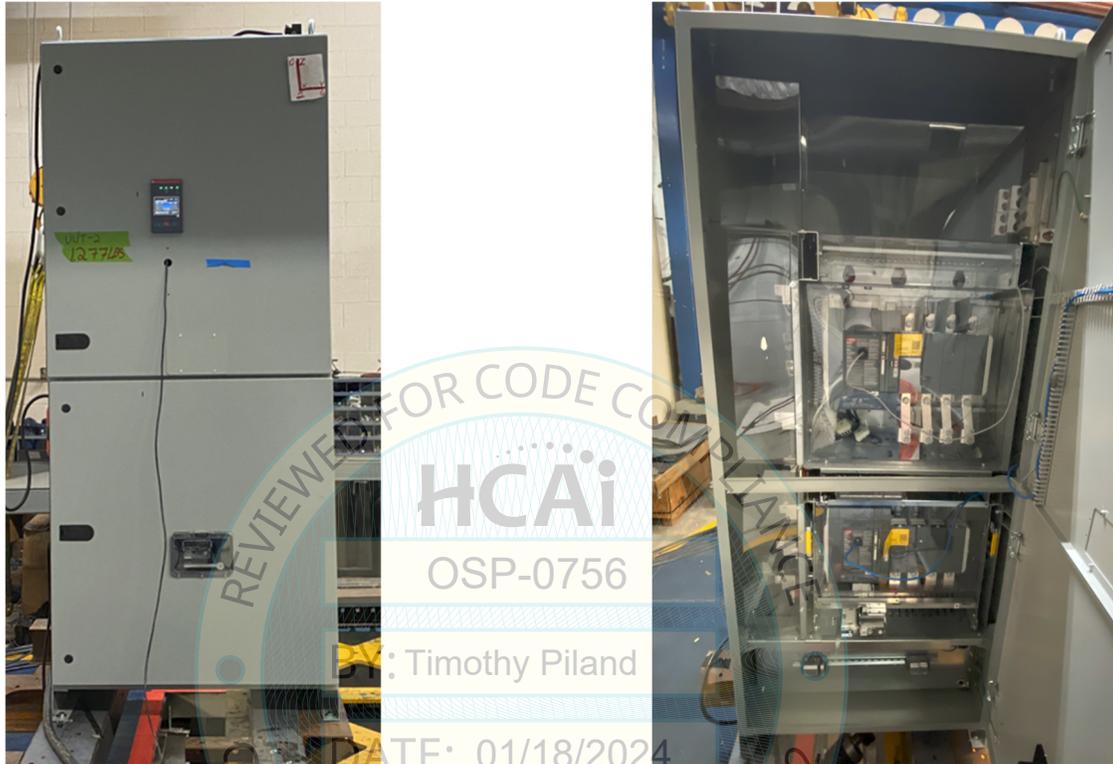


UUT<sub>y</sub>-2

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



**Mounting Details:** Rigid floor mounted with (4) ½" diameter grade 8 bolts



<b>Manufacturer:</b> ABB, Inc.	<b>Test Location:</b> ETL (Dallas, TX)
<b>Component:</b> R3B / R4B ATS BYPASS	<b>Test Date:</b> December 2022
<b>Model Number:</b> ZSBD060WS1S5TBXX3X	<b>Report Number:</b> 16827
<b>UUT Function:</b> Manual/Automatic power switching from utility to emergency power	
<b>UUT Description:</b> 600A 4-Pole Automatic Transfer Switch with OXB0600U3S4QBY power panel, OXYJ2 control panel, and OXCO1 HMI in a NEMA 1 welded enclosure construction	

**UUT PROPERTIES**

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,277	40	35	86	10.8	6.0	6.8

**SEISMIC TEST PARAMETERS**

Building Code / Test Criteria	S <sub>DS</sub> (g)	z / h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (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.

UUT<sub>y</sub>-3

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



**Mounting Details:** Rigid floor mounted with (4) ½" diameter grade 8 bolts



<b>Manufacturer:</b> ABB, Inc.	<b>Test Location:</b> ETL (Dallas, TX)
<b>Component:</b> R3B / R4B ATS BYPASS	<b>Test Date:</b> December 2022
<b>Model Number:</b> ZSBD120WS1S5TBXX4X	<b>Report Number:</b> 16827
<b>UUT Function:</b> Manual/Automatic power switching from utility to emergency power	
<b>UUT Description:</b> 1200A 4-Pole Automatic Transfer Switch with OXB1200U3S4QBY power panel, OXYJ2 control panel, and OXCO1 HMI in a NEMA 1 bolted enclosure construction	

**UUT PROPERTIES**

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,923	40	40	90	9.9	6.5	19.6

**SEISMIC TEST PARAMETERS**

Building Code / Test Criteria	S <sub>DS</sub> (g)	z / h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIg-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIg-V</sub> (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

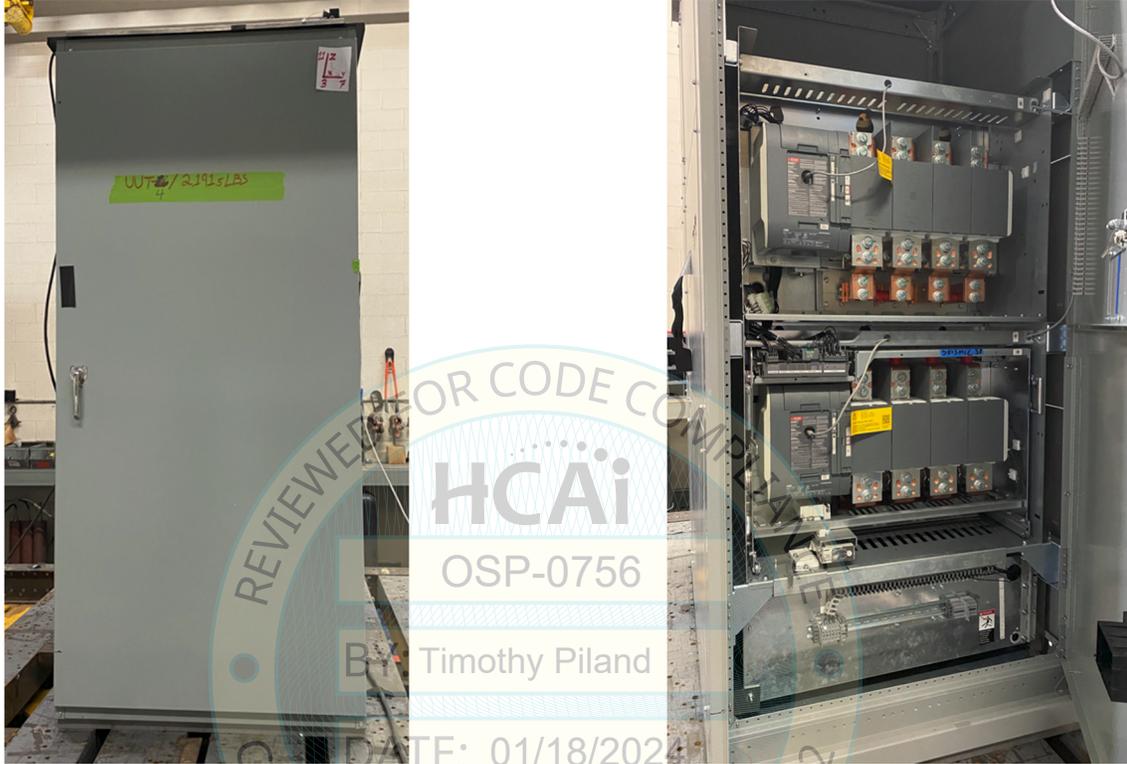
Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT<sub>y</sub>-4

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



**Mounting Details:** Rigid floor mounted with (10) ½" diameter grade 8 bolts



<b>Manufacturer:</b> ABB, Inc.	<b>Test Location:</b> ETL (Dallas, TX)
<b>Component:</b> R3B / R4B ATS BYPASS	<b>Test Date:</b> December 2022
<b>Model Number:</b> ZSBD120WSCS5TBXX4X	<b>Report Number:</b> 16827
<b>UUT Function:</b> Manual/Automatic power switching from utility to emergency power	
<b>UUT Description:</b> 1200A 4-Pole Automatic Transfer Switch with OXB1200U3S4QBY power panel, OXYJ2 control panel, and OXCO1 HMI in a NEMA 3R bolted enclosure construction	

**UUT PROPERTIES**

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
2,191	40	60	92	10.1	7.0	16.0

**SEISMIC TEST PARAMETERS**

Building Code / Test Criteria	S <sub>DS</sub> (g)	z / h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIg-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIg-V</sub> (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.