APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0331

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: ABB, Inc.

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: ABB, Inc. ZTG, ZTS, ZT3, ZBG, ZBS, AND ZBT3 Automatic Transfer Switches

Product Type: Automatic Transfer Switch

Product Model Number: ZTG, ZTS, ZT3, ZBG, ZBS, AND ZBT3 - See Attachment for full identification numbers
(List all unique product identification numbers and/or part numbers)

General Description: Standalone (ZT) and Bypass Transfer Switches that provide manual / automatic power switching from a primary power source to backup power sources. Covers ampere ratings from 801-3000 and voltage from 120-600.

Mounting Description: Rigid floor mounted

Applicant Information

Applicant Company Name: W.E. Gundy & Associates, Inc.

Contact Person: Travis Soppe SE

Mailing Address: 1199 Shoreline Dr, Ste 300, Boise, ID 83702

Telephone: (208) 342-5898 Ext.115 Email: tsoppe@wegai.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: Travis Soppe Date: 6/18/2019

Title: President Company Name: W.E. Gundy & Associates Inc.

REVIEWED FOR CODE COMPLIANCE OSHPD OSP-0331 By: Timothy J Piland DATE: 07/23/2020 CALIFORNIA BUILDING CODE, 2019

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

Company Name: W.E. Gundy & Associates, Inc.

Name: Travis Soppe, SE California License Number: S6115

Mailing Address: 1199 Shoreline Dr, Suite 310, Boise, ID 83702

Telephone: (208) 342-5898 Ext. 115 Email: tsoppe@wegai.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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Testing Laboratory

Company Name: Clark Dynamic Test Laboratory

Contact Name: Devon Lohr

Mailing Address: 1801 Route 51 South, Jefferson Hills, PA 15025

Telephone: 412-387-1027 Email: dlohr@clarktesting.com

Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.13 for S_{DS} = 2.50 at z/h = 0; 1.50 for S_{DS} = 2.00 at z/h = 1

S_{DS} (Design spectral response acceleration at short period, g) = 2.50 at z/h = 0; 2.00 at z/h = 1

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

R_p (Equipment or component response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

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

Equipment or Component Natural Frequencies (Hz) = See Attachments

Overall dimensions and weight (or range thereof) = See Attachments

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

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

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

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

R (Response modification coefficient) =

Ω_0 (System overstrength factor) =

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, 2010: ☐ 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): OSP Listing Documents, Subcomponent Certification Letter

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2025

Signature: Date: July 23, 2020

Print Name: Timothy J. Piland Title: SSE

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

Condition of Approval (if applicable):

ABB, Inc. ZTG, ZTS, ZT3, ZBG, ZBS, and ZB3
AUTOMATIC TRANSFER SWITCH CERTIFIED PRODUCT LINE MATRIX

WEGAI
W.E. GUNDY & ASSOCIATES, INC.
STRUCTURAL & EARTHQUAKE ENGINEERING

	ID Number	Frame Size	Pole	Ampre Rating	Voltage	NEMA Rating	Enclosure Width	Enclosure Depth	Enclosure Height	Service Weight (lbs)	Representative UUT
Non-Bypass	ZTG, ZTS, ZT3 - 3P - 1	40LA	3	801 - 3000	120 - 600	1	36.5"	23.5"	90.0"	867-972	extrapolated
	ZT3 - 3P - 1	40LA	3	3000	600	1	36.5"	23.5"	90.0"	917	UUT-1
	ZTG, ZTS, ZT3 - 4P - 1	40LA	4	801 - 3000	120 - 600	1	36.5"	23.5"	90.0"	923-1062	interpolated
	ZTG, ZTS, ZT3 - 3P - 1	40LA	3	801 - 3000	120 - 600	1	36.5"	32.5"	90.0"	950-1055	interpolated
	ZTG, ZTS, ZT3 - 4P - 1	40LA	4	801 - 3000	120 - 600	1	36.5"	32.5"	90.0"	1007-1145	interpolated
	ZTG, ZTS, ZT3 - 3P - 1	40LA	3	801 - 3000	120 - 600	1	36.5"	38.5"	90.0"	1033-1138	interpolated
	ZTG, ZTS, ZT3 - 4P - 1	40LA	4	801 - 3000	120 - 600	1	36.5"	38.5"	90.0"	1090-1228	interpolated
	ZTG, ZTS, ZT3 - 3P - 1	40LA	3	801 - 3000	120 - 600	1	36.5"	53.5"	90.0"	1157-1262	interpolated
	ZTG, ZTS, ZT3 - 4P - 1	40LA	4	801 - 3000	120 - 600	1	36.5"	53.5"	90.0"	1231-1352	interpolated
	ZTG, ZTS, ZT3 - 3P - 3R, 4, 12	40LA	3	801 - 3000	120 - 600	3R, 4, 12	38.8"	41.5"	90.0"	1273-1339	interpolated
	ZT3 - 4P - 3R, 4, 12	40LA	4	3000	600	3R, 4, 12	38.8"	41.5"	90.0"	1295	UUT-2
	ZTG, ZTS, ZT3 - 4P - 3R, 4, 12	40LA	4	801 - 3000	120 - 600	3R, 4, 12	38.8"	41.5"	90.0"	1330-1429	extrapolated
Bypass	ZBG, ZBS, ZB3 - 3P - 1	40LB	3	801 - 3000	120 - 600	1	45.5"	50.0"	90.0"	2280-2506	extrapolated
	ZB3 - 3P - 1	40LB	3	3000	600	1	45.5"	50.0"	90.0"	2350	UUT-3
	ZBG, ZBS, ZB3 - 4P - 1	40LB	4	801 - 3000	120 - 600	1	45.5"	50.0"	90.0"	2486-2749	interpolated
	ZBG, ZBS, ZB3 - 3P - 1	40LB	3	801 - 3000	120 - 600	1	45.5"	60.0"	90.0"	2416-2643	interpolated
	ZBG, ZBS, ZB3 - 4P - 1	40LB	4	801 - 3000	120 - 600	1	45.5"	60.0"	90.0"	2623-2885	interpolated
	ZBG, ZBS, ZB3 - 3P - 3R, 4, 12	40LB	3	801 - 3000	120 - 600	3R, 4, 12	45.5"	63.0"	90.0"	2756-2869	interpolated
	ZB3 - 4P - 3R, 4, 12	40LB	4	3000	600	3R, 4, 12	45.5"	63.0"	90.0"	2895	UUT-4
	ZBG, ZBS, ZB3 - 4P - 3R, 4, 12	40LB	4	801 - 3000	120 - 600	3R, 4, 12	45.5"	63.0"	90.0"	2960-3112	extrapolated

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Notes:

1) All Transferswitches are delay, closed, and open switches.
2) Enclosures of constructed of bolted and welded carbon steel.
3) The ZTG, ZTS, and ZT3 Non-Bypass transfer switches are of identical construction.
4) The ZBG, ZBS, and ZB3 Bypass transfer switches are of identical construction.

ABB, Inc. ZTG, ZTS, ZT3, ZBG, ZBS, and ZB3
AUTOMATIC TRANSFER SWITCH CERTIFIED SUBCOMPONENT MATRIX

WEGAI
W.E. GUNDY & ASSOCIATES, INC.
STRUCTURAL & EARTHQUAKE ENGINEERING

Component ID Number	Description	Manufacturer	Width	Depth	Height	Weight (lbs)	Representative UUT
Carbon Steel Enclosures [1)]							
F-3000MP	NEMA1 bolted carbon steel	Genesis Inc.	36.5"	23.5"	90.0"	na	UUT-1
F-3000MP+26h-1946	NEMA1 bolted carbon steel	Genesis Inc.	36.5"	32.5"	90.0"	na	interpolated
F-3000MP+26h-1947	NEMA1 bolted carbon steel	Genesis Inc.	36.5"	38.5"	90.0"	na	interpolated
F-3000MP+26h-1980	NEMA1 bolted carbon steel	Genesis Inc.	36.5"	53.5"	90.0"	na	interpolated
F-3001MP	NEMA3R,4,12 welded carbon steel	Genesis Inc.	38.8"	41.5"	90.0"	na	UUT-2
F-3003MP	NEMA1 bolted carbon steel	Genesis Inc.	45.5"	50.0"	90.0"	na	UUT-3
F-3003MP+26h-1948	NEMA1 bolted carbon steel	Genesis Inc.	45.5"	60.0"	90.0"	na	interpolated
F-3004MP	NEMA3R,4,12 welded carbon steel	Genesis Inc.	45.5"	60.0"	90.0"	na	UUT-4
Electrical Panel / Controler Components							
50P-1160/61	MX150 and MX250 Controller	Sienna	11.0"	4.0"	14.0"	12.0	UUT-1, UUT-3
MX250: 26P-3176	Electrical Panel	Precision	31.0"	1.0"	18.0"	1.0	UUT-1, UUT-3
MX350 HMI	Controller	GE	6.0"	1.0"	7.0"	2.0	UUT-2, UUT-4
MX350 CPU	Controller	GE	4.0"	5.0"	12.0"	3.0	UUT-2, UUT-4
50P-3041	MX350 Input Module	Sienna	3.5"	5.2"	2.5"	1.0	UUT-2, UUT-4
50P-3042	MX350 Output Module	Sienna	3.5"	5.2"	2.5"	1.0	UUT-2, UUT-4
MX350: 26P-3177	Electrical Panel	Precision	31.0"	1.0"	18.0"	1.0	UUT-2, UUT-4
CPS Box Components [2)]							
50P-1224	CPS Box, 120V	Sienna	5.0"	3.0"	10.0"	7.0	UUT-1, UUT-3
50P-1225	CPS Box, 208-220V	Sienna	5.0"	3.0"	10.0"	7.0	interpolated / extrapolated
50P-1226	CPS Box, 230-240V	Sienna	5.0"	3.0"	10.0"	7.0	interpolated / extrapolated
50P-1227	CPS Box, 277V	Sienna	5.0"	3.0"	10.0"	7.0	interpolated / extrapolated
50P-1228	CPS Box, 380-400V	Sienna	5.0"	3.0"	10.0"	7.0	interpolated / extrapolated
50P-1229	CPS Box, 416-440V	Sienna	5.0"	3.0"	10.0"	7.0	interpolated / extrapolated
50P-1230A	CPS Box, 480V	Sienna	5.0"	3.0"	10.0"	7.0	interpolated / extrapolated
50P-1261RPL	CPS Box, 575-600V	Sienna	5.0"	3.0"	10.0"	7.0	interpolated / extrapolated

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ABB, Inc. ZTG, ZTS, ZT3, ZBG, ZBS, and ZB3
AUTOMATIC TRANSFER SWITCH CERTIFIED SUBCOMPONENT MATRIX

WEGAI
W.E. GUNDY & ASSOCIATES, INC.
STRUCTURAL & EARTHQUAKE ENGINEERING

Transformer Components							
9T58K0070	Transformers, 0.5KVA, 230-575V	GE	5.0"	5.0"	7.0"	20.0	UUT-3, UUT-4
9T58K0090	Transformers, 0.5KVA, 208-380V	GE	5.0"	5.0"	7.0"	20.0	UUT-2
9T58K3717	Transformers, 0.5KVA	GE	5.0"	5.0"	7.0"	20.0	interpolated
9T58K3718	Transformers, 0.75KVA	GE	5.0"	5.0"	7.0"	20.0	UUT-1
9T58K2913	Transformers, 0.5KVA, 120-240V	GE	5.0"	5.0"	7.0"	20.0	interpolated
9T58K2930	Transformers, 0.5kVA, 240-480V	GE	5.0"	5.0"	7.0"	20.0	UUT-4
Power Panel Assembly							
23c-4001	3-Pole Power Panel Standalone	GE Zenith	28.9"	14.6"	28.6"	450.0	UUT-1
23c-4002	4-Pole Power Panel Standalone	GE Zenith	28.9"	14.6"	28.6"	450.0	UUT-2
26p-4007	3-Pole Power Panel Bypass	GE Zenith	38.3"	39.2"	55.5"	1400.0	UUT-3
26p-4007	4-Pole Power Panel Bypass	GE Zenith	38.3"	39.2"	55.5"	1400.0	UUT-4

Notes:
1) The size, construction material and coating of NEMA Type 3R, 4, and 12 enclosures are identical.
2) The tested and interpolated CPS Box Componenents are of identical construction with the exception of voltage ratings.

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ABB, Inc. ZTG, ZTS, ZT3, ZBG, ZBS, and ZB3
ATS CERTIFIED PRODUCT LINE NUMBERING SYSTEM

WEGAI
W.E. GUNDY & ASSOCIATES, INC.
STRUCTURAL & EARTHQUAKE ENGINEERING

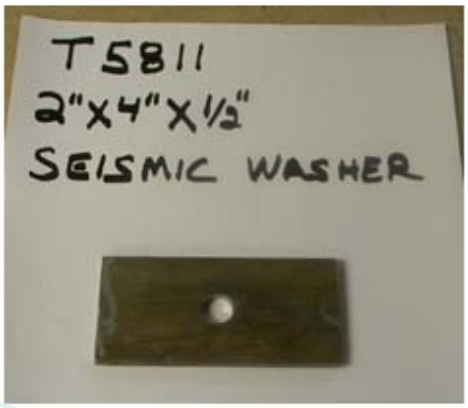
	Brand	ATS\BYPASS	Model	Transition	Serv. Equip	Amperage			Poles	Dash	voltage	# of Wires, Hx	Enclosure	Application	Control panel	Power Panel Code	reserved for OPTION coding		
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*-*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*
Product Numbering System -	↓	↓	↓	↓	↓	↓	↓	↓	↓	-	X	X	↓	X	↓	X	X	X	X
1 Brand																			
Zenith	Z																		
2 ATS/Bypass																			
ATS	-	T																	
Bypass	-	B																	
3 Model																			
ZTG	-	-	G																
ZTS	-	-	S																
ZT30	-	-	3																
4 Transition Type																			
Standard Transition	-	-	-	S															
Delayed Transition	-	-	-	D															
Closed Transition	-	-	-	C															
5 Type																			
Standard	-	-	-	-	T														
6, 7, 8 Amperage																			
1000	-	-	-	-	-	1	0	0											
1200	-	-	-	-	-	1	2	0											
1600	-	-	-	-	-	1	6	0											
2000	-	-	-	-	-	2	0	0											
2600	-	-	-	-	-	2	6	0											
3000	-	-	-	-	-	3	0	0											
9 Poles																			
3-Pole	-	-	-	-	-	-	-	-	E										
4-Pole	-	-	-	-	-	-	-	-	F										
13 Enclosure																			
NEMA 1	-	-	-	-	-	-	-	-	-	-	-	-	1						
NEMA 3R	-	-	-	-	-	-	-	-	-	-	-	-	R						
NEMA 4	-	-	-	-	-	-	-	-	-	-	-	-	4						
NAME 12	-	-	-	-	-	-	-	-	-	-	-	-	2						
15 Controller																			
MX150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1				
MX250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2				
MX350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3				

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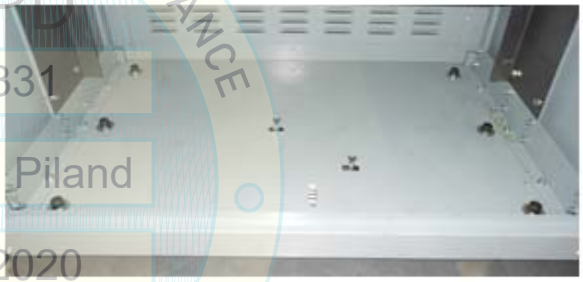
UUT-1	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mount with 6 - 1/2" diameter anchor bolts and 2x4x0.25" plate washers





Use seismic washer at all six anchor bolt locations



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Manufacturer: ABB, Inc.

Product Line: ZTG, ZTS, ZT3, ZBG, ZBS, and ZB3 Automatic Transfer Switches

Identification Number: ZT3 - 3P - 1

UUT Function: Manual/Automatic power switching from utility power to emergency power

UUT Description: Standalone Non-Bypass 3 Pole Automatic Transfer Switch and Controls housed in NEMA1 steel enclosure.

UUT Component Description: F-3000MP NEMA1 carbon steel enclosure, 23c-4001 3-Pole Power Panel, 50P-1160/61 MX250 Controller, MX250: 26P-3176 Electrical Panel, 50P-1224 CPS Box, and two 9T58k3718 Transformers.

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
917	36.5	23.5	90	6.8	9.0	> 33

SEISMIC TEST PARAMETERS (TESTED 12-20-2012)

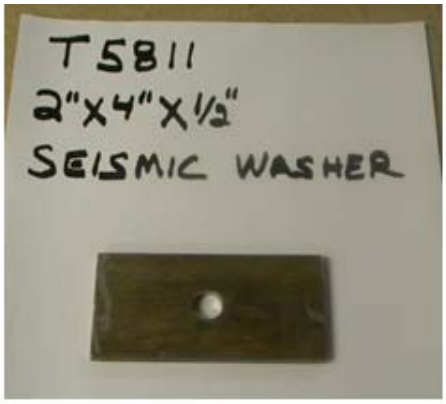
Test Criteria	S_{DS}	z / h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.68	0.68

Note: The transfer switch maintained structural integrity and functionality after the ICC-ES AC156 Test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

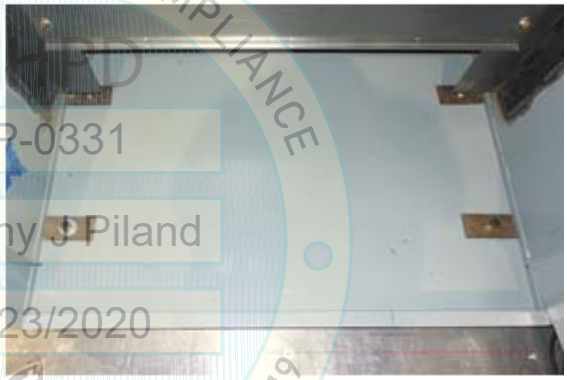
UUT-2	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mount with 6 - 1/2" diameter anchor bolts and 2x4x0.25" plate washers.





Use seismic washer at
all six anchor bolt locations



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Manufacturer: ABB, Inc.

Product Line: ZTG, ZTS, ZT3, ZBG, ZBS, and ZB3 Automatic Transfer Switches

Identification Number: ZT3 - 4P - 3R, 4, 12

UUT Function: Manual/Automatic power switching from utility power to emergency power

UUT Description: Standalone Non-Bypass 4 Pole Automatic Transfer Switch and Controls housed in NEMA3R, 4, 12 steel enclosure.

UUT Component Description: F-3001MP NEMA3R, 4, 12 carbon steel enclosure, 23c-4002 4-Pole Power Panel, MX350 HMI/CPU Controller, MX350: 26P-3177 Electrical Panel, MX350: 50P-3041 and 50P-3042 Input/Output Module, and two 9T58k0090 Transformers.

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,295	38.8	41.5	90	19.7	14.7	> 33

SEISMIC TEST PARAMETERS (TESTED 12-20-2012)

Test Criteria	S_{DS}	z / h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.68	0.68

Note: The transfer switch maintained structural integrity and functionality after the ICC-ES AC156 Test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-3	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mount with 6 - 1/2" diameter anchor bolts and 2x4x0.25" plate washers.





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Manufacturer: ABB, Inc.

Product Line: ZTG, ZTS, ZT3, ZBG, ZBS, and ZB3 Automatic Transfer Switches

Identification Number: ZB3 - 3P - 1

UUT Function: Manual/Automatic power switching from utility power to emergency power

UUT Description: Bypass 3-Pole Automatic Transfer Switch and Controls housed in NEMA1 steel enclosure.

UUT Component Description: F-3003MP NEMA1 carbon steel enclosure, 26p-4007 3-Pole Bypass Power Panel, 50P-1160/61 MX250 Controller, MX250: 26P-3176 Electrical Panel, 50P-1224 CPS Box, and two 9T58K0070 Transformers.

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
2,350	45.5	50	90	23.2	19.0	> 33

SEISMIC TEST PARAMETERS (TESTED 12-20-2012)

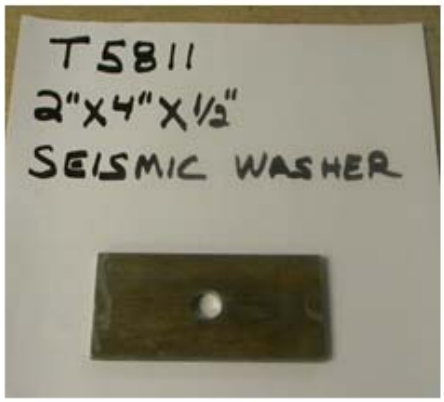
Test Criteria	S_{DS}	z / h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.68	0.68

Note: The transfer switch maintained structural integrity and functionality after the ICC-ES AC156 Test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-4	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mount with 6 - 1/2" diameter anchor bolts and 2x4x0.25" plate washers.





Use seismic washer at all six anchor bolt locations



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Manufacturer: ABB, Inc.

Product Line: ZTG, ZTS, ZT3, ZBG, ZBS, and ZB3 Automatic Transfer Switches

Identification Number: ZB3 - 4P - 3R, 4, 12

UUT Function: Manual/Automatic power switching from utility power to emergency power

UUT Description: Bypass 4-Pole Automatic Transfer Switch and Controls housed in NEMA3R, 4, 12 steel enclosure.

UUT Component Description: F-3004MP NEMA3R, 4, 12 carbon steel enclosure, 26p-4007 4-Pole Bypass Power Panel, MX350 HMI/CPU Controller, MX350: 26P-3177 Electrical Panel, MX350: 50P-3041 and 50P-3042 Input/Output Module, 9T58k0070 Transformer, and 9T58k2930 Transformer.

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
2,895	45.5	63	90	14.43	8.08	11.7

SEISMIC TEST PARAMETERS (TESTED 12-20-2012)

Test Criteria	S_{DS}	z / h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.68	0.68

Note: The transfer switch maintained structural integrity and functionality after the ICC-ES AC156 Test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

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