



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

**APPLICATION FOR HCAI SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY

**APPLICATION #: OSP-0320**

**HCAI 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: Switchgear/Switchboards

Product Type: Switchboards

Product Model Number: See Attachment for full identification numbers

General Description: 30A to 1200A General Duty, Heavy Duty, Mill Duty, Double Throw, and Solar Duty Safety Switches.

Mounting Description: Rigid, Wall 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.

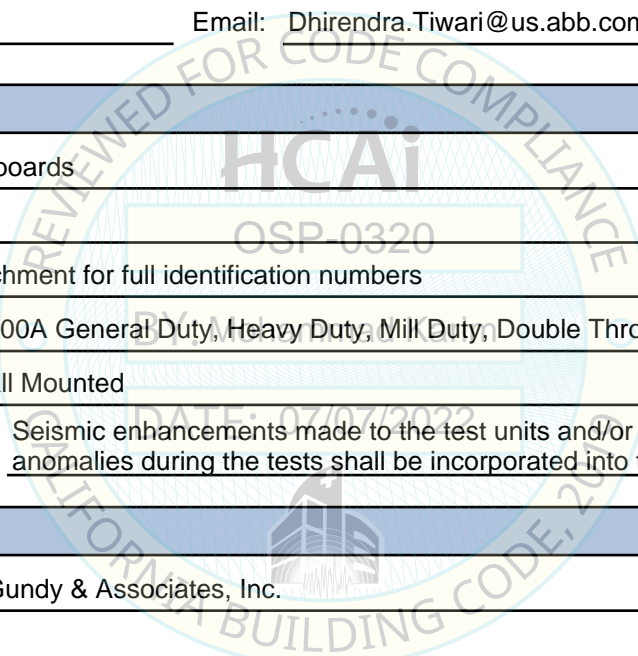
Contact Person: Travis Soppe

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

Telephone: (208) 342-5898

Email: tsoppe@wegai.com

Title: SE





**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

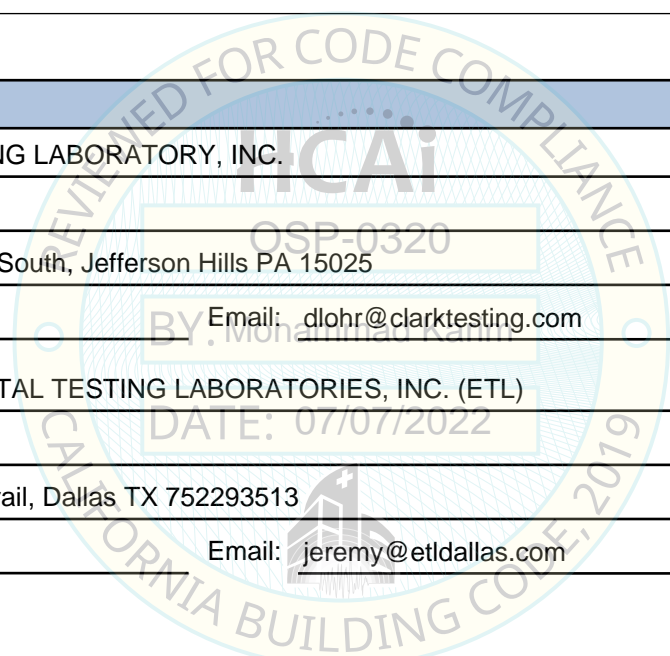
**Certification Method**

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: Devon Lohr  
Mailing Address: 1801 Route 51 South, Jefferson Hills PA 15025  
Telephone: (412) 387-1027 Email: dlohr@clarktesting.com

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)  
Contact Person: Jeremy Lange  
Mailing Address: 11034 Indian Trail, Dallas TX 752293513  
Telephone: (972) 247-9657 Email: jeremy@etldallas.com





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

**Seismic Parameters**

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.5 for SDS = 2.0 at z/h = 1 and 1.13 for SDS = 2.0 at z/h = 0

SDS (Design spectral response acceleration at short period, g) = SDS = 2.0 at z/h = 1 and SDS = 2.0 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

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

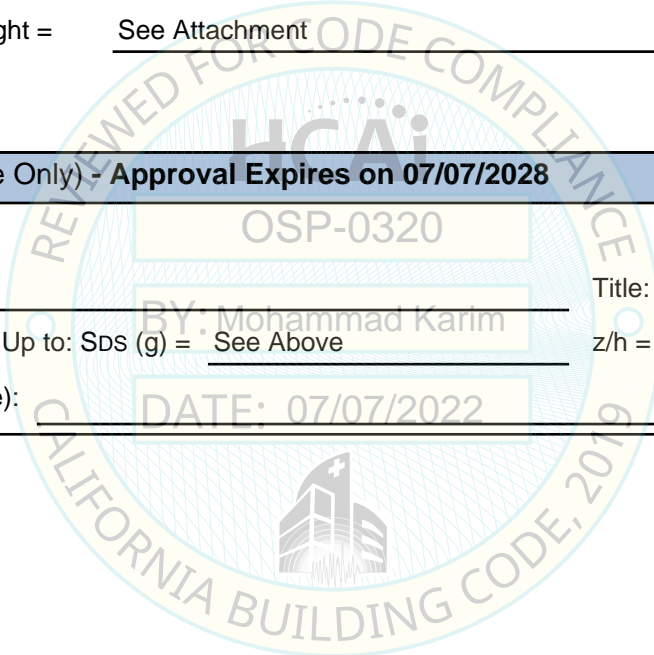
**HCAI Approval (For Office Use Only) - Approval Expires on 07/07/2028**

Date: 7/7/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = See Above z/h = 1

Condition of Approval (if applicable): DATE: 07/07/2022



# ABB, INC. SPEC SETTER AND EVERGOLD SOLAR SAFETETY SWITCHES CERTIFIED PRODUCT LINE MATRICES



ID/Catalog Number <sup>1</sup>	Ampere Rating	NEMA <sup>2</sup> Rating	Equipment Dimensions			Weight (lbs)	Representative UUT <sup>3</sup>
			Width (in)	Depth (in)	Height (in)		
<b>Table 1: 30-1200A Safety Switches Product Line - Max S<sub>DS</sub> = 2.0g at z/h = 1.0 and S<sub>DS</sub> = 2.50g at z/h = 0</b>							
TGxxx, THxxx, TCxxx, TSxxx	30-100	1 / 3R / 5 / 12 / 4 / 4X	6.0 - 13.4	3.0 - 5.7	10.0 - 35.0	12 - 38	Interpolated
TGN3323R	100	3R	9.0	5.0	16.0	12	UUT <sub>y</sub> -1
TH3364SSVW	200	4X	14.5	6.0	35.0	48	UUT <sub>x</sub> -14
TGxxx, THxxx, TCxxx, TSxxx	100-600	1 / 3R / 5 / 12 / 4 / 4X	13.4 - 25.0	5.2 - 8.0	10.0 - 60.0	38 - 200	Interpolated
TH3365	400	1	23.0	8.0	54.0	122	UUT <sub>x</sub> -10
TH3366SS	600	4X	25.0	8.0	60.0	194	UUT <sub>x</sub> -11
TC72367	800	1	42.0	12.0	62.0	340	UUT <sub>z</sub> -9
TC72367	800	1	42.0	12.0	62.0	330	UUT <sub>z</sub> -10
TGxxx, THxxx, TCxxx, TSxxx	800-1200	1 / 3R / 5 / 12	31.0 - 47.0	11.0 - 13.0	52.0 - 77.0	245-530	Interpolated
TC72368	1200	1	47.0	13.0	77.0	514	UUT <sub>z</sub> -7
TC72368	1200	1	47.0	13.0	77.0	513	UUT <sub>z</sub> -8

**General Notes:**

<sup>1</sup> All components are manufactured by ABB, Inc. unless noted. The part numbers listed uniquely identify the type of component, manufacturer, and material of construction for each sub-component with the tested units. All stainless steel enclosures include the "SS" or "SS316" suffix in the ID/Catalog Number.

<sup>2</sup> NEMA 1/3R/5/12 enclosures are constructed of carbon steel and NEMA 4/4X enclosures are constructed of stainless steel. NEMA 4/4X enclosures are not used with the 800-1200A product range

<sup>3</sup> Subscript indicates the test report in which the units were qualified: <sub>x</sub> - 16380, <sub>y</sub> - 10282, <sub>z</sub> - 19-01143-1

**ABB, INC. SPEC SETTER AND EVERGOLD SOLAR  
SAFETY SWITCHES  
CERTIFIED SUBCOMPONENT MATRICES**



Identification Number	Manufacturer	Description	Approximate Weights (lbs)	Representative UUT <sup>1</sup>
-----------------------	--------------	-------------	---------------------------	---------------------------------

**Table 2: 30-1200A SAFETY SWITCHES**

**Switch Base Assembly**

139C5071Gxx	ABB	30A	1.6	Extrapolated
139C5072Gxx		60A	2.7	Extrapolated
139C5072Gxx		100A	2.7	UUT <sub>y</sub> -1
139C4030Gxx		200A	6.1	UUT <sub>x</sub> -14
21020710674Axx		400A	28	UUT <sub>x</sub> -10
21020710675Axx		600A	33	UUT <sub>x</sub> -11
139C3700G18		800A	27.9	UUT <sub>z</sub> -9 / UUT <sub>z</sub> -10
139C3700G20		1200A	43.5	UUT <sub>z</sub> -7 / UUT <sub>z</sub> -8

**Mechanism Assembly**

139C3768Gxx	ABB	30A	1.1	Extrapolated
139C3768Gxx		60A	1.2	Extrapolated
139C3768Gxx		100A	1.2	UUT <sub>y</sub> -1
567B769Gxx		200A	1.6	UUT <sub>x</sub> -14
21020710680Axx		400A	1.3	Interpolated
455C412Gxx		400A	7.8	UUT <sub>x</sub> -10
21020710680Axx		600A	1.3	Interpolated
455C412Gxx		600A	7.8	UUT <sub>x</sub> -11
315A7092G1		800A	6.6	UUT <sub>z</sub> -9 / UUT <sub>z</sub> -10
315A7092G1		1200A	6.6	UUT <sub>z</sub> -7 / UUT <sub>z</sub> -8

**Load Base Assembly**

569B384Gxx	ABB	30A	0.6	Extrapolated
569B392Gxx		60A	1.4	Extrapolated
569B392Gxx		100A	1.4	UUT <sub>y</sub> -1
192A8146Gxx		200A	1.4	UUT <sub>x</sub> -14
21020710683Axx		400A	4	UUT <sub>x</sub> -10
21020710684Axx		600A	9	UUT <sub>x</sub> -11
139C3700G18		800A	11.1	UUT <sub>z</sub> -9 / UUT <sub>z</sub> -10
139C3700G20		1200A	19.1	UUT <sub>z</sub> -7 / UUT <sub>z</sub> -8

**General Notes:**

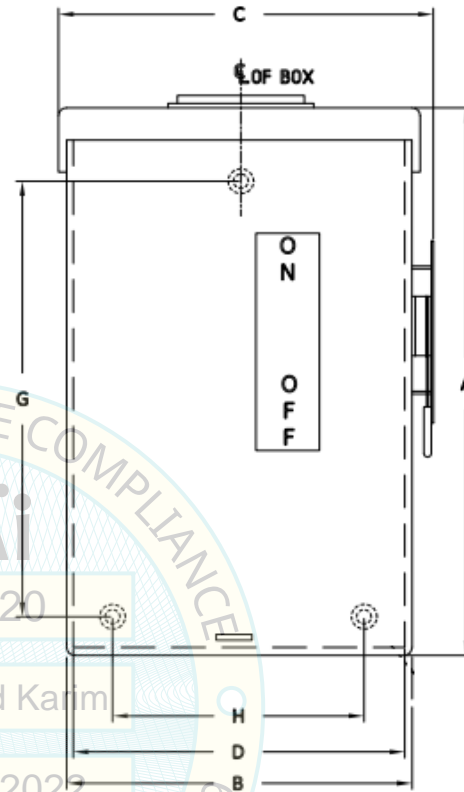
<sup>1</sup> Subscript indicates the test report in which the units were qualified: x - 16380, y - 10282, z - 19-01143-1

UUT<sub>y</sub>-1

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



**Mounting Details:** Wall through bolt mounted with (3) 10-32 grade 5 bolts



**Manufacturer:** ABB, Inc. **Test Location:** Clark Testing Laboratory

**Product Line:** Spec Setter / Evergold Solar Safety Switches **Report Number:** 10282

**Identification Number:** TGN3323R **UUT No. in Test Report:** UUT-1

**UUT Function:** General Duty Safety Switch

**UUT Description:** The unit is a through bolt wall mounted general duty safety switch with a NEMA type 3R enclosure and a rating of 100A.

**UUT Component Description:**  
NEMA 3R 16ga Carbon Steel Enclosure, and 100A mechanism assembly.

**UUT PROPERTIES**

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Enclosure Width	Enclosure Depth	Enclosure Height	FB	SS	V
12	9.0"	5.0"	16.0"	NA	NA	NA

**SEISMIC TEST PARAMETERS**

Test Criteria	S <sub>DS</sub> (g)	z / h	I <sub>p</sub>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2019 / ICC-ES-AC156	2.00	1.00	1.50	3.20g	2.40g	-	-
	2.50	0.0	1.50	-	-	1.67g	0.67g

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</sub>-7

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



**Mounting Details:** Wall bolted bracket mounted with (6) 3/8" diameter grade 5 bolts



**Manufacturer:** ABB, Inc. **Test Location:** Clark Testing Laboratory

**Product Line:** Spec Setter / Evergold Solar Safety Switches **Report Number:** 19-01143-1

**Identification Number:** TC72368 **UUT No. in Test Report:** UUT-7

**UUT Function:** Heavy Duty Safety Switch

**UUT Description:** The unit is a bolted bracket wall mounted heavy duty safety switch with a NEMA type 1 enclosure and a rating of 1200A.

**UUT Component Description:**  
NEMA 1 16ga Carbon Steel Enclosure, and 1200A mechanism assembly.

**UUT PROPERTIES**

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Enclosure Width	Enclosure Depth	Enclosure Height	FB	SS	V
514	47.0"	13.0"	77.0"	NA	NA	NA

**SEISMIC TEST PARAMETERS**

Test Criteria	S <sub>DS</sub> (g)	z / h	I <sub>p</sub>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2019 / ICC-ES-AC156	2.00	1.00	1.50	3.20g	2.40g	-	-
	2.50	0.0	1.50	-	-	1.67g	0.67g

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</sub>-8**

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



**Mounting Details:** Wall bolted bracket mounted with (6) 3/8" diameter grade 5 bolts



**Manufacturer:** ABB, Inc. **Test Location:** Clark Testing Laboratory

**Product Line:** Spec Setter / Evergold Solar Safety Switches **Report Number:** 19-01143-1

**Identification Number:** TC72368 **UUT No. in Test Report:** UUT-8

**UUT Function:** Heavy Duty Safety Switch

**UUT Description:** The unit is a bolted bracket wall mounted heavy duty safety switch with a NEMA type 1 enclosure and a rating of 1200A.

**UUT Component Description:**  
NEMA 1 16ga Carbon Steel Enclosure, and 1200A mechanism assembly.

**UUT PROPERTIES**

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Enclosure Width	Enclosure Depth	Enclosure Height	FB	SS	V
513	47.0"	13.0"	77.0"	NA	NA	NA

**SEISMIC TEST PARAMETERS**

Test Criteria	S <sub>DS</sub> (g)	z / h	I <sub>p</sub>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2019 / ICC-ES-AC156	2.00	1.00	1.50	3.20g	2.40g	-	-
	2.50	0.0	1.50	-	-	1.67g	0.67g

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-9</sub>

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



**Mounting Details:** Wall bolted bracket mounted with (6) 3/8" diameter grade 5 bolts



REVIEWED FOR CODE COMPLIANCE  
HCA  
OSP-0320  
BY: Mohammad Karim  
DATE: 07/07/2022

**Manufacturer:** ABB, Inc. **Test Location:** Clark Testing Laboratory

**Product Line:** Spec Setter / Evergold Solar Safety Switches **Report Number:** 19-01143-1

**Identification Number:** TC72367 **UUT No. in Test Report:** UUT-9

**UUT Function:** Heavy Duty Safety Switch

**UUT Description:** The unit is a bolted bracket wall mounted heavy duty safety switch with a NEMA type 1 enclosure and a rating of 800A.

**UUT Component Description:**  
NEMA 1 16ga Carbon Steel Enclosure, and 800A mechanism assembly.

**UUT PROPERTIES**

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Enclosure Width	Enclosure Depth	Enclosure Height	FB	SS	V
340	42.0"	12.0"	62.0"	NA	NA	NA

**SEISMIC TEST PARAMETERS**

Test Criteria	S <sub>DS</sub> (g)	z / h	I <sub>p</sub>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2019 / ICC-ES-AC156	2.00	1.00	1.50	3.20g	2.40g	-	-
	2.50	0.0	1.50	-	-	1.67g	0.67g

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.

**Mounting Details:** Wall bolted bracket mounted with (6) 3/8" diameter grade 5 bolts



<b>Manufacturer:</b> ABB, Inc.	<b>Test Location:</b> Clark Testing Laboratory
<b>Product Line:</b> Spec Setter / Evergold Solar Safety Switches	<b>Report Number:</b> 19-01143-1
<b>Identification Number:</b> TC72367	<b>UUT No. in Test Report:</b> UUT-10
<b>UUT Function:</b> Heavy Duty Safety Switch	
<b>UUT Description:</b> The unit is a bolted bracket wall mounted heavy duty safety switch with a NEMA type 1 enclosure and a rating of 800A.	
<b>UUT Component Description:</b> NEMA 1 16ga Carbon Steel Enclosure, and 800A mechanism assembly.	

UUT PROPERTIES							
Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)			
	Enclosure Width	Enclosure Depth	Enclosure Height	FB	SS	V	
330	42.0"	12.0"	62.0"	NA	NA	NA	
SEISMIC TEST PARAMETERS							
Test Criteria	S <sub>DS</sub> (g)	z / h	I <sub>p</sub>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2019 / ICC-ES-AC156	2.00	1.00	1.50	3.20g	2.40g	-	-
	2.50	0.0	1.50	-	-	1.67g	0.67g

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>x</sub>-10

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



**Mounting Details:** Wall bolted bracket mounted with (5) 5/16" diameter grade 5 bolts



REVIEWED FOR CODE COMPLIANCE  
**HCAi**  
 OSP-0320  
 BY: Mohammad Karim  
 DATE: 07/07/2022

<b>Manufacturer:</b> ABB, Inc.	<b>Test Location:</b> ETL (Dallas, TX)
<b>Product Line:</b> Spec Setter / Evergold Solar Safety Switches	<b>Report Number:</b> 16380
<b>Identification Number:</b> TH3365	<b>UUT No. in Test Report:</b> UUT-10
<b>UUT Function:</b> Heavy Duty Safety Switch	
<b>UUT Description:</b> The unit is a bolted bracket wall mounted heavy duty safety switch with a NEMA type 1 enclosure and a rating of 400A.	
<b>UUT Component Description:</b> NEMA 1 16ga Carbon Steel Enclosure, and 400A mechanism assembly.	

**UUT PROPERTIES**

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Enclosure Width	Enclosure Depth	Enclosure Height	FB	SS	V
122	23.0"	8.0"	54.0"	NA	NA	NA

**SEISMIC TEST PARAMETERS**

Test Criteria	S <sub>DS</sub> (g)	z / h	I <sub>p</sub>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2019 / ICC-ES-AC156	2.00	1.00	1.50	3.20g	2.40g	-	-
	2.50	0.0	1.50	-	-	1.67g	0.67g

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.



**Mounting Details:** Wall bolted bracket mounted with (5) 5/16" diameter grade 5 bolts



<b>Manufacturer:</b> ABB, Inc.	<b>Test Location:</b> ETL (Dallas, TX)
<b>Product Line:</b> Spec Setter / Evergold Solar Safety Switches	<b>Report Number:</b> 16380
<b>Identification Number:</b> TH3366SS	<b>UUT No. in Test Report:</b> UUT-11
<b>UUT Function:</b> Heavy Duty Safety Switch	
<b>UUT Description:</b> The unit is a bolted bracket wall mounted heavy duty safety switch with a NEMA 4X enclosure and a rating of 600A.	
<b>UUT Component Description:</b> NEMA 4X 16ga Stainless Steel Enclosure, and 600A mechanism assembly.	

UUT PROPERTIES							
Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)			
	Enclosure Width	Enclosure Depth	Enclosure Height	FB	SS	V	
194	25.0"	8.0"	60.0"	NA	NA	NA	
SEISMIC TEST PARAMETERS							
Test Criteria	S <sub>DS</sub> (g)	z / h	I <sub>P</sub>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2019 / ICC-ES-AC156	2.00	1.00	1.50	3.20g	2.40g	-	-
	2.50	0.0	1.50	-	-	1.67g	0.67g

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.



**Mounting Details:** Wall bolted bracket mounted with (3) 1/4" diameter grade 5 bolts



<b>Manufacturer:</b> ABB, Inc.	<b>Test Location:</b> ETL (Dallas, TX)
<b>Product Line:</b> Spec Setter / Evergold Solar Safety Switches	<b>Report Number:</b> 16380
<b>Identification Number:</b> TH3364SSVW	<b>UUT No. in Test Report:</b> UUT-14
<b>UUT Function:</b> Heavy Duty Safety Switch	
<b>UUT Description:</b> The unit is a bolted bracket wall mounted heavy duty safety switch with a NEMA 4X enclosure and a rating of 200A. The enclosure includes a viewing window.	
<b>UUT Component Description:</b> NEMA 4X 16ga Stainless Steel Enclosure, and 200A mechanism assembly.	

UUT PROPERTIES							
Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)			
	Enclosure Width	Enclosure Depth	Enclosure Height	FB	SS	V	
48	14.5"	6.0"	35.0"	NA	NA	NA	
SEISMIC TEST PARAMETERS							
Test Criteria	S <sub>DS</sub> (g)	z / h	I <sub>p</sub>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2019 / ICC-ES-AC156	2.00	1.00	1.50	3.20g	2.40g	-	-
	2.50	0.0	1.50	-	-	1.67g	0.67g

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.