



**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

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

OFFICE USE ONLY	
APPLICATION #:	OSP - 0304

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: ABB Inc.

Manufacturer's Technical Representative: Justin Dubrosky

Mailing Address: 41 Woodford Ave., Plainville, CT 06062-2372

Telephone: 860.747.7807 Email: justin.dubrosky@us.abb.com

Product Information

Product Name: ReliaGear neXT and EntellEon

Product Type: Panelboards

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

General Description: 250A-1200A ReliaGear neXT and EntellEon Panelboards
Modifications made to test units to address anomalies observed during testing shall be incorporated into production units.

Mounting Description: Wall mounted-rigid.

Applicant Information

Applicant Company Name: TRU Compliance, by Structural Integrity Associates, Inc.

Contact Person: Katie Braman

Mailing Address: 5215 Hellyer Ave., Suite 210, San Jose, CA 95138

Telephone: 844-878-0200 Email: kbraman@structint.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: *Katie Braman* Date: 12/19/2019

Title: Program Manager Company Name: TRU Compliance, by Structural Integrity Associates, Inc.

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





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

Company Name: TRU Compliance, by Structural Integrity Associates, Inc.

Name: Andrew M. Coughlin, SE California License Number: S6082

Mailing Address: 5215 Hellyer Ave., Suite 210, San Jose, CA 95138

Telephone: 844-878-0200 Email: acoughlin@structint.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): _____

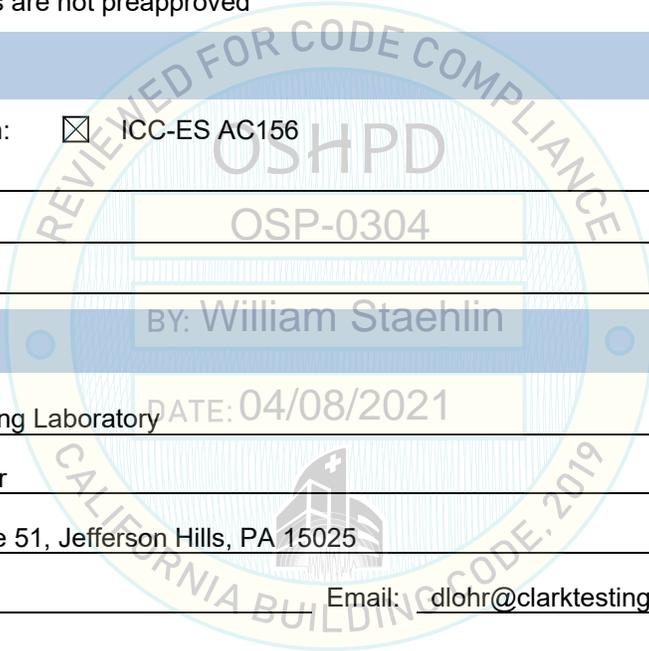
Testing Laboratory

Company Name: Clark Testing Laboratory

Contact Name: Devon Lohr

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

Telephone: 412.387.1026 Email: dlohr@clarktesting.com



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Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: [X] Yes [] No

Design Basis of Equipment or Components (Fp/Wp) = 1.13 (SDS =2.50, z/h=0), 1.5 (SDS=2.00, z/h=1)

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

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

Rp (Equipment or component response modification factor) = 6.0

Omega_0 (System overstrength factor) = 2.0

Ip (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0 (SDS =2.00), 0 (SDS=2.50)

Equipment or Component Natural Frequencies (Hz) = See Attachment

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

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: [] Yes [X] No

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

SDS (Design spectral response acceleration at short period, g) =

SD1 (Design spectral response acceleration at 1 second period, g) =

R (Response modification coefficient) =

Omega_0 (System overstrength factor) =

Cd (Deflection amplification factor) =

Ip (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 [X] No

List of Attachments Supporting Special Seismic Certification

[X] Test Report(s) [] Drawings [] Calculations [X] Manufacturer's Catalog

[X] Other(s) (Please Specify): Product Matrices

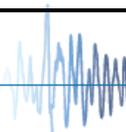
OSHPD Approval (For Office Use Only) - Approval Expires on December 31, 2025

Signature: [Handwritten Signature] Date: April 8, 2021

Print Name: William Staehlin Title: Senior Structural Engineer

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

Condition of Approval (if applicable):



SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

1900462-CR-001 R0



Manufacturer: ABB	TABLE 1
Model Line: ReliaGear neXT & EntellEon	

Certified Product Construction Summary:
Enclosures: NEMA1 - Cold formed carbon steel, NEMA 3 - Cold formed carbon steel, NEMA 4X - Stainless Steel

Certified Options Summary:

Mounting Configuration:
Wall mounted - rigid
Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2019 **Seismic Certification Limits:** $S_{DS} = 2.0g$ $z/h = 1.0$ $I_p = 1.5$
 $S_{DS} = 2.5g$ $z/h = 0.0$

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT	
		Depth	Width	Height				
ReliaGear neXT & EntellEon (250 -1200 amps)	ENC6030A & ENT1602NN3H2	15	30	60	250	Indoor ^{1,3} - NEMA 1	1	
	ENC* & ENT* & IN* & ER*	...	...	...	...		Interp
	ENC9645A & ENT4012BL3H2	10.5	45	96	896		2	
	ENC ^{*4} & ENT ^{*4} & IN ^{*4} & ER ^{*4}	...	...	...	...		Interp
	ER9645A ⁴ & IN4012BL4H1 ⁴	16	45	96	970		6	
	ENC7230X & ENT1604BL3H2	13	32	72	436		Outdoor ^{2,3} - NEMA 4X	3
	ENC* & ENT* & IN* & ER*		NEMA 4X and NEMA 3R	Interp
	ENC9645R & ENT3212BL3H2	12.5	47	96	988		Outdoor ^{2,3} - NEMA 3R	4
	ENC* & ENT* & IN* & ER*		NEMA 4X and NEMA 3R	Interp
	ER9645S & IN4012BL4B3	16	47	96	1182		Outdoor ^{2,3} - NEMA 4X	5

Notes:
¹Indoor enclosures are constructed from cold-formed carbon steel and are available in NEMA 1 and 2.
²Outdoor Enclosures are constructed from cold-formed carbon steel (Type NEMA 3R, 4, 12) or Stainless steel (Type NEMA 4X)
³Indoor enclosures are wall mounted directly to structural framing with 4 or 6 bolts. Outdoor enclosures are wall-mounted with 4 bolts through steel mounting tabs.
⁴Tap tight screws used to mount door replaced with spot welds.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1900462-CR-001 R0



Manufacturer: ABB	Table Description: Enclosures and Internal Frame	TABLE 2
Model Line: ReliaGear neXT & EntellEon		

Building Code: CBC 2019 **Seismic Certification Limits:** $S_{DS} = 2.0 g$ $z/h = 1.0$ $I_p = 1.5$
 $S_{DS} = 2.5 g$ $z/h = 0.0$

Model Line (Manufacturer ¹)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT
		Depth	Width	Height				
Enclosure NEMA ² 1/2/3R/4R4x/12	ENC*, ER*	...	...	...	...	Carbon Steel or Stainless Steel		Extrap.
Enclosure NEMA 1 Indoor (ABB/GE)	ENC6030A	15	30	60	126	Carbon Steel		1
	ENC*, ER*	...	...	...	...			Interp
	ENC9645A	10.5	45	96	243			2
	ENC*, ER*	...	...	...	...			Interp
Enclosure NEMA 3R and 4X Outdoor (ABB/GE)	EN9645A	16	45	96	245	Carbon Steel or Stainless Steel		6
	ENC7230X	13	32	72	291			UUT: Stainless Steel
	ENC*, ER*	...	...	...	...			Interp
	ENC9645R	12.5	47	96	458			UUT: Carbon Steel
	ENC*, ER*	...	...	...	...			Interp
Internal Frame ² (ABB/GE)	ER9645S	16	47	96	502	Carbon Steel		UUT: Stainless Steel
	*IF, *FRM	-	...	...	...			Extrap.
	FRM1630C	-	16	30	14			1,3
	*IF, *FRM	-	...	...	...			Interp
	FRM3245C	-	32	45	40			4
	*IF, *FRM	-	...	...	...			Interp
	FRM4045F	-	40	45	48			2
	*IF, *FRM	-	...	...	...			Interp
IF4045F	-	40	45	48		5,6		

Notes:
¹ GE or ABB may be branded on product, products are identical
² Catalog numbers to be interpolated using both 2017 and 2019 testing as designs are comparable.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1900462-CR-001 R0



Manufacturer: ABB	Table Description: Circuit Breakers	TABLE 4
Model Line: EntellEon		

Building Code: CBC 2019	Seismic Certification Limits:	$S_{DS} = 2.0g$ $z/h = 1.0$	$I_p = 1.5$
		$S_{DS} = 2.5g$ $z/h = 0.0$	

Component Type	Manufacturer ¹	Model	Description	Notes	UUT
Circuit Breaker - Spectra	ABB/GE	EZSEDA36AT0030	Plastic molded case, 7 lbs.		1,2
		EZSEDA36AT0150	Plastic molded case, 7 lbs.		2,3
		EZSGHA36AT0400	Plastic molded case, 17 lbs.		4
		EZSGHA36AT0600	Plastic molded case, 17 lbs.		4
		EZSFHA36AT0250	Plastic molded case, 11 lbs.		4
		EZSKHA36AT0800	Plastic molded case, 50 lbs.		2
		EZS*	Plastic molded case, 50 lbs.		Interp
		EZSKHA36AT1200	Plastic molded case, 50 lbs.		2
		EUSGHA36AT0400	Plastic molded case, 60 lbs.		3
		EUS*	...		Interp
Circuit Breaker - Record Plus	ABB/GE	EZFBV16TE015R2A	Plastic molded case, 3 lbs.	1 Pole	1
		EZFB*, NEFB*	...	EZFB and NEFB are identical, NEFB is new prefix model number.	Interp Interp
		EZFBV26TE100R2BC	Plastic molded case, 5 lbs.	2 Pole	1
Circuit Breaker - XT Breakers	ABB/GE	XT1*	Plastic molded case, 4 lbs.		Extrap
		XT1HU3125AYD000XXX	Plastic molded case, 4 lbs.		6
		XT4*	...		Interp
		XT4VU3250BYJ000XXX	Plastic molded case, 7 lbs.		5,6
		XT5*	...		Interp

Notes:
¹ GE or ABB may be branded on product, products are identical

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1900462-CR-001 R0



Manufacturer: ABB	Table Description: Fronts, Vertical Kits, Gutter Doors	TABLE 5
Model Line: ReliaGear neXT & EntellEon		

Building Code: CBC 2019	Seismic Certification Limits:	$S_{DS} = 2.0g$ $z/h = 1.0$	$I_p = 1.5$
		$S_{DS} = 2.5g$ $z/h = 0.0$	

Component Type	Manufacturer ¹	Model	Description	Notes	UUT
Front	ABB/GE	FT*	...		Extrap
		FT45S00065	Carbon steel, 7 lbs.		5
		FT45VM0260	Carbon steel, 24 lbs.		5
		FT45VF0100	Carbon steel, 24 lbs.		5
		FNT*	...		Interp
		FNT306016HSE3ANCT	Carbon steel, 22 lbs.		1
		FNT307216VSG5ANCT	Carbon steel, 28 lbs.		3
		FNT459632VSK5ANCT	Carbon steel, 31 lbs.		4
		FNT459640ML45ANFT	Carbon steel, 35 lbs.		2
Door in Door	ABB/GE	DID*	...		Extrap
		DD*	...		Extrap
		DDSUP36	Carbon steel, 13lbs.		6
		DDFIL45XX33VF	Carbon steel, 17 lbs.		6
		DD4596AHFS	Carbon steel, 197 lbs.		6
Vertical Main Kit	ABB/GE	VMKSG30C	Carbon steel, 8 lbs.		3
		VMKS*	...		Interp
		VMKSK45C	Carbon steel, 8 lbs.		4
		VM*	...		Interp
		VMX545F	Copper and carbon steel, 18 lbs.		5
		VMX745F	Copper and carbon steel, 18 lbs.		6

Notes:
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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1900462-CR-001 R0



Manufacturer: ABB	Table Description: Fronts, Vertical Kits, Gutter Doors	TABLE 5
Model Line: ReliaGear neXT & EntellEon		

Building Code: CBC 2019	Seismic Certification Limits:	$S_{DS} = 2.0g$ $z/h = 1.0$	$I_p = 1.5$
		$S_{DS} = 2.5g$ $z/h = 0.0$	

Component Type	Manufacturer ¹	Model	Description	Notes	UUT
Gutter Doors	ABB/GE	GUT30C16BLA	Carbon steel, 4 lbs.		3
		GUT30C16NNA	Carbon steel, 5 lbs.		1
		GUT45C32BLS	Carbon steel, 8 lbs.		4
		GUT*	OSP-0304		Interp
		GUT45F40BLA	Carbon steel, 17 lbs.		2
		GC*			Interp
Spacers	ABB/GE	GC45F40BLA	Carbon steel, 17 lbs.		5
		SPC1BB	Carbon steel, 1 lb.		1
		SPC2BB	Carbon steel, 1 lb.		1
		SPC*	...		Interp
		SPC3BB	Carbon steel, 3 lbs.		1,3
		SR*	...		Interp
		SR1XBF	Carbon steel, 4 lbs.		6
SR02BF	Carbon steel, 4 lbs.		6		
Lugs	ABB/GE	LUGML45	Copper/aluminum, 6 lbs.		2
		LUGML47	Copper/aluminum, 6 lbs.		2
		LUG*, LG* ¹	...	LUG* and LG* are identical, LG* is new prefix model number.	Interp
		LUGCL45	Aluminum, 8 lbs.		2

Notes:
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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1900462-CR-001 R0



Manufacturer: ABB	Table Description: Fronts, Vertical Kits, Gutter Doors	TABLE 5
Model Line: ReliaGear neXT & EntellEon		

Building Code: CBC 2019 **Seismic Certification Limits:** $S_{DS} = 2.0g$ $z/h = 1.0$ $I_p = 1.5$
 $S_{DS} = 2.5g$ $z/h = 0.0$

Component Type	Manufacturer ¹	Model	Description	Notes	UUT
Lug Wire Post	ABB/GE	LWP30C	Carbon steel, 4 lbs.		1,3
		LWP45F	Carbon steel, 6 lbs.		2,
		LWP*, BP* ¹	...		Interp
		LWP45C	Carbon steel, 6 lbs.		4
Neutrals	ABB/GE	NEU12I0N	Copper/aluminum/carbon steel, 8 lbs.		2
		NEU04I0N	Copper/aluminum/carbon steel, 7 lbs.		3
		NEU*, NL* ¹	...		Interp
		NEU12I0GML45	Copper/aluminum/carbon steel, 22 lbs.		4
Ground Pans	ABB/GE	GRN02BG10	Aluminum & carbon steel, 4 lbs.		1
		GRN12BG47	Copper or aluminum & carbon steel, 7 lbs.		2,4
		GRN*, GD* ¹	GRN* and GD* are identical, GD* is new prefix model number.	Interp
		GRN04BG10	Aluminum & carbon steel, 4 lbs.		3

Notes:
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SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1900462-CR-001 R0



Manufacturer: ABB	TABLE 6
Model Line: ReliaGear neXT & EntellEon	

Building Code: CBC 2019	Seismic Certification Limits:	$S_{DS} = 2.0 g$ $z/h = 1.0$	$I_p = 1.5$
		$S_{DS} = 2.5 g$ $z/h = 0.0$	

Component Type	Manufacturer ¹	Model	Description	Notes	UUT
RELT	ABB/GE	MOD04A	Carbon steel & wiring, 25 lbs.		4
		MOD*, RT*1	...	MOD* and RT* are identical, RT* is new catalog prefix.	Interp
		MOD04C	Carbon steel & wiring, 25 lbs.		4
Surge Portective Devices (SPD)	ABB/GE	SPD120S06SE02	SPD & disconnect, 50 lbs.		4
		SPD*, SP*1	...	SPD* and SP* are identical, SP* is new catalog prefix.	Interp
		SPD347Y10SE02	SPD & disconnect, 50 lbs.		4
Main Metering	ABB/GE	AMUSPM04AP	Carbon steel, meter, wiring, 16 lbs.		4
		AMU*	...	AMU* and MT* are identical, MT* is new catalog prefix.	Interp
		AMUSPM04AM	Carbon steel, meter, wiring, 16 lbs.		4
Current Transformers	ABB/GE	AMUSPMA0302CT	Current xformer & carbon steel, 6 lbs.		4
		AMUSPMA0308CT	Current xformer & carbon steel, 6 lbs.		4
		AMU*	...	AMU* and MT* are identical, MT* is new catalog prefix.	Interp
		AMUSPMA0312CT	Current xformer & carbon steel, 6 lbs.		4

Notes:
¹ GE or ABB may be branded on product, products are identical

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

1900462-CR-001 R0



Manufacturer: ABB Model Line: ReliaGear neXT & EntellEon				TABLE 6	
Building Code: CBC 2019		Seismic Certification Limits:		$S_{DS} = 2.0 g \quad z/h = 1.0$ $S_{DS} = 2.5 g \quad z/h = 0.0$	
Component Type	Manufacturer ¹	Model	Description	Notes	UUT
Current Transformers Mounting Kits	ABB/GE	AMUSPM40FMSMMK	Carbon steel, 5 lbs.		4
		AMUSPM45CMSMMK	Carbon steel, 5 lbs.		4
		AMU*, MT* ¹	OSP-0304	AMU* and MT* are identical, MT* is new catalog prefix.	Interp
		AMUSPM45FMSMMK	Carbon steel, 5 lbs.		4
Kirklock	ABB/GE	AMUKRKSK	Carbon steel, 3 lbs.		2
		AMUKRK*, KL* ¹	...	AMUKRK* and KL* are identical, KL* is new catalog prefix.	Interp
		AMUKRKSG	Carbon steel, 3 lbs.		3
Notes: ¹ GE or ABB may be branded on product, products are identical					

UNIT UNDER TEST (UUT) SUMMARY SHEET

1900462-CR-001 R0



Manufacturer: ABB	UUT 1
Model Line: ReliaGear neXT & EntellEon	
Model Number: ENC6030A & ENT1602NN3H2	
Serial Number: N/A	

Product Construction Summary:
12-14 ga. Cold Formed Carbon Steel

Options/Subcomponent Summary:
Enclosure (PN: ENC6030A), Interior Frame Center (PN: FRM1630C), Bus Stack 16x (PN: ENT1602NN3H2), Gutter-standard (GUT30C16NNA), Front (PN: FNT306016HSE3ANCT), Breaker - Spectra E (PN: EZSEDA36AT0030), Breaker - Record Plus (PN: EZFBV16TE015R2A), Breaker - Record Plus (PN: EZFBV26TE100R2BC), Spacers (PN: SPC1BB), Spacers (PN: SPC2BB), Spacers (PN: SPC3BB), Ground (PN: GRN02BG10), Lug Wire Post (PN: LWP30C)

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
250	15	30	60	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information								
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 2019	ICC-ES AC156 (2018)	2.67	1.0	1.5	4.27	3.2	1.79	0.72

Test Mounting Details:



UUT wall mounted-rigid with four (4) 3/8"-16 Grade 5 bolts, washers, and lock washers (torqued to 30 ft.-lbs).
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1900462-CR-001 R0



Manufacturer: ABB	UUT 2
Model Line: ReliaGear neXT & EntellEon	
Model Number: ENC9645A & ENT4012BL3H2	
Serial Number: N/A	

Product Construction Summary:
12- 14 ga. Cold Formed Carbon Steel

Options/Subcomponent Summary:
Enclosure (PN: ENC9645A), Interior Frame Center (PN: FRM4045F), Bus stack 40x (PN: ENT4012BL3H2), Gutter -standard (PN: GUT45F40BLA), Front (PN: FNT459640ML45ANFT), Breaker - Spectra K (PN: EZSKHA36AT0800), Breaker - Spectra K (PN: EZSKHA36AT1200), Breaker - Spectra E (PN: EZSEDA36AT0030), Breaker - Spectra E (PN: EZSEDA36AT0150), Lug (PN: LUGML45), Lug (PN: LUGML47), Lug (PN: LUGCL45), Ground (PN: GRN12BG47), Neutral (PN: NEU1210N), Lug Wire Post (PN: LWP45F), Kirk Locks (PN: AMUKRKSK)

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
896	10.5	45	96	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information								
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 2019	ICC-ES AC156 (2018)	2.8	1.0	1.5	4.48	3.36	1.88	0.76

Test Mounting Details:



UUT wall mounted - rigid with six (6) 3/8" -16 Grade 5 bolts, washers, and lock washers (torqued to 30 ft.-lbs).
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1900462-CR-001 R0



Manufacturer: ABB	UUT 3
Model Line: ReliaGear neXT & EntellEon	
Model Number: ENC7230X & ENT1604BL3H2	
Serial Number: N/A	

Product Construction Summary:
12- 14 ga. Stainless Steel

Options/Subcomponent Summary:
Enclosure 72x32 (PN: ENC7230X), Interior Frame Center(PN: FRM1630C), Bus Stack 24x (PN: ENT1604BL3H2), Front - Center(PN: FNT307216VSG5ANCT), Main SG (PN: EUSGHA36AT0400), Kirk Locks (PN: AMUKRKSG), Vertical Main kit SG (PN: VMKSG30C), Breaker - Spectra E (PN: EZSEDA36AT0150), Spacers (PN: SPC3BB), Gutter-standard (PN: GUT30C16BLA), LWP 30W (PN: LWP30C), Neutral 250 no GF (PN: NEU0410N), Ground 10 device (PN: GRN04BG10)

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
436	13	32	72	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

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 2019	ICC-ES AC156 (2018)	2.75	1.0	1.5	4.40	3.30	1.84	0.74

Test Mounting Details:



UUT wall mounted-rigid with four (4) 1/2"-13 Grade 5 bolts and belleville washers (torqued to 75 ft.-lbs).
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET



1900462-CR-001 R0

Manufacturer: ABB	UUT 4
Model Line: ReliaGear neXT & EntellEon	
Model Number: ENC9645R & ENT3212BL3H2	
Serial Number: N/A	

Product Construction Summary:
12-14 ga. Cold Formed Carbon Steel

Options/Subcomponent Summary:
Enclosure 96”X47 (PN: ENC9645R), Interior Frame Center (PN: FRM3245C), Bus Stack 32x (PN: ENT3212BL3H2), Front – center (PN: FNT459632VSK5ANCT), Main SK (PN: EUSKHC3612L3XX), Vertical Main Kit SK (PN: VMKSK45C), Gutter-standard (PN: GUT45C32BLS), LWP 45W (PN: LWP45C), Neutral 1200gf (PN: NEU1210GML45), Ground 47 device (PN: GRN12BG47), RELT (PN: MOD04A), RELT (PN: MOD04C), Metering (PN: AMUSPM04AP), Metering (PN: AMUSPM04AM), SPD (PN: SPD120S06SE02), SPD (PN: SPD347Y10SE02), Circuit Breaker Spectra (PN: EZSFHA36AT0250), Circuit Breaker Spectra (PN: EZSGHA36AT0400), Circuit Breaker Spectra (PN: EZSGHA36AT0600), CT (PN: AMUSPMA0302CT), CT (PN: AMUSPMA0308CT), CT (PN: AMUSPMA0312CT), CT (PN: AMUSPM40FMSMMK), CT (PN: AMUSPM45CMSMMK), CT (PN: AMUSPM45FMSMMK)

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
988	12.5	47	96	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

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 2019	ICC-ES AC156 (2018)	2.75	1.0	1.5	4.40	3.30	1.84	0.74

Test Mounting Details:



UUT wall mounted-rigid with four (4) 1/2"-13 Grade 5 bolts and belleville washers (torqued to 75 ft.-lbs).
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1900462-CR-001 R0



Manufacturer: ABB	UUT 5
Model Line: ReliaGear neXT & EntellEon	
Model Number: ER9645S & IN4012BL4B3	
Serial Number: N/A	

Product Construction Summary:
12- 14 ga. Stainless Steel

Options/Subcomponent Summary:
Enclosure - Stainless Steel (PN: ER9645S), Interior Frame (PN:IF4045F), Bus Stack - 40X, 4 pole, CU bus (PN: IN4012BL4B3), Gutter Doors (PN: GC45F40BLA), Front (PN: FT45VF0100), Front (PN: FT45VM0260), Front (PN: FT45S00065), Horizontal Breaker - XT7(PN: XT7LU12EQYX000XXX), Horizontal Breaker - XT4 (PN: XT4VU3250BYJ000XXX), Vertical Breaker - XT5 (PN:XT5LU360BAFN000XXX), Vertical Main Mounting Kit (VMX545F)

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1,182	16	47	96	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information									
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 2019	ICC-ES AC156 (2018)	2.0 2.5	1.0 0.0	1.5	3.20	2.40	1.67	0.67	

Test Mounting Details:



UUT was wall mounted-rigid with four (4) 1/2"-13 grade 5 bolts, washers, and lock washers (torqued to 75ft.-lbs.) Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

1900462-CR-001 R0



Manufacturer: ABB	UUT 6
Model Line: ReliaGear neXT & EntellEon	
Model Number: ER9645A & IN4012BL4H1	
Serial Number: N/A	

Product Construction Summary:
NEMA 1 Panel - Cold Formed Carbon Steel

Options/Subcomponent Summary:
Enclosure (PN: ER9645A), Interior Frame (PN: IF4045F), Bus Stack - 40X, 4 pole, AL bus (PN: IN4012BL4H1), Door-in-Door Deadfront Kit (PN: DD4596AHFS), Door-in-Door Filler Kit (PN: DDFIL45XX33VF), Door-in-Door Filler Support Rail Kit (PN: DDSUP36), Horizontal Breaker - XT7 (PN: XT7LU12EQYX000XXX), Horizontal Breaker - XT5 (PN: XT5LU360BAYN000XXX), Horizontal Breaker - XT4 (PN: XT4VU3250BYJ000XXX), Horizontal Breaker - XT1 (PN: XT1HU3125AYD000XXX), Vertical Breaker - XT7 (PN: XT7LU12EQFX000XXX), Vertical Main Mounting Kit (VMX745F), XT1 Spacer Kit (PN: SR1XBF), Spacer (PN: SR02BF)

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
970	16	45	96	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information									
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 2019	ICC-ES AC156 (2018)	2.0 2.5	1.0 0.0	1.5	3.20	2.40	1.67	0.67	

Test Mounting Details:



UUT wall mounted-rigid with six (6) 3/8" -16 grade 5 bolts, washers, and lock washers (torqued to 30 ft.-lbs).
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.