



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0217

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Siemens Industry, Inc.

Manufacturer's Technical Representative: Mike Schuler

Mailing Address: 1000 Deerfield Parkway, Buffalo Grove, IL 60089-4547

Telephone: (847) 941-5764

Email: mike.schuler@siemens.com

Product Information

Product Name: Industrial Control Panels

Product Type: Building Automation and Security Systems

Product Model Number: See Attachments

General Description: APOGEE Building automation system controllers. See attachments for a list of certified internal components.

Mounting Description: Rigid, Wall Mounted

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: Dynamic Certification Laboratories

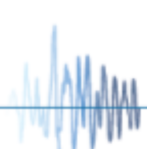
Contact Person: Kelly Laplace

Mailing Address: 1315 Greg Street, Suite 109, Sparks, NV 89431

Telephone: (775) 358-5085

Email: kelly@shaketest.com

Title: Business Manager





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

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

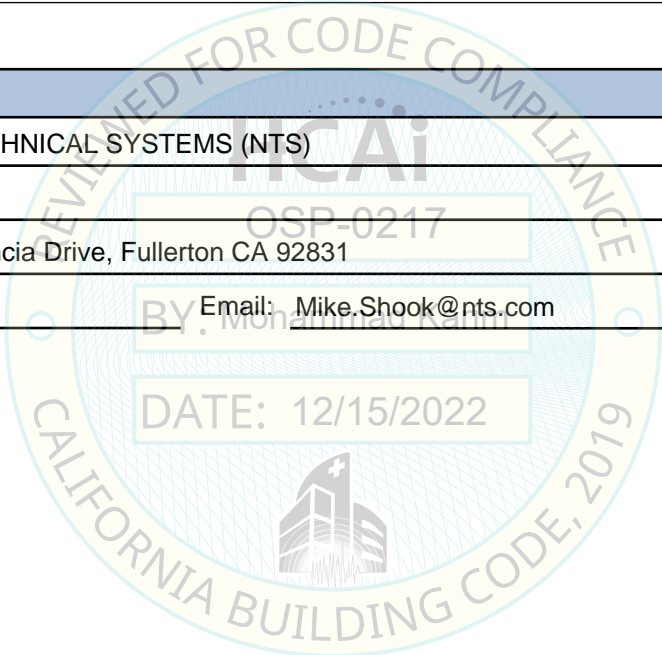
Company Name: THE VMC GROUP
Name: Kenneth Tarlow California License Number: S2851
Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814
Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

Certification Method

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

Testing Laboratory

Company Name: NATIONAL TECHNICAL SYSTEMS (NTS)
Contact Person: Mike Shook
Mailing Address: 1536 East Valencia Drive, Fullerton CA 92831
Telephone: (714) 879-6110 Email: Mike.Shook@nts.com





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

Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.87

SDS (Design spectral response acceleration at short period, g) = 2.5

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

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

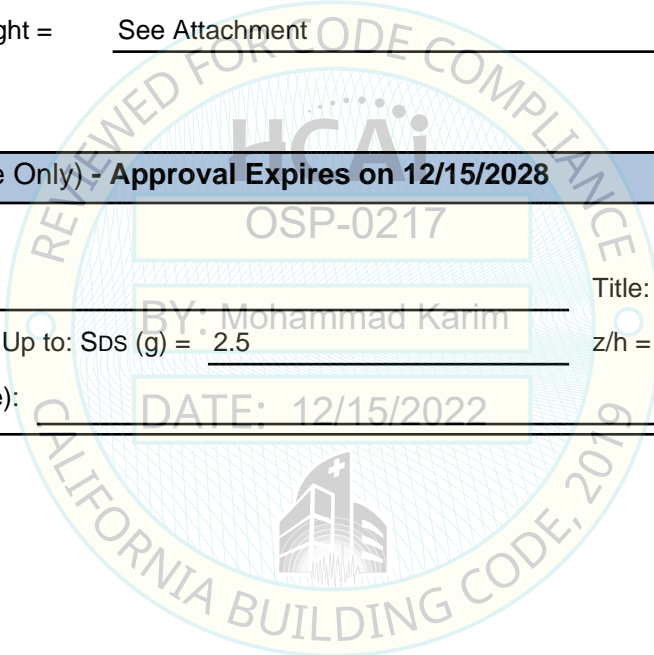
HCAI Approval (For Office Use Only) - Approval Expires on 12/15/2028

Date: 12/15/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = 2.5 z/h = 1

Condition of Approval (if applicable): DATE: 12/15/2022



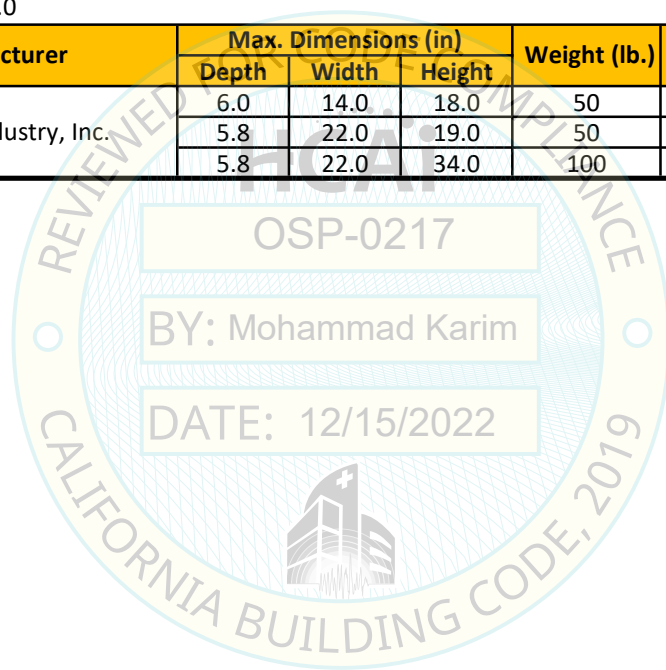
Special Seismic Certification

Table 1 - Certified Components



DCL Project Number: 29273-2201
 Manufacturer: Siemens Industry, Inc.
 Product Line: PX & SLX Controllers
 Mounting Configuration: Rigid wall mount
 Test Levels: $S_{DS} = 2.50g, z/h=1.0$

Model Number	Manufacturer	Max. Dimensions (in)			Weight (lb.)	Unit
		Depth	Width	Height		
PXA-ENC18	Siemens Industry, Inc.	6.0	14.0	18.0	50	Extrapolated
PXA-ENC19		5.8	22.0	19.0	50	UUT-03
PXA-ENC34		5.8	22.0	34.0	100	UUT-01, UUT-02



Special Seismic Certification

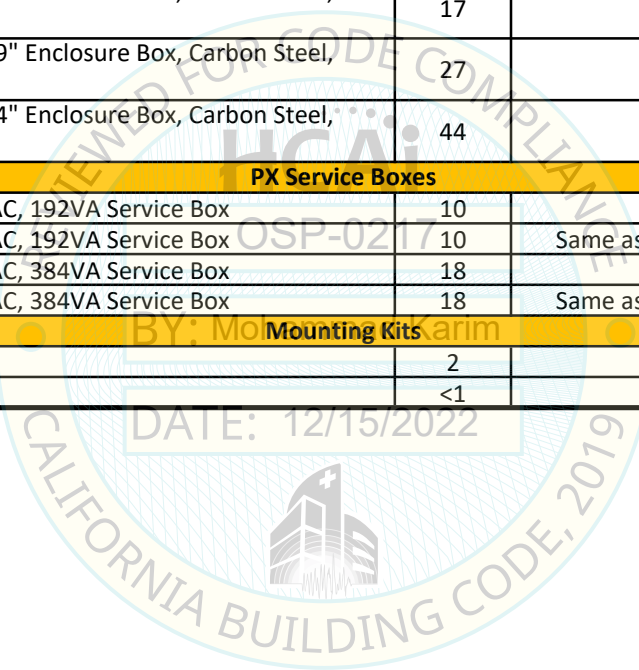
Table 2 - Certified Subcomponents - Enclosures, Service Boxes, and Kits



DCL Project Number: 29273-2201

Certified Seismic Level : $S_{DS} = 2.50g, z/h=1.0$

Model Number	Manufacturer	Description	Weight (lb.)	Justification	Unit
PXA Enclosures					
PXA-ENC18-A	Siemens Industry, Inc.	PX Series 18" Enclosure Box, Carbon Steel, NEMA 1	17		Extrapolated
PXA-ENC19-A		PX Series 19" Enclosure Box, Carbon Steel, NEMA 1	27		UUT-03
PXA-ENC34-A		PX Series 34" Enclosure Box, Carbon Steel, NEMA 1	44		UUT-01, UUT-02
PX Service Boxes					
PXA-SB115V192VA	Siemens Industry, Inc.	115V, 24VAC, 192VA Service Box	10		UUT-03
PXA-SB230V192VA		230V, 24VAC, 192VA Service Box	10	Same as 115V but wired in parallel	Interp.
PXA-SB115V384VA		115V, 24VAC, 384VA Service Box	18		UUT-01, UUT-02
PXA-SB230V384VA		230V, 24VAC, 384VA Service Box	18	Same as 115V but wired in parallel	Interp.
Mounting Kits					
PXA-DIN16KIT	Siemens Industry, Inc.	DIN Rail Kit	2		UUT-01, UUT-02, UUT-03
PXA-TIEBARKIT	Siemens Industry, Inc.	Tie Bar Kit	<1		UUT-01, UUT-02, UUT-03



Special Seismic Certification

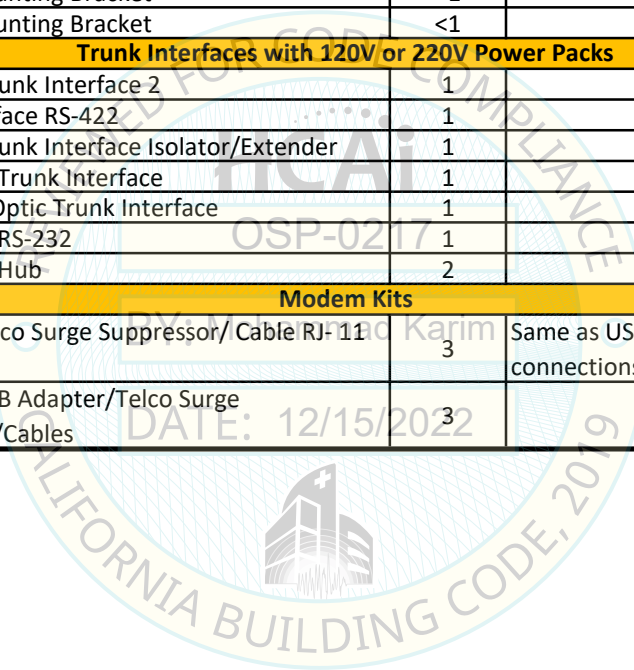
Table 3 - Certified Subcomponents - Brackets, Interfaces, and Kits



DCL Project Number: 29273-2201

Certified Seismic Level : $S_{DS} = 2.50g, z/h=1.0$

Model Number	Manufacturer	Description	Weight (lb.)	Justification	Unit
Wall Mounting Brackets					
4" Bracket	Siemens	4" Wall Mounting Bracket	<1		UUT-03
7" Bracket	Industry, Inc.	7" Wall Mounting Bracket	<1		UUT-03
Trunk Interfaces with 120V or 220V Power Packs					
HSTI2	Siemens Industry, Inc.	Hi-Speed Trunk Interface 2	1		Interp.
TI-RS422		Trunk Interface RS-422	1		Interp.
HSTIE		Hi-Speed Trunk Interface Isolator/Extender	1		UUT-01
FOTI		Fiber Optic Trunk Interface	1		Interp.
DFOTI		Dual Fiber Optic Trunk Interface	1		UUT-03
FO-RS232		Fiber Optic RS-232	1		Interp.
FOH		Fiber Optic Hub	2		UUT-03
Modem Kits					
Service Modem Kit	Siemens Industry, Inc.	Modem/Telco Surge Suppressor/ Cable RJ-11 6-pin	3	Same as USB Modem kit / different cable connections	Same as UUT-01
USB Modem Kit		Modem/USB Adapter/Telco Surge Suppressor/Cables	3		UUT-01



Special Seismic Certification

Table 4 - Certified Subcomponents - Modular Controllers and Accessories



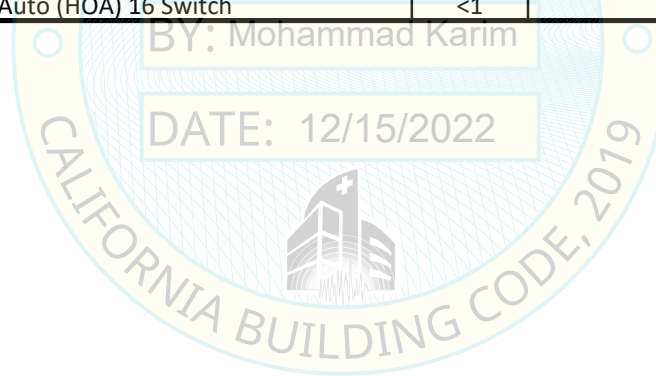
DCL Project Number: 29273-2201

Certified Seismic Level : $S_{DS} = 2.50g, z/h=1.0$

Model Number	Manufacturer	Description	Weight (lb.)	Justification	Unit
PXC Modular Controllers					
PXC7.E400.A	Siemens Industry, Inc.	PXC7.E400.A Modular, BACnet, APOGEE	1		Interp.
PXC100-E96.A		PXC MOD, BACNET, TX-I/O, 96 NODE, APOGEE	1	Same construction as PXC100-PE96.A	Interp.
PXC100-PE96.A		PXC MOD, P2, TX-I/O, 96 NODE, APOGEE	1		UUT-01
PXC00-E96.A		PXC MOD, BACNET, 96 NODE, APOGEE	1	Same construction as PXC100-PE96.A	Interp.
PXC00-PE96.A		PXC MOD, P2, 96 NODE, APOGEE	1	Same construction as PXC100-PE96.A	Interp.
PXX-485.3		Modular Expansion Device	<1		UUT-01
PX Accessories					
PXA-HMI	Siemens Industry, Inc.	Remote Kit and Cables	<1		UUT-03
PXM10 Tiny		Operator Display Panel	1		UUT-03
PXA8		Hand Off Auto (HOA) 8 Switch	<1	Same construction as PXA16	Interp.
PXA16		Hand Off Auto (HOA) 16 Switch	<1		UUT-03

BY: Mohammad Karim

DATE: 12/15/2022



Special Seismic Certification

Table 5 - Certified Subcomponents - Compact Controllers



DCL Project Number: 29273-2201

Certified Seismic Level : $S_{DS} = 2.50g, z/h=1.0$

Model Number	Manufacturer	Description	Weight (lb.)	Justification	Unit
PXC Compact Controllers					
PXC4.E16.A	Siemens Industry, Inc.	PXC4.E16.A Compact 16pt, BACnet, APOGEE	1	Same construction as PXC24.2-UCMR.A	Interp.
PXC5.E24.A		PXC5.E24.A Compact 24pt, BACnet, APOGEE	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC16.2-E.A		APOGEE 16PT, BACNET ETHERNET ALN	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC16.2-EF.A		APOGEE 16PT, BACNET ETHERNET ALN, RS485	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC16.2-EF32.A		APOGEE 16PT BACNET IP ALN RS485 ENABLED	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC16.2-M.A		APOGEE 16 PT, BACNET MS/TP	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC16.2-P.A		APOGEE 16PT, RS-485 ALN	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC16.2-PE.A		APOGEE 16PT, P2 ETHERNET	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC16.3-UCM.A		APOGEE 16 PT, UEC BAC MSTP RS485	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC16.3-UCMR.A		APOGEE 16 PT, UEC BAC MSTP RS485, ROOFTOP	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.2-E.A		APOGEE 24PT, BACNET ETHERNET	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.2-EF.A		APOGEE 24PT, BACNET ETHERNET, RS485	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.2-EF32.A		APOGEE 24PT BACNET IP ALN RS485 ENABLED	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.2-ER.A		APOGEE 24PT, BACNET ETHERNET, ROOFTOP	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.2-ERF.A		APOGEE 24PT, BACNET ETHERNET, RS485, ROOFTOP	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.2-M.A		APOGEE 24 PT, BACNET MS/TP	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.2-MR.A		APOGEE 24 PT, BACNET MSTP ROOFTOP	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.2-P.A		APOGEE 24PT, RS-485 ALN	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.2-PE.A		APOGEE 24PT, P2 ETHERNET	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.2-PEF.A		APOGEE 24PT, P2 ETHERNET, RS485	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.2-PEF32.A		APOGEE 24PT, P2 IP ALN, RS485 ENABLED	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.2-PER.A		APOGEE 24PT, P2 ETHERNET, ROOFTOP	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.2-PERF.A		APOGEE 24PT, P2 ETHERNET, RS485, ROOFTOP	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.2-PR.A		APOGEE 24 PT, RS-485 BLN, ROOFTOP, REV 2	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.2-UCMR.A		APOGEE 24 PT, UEC BAC IP/MSTP RS485, ROOFTOP	2		UUT-03
PXC24.3-UCM.A		APOGEE 24 PT, UEC BAC MSTP RS485	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC24.3-UCMR.A		APOGEE 24 PT, UEC BAC MSTP RS485	2	Same construction as PXC24.2-UCMR.A	Interp.
PXC36-E.A		PXC COMPACT 36-PT, BACNET, APOGEE	3	Same Construction as PXC36-EF.A	Interp.
PXC36-EF.A		APOGEE 36PT, BACNET IP/MSTP, TXIO, RS485	3		UUT-03
PXC36-PE.A		APOGEE 36PT, P2 RS485/IP ALN	3	Same Construction as PXC36-EF.A	Interp.
PXC36-PEF.A		APOGEE 36PT, P2 RS485/IP ALN, TXIO, RS485	3	Same Construction as PXC36-EF.A	Interp.

Special Seismic Certification

Table 6 - Certified Subcomponents - Modules



DCL Project Number: 29273-2201

Certified Seismic Level : $S_{DS} = 2.50g$, $z/h=1.0$

Model Number	Manufacturer	Description	Weight (lb.)	Justification	Unit
TX-I/O Product Range					
TXM1.6R	Siemens Industry, Inc.	6 Relay Output Module	<1		UUT-01
TXM1.6R-M		6 Relay Output Module with Manual Override	<1		UUT-01, UUT-03
TXM1.8D		8 Digital Input Module	<1		UUT-01
TXM1.16D		16 Digital Input Module	<1		UUT-01
TXM1.4D3R		4 Digital Input 3 Relay Output Module	<1		Interp.
TXM1.8T		8 Triac Output Module	<1		Interp.
TXM1.8U		8 univ I/O Module (DI, AI, AO)	<1		UUT-01
TXM1.8U-ML		8 univ I/O Module (DI, AI, AO) + LOID	<1		UUT-01
TXM1.8X		8 univ I/O Module (DI, AI, AO + current)	<1		UUT-01
TXM1.8X-ML		8 univ I/O Module (DI, AI, AO + current) + LOID	<1		UUT-01, UUT-03
TXB1.P1		TX-I/O Bus Interface Module	<1		UUT-01
TXB1.P1-4		TX-I/O Bus Interface Module	<1	Same construction as TXB1.P1	Interp.
TXS1.12F4		TX-I/O Power Supply 4A	<1		UUT-01, UUT-03
TXS1.12F10		TX-I/O Power Supply 10A	<1	Same construction as TXS1.12F4	Interp.
TXS1.EF4		TX-I/O Bus Connection Module 4A	<1		UUT-01, UUT-03
TXS1.EF10		TX-I/O Bus Connection Module 10A	<1	Same construction as TXS1.EF4	Interp.
TXA1.IBE		Bus Expansion Module	<1		UUT-01
TXA1.K*		TXIO Address Keys, One Per Module, * Relates to Sets of 12, 24, 48, 72, 120	<1		UUT-01, UUT-03
TXA1.LL		TXIO Labels, One Per Module, Package of 100 Sheets	<1		UUT-01, UUT-03
Point Pickup Module					
PPM-1U32.PPF	Siemens Industry, Inc.	PPM, 1UI, 3 DI, 2 DO, FIXED TB	<1		UUT-01
PPM-1U32.PPR		PPM, 1UI, 3 DI, 2 DO, REMOVABLE TB	<1	Same construction as PPM-1U32.PPF	Interp.
PPM-1U32.BPF		DIGITAL PPM, 1UI, 3 DI, 2 DO, FIXED TB	<1	Same construction as PPM-2U3322.BPR	Interp.
PPM-1U32.BPR		DIGITAL PPM, 1UI, 3 DI, 2 DO, REMOVABLE TB	<1	Same construction as PPM-2U3322.BPR	Interp.
PPM-2U22.BPF		ANALOG PPM, 2UI, 2AI, 2AO, FIXED TB	<1	Same construction as PPM-2U3322.BPR	Interp.
PPM-2U22.BPR		ANALOG PPM, 2UI, 2AI, 2AO, REMOVABLE TB	<1	Same construction as PPM-2U3322.BPR	Interp.
PPM-2U3322.BPF		COMBO PPM, 3DI, 3DO, 2UI, 2AI, 2AO, FIXED TB	<1	Same construction as PPM-2U3322.BPR	Interp.
PPM-2U3322.BPR		COMBO PPM, 3DI, 3DO, 2UI, 2AI, 2AO, REMOVABLE TB	<1		UUT-03

Special Seismic Certification

Table 7 - Certified Subcomponents - Tridium Parts



DCL Project Number: 29273-2201

Certified Seismic Level : $S_{DS} = 2.50g, z/h=1.0$

Model Number	Manufacturer	Description	Weight (lb.)	Justification	Unit
SLX Network Managers					
JACE 6	Tridium, Inc.	Base Controller up to 66 Point	1		UUT-02
JACE 8000		Base Controller up to Remote 256 Point	1		Interp.
JACE 7		Base Controller up to Remote 256 Point	1		UUT-02
I/O Modules					
IO-16	Tridium, Inc.	Input/Output Module 16 Points	<1		UUT-02
IO-34		Input/Output Module 34 Points	1		UUT-02
T-IO-34-485		RS-485 Remote I/O Module 34 Points	1		Interp.
T-IO-16-485		RS-485 Remote I/O Module 16 Points	<1		UUT-02
Communication Option Cards					
NPB-LON	Tridium, Inc.	Internal Single Port LON	<1		UUT-02
NPB-MDM		Internal Single Port Modem	<1	Same construction as NPB-2X-485	Interp.
NPB-232		Internal Single Port RS-232	<1	Same construction as NPB-2X-485	Interp.
NPB-2X-485		Internal Dual Port RS-485	<1		UUT-02
Power Supplies					
NPB-PWR	Tridium, Inc.	DIN-Mountable 24V Isolated pwr. Module	<1		UUT-02
NPB-PWR-UN		DIN-Mountable, Universal 90-263 VAC Input, 15VDC Output, 30W Power Supply	<1		UUT-02
WPM-US		US Wall Power Module	<1		Interp.

Note:

Power packs installed using 3M Dual Lock fasteners.

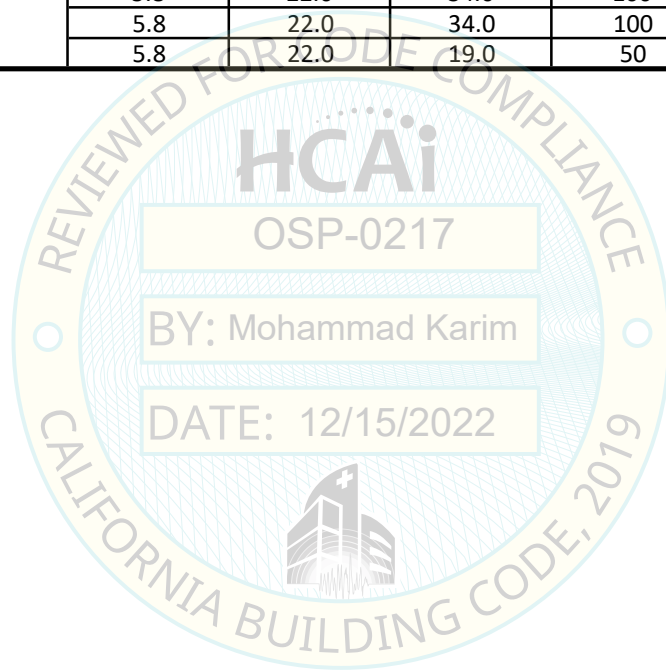
Special Seismic Certification

Table 8 - Tested Units



DCL Project Number: 29273-2201
 Manufacturer: Siemens Industry, Inc.
 Product Line: PX & SLX Controllers

Model Number	Manufacturer	Dimensions (in)			Weight (lb.)	Mounting Configuration	Sds (g) z/h=1	Unit
		Depth	Width	Height				
PXA-ENC34	Siemens Industry, Inc.	5.8	22.0	34.0	100	Rigid Wall Mount	2.5	UUT-01
PXA-ENC34		5.8	22.0	34.0	100	Rigid Wall Mount	2.5	UUT-02
PXA-ENC19		5.8	22.0	19.0	50	Rigid Wall Mount	2.5	UUT-03



UUT-01 UNIT UNDER TEST (UUT) Summary Sheet



DCL Project Number: 29273-2201

Test Report: No. 113-2340

Manufacturer: Siemens Industry, Inc.

Product Line: PX & SLX Controllers

Model Number: PXA-ENC34

Product Construction Summary:

Carbon steel enclosure. NEMA 1 rated

Subcomponent Summary:

Refer to tables 2-7 for a complete listing of internal subcomponents

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
100	5.8	22.0	34.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	1.67	0.67

Unit Mounting Description:

UUT-01 was rigid wall mounted with (4) 1/4" diameter bolts.



Overall view of UUT-01

UUT-02 UNIT UNDER TEST (UUT) Summary Sheet



DCL Project Number: 29273-2201

Test Report: No. 113-2340

Manufacturer: Siemens Industry, Inc.

Product Line: PX & SLX Controllers

Model Number: PXA-ENC34

Product Construction Summary:

Carbon steel enclosure. NEMA 1 rated

Subcomponent Summary:

Refer to tables 2-7 for a complete listing of internal subcomponents

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
100	5.8	22.0	34.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.67	0.67

Unit Mounting Description:

UUT-02 was rigid wall mounted with (4) 1/4" diameter bolts.



Overall view of UUT-02

UUT-03 UNIT UNDER TEST (UUT) Summary Sheet



DCL Project Number: 29273-2201

Test Report: No. 113-2340

Manufacturer: Siemens Industry, Inc.

Product Line: PX & SLX Controllers

Model Number: PXA-ENC19

Product Construction Summary:

Carbon steel enclosure. NEMA 1 rated

Subcomponent Summary:

Refer to tables 2-7 for a complete listing of internal subcomponents

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
50	5.8	22.0	19.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Afix-H (g)	Arig-H (g)	Afix-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	1.67	0.67

Unit Mounting Description:

UUT-03 was rigid wall mounted with (4) 1/4" diameter bolts.



Overall view of UUT-03