



# APPLICATION FOR PREAPPROVAL SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

**APPLICATION NO.**

**OSP – 0252-10**

Check whether application is: NEW  RENEWAL

<b>1.0</b>	Climatec Building Technologies Group <i>Manufacturer</i> 18002 Cowan	Brian Randleman, Design Specialist <i>Manufacturer's Technical Representative</i> Irvine, CA 92614
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*Mailing Address*

(949) 474-0955

*Telephone*

brianr@climatec.com

*E-mail Address*

<b>2.0</b>	Custom Control Panels <i>Product Name</i>	Electrical Equipment <i>Product Type</i>
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*See attached OSP Product Summary*

*Product model No (List all unique product identification numbers and/or serial numbers)*

*General Description: Rigid or flexible wall mounted NEMA 1, 4 and 12 control panels, ranging in size from 6 to 9 inches deep by 16 to 36 inches wide by 20 to 48 inches high, containing various power supplies, transformers, switches, controllers, routers, repeaters, relays, and additional components required for a complete temperature control panel system.*

<b>3.0</b>	DYNAMIC CERTIFICATION LABORATORIES, LLC <i>Applicant Company Name</i> 1315 GREG STREET, SUITE 109	JOSEPH LA BRIE, S.E. <i>Contact Person</i> SPARKS, NV 89431
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*Mailing Address*

(775) 358-5085

*Telephone*

LaBrie@makeitright.net

*E-mail Address*

I hereby agree to reimburse the Office of Statewide Health Planning and Development for the actual costs incurred by the department for review.

*Signature of Applicant*

01/31/12

*Date*

Managing Partner  
*Title*

Dynamic Certification Laboratories, LLC  
*Company Name*



**Registered Design Professional Preparing the Report**

**4.0** DYNAMIC CERTIFICATION LABORATORIES, LLC  
*Company Name*

JOSEPH LA BRIE, S.E. SE-3566  
*Contact Name* *California License Number*

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

(626) 445-0366 LaBrie@MakeltRight.net  
*Telephone* *E-mail Address*

**California Licensed Structural Engineer Review and Acceptance of the Report**

**5.0** DYNAMIC CERTIFICATION LABORATORIES, LLC  
*Company Name*

DR. AHMAD ITANI, SE SE-5220  
*Contact Name* *California License Number*

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

(775) 358-5085 Itani@shaketest.com  
*Telephone* *E-mail Address*

**Anchorage Pre-Approval**

- 6.0**
- Anchorage is pre-approved under OPA-  
 (Separate application for anchorage pre-approval is required)
- Anchorage is not Pre-approved

**Certification Method**

- 7.0**  Testing in accordance with:  ICC-ES AC-156  Other (Please Specify):
- 
- Analysis
- Experience data
- Combination of Testing, Analysis, and/or Experience Data (Please Specify):

**Testing Laboratory (if applicable)**

**8.0** DYNAMIC CERTIFICATION LABORATORIES, LLC KELLY LAPLACE, PROJECT ENGINEER  
*Company Name* *Contact Name*

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

(775) 358-5085 Kelly@shaketest.com  
*Telephone* *E-mail:*



**Approval Parameters**

9.0

Design in accordance with ASCE 7-05 Chapter 13:  Yes  No

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.45 (Rigid) or 4.35 (Spring Isolated)

$S_{DS}$  (Spectral response acceleration at short period) = 1.93g

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

$R_p$  (Equipment or component response modification factor) = 6.0 (Rigid) or 2.5 (Spring Isolated)

$I_p$  (Importance factor) = 1.5

$z/h$  (Height factor ratio) = 1.0

Equipment or Component fundamental period(s) = SEE ATTACHMENT

Building period limits (if any) = NONE

Overall dimensions and weight (or range thereof) = SEE ATTACHMENT

Equipment or Components @ grade designed in accordance with ASCE 7-05 Chapter 15:  Yes  No

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

$S_{DS}$  (Spectral response acceleration at short period) =

$S_1$  (Spectral response acceleration at 1 second period) =

$R$  (Response modification coefficient) = 1.0

$\Omega_0$  (System overstrength factor) = 1.0

$C_d$  (Deflection amplification factor) = 1.0

$I_p$  (Importance factor) = 1.5

Height to Center of Gravity above base =

Equipment or Component fundamental period(s) = Sec

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2007:  Yes  No

**10.0 List of attachments supporting the special seismic certification of equipment or components:**

- Test Report
- Drawings
- Manufacturer's Catalog
- Calculations
- Others (Please Specify):

**11.0 OSHPD Approval (For Office Use Only)**

*M. R. Karim*

2/10/2012

December 31, 2016

Signature & Date

Approval Expiration Date

**M. R. Karim, SHFR**

$S_{DS}$  (g) = **1.93**       $z/h$  = **1.0**

Name & Title

Special Seismic Certification Valid Up to

Condition of Approval (if any):

# Special Seismic Certification Tested Units



**Manufacturer:** Climatec Building Technologies Group

**Product Line:** Custom Control Panels

**Tested Product Construction:**

Cabinets are powder-coated carbon steel, NEMA 1 or NEMA 4 rating.

**Tested Options:**

120V, power supplies, transformers, switches, controllers, routers, repeaters, relays, and additional components required for a complete temperature control panel system.

**Tested Mounting Description:**

Equipment was tested on both a rigid and flexible test wall.

Product Line	Enclosure Model Number	Dimensions (inches)			Weight	NEMA Rating	Mount	Sds Level	Unit
		Depth	Width	Height					
Custom Control Panels	A20N16ALP	7	16	20	37	1	Flexible Wall-Mount	1.93	1a
							Rigid Wall-Mount		1b
	A48N3609	9	36	48	180	1	Flexible Wall-Mount		2a
							Rigid Wall-Mount		2b
	A24H20ALP	6	20	24	51	4	Flexible Wall-Mount		3a
							Rigid Wall-Mount		3b
	A48H36BLP	8	36	48	180	4	Flexible Wall-Mount		4a
							Rigid Wall-Mount		4b

# UUT1a Unit Under Test Summary Sheet



**Manufacturer:** Climatec Building Technologies Group

**Product Line:** Custom Control Cabinet

**Model Number:** n/a (Enclosure Model Number A20N16ALP)

**Product Construction Summary:**

Cabinet is constructed of powder-coated carbon steel, NEMA 1 rating.

**Options / Component Summary:**

120V power, uninterruptible power supply.

**UUT Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
37	7	16	20	n/a	n/a	n/a

**Seismic Test Parameters**

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2010	2010 ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

**Note:** The UUT was operational before and after shaking. The structural integrity of the component attachment system and force-resisting systems was maintained.

**Unit Mounting Description:**



UUT1a mounted to shake table and ready for test.



Interior view of UUT1a.

UUT1a was mounted to the flexible DCL-provided steel stud wall shake table interface frame using four 3/8-inch diameter Grade 5 bolts, strut and strut nuts, utilizing the existing holes in the back of the back-box. The shake table interface frame was mounted to the shake table using Mason spring isolators. The spring isolators were attached to the shake table using M12 threaded rod.

# UUT1b Unit Under Test Summary Sheet



**Manufacturer:** Climatec Building Technologies Group

**Product Line:** Custom Control Cabinet

**Model Number:** n/a (Enclosure Model Number A20N16ALP)

**Product Construction Summary:**

Cabinet is constructed of powder-coated carbon steel, NEMA 1 rating.

**Options / Component Summary:**

120V power, uninterruptible power supply.

**UUT Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
37	7	16	20	n/a	n/a	n/a

**Seismic Test Parameters**

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2010	2010 ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

**Note:** The UUT was operational before and after shaking. The structural integrity of the component attachment system and force-resisting systems was maintained.

**Unit Mounting Description:**



UUT1b mounted to shake table and ready for test.



Interior view of UUT1b.

UUT1b was mounted to the rigid DCL-provided steel stud wall shake table interface frame using four 3/8-inch diameter Grade 5 bolts, strut and strut nuts, utilizing the existing holes in the back of the back-box. The shake table interface frame was mounted to the shake table using M12 threaded rod, spaced approximately 8-inches on-center.

# UUT2a Unit Under Test Summary Sheet

**Manufacturer:** Climatec Building Technologies Group

**Product Line:** Custom Control Cabinet

**Model Number:** n/a (Enclosure Model Number A48N3609)

**Product Construction Summary:**

Cabinet is constructed of powder-coated carbon steel, NEMA 1 rating.

**Options / Component Summary:**

120V power, power supply, control transformer, relays, switches, lights, Tridium JACE-600 controller, Honeywell Excel 800 controller, remote IO-16 module, LPR router module and terminators.

**UUT Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
180	9	36	48	n/a	n/a	n/a

**Seismic Test Parameters**

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2010	2010 ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

**Note:** The UUT was operational before and after shaking. The structural integrity of the component attachment system and force-resisting systems was maintained.

**Unit Mounting Description:**



UUT2a mounted to shake table and ready for test.

UUT2a was mounted to the flexible DCL-provided steel stud wall shake table interface frame using four 3/8-inch diameter Grade 5 bolts, strut and strut nuts, utilizing the existing holes in the back of the back-box. The shake table interface frame was mounted to the shake table using Mason spring isolators. The spring isolators were attached to the shake table using M12 threaded rod.

# UUT2b Unit Under Test Summary Sheet



**Manufacturer:** Climatec Building Technologies Group

**Product Line:** Custom Control Cabinet

**Model Number:** n/a (Enclosure Model Number A48N3609)

**Product Construction Summary:**

Cabinet is constructed of powder-coated carbon steel, NEMA 1 rating.

**Options / Component Summary:**

120V power, power supply, control transformer, relays, switches, lights, Tridium JACE-600 controller, Honeywell Excel 800 controller, remote IO-16 module, LPR router module and terminators.

**UUT Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
180	9	36	48	n/a	n/a	n/a

**Seismic Test Parameters**

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2010	2010 ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

**Note:** The UUT was operational before and after shaking. The structural integrity of the component attachment system and force-resisting systems was maintained.

**Unit Mounting Description:**



UUT2b mounted to shake table and ready for test.

UUT2b was mounted to the rigid DCL-provided steel stud wall shake table interface frame using four 3/8-inch diameter Grade 5 bolts, strut and strut nuts, utilizing the existing holes in the back of the back-box. The shake table interface frame was mounted to the shake table using M12 threaded rod, spaced approximately 8-inches on-center.

# UUT3a Unit Under Test Summary Sheet



**Manufacturer:** Climatec Building Technologies Group

**Product Line:** Custom Control Cabinet

**Model Number:** n/a (Enclosure Model Number A24H20ALP)

**Product Construction Summary:**

Cabinet is constructed of powder-coated carbon steel, NEMA 4 rating.

**Options / Component Summary:**

120V power, power supply, relays, lights, Honeywell Spyder BACnet unitary controller.

**UUT Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
51	6	20	24	n/a	n/a	n/a

**Seismic Test Parameters**

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2010	2010 ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

**Note:** The UUT was operational before and after shaking. The structural integrity of the component attachment system and force-resisting systems was maintained.

**Unit Mounting Description:**



UUT3a mounted to shake table and ready for test.

UUT3a was mounted to the flexible DCL-provided steel stud wall shake table interface frame using four 3/8-inch diameter Grade 5 bolts, strut and strut nuts, utilizing the manufacturer-provided mounting tabs on the back of the back-box. The shake table interface frame was mounted to the shake table using Mason spring isolators. The spring isolators were attached to the shake table using M12 threaded rod.

# UUT3b Unit Under Test Summary Sheet



**Manufacturer:** Climatec Building Technologies Group

**Product Line:** Custom Control Cabinet

**Model Number:** n/a (Enclosure Model Number A24H20ALP)

**Product Construction Summary:**

Cabinet is constructed of powder-coated carbon steel, NEMA 4 rating.

**Options / Component Summary:**

120V power, power supply, relays, lights, Honeywell Spyder BACnet unitary controller.

**UUT Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
51	6	20	24	n/a	n/a	n/a

**Seismic Test Parameters**

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2010	2010 ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

**Note:** The UUT was operational before and after shaking. The structural integrity of the component attachment system and force-resisting systems was maintained.

**Unit Mounting Description:**



UUT3b mounted to shake table and ready for test.

UUT3b was mounted to the rigid DCL-provided steel stud wall shake table interface frame using four 3/8-inch diameter Grade 5 bolts, strut and strut nuts, utilizing the manufacturer-provided mounting tabs on the back of the back-box. The shake table interface frame was mounted to the shake table using M12 threaded rod, spaced approximately 8-inches on-center.

# UUT4a Unit Under Test Summary Sheet



**Manufacturer:** Climatec Building Technologies Group

**Product Line:** Custom Control Cabinet

**Model Number:** n/a (Enclosure Model Number A48H36BLP)

**Product Construction Summary:**

Cabinet is constructed of powder-coated carbon steel, NEMA 4 rating.

**Options / Component Summary:**

120V power, power supply, relays, switches, lights, Honeywell Spyder Lon Unitary Controller, Lon adapter, Web 700 controller.

**UUT Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
180	8	36	48	n/a	n/a	n/a

**Seismic Test Parameters**

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2010	2010 ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

**Note:** The UUT was operational before and after shaking. The structural integrity of the component attachment system and force-resisting systems was maintained.

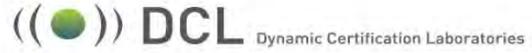
**Unit Mounting Description:**



UUT4a mounted to shake table and ready for test.

UUT4a was mounted to the flexible DCL-provided steel stud wall shake table interface frame using four 3/8-inch diameter Grade 5 bolts, strut and strut nuts, utilizing the manufacturer-provided mounting tabs on the back of the back-box. The shake table interface frame was mounted to the shake table using Mason spring isolators. The spring isolators were attached to the shake table using M12 threaded rod.

# UUT4b Unit Under Test Summary Sheet



**Manufacturer:** Climatec Building Technologies Group

**Product Line:** Custom Control Cabinet

**Model Number:** n/a (Enclosure Model Number A48H36BLP)

**Product Construction Summary:**

Cabinet is constructed of powder-coated carbon steel, NEMA 4 rating.

**Options / Component Summary:**

120V power, power supply, relays, switches, lights, Honeywell Spyder Lon Unitary Controller, Lon adapter, Web 700 controller.

**UUT Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
180	8	36	48	n/a	n/a	n/a

**Seismic Test Parameters**

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2010	2010 ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

**Note:** The UUT was operational before and after shaking. The structural integrity of the component attachment system and force-resisting systems was maintained.

**Unit Mounting Description:**



UUT4b mounted to shake table and ready for test.

UUT4b was mounted to the rigid DCL-provided steel stud wall shake table interface frame using four 3/8-inch diameter Grade 5 bolts, strut and strut nuts, utilizing the manufacturer-provided mounting tabs on the back of the back-box. The shake table interface frame was mounted to the shake table using M12 threaded rod, spaced approximately 8-inches on-center.

**COMPONENT IDENTIFICATION MATRIX:**

**Transformers and Power Supplies**

COMPONENT				TEST IN
MODEL NUMBER	MANUFACTURER	DESCRIPTION	PRODUCT LINE	UUT #
PSH100AB10	Functional Devices	POWER SUPPLY 100 VA	PSH	UUT3a, 3b
PSH100A100AB10	Functional Devices	POWER SUPPLY-DUAL 100 VA	PSH	UUT4a, 4b
DCP-1.5W	Kele	POWER SUPPLY - 24VAC/24VDC	DCP	UUT4a, 4b
PS247.5	Veris	POWER SUPPLY - 120VAC/24VDC	PS	UUT4a, 4b
PS2415	Veris	POWER SUPPLY - 120VAC/24VDC	PS	Interpolated
PS2430	Veris	POWER SUPPLY - 120VAC/24VDC	PS	Interpolated
PS2450	Veris	POWER SUPPLY - 120VAC/24VDC	PS	Interpolated
PS24100	Veris	POWER SUPPLY - 120VAC/24VDC	PS	UUT2a, 2b
SDU 500	Solahd	UPS	SDU	UUT1a, 1b
SDU-PMBRK	Solahd	UPS MOUNTING BRACKETS	SDU	UUT1a, 1b
X100CBB	Veris	CONTROL TRANSFORMER-100VA	X-SERIES	UUT2a, 2b
X050CBB	Veris	CONTROL TRANSFORMER-50VA	X-SERIES	UUT2a, 2b

**Relays**

COMPONENT				TEST IN
MODEL NUMBER	MANUFACTURER	DESCRIPTION	PRODUCT LINE	UUT #
781XAXM4L-24A	Magnacraft	FULL FEATURED 1PDT 24VAC RELAY	781	UUT3a, 3b
781XAXM4L-12A	Magnacraft	FULL FEATURED 1PDT 12VAC RELAY	781	Interpolated
781XAXM4L-120A	Magnacraft	FULL FEATURED 1PDT 120VAC RELAY	781	Interpolated
781XAXM4L-220/230A	Magnacraft	FULL FEATURED 1PDT 220/230VAC RELAY	781	Interpolated
781XAXM4L-240A	Magnacraft	FULL FEATURED 1PDT 240VAC RELAY	781	Interpolated
781XAXM4L-12D	Magnacraft	FULL FEATURED 1PDT 12VDC RELAY	781	Interpolated
781XAXM4L-24D	Magnacraft	FULL FEATURED 1PDT 24VDC RELAY	781	Interpolated
70-781D5-1A	Magnacraft	PANEL RELAY BASE	781	UUT3a, 3b
16-781SC	Magnacraft	RELAY CLIP - 1PDT	781	UUT3a, 3b
782XBX4M4L-24A	Magnacraft	FULL FEATURED 2PDT 24VAC RELAY	782	UUT2a, 2b
782XBX4M4L-12A	Magnacraft	FULL FEATURED 2PDT 12VAC RELAY	782	Interpolated
782XBX4M4L-120A	Magnacraft	FULL FEATURED 2PDT 120VAC RELAY	782	Interpolated
782XBX4M4L-220/230A	Magnacraft	FULL FEATURED 2PDT 220/230VAC RELAY	782	Interpolated
782XBX4M4L-240A	Magnacraft	FULL FEATURED 2PDT 240VAC RELAY	782	Interpolated
782XBX4M4L-12D	Magnacraft	FULL FEATURED 2PDT 12VDC RELAY	782	Interpolated
782XBX4M4L-24D	Magnacraft	FULL FEATURED 2PDT 24VDC RELAY	782	Interpolated
70-782D8-1A	Magnacraft	RELAY SOCKET	782	UUT2a, 2b
16-782SC	Magnacraft	RELAY CLIP - 2PDT	782	UUT2a, 2b
783XCXM4L-24A	Magnacraft	FULL FEATURED 3PDT 24VAC RELAY	783	UUT4a, 4b
783XCXM4L-12A	Magnacraft	FULL FEATURED 3PDT 12VAC RELAY	783	Interpolated
783XCXM4L-120A	Magnacraft	FULL FEATURED 3PDT 120VAC RELAY	783	Interpolated
783XCXM4L-220/230A	Magnacraft	FULL FEATURED 3PDT 220/230VAC RELAY	783	Interpolated
783XCXM4L-240A	Magnacraft	FULL FEATURED 3PDT 240VAC RELAY	783	Interpolated
783XCXM4L-12D	Magnacraft	FULL FEATURED 3PDT 12VDC RELAY	783	Interpolated
783XCXM4L-24D	Magnacraft	FULL FEATURED 3PDT 24VDC RELAY	783	Interpolated
70-783D11-1A	Magnacraft	RELAY SOCKET	783	UUT4a, 4b
16-783SC	Magnacraft	RELAY CLIP - 3PDT	783	UUT4a, 4b
784XDXM4L-24A	Magnacraft	FULL FEATURED 4PDT 24VAC RELAY	784	UUT4a, 4b
784XDXM4L-12A	Magnacraft	FULL FEATURED 4PDT 12VAC RELAY	784	Interpolated
784XDXM4L-120A	Magnacraft	FULL FEATURED 4PDT 120VAC RELAY	784	Interpolated
784XDXM4L-220/230A	Magnacraft	FULL FEATURED 4PDT 220/230VAC RELAY	784	Interpolated
784XDXM4L-240A	Magnacraft	FULL FEATURED 4PDT 240VAC RELAY	784	Interpolated
784XDXM4L-12D	Magnacraft	FULL FEATURED 4PDT 12VDC RELAY	784	Interpolated
784XDXM4L-24D	Magnacraft	FULL FEATURED 4PDT 24VDC RELAY	784	Interpolated
70-784D14-1	Magnacraft	RELAY SOCKET	784	UUT4a, 4b
16-784SC	Magnacraft	RELAY CLIP - 4PDT	784	UUT4a, 4b

**COMPONENT IDENTIFICATION MATRIX:**

**Switches and Lights**

MODEL NUMBER	COMPONENT		PRODUCT LINE	TEST IN
	MANUFACTURER	DESCRIPTION		UUT #
APW299D-R-24	IDEC	PANEL LIGHT - RED	APW	UUT2a, 2b
APW299D-G-24	IDEC	PANEL LIGHT - GREEN	APW	UUT3a, 3b, 4a, 4b
APW299D-A-24	IDEC	PANEL LIGHT - AMBER	APW	Interpolated
APW299D-R-120	IDEC	PANEL LIGHT - RED	APW	Interpolated
APW299D-G-120	IDEC	PANEL LIGHT - GREEN	APW	Interpolated
APW299D-A-120	IDEC	PANEL LIGHT - AMBER	APW	Interpolated
APW299-R-24	IDEC	PANEL LIGHT - RED	APW	Interpolated
APW299-G-24	IDEC	PANEL LIGHT - GREEN	APW	Interpolated
APW299-A-24	IDEC	PANEL LIGHT - AMBER	APW	Interpolated
ASW2K10	IDEC	2 POSITION SWITCH W/ KEY	ASW	UUT4a, 4b
ASW210	IDEC	2 POSITION SWITCH	ASW	Interpolated
ASW3K20	IDEC	3 POSITION SWITCH W/KEY	ASW	UUT2a, 2b
ASW320	IDEC	3 POSITION SWITCH	ASW	Interpolated
LPI-1C	Kele	PANEL MOUNT LCD	LPI	UUT2a, 2b
EIR418-2SFP-T	B&B Electronics	ETHERNET SWITCH - 18 PORT/(2) FIBER OPT	EIR	UUT2a, 2b
SFP-100FX-M-2KM-T	B&B Electronics	ETHERNET SFP MODULE - MULTI-MODE/LC	EIR	UUT2a, 2b
EIR208	B&B Electronics	ETHERNET SWITCH - 8 PORT	EIR	UUT4a, 4b
EIR208-MT	B&B Electronics	ETHERNET SWITCH - 8 PORT	EIR	Interpolated
EIR208-MC	B&B Electronics	ETHERNET SWITCH - 8 PORT	EIR	Interpolated
EIR208-SC	B&B Electronics	ETHERNET SWITCH - 8 PORT	EIR	Interpolated
EIR208-ST	B&B Electronics	ETHERNET SWITCH - 8 PORT	EIR	Interpolated
EIR208-2MT	B&B Electronics	ETHERNET SWITCH - 8 PORT	EIR	Interpolated
EIR208-2MC	B&B Electronics	ETHERNET SWITCH - 8 PORT	EIR	Interpolated
EIR208-2SC	B&B Electronics	ETHERNET SWITCH - 8 PORT	EIR	Interpolated
EIR208-2ST	B&B Electronics	ETHERNET SWITCH - 8 PORT	EIR	Interpolated

**COMPONENT IDENTIFICATION MATRIX:**

**Controllers and Controller Components**

COMPONENT		TEST IN		
MODEL NUMBER	MANUFACTURER	DESCRIPTION	PRODUCT LINE	UUT #
WEB-700	Honeywell	WEB 700	WEB-700	UUT4a, 4b
NPB-PWR-UN-H	Honeywell	POWER SUPPLY	WEB 600/700	UUT4a, 4b
NPB-2X-RS485	Honeywell	DUAL RS-485 COMM PORT	WEB-600/700	UUT4a, 4b
NPB-232	Honeywell	RS-232 Comm Card	WEB 600/700	Interpolated
WEB-600	Honeywell	WEB 600 Controller	WEB-600	Interpolated
NPB-PWR-H	Honeywell	WEB 600 Power Supply	WEB-600	Interpolated
NPM-256	Honeywell	WEB 600 memory expansion	WEB-600	Interpolated
NPB-LON	Honeywell	LON Adapter	WEB-600/700	UUT4a, 4b
IO-16-H/U	Honeywell	OPTIONAL I/O MODULE	WEB-600	Interpolated
IO-34-H/U	Honeywell	OPTIONAL I/O MODULE	WEB-600	Interpolated
J-700	Tridium	JACE-700	JACE-700	Interpolated
NPB-PWR-UN	Tridium	POWER SUPPLY	JACE-600/700	Interpolated
NPB-2X-485	Tridium	DUAL RS-485 COMM PORT	JACE-600/700	Interpolated
NPB-LON	Tridium	LON Adapter	JACE-600/700	UUT2a, 2b
NPB-RS232	Tridium	RS-232 Comm Card	JACE 600/700	UUT2a, 2b
J-600	Tridium	JACE-600 Controller	JACE-600	UUT2a, 2b
NPB-PWR	Tridium	JACE-600 Power Supply	JACE-600	UUT2a, 2b
NPB-256	Tridium	JACE-600 memory expansion	JACE-600	UUT2a, 2b
IO-16	Tridium	OPTIONAL I/O MODULE	JACE-600	UUT2a, 2b
IO-34	Tridium	OPTIONAL I/O MODULE	JACE-600	UUT2a, 2b
PUL1012S	Honeywell	Spyder Lon Unitary Controller	SPYDER LON	Interpolated
PUL4024S	Honeywell	Spyder Lon Unitary Controller	SPYDER LON	UUT4a, 4b
PUL6438S	Honeywell	Spyder Lon Unitary Controller	SPYDER LON	UUT4a, 4b
PUB6438S	Honeywell	Spyder BACnet Unitary Controller	SPYDER BACNET	UUT3a, 3b
PUL6438S-ILC	Honeywell	Spyder Lon Unitary Controller	SPYDER LON	Interpolated
PUB6438S-ILC	Honeywell	Spyder BACnet Unitary Controller	SPYDER BACNET	Interpolated
PUL1012S-ILC-US	Honeywell	Spyder Lon Unitary Controller	SPYDER LON	Interpolated
PUL4024S-ILC-US	Honeywell	Spyder Lon Unitary Controller	SPYDER LON	Interpolated
PUL6438S-ILC-US	Honeywell	Spyder Lon Unitary Controller	SPYDER LON	Interpolated
PUB6438S-ILC-US	Honeywell	Spyder BACnet Unitary Controller	SPYDER BACNET	Interpolated
XCL8010A	Honeywell	EXCEL 800 CONTROLLER	EXCEL 800	UUT2a, 2b
XF821A	Honeywell	EXCEL 800 PANEL BUS ANALOG INPUT MODULE	EXCEL 800	UUT2a, 2b
XF823A	Honeywell	EXCEL 800 PANEL BUS BINARY INPUT MODULE	EXCEL 800	UUT2a, 2b
XFR822A	Honeywell	EXCEL 800 PANEL BUS AO MODULE W/ OR	EXCEL 800	UUT2a, 2b
XFR824A	Honeywell	EXCEL 800 PANEL BUS RELAY MODULE W/ OR	EXCEL 800	UUT2a, 2b
XFL821A	Honeywell	EXCEL 800 LON BUS ANALOG INPUT MODULE	EXCEL 800	UUT2a, 2b
XFL823A	Honeywell	EXCEL 800 LON BUS BINARY INPUT MODULE	EXCEL 800	UUT2a, 2b
XFLR822A	Honeywell	EXCEL 800 LON BUS AO MODULE W/ OR	EXCEL 800	UUT2a, 2b
XFLR824A	Honeywell	EXCEL 800 LON BUS RELAY MODULE W/ OR	EXCEL 800	UUT2a, 2b
XS814	Honeywell	EXCEL 800 AUXILARY TERMINAL BLOCKS	EXCEL 800	UUT2a, 2b
XS817	Honeywell	EXCEL 800 3-RELAY CROSS CONNECTOR	EXCEL 800	UUT2a, 2b
XS821-22	Honeywell	EXCEL 800 TERMINAL SOCKET FOR AI/AO MODULES	EXCEL 800	UUT2a, 2b
XS823	Honeywell	EXCEL 800 TERMINAL SOCKET FOR BI MODULE	EXCEL 800	UUT2a, 2b
XS824-25	Honeywell	EXCEL 800 TERMINAL SOCKET FOR RELAY MODULES	EXCEL 800	UUT2a, 2b
W7761A2010/U	Honeywell	Excel 10 Remote I/O	EXCEL 10	UUT2a, 2b

**COMPONENT IDENTIFICATION MATRIX:**

**Controllers and Controller Components (continued)**

COMPONENT				TEST IN
MODEL NUMBER	MANUFACTURER	DESCRIPTION	PRODUCT LINE	UUT #
W7750A2005/U	Honeywell	CONSTANT VOLUME AHU CONTROLLER	EXCEL 10	Interpolated
W7750B2011/U	Honeywell	CONSTANT VOLUME AHU CONTROLLER	EXCEL 10	Interpolated
W7750C2001/U	Honeywell	CONSTANT VOLUME AHU CONTROLLER	EXCEL 10	Interpolated
W7753A2002/U	Honeywell	Unit Ventilator Controller	EXCEL 10	Interpolated
IO-16-REM-H/U	Honeywell	REMOTE IO-16 MODULE	WEB 600	Interpolated
T-IO-16-485	Tridium	REMOTE IO-16 MODULE	JACE 600	UUT2a, 2b

**Routers, Repeaters, and Terminators for the Network**

COMPONENT				TEST IN
MODEL NUMBER	MANUFACTURER	DESCRIPTION	PRODUCT LINE	UUT #
42100R	Echelon	LPR Router Module	LonPoint	UUT2a, 2b
42101R	Echelon	LPR Router Module	LonPoint	Interpolated
42102R	Echelon	LPR Router Module	LonPoint	Interpolated
42103R	Echelon	LPR Router Module	LonPoint	Interpolated
42104R	Echelon	LPR Router Module	LonPoint	Interpolated
42105R	Echelon	LPR Router Module	LonPoint	Interpolated
48222R	Echelon	DIN BASE PLATE	LonPoint	UUT2a, 2b
44200	Echelon	TERMINATORS	LonPoint	UUT2a, 2b
44100	Echelon	TERMINATORS	LonPoint	Interpolated
44101	Echelon	TERMINATORS	LonPoint	Interpolated
209541B	Honeywell	Terminator module for FTT network	EXCEL 10	UUT2a, 2b

**COMPONENT IDENTIFICATION MATRIX:**

**Enclosures/Back Panels**

COMPONENT NAME	COMPONENT MANUFACTURER	Dimensions (Inches)			NEMA Rating	TEST IN UUT #
		Depth	Width	Height		
A20N16ALP/A20N16MP	HOFFMAN	7	16	20	1	UUT1a, 1b
Varies	HOFFMAN	7 to 9	16 to 36	20 to 48	1	Interpolated
A48N3609/A48P36	HOFFMAN	9	36	48	1	UUT2a, 2b
A24H20ALP/A24P20	HOFFMAN	6	20	24	4	UUT3a, 3b
Varies	HOFFMAN	6 to 8	20 to 36	24 to 48	4 or 12*	Interpolated
A48H36BLP/A48P36	HOFFMAN	8	36	48	4	UUT4a, 4b

NEMA 4 and 12 construction is identical; only the door seal varies.