



APPLICATION FOR PREAPPROVAL SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

APPLICATION NO.

OSP – 0214-10

Check whether application is: NEW RENEWAL

1.0 Sunbelt Controls as representing Vinh Lam
Automated Logic Corporation
Manufacturer *Manufacturer's Technical Representative*
1133 Aladdin Ave San Leandro, CA 94577

Mailing Address

(510) 346-4375 vlam@sunbeltcontrols.com
Telephone *E-mail Address*

2.0 Automated Logic Control Panels Electrical Equipment
Product Name *Product Type*

TCP-01 (Chiller Plant Panel), TCP-02 (AHU Panel)

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

General Description: Rigid wall mounted the Sunbelt Controls chiller plant panel and AHU panel consist of a power supply, relay card, transformers, control modules and additional components to each form a complete control panel. Cabinets are 14 gage powder-coated carbon steel with a NEMA 4 rating.

3.0 DYNAMIC CERTIFICATION JOSEPH LA BRIE
LABORATORIES
Applicant Company Name *Contact Person*
1315 GREG ST., STE. 109 SPARKS, NV 89431

Mailing Address

(775) 358-5085 LaBrie@MakeltRight.net
Telephone *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.

09 / 22 / 2011

Signature of Applicant

Date

Managing Partner
Title

Dynamic Certification Laboratories
Company Name

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Registered Design Professional Preparing the Report

4.0 DYNAMIC CERTIFICATION LABORATORIES, LLC
Company Name

JOSEPH LA BRIE, SE SE-3566
Contact Name California License Number

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

(775) 358-5085 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

Testing Laboratory (if applicable)

8.0 DYNAMIC CERTIFICATION LABORATORIES, LLC KELLY LAPLACE, QUALITY MANAGER
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) = 1.39g

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

a_p (In-structure equipment or component amplification factor) = 1.0

R_p (Equipment or component response modification factor) = 2.5

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1

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

Ω_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)



9/29/2011

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):

Table 1

**Special Seismic Certification
Approved Units**



Manufacturer: Sunbelt Controls

Product Line: Chiller Plant Panel and AHU Panel

Certified Product Construction:

14 gage powder-coated carbon steel, NEMA 4

Certified Options:

120V, ethernet switch, control modules, power supply, terminal blocks, uninterruptible power supply

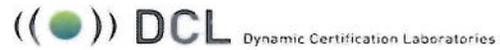
Certified Mounting Description:

All equipment is to be rigid-mounted

Product Line	Model Number*	Dimensions (inches)			Estimated Operating Weight (lb)	Size	Unit
		Depth	Width	Height			
AHU Panel	TCP-02	9	30	36	148	Smallest	UUT2
Chiller Plant Panel	TCP-01	9	30	36	149	Largest	UUT1

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Table 2



**UUT1 Unit Under Test
Summary Sheet**

Manufacturer: Sunbelt Controls

Product Line: Chiller Plant Panel and AHU Panel

Model Number: TCP-01

Product Construction Summary:

14 gage powder-coated carbon steel, NEMA 4

Options / Component Summary:

120V, ethernet switch, control modules, power supply, terminal blocks, uninterruptible power supply

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
149	9	30	36	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

Unit Mounting Description:

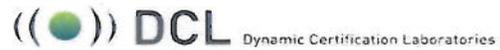


UUT1 mounted to shake table and ready for test.

UUT1 was wall-mounted to the DCL-provided stud wall shake table interface frame using four (4) 3/8-inch Grade 2 bolts, utilizing the existing manufacturer-provided mounting tabs on the back of the back-box.

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Table 3



**UUT2 Unit Under Test
Summary Sheet**

Manufacturer: Sunbelt Controls

Product Line: Chiller Plant Panel and AHU Panel

Model Number: TCP-02

Product Construction Summary:

14 gage powder-coated carbon steel, NEMA 4

Options / Component Summary:

120V, ethernet switch, control modules, power supply, terminal blocks, uninterruptible power supply

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
148	9	30	36	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

Unit Mounting Description:



UUT2 mounted to shake table and ready for test.

UUT2 was wall-mounted to the DCL-provided stud wall shake table interface frame using four (4) 3/8-inch Grade 2 bolts, utilizing the existing manufacturer-provided mounting tabs on the back of the back-box.

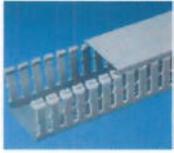
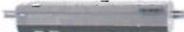
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COMPONENT IDENTIFICATION MATRIX:

COMPONENT NAME	COMPONENT DESCRIPTION	COMPONENT MANUFACTURER	PART NUMBER	CONSTRUCT MATERIAL	TEST IN UUT	PHOTO
DIN-01 1000	DIN Rail	KELE	BAM-1000	Aluminum	1, 2	
EB-01	Span-On End Bracket (CLIPFIX 35)	PHOENIX CONTACT	3022218	Polyacrylate Rubber	1, 2	
EC-01	End Cover (D-UK 4/10)	PHOENIX CONTACT	3003020	Plastic	1, 2	
ES5	5-Port Ethernet Switch	CONTEMP. CONTROLS	EISK5-100T	Metal and fiberglass	1, 2	
MB-01	UPS Mounting Bracket	SOLA	SDU-PMBRK	n/a	1, 2	
ME812U-E	ME812U-E Ethernet Control Module	AUTOMATED LOGIC	ME812U-E	Aluminum	1	
ME812U-R	ME812U-LGR Router/Control Module	AUTOMATED LOGIC	ME812U-LGR	Aluminum	1, 2	
MEX816U	MEX816U Expander Module	AUTOMATED LOGIC	MEX816U	Aluminum	1, 2	
PAN-01	Wiring Duct 1X3-in Cover	PANDUIT	F1X4LG6 + C1LG6	Lead Free PVC	1, 2	

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COMPONENT IDENTIFICATION MATRIX:

PAN-02	Wiring Duct 2.25X4.10-in Cover	PANDUIT	F2X4LG6 + C2LG6	Lead Free PVC	1, 2	
PNL-01	NEMA 4 Enclosure, 36X30X9	HAMMOND	EN4SD36308GY + EP3630	14 Ga Steel	1, 2	
PS5R	Power Supply, 24VDC, 120W, 5A	IDEC	PS5R-F24	PLASTIC	1, 2	
PSH200	Enclosed Dual 100VA Power Supply, 120VAC to 24VAC	FUNCTIONAL DEVICES	PSH100A100AB10	n/a	1, 2	
RB-01	SPDT Relay DIN Rail Mount	IDEC	SH1B-05C	Plastic	1, 2	
RDC-01	RH Relay SPDT, 24VDC, LED, Button	IDEC	RH1B-ULCDC24V	Silver cadmium oxide	1, 2	
RPW-01	RH1B Pullover Wire Spring	IDEC	SY2S-02F1	Steel	1, 2	
TB-01	Terminal Block (UK 5 N)	PHOENIX CONTACT	3004362	Plastic and steel	1, 2	
TB-02	Ground Terminal Block (USLKG 5)	PHOENIX CONTACT	441504	Plastic and steel	1, 2	
UPS-500	Uninterruptible Power Supply, 500VA	SOLA/HD	SDU500	n/a	1, 2	
UPS-R	Dry Contact Relay Kit SDU	SOLA/HD	RELAYCARD-SDU	n/a	1, 2	

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UUT2 Schematic

Sample AHU Panel Layout

Bill of Materials

ITEM NO.	DESCRIPTION	QTY
1.00	WIRE	1.00
1.01	WIRE	1.00
1.02	WIRE	1.00
1.03	WIRE	1.00
1.04	WIRE	1.00
1.05	WIRE	1.00
1.06	WIRE	1.00
1.07	WIRE	1.00
1.08	WIRE	1.00
1.09	WIRE	1.00
1.10	WIRE	1.00
1.11	WIRE	1.00
1.12	WIRE	1.00
1.13	WIRE	1.00
1.14	WIRE	1.00
1.15	WIRE	1.00
1.16	WIRE	1.00
1.17	WIRE	1.00
1.18	WIRE	1.00
1.19	WIRE	1.00
1.20	WIRE	1.00
1.21	WIRE	1.00
1.22	WIRE	1.00
1.23	WIRE	1.00
1.24	WIRE	1.00
1.25	WIRE	1.00
1.26	WIRE	1.00
1.27	WIRE	1.00
1.28	WIRE	1.00
1.29	WIRE	1.00
1.30	WIRE	1.00
1.31	WIRE	1.00
1.32	WIRE	1.00
1.33	WIRE	1.00
1.34	WIRE	1.00
1.35	WIRE	1.00
1.36	WIRE	1.00
1.37	WIRE	1.00
1.38	WIRE	1.00
1.39	WIRE	1.00
1.40	WIRE	1.00
1.41	WIRE	1.00
1.42	WIRE	1.00
1.43	WIRE	1.00
1.44	WIRE	1.00
1.45	WIRE	1.00
1.46	WIRE	1.00
1.47	WIRE	1.00
1.48	WIRE	1.00
1.49	WIRE	1.00
1.50	WIRE	1.00
1.51	WIRE	1.00
1.52	WIRE	1.00
1.53	WIRE	1.00
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1.57	WIRE	1.00
1.58	WIRE	1.00
1.59	WIRE	1.00
1.60	WIRE	1.00
1.61	WIRE	1.00
1.62	WIRE	1.00
1.63	WIRE	1.00
1.64	WIRE	1.00
1.65	WIRE	1.00
1.66	WIRE	1.00
1.67	WIRE	1.00
1.68	WIRE	1.00
1.69	WIRE	1.00
1.70	WIRE	1.00
1.71	WIRE	1.00
1.72	WIRE	1.00
1.73	WIRE	1.00
1.74	WIRE	1.00
1.75	WIRE	1.00
1.76	WIRE	1.00
1.77	WIRE	1.00
1.78	WIRE	1.00
1.79	WIRE	1.00
1.80	WIRE	1.00
1.81	WIRE	1.00
1.82	WIRE	1.00
1.83	WIRE	1.00
1.84	WIRE	1.00
1.85	WIRE	1.00
1.86	WIRE	1.00
1.87	WIRE	1.00
1.88	WIRE	1.00
1.89	WIRE	1.00
1.90	WIRE	1.00
1.91	WIRE	1.00
1.92	WIRE	1.00
1.93	WIRE	1.00
1.94	WIRE	1.00
1.95	WIRE	1.00
1.96	WIRE	1.00
1.97	WIRE	1.00
1.98	WIRE	1.00
1.99	WIRE	1.00
2.00	WIRE	1.00

Remove low voltage wires from these terminals.

Remove ME812u-E and associated relay wires.

Remove R-11 thru R-23. Move the end stop up against R-10 and secure.

Tag Size: 3" x 1"
Letter Size: X"
Black background w/ White Letters
Adhesive Backing

TCP-02

TCP-01

120VAC Entry

Regulation low voltage entry

ME812u-E

ME812u-LGR

ME812u

PC

LPS

600VA

Sample Chiller Panel
San Leandro, California

Sunbelt Controls

Sample Chiller Panel Layout

REV 2

DATE

REVISED

DATE

CHECK BY

DATE

SUNBELT CONTROLS

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