



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OSP – 0068 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Systecon

Manufacturer's Technical Representative: Stu Barrick

Mailing Address: 6121 Schumacher Park Drive, West Chester, Ohio 45069

Telephone: 513-777-7722 Email: Stu.barrick@systecon.com

Product Information

Product Name: HVAC Control Panels

Product Type: HVAC Control Panels

Product Model Number: See Tables for Components included

(List all unique product identification numbers and/or part numbers)

General Description: Configurable control panels for HVAC applications

Mounting Description: Rigid and spring isolated surface mounted panels on a wall.

Applicant Information

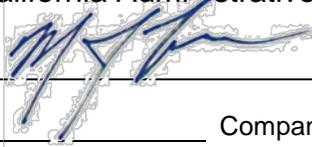
Applicant Company Name: Tobolski Watkins Engineering, Inc.

Contact Person: Matthew J. Tobolski, PhD, S.E.

Mailing Address: 9246 Lightwave Ave San Diego, CA 92123

Telephone: 858-381-5843 Email: mtobolski@tobolskiwatkins.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant:  Date: 09/19/2013

Title: President and CEO Company Name: Tobolski Watkins Engineering Inc.

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

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY
OSH-FD-759 (REV 6/14/13)



osHPD

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

Company Name: Tobolski Watkins Engineering Inc.

Name: Matthew J. Tobolski, PhD, S.E. California License Number: S 5648

Mailing Address: 9246 Lightwave Ave San Diego, CA 92123

Telephone: 858-381-5843 Email: mtobolski@tobolskiwatkins.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 Dynamic Test Laboratory, Inc.

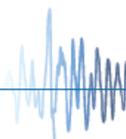
Contact Name: J.R. Antenucci

Mailing Address: 1801 Route 51 South, Building 8, Jefferson Hills, PA

Telephone: 412-387-1001 Email: jrantenucci@clarkdynamic.com

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

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Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.44 (rigid) or 4.50 (isolated)

S_{DS} (Design spectral response acceleration at short period, g) = 2.00g

a_p (In-structure equipment or component amplification factor) = 1.0 (rigid) or 2.5 (isolated)

R_p (Equipment or component response modification factor) = 2.5 (rigid) or 2.0 (isolated)

Ω_0 (System overstrength factor) = 2.5

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = N/A

Overall dimensions and weight (or range thereof) = See Table 1

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

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

S_{DS} (Design spectral response acceleration at short period, g) = _____

S_{D1} (Design spectral response acceleration at 1 second period, g) = _____

R (Response modification coefficient) = _____

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = _____

I_p (Importance factor) = _____

Height to Center of Gravity above base = _____

Equipment or Component Natural Frequencies (Hz) = _____

Overall dimensions and weight (or range thereof) = _____

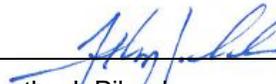
Tank(s) designed in accordance with ASME BPVC, 2010: Yes No

List of Attachments Supporting Special Seismic Certification

Test Report(s) Drawings Calculations Manufacturer's Catalog

Other(s) (Please Specify): _____

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2019

Signature: 

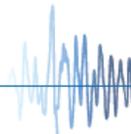
Date: December 30, 2013

Print Name: Timothy J. Piland

Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.0 z/h = 1.0

Condition of Approval (if applicable): Valid for flush mounting on a wall or vertical surface.





UUT – 1

UNIT UNDER TEST (UUT) Summary Sheet

TWEI Project No.: 2013-0690-CO-001, rev. 0

Manufacturer: Syscon

Model Line: HVAC Control Panel

Model Number: N/A

Product Construction Summary:
NEMA 1/12 Sheet Metal Carbon Steel Cabinet
Units tested mounted to steel frame and skid. Units tested on rigidly mounted skid (Run #1) and seismically restrained vibration isolated skid (Run #2)

Options/Subcomponent Summary:
See Tables 1-6 for detailed listing of components within UUT.

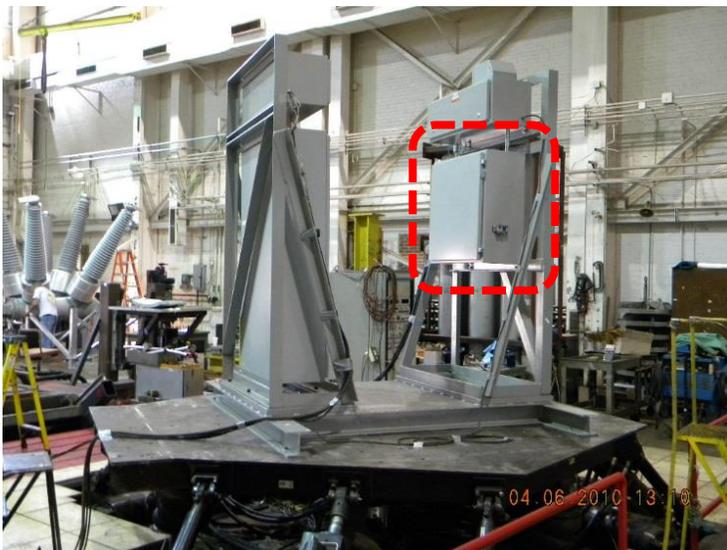
UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz) – Isolated Mounting		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
300	13.3	30.0	30.0	N/A	N/A	N/A

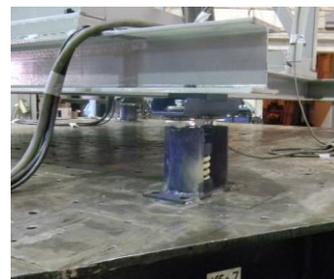
UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{ds}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2013	ICC-ES AC 156	2.00g	1.0	1.5	3.20g	2.40g	1.33g	0.53g

Test Mounting Details:



Run #1
Rigid mounted



Run #2
Isolated skid

Unit mounted to frame/skid using (4) 7/16" A325 bolts
 Direct Mount: Skid mounted to table using (8) 1/2" Grade 5 bolts
 Isolation Mount: (4) Mason isolators attach to assembly using (2) 1/2" Grade 5 bolts each. Isolators welded to the table.
 Unit maintained structural integrity and remained functional per manufacturer requirement.

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UUT – 2

UNIT UNDER TEST (UUT) Summary Sheet

TWEI Project No.: 2013-0690-CO-001, rev. 0

Manufacturer: Syscon

Model Line: HVAC Control Panel

Model Number: N/A

Product Construction Summary:
 NEMA 1/12 Sheet Metal Carbon Steel Cabinet
 Units tested mounted to steel frame and skid. Units tested on rigidly mounted skid (Run #1) and seismically restrained vibration isolated skid (Run #2)

Options/Subcomponent Summary:
 See Tables 1-6 for detailed listing of components within UUT.

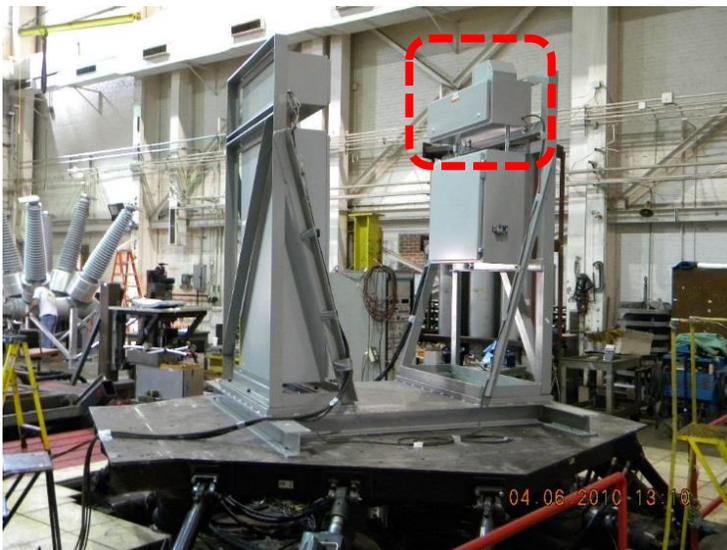
UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz) – Isolated Mounting		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
150	13.0	36.0	12.0	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{ds}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2013	ICC-ES AC 156	2.00g	1.0	1.5	3.20g	2.40g	1.33g	0.53g

Test Mounting Details:



**Run #1
Rigid mounted**



**Run #2
Isolated skid**

Unit mounted to frame/skid using (4) 7/16" A325 bolts
 Direct Mount: Skid mounted to table using (8) 1/2" Grade 5 bolts
 Isolation Mount: (4) Mason isolators attach to assembly using (2) 1/2" Grade 5 bolts each. Isolators welded to the table.
 Unit maintained structural integrity and remained functional per manufacturer requirement.

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UUT – 3

UNIT UNDER TEST (UUT) Summary Sheet

TWEI Project No.: 2013-0690-CO-001, rev. 0

Manufacturer: Syscon

Model Line: HVAC Control Panel

Model Number: N/A

Product Construction Summary:
 NEMA 1/12 Sheet Metal Carbon Steel Cabinet
 Units tested mounted to steel frame and skid. Units tested on rigidly mounted skid (Run #1) and seismically restrained vibration isolated skid (Run #2)

Options/Subcomponent Summary:
 See Tables 1-6 for detailed listing of components within UUT.

UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz) – Isolated Mounting		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
200	13.3	36.0	60.0	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{ds}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2013	ICC-ES AC 156	2.00g	1.0	1.5	3.20g	2.40g	1.33g	0.53g

Test Mounting Details:



**Run #1
Rigid mounted**



**Run #2
Isolated skid**

Unit mounted to frame/skid using (4) 7/16" A325 bolts
 Direct Mount: Skid mounted to table using (8) 1/2" Grade 5 bolts
 Isolation Mount: (4) Mason isolators attach to assembly using (2) 1/2" Grade 5 bolts each. Isolators welded to the table.
 Unit maintained structural integrity and remained functional per manufacturer requirement.

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UUT – 4

UNIT UNDER TEST (UUT) Summary Sheet

TWEI Project No.: 2013-0690-CO-001, rev. 0

Manufacturer: Systecon

Model Line: HVAC Control Panel

Model Number: N/A

Product Construction Summary:
NEMA 1/12 Sheet Metal Carbon Steel Cabinet
Units tested mounted to steel frame and skid. Units tested on rigidly mounted skid (Run #1) and seismically restrained vibration isolated skid (Run #2)

Options/Subcomponent Summary:
See Tables 1-6 for detailed listing of components within UUT.

UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz) – Isolated Mounting		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
150	13.0	36.0	12.0	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{ds}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2013	ICC-ES AC 156	2.00g	1.0	1.5	3.20g	2.40g	1.33g	0.53g

Test Mounting Details:



**Run #1
Rigid mounted**



**Run #2
Isolated skid**

Unit mounted to frame/skid using (4) 7/16" A325 bolts
 Direct Mount: Skid mounted to table using (8) 1/2" Grade 5 bolts
 Isolation Mount: (4) Mason isolators attach to assembly using (2) 1/2" Grade 5 bolts each. Isolators welded to the table.
 Unit maintained structural integrity and remained functional per manufacturer requirement.

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Table 2

Special Seismic Certification Certified Product Matrix

TWEI Project No.: 2013-0690-CO-001, rev. 0

Manufacturer: Syscon

Model Line: HVAC Control Panel – Allen Bradley I/O Devices

Certified Product Construction Summary:
Specific manufacturer products are listed herein and uniquely define component details.

Certified Options Summary:
N/A

Certified Mounting Summary:
Mounted within HVAC control cabinet panels

Building Code: CBC 2013 **Seismic Certification Limits:** $S_{DS} = 2.00g$ $z/h = 1.0$ $I_p = 1.5$

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Ethernet Adapter	1734-AENT						1
Input Modules	1734-IB2						
	1734-IB4						
	1734-IB8						1
	1734-IE8C						1
	1769-IQ16						3
	1769-IF16C						3
Output Modules	1734-OB2						
	1734-OE4C						1
	1734-OB4						
	1734-OB8						1
	1769-OB16						3
	1769-OF4CI						3
CompactLogix Controller	1769-L32E						3
	1769-L35E						3
Expansion Pwr Sply	1734-EP24DC						1
Communication Mod	MVI69-MCM						3

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Table 3

**Special Seismic Certification
Certified Product Matrix**

TWEI Project No.: 2013-0690-CO-001, rev. 0

Manufacturer: Syscon

Model Line: HVAC Control Panel – Circuit Protection

Certified Product Construction Summary:
Specific manufacturer products are listed herein and uniquely define component details.

Certified Options Summary:
N/A

Certified Mounting Summary:
Mounted within HVAC control cabinet panels

Building Code: CBC 2013 **Seismic Certification Limits:** $S_{DS} = 2.00g$ $z/h = 1.0$ $I_p = 1.5$

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Circuit Breakers Eaton	WMZT1CX0 – 0.5A						
	WMZT1C01 – 1A						3
	WMZT1CX1 – 1.5A						
	WMZT1C02 – 2A						
	WMZT1C03 – 3A						
	WMZT1C04 – 4A						
	WMZT1C05 – 5A						
	WMZT1C06 – 6A						
	WMZT1C07 – 7A						
	WMZT1C08 – 8A						
	WMZT1C10 – 10A						
	WMZT1C13 – 13A						
	WMZT1C15 – 15A						3
Circuit Breakers Phoenix Contact	0712123 – 0.25A						1
	0712152 – 0.5A						1
	0712194 – 1A						
	0712217 – 2A						
	0712233 – 3A						1
Fuses Bussman	FNQ-R-8						2
	LPJ-100SP						4
	OPM-1038RSW						1-4
	J60100-3CR						2,4
Power Dist. Block Gould Shawmut	66573						2,4

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Table 4

**Special Seismic Certification
Certified Product Matrix**

TWEI Project No.: 2013-0690-CO-001, rev. 0

Manufacturer: Syscon

Model Line: HVAC Control Panel – Transformers, Power Supplies

Certified Product Construction Summary:
Specific manufacturer products are listed herein and uniquely define component details.

Certified Options Summary:
N/A

Certified Mounting Summary:
Mounted within HVAC control cabinet panels

Building Code: CBC 2013 **Seismic Certification Limits:** $S_{DS} = 2.00g$ $z/h = 1.0$ $I_p = 1.5$

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Transformers GE Open Core and Coil Cu	9T58K2873					120/240v,12/24v,0.05kVA	3
	PT58K3164					240/480v,12/24v,0.05kVA	
	9T51B0002					240/480v,120/240v,0.05kVA	
	9T58K2874					120/240v,12/24v,0.075kVA	
	9T51B0003					240/480v,120/240v,0.075kVA	
	9T58K2875					120/240v,12/24v,0.1kVA	
	9T58K2907					120/240v,120/240v,0.1kVA	
	PT58K4132					240/480v,12/24v,0.1kVA	
	9T51B0004					240/480v,120/240v,0.1kVA	
	9T58K2876					120/240v,12/24v,0.15kVA	
	PT58K4133					240/480v,12/24v,0.15kVA	
	9T51B0005					240/480v,120/240v,0.15kVA	
	9T58K2878					120/240v,12/24v,0.25kVA	
	PT58K3024					240/480v,12/24v,0.25kVA	
	9T51B0007					240/480v,120/240v,0.25kVA	
	PT58K2913					120/240v,120/240v,0.5kVA	
	9T51B0008					240/480v,120/240v,0.5kVA	
	PT58K2914					120/240v,120/240v,0.75kVA	
	9T51B0009					240/480v,120/240v,0.75kVA	
	PT58K2915					120/240v,120/240v,1kVA	
9T51B0010					240/480v,120/240v,1kVA		
9T51B0011					240/480v,120/240v,1.5kVA	2,4	
Power Supply IDEC Slim Line	PS5R-SF24						1,3

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