OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0201

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Functional Devices, Inc.

Manufacturer's Technical Representative: Samuel Klennert

Mailing Address: 101 Commerce Drive, Sharpsville, IN 46068

Telephone: (765) 416-6810 Email: s.klennert@functionaldevices.com

Product Information

Product Name: Power Isolation and Correction Systems

Product Type: Power Isolation and Correction Systems

Product Model Number: See attachments

General Description: Units are 40 VA to 500VA AC power supplies with transformers capable of converting voltage

Mounting Description: Rigid, Wall Mounted

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: The VMC Group

Contact Person: John Giuliano

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: (973) 838-1780 Email: john.giuliano@thevmcgroup.com

Title: President

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: (916) 449-9918 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: DYNAMIC CERTIFICATION LABORATORY (DCL)

Contact Person: Josh Sailer

Mailing Address: 1315 Greg St., Ste 109, Sparks NV 89431

Telephone: (775) 358-5085 Email: josh@shaketest.com

Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.39

S_{DS} (Design spectral response acceleration at short period, g) = 1.93

a_p (Amplification factor) = 1

R_p (Response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1

Natural frequencies (Hz) = See attachments

Overall dimensions and weight = See attachments

OSHPD Approval (For Office Use Only) - Approval Expires on 12/31/2025

Date: 9/21/2020

Name: Mohammad Aliaari Title: Senior Structural Engineer

Special Seismic Certification Valid Up to: S_{DS} (g) = 1.93 z/h = 1

Condition of Approval (if applicable):

Functional Devices - PSH AC Power Supplies

Table 1 - Certified Components

Manufacturer: Functional Devices

Mounting: Rigid Wall Mounted

Test Levels: Sds = 1.93g, z/h=1.0

Material: Cold Rolled Carbon Steel (NEMA 1)

Model	Dimensions (in)			Weight (lb)	Gage	UUT
	Depth	Width	Height			
PSH40A	4.5	4.5	5.4	3.1	18	UUT 1
PSH75A	4.5	4.5	5.4	4.5		Interpolated
PSH100A	4.5	4.5	5.4	4.6		Interpolated
PSH40A-40A	4.5	4.5	8.6	5.4		Interpolated
PSH40A-75A	4.5	4.5	8.6	6.8		Interpolated
PSH40A-100A	4.5	4.5	8.6	6.9		Interpolated
PSH75A-75A	4.5	4.5	8.6	8.4		Interpolated
PSH75A-100A	4.5	4.5	8.6	8.5		Interpolated
PSH100A-100A	4.5	4.5	8.6	8.6		Interpolated
PSH300A	6.0	12.0	12.0	18.1	16	Interpolated
PSH300A-LVC[2]	6.0	12.0	12.0	19.6		Interpolated
PSH300AB10-LVC[2]	6.0	12.0	12.0	19.7		Interpolated
PSH500A	6.0	12.0	12.0	30.2		UUT 2
PSH500A-LVC[2]	6.0	12.0	12.0	31.5		Extrapolated[1]
PSH500AB10-LVC[2]	6.0	12.0	12.0	31.6		Extrapolated[1]

Notes:

1. Subcomponents in extrapolated units are bookended by UUT1 and UUT2 tests.

2. B10 = 10 amp main breaker switch, LVC = Low Voltage Compartment.

Functional Devices - PSH AC Power Supplies

Table 2 - Certified Subcomponents - Enclosures

Manufacturer: Functional Devices
Material: Cold Rolled Carbon Steel (NEMA 1)

Model	Gage	Dimensions			Weight (lb)	UUT
		Depth	Width	Height		
140793/140792 [1]	18	3.8	5.1	4.3	1.6	UUT 1
140827/140787 [1]		3.8	8.3	4.3	2.2	Interpolated
141432	16	6.0	12.0	12.0	9.8	Interpolated
141460		6.0	12.0	12.0	9.8	Interpolated
140946		6.0	12.0	12.0	10.7	UUT 2
141432-LVC[3]		6.0	12.0	12.0	11.0	Extrapolated
141460-LVC[3]		6.0	12.0	12.0	11.0	Extrapolated

Note:
1. Enclosure models are physically identical; model numbering difference is based on marketing only.
2. All enclosures come with an associated lid. The lid is included in the weight of the enclosure.
3. LVC = Low Voltage Compartment; these enclosures have extra dividers inside the enclosure to separate the low and high voltage compartments.

Table 3 - Certified Subcomponents - Transformers

Manufacturer: Functional Devices

Model	Material	Dimensions (in)			Weight (lb)	UUT
		Depth	Width	Height		
TR40VA020	Laminated sheet steel core wound with enameled copper wire	2.4	3.3	1.9	1.5	UUT 1
560021		2.5	4.0	2.5	2.8	Interpolated
560058		2.7	4.1	2.6	2.6	Interpolated
TR300VA003		4.5	3.5	4.0	8.2	Interpolated
TR500VA003		5.3	4.3	4.4	19.8	UUT 2

Table 4 - Certified Subcomponents - Receptacles

Manufacturer: Functional Devices

Model	Material	Dimensions (in)			Weight (lb)	UUT
		Depth	Width	Height		
210309	Plastic	1.0	1.0	0.8	<1	UUT1, UUT2

Functional Devices - PSH AC Power Supplies

Table 5 - Certified Subcomponents - Switches

Manufacturer: Functional Devices

Model	Material	Dimensions (in)			Weight (lb)	UUT
		Depth	Width	Height		
517012	Plastic	0.6	1.3	1.3	<1	UUT1, UUT2

Table 6 - Certified Subcomponents - Breakers

Manufacturer: Functional Devices

Model	Material	Dimensions (in)			Weight (lb)	UUT
		Depth	Width	Height		
517013	Plastic	0.8	0.8	2.0	<1	UUT1, UUT2

Table 7 - Tested Units

Manufacturer: Functional Devices
Test Levels: Sds = 1.93g, z/h=1.0
Material: Cold Rolled Carbon Steel (NEMA 1)

Model	Gage	Dimensions (in)			Weight (lb)	UUT
		Depth	Width	Height		
PSH40A	18	4.5	4.5	5.4	3.1	UUT 1
PSH500A	16	6.0	12.0	12.0	30.2	UUT 2

UUT 1	
UNIT UNDER TEST (UUT) Sheets	
Manufacturer:	Functional Devices
Product Line:	PSH AC Power Supplies
Model Number	PSH40A
Mounting:	Rigid Wall Mounted
DCL Test Report:	23258-1601

Product Construction Summary

18 gage cold-rolled carbon steel, coated with smooth powder paint

Options / Subcomponent Summary

Enclosed single 40 VA power supply, 120 to 24 Vac

UUT Properties

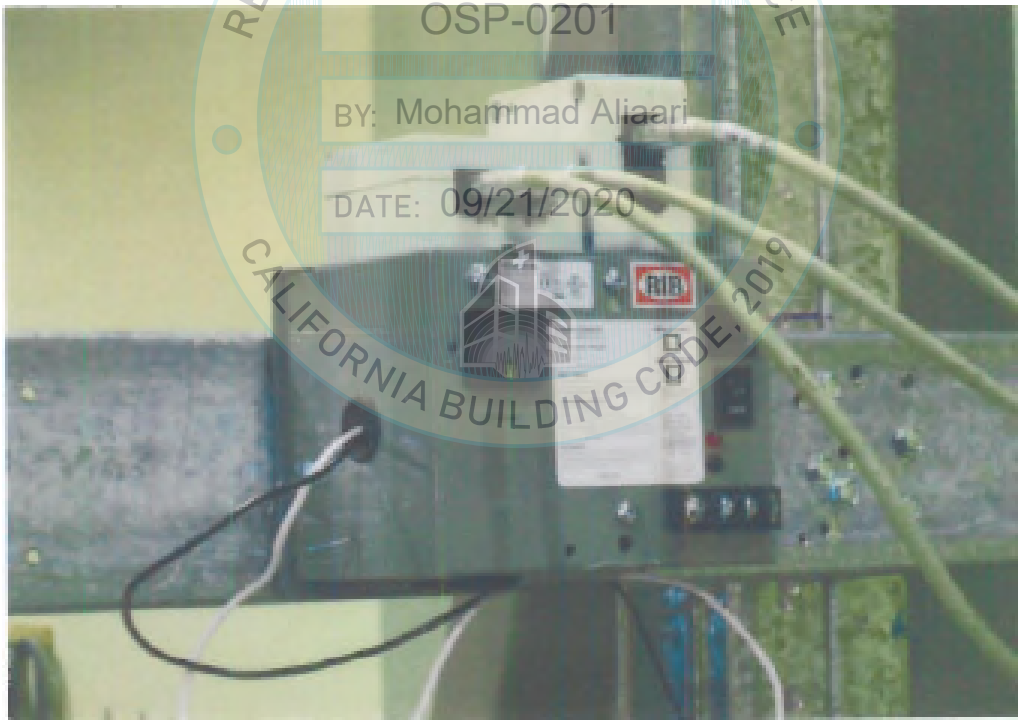
Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Length	Width	Height	F-B	S-S	V
3.1	4.5	4.5	5.4	N/A	N/A	N/A

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	1.93	1	1.5	3.09	2.32	1.29	0.51

Test Mounting Details

The UUT was attached to the fixturing wall utilizing three (3) #14 sheet metal screws and the existing openings in the back of the back-box.



All units were filled with contents and maintained structural integrity and functionality after shake table test

UUT 2

UNIT UNDER TEST (UUT) Sheets

Manufacturer:	Functional Devices
Product Line:	PSH AC Power Supplies
Model Number	PSH500A
Mounting:	Rigid Wall Mounted
DCL Test Report:	23258-1601

Product Construction Summary

16 gage cold-rolled carbon steel, coated with smooth powder paint

Options / Subcomponent Summary

Enclosed 500VA power supply with five 100A Class 2 outputs, 480/277/240/120 Vac to 24Vac

UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Length	Width	Height	F-B	S-S	V
30.2	6	12	12	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	1.93	1	1.5	3.09	2.32	1.29	0.51

Test Mounting Details

The UUT was attached to the fixturing wall utilizing four (4) #14 sheet metal screws and the existing openings in the back of the back-box

All units were filled with contents and maintained structural integrity and functionality after shake table test