



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

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

OFFICE USE ONLY

APPLICATION #: OSP-0880

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Power Quality International

Manufacturer's Technical Representative: Jeffrey Turner

Mailing Address: 2404 Merchant Ave., Odessa, FL 33556

Telephone: (888) 539-7712 Email: JTurner@pqi1.com

Product Information

Product Name: Dry-Type Transformer

Product Model Number(s): Single & Three Phase Power Transformers

Product Category: Transformers

Product Sub-Category: Transformers – Dry Type

General Description: Dry-type transformer family. Floor mounted, aluminum and copper windings. Winding Type: Barrel w/Shield Disc, Disc w/ Shield Cast w/Shield. Nema 1, 2, 3R, or 12 enclosure. One or three phase and various options (see attached tables for further details)

Mounting Description: Base Mounted Rigid

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

Applicant Company Name: TRU Compliance, by Structural Integrity Associates

Contact Person: Victoria Ahrens

Mailing Address: 233 SW Wilson Ave UNIT 101, Bend, OR 97702

Telephone: (541) 292-5820 Email: vahrens@structint.com

Title: Certification Engineer

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STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY



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

Company Name: STRUCTURAL INTEGRITY ASSOCIATES, INC.

Name: LACHEZAR HANDZHIYSKI California License Number: S6515

Mailing Address: 5215 Hellyer Avenue, Suite 210, San Jose, CA 95138

Telephone: (669) 437-0200 Email: Lhandzhiyski@StructInt.com

Certification Method

GR-63-Core ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3

Other (Please Specify): _____

Testing Laboratory

Company Name: U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER, CONSTRUCTION ENGINEERING RESEARCH LABORATORY (CERL)

Contact Person: James Wilcoski

Mailing Address: 2902 Newmark Dr., Champaign IL 61822-1076

Telephone: (217) 373-4565 Email: James.wilcoski@usace.army.mil

Company Name: UNIVERSITY OF CALIFORNIA, BERKELEY (PEER)

Contact Person: Amarnath Kasalanati

Mailing Address: 325 Davis Hall, Berkeley CA 94720-1729

Telephone: (510) 642-3437 Email: Amarnath1@berkeley.edu

Company Name: UNIVERSITY OF BUFFALO (SEESL)

Contact Person: Yushan Fu

Mailing Address: 212 Ketter Hall, Buffalo NY 14260

Telephone: (716) 645-4377 Email: yushanfu@buffalo.edu

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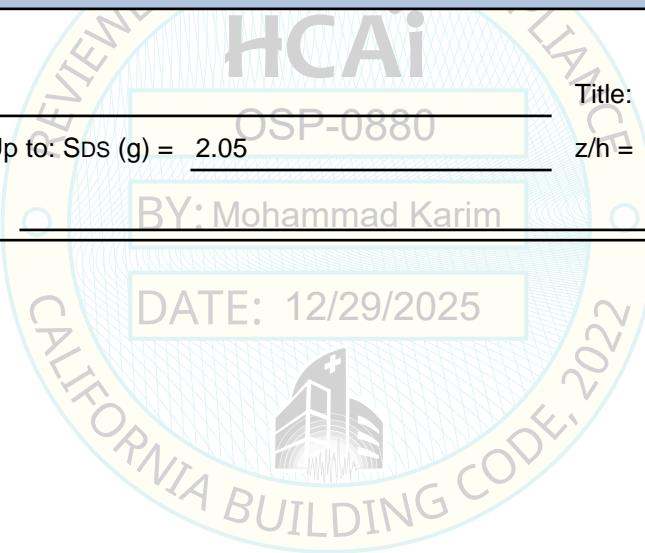
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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) =	1.476 (SDS=2.05 @ $z/h=1$); 0.923 (SDS=2.05 @ $z/h=0$)
SDS (Design spectral response acceleration at short period, g) =	2.05 @ $z/h=1$; 2.05 @ $z/h=0$
a_p (Amplification factor) =	1.0
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) =	0 and 1
Natural frequencies (Hz) =	See Attachment
Overall dimensions and weight =	See Attachment

HCAi Approval (For Office Use Only) - Approval Expires on 12/29/2031

Date: 12/29/2025	Name: Mohammad Karim	Title: Supervisor, Health Facilities
Special Seismic Certification Valid Up to: SDS (g) = 2.05	z/h = 1	
Condition of Approval (if applicable):	BY: Mohammad Karim	



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SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX



2551652-CR-001-R1

Notes:

1. kVA is referring to transformers "two winding" kVA.
2. Enclosures 4 and 7 have different dimensions than previously tested (UUT1 and UUT2) dimension in order for enclosures to meet code requirement. New dimensions are still bounded by tested units.
3. 150 kVA rated unit can not exceed 639 lbs.
4. Custom enclosure Type A sizes are permitted. Custom enclosures must not exceed dimensions or weight of UUT6.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

2551652-CR-001-R1



Manufacturer:	Power Quality International
Model Line:	Single & Three Phase Power Transformers

TABLE 1

Certified Product Construction Summary:

Type A Enclosures: mild carbon steel sheet metal enclosure with sizes ranging from 3 to 7.

Type A =Transformers are mounted to enclosure and the enclosure is mounted to the floor. Designation type indicates intended use of the transformer which may affect the electrical characteristics.

Certified Options Summary:

Winding material: A - Aluminum or C - Copper; Single or Three Phase

Winding Type: Barrel, Barrel w/ Shield NEMA Type 1, 2, 3R, or 12 enclosure;

S and PC1 - Single Phase Isolation; AT1 - Single Phase Autotransformer;

DV, DY, EV, EY, GYV, GY, PC3, RVY, SVY, SY and T - Three Phase - General Purpose Isolation;

DD - Three Phase - Drive; Z, GT, Y, YV, YZ and AT3 - Three Phase Autotransformer - Iron Core; ACR - Single/Three Phase - Air Core, 1LR and 3LR - Single/Three Phase - Iron Core custom kVA

-NEMA 2 enclosures are the same construction as NEMA 1, except NEMA 2 enclosures provide a drip shield.

-NEMA 12 enclosures are for indoor use with dust and drip protection.

-NEMA 3R enclosures are for indoor/outdoor use with rain and ice protection (outdoor providing weather kits).

Mounting Configuration:

Base mounted - rigid

OSP-0880

Note: Installed mounting must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2022			Seismic Certification Limits:			$S_{DS} = 2.05 g$	$z/h=1.0$	$I_p = 1.5$
Model Line	Enclosure Designation	kVA ¹	Dimensions (in)			Weight (lbs.) ³	Notes ⁴	UUT
			Depth	Width	Height			
Enclosure Type: A Models: Z, GT, Y, YV, YZ and AT3 Series, DV, DY, EV, EY, GYV, GY, PC3, RVY, SVY, SY, T, PE, PV and PY Series, DD Series, 3LR Series, ACR Series Three Phase	0	≤ 5	7.0	9.5	8.0	50		Interp.
	1	≤ 10	9.0	12.0	9.3	60		Interp.
	2	≤ 15	11.0	11.0	14.0	70		Interp.
	3	≤ 20	16.0	15.5	14.0	85		Interp.
	4	7.5	13.6	18.5	15.5	110		Interp.
	4 ²	≤ 30	16.0	15.8	21.0	150		Interp.
	5	≤ 45	16.0	20.5	25.0	400		Interp.
	6	≤ 75	20.8	20.5	30.0	600		Interp.
	7	≤ 150	21.9	24.5	36.0	639		Interp.
	7 ²	75	19.3	27.4	31.5	540	Al Barrel w/ Shield, NEMA 3R	2

Notes:

1. kVA is referring to transformers "two winding" kVA.
2. Enclosures 4 and 7 have different dimensions than previously tested (UUT1 and UUT2) dimension in order for enclosures to meet code requirement. New dimensions are still bounded by tested units.
3. 150 kVA rated unit can not exceed 639 lbs.
4. Custom enclosure Type A sizes are permitted. Custom enclosures must not exceed dimensions or weight of UUT6.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

2551652-CR-001-R1



Manufacturer:	Power Quality International
Model Line:	Single & Three Phase Power Transformers

TABLE 2

Certified Product Construction Summary:

Type B Enclosures: mild carbon steel sheet metal enclosure with sizes ranging from 8 to 12.

Type B = transformer mounted directly to exposed base rails rather than the enclosure. Designation type indicates intended use of the transformer which may affect the electrical characteristics.

Certified Options Summary:

Winding material: A - Aluminum or C - Copper; Single or Three Phase

Winding Type: Barrel, Barrel W/ Shield, Disc, Disc w/ Shield, Cast, Cast w/ shield NEMA Type 1, 2, 3R, or 12 enclosure;

Fans (YAHOA Electric Co.), Thermometer and controller (Qualitrol / Precimeasure)

S and PC1 - Single Phase Isolation; AT1 - Single Phase Autotransformer;

DV, DY, EV, EY, GY, PC3, RVY, SVY, SY and T - Three Phase - General Purpose Isolation;

DD - Three Phase - Drive; Z, GT, Y, YV, YZ and AT3 - Three Phase Autotransformer - Iron Core, ACR - Single/Three Phase - Air Core;

1LR and 3LR - Single/Three Phase - Iron Core custom kVA

-NEMA 2 enclosures are the same construction as NEMA 1, except NEMA 2 enclosures provide a drip shield.

-NEMA 12 enclosures are for indoor use with dust and drip protection.

-NEMA 3R enclosures are for indoor/outdoor use with rain and ice protection (outdoor providing weather kits).

Mounting Configuration:

Base mounted - rigid

Note: Installed mounting must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2022

Seismic Certification Limits:

$S_{DS} = 2.05 \text{ g}$ $z/h=1.0$

$I_p = 1.5$

$S_{DS} = 2.05 \text{ g}$ $z/h=0.0$

Model Line	Enclosure Designation	kVA¹	Dimensions (in)			Weight (lbs.)³	Notes⁴	UUT
			Depth	Width	Height			
Enclosure Type B Models: S and PC1 Series, AT1 Series, 1LR Series, ACR Series Single Phase	8	25	29.8	30.8	31.8	450	Al Disc Coil	3
	8S ²	≤ 300	29.0	27.0	47.0	1,000		Interp.
	9	55	38.0	40.0	44.3	680	Cu Barrel Cast Coil 55kVA	5
	9S ²	≤ 600	32.0	32.0	52.0	3,000		Interp.
	10	≤ 750	50.0	46.0	66.0	4,000		Interp.
	11	≤ 1000	55.0	60.0	71.0	5,000		Interp.
	12	≤ 1500	56.0	73.0	79.5	6,744		Interp.
Enclosure Type B Models: Z, GT, Y, YV, YZ and AT3 Series, DV, DY, EV, EY, GY, PC3, RVY, SVY, SY, T, PE, PV and PY Series, DD Series, 3LR Series, ACR Series Three Phase	8	≤ 300	33.5	30.8	44.0	1,000		Interp.
	9	≤ 600	38.0	40.0	52.0	3,000		Interp.
	10	≤ 750	50.0	46.0	66.0	4,000		Interp.
	11	≤ 1000	55.0	60.0	71.0	5,000		Interp.
	12	≤ 1500	56.0	73.0	79.8	6,744		Interp.
	12	1000	56.0	73.0	79.8	6,744	Al/Cu Barrel Hybrid 1000 kVA	7

Notes:

1. kVA is referring to transformers "two winding" kVA.
2. Enclosures 8S and 9S (single phase only) have different dimensions than enclosures 8 and 9 in order for enclosures to meet code requirements. New dimensions are still bounded by tested units.
3. 1500 kVA rated unit can not exceed 6,744 lbs.
4. Custom enclosure Type B sizes are permitted. Custom enclosures must not exceed dimensions or weight of UUT7.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

2551652-CR-001-R1



Manufacturer:	Power Quality International
Model Line:	Single & Three Phase Power Transformers

TABLE 3

Certified Product Construction Summary:

Type C Enclosures: mild carbon steel sheet metal enclosure with sizes ranging from 13 to 22.

Type C = transformer mounted directly to enclosed base rails rather than the enclosure. Designation type indicates intended use of the transformer which may affect the electrical characteristics.

Certified Options Summary:

Winding material: A - Aluminum or C - Copper; Single or Three Phase

Winding Type: Barrel, Barrel W/ Shield, Disc, Disc w/ Shield, Cast, Cast w/ shield NEMA Type 1, 2, 3R, or 12 enclosure;

Fans (YAHOA Electric Co.), Thermometer and controller (Qualitrol / Precimeasure)

S and PC1 - Single Phase Isolation; AT1 - Single Phase Autotransformer;

DV, DY, EV, EY, GYV, GY, PC3, RVY, SVY, SY and T - Three Phase - General Purpose Isolation; DD - Three Phase - Drive;

Z, GT, Y, YV, YZ and AT3 - Three Phase Autotransformer - Iron Core; ACR - Single/Three Phase - Air Core;

1LR and 3LR - Single/Three Phase - Iron Core custom kVA

-NEMA 2 enclosures are the same construction as NEMA 1, except NEMA 2 enclosures provide a drip shield.

-NEMA 12 enclosures are for indoor use with dust and drip protection.

-NEMA 3R enclosures are for indoor/outdoor use with rain and ice protection (outdoor providing weather kits).

Mounting Configuration:

Base mounted - rigid

Note: Installed mounting must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2022

Seismic Certification Limits:

$S_{DS} = 2.05 \text{ g}$ $z/h=1.0$

$I_p = 1.5$

$S_{DS} = 2.05 \text{ g}$ $z/h=0.0$

Model Line	Enclosure Designation	kVA¹	Dimensions (in)			Weight (lbs.)	Notes³	UUT
			Depth	Width	Height			
Enclosure Type C Models: S and PC1 Series, AT1 Series, 1LR Series, ACR Series Single Phase	13	≤ 1750	48.0	80.0	91.5	7,000		Interp.
	14	≤ 2000	60.0	90.0	91.5	9,000		Interp.
	15	≤ 2250	60.0	90.0	100.0	10,000		Interp.
	16	≤ 2500	60.0	100.0	91.5	10,500		Interp.
	17	≤ 2750	60.0	100.0	110.0	12,000		Interp.
	18	≤ 3000	60.0	110.0	110.0	13,000		Interp.
	19	≤ 3250	60.0	110.0	120.0	14,000		Interp.
	20	≤ 3500	72.0	110.0	110.0	16,000		Interp.
	21	≤ 3750	72.0	120.0	120.0	18,000		Interp.
	22	≤ 4000	72.0	150.0	124.0	21,000		Interp.

Notes:

1. kVA is referring to transformers "two winding" kVA.

2. Transformer cores and coils are also certified for standalone installation. They are supported and mounted independently from the enclosures.

3. Custom enclosure Type C sizes are permitted. Custom enclosures must not exceed dimensions or weight of UUT4.

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

2551652-CR-001-R1



Manufacturer:	Power Quality International
Model Line:	Single & Three Phase Power Transformers

TABLE 3

Certified Product Construction Summary:

Type C Enclosures: mild carbon steel sheet metal enclosure with sizes ranging from 13 to 22.

Type C = transformer mounted directly to enclosed base rails rather than the enclosure. Designation type indicates intended use of the transformer which may affect the electrical characteristics.

Certified Options Summary:

Winding material: A - Aluminum or C - Copper; Single or Three Phase

Winding Type: Barrel, Barrel W/ Shield, Disc, Disc w/ Shield, Cast, Cast w/ shield NEMA Type 1, 2, 3R, or 12 enclosure;

Fans (YAHOA Electric Co.), Thermometer and controller (Qualitrol / Precimeasure)

S and PC1 - Single Phase Isolation; AT1 - Single Phase Autotransformer;

DV, DY, EV, EY, GY, PC3, RVY, SVY, SY and T - Three Phase - General Purpose Isolation; DD - Three Phase - Drive;

Z, GT, Y, YV, YZ and AT3 - Three Phase Autotransformer - Iron Core; ACR - Single/Three Phase - Air Core;

1LR and 3LR - Single/Three Phase - Iron Core custom kVA

-NEMA 2 enclosures are the same construction as NEMA 1, except NEMA 2 enclosures provide a drip shield.

-NEMA 12 enclosures are for indoor use with dust and drip protection.

-NEMA 3R enclosures are for indoor/outdoor use with rain and ice protection (outdoor providing weather kits).

Mounting Configuration:

Base mounted - rigid

Note: Installed mounting must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2022

Seismic Certification Limits:

$S_{DS} = 2.05 \text{ g}$ $z/h=1.0$

$I_p = 1.5$

$S_{DS} = 2.05 \text{ g}$ $z/h=0.0$

Model Line	Enclosure Designation	kVA¹	Dimensions (in)			Weight (lbs.)	Notes³	UUT
			Depth	Width	Height			
Enclosure Type C Models: Z, GT, Y, YV, YZ and AT3 Series, DV, DY, EV, EY, GY, PC3, RVY, SVY, SY, T, PE, PV and PY Series, DD Series, 3LR Series, ACR Series Three Phase	13	1500	48.0	80.0	91.5	11,100	Cu Coil	8
	14	≤ 2500	60.0	90.0	91.5	11,000		Interp.
	15	≤ 3000	60.0	90.0	100.0	12,000		Interp.
	16	≤ 3500	60.0	100.0	91.5	12,000		Interp.
	17	≤ 4000	60.0	100.0	110.0	15,000		Interp.
	18	≤ 5000	60.0	110.0	110.0	16,000		Interp.
	19	≤ 5500	60.0	110.0	120.0	18,000		Interp.
	20	≤ 6000	72.0	110.0	110.0	19,000		Interp.
	21	≤ 7000	72.0	120.0	120.0	23,000		Interp.
	22	≤ 4000	72.0	130.0	124.0	26,500		Interp.
	22	6000	72.0	150.0	124.0	26,500	Cu-Disc Single Leg w/ Shield, Al-Barrel, Al-Barrel Cast Single Leg	4

Notes:

1. kVA is referring to transformers "two winding" kVA.

2. Transformer cores and coils are also certified for standalone installation. They are supported and mounted independently from the enclosures.

3. Custom enclosure Type C sizes are permitted. Custom enclosures must not exceed dimensions or weight of UUT4.

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

2551652-CR-001-R1



TABLE 4

TRU Compliance, by Structural Integrity Associates, Inc.
844-TRU-0200 | info@trucompliance.com

UNIT UNDER TEST (UUT) SUMMARY SHEET

2551652-CR-001-R1



Manufacturer: Power Quality International
Model Line: Single & Three Phase Power Transformers

UUT	Unit Description (kVA)	Report Number (UUT #)	Testing Lab	Tested	ISO 17025 Accredited?	S _{DS}	z/h	I _P
1	Type A, Single Phase, Size 4 (7.5 kVA)	2012-0471-TR-001, Rev.00 (UUT1)	ERDC-CERL	9-April 2013	No ¹	2.50	1.0	1.5
2	Type A, Three Phase, Size 7 (75 kVA)	2012-0471-TR-001, Rev.00 (UUT2)	ERDC-CERL	9-April 2013	No ¹	2.50	1.0	1.5
3	Type B, Single Phase, Size 8 (25 kVA)	2012-0471-TR-001, Rev.00 (UUT3)	ERDC-CERL	9-April 2013	No ¹	2.50	1.0	1.5
4	Type C, Three Phase, Size 22 (6000 kVA)	2012-0471-TR-001, Rev.00 (UUT4)	ERDC-CERL	10-April 2013	No ¹	2.10	1.0	1.5
5	Type B, Single Phase, Size 9 (55 kVA)	2012-0471-TR-001, Rev.00 (UUT5)	ERDC-CERL	9-April 2013	No ¹	2.50	1.0	1.5
6	Type A, Three Phase, Size 7 (75 kVA)	1900565-TR-001 (UUT6)	Pacific Earthquake Engineering Research Center (PEER)	12-Jan 2022	Yes	2.10	1.0	1.5
7	Type B, Three Phase, Size 12 (1000 kVA)	1900565-TR-001 (UUT7)	Pacific Earthquake Engineering Research Center (PEER)	14-Jan 2022	Yes	2.10	1.0	1.5
8	Type C, Three Phase, Size 13 (1500 kVA)	1900565-TR-002 (UUT8)	Structural & Earthquake Engineering & Simulation Laboratory (SEESL)	11-April 2022	Yes	2.05	1.0	1.5

Notes:

1. ERDC-CERL was not ISO 17025 accredited at the time of testing but has been reviewed by TRU Compliance and found to meet the requirements for ICC-ES AC156 testing. Review form is on file with TRU Compliance.

UNIT UNDER TEST (UUT) SUMMARY SHEET

2551652-CR-001-R1



Manufacturer:	Power Quality International						UUT 1		
Product Function:	Dry-Type Transformers								
Model Line:	Single & Three Phase Power Transformers								
Model Number:	Type A, Single Phase, Size 4 (7.5 kVA)								
Serial Number:	N/A					Test Report:	2012-0471-TR-001, Rev.00 (UUT1)		
UUT Properties									
Weight (lbs.)	Dimension (in)			Lowest Natural Frequency (Hz)					
	Depth	Width	Height	Front-Back	Side-Side	Vertical			
110	13.6	18.5	15.5	20.90	30.50	>33.33			
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 2022	ICC-ES AC156		2.50	1.0	1.5	4.00	3.00	1.67	0.67
			2.50	0.0					
Product Construction Summary:				Test Mounting Details:					
Enclosure Size 4 - Type A - NEMA 1 type enclosure, ventilated, mild carbon steel sheet metal. Copper barrel wound coil - Type S									
Options/Subcomponent Summary:									
Description (manufacturer)	Part Number			<p>UUT1 was base mounted - rigid to the test fixture using a total of four (4) 5/8" Grade 5 bolts and washers.</p> <p>Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.</p>					
n/a	n/a								

UNIT UNDER TEST (UUT) SUMMARY SHEET



2551652-CR-001-R1

UUT2 was base mounted - rigid to the test fixture using four (4) 1/2" Grade 5 bolts and washers.

Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET



2551652-CR-001-R1

Manufacturer:	Power Quality International						UUT 3						
Product Function:	Dry-Type Transformers												
Model Line:	Single & Three Phase Power Transformers												
Model Number:	Type B, Single Phase, Size 8 (25 kVA)												
Serial Number:	N/A						Test Report: 2012-0471-TR-001, Rev.00 (UUT3)						
UUT Properties													
Weight (lbs.)	Dimension (in)			Lowest Natural Frequency (Hz)									
	Depth	Width	Height	Front-Back	Side-Side	Vertical							
450	29.8	30.8	31.8	25.30	8.70	>33.33							
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 2022	ICC-ES AC156		2.50	1.0	1.5	4.00	3.00	1.67	0.67				
	2.50	0.0											
Product Construction Summary:					Test Mounting Details:								
Enclosure Size 8 - Type B - NEMA 3R type enclosure, ventilated, mild carbon steel sheet metal. Aluminum disc wound coil - Type S													
Options/Subcomponent Summary:													
Description (manufacturer)	Part Number												
n/a	n/a												

- UUT3 was base mounted - rigid to the test fixture using four (4) 1/2" Grade 5 bolts and washers.
- Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

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UNIT UNDER TEST (UUT) SUMMARY SHEET

2551652-CR-001-R1



Manufacturer: Power Quality International
Product Function: Dry-Type Transformers
Model Line: Single & Three Phase Power Transformers
Model Number: Type C, Three Phase, Size 22 (6000 kVA)
Serial Number: N/A

Test Report: 2012-0471-TR-001, Rev.00 (UUT4)

UUT 4

UUT Properties

Weight (lbs.)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
26,500	72.0	150.0	124.0	8.20	2.10	17.50

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 2022	ICC-ES AC156	2.10	1.0	1.5	3.36	2.52	1.40	0.56
		2.10	0.0					

Product Construction Summary:

Enclosure Size 22 - Type C -
 NEMA 1 type enclosure, ventilated, mild steel sheet metal.
 Transformer windings are supported on their own mild
 carbon structural steel frame, separate from the enclosure.
 Copper disc winding with shield - Type B
 Aluminum barrel winding - Type B
 Copper cast winding - Type B

Test Mounting Details:



UUT4 was base mounted - rigid to the test fixture using eight (8) 1/2" Grade 5 bolts for the enclosure and twelve (12) 1" Grade 5 bolts for the transformer assembly. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

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UNIT UNDER TEST (UUT) SUMMARY SHEET



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- UUT5 was base mounted - rigid to the test fixture using four (4) 1/2" Grade 5 bolts and washers.
- Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

TRU Compliance, by Structural Integrity Associates, Inc.

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UNIT UNDER TEST (UUT) SUMMARY SHEET



2551652-CR-001-R1

- UUT6 was base mounted - rigid to the test fixture using four (4) 3/8" Grade 8 bolts and flat washers.
- Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

2551652-CR-001-R1



Manufacturer: Power Quality International
Product Function: Dry-Type Transformers
Model Line: Single & Three Phase Power Transformers
Model Number: Type B, Three Phase, Size 12 (1000 kVA)
Serial Number: J54383

Test Report: 1900565-TR-001 (UUT7)

UUT 7

UUT Properties

Weight (lbs.)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
6,744	56.0	72.9	79.8	6.12	5.32	5.05

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 2022	ICC-ES AC156	2.10	1.0	1.5	3.36	2.52	1.40	0.56
		2.10	0.0					

Product Construction Summary:

Enclosure Size 12 - Type B -
 NEMA 3R type enclosure, ventilated, carbon steel sheet metal.

Three (3) cores, all with copper windings - Type B

Test Mounting Details:



UUT7 was base mounted - rigid to the test fixture using four (4) 7/8" Grade 8 bolts and flat washers.

Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

TRU Compliance, by Structural Integrity Associates, Inc.

844-TRU-0200 | info@trucompliance.com

UNIT UNDER TEST (UUT) SUMMARY SHEET

2551652-CR-001-R1



Manufacturer:	Power Quality International						UUT 8
Product Function:	Dry-Type Transformers						
Model Line:	Single & Three Phase Power Transformers						
Model Number:	Type C, Three Phase, Size 13 (1500 kVA)						
Serial Number:	D22						Test Report: 1900565-TR-002 (UUT8)
UUT Properties							
Weight (lbs.)	Dimension (in)			Lowest Natural Frequency (Hz)			
	Depth	Width	Height	Front-Back	Side-Side	Vertical	
11,100	48.0	80.0	91.5	13.77	14.38	18.65	
UUT Highest Passed Seismic Run Information							
Building Code	Test Criteria		$S_{DS}(g)$	z/h	I_p	$A_{FLX-H}(g)$	$A_{RIG-H}(g)$
CBC 2022	ICC-ES AC156		2.05	1.0	1.5	3.28	2.46
			2.05	0.0			
Product Construction Summary:				Test Mounting Details:			
Enclosure Size 13 - Type C - NEMA 1 type enclosure, ventilated, carbon steel sheet metal. Transformer windings are supported on their own carbon structural steel frame, separate from the enclosure. Three (3) cores, all with copper windings - Type B							
Options/Subcomponent Summary:				<p>UUT8 was base mounted - rigid to the test fixture using four (4) 1/2" Grade 8 bolts with flat washers for the enclosure and twelve (12) 7/8" Grade 8 bolts with flat washers for the transformer core. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.</p>			