



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-0829

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Active Power

Manufacturer's Technical Representative: Karl Schuetze

Mailing Address: 2128 W Braker Ln BK12, Austin, TX 78758

Telephone: (512) 836-6464 Email: seismic@activepower.com

Product Information

Product Name: CLEANSOURCE PLUS

Product Model Number(s): SEE ATTACHMENT 1

Product Category: UPS and Batteries

Product Sub-Category: UPS

General Description: Uninterruptible Power Supply
· UL/cUL 1778 and CAN/CSA 22.2 No.107.1 Listed
· Includes both Single Module Systems (SMS) and Multi-Module Systems (MMS)
· These systems are intended for use in 480, 415, or 400 VAC electrical systems installed per NEC requirement, with or without a neutral from the source. The systems can be configured singly or in parallel depending on customer requirements.

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: EASE LLC

Contact Person: Jonathan Roberson

Mailing Address: 5877 Pine Ave., Suite 210, Chino Hills, CA 91709

Telephone: (909) 606-7622 Email: jon@EASECo.com

Title: Principal Structural Engineer



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OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT**

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

Company Name: EASE LLC

Name: Jonathan Roberson

California License Number: S4197

Mailing Address: 5877 Pine Ave., Suite 210, Chino Hills, CA 91709

Telephone: (951) 295-1892

Email: jon@EASECo.com

Certification Method

☐ GR-63-Core

☒ ICC-ES AC156

☐ IEEE 344

☐ IEEE 693

☐ NEBS 3

☐ Other (Please Specify): _____

Testing Laboratory

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)

Contact Person: Jeremy Lange

Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513

Telephone: (972) 247-9657

Email: INFO@ETLDALLAS.COM

BY: Mohammad Karim

DATE: 09/25/2025



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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.44 (2.0 @ $z/h=1$) / 1.13 (2.5 @ $z/h=0$)

S_{ds} (Design spectral response acceleration at short period, g) = 2.0 @ $z/h=1$ / 2.5 @ $z/h=0$

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) = 0 and 1

Natural frequencies (Hz) = SEE ATTACHMENT 2

Overall dimensions and weight = SEE ATTACHMENT 1

HCAI Approval (For Office Use Only) - Approval Expires on 09/25/2031

Date: 9/25/2025

Name: Mohammad Karim

Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: S_{ds} (g) = 2.0

z/h = 1

Condition of Approval (if applicable):

BY: Mohammad Karim

DATE: 09/25/2025

ATTACHMENT 1:

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TABLE 1: SEISMIC CERTIFIED COMPONENTS

Manufacturer	Active Power								S _{DS} = 2.0 at z/h = 1 S _{DS} = 2.5 at z/h = 0	
Product Line	CLEANSOURCE PLUS UPS									
COMPONENT	MODEL NO.	ELECTRICAL RATING			DIMENSIONS (IN.)			MAX. WT. (LB.)	BASIS ^[1]	
		INPUT / OUTPUT	INPUT CURRENT (A)	OUTPUT POWER RATING	W	D	H			
CLEANSOURCE PLUS SINGLE MODULE SYSTEM (SMS) ^{[2][3]}										
CleanSource Plus SMS	Plus SMS 333 ^[5]	480 VAC, 3Ø, 60 Hz	500	370 kVA / 333 kW	58.74	34	78	4,707	UUT-1	
CleanSource Plus SMS	Plus SMS 277y ^[5]	400 / 415 VAC, 3Ø, 60 Hz	500	307 kVA / 277 kW	58.74	34	78	4,707	INT	
CLEANSOURCE PLUS MULTI-MODULE SYSTEM (MMS) ^{[2][4][10]}										
CleanSource Plus MMS, 1MMU	Plus MMS 333 ^[6]	400 / 415 VAC, 3Ø, 60 Hz	500	370 kVA / 333 kW	128.41	34.17	95.12	6,910	UUT-2	
CleanSource Plus MMS, 1MMU	Plus MMS 277y ^[6]	400 / 415 VAC, 3Ø, 60 Hz	500	307 kVA / 277 kW	128.41	34.17	95.12	6,910	INT	
CleanSource Plus MMS, 2MMU	Plus MMS 333 N+1 ^[7]	480 VAC, 3Ø, 60 Hz	500	667 kVA / 600 kW	171.91	34.17	95.12	10,893	INT	
CleanSource Plus MMS, 2MMU	Plus MMS 555y ^[7]	400 / 415 VAC, 3Ø, 60 Hz	1000	616 kVA / 555 kW	171.91	34.17	95.12	10,893	INT	
CleanSource Plus MMS, 2MMU	Plus MMS 277y N+1 ^[7]	400 / 415 VAC, 3Ø, 60 Hz	500	307 kVA / 277 kW	171.91	34.17	95.12	10,893	INT	
CleanSource Plus MMS, 2MMU	Plus MMS 667 ^[7]	480 VAC, 3Ø, 60 Hz	1000	740 kVA / 667 kW	171.91	34.17	95.12	10,893	UUT-3	
CleanSource Plus MMS, 3MMU	Plus MMS 1000 ^[8]	480 VAC, 3Ø, 60 Hz	1500	1110 kVA / 1000 kW	215.91	34.17	95.12	14,880	INT	
CleanSource Plus MMS, 3MMU	Plus MMS 667 N+1 ^[8]	480 VAC, 3Ø, 60 Hz	1000	740 kVA / 667 kW	215.91	34.17	95.12	14,880	INT	
CleanSource Plus MMS, 3MMU	Plus MMS 833y ^[8]	400 / 415 VAC, 3Ø, 60 Hz	1500	925 kVA / 833 kW	215.91	34.17	95.12	14,880	INT	
CleanSource Plus MMS, 3MMU	Plus MMS 555y N+1 ^[8]	400 / 415 VAC, 3Ø, 60 Hz	1000	616 kVA / 555 kW	215.91	34.17	95.12	14,880	INT	
CleanSource Plus MMS, 4MMU	Plus MMS 1333 ^[9]	480 VAC, 3Ø, 60 Hz	2000	1480 kVA / 1333 kW	259.07	34.17	95.12	18,865	INT	

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Manufacturer	Active Power							S _{DS} = 2.0 at z/h = 1	
Product Line	CLEANSOURCE PLUS UPS							S _{DS} = 2.5 at z/h = 0	
COMPONENT	MODEL NO.	ELECTRICAL RATING			DIMENSIONS (IN.)			MAX. WT. (LB.)	BASIS ^[1]
		INPUT / OUTPUT	INPUT CURRENT (A)	OUTPUT POWER RATING	W	D	H		
CleanSource Plus MMS, 4MMU	Plus MMS 1000 N+1 ^[9]	480 VAC, 3Ø, 60 Hz	1500	1110 kVA / 1000 kW	259.07	34.17	95.12	18,865	INT
CleanSource Plus MMS, 4MMU	Plus MMS 1110y ^[9]	400 / 415 VAC, 3Ø, 60 Hz	2000	1233 kVA / 1110 kW	259.07	34.17	95.12	18,865	INT
CleanSource Plus MMS, 4MMU	Plus MMS 833y N+1 ^[9]	400 / 415 VAC, 3Ø, 60 Hz	1500	925 kVA / 833 kW	259.07	34.17	95.12	18,865	INT
Mount	RIGID BASE: free-standing, base-mounted configuration with the component rigidly attached to a supporting structure and no lateral support above the base.								
Notes	- BASIS: - UUT-#: Indicates that a test specimen matching these characteristics was tested as part of this testing program. - INT (Interpolate or extrapolate): indicates a model that was not specifically tested, and by which seismic qualification was established through evaluation of testing of similar models in the product line. - Special Seismic Certification is limited to components in Table 1 configured with subcomponents listed in Table 2 and those meeting exceptions of CBC §1705A.14.3.1. 3 wire (3W) or 4 wire (4W); single or dual input; with or without maintenance bypass configurations. 3 wire (3W) or 4 wire (4W); single or dual input configurations. - SMS configurations require use of Seismic Door Brace, 1826916-01 1MMU configurations require use of seismic kit 8821325-01 for 4-wire configuration or seismic kit 8821325-05 for 3-wire configuration. 2MMU configurations require use of seismic kits 8821325-01 and 8821325-02 for 4-wire configuration or seismic kits 8821325-05 and 8821325-06 for 3-wire configuration. 3MMU configurations require use of seismic kits 8821325-01, 8821325-02, and 8821325-03 for 4-wire configuration or seismic kits 8821325-05, 8821325-06, and 8821325-07 for 3-wire configuration. 4MMU configurations require use of seismic kits 8821325-01, 8821325-02, 8821325-03, and 8821325-04 for 4-wire configuration or seismic kits 8821325-05, 8821325-06, 8821325-07, and 8821325-08 for 3-wire configuration. - Each system consists of an input/output cabinet (IOC) for landing of power cables, a system cabinet (SC) for integrating 1 to 4 flywheel cabinets, and the ability to connect up to four Multi-Module Units (MMU) – 300kW flywheel modules with built-in wireway. Each MMU is structurally separate from adjacent cabinets, except for cables running through the wireway at top of cabinets. Hence testing of 3-wire w/ 1MMU in UUT-2 and 4-wire w/ 2MMU in UUT-3 is sufficient to justify heavier configurations with 3MMU & 4MMU.								

ATTACHMENT 1:

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TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS

SUBCOMPONENT	MANUFACTURER	ID NO. ^[2]	DESCRIPTION / RATING	MATERIALS	BASIS ^[1]
SINGLE MODULE SYSTEM (SMS)					UUT-1
I/O and Bypass Cabinet with MBP, Single Input					UUT-1
Maintenance Bypass Assembly	Eaton	PDG33M0600KNSN ^[4]	SWITCH, 600A, 3POL, FRAME-3	Thermoplastic, steel, copper	UUT-1, 2, 3
Bypass Contactor Assembly	Eaton	XTCE500M22A ^[4]	CONTACTOR, M-FR, COIL: 100-250V, AUX: 2NO-NC	Thermoplastic, steel, copper	UUT-1, 2, 3
Cabinet Frame	Active Power	8821175-02	ASSY, BYPASS CABINET, 1 INP, MBP, CS+, NEMA Type 1/ IP20	Carbon Steel	UUT-1
I/O and Bypass Cabinet without MBP, Single Input					
Bypass Contactor Assembly	Eaton	XTCE500M22A ^[4]	CONTACTOR, M-FR, COIL: 100-250V, AUX: 2NO-NC	Thermoplastic, steel, copper	UUT-1, 2, 3
Cabinet Frame	Active Power	8821175-01	ASSY, BYPASS CABINET, 2 INP, MBP, CS+, NEMA Type 1/ IP20	Carbon Steel	INT
I/O and Bypass Cabinet with MBP, Dual Input ^[3]					
Maintenance Bypass Assembly	Eaton	PDG33M0600KNSN ^[4]	SWITCH, 600A, 3POL, FRAME-3	Thermoplastic, steel, copper	UUT-1, 2, 3
Bypass Contactor Assembly	Eaton	XTCE500M22A ^[4]	CONTACTOR, M-FR, COIL: 100-250V, AUX: 2NO-NC	Thermoplastic, steel, copper	UUT-1, 2, 3
Dual Input Copper Bus	Active Power	1825997	BUSBAR, INPUT/OUTPUT, MMU, CS275	Copper	INT
Cabinet Frame	Active Power	8821175-04	ASSY, BYPASS CABINET, 1 INP, MBP, CS+, NEMA Type 1/ IP20	Carbon Steel	INT
I/O and Bypass Cabinet without MBP, Dual Input ^[3]					
Bypass Contactor Assembly	Eaton	XTCE500M22A ^[4]	CONTACTOR, M-FR, COIL: 100-250V, AUX: 2NO-NC	Thermoplastic, steel, copper	UUT-1, 2, 3
Dual Input Copper Bus	Active Power	8820735-1	ASSY, DUAL INPUT, BYPASS, CS275	Thermoplastic, steel, copper	INT
Cabinet Frame	Active Power	8821175-03	ASSY, BYPASS CABINET, 1 INP, MBP, CS+, NEMA Type 1/ IP20	Carbon Steel	INT
3W Multi-Module Unit, Single Input					
Flywheel	Active Power	8820628-01	ASSY, FLYWHEEL, CS275	4340 Steel, Ductile Cast Iron, Copper	UUT-1, 2, 3
Vacuum Pump	Welch	3042-Z01 ^[4]	PUMP, VAC, WELCH, CRVPRO4, 220-240V	Cast Iron, Polymer, Copper, Electrical Steel	UUT-1, 2, 3
Fan Plenum	Rosenberg	8820719-1	ASSY, PLENUM, FAN, MMU, CS275	Carbon Steel, Composite, Copper	UUT-1, 2, 3
Swing Panel	Active Power	8820715-1	ASSY, SWING PANEL, MMU, CS275	Carbon Steel	UUT-1, 2, 3
Printed Wiring Assemblies (PWA's)					
APC 3	Hunting	31110-2	ASSY, PWA, APC3	Epoxy, Copper, Silicon	UUT-1, 2, 3

TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS

SUBCOMPONENT	MANUFACTURER	ID NO. ^[2]	DESCRIPTION / RATING	MATERIALS	BASIS ^[1]
PDDC	Hunting	31228-2	ASSY, PWA, PDDC	Epoxy, Copper, Silicon	UUT-1, 2, 3
CIO	Hunting	31072-2	ASSY, PWA, CIO2	Epoxy, Copper, Silicon	UUT-1, 2, 3
BCI	Hunting	31084-3	ASSY, PWA, BCI	Epoxy, Copper, Silicon	UUT-1, 2, 3
PDAC	Hunting	31090-3	ASSY, PWA, PDAC, POWER DIST AC	Epoxy, Copper, Silicon	UUT-1, 2, 3
Left Panel		8821118-01	ASSY, LEFT PNL, 3W, 1 INP, SMS, CS+	Carbon Steel	SAME (UUT-1)
Static Switch Assembly	Infineon	8821092-01	THYRISTOR, DUAL, 600 ITAV, 1600V	Silicon, Aluminum, Copper	UUT-1, 2, 3
Input/Output Contactors	Eaton	XTCE500M22A ^[4]	CONTACTOR, M-FR, COIL: 100-250V, AUX: 2NO-NC	Thermoplastic, Copper, Steel	UUT-1, 2, 3
Bypass Static Switch	Infineon	TT162N16KOF ^[4]	THYRISTOR, DUAL, 162 ITAV, 1600V	Silicon, Copper, Thermoplastic	UUT-1
Bypass Static Switch Contactor	Eaton	XTCE115GS1B ^[4]	CONTACTOR, 3P, 115A, G, 1NO/1NC, 190-240VAC	Thermoplastic, Copper, Steel	UUT-1
Bypass Static Switch Fuses	Ferraz Shawmut - Mersen	AJT200-EIA ^[4]	FUSE, AJT200, 200A, SWITCH MOUNT, 45DEG	Composite, Copper	UUT-1
Transformer	Nova Magnetics	2641062-0750	TRANSFORMER, 750VA, 380-480/160, 230V	Copper, Silicon Steel, Electrical Insulation	UUT-1, 2, 3
Inductors and Transformers					
Line/Filter Inductor Assembly	Nova Magnetics	86427-4	ASSY, LINE/FILTER INDUCTORS, MMU, AL, CS275	Aluminum, Silicon Steel, Electrical Insulation	UUT-1, 2, 3
Transformer	Nova Magnetics	2641062-1750	TRANSFORMER, 1750VA, 380-480/160, 230V	Copper, Silicon Steel, Electrical Insulation	UUT-1, 2, 3
Zig-Zag Transformer	Nova Magnetics	26258	TRANSFORMER, ZZ, 380/480V, 3.34A	Copper, Silicon Steel, Electrical Insulation	UUT-2
Inverters					
Left Inverter	Infineon	8820771-1	ASSY, INVERTER MODULE, LEFT, 3-WIRE, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-2
Right Inverter	Infineon	8820768-1	ASSY, INVERTER MODULE, RIGHT, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-1, 2, 3
DC Bus Assembly	Active Power	8821090-01	ASSY, DC CAPS, INVERTER, CS+	Copper, Aluminum, Carbon Steel, Electrolytes	UUT-1, 2, 3
Field Coil Driver	Infineon	8820748	ASSY, FIELD COIL DRIVER, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-1, 2, 3
Inverter Fuses	Ferraz Shawmut - Mersen	A70QS500-4K ^[4]	FUSE, A70QS, SEMICOND, 700VDC, 500A	Composite, Copper	UUT-1, 2, 3
Cabinet Frame	Active Power	8821174-01	ASSY, FRAME, 3W, 1 INP, SMS, CS+, NEMA Type 1/ IP20	Carbon Steel	SAME (UUT-1)
3W Multi-Module Unit, Dual Input					
Flywheel	Active Power	8820628-01	ASSY, FLYWHEEL, CS275	4340 Steel, Ductile Cast Iron, Copper	UUT-1, 2, 3
Vacuum Pump	Welch	3042-Z01 ^[4]	PUMP, VAC, WELCH, CRVPRO4, 220-240V	Cast Iron, Polymer, Copper, Electrical Steel	UUT-1, 2, 3

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TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS

SUBCOMPONENT	MANUFACTURER	ID NO. [2]	DESCRIPTION / RATING	MATERIALS	BASIS [1]
Fan Plenum	Rosenberg	8820719-1	ASSY, PLENUM, FAN, MMU, CS275	Carbon Steel, Composite, Copper	UUT-1, 2, 3
Swing Panel	Active Power	8820715-1	ASSY, SWING PANEL, MMU, CS275	Carbon Steel	UUT-1, 2, 3
Printed Wiring Assemblies (PWA's)					
APC 3	Hunting	31110-2	ASSY, PWA, APC3	Epoxy, Copper, Silicon	UUT-1, 2, 3
PDDC	Hunting	31228-2	ASSY, PWA, PDDC	Epoxy, Copper, Silicon	UUT-1, 2, 3
CIO	Hunting	31072-2	ASSY, PWA, CIO2	Epoxy, Copper, Silicon	UUT-1, 2, 3
BCI	Hunting	31084-3	ASSY, PWA, BCI	Epoxy, Copper, Silicon	UUT-1, 2, 3
PDAC	Hunting	31090-3	ASSY, PWA, PDAC, POWER DIST AC	Epoxy, Copper, Silicon	UUT-1, 2, 3
Left Panel		8821118-02	ASSY, LEFT PNL, 3W, 2 INP, SMS, CS+	Carbon Steel	SAME (UUT-1)
Static Switch Assembly	Infineon	8821092-01	THYRISTOR, DUAL, 600 ITAV, 1600V	Silicon, Aluminum, Copper	UUT-1, 2, 3
Input/Output Contactors	Eaton	XTCE500M22A [4]	CONTACTOR, M-FR, COIL: 100-250V, AUX: 2NO-NC	Thermoplastic, Copper, Steel	UUT-1, 2, 3
Bypass Static Switch	Infineon	TT162N16KOF [4]	THYRISTOR, DUAL, 162 ITAV, 1600V	Silicon, Copper, Thermoplastic	UUT-1
Bypass Static Switch Contactor	Eaton	XTCE115GS1B [4]	CONTACTOR, 3P, 115A, G, 1NO/1NC, 190-240VAC	Thermoplastic, Copper, Steel	UUT-1
Bypass Static Switch Fuses	Ferraz Shawmut - Mersen	AJT200-EIA [4]	FUSE, AJT200, 200A, SWITCH MOUNT, 45DEG	Composite, Copper	UUT-1
Transformer	Nova Magnetics	2641062-0750	TRANSFORMER, 750VA, 380-480/160, 230V	Copper, Silicon Steel, Electrical Insulation	UUT-1, 2, 3
Inductors and Transformers					
Line/Filter Inductor Assembly	Nova Magnetics	86427-4	ASSY, LINE/FILTER INDUCTORS, MMU, AL, CS275	Aluminum, Silicon Steel, Electrical Insulation	UUT-1, 2, 3
Transformer	Nova Magnetics	2641062-1750	TRANSFORMER, 1750VA, 380-480/160, 230V	Copper, Silicon Steel, Electrical Insulation	UUT-1, 2, 3
Zig-Zag Transformer	Nova Magnetics	26258	TRANSFORMER, ZZ, 380/480V, 3.34A	Copper, Silicon Steel, Electrical Insulation	UUT-2
Inverters					
Left Inverter	Infineon	8820771-1	ASSY, INVERTER MODULE, LEFT, 3-WIRE, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-2
Right Inverter	Infineon	8820768-1	ASSY, INVERTER MODULE, RIGHT, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-1, 2, 3
DC Bus Assembly	Active Power	8821090-01	ASSY, DC CAPS, INVERTER, CS+	Copper, Aluminum, Carbon Steel, Electrolytes	UUT-1, 2, 3
Field Coil Driver	Infineon	8820748	ASSY, FIELD COIL DRIVER, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-1, 2, 3
Inverter Fuses	Ferraz Shawmut - Mersen	A70QS500-4K [4]	FUSE, A70QS, SEMICOND, 700VDC, 500A	Composite, Copper	UUT-1, 2, 3

TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS

SUBCOMPONENT	MANUFACTURER	ID NO. [2]	DESCRIPTION / RATING	MATERIALS	BASIS [1]
Cabinet Frame	Active Power	8821174-02	ASSY, FRAME, 3W, 2 INP, SMS, CS+, NEMA Type 1/ IP20	Carbon Steel	SAME (UUT-1)
4W Multi-Module Unit, Single Input					UUT-1
Flywheel	Active Power	8820628-01	ASSY, FLYWHEEL, CS275	4340 Steel, Ductile Cast Iron, Copper	UUT-1, 2, 3
Vacuum Pump	Welch	3042-Z01 [4]	PUMP, VAC, WELCH, CRVPRO4, 220-240V	Cast Iron, Polymer, Copper, Electrical Steel	UUT-1, 2, 3
Fan Plenum	Rosenberg	8820719-1	ASSY, PLENUM, FAN, MMU, CS275	Carbon Steel, Composite, Copper	UUT-1, 2, 3
Swing Panel	Active Power	8820715-1	ASSY, SWING PANEL, MMU, CS275	Carbon Steel	UUT-1, 2, 3
Printed Wiring Assemblies (PWA's)					
APC 3	Hunting	31110-2	ASSY, PWA, APC3	Epoxy, Copper, Silicon	UUT-1, 2, 3
PDDC	Hunting	31228-2	ASSY, PWA, PDDC	Epoxy, Copper, Silicon	UUT-1, 2, 3
CIO	Hunting	31072-2	ASSY, PWA, CIO2	Epoxy, Copper, Silicon	UUT-1, 2, 3
BCI	Hunting	31084-3	ASSY, PWA, BCI	Epoxy, Copper, Silicon	UUT-1, 2, 3
PDAC	Hunting	31090-3	ASSY, PWA, PDAC, POWER DIST AC	Epoxy, Copper, Silicon	UUT-1, 2, 3
Left Panel	Active Power	8821118-03	ASSY, LEFT PNL, 4W, 1 INP, SMS, CS+	Carbon Steel	UUT-1
Static Switch Assembly	Infineon	8821092-01	THYRISTOR, DUAL, 600 ITAV, 1600V	Silicon, Aluminum, Copper	UUT-1, 2, 3
Input/Output Contactors	Eaton	XTCE500M22A [4]	CONTACTOR, M-FR, COIL:100-250V, AUX:2NO-NC	Thermoplastic, Copper, Steel	UUT-1, 2, 3
Bypass Static Switch	Infineon	TT162N16KOF [4]	THYRISTOR, DUAL, 162 ITAV, 1600V	Silicon, Copper, Thermoplastic	UUT-1
Bypass Static Switch Contactor	Eaton	XTCE115GS1B [4]	CONTACTOR, 3P, 115A, G, 1NO/1NC, 190-240VAC	Thermoplastic, Copper, Steel	UUT-1
Bypass Static Switch Fuses	Ferraz Shawmut - Mersen	AJT200-EIA [4]	FUSE, AJT200, 200A, SWITCH MOUNT, 45DEG	Composite, Copper	UUT-1
Transformer	Nova Magnetics	2641062-0750	TRANSFORMER, 750VA, 380-480/160, 230V	Copper, Silicon Steel, Electrical Insulation	UUT-1, 2, 3
Inductors and Transformers					
Line/Filter Inductor Assembly	Nova Magnetics	86427-4	ASSY, LINE/FILTER INDUCTORS, MMU, AL, CS275	Aluminum, Silicon Steel, Electrical Insulation	UUT-1, 2, 3
Transformer	Nova Magnetics	2641062-1750	TRANSFORMER, 1750VA, 380-480/160, 230V	Copper, Silicon Steel, Electrical Insulation	UUT-1, 2, 3
Neutral Inductor	Nova Magnetics	2641082	INDUCTOR, 1PH, 108uH, 380A, S275	Copper, Silicon Steel, Electrical Insulation	UUT-1, 3
Inverters					
Left Inverter	Infineon	8820820-1	ASSY, INVERTER MODULE, LEFT, 4-WIRE, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-1, 3

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TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS

SUBCOMPONENT	MANUFACTURER	ID NO. [2]	DESCRIPTION / RATING	MATERIALS	BASIS [1]
Right Inverter	Infineon	8820768-1	ASSY, INVERTER MODULE, RIGHT, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-1, 2, 3
DC Bus Assembly	Active Power	8821090-01	ASSY, DC CAPS, INVERTER, CS+	Copper, Aluminum, Carbon Steel, Electrolytes	UUT-1, 2, 3
Field Coil Driver	Infineon	8820748	ASSY, FIELD COIL DRIVER, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-1, 2, 3
Inverter Fuses	Ferraz Shawmut - Mersen	A70QS500-4K [4]	FUSE, A70QS, SEMICON, 700VDC, 500A	Composite, Copper	UUT-1, 2, 3
Cabinet Frame	Active Power	8821174-03	ASSY, FRAME, 4W, 1 INP, SMS, CS+, NEMA Type 1/ IP20	Carbon Steel	UUT-1
4W Multi-Module Unit, Dual Input					
Flywheel	Active Power	8820628-01	ASSY, FLYWHEEL, CS275	4340 Steel, Ductile Cast Iron, Copper	UUT-1, 2, 3
Vacuum Pump	Welch	3042-Z01	PUMP, VAC, WELCH, CRVPRO4, 220-240V	Cast Iron, Polymer, Copper, Electrical Steel	UUT-1, 2, 3
Fan Plenum	Rosenberg	8820719-1	ASSY, PLENUM, FAN, MMU, CS275	Carbon Steel, Composite, Copper	UUT-1, 2, 3
Swing Panel	Active Power	8820715-1	ASSY, SWING PANEL, MMU, CS275	Carbon Steel	UUT-1, 2, 3
Printed Wiring Assemblies (PWA's)					
APC 3	Hunting	31110-2	ASSY, PWA, APC3	Epoxy, Copper, Silicon	UUT-1, 2, 3
PDDC	Hunting	31228-2	ASSY, PWA, PDDC	Epoxy, Copper, Silicon	UUT-1, 2, 3
CIO	Hunting	31072-2	ASSY, PWA, CIO2	Epoxy, Copper, Silicon	UUT-1, 2, 3
BCI	Hunting	31084-3	ASSY, PWA, BCI	Epoxy, Copper, Silicon	UUT-1, 2, 3
PDAC	Hunting	31090-3	ASSY, PWA, PDAC, POWER DIST AC	Epoxy, Copper, Silicon	UUT-1, 2, 3
Left Panel		8821118-04	ASSY, LEFT PNL, 4W, 2 INP, SMS, CS+	Carbon Steel	SAME (UUT-1)
Static Switch Assembly	Infineon	8821092-01	THYRISTOR, DUAL, 600 ITAV, 1600V	Silicon, Aluminum, Copper	UUT-1, 2, 3
Input/Output Contactors	Eaton	XTCE500M22A [4]	CONTACTOR, M-FR, COIL: 100-250V, AUX: 2NO-NC	Thermoplastic, Copper, Steel	UUT-1, 2, 3
Bypass Static Switch	Infineon	TT162N16KOF [4]	THYRISTOR, DUAL, 162 ITAV, 1600V	Silicon, Copper, Thermoplastic	UUT-1
Bypass Static Switch Contactor	Eaton	XTCE115GS1B [4]	CONTACTOR, 3P, 115A, G, 1NO/1NC, 190-240VAC	Thermoplastic, Copper, Steel	UUT-1
Bypass Static Switch Fuses	Ferraz Shawmut - Mersen	AJT200-EIA [4]	FUSE, AJT200, 200A, SWITCH MOUNT, 45DEG	Composite, Copper	UUT-1
Transformer	Nova Magnetics	2641062-0750	TRANSFORMER, 750VA, 380-480/160, 230V	Copper, Silicon Steel, Electrical Insulation	UUT-1, 2, 3
Inductors and Transformers					
Line/Filter Inductor Assembly	Nova Magnetics	86427-4	ASSY, LINE/FILTER INDUCTORS, MMU, AL, CS275	Aluminum, Silicon Steel, Electrical Insulation	UUT-1, 2, 3

ATTACHMENT 1:

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TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS

SUBCOMPONENT	MANUFACTURER	ID NO. ^[2]	DESCRIPTION / RATING	MATERIALS	BASIS ^[1]
Transformer	Nova Magnetics	2641062-1750	TRANSFORMER, 1750VA, 380-480/160, 230V	Copper, Silicon Steel, Electrical Insulation	UUT-1, 2, 3
Neutral Inductor	Nova Magnetics	2641082	INDUCTOR, 1PH, 108uH, 380A, S275	Copper, Silicon Steel, Electrical Insulation	UUT-1, 3
Inverters					
Left Inverter	Infineon	8820820-1	ASSY, INVERTER MODULE, LEFT, 4-WIRE, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-1, 3
Right Inverter	Infineon	8820768-1	ASSY, INVERTER MODULE, RIGHT, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-1, 2, 3
DC Bus Assembly	Active Power	8821090-01	ASSY, DC CAPS, INVERTER, CS+	Copper, Aluminum, Carbon Steel, Electrolytes	UUT-1, 2, 3
Field Coil Driver	Infineon	8820748	ASSY, FIELD COIL DRIVER, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-1, 2, 3
Inverter Fuses	Ferraz Shawmut - Mersen	A70QS500-4K ^[4]	FUSE, A70QS, SEMICON, 700VDC, 500A	Composite, Copper	UUT-1, 2, 3
Cabinet Frame	Active Power	8821174-04	ASSY, FRAME, 4W, 2 INP, SMS, CS+, NEMA Type 1/ IP20	Carbon Steel	SAME (UUT-1)
MULTI-MODULE SYSTEM (MMS)					
I/O Cabinets					
Single Input 3W					
Input Bus	Active Power	8821133-01	ASSY, REAR PNL, 1 INP, 3W, IOC, CS+	Copper	INT
Output Bus	Active Power	8821133-01	ASSY, REAR PNL, 1 INP, 3W, IOC, CS+	Copper	INT
Ground Bus	Active Power	8821133-01	ASSY, REAR PNL, 1 INP, 3W, IOC, CS+	Copper	INT
Cabinet Frame	Active Power	8821131-01	ASSY, 1 INP, 3W, IOC, CS+, NEMA Type 1/ IP20	Carbon Steel	INT
Dual Input 3W					
Input Bus	Active Power	8821133-02	ASSY, REAR PNL, 2 INP, 3W, IOC, CS+	Copper	UUT-2
Output Bus	Active Power	8821133-02	ASSY, REAR PNL, 2 INP, 3W, IOC, CS+	Copper	UUT-2
Ground Bus	Active Power	8821133-02	ASSY, REAR PNL, 2 INP, 3W, IOC, CS+	Copper	UUT-2
Bypass Bus	Active Power	8821133-02	ASSY, REAR PNL, 2 INP, 3W, IOC, CS+	Copper	UUT-2
Cabinet Frame	Active Power	8821131-02	ASSY, 2 INP, 3W, IOC, CS+, NEMA Type 1/ IP20	Carbon Steel	UUT-2
Single Input 4W					
Input Bus	Active Power	8821133-03	ASSY, REAR PNL, 1 INP, 4W, IOC, CS+	Copper	UUT-3
Output Bus	Active Power	8821133-03	ASSY, REAR PNL, 1 INP, 4W, IOC, CS+	Copper	UUT-3

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TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS

SUBCOMPONENT	MANUFACTURER	ID NO. [2]	DESCRIPTION / RATING	MATERIALS	BASIS [1]
Ground Bus	Active Power	8821133-03	ASSY, REAR PNL, 1 INP, 4W, IOC, CS+	Copper	UUT-3
Neutral Bus	Active Power	8821133-03	ASSY, REAR PNL, 1 INP, 4W, IOC, CS+	Copper	UUT-3
Cabinet Frame	Active Power	8821131-03	ASSY, 1 INP, 4W, IOC, CS+, NEMA Type 1/ IP20	Carbon Steel	UUT-3
Dual Input 4W [5]					EXT
Input Bus	Active Power	8821133-04	ASSY, REAR PNL, 2 INP, 4W, IOC, CS+	Copper	SAME (UUT-3)
Output Bus	Active Power	8821133-04	ASSY, REAR PNL, 2 INP, 4W, IOC, CS+	Copper	SAME (UUT-3)
Ground Bus	Active Power	8821133-04	ASSY, REAR PNL, 2 INP, 4W, IOC, CS+	Copper	SAME (UUT-3)
Bypass Bus	Active Power	8821133-04	ASSY, REAR PNL, 2 INP, 4W, IOC, CS+	Copper	EXT
Neutral Bus	Active Power	8821133-04	ASSY, REAR PNL, 2 INP, 4W, IOC, CS+	Copper	SAME (UUT-3)
Cabinet Frame	Active Power	8821131-04	ASSY, 2 INP, 4W, IOC, CS+, NEMA Type 1/ IP20	Carbon Steel	SAME (UUT-3)
System Cabinet					UUT-2, 3
Bypass Breaker	Eaton	SBS6203HEA2052CP RN4ENNNBX [4]	CKT BRKR, SBS-620, 3POL, 2000A, 24VDC ST	Carbon Steel, Copper, Thermoplastic	UUT-2, 3
Output Isolation Switches	Eaton	PDG33M0600KNSN [4]	SWITCH, 600A, 3POL, FRAME-3	Carbon Steel, Copper, Thermoplastic	UUT-1, 2, 3
Input Isolation Switches	Eaton	PDG33M0600B2NN [4]	CKT BREAKER, 600A, 3POL, FRAME-3,80%,LSI	Carbon Steel, Copper, Thermoplastic	UUT-2, 3
Swing Panel	Active Power	8820957-01	ASSY, SWING PANEL, SC, XT250G/Z	Carbon Steel	UUT-2, 3
Printed Wiring Assemblies (PWA's)					
APC 3	Hunting	31110-2	ASSY, PWA, APC3	Epoxy, Copper, Silicon	UUT-1, 2, 3
PDDC	Hunting	31228-2	ASSY, PWA, PDDC	Epoxy, Copper, Silicon	UUT-1, 2, 3
CIO	Hunting	31072-2	ASSY, PWA, CIO2	Epoxy, Copper, Silicon	UUT-1, 2, 3
BCI	Hunting	31084-3	ASSY, PWA, BCI	Epoxy, Copper, Silicon	UUT-1, 2, 3
PDAC	Hunting	31090-3	ASSY, PWA, PDAC, POWER DIST AC	Epoxy, Copper, Silicon	UUT-1, 2, 3
Left Panel	Active Power	8821116-01	ASSY, LEFT PANEL, SC, CS+	Carbon Steel	UUT-2, 3
Network Switch	Phoenix	1085256 [4]	ETHERNET SW,8PORT,10/100 Mbps, RJ45	Silicon, Carbon Steel, Copper, Thermoplastic	UUT-2, 3
Bypass Static Switch	Infineon	TT500N16K0F [4]	THYRISTOR, DUAL, 500 ITAV, 1600V	Silicon, Copper, Thermoplastic	UUT-2, 3
Bypass Static Switch Fuses	Ferraz Shawmut - Mersen	AJT600-EIB [4]	FUSE, AJT600, 600A, SWITCH MOUNT, 22.5DEG	Composite, Copper	UUT-2, 3

TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS

SUBCOMPONENT	MANUFACTURER	ID NO. [2]	DESCRIPTION / RATING	MATERIALS	BASIS [1]
Bypass Static Switch Contactor	Eaton	XTCS400M22B [4]	CONTACTOR, 3P,400A,2NO/2NC,220-240V COIL	Carbon Steel, Copper, Thermoplastic	UUT-2, 3
Fan Plenum	Rosenberg	8820902-02	ASSY, TOP W/FANS, SC, CS+	Carbon Steel, Composite, Copper	UUT-2, 3
MMU Input Bus Assembly	Active Power	8821130-01	ASSY, PNL, MMU INP, SC, CS+	Carbon Steel, Copper, Composite	UUT-2, 3
SC Input Bus Assembly	Active Power	8821128-04	ASSY, PNL, IO BUS,INP,4 MMU,SC, CS+	Carbon Steel, Copper, Composite	UUT-2, 3
MMU Output Bus Assembly	Active Power	8821129-01	ASSY, PNL, MMU OUT, SC, CS+	Carbon Steel, Copper, Composite	UUT-2, 3
SC Output Bus Assembly	Active Power	8821127-04	ASSY, PNL, IO BUS,OUT,4 MMU,SC,CS+	Carbon Steel, Copper, Composite	UUT-2, 3
Transformers	NOVA MAGFLUX	26243-0500	TRANSFORMER, 500VA, 380-480/190, 230V	Copper, Silicon Steel, Electrical Insulation	UUT-2, 3
Cabinet Frame	Active Power	8821310-04	ASSY, TOP, 3W/4W, 4 MMU, 2000A, SC, CS+, NEMA Type 1/ IP20	Carbon Steel	UUT-2, 3
3W Multi-Module Unit (MMU)					UUT-2
Flywheel	Active Power	8820628-01	ASSY, FLYWHEEL, CS275	4340 Steel, Ductile Cast Iron, Copper	UUT-1, 2, 3
Vacuum Pump	Welch	3042-Z01 [4]	PUMP, VAC, WELCH, CRVPRO4, 220-240V	Cast Iron, Polymer, Copper, Electrical Steel	UUT-1, 2, 3
Fan Plenum	Rosenberg	8820719-1	ASSY, PLENUM, FAN, MMU, CS275	Carbon Steel, Composite, Copper	UUT-1, 2, 3
Swing Panel	Active Power	8820715-1	ASSY, SWING PANEL, MMU, CS275	Carbon Steel	UUT-1, 2, 3
Printed Wiring Assemblies (PWA's)					
APC 3	Hunting	31110-2	ASSY, PWA, APC3	Epoxy, Copper, Silicon	UUT-1, 2, 3
PDDC	Hunting	31228-2	ASSY, PWA, PDDC	Epoxy, Copper, Silicon	UUT-1, 2, 3
CIO	Hunting	31072-2	ASSY, PWA, CIO2	Epoxy, Copper, Silicon	UUT-1, 2, 3
BCI	Hunting	31084-3	ASSY, PWA, BCI	Epoxy, Copper, Silicon	UUT-1, 2, 3
PDAC	Hunting	31090-3	ASSY, PWA, PDAC, POWER DIST AC	Epoxy, Copper, Silicon	UUT-1, 2, 3
Left Panel		8821109-01	ASSY, LEFT COMP PANEL, 3W, MMU, CS+	Carbon Steel	UUT-2
Static Switch Assembly	Infineon	8821092-01	THYRISTOR, DUAL, 600 ITAV, 1600V	Silicon, Aluminum, Copper	UUT-1, 2, 3
Input/Output Contactors	Eaton	XTCE500M22A [4]	CONTACTOR, M-FR,COIL:100-250V, AUX:2NO-NC	Thermoplastic, Copper, Steel	UUT-1, 2, 3
Transformer	Nova Magnetics	2641062-0750	TRANSFORMER, 750VA, 380-480/160, 230V	Copper, Silicon Steel, Electrical Insulation	UUT-1, 2, 3
Inductors and Transformers					
Line/Filter Inductor Assembly	Nova Magnetics	86427-4	ASSY, LINE/FILTER INDUCTORS,MMU,AL,CS275	Aluminum, Silicon Steel, Electrical Insulation	UUT-1, 2, 3

ATTACHMENT 1:

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TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS

SUBCOMPONENT	MANUFACTURER	ID NO. [2]	DESCRIPTION / RATING	MATERIALS	BASIS [1]
Transformer	Nova Magnetics	2641062-1750	TRANSFORMER, 1750VA, 380-480/160, 230V	Copper, Silicon Steel, Electrical Insulation	UUT-1, 2, 3
Zig-Zag Transformer	Nova Magnetics	26258	TRANSFORMER, ZZ,380/480V, 3.34A, NEMA Type 1/ IP20	Copper, Silicon Steel, Electrical Insulation	UUT-2
Inverters					
Left Inverter	Infineon	8820771-1	ASSY, INVERTER MODULE, LEFT,3-WIRE,CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-2
Right Inverter	Infineon	8820768-1	ASSY, INVERTER MODULE, RIGHT, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-1, 2, 3
DC Bus Assembly	Active Power	8821090-01	ASSY, DC CAPS, INVERTER, CS+	Copper, Aluminum, Carbon Steel, Electrolytes	UUT-1, 2, 3
Field Coil Driver	Infineon	8820748	ASSY, FIELD COIL DRIVER, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-1, 2, 3
Inverter Fuses	Ferraz Shawmut - Mersen	A70QS500-4K [4]	FUSE, A70QS, SEMICON, 700VDC, 500A	Composite, Copper	UUT-1, 2, 3
Cabinet Frame	Active Power	8821160-01	ASSY, FRAME, 3W, MMU, CS+, NEMA Type 1/ IP20	Carbon Steel	UUT-2
4W Multi-Module Unit (MMU)					UUT-3
Flywheel	Active Power	8820628-01	ASSY, FLYWHEEL, CS275	4340 Steel, Ductile Cast Iron, Copper	UUT-1, 2, 3
Vacuum Pump	Welch	3042-Z01 [4]	PUMP, VAC, WELCH, CRVPRO4, 220-240V	Cast Iron, Polymer, Copper, Electrical Steel	UUT-1, 2, 3
Fan Plenum	Rosenberg	8820719-1	ASSY, PLENUM, FAN, MMU, CS275	Carbon Steel, Composite, Copper	UUT-1, 2, 3
Swing Panel	Active Power	8820715-1	ASSY, SWING PANEL, MMU, CS275	Carbon Steel	UUT-1, 2, 3
Printed Wiring Assemblies (PWA's)					
APC 3	Hunting	31110-2	ASSY, PWA, APC3	Epoxy, Copper, Silicon	UUT-1, 2, 3
PDDC	Hunting	31228-2	ASSY, PWA, PDDC	Epoxy, Copper, Silicon	UUT-1, 2, 3
CIO	Hunting	31072-2	ASSY, PWA, CIO2	Epoxy, Copper, Silicon	UUT-1, 2, 3
BCI	Hunting	31084-3	ASSY, PWA, BCI	Epoxy, Copper, Silicon	UUT-1, 2, 3
PDAC	Hunting	31090-3	ASSY, PWA, PDAC, POWER DIST AC	Epoxy, Copper, Silicon	UUT-1, 2, 3
Left Panel		8821109-02	ASSY, LEFT COMP PANEL, 4W, MMU, CS+	Carbon Steel	UUT-3
Static Switch Assembly	Infineon	8821092-01	THYRISTOR, DUAL, 600 ITAV, 1600V	Silicon, Aluminum, Copper	UUT-1, 2, 3
Input/Output Contactors	Eaton	XTCE500M22A [4]	CONTACTOR, M-FR,COIL:100-250V, AUX:2NO-NC	Thermoplastic, Copper,, Steel	UUT-1, 2, 3
Transformer	Nova Magnetics	2641062-0750	TRANSFORMER, 750VA, 380-480/160, 230V	Copper, Silicon Steel, Electrical Insulation	UUT-1, 2, 3

TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS

SUBCOMPONENT	MANUFACTURER	ID NO. [2]	DESCRIPTION / RATING	MATERIALS	BASIS [1]
Inductors and Transformers					
Line/Filter Inductor Assembly	Nova Magnetics	86427-4	ASSY, LINE/FILTER INDUCTORS,MMU,AL,CS275	Aluminum, Silicon Steel, Electrical Insulation	UUT-1, 2, 3
Transformer	Nova Magnetics	2641062-1750	TRANSFORMER, 1750VA, 380-480/160, 230V	Copper, Silicon Steel, Electrical Insulation	UUT-1, 2, 3
Neutral Inductor	Nova Magnetics	2641082	INDUCTOR, 1PH, 108uH, 380A, S275	Copper, Silicon Steel, Electrical Insulation	UUT-1, 3
Inverters					
Left Inverter	Infineon	8820820-1	ASSY, INVERTER MODULE, LEFT,4-WIRE, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-1, 3
Right Inverter	Infineon	8820768-1	ASSY, INVERTER MODULE, RIGHT, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-1, 2, 3
DC Bus Assembly	Active Power	8821090-01	ASSY, DC CAPS, INVERTER, CS+	Copper, Aluminum, Carbon Steel, Electrolytes	UUT-1, 2, 3
Field Coil Driver	Infineon	8820748	ASSY, FIELD COIL DRIVER, CS275	Silicon, Copper, Aluminum, Carbon Steel	UUT-1, 2, 3
Inverter Fuses	Ferraz Shawmut - Mersen	A70QS500-4K [4]	FUSE, A70QS, SEMICOND, 700VDC, 500A	Composite, Copper	UUT-1, 2, 3
Cabinet Frame	Active Power	8821160-02	ASSY, FRAME, 4W, MMU, CS+, NEMA Type 1/ IP20	Carbon Steel	UUT-3
Notes	1. BASIS: • UUT-#: Indicates that a test specimen matching these characteristics was tested as part of this testing program. • SAME: Subcomponent is physically, mechanically & electrically the same as test specimen. Differences are limited to color, software, and/or labeling. • INT (Interpolated): indicates a subcomponent not specifically tested, and by which seismic qualification is established through evaluation of testing of at least two other similar subcomponents in the product line which this subcomponent falls between. • EXT (Extrapolated): indicates a subcomponent not specifically tested, and by which seismic qualification is established through evaluation of testing of at least two other similar models in the product line which this subcomponent falls outside. 2. Unless otherwise noted, Identification No. listed is Active Power's Identification No. 3. The dual input configuration of the SMS adds 20 lb or less to the single input configuration and is not used in the versions with maintenance bypass. 4. Subcomponent manufacturer's Identification No. 5. The 4W, dual input configuration is the heaviest configuration but the 3W, dual input is structurally less stiff and has a higher center of gravity. 6. Special Seismic Certification is limited to subcomponents in Table 2 when installed as part of a complete assembly of a CleanSource Plus UPS listed in Table 1.				

ATTACHMENT 2: TEST SPECIMEN SUMMARY

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UUT-1 CLEANSOURCE PLUS SMS (Single Module System) 4-Wire UPS		
Manufacturer: Active Power		
Identification: Model No.: PLUS SMS 333		
Description: 480 VAC, 3Ø, 60 Hz; 500 A; 370 kVA / 333 kW 4-wire; single input; w/ internal Maintenance Bypass		
Includes the following subcomponents:		
SUBCOMPONENT	MANUFACTURER	IDENTIFICATION NO.
<u>I/O and Bypass Cabinet with MBP, Single Input</u>		
Maintenance Bypass Assembly	Eaton	PDG33M0600KNSN
Bypass Contactor Assembly	Eaton	XTCE500M22A
Cabinet Frame (NEMA Type 1/ IP20)	Active Power	8821175-02
<u>4W Multi-Module Unit, Single Input</u>		
Flywheel	Active Power	8820628-01
Vacuum Pump	Welch	3042-Z01
Fan Plenum	Rosenberg	8820719-1
Swing Panel	Active Power	8820715-1
PWA's	Hunting 31110-2 / 31228-2 / 31072-2 / 31084-3 / 31090-3 *	
Left Panel	Active Power	8821118-03
Static Switch Assembly	Infineon	8821092-01
Input/Output Contactors	Eaton	XTCE500M22A
Bypass Static Switch	Infineon	TT162N16KOF
Bypass Static Switch Contactor	Eaton	XTCE115GS1B
Bypass Static Switch Fuses	FERRAZ SHAWMUT - MERSEN	AJT200-EIA
Transformer	Nova Magnetics	2641062-0750
<u>Inductors and Transformers</u>		
Line/Filter Inductor Assembly	Nova Magnetics	86427-4
Transformer	Nova Magnetics	2641062-1750
Neutral Inductor	Nova Magnetics	2641082
<u>Inverters</u>		
Left Inverter	Infineon	8820820-1
Right Inverter	Infineon	8820768-1
DC Bus Assembly	Active Power	8821090-01
Field Coil Driver	Infineon	8820748
Inverter Fuses	FERRAZ SHAWMUT - MERSEN	A70QS500-4K
Cabinet Frame	Active Power	8821174-03
Mounting: <u>Rigid Base (Floor)</u> mounted using (8) – 3/4" dia. A307 Hex Head Bolts w/ Standard Washers (Torque =110 ft-lb)		

Dimensions [in.]				Lowest Resonant Frequency [Hz]		
Width	Depth	Height	Weight [lb.]	Front - Axis	Side - Axis	Vert - Axis
58.74	34.00	78.00	4707	5.37	8.64	26.89

ICC-ES AC156 Shake Table Test Parameters						
S _{DS} [G]	z/h	I _p	A _{FLX-H} [G]	A _{RIG-H} [G]	A _{FLX-V} [G]	A _{RIG-V} [G]
2.0	1	1.5	3.20	2.40	1.68	0.68
2.5	0					



Test Report: SQ10240201

Included Seismic Door Brace, 1826916-01

* For more details on Printed Wiring Assemblies (PWA's) see Attachment 1, Table 2.

Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.

Test Report: SQ10240201

Included Seismic Door Brace, 1826916-01

* For more details on Printed Wiring Assemblies (PWA's) see Attachment 1, Table 2.

ATTACHMENT 2: TEST SPECIMEN SUMMARY

ATTACHMENT PAGE | 2 OF 3

UUT-2 CLEANSOURCE PLUS MMS (Multi-Module System) w/ 1 MMU 3-Wire UPS						
Manufacturer: Active Power						
Identification: Model No.: PLUS MMS 333						
Description: 400 / 415 VAC, 3Ø, 60 Hz; 500 A; 370 kVA / 333 kW 3-wire; dual input						
Includes the following sub-components:						
SUBCOMPONENT		MANUFACTURER		IDENTIFICATION NO.		
<u>Dual Input 3W (I/O Cabinet)</u>						
Input Bus	Active Power		8821133-02			
Output Bus	Active Power		8821133-02			
Ground Bus	Active Power		8821133-02			
Bypass Bus	Active Power		8821133-02			
Cabinet Frame (NEMA Type 1/ IP20)	Active Power		8821131-02			
<u>System Cabinet</u>						
Bypass Breaker	Eaton	SBS6203HEA2052CPRN4ENNNBX				
Output Isolation Switches	Eaton	PDG33M0600KNSN				
Input Isolation Switches	Eaton	PDG33M0600B2NN				
Swing Panel	Active Power	8820957-01				
PWA's	Hunting	31110-2 / 31228-2 / 31072-2 / 31084-3 / 31090-3*				
Left Panel	Active Power	8821116-01				
Network Switch	Phoenix	1085256				
Bypass Static Switch	Infineon	TT500N16K0F				
Bypass Static Switch Fuses	FERRAZ SHAWMUT - MERSEN	AJT600-EIB				
Bypass Static Switch Contactor	Eaton	XTCS400M22B				
Fan Plenum	Rosenberg	8820902-02				
MMU Input Bus Assembly	Active Power	8821130-01				
SC Input Bus Assembly	Active Power	8821128-04				
MMU Output Bus Assembly	Active Power	8821129-01				
SC Output Bus Assembly	Active Power	8821127-04				
Transformers	NOVA MAGFLUX	26243-0500				
Cabinet Frame	Active Power	8821310-04				
<u>3W Multi-Module Unit (MMU)</u>						
Flywheel	Active Power	8820628-01				
Vacuum Pump	Welch	3042-Z01				
Fan Plenum	Rosenberg	8820719-1				
Swing Panel	Active Power	8820715-1				
PWA's	Hunting	31110-2 / 31228-2 / 31072-2 / 31084-3 / 31090-3*				
Left Panel		8821109-01				
Static Switch Assembly	Infineon	8821092-01				
Input/Output Contactors	Eaton	XTCE500M22A				
Transformer	Nova Magnetics	2641062-0750				
<u>Inductors and Transformers</u>						
Line/Filter Inductor Assembly	Nova Magnetics	86427-4				
Transformer	Nova Magnetics	2641062-1750				
Zig-Zag Transformer	Nova Magnetics	26258				
<u>Inverters</u>						
Left Inverter	Infineon	8820771-1				
Right Inverter	Infineon	8820768-1				
DC Bus Assembly	Active Power	8821090-01				
Field Coil Driver	Infineon	8820748				
Inverter Fuses	FERRAZ SHAWMUT - MERSEN	A70QS500-4K				
Cabinet Frame	Active Power	8821160-01				
Mounting: <u>Rigid Base (Floor)</u> mounted using (13) – 3/4" dia. A307 Hex Head Bolts w/ Standard Washers (Torque =110 ft-lb)						
Dimensions [in.]			Weight [lb.]	Lowest Resonant Frequency [Hz]		
Width	Depth	Height		Front - Axis	Side - Axis	Vert - Axis
128.41	34.17	95.12	6910	4.98	6.79	5.64
ICC-ES AC156 Shake Table Test Parameters						
S _{DS} [G]	z/h	I _p	A _{FLX-H} [G]	A _{RIg-H} [G]	A _{FLX-V} [G]	A _{RIg-V} [G]
2.0	1	1.5	3.20	2.40	1.68	0.68
2.5	0					
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						

Test Report: SQ10240201

Included Seismic Kit: 8821325-05

* For more details on Printed Wiring Assemblies (PWA's) see Attachment 1, Table 2.

ATTACHMENT 2: TEST SPECIMEN SUMMARY

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UUT-3 CLEANSOURCE PLUS MMS (Multi-Module System) w/ 2 MMU 4-wire UPS						
Manufacturer: Active Power						
Identification: Model No.: PLUS MMS 667						
Description: 480 VAC, 3Ø, 60 Hz; 1000A; 740 kVA / 667 kW 4-wire; single input						
Includes the following sub-components:						
SUBCOMPONENT		MANUFACTURER		IDENTIFICATION NO.		
<u>Single Input 4W (I/O Cabinet)</u>						
Input Bus	Active Power		8821133-03			
Output Bus	Active Power		8821133-03			
Ground Bus	Active Power		8821133-03			
Neutral Bus	Active Power		8821133-03			
Cabinet Frame (NEMA Type 1/ IP20)	Active Power		8821131-03			
<u>System Cabinet</u>						
Bypass Breaker	Eaton	SBS6203HEA2052CPRN4ENNNBX				
Output Isolation Switches	Eaton	PDG33M0600KNSN				
Input Isolation Switches	Eaton	PDG33M0600B2NN				
Swing Panel	Active Power	8820957-01				
PWA's	Hunting	31110-2 / 31228-2 / 31072-2 / 31084-3 / 31090-3*				
Left Panel	Active Power	8821116-01				
Network Switch	Phoenix	1085256				
Bypass Static Switch	Infineon	TT500N16K0F				
Bypass Static Switch Fuses	FERRAZ SHAWMUT - MERSEN	AJT600-EIB				
Bypass Static Switch Contactor	Eaton	XTCS400M22B				
Fan Plenum	Rosenberg	8820902-02				
MMU Input Bus Assembly	Active Power	8821130-01				
SC Input Bus Assembly	Active Power	8821128-04				
MMU Output Bus Assembly	Active Power	8821129-01				
SC Output Bus Assembly	Active Power	8821127-04				
Transformers	NOVA MAGFLUX	26243-0500				
Cabinet Frame	Active Power	8821310-04				
<u>4W Multi-Module Unit (MMU)</u>						
Flywheel	Active Power	8820628-01				
Vacuum Pump	Welch	3042-Z01				
Fan Plenum	Rosenberg	8820719-1				
Swing Panel	Active Power	8820715-1				
PWA's	Hunting	31110-2 / 31228-2 / 31072-2 / 31084-3 / 31090-3*				
Left Panel		8821109-02				
Static Switch Assembly	Infineon	8821092-01				
Input/Output Contactors	Eaton	XTCE500M22A				
Transformer	Nova Magnetics	2641062-0750				
<u>Inductors and Transformers</u>						
Line/Filter Inductor Assembly	Nova Magnetics	86427-4				
Transformer	Nova Magnetics	2641062-1750				
Neutral Inductor	Nova Magnetics	2641082				
<u>Inverters</u>						
Left Inverter	Infineon	8820820-1				
Right Inverter	Infineon	8820768-1				
DC Bus Assembly	Active Power	8821090-01				
Field Coil Driver	Infineon	8820748				
Inverter Fuses	FERRAZ SHAWMUT - MERSEN	A70QS500-4K				
Cabinet Frame	Active Power	8821160-02				
Mounting: <u>Rigid Base (Floor)</u> mounted using (19) – 3/4" dia. A307 Hex Head Bolts w/ Standard Washers (Torque =110 ft-lb)						
Dimensions [in.]			Weight [lb.]	Lowest Resonant Frequency [Hz]		
Width	Depth	Height		Front - Axis	Side - Axis	Vert - Axis
171.91	34.17	95.12	10,893	6.65	5.62	6.01
ICC-ES AC156 Shake Table Test Parameters						
S _{DS} [G]	z/h	I _p	A _{FLX-H} [G]	A _{RIX-H} [G]	A _{FLX-V} [G]	A _{RIX-V} [G]
2.0	1	1.5	3.20	2.40	1.68	0.68
2.5	0					
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						

Test Report: SQ10240201

 Included Seismic Kits:
8821325-01 and 8821325-02

* For more details on Printed Wiring Assemblies (PWA's) see Attachment 1, Table 2.

Additionally, the test unit was modified relative to standard production PLUS MMS 667 configuration indicated to have cabling in its wireways similar to a CleanSource Plus MMS, 4MMU (PLUS MMS 1333) system to simulate the larger loading of the 4MMU system during shake table testing.