APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0861

HCAI Special Seismic Certification Preapproval (OSP)

Type: [X] New [ ] Renewal

Manufacturer Information

Manufacturer: Stored Energy Systems, LLC

Manufacturer's Technical Representative: Sam Coleman

Mailing Address: 1840 Industrial Circle, Longmont, CO 80501

Telephone: (303) 678-7500 Email: samc@sens-usa.com

Product Information

Product Name: MicroGenius® Genset Battery Chargers and EnerGenius® DC Ruggedized Battery Charger & DC Supply

Product Model Number(s): See attached

Product Category: UPS and Batteries

Product Sub-Category: Battery Chargers

General Description: MicroGenius® wall mounted, or equipment mounted Genset Battery Chargers, EnerGenius® wall mounted, or equipment mounted DC Ruggedized Battery Chargers & DC Supplies, and EnerGenius® base mounted DC Ruggedized Battery Charger & DC Supplies.

Mounting Description: Any Vertical Surface Mounted Rigid (tested wall mounted both rigid and flexible) -

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: Dynamic Certification Laboratories, LLC

Contact Person: Rachel Wolfe

Mailing Address: 1315 Greg Street, Sparks, NV 89431

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

Title: Seismic Test Engineer

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: (832) 627-2214 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) = 1.5 at z/h=1.0; 1.13 at z/h=0

S_{DS} (Design spectral response acceleration at short period, g) = Sds=2.0g at z/h=1.0; Sds=2.5g at z/h=0.0

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6

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 08/11/2030

Date: 8/11/2025

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):

Special Seismic Certification

Table 1 - Certified Components - MicroGenius 2, MicroGenius S2 and S4

DCL Project Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Family: Battery Chargers for Gensets

Product Line: MicroGenius Intelligent Engine Start Battery Chargers

Mounting Configuration: Rigid and Isolated Wall Mount

Test Levels: Sds = 2.00g, z/h=1.0 ; Sds = 2.50g, z/h=0.0

Model Family	Model Number [1]	NEMA Rating	Enclosure Material	Max. Dimensions (in)[2]			Max. Weight (lb.)	Unit
				Width	Depth	Height		
MicroGenius 2	M1-20-1006-A	1	Aluminum Base with a Stainless Steel Cover	5.6	2.8	10.0	4.2	UUT-02a,b
	ML-22-0006-AN			5.8	4.0	12.4	6.0	UUT-09a,b
	MX-XX-XXXX-XX			5.8	4.0	12.4	7.4	Interpolated
	M7-22-2525-FT			5.8	4.0	12.4	7.4	UUT-01a,b
MicroGenius S2 and S4	SX-XXX-XXXXXXXX			12.0	4.8	17.0	14.8	Extrapolated
	S2-B20-B0000000			20.0	7.6	17.5	16.4	UUT-03a,b
	SX-XXX-XXXXXXXX			14.3	10.5	16.5	37.0	Interpolated
	S4-C30-K0000000			22.0	15.5	17.5	40.6	UUT-04a,b

Notes:
1. Options/Subcomponents: See Table 2 for nomenclature table.
2. Maximum dimensions and weights for tested units include rain shields.

Special Seismic Certification
Table 2 - Nomenclature Table - MicroGenius 2, MicroGenius S2 and S4

DCL Project Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Family: Battery Chargers for Gensets

Product Line: MicroGenius Intelligent Engine Start Battery Chargers

Mounting Configuration: Rigid and Isolated Wall Mount

Test Levels: Sds = 2.00g, z/h=1.0 ; Sds = 2.50g, z/h=0.0

MicroGenius 2 Nomenclature
Sample Part Number: AB-C-D-EF

Sample Value	Category	Allowable Value	Definition	Unit
A	Product Type	M	MicroGenius 2	UUT-01a,b; UUT-02a,b; UUT-09a,b
B	Power	1	180 W	UUT-02a,b
		3	300 W	Interpolated
		4	450 W	Interpolated
		6	600 W	Interpolated
		7	750 W	UUT-01a,b
		F	180 W	Interpolated
		G	300 W	Interpolated
		H	450 W	Interpolated
		L	750 W	UUT-09a,b
C	Output Voltage	22	12/24 Volts	UUT-01a,b; UUT-09a,b
		20	120 Volts	UUT-02a,b
D	Output Current	1006	10 Amp at 12 V; 6 Amp at 24 V (180 W only)	UUT-02a,b
		1210	12 Amp at 12 V; 10 Amp at 24 V (300 W only)	Interpolated
		1515	15 Amp at 12 V; 15 Amp at 24 V (450 W only)	Interpolated
		2020	20 Amp at 20 V; 12 Amp at 24 V (600 W only)	Interpolated
		2525	25 Amp at 25 V; 12 Amp at 24 V (750 W only)	UUT-01a,b
		0606	6 Amp at 36/48V (500W)	Interpolated
		1212	12 Amp at 36/48 V (750W)	Interpolated
		0006	6 Amp at 120V (750W)	UUT-09a,b
E	Alarm & Communication Options	A	Base Mode	UUT-02a,b; UUT-09a,b
		D	Base Mode, LCD, USBC, 5 alarm relays	Interpolated
		E	Base Mode, LCD, USBC, 2 alarm relays	Interpolated
		F	Base Mode, LCD, USBC, 5 alarm relays, Keypad	UUT-01a,b
F	Adapter Plate & Remote Temperature Sensor Options	Blank	None	UUT-02a,b
		F	FC to MicroGenius 2 adapter plate	Interpolated
		G	MicroGenius 15 to MicroGenius 2 adapter plate	Interpolated
		L	LC to MicroGenius 2 adapter plate	Interpolated
		N	NRG10 to MicroGenius 2 adapter plate	UUT-09a,b
		T	Remote Temperature Sensor	UUT-01a,b

MicroGenius S2 and S4 Nomenclature
Sample Part Number: AB-CDE-F

Sample Value	Category	Allowable Value	Definition	Unit
A	Product Type	S	MicroGenius S	UUT-03a,b; UUT-04a,b
B	Enclosure	2	S2 Chassis	UUT-03a,b
		4	S4 Chassis	UUT-04a,b
C	AC & DC Protection Configuration	A	Standard, No Circuit Breakers	Extrapolated
		B	AC and DC Circuit Breakers	UUT-03a,b
		C	AC/DC Circuit Breakers, Supplementary Surge Protection	UUT-04a,b
D	Communications	0	J-1939 and Modbus RS-485	Extrapolated
		1	J-1939 and Modbus TCP/IP	Extrapolated
		2	J-1939 and Modbus RS-485 with RJ-45	UUT-03a,b
		3	J-1939 and Modbus TCP/IP with RJ-45	UUT-04a,b
E	Configuration	0	Standard Mounting Kit	UUT-03a,b; UUT-04a,b
F	Output Current (S2)	B	20 Amp	UUT-03a,b
		D	30 Amp	Interpolated
		E	40 Amp	Interpolated
		G	50 Amp	Interpolated
	Output Current (S4)	C	25 Amp	Interpolated
		G	50 Amp	Interpolated
		J	75 Amp	Interpolated
		K	100 Amp	UUT-04a,b

Special Seismic Certification
Table 3 - Certified Components - EnerGenius Compact and Wallbox

DCL Project Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Family: Battery Chargers for Gensets

Product Line: EnerGenius Wall Mounted Automatic DC Power Supply/Battery Charger

Mounting Configuration: Rigid and Isolated Wall Mount

Test Levels: Sds = 2.00g, z/h=1.0 ; Sds = 2.50g, z/h=0.0

Model Family	Model Number [1]	NEMA Rating	Enclosure Material	Max. Dimensions (in)			Max. Weight (lb.)	Unit
				Width	Depth	Height		
Compact	DS-F-120-025-AAB-000	1	Aluminum	11	8	20	38	UUT-05a,b
	DS-F-XXX-XXX-A-X-X-0XX			11	8	20	38	Interpolated
Wallbox	DW-FX-XXXX-XXX-X-XXX-0XX			21	8	31	85	Interpolated
	DW-FH-240S-050-0-BDB-000			21	8	31	85	UUT-06a,b

Notes:
1. Options/Subcomponents: See Table 4 for nomenclature table.

Special Seismic Certification
Table 4 - Nomenclature Table - EnerGenius Compact and Wallbox

DCL Project Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Family: Battery Chargers for Gensets

Product Line: EnerGenius Wall Mounted Automatic DC Power Supply/Battery Charger

Mounting Configuration: Rigid and Isolated Wall Mount

Test Levels: Sds = 2.00g, z/h=1.0 ; Sds = 2.50g, z/h=0.0

EnerGenius Compact Nomenclature
Sample Part Numer: AB-C-D-E-FGH-IJ

Sample Value	Category	Allowable Value	Definition	Unit
A	Product Type	D	EnerGenius DC	UUT-05a,b
B	Enclosure	S	7 kW Compact	UUT-05a,b
C	AC Input Voltage	F	Three Phase 380-480 VAC Nominal 50/60 Hz	UUT-05a,b
D	DC Output Voltage	120	120 VDC	UUT-05a,b
		240	240 VDC	Same as UUT-06a,b
E	Output Current	006	6 Amp at 240 VDC	Same as UUT-05a,b
		012	12 Amp at 120 or 240 VDC	Same as UUT-05a,b
		025	25 Amp at 120 or 240 VDC	UUT-05a,b
		035	35 Amp at 120 VDC	Same as UUT-06a,b
		050	50 Amp at 120 VDC	Same as UUT-06a,b
F	Display & Comunication	A	LDC, Keypad Control	UUT-05a,b
G	Accessory Hardware	0	None	Extrapolated
		A	High Current AC Alarm Relays	UUT-05a,b
H	Surge Protection	A	Standard AC/DC	Extrapolated
		B	Supplementary	UUT-05a,b
I	Mounting	0	Wallmount	UUT-05a,b
J	Configuration	00	Standard	UUT-05a,b
		01	Labeled Wires	Same as tested
		XX	Custom Configuration	Same as tested

EnerGenius Wallbox Nomenclature
Sample Part Numer: AB-CD-EF-G-H-IJK-LM

Sample Value	Category	Allowable Value	Definition	Unit
A	Product Type	D	EnerGenius DC	UUT-06a,b
B	Enclosure	W	14 kW Wallbox Charger	UUT-06a,b
C	AC Input Voltage	F	Three Phase 380-480 VAC Nominal 50/60 Hz	UUT-06a,b
D	AC Interupt	S	Standard Interrupt Rating (24 kAIC)	Same as UUT-06a,b
		H	High Interrupt Rating (65 kAIC)	UUT-06a,b
E	DC Output Voltage	120	120 VDC	Same as UUT-05a,b
		240	240 VDC	UUT-06a,b
F	DC Interupt	S	Standard Interrupt Rating (10 kAIC)	UUT-06a,b
		H	High Interrupt Rating (25 kAIC)	Same as UUT-06a,b
G	Output Current	025	25 Amp at 240 VDC	Same as UUT-05a,b
		035	35 Amp at 240 VDC	Interpolated
		050	50 Amp at 120 or 240 VDC	UUT-06a,b
		075	75 Amp at 120 VDC	Same as UUT-06a,b
		100	100 Amp at 120 VDC	Same as UUT-06a,b
H	Redundancy/Termination	0	No Redundancy	UUT-06a,b[1]
		1	N +1	Same as UUT-06a,b
I	Display & Comunication	A	Standard; LDC, Keypad Control	Extrapolated
		B	Standard plus Breaker Status	UUT-06a,b
J	Accessory Hardware	0	None	Extrapolated
		A	High Current AC Alarm Relays	Extrapolated
		B	High Current AC/DC Alarm Relays	Extrapolated
		C	AC Breaker Shunt Trip	Extrapolated
		D	Options B and C	UUT-06a,b
K	Surge Protection	A	Standard AC/DC	Extrapolated
		B	Supplementary	UUT-06a,b
L	Mounting	0	Wallmount	UUT-06a,b
M	Configuration	00	Standard	UUT-06a,b
		01	Labeled Wires	Same as tested
		XX	Custom Configuration within OSHPD guidelines	Same as tested

Note:
1. The maximum number of modules (two modules) were tested in UUT-06a,b, which would be the same configuration as one module plus one redundant module

Special Seismic Certification
Table 5 - Certified Components - EnerGenius 56kW Cabinets

DCL Project Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Family: Battery Chargers for Gensets

Product Line: EnerGenius Base Mounted Automatic DC Power Supply/Battery Charger

Mounting Configuration: Rigid Base Mounted

Test Levels: Sds = 2.00g, z/h=1.0 ; Sds = 2.50g, z/h=0.0

Model Number [1]	NEMA Rating	Enclosure Material	Max. Dimensions (in)			Max. Weight (lb.)	Unit
			Width	Depth	Height		
DK-FH-120H-400-050-0-BFB-200	1	Aluminum	29	28	53	267	UUT-07
DK-FX-XXXX-XXX-XXX-X-XXX-XXX			29	28	53	455	Interpolated
DK-FH-120H-400-400-0-BFB-200			29	28	53	455	UUT-08

Notes:
1. Options/Subcomponents: See Table 6 for nomenclature table

Special Seismic Certification
Table 6 - Nomenclature Table - EnerGenius 56kW Cabinets

DCL Project Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Family: Battery Chargers for Gensets

Product Line: EnerGenius Base Mounted Automatic DC Power Supply/Battery Charger

Mounting Configuration: Rigid Base Mount

Test Levels: Sds = 2.00g, z/h=1.0 ; Sds = 2.50g, z/h=0.0

EnerGenius 56kW Cabinet Nomenclature
Sample Part Number: AB-CD-EF-G-H-I-JKL-MN

Sample Value	Category	Allowable Value	Definition	Unit
A	Product Type	D	EnerGenius DC	UUT-07, UUT-08
B	Enclosure	K	Cabinet	UUT-07, UUT-08
C	AC Input Voltage	F	Three Phase 380-480 VAC Nominal 50/60 Hz	UUT-07, UUT-08
D	AC Interrupt	S	Standard Interrupt Rating (24 kAIC)	Extrapolated
		H	High Interrupt Rating (65 kAIC)	UUT-07, UUT-08
E	DC Output Voltage	120	120 VDC	UUT-07, UUT-08
		240	240 VDC	Same as tested[2]
F	DC Interrupt	S	Standard Interrupt Rating (10 kAIC)	Depopulated
		H	High Interrupt Rating (25 kAIC)	UUT-07, UUT-08
G	Output Current	050	50 Amp at 240 VDC	Depopulated
		100	100 Amp at 120 VDC or 240 VDC	Depopulated
		150	150 Amp at 240 VDC	Depopulated
		200	200 Amp at 120 VDC or 240 VDC	Depopulated
		300	300 Amp at 120 VDC	Depopulated
		400	400 Amp at 120 VDC	UUT-07, UUT-08
H	Factory Installed Output Current	025	25 Amp at 240 VDC	Extrapolated
		050	50 Amp at 120 or 240 VDC	UUT-07
		075	75 Amp at 120 VDC	Interpolated
		100	100 Amp at 120 or 240 VDC	Interpolated
		125	125 Amp at 240 VDC	Interpolated
		150	150 Amp at 120 or 240 VDC	Interpolated
		175	175 Amp at 240 VDC	Interpolated
		200	200 Amp at 120 VDC or 240 VDC	Interpolated
		250	250 Amp at 120 VDC	Interpolated
		300	300 Amp at 120 VDC	Interpolated
		350	350 Amp at 120 VDC	Interpolated
		400	400 Amp at 120 VDC	UUT-08
I	Redundancy/Termination	0	No Redundancy	UUT-07, UUT-08
		1	N +1	Same as tested[1]
		2	N +2	Same as tested[1]
		A	Dual AC with common DC	Extrapolated
		B	Dual System	Extrapolated
J	Display & Communications	A	LCD, Keypad	Depopulated
		B	LCD, Keypad, Breaker Status	UUT-07, UUT-08
K	Accessory Hardware	0	None	Extrapolated
		A	High Current AC Alarm Relays	Extrapolated
		B	High Current AC/DC Alarm Relays	Extrapolated
		C	AC Breaker Shunt Trip	Extrapolated
		D	Options B and C	Extrapolated
		E	2x Option B	Extrapolated
		F	2x Options B and C	UUT-07, UUT-08
L	Surge Protection	A	Standard AC/DC	Extrapolated
		B	Supplementary	UUT-07, UUT-08
M	Mounting	1	Floor mount	Extrapolated
		2	Floor mount with toplift	UUT-07, UUT-08
N	Labeling Configuration	00	Standard	UUT-07, UUT-08
		01	Labeled Wires	Same as tested
		XX	Custom Configuration within OSHPD guidelines	Same as tested

Note:

1. The maximum number of modules (eight modules) were tested in UUT-08, which would be the same configuration as six modules plus two redundant modules or seven modules plus one redundant module

2. The difference between 120V and 240V is software

Special Seismic Certification
Table 7 - Certified Subcomponents - MicroGenius 2

DCL Project Number: 10644-2301

Product Line: MicroGenius Intelligent Engine Start Battery Chargers

Subcomponent Type	Model Number	Manufacturer	Description	Material	Weight [lb.]	Unit
Enclosures	M1	Stored Energy Systems	Open Frame	Aluminum Base, Stainless Steel Cover	5	UUT-02a,b
	ML		Closed Frame		6	UUT-09a,b
	M5		Closed Frame		6	Interpolated
	M6		Closed Frame		6	Interpolated
	M7		Closed Frame		6	UUT-01a,b
Circuit Boards	2S7755	Stored Energy Systems	PCA,MG2,ACCY,CANBUS,DISP,5 RLY,S/W	PCB, Copper	<1	UUT-01a,b
	2S7756		PCA,MG2,ACCY,CANBUS,DISP,2 RLY,S/W		<1	Interpolated
	2S7757		PCA,MG2,ACCY,CAN,DISP,5 RLY,ETH,SYS,S/W		<1	Interpolated
	2S7810		PCA,PROTOCOL,MG,SYSTEM,S/W		<1	Interpolated
	2S5750		PCA,MG2,PWR/CTRL,12V/24V,15A,SC TRM,S/W		1	Interpolated
	202887		PCA,MG2E,PWR,120V,RT ANG		2	Interpolated
	2S1885		PCA,MG2E,CTRL,12V-48V,S/W | U100, DAUGHTER PCA		2	UUT-01a,b; UUT-09a,b
	2S1887		PCA,MG2E,CTRL,120V,S/W | U100, DAUGHTER PCA		2	UUT-02a,b
	202883		PCA,MG2E,PWR,36V/48V,SCR TERM		2	Interpolated
	202882		PCA,MG2E,PWR,12V/24V,SCR TERM		2	UUT-01a,b; UUT-09a,b
	202884		PCA,MG2E,PWR,120V,SCR TERM		2	UUT-02a,b

Special Seismic Certification
Table 8 - Certified Subcomponents - MicroGenius S2 and S4

DCL Project Number: 10644-2301

Product Line: MicroGenius Intelligent Engine Start Battery Chargers

Subcomponent Type	Model Number	Manufacturer	Description	Material	Weight [lb.]	Unit
Enclosures	S2	Stored Energy Systems	Closed Frame	Aluminum	4	UUT-03a,b
	S4		Closed Frame		6	UUT-04a,b
Circuit Boards	207132	Stored Energy Systems	S2 Isolator Board (PCA, S2, ISOLATED, BREAKOUT)	PCB, Copper	<1	UUT-03a,b
	207130		S2 Breakout Board (PCA, S2, ISOLATED, SINGLE OUT, BREAKOUT BRD)		<1	UUT-03a,b
	207131		PCA, S2, ISOLATED, DUAL OUT, BREAKOUT BOARD		<1	UUT-03a,b
	201136		S2 Bypass Board (PCA,S2,CTRL,CAN/PWR BYPASS)		<1	UUT-03a,b
	201135		S2 Isolator Daughter Card (PCA,S2,CTRL,CAN/PWR ISOLATOR)		<1	Interpolated
	2S7757		S2/S4 Display Board (PCA,MG2,DISP,5 RLY,ETH,SYS,S/W)		<1	UUT-03a,b; UUT-04a,b
	207799		S4 Breakout Board (PCA ,S4, BREAKOUT BOARD)		<1	UUT-03a,b; UUT-04a,b
	207826		S4 Breakout Isolator Board (PCA,S4,BREAKOUT BOARD,SENSBUS ISOLATOR)		<1	Interpolated
	2S7810		PCA,PROTOCOL,MG,SYSTEM,S/W		<1	Interpolated
	2S7755		S2/S4 PCA,MG2,ACCY,CANBUS,DISP,5 RLY,S/W		<1	UUT-03a,b; UUT-04a,b
	2S1885		S2/S4 PCA,MG2E,CTRL,12V-48V,S/W		2	UUT-03a,b; UUT-04a,b
	202883		PCA,MG2E,PWR,36V/48V,SCR TERM		2	Interpolated
	202884		PCA,MG2E,PWR,120V,SCR TERM		2	Interpolated
	2S1887		PCA,MG2E,CTRL,120V		2	Interpolated
	202882		S2/S4 PCA,MG2E,PWR,12V/24V,SCR TERM		2	UUT-03a,b; UUT-04a,b
Circuit Breakers[1]	702386	Altech Corp.	S4 Input AC (2POLE,FWD LUG,40A,240VAC)	Plastic, Copper	1	UUT-04a,b
	702760		S4 Output DC (2 POLE, 8A, 125/250VDC, 35MMDIN)		1	Same as tested
	702761		S4 Output DC (2 POLE, 16A,125/250VDC, 35MMDIN)		1	Same as tested
	702762		S4 Output DC (2 POLE, 25A, 125/250VDC, 35MMDIN)		1	Same as tested
	702731	Carling Technologies	S2 Input (2POLE,10A,240VAC,5KAIC,BULLET)	Plastic, Copper	1	Same as tested
	702732		S2 Input (2POLE,20A,240VAC,5KAIC,BULLET)		1	Same as tested
	702738		S2 Output (2POLE,25A,120VDC,5KAIC,BULLET)		1	Same as tested
	702735		S2 Output (2POLE,35A,120VDC,5KAIC,BULLET)		1	Same as tested
	702737		S2 Output (2POLE,40A,120VDC,5KAIC,BULLET)		1	Same as tested
	702739		S2 Output (2POLE,60A,120VDC,5KAIC,BULLET)		1	UUT-03a,b
	702736		S2 Output (2POLE,70A,120VDC,5KAIC,BULLET)		1	Same as tested
	702734		S2 Output (2POLE,16A,120VDC,5KAIC,BULLET)		1	Same as tested
	702733		S2 Output (2POLE,8A,120VDC,5KAIC,BULLET)		1	Same as tested
	702360	Schneider / SquareD	S4 Input AC (QOU215H, 2POLE, FWD LUG, 15A, 240VAC)	Plastic, Copper	1	Same as tested
	702361		S4 Input AC (QOU220H,2POLE,FWD LUG,20A,240VAC)		1	Same as tested
	702364		S4 Input AC (QOU230H,2POLE,FWD LUG,30A,240VAC)		1	Same as tested
	702522		S4 Output DC (QOU220,2POLE,FWD LUG,20A,120/240VAC)		1	Same as tested
	702531		S4 Output DC (QOU225,2POLE,FWD LUG,25A,120/240VAC)		1	Same as tested
	702514		S4 Output DC (QOU235,2POLE,FWD LUG,35A,120/240VAC)		1	Same as tested
	702524		S4 Output DC (QOU240,2POLE,FWD LUG,40A,120/240VAC)		1	Same as tested
	702526		S4 Output DC (QOU250,2POLE,FWD LUG,50A,120/240VAC)		1	Same as tested
	702532		S4 Output DC (QOU250,2POLE,FWD LUG,50A,120/240VAC)		1	Same as tested
	702527		S4 Output DC (QOU270,2POLE,FWD LUG,70A,120/240VAC)		1	Same as tested
	702529		S4 Output DC (QOU290,2POLE,FWD LUG,90A,120/240VAC)		1	Same as tested
	702530		S4 Output DC (QOU2100,2POLE,FWD LUG,100A,120/240V)		1	Same as tested
	702578		S4 Output DC (QOU2125,2POLE,FWD LUG,125A,120/240V)		1	Same as tested
	702521		S4 Output DC (QOU215,2POLE,FWD LUG,15A,120/240VAC)		1	Same as tested
	702380		S4 Input AC (2POLE,FWD LUG,15A,240VAC)		1	Same as tested
	702384		S4 Input AC (2POLE,FWD LUG,30A,240VAC)		1	Same as tested
	702381		S4 Input AC (2POLE,FWD LUG,20A,240VAC)		1	UUT-04a,b
Surge Protectors	702703	Bourns	S4 SURGE PROTECTOR,24VDC,1POLE,DIN	Plastic, Copper	<1	UUT-04a,b
	702702		S4 SURGE PROTECTOR,12VDC,1POLE,DIN		<1	Interpolated
	702751		S4 SURGE PROTECTOR,48VDC,1POLE,DIN		<1	Interpolated
	702907		S4 SURGE PROTECTOR,130VDC,2P,DIN		1	Interpolated
	702701		S4 SURGE PROTECTOR,240VAC,2POLE,DIN		1	UUT-04a,b

Note:

1. Differences in circuit breakers are software only

Special Seismic Certification
Table 9 - Certified Subcomponents - EnerGenius Compact and Wallbox

DCL Project Number: 10644-2301

Product Line: EnerGenius Wall Mounted Automatic DC Power Supply/Battery Charger

Subcomponent Type	Model Number	Manufacturer	Description	Material	Weight [lb.]	Unit
Enclosures	DS	Stored Energy Systems	Small Wallbox	Powder Coated Aluminum	2	UUT-05a,b
	DW		Standard Wallbox		7	UUT-06a,b
Circuit Boards	2S7810	Stored Energy Systems	PCA,PROTOCOL,MG,SYSTEM,S/W	PCB, Copper	<1	UUT-05a,b; UUT-06a,b
	205807		PCA,3PH,BIAS SUPPLY	PCB, Copper	<1	UUT-05a,b; UUT-06a,b
	203975		PCA,5A,240V,RELAY,DUAL	PCB, Copper	<1	Interpolated
	203972		PCA,MG,POWER RELAY,NO REMOTE TRIP	PCB, Copper	<1	Interpolated
	203973		PCA,MG,POWER RELAY,SINGLE REMOTE TRIP	PCB, Copper	<1	Interpolated
	203974		PCA,MG,POWER RELAY,DUAL REMOTE TRIP	PCB, Copper	<1	Interpolated
	203976		PCA,MG,SINGLE REMOTE TRIP	PCB, Copper	<1	Interpolated
	205890		PCA,3PH,UNIV AUX SUPPLY,HV	PCB, Copper	1	Interpolated
	207813		PCA,3PH,MODULE BACKPLANE,SINGLE	PCB, Copper	1	UUT-05a,b
	207812		PCA,3PH,MODULE BACKPLANE	PCB, Copper	1	Interpolated
	207815		PCA,3PH,RACK BACKPLANE,DUAL CHOKE	PCB, Copper	1	UUT-06a,b
	2S5805		PCA,3PH,FORWARD,2X 400V/240VDC,25A,S/W	PCB, Copper	4	UUT-06a,b
	2S5806		PCA,3PH,FORWARD,2X 400V/120VDC,50A,S/W	PCB, Copper	6	UUT-05a,b
	2S5803		PCA,3PH,480VAC/800VDC,S/W	PCB, Copper	7	UUT-05a,b; UUT-06a,b
Circuit Breakers	702910	Eaton Heinemann	BRKR,3 POLE,15A,480Y/277VAC,35MMDIN	Plastic, Copper	10	UUT-05a,b
	702912	Altech Corp.	BRKR,2 POLE,32A,125/250VDC,35MMDIN	Plastic, Copper	5	UUT-06a,b
	702911		BRKR,2 POLE,63A,125/250VDC,35MMDIN	Plastic, Copper	8	UUT-05a,b
	702894	ABB	BRKR,ABB,XT1,3P,30A,65KA,480VAC&600Y/347	Plastic, Copper	2	Extrapolated
	702898		BRKR,ABB,A2,@P,150A,240VAC,125VDC	Plastic, Copper	2	Extrapolated
	702914		BRKR,ABB,A2,2P,150A,240VAC,125VDC,25KAIC	Plastic, Copper	2	Extrapolated
	702891		BRKR,ABB,XT1,3P,650A,480VAC&600Y/347VAC	Plastic, Copper	2	Extrapolated
	702892		BRKR,ABB,XT1,3P,90A,480VAC&600Y/347VAC	Plastic, Copper	2	Extrapolated
	702893		BRKR,ABB,XT1,3P,125A,480VAC&600Y/347VAC	Plastic, Copper	2	Extrapolated
	702895		BRKR,ABB,XT1,3P,60A,65KA,480VAC&600Y/347	Plastic, Copper	2	Extrapolated
	702896		BRKR,ABB,XT1,3P,90A,65KA,480VAC&600Y/347	Plastic, Copper	2	Extrapolated
	702916		BRKR,ABB,A2,3P,125A,240VAC,125VDC,25KAIC	Plastic, Copper	2	Extrapolated
	702890		BRKR,ABB,XT1,3P,30A,480VAC&600Y/347VAC	Plastic, Copper	4	UUT-06a,b
	702900		BRKR,ABB,A1,3P,70A,240VAC,125VDC,25KAIC	Plastic, Copper	4	UUT-06a,b
Surge Protectors	702907	CITEL Inc.	SURGE PROTECTOR,130VDC,2P,DIN	Plastic, Copper	<1	UUT-05a,b
	702908		SURGE PROTECTOR,350VDC,2P,DIN	Plastic, Copper	<1	Interpolated
	702906		SURGE PROTECTOR,480VAC,3P,DIN	Plastic, Copper	1	UUT-06a,b

Special Seismic Certification
Table 10 - Certified Subcomponents - EnerGenius 56kW Cabinets

DCL Project Number: 10644-2301

Product Line: EnerGenius Base Mounted Automatic DC Power Supply/Battery Charger

Subcomponent Type	Model Number	Manufacturer	Description	Material	Weight [lb.]	Unit
Enclosures	DK	Stored Energy Systems	Large Cabinet	Powder Coated Aluminum	250	UUT-07, UUT-08
Circuit Boards	205807	Stored Energy Systems	PCA,3PH,BIAS SUPPLY	PCB, Copper	<1	UUT-07, UUT-08
	2S7810		PCA,PROTOCOL,MG,SYSTEM,S/W	PCB, Copper	<1	Interpolated
	203975		PCA,5A,240V,RELAY,DUAL	PCB, Copper	<1	UUT-08
	203976		PCA,MG,SINGLE REMOTE TRIP	PCB, Copper	<1	Interpolated
	203972		PCA,MG,POWER RELAY,NO REMOTE TRIP	PCB, Copper	<1	UUT-08
	203973		PCA,MG,POWER RELAY,SINGLE REMOTE TRIP	PCB, Copper	<1	Interpolated
	203974		PCA,MG,POWER RELAY,DUAL REMOTE TRIP	PCB, Copper	<1	Interpolated
	205890		PCA,3PH,UNIV AUX SUPPLY,HV	PCB, Copper	1	UUT-08
	207812		PCA,3PH,MODULE BACKPLANE	PCB, Copper	1	UUT-07, UUT-08
	207815		PCA,3PH,RACK BACKPLANE,DUAL CHOKE	PCB, Copper	1	UUT-07, UUT-08
	2S7820		PCA,PROTOCOL XL,MG,S/W	PCB, Copper	1	UUT-07, UUT-08
	2S5805		PCA,3PH,FORWARD,2X 400V/240VDC,25A,S/W	PCB, Copper	1	Interpolated
	2S5806		PCA,3PH,FORWARD,2X 400V/120VDC,50A,S/W	PCB, Copper	1	UUT-07, UUT-08
	2S5803		PCA,3PH,480VAC/800VDC,S/W	PCB, Copper	1	UUT-07, UUT-08
Circuit Breakers	702890	ABB	BRKR,ABB,XT1,3P,30A,480VAC&600Y/347VAC	Plastic, Copper	2	Extrapolated
	702891		BRKR,ABB,XT1,3P,60A,480VAC&600Y/347VAC	Plastic, Copper	2	Extrapolated
	702892		BRKR,ABB,XT1,3P,90A,480VAC&600Y/347VAC	Plastic, Copper	2	Extrapolated
	702894		BRKR,ABB,XT1,3P,30A,65KA,480VAC&600Y/347	Plastic, Copper	2	Extrapolated
	702895		BRKR,ABB,XT1,3P,60A,65KA,480VAC&600Y/347	Plastic, Copper	2	Extrapolated
	702896		BRKR,ABB,XT1,3P,90A,65KA,480VAC&600Y/347	Plastic, Copper	2	Extrapolated
	702897		BRKR,XT1,3P,125A,65KA,480?VAC&600Y/347VAC	Plastic, Copper	2	Extrapolated
	702898		BRKR,ABB,A2,2P,150A,240VAC,125VDC	Plastic, Copper	2	Extrapolated
	702899		BRKR,ABB,A2,2P,250A,240VAC,125VDC	Plastic, Copper	2	Extrapolated
	702900		BRKR,ABB,A1,3P,70A,240VAC,125VDC,25KAIC	Plastic, Copper	2	Extrapolated
	702901		BRKR,ABB,A2,3P,125A,240VAC,125VDC	Plastic, Copper	2	Extrapolated
	702902		BRKR,ABB,A2,3P,200A,240VAC,125VDC	Plastic, Copper	2	Extrapolated
	702903		BRKR,ABB,A2,3P,250A,240VAC,125VDC	Plastic, Copper	2	Extrapolated
	702914		BRKR,ABB,A2,2P,150A,240VAC,125VDC,25KAIC	Plastic, Copper	2	Extrapolated
	702915		BRKR,ABB,A2,2P,250A,240VAC,125VDC,25KAIC	Plastic, Copper	2	Extrapolated
	702916		BRKR,ABB,A2,3P,125A,240VAC,125VDC,25KAIC	Plastic, Copper	2	Extrapolated
	702917		BRKR,ABB,A2,3P,200A,240VAC,125VDC,25KAIC	Plastic, Copper	2	Extrapolated
	702918		BRKR,ABB,A2,3P,250A,240VAC,125VDC,25KAIC	Plastic, Copper	2	Extrapolated
	702893		BRKR,ABB,XT1,3P,125A,480VAC&600Y/347VAC	Plastic, Copper	2	UUT-07, UUT-08
	702921	Siemens[1]	BRKR,SIEMENS,3VA,400A,250VDC,50KAIC	Plastic, Copper	2	Same as tested
	702924		BRKR,SIEMENS,3VA,400A,250VDC,100KAIC	Plastic, Copper	2	Same as tested
	702925		BRKR,SIEMENS,3VA,500A,250VDC,100KAIC	Plastic, Copper	2	Same as tested
	702922		BRKR,SIEMENS,3VA,500A,250VDC,50KAIC	Plastic, Copper	2	UUT-08
Surge Protectors	702908	CITEL Inc.	SURGE PROTECTOR,350VDC,2P,DIN	Plastic, Copper	<1	UUT-07
	702907	CITEL Inc.	SURGE PROTECTOR,130VDC,2P,DIN	Plastic, Copper	<1	Interpolated
	702906	CITEL Inc.	SURGE PROTECTOR,480VAC,3P,DIN	Plastic, Copper	1	UUT-08

Note:

1. Differences in circuit breakers are due to solfware

Special Seismic Certification
Table 11 - Tested Units

DCL Project Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Family: Battery Chargers for Gensets

Product Line: MicroGenius Intelligent Engine Start Battery Chargers, EnerGenius Wall Mounted Automatic DC Power Supply/Battery Charger, and EnerGenius Base Mounted Automatic DC Power Supply/Battery Charger

Test Levels: Sds = 2.00g, z/h=1.0 ; Sds = 2.50g, z/h=0.0

Model Number	Model Family	Dimensions [in.]			Mounting Configuration	Weight (lb.)	Unit
		Length	Width	Height			
M7-22-2525-FT	MicroGenius 2	6	4	12	Rigid and Isolated Wall Mounted	7.2	UUT-01a,b
M1-20-1006-A	MicroGenius 2	6	3	10	Rigid and Isolated Wall Mounted	4.2	UUT-02a,b
ML-22-0006-AN	MicroGenius 2	6	4	12	Rigid and Isolated Wall Mounted	6.0	UUT-09a,b
S2-B20-B0000000	MicroGenius S2	12	5	17	Rigid and Isolated Wall Mounted	16.4	UUT-03a,b
S4-C3T-K0000000	MicroGenius S4	14	10	17	Rigid and Isolated Wall Mounted	40.6	UUT-04a,b
DS-F-120-025-AAB-000	EnerGenius Compact	11	8	20	Rigid and Isolated Wall Mounted	38.0	UUT-05a,b
DW-FH-240S-050-0-BDB-000	EnerGenius Wallbox	21	8	31	Rigid and Isolated Wall Mounted	95.0	UUT-06a,b
DK-FH-120H-400-050-0-BFB-200	EnerGenius 56kW Cabinets	29	28	53	Rigid Base Mounted	267.0	UUT-07
DK-FH-120H-400-400-0-BFB-200	EnerGenius 56kW Cabinets	29	28	53	Rigid Base Mounted	455.0	UUT-08

UNIT UNDER TEST (UUT) Summary Sheet

UUT-01a

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: MicroGenius Intelligent Engine Start Battery Chargers

Model Number: M7-22-2525-FT

Model Family: MicroGenius 2

Product Construction Summary: NEMA 1, Aluminum Base with Stainless Steel Cover

Options / Component Summary: M7 enclosue with circuit boards.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
7.4	4.0	5.8	12.4	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was wall mounted to the DCL wall fixture using (4) Grade ¼" 5 bolts, flat washers, 1.6" x 1.6" x 0.3" carbon steel plate washers and channel nuts. The bolts were spaced approximately 4.5" apart in the side-side direction measured on-center and 11.8" apart in the vertical direction measured on-center.
For the rigid set-up the wall fixture was attached directly to the shake table.

UUT-01a close-up

UUT-01a overall test set-up

UNIT UNDER TEST (UUT) Summary Sheet

UUT-01b

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: MicroGenius Intelligent Engine Start Battery Chargers

Model Number: M7-22-2525-FT

Model Family: MicroGenius 2

Product Construction Summary: NEMA 1, Aluminum Base with Stainless Steel Cover

Options / Component Summary: M7 enclosue with circuit boards.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
7.4	4.0	5.8	12.4	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was wall mounted to the DCL wall fixture using (4) Grade ¼" 5 bolts, flat washers, 1.6" x 1.6" x 0.3" carbon steel plate washers and channel nuts. The bolts were spaced approximately 4.5" apart in the side-side direction measured on-center and 11.8" apart in the vertical direction measured on-center.

For the isolated set-up the wall fixture was mounted to the shake table using (4) VMC MSSH-1E-650 spring isolators.

UUT-01b close-up

UUT-01b overall test set-up

UNIT UNDER TEST (UUT) Summary Sheet

UUT-02a

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: MicroGenius Intelligent Engine Start Battery Chargers

Model Number: M1-20-1006-A

Model Family: MicroGenius 2

Product Construction Summary: NEMA 1, Aluminum Base with Stainless Steel Cover

Options / Component Summary: M1 enclosue with circuit boards.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
4.2	2.8	5.6	10.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was wall mounted to the DCL wall fixture using (4) Grade ¼" 5 bolts, flat washers, 1.6" x 1.6" x 0.3" carbon steel plate washers and channel nuts. The bolts were spaced approximately 2.8" apart in the side-side direction measured on-center and 9.5" apart in the vertical direction measured on-center.
For the rigid set-up the wall fixture was attached directly to the shake table.

UUT-02a close-up

UUT-02a overall test set-up

UNIT UNDER TEST (UUT) Summary Sheet

UUT-02b

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: MicroGenius Intelligent Engine Start Battery Chargers

Model Number: M1-20-1006-A

Model Family: MicroGenius 2

Product Construction Summary: NEMA 1, Aluminum Base with Stainless Steel Cover

Options / Component Summary: M1 enclosue with circuit boards.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

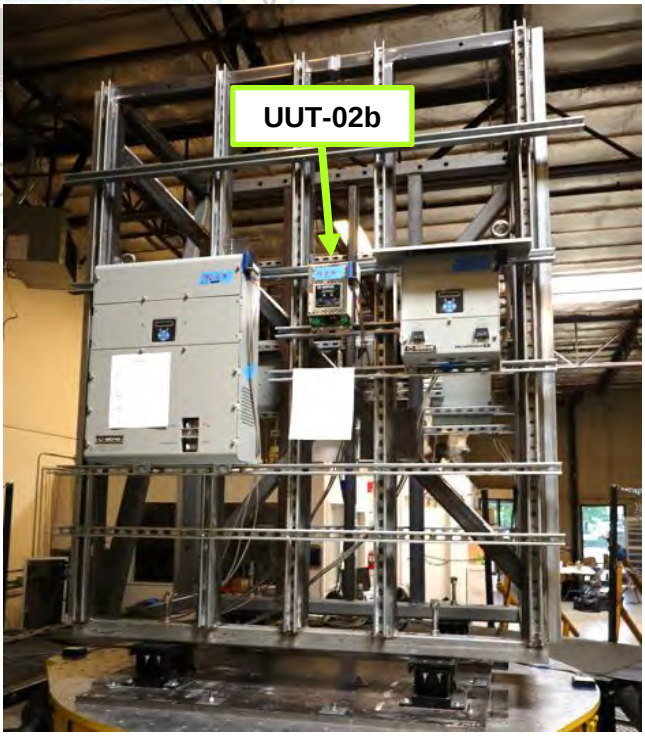
Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
4.2	2.8	5.6	10.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was wall mounted to the DCL wall fixture using (4) Grade ¼" 5 bolts, flat washers, 1.6" x 1.6" x 0.3" carbon steel plate washers and channel nuts. The bolts were spaced approximately 2.8" apart in the side-side direction measured on-center and 9.5" apart in the vertical direction measured on-center.
For the isolated set-up the wall fixture was mounted to the shake table using (4) VMC MSSH-1E-650 spring isolators.

UUT-02a,b close-up



UUT-02b overall test set-up

UNIT UNDER TEST (UUT) Summary Sheet

UUT-09a

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: MicroGenius Intelligent Engine Start Battery Chargers

Model Number: ML-22-0006-AN

Model Family: MicroGenius 2

Product Construction Summary: NEMA 1, Aluminum Base with Stainless Steel Cover

Options / Component Summary: ML enclosue with circuit boards.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
6.0	4.0	5.8	12.4	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was wall mounted to a manufacturer-provided mounting plate using (4) threaded studs, flat washers, and nuts. The threaded studs were spaced approximately 4.5” apart in the side-side direction measured on-center and 11.8” apart in the vertical direction measured on-center. The manufacturer-provided mounting plate was mounted to the DCL wall fixture using (4) Grade ¼” 5 bolts, flat washers, 1.6” x 1.6” x 0.3” carbon steel plate washers and channel nuts. The bolts were spaced approximately 6.0” apart in the side-side direction measured on-center and 11.5” apart in the vertical direction measured on-center.
For the rigid set-up the wall fixture was attached directly to the shake table.

UUT-09a close-up

UUT-09a overall test set-up

UNIT UNDER TEST (UUT) Summary Sheet

UUT-09b

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: MicroGenius Intelligent Engine Start Battery Chargers

Model Number: ML-22-0006-AN

Model Family: MicroGenius 2

Product Construction Summary: NEMA 1, Aluminum Base with Stainless Steel Cover

Options / Component Summary: ML enclosue with circuit boards.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
6.0	4.0	5.8	12.4	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was wall mounted to a manufacturer-provided mounting plate using (4) threaded studs, flat washers, and nuts. The threaded studs were spaced approximately 4.5” apart in the side-side direction measured on-center and 11.8” apart in the vertical direction measured on-center. The manufacturer-provided mounting plate was mounted to the DCL wall fixture using (4) Grade ¼” 5 bolts, flat washers, 1.6” x 1.6” x 0.3” carbon steel plate washers and channel nuts. The bolts were spaced approximately 6.0” apart in the side-side direction measured on-center and 11.5” apart in the vertical direction measured on-center.

For the isolated set-up the wall fixture was mounted to the shake table using (4) VMC MSSH-1E-650 spring isolators..

UUT-09a,b close-up

UUT-09b overall test set-up

UNIT UNDER TEST (UUT) Summary Sheet

UUT-03a

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: MicroGenius Intelligent Engine Start Battery Chargers

Model Number: S2-B20-B0000000

Model Family: MicroGenius S2

Product Construction Summary: NEMA 1, Aluminum

Options / Component Summary: S2 enclosue with circuit boards, circuit breakers and surge protectors.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

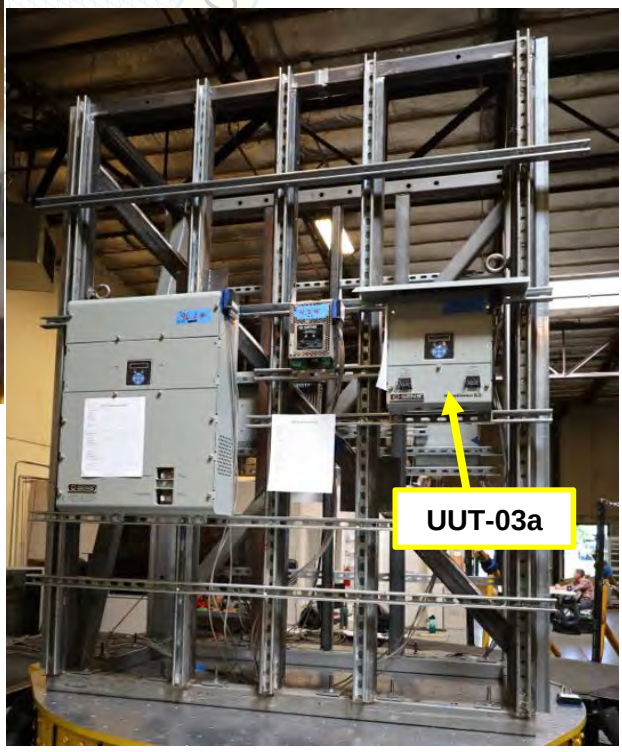
Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
16	7.6	20.0	17.5	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was wall mounted to the DCL wall fixture using (4) Grade ¼" 5 bolts, flat washers, 1.6" x 1.6" x 0.3" carbon steel plate washers and channel nuts. The bolts were spaced approximately 10.8" apart in the side-side direction measured on-center and 16.3" apart in the z-direction measured on-center.
For the rigid set-up the wall fixture was attached directly to the shake table.

UUT-03a close-up



UUT-03a overall test set-up

UNIT UNDER TEST (UUT) Summary Sheet

UUT-03b

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: MicroGenius Intelligent Engine Start Battery Chargers

Model Number: S2-B20-B0000000

Model Family: MicroGenius S2

Product Construction Summary: NEMA 1, Aluminum

Options / Component Summary: S2 enclosue with circuit boards, circuit breakers and surge protectors.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
16	7.6	20.0	17.5	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was wall mounted to the DCL wall fixture using (4) Grade ¼" 5 bolts, flat washers, 1.6" x 1.6" x 0.3" carbon steel plate washers and channel nuts. The bolts were spaced approximately 10.8" apart in the side-side direction measured on-center and 16.3" apart in the z-direction measured on-center.
For the isolated set-up the wall fixture was mounted to the shake table using (4) VMC MSSH-1E-650 spring isolators.

UUT-03a,b close-up

UUT-03b overall test set-up

UNIT UNDER TEST (UUT) Summary Sheet

UUT-04a

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: MicroGenius Intelligent Engine Start Battery Chargers

Model Number: S4-C30-K0000000

Model Family: MicroGenius S4

Product Construction Summary: NEMA 1, Aluminum

Options / Component Summary: S4 enclosue with circuit boards, circuit breakers and surge protectors.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
40.6	15.5	22.0	18.4	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was wall mounted to the DCL wall fixture using (4) Grade ¼" 5 bolts, flat washers, 1.6" x 1.6" x 0.3" carbon steel plate washers and channel nuts. The bolts were spaced approximately 13.0" apart in the side-side direction measured on-center and 15.5" apart in the vertical direction measured on-center.
For the rigid set-up the wall fixture was attached directly to the shake table.

UUT-04a close-up

UUT-04a overall test set-up

UNIT UNDER TEST (UUT) Summary Sheet

UUT-04b

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: MicroGenius Intelligent Engine Start Battery Chargers

Model Number: S4-C30-K0000000

Model Family: MicroGenius S4

Product Construction Summary: NEMA 1, Aluminum

Options / Component Summary: S4 enclosue with circuit boards, circuit breakers and surge protectors.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
40.6	15.5	22.0	18.4	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was wall mounted to the DCL wall fixture using (4) Grade ¼" 5 bolts, flat washers, 1.6" x 1.6" x 0.3" carbon steel plate washers and channel nuts. The bolts were spaced approximately 13.0" apart in the side-side direction measured on-center and 15.5" apart in the vertical direction measured on-center.
For the isolated set-up the wall fixture was mounted to the shake table using (4) VMC MSSH-1E-650 spring isolators.

UUT-04a,b close-up

UUT-04b overall test set-up

UNIT UNDER TEST (UUT) Summary Sheet

UUT-05a

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: EnerGenius Wall Mounted Automatic DC Power Supply/Battery Charger

Model Number: DS-F-120-025-AAB-000

Model Family: EnerGenius Compact

Product Construction Summary: NEMA 1, Powder Coated Aluminum

Options / Component Summary: DS enclosue with circuit boards, circuit breakers and surge protectors.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
39.8	7.8	11.0	20.3	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was wall mounted to the DCL wall fixture using (4) Grade ¼" 5 bolts, flat washers, 1.6" x 1.6" x 0.3" carbon steel plate washers and channel nuts. The bolts were spaced approximately 8.0" apart in the side-side direction measured on-center and 19.5" apart in the vertical direction measured on-center.
For the rigid set-up the wall fixture was attached directly to the shake table.

UUT-05a close-up

UUT-05a overall test set-up

UNIT UNDER TEST (UUT) Summary Sheet

UUT-05b

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: EnerGenius Wall Mounted Automatic DC Power Supply/Battery Charger

Model Number: DS-F-120-025-AAB-000

Model Family: EnerGenius Compact

Product Construction Summary: NEMA 1, Powder Coated Aluminum

Options / Component Summary: DS enclosue with circuit boards, circuit breakers and surge protectors.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
39.8	7.8	11.0	20.3	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was wall mounted to the DCL wall fixture using (4) Grade ¼" 5 bolts, flat washers, 1.6" x 1.6" x 0.3" carbon steel plate washers and channel nuts. The bolts were spaced approximately 8.0" apart in the side-side direction measured on-center and 19.5" apart in the vertical direction measured on-center.
For the isolated set-up the wall fixture was mounted to the shake table using (4) VMC MSSH-1E-650 spring isolators.

UUT-05b close-up

UUT-05b overall test set-up

UNIT UNDER TEST (UUT) Summary Sheet

UUT-06a

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: EnerGenius Wall Mounted Automatic DC Power Supply/Battery Charger

Model Number: DW-FH-240S-050-0-BDB-000

Model Family: EnerGenius Wallbox

Product Construction Summary: NEMA 1, Powder Coated Aluminum

Options / Component Summary: DW enclosue with circuit boards, circuit breakers and surge protectors.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

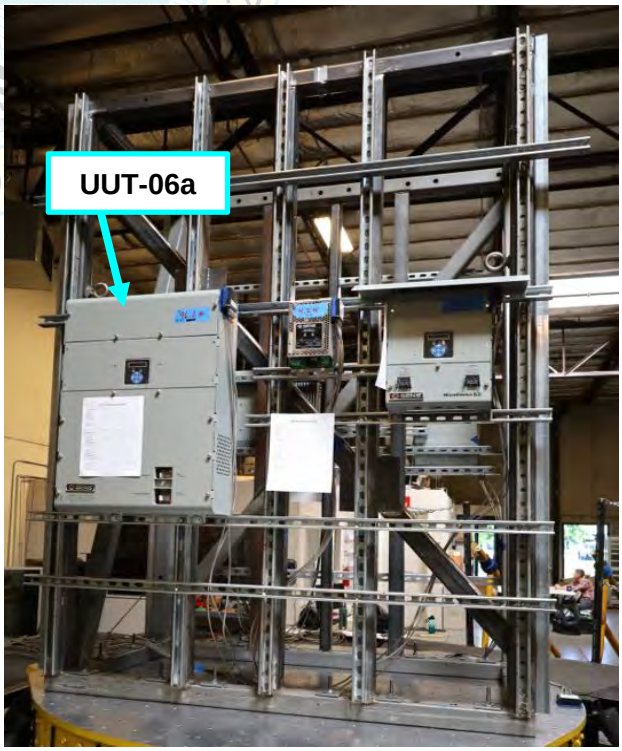
Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
96.0	7.0	21.5	31.5	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was wall mounted to the DCL wall fixture using (4) Grade ¼" 5 bolts, flat washers, 1.6" x 1.6" x 0.3" carbon steel plate washers and channel nuts. The bolts were spaced approximately 12.0" apart in the side-side direction measured on-center and 30.8" apart in the vertical direction measured on-center.
For the rigid set-up the wall fixture was attached directly to the shake table.

UUT-06a close-up



UUT-06a overall test set-up

UNIT UNDER TEST (UUT) Summary Sheet

UUT-06b

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: EnerGenius Wall Mounted Automatic DC Power Supply/Battery Charger

Model Number: DW-FH-240S-050-0-BDB-000

Model Family: EnerGenius Wallbox

Product Construction Summary: NEMA 1, Powder Coated Aluminum

Options / Component Summary: DW enclosue with circuit boards, circuit breakers and surge protectors.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

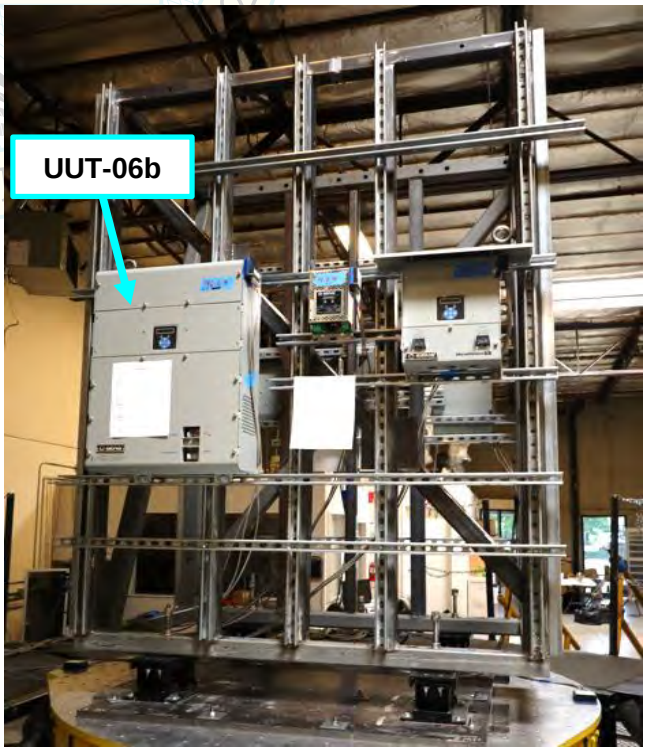
Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
96.0	7.0	21.5	31.5	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was wall mounted to the DCL wall fixture using (4) Grade ¼" 5 bolts, flat washers, 1.6" x 1.6" x 0.3" carbon steel plate washers and channel nuts. The bolts were spaced approximately 12.0" apart in the side-side direction measured on-center and 30.8" apart in the vertical direction measured on-center.
For the isolated set-up the wall fixture was mounted to the shake table using (4) VMC MSSH-1E-650 spring isolators.

UUT-06b close-up



UUT-06b overall test set-up

UNIT UNDER TEST (UUT) Summary Sheet

UUT-07

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: EnerGenius Base Mounted Automatic DC Power Supply/Battery Charger

Model Number: DK-FH-120H-400-050-0-BFB-200

Model Family: EnerGenius 56kW Cabinets

Product Construction Summary: NEMA 1, Powder Coated Aluminum

Options / Component Summary: DK enclosue with circuit boards, circuit breakers and surge protectors.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
267	27.8	29.0	53.0	9.0	18.3	>33.3

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was base mounted to the DCL interface plate using (4) Grade 3/8" 5 bolts, and flat washers. The bolts were spaced approximately 25.5" apart in the side-side direction measured on-center and 24" apart in the front-back direction measured on-center.

UUT-07 overall view

UUT-07 interior view

UNIT UNDER TEST (UUT) Summary Sheet

UUT-08

DCL Repot Number: 10644-2301

Manufacturer: Stored Energy Systems

Product Line: EnerGenius Base Mounted Automatic DC Power Supply/Battery Charger

Model Number: DK-FH-120H-400-400-0-BFB-200

Model Family: EnerGenius 56kW Cabinets

Product Construction Summary: NEMA 1, Powder Coated Aluminum

Options / Component Summary: DK enclosue with circuit boards, circuit breakers and surge protectors.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
455	27.8	29.0	53.0	9.5	15.5	>33.3

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description: The unit was base mounted to the DCL interface plate using (4) Grade 3/8" 5 bolts, and flat washers. The bolts were spaced approximately 25.5" apart in the side-side direction measured on-center and 24" apart in the front-back direction measured on-center.

UUT-08 overall view

UUT-08 interior view