



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-0419

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Motion Control Engineering

Manufacturer's Technical Representative: Caesar Romero

Mailing Address: 11380 White Rock Road, Rancho Cordova, CA 95742

Telephone: (916) 463-9355

Email: caesar.romero@nidec-mce.com

Product Information

Product Name: HMC-2000-S, mGroup, M4000-AC-S, i-AC-S, i-DC-S, i-CENTRAL-CUE-S, RESIST-R-C-S, RESISTOR-V-S, Filter Cabinets, and REMOTE-HF

Product Model Number(s): See attached

Product Category: Elevator Equipment

Product Sub-Category: Elevator Control Panels

General Description: Painted carbon steel or aluminum enclosures, NEMA 1, containing various subcomponents as described in the attachments.

Mounting Description: Several - See Certified Product Tables

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: Dynamic Certification Laboratories

Contact Person: Rachel Wolfe

Mailing Address: 1315 Greg Parkway #109, Sparks, NV 89431

Telephone: (775) 358-5085

Email: rachel.wolfe@shaketest.com

Title: Seismic Test Engineer



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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

BY: Mohammad Karim

DATE: 01/07/2026



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Seismic Parameters

Certified Response Spectral Acceleration Factors:(F_p/W_p)

Horizontal	(A Flx-H), g=	3.36 (SDS =2.1g), 4.0 (SDS =2.5g)	(A Rig-H), g=	2.26 (SDS =2.1g), 2.69 (SDS =2.5g)
Vertical	(A Flx-V), g=	1.4 (SDS =2.1g), 1.67 (SDS =2.5g)	(A Rig-V), g=	0.56 (SDS =2.1g), 0.67 (SDS =2.5g)

SDs (Design spectral response acceleration at short period, g) = 2.10 (M4000-AC-S, i-AC-S, i-CENTRAL-CUE-S, REMOTE-HF), 2.50 (all other units)

H_f (Force amplification height factor) = 3.5 at z/h=1.0; 1.0 at z/h=0.0

R_u (Structure ductility reduction factor) = 1.3 at z/h=1.0; 1.0 at z/h=0.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 0 and 1

HCAI Approval (For Office Use Only) - Approval Expires on 01/07/2032

Date: 1/7/2026

Name: Mohammad Karim

Title: Supervisor, Health Facilities

Condition of Approval (if applicable):

BY: Mohammad Karim

DATE: 01/07/2026

Special Seismic Certification
Table 1 - Certified Components: HMC-2000 and mGroup



DCL Project Number: 30489-2501

Manufacturer: Motion Control Engineering (MCE)

Product Line: HMC-2000 and mGroup

Certified Product Construction: NEMA 1 Enclosures; Painted Carbon Steel

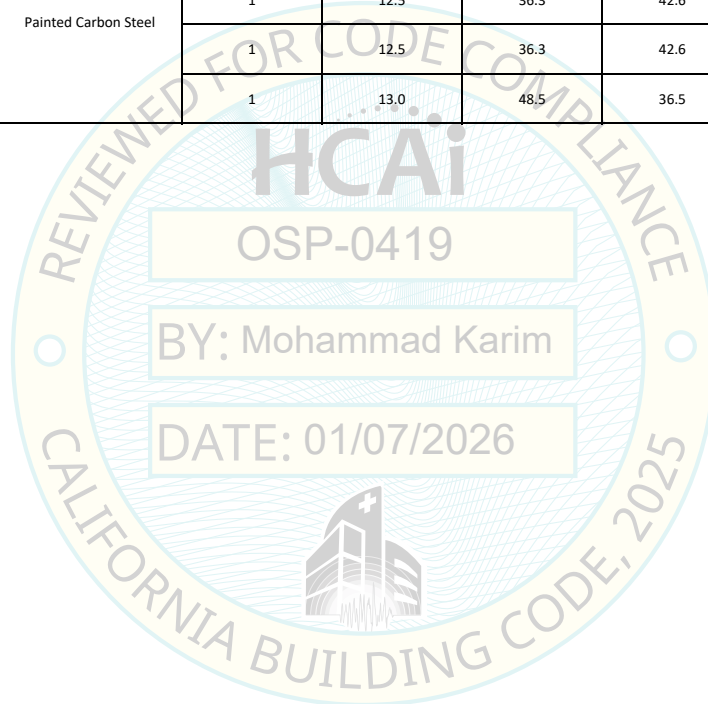
Certified Options: Enclosures, fuses, capacitors, solid state starters, battery rescue devices, p.c. boards, terminals, power modules, power supplies, receptacles, relays, surge protectors, contactors, resistors, transformers.

Mounting Description: Rigid or Flexible Wall Mounted

Certified Seismic Levels: Sds 2.5 g at z/h=1.0 and z/h=0.0

Factors for Force Amplification and Structure Ductility Reduction: $H_f = 3.5$ at z/h=1.0; 1.0 at z/h=0 and $R_d = 1.3$ at z/h=1.0; 1.0 at z/h=0

Model	Description	Enclosure Material	NEMA Rating	Maximum Dimensions (in)			Max. Weight (lb)	Unit
				Depth	Width	Height		
mGROUP	One Size	Painted Carbon Steel	1	6.3	18.3	44.0	95	UUT4a,b
mGROUP	One Size	Painted Carbon Steel	1	6.3	18.3	44.0	96	UUT2a,b
HMC-2000-S3	Size 3	Painted Carbon Steel	1	11.0	34.0	31.5	250	Extrapolated
HMC-2000-S2	Size 2		1	12.5	36.3	42.6	225	UUT17a,b
HMC-2000-S2	Size 2		1	12.5	36.3	42.6	250	UUT3a,b
HMC-2000-S1	Size 1		1	13.0	48.5	36.5	318	UUT1a,b



Special Seismic Certification

Table 2 - Certified Components: RESIST-R-C (alternately branded RESISTOR-V)



DCL Project Number: 30489-2501

Manufacturer: Motion Control Engineering (MCE)

Product Line: RESIST-R-C (alternately branded RESISTOR-V)

Certified Product Construction: NEMA 1 Enclosures; Aluminum

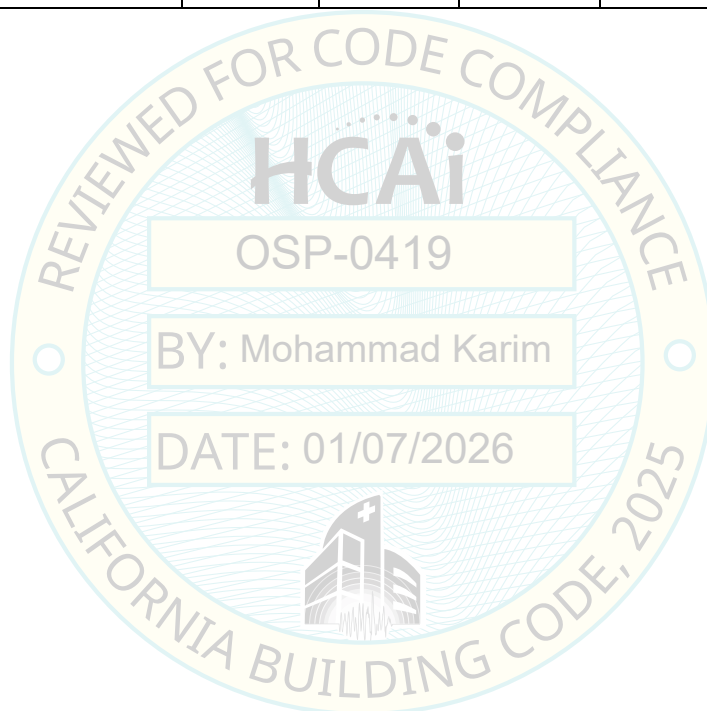
Certified Options: Enclosures, Terminal Blocks and Resistors

Mounting Description: Rigid Base or Wall mounted

Certified Seismic Levels: Sds 2.5 g at z/h=1.0 and z/h=0.0

Factors for Force Amplification and Structure Ductility Reduction: $H_f = 3.5$ at $z/h=1.0$; 1.0 at $z/h=0$ and $R_d = 1.3$ at $z/h=1.0$; 1.0 at $z/h=0$

Model	Description	Enclosure Material	NEMA Rating	Maximum Dimensions (inches)			Max. Weight (lb)	Unit
				Depth	Width	Height		
RESIST-R-C-S1	Size 1	Aluminum	1	10.3	18.0	32.0	40	UUT15a,b
RESISTOR-V-S1	Size 1	Aluminum	1	10.3	18.0	32.0	40	Same as UUT15a,b
RESISTOR-V-S2	Size 2	Aluminum	1	10.0	20.8	32.0	51	Same as UUT16a,b
RESIST-R-C-S2	Size 2	Aluminum	1	10.0	20.8	32.0	51	UUT16a,b



Special Seismic Certification

Table 3 - Certified Components: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF



DCL Project Number: 30489-2501

Manufacturer: Motion Control Engineering (MCE)

Product Line: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF

Certified Product Construction: NEMA 1 Enclosures; Painted Carbon Steel

Certified Options: Enclosures, fuses, terminals, capacitors, contactors, drives, fans, power modules, power supplies, filters and chokes, P.C. boards, computers and peripherals, receptacles and power strips, relays, timers, surge protectors, contactors, resistors and transformers

Mounting Description: Rigid Base Mounted

Certified Seismic Levels: Sds 2.1 g at z/h=1.0 and z/h=0.0

Factors for Force Amplification and Structure Ductility Reduction: Hf = 3.5 at z/h=1.0; 1.0 at z/h=0 and Rμ = 1.3 at z/h=1.0; 1.0 at z/h=0

Model	Description	Enclosure Material	NEMA Rating	Maximum Dimensions (inches)			Max. Weight (lb)	Unit
				Depth	Width	Height		
i-CENTRAL-CUE-S2	Size 2	Painted carbon steel	1	14.0	27.0	66.0	402	Extrapolated
i-CENTRAL-CUE-S1	Size 1	Painted carbon steel	1	23.0	28.0	72.0	380	UUT12
i-CENTRAL-CUE-S1	Size 1	Painted carbon steel	1	23.0	28.0	72.0	402	UUT11
M4000-AC-S1	Size 1	Painted carbon steel	1	16.0	42.0	72.0	481	UUT5
M4000-AC-S4	Size 4	Painted carbon steel	1	16.0	36.0	68.5	500	UUT19
M4000-AC-S3	Size 3	Painted carbon steel	1	17.0	46.0	72.0	960	Interpolated
M4000-AC-S2	Size 2	Painted carbon steel	1	17.0	61.0	72.0	960	UUT6 ¹
i-AC-S1	Size 1	Painted carbon steel	1	16.0	42.0	72.0	560	UUT7
i-AC-S3	Size 3	Painted carbon steel	1	17.0	46.0	71.3	830	UUT18
i-AC-S2	Size 2	Painted carbon steel	1	17.0	61.0	72.0	1,050	UUT8 ¹
REMOTE-HF	One Size	Painted carbon steel	1	14.0	39.0	27.5	320	UUT20
REMOTE-HF	One Size	Painted carbon steel	1	14.0	39.0	27.5	400	UUT21

Note:

1. UUT6 and UUT8 cabinet width is 61.0" with optional side enclosure, and 46.0" without.

Special Seismic Certification
Table 4 - Certified Components: i-DC, Filter



DCL Project Number: 30489-2501

Manufacturer: Motion Control Engineering (MCE)

Product Line: i-DC, Filter

Certified Product Construction: NEMA 1 Enclosures; Painted Carbon Steel

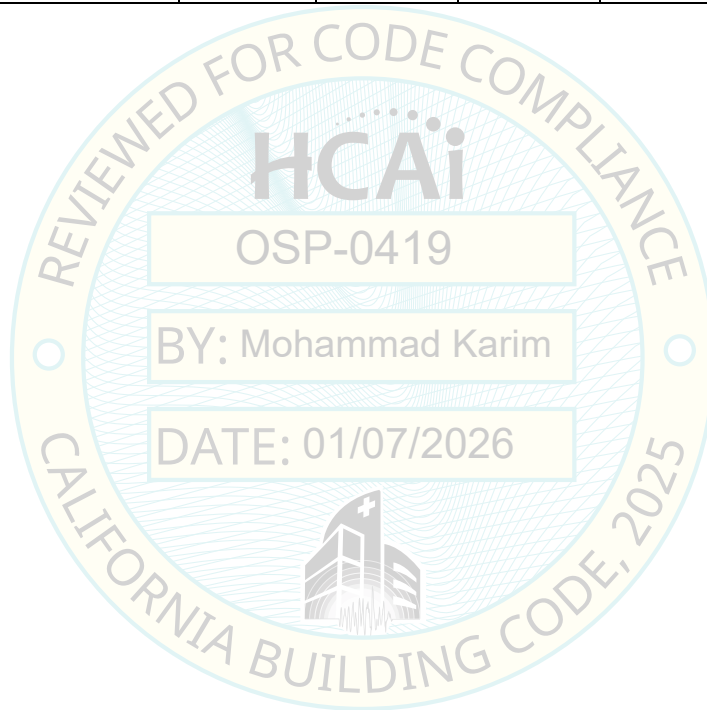
Certified Options: Enclosures, fuses and fuse blocks, terminals, capacitors, fans, drives, filters, chokes, p.c. boards, power modules, power supplies, receptacles, relays, timers resistors, and transformers

Mounting Description: Rigid Base Mounted

Certified Seismic Levels: Sds 2.5 g at z/h=1.0 and z/h=0.0

Factors for Force Amplification and Structure Ductility Reduction: $H_f = 3.5$ at z/h=1.0; 1.0 at z/h=0 and $R_d = 1.3$ at z/h=1.0; 1.0 at z/h=0

Model	Description	Enclosure Material	NEMA Rating	Maximum Dimensions (inches)			Max. Weight (lb)	Unit
				Depth	Width	Height		
i-DC	One Size	Painted carbon steel	1	16.0	42.0	72.0	540	UUT9
i-DC	One Size	Painted carbon steel	1	16.0	42.0	72.0	550	UUT10
Filter	One Size	Painted carbon steel	1	14.3	30.0	25.8	111	UUT13
Filter	One Size	Painted carbon steel	1	14.3	30.0	25.8	166	UUT14



Special Seismic Certification

Table 5 - Certified Subcomponents: HMC-2000 and mGroup



DCL Project Number: 30489-2501

Product Line: HMC-2000 and mGroup

Certified Seismic Levels: Sds 2.5 g at z/h=1.0 and z/h=0.0

mGROUP Enclosure									
Model Number	MCE Part #	Manufacturer	Material	Dimensions (in)			NEMA Type	Weight (lb)	Unit
				Depth	Width	Height			
190RQ	15-10-0022	Hoffman	Painted Carbon Steel	6.3	18.3	44.0	1	34	UUT2a,b, UUT4a,b
HMC-2000 Enclosures									
105RJ-TAN	15-01-0046	Hoffman	Painted Carbon Steel	11.0	34.0	31.5	1	75	Extrapolated
115RS REV B	15-02-0027-ID-D			13.0	48.5	36.5	1	96	UUT1a,b
118RS	15-01-0019-ID-D			12.5	36.3	42.6	1	104	Interpolated
116RS	15-01-0019-ID-S			12.5	36.3	42.6	1	104	Interpolated
106RJ-TAN	15-01-0047			12.5	36.3	42.6	1	109	UUT3a,b, UUT17a,b
Fuses									
Model Number		Manufacturer	Materials	Description				Unit	
312001P		Littelfuse	Glass, Thermoplastic	Fuse 250V 1AMP GLASS				UUT1a,b, UUT2a,b, UUT3a,b, UUT4a,b	
312002				Fuse 250V 2AMP GLASS				UUT4a,b	
312003.P				Fuse 250V 3AMP GLASS				UUT1a,b, UUT3a,b	
312004				Fuse 250V 4AMP GLASS				UUT1a,b	
313001P				Fuse Slo-Blo 250V 1A MDQ/313				UUT1a,b, UUT2a,b, UUT3a,b, UUT4a,b	
313002				Fuse Slo-Blo 250V 2A MDQ/313				UUT1a,b, UUT3a,b	
31303				Fuse Slo-Blo 250V 3-2/10A MDQ/313				UUT1a,b	
313004				Fuse Slo-Blo 250V 4A MDQ/313				UUT1a,b, UUT3a,b	
313600				Fuse Slo-Blo 250V 6/10A MDQ/313				UUT2a,b, UUT4a,b	
FLN-R 12				Fuse 250V 12AMP FRN-R				UUT1a,b	
FLQ-3 2/10				Fuse 500V 3 2/10AMP FNQ				UUT1a,b, UUT3a,b	
FLQ-4				Fuse Slo-Blo 500V 4A FNQ/FLQ				UUT3a,b	
FLQ-7				Fuse Slo-Blo 500V 7A FNQ/FLQ				UUT1a,b	
FLSR 30_ID				Fuse Slo-Blo 600V 30A FRSR/FLSR				UUT3a,b	
78025802558				Fuse 600V 300Amp FRS-R/FLSR				UUT1a,b	
KLDR007				Fuse Time Delay 600V 7A Class CC KLDR				Interpolated	
KLDR005				Fuse Time Delay 600V 5A Class CC KLDR				UUT17a,b	
354 812-GY				Fuse Block 300V 1 POSITION				UUT1a,b, UUT2a,b, UUT3a,b, UUT4a,b	
L60030M-1SQ				Fuse Block 600V30AMP 1 POS GANG				UUT1a,b	
LFR250302S				Fuse Block 250V 30AMP 2 POS FRN-R				UUT1a,b	
LFR604003C				Fuse Holder 600V 400A 3P PNL MT FRS/F				UUT1a,b	
LFR600303SID				Fuse Block 600V 30AMP 3 POS FRS-R				UUT3a,b	
Capacitor									
E81D630VNN682MA50T		UCC	Aluminum	Electrical Ratings are 6800uF, 63V				UUT1a,b; UUT2a,b; UUT3a,b; UUT4a,b	
Solid State Starters									
72EG34AFP		Siemens	Solid State Electronics, Plastic Housing	208-480VAC; 5-125 HP; 22-252 FLA				UUT3a,b	
72GG34AFP								Interpolated	
72HG34AFP								Interpolated	
72JG34AFP								Interpolated	
72KG34AFP								Interpolated	
72LG34AFP								Interpolated	
72MG34AFP								Interpolated	
72NG34AFP								Interpolated	
72PG34AFP								Interpolated	
72RG32AFP		UUT1a,b							
PCEC-032-600V-120V		Sprecher + Schuh	Solid State Electronics, Plastic Housing	208-600VAC; 5-30 HP; 32 FLA				UUT17a,b	
Fan									
Model Number		Manufacturer	Material	Description		Electrical Ratings		Unit	
UF12A12-BTHR		Mechatronics	Die Cast Aluminum	4.69 in. x 4.69 in. x 1.5 in.		115V, 50/60Hz, 0.26/0.24A		UUT17a,b	

Special Seismic Certification

Table 6 - Certified Subcomponents: HMC-2000 and mGroup



DCL Project Number: 30489-2501

Product Line: HMC-2000 and mGroup

Certified Seismic Levels: Sds 2.5 g at z/h=1.0 and z/h=0.0

Battery Rescue Devices					
Model Number	Manufacturer	Materials	Description	Weight (lb)	Unit
HAPS-2B-208V	MCE	Circuit Board Assembly	Battery lowering unit, 2 batteries, XFMR, 208VAC	33	UUT1a,b
HAPS-2-208-208			Battery lowering unit, 2 batteries, XFMR, 208Vi/208Vo	33	Interpolated
HAPS-2-208-220			Battery lowering unit, 2 batteries, XFMR, 208Vi/220Vo	33	Interpolated
HAPS-2-208-240			Battery lowering unit, 2 batteries, XFMR, 208Vi/240Vo	33	Interpolated
HAPS-2B-220V			Battery lowering unit, 2 batteries, XFMR, 220VAC	33	Interpolated
HAPS-2-220-208			Battery lowering unit, 2 batteries, XFMR, 220Vi/208Vo	33	Interpolated
HAPS-2-220-220			Battery lowering unit, 2 batteries, XFMR, 220Vi/220Vo	33	Interpolated
HAPS-2-220-240			Battery lowering unit, 2 batteries, XFMR, 220Vi/240Vo	33	Interpolated
HAPS-2B-240V			Battery lowering unit, 2 batteries, XFMR, 240VAC	33	Interpolated
HAPS-2-240-208			Battery lowering unit, 2 batteries, XFMR, 240Vi/208Vo	33	Interpolated
HAPS-2-240-220			Battery lowering unit, 2 batteries, XFMR, 240Vi/220Vo	33	Interpolated
HAPS-2-240-240			Battery lowering unit, 2 batteries, XFMR, 240Vi/240Vo	33	Interpolated
HAPS-2B-480V			Battery lowering unit, 2 batteries, XFMR, 480VAC	33	Interpolated
HAPS-2-480-208			Battery lowering unit, 2 batteries, XFMR, 480Vi/208Vo	33	Interpolated
HAPS-2-480-220			Battery lowering unit, 2 batteries, XFMR, 480Vi/220Vo	33	Interpolated
HAPS-2-480-240			Battery lowering unit, 2 batteries, XFMR, 480Vi/240Vo	33	Interpolated
HAPS-2-480-480			Battery lowering unit, 2 batteries, XFMR, 480Vi/480Vo	33	Interpolated
HAPS-4B-208V			Battery lowering unit, 4 batteries, XFMR, 208VAC	41	Interpolated
HAPS-4-208-208			Battery lowering unit, 4 batteries, XFMR, 208Vi/208Vo	41	Interpolated
HAPS-4-208-220			Battery lowering unit, 4 batteries, XFMR, 208Vi/220Vo	41	Interpolated
HAPS-4-208-240			Battery lowering unit, 4 batteries, XFMR, 208Vi/240Vo	41	Interpolated
HAPS-4B-220V			Battery lowering unit, 4 batteries, XFMR, 220VAC	41	Interpolated
HAPS-4-220-208			Battery lowering unit, 4 batteries, XFMR, 220Vi/208Vo	41	Interpolated
HAPS-4-220-220			Battery lowering unit, 4 batteries, XFMR, 220Vi/220Vo	41	Interpolated
HAPS-4-220-240			Battery lowering unit, 4 batteries, XFMR, 220Vi/240Vo	41	Interpolated
HAPS-4B-240V			Battery lowering unit, 4 batteries, XFMR, 240VAC	41	Interpolated
HAPS-4-240-208			Battery lowering unit, 4 batteries, XFMR, 240Vi/208Vo	41	Interpolated
HAPS-4-240-220			Battery lowering unit, 4 batteries, XFMR, 240Vi/220Vo	41	Interpolated
HAPS-4-240-240			Battery lowering unit, 4 batteries, XFMR, 240Vi/240Vo	41	Interpolated
HAPS-4-480-208			Battery lowering unit, 4 batteries, XFMR, 480Vi/208Vo	41	Interpolated
HAPS-4-480-220			Battery lowering unit, 4 batteries, XFMR, 480Vi/220Vo	41	Interpolated
HAPS-4-480-240			Battery lowering unit, 4 batteries, XFMR, 480Vi/240Vo	41	Interpolated
HAPS-4-480-480			Battery lowering unit, 4 batteries, XFMR, 480Vi/480Vo	41	Interpolated
HAPS-4B-480V			Battery lowering unit, 4 batteries, XFMR, 480VAC	41	UUT3a,b
Printed Circuit Boards					
Model Number	Manufacturer	Materials	Unit		
CE2849F with M00393 Piggyback board	MCE	Epoxy Glass with Plated Copper	UUT1a,b; UUT3a,b		
HC-CHP			UUT1a,b; UUT2a,b; UUT3a,b; UUT4a,b		
HC-CTL			UUT1a,b; UUT3a,b		
HC-DAB			UUT1a,b; UUT2a,b; UUT3a,b; UUT4a,b		
HC-DB-MOD			UUT1a,b; UUT3a,b		
HC-DB-MOD-R			UUT1a,b; UUT3a,b		
HC-DVR			UUT1a,b; UUT3a,b		
HC-GB-4			UUT1a,b; UUT3a,b		
HC-MPU			UUT1a,b; UUT3a,b		
HC-RDR			UUT1a,b; UUT3a,b		
HC-RT20			UUT1a,b; UUT3a,b		
HC-UIO			UUT1a,b; UUT2a,b; UUT3a,b; UUT4a,b		
MC-DLC			UUT1a,b; UUT3a,b		
MC-M2C			UUT1a,b; UUT3a,b		
MC-MCP			UUT1a,b; UUT3a,b		
SC-HCE-2			UU17a,b		
Terminals					
Model Number	Manufacturer	Description	Materials	Unit	
970-5100	Marathon	Lug, Double Ground	Aluminum, Tin-plated	UUT1a,b, UUT2a,b, UUT4a,b	
1433559		Terminal Block 3POS 350A 3/8 Stud	Aluminum, Plastic	UUT1a,b	
1423553		Terminal Block 3POS 175A 1/4 Stud		UUT3a,b	
1853950000	Weidmuller	Terminal Pnlmnt 1R 1P 4 26-10AWG GRY	Aluminum, Plastic	UUT1a,b, UUT2a,b, UUT4a,b	
Power Modules					
Model Number	Manufacturer	Description		Power	Unit
HAPS	MCE	Circuit Boards; Solid State Devices; Terminal Blocks; 12V, 5AH Batteries; Etc., in Open Housing		100-240 VAC / 24 VDC	UUT1a,b; UUT3a,b

Special Seismic Certification

Table 7 - Certified Subcomponents: HMC-2000 and mGroup



DCL Project Number: 30489-2501

Product Line: HMC-2000 and mGroup

Certified Seismic Levels: Sds 2.5 g at z/h=1.0 and z/h=0.0

Power Supplies							
Model Number	Manufacturer	Materials	Power	Unit			
DSP 100-24	Lamda	Plastic Housing	Input: 100VAC-240VAC Output: 24V	UUT2a,b; UUT4a,b			
Relays & Relay Sockets, Surge Protectors, Contactors							
Model Number	Manufacturer	Materials	Power	Description	Weight (lb)	Unit	
MY4N-AC110/120(S)	Omron	Silver, Plastic	120VAC coil, 5A	Relay	<1	UUT1a,b; UUT2a,b; UUT3a,b; UUT4a,b	
PYF14A-C		Plastic	Used for relays with up to 120VAC coils, 5A contacts	Relay Socket	<1	UUT1a,b; UUT2a,b; UUT3a,b; UUT4a,b	
BSPM3480WYGR	Cooper-Bussmann	Thermoplastic	227/480VAC	Surge Protector	<1	UUT4a,b	
GFNT1-W	Leviton	Thermoplastic	15A, 120V	GFCI Receptacle	<1	UUT17a,b	
RL4RA031TJ	G.E.	Silver Alloy, Plastic	120VAC coil, 10A	Auxiliary Contactors	1	UUT1a,b; UUT2a,b; UUT3a,b	
PRD-11AH0-120V	Potter & Brumfield	Silver Alloy, Plastic	120VAC coil; 20A, 125VDC contacts	Relay	<1	UUT1a,b; UUT3a,b	
KUP-14A15-120			120VAC coil, 10A contacts		<1	UUT17a,b	
3RH2131-1AK60	Siemens	Silver, Plastic	120VAC coil, 10A contacts	Contactor	<1	UUT17a,b	
3RT2017-1AK62			120VAC coil; 12A, 250VAC contacts		<1	UUT17a,b	
3RT2025-1AK60			120VAC coil; 17A, 250VAC contacts		<1	Interpolated	
3RT2024-1AK60			120VAC coil; 12A, 250VAC contacts		<1	Interpolated	
3RT2026-1AK60			120VAC coil; 25A, 250VAC contacts		<1	Interpolated	
3RT2027-1AK60			120VAC coil; 32A, 250VAC contacts		<1	Interpolated	
3RT2038-1AK60			120VAC coil; 80A, 250VAC contacts		2	Interpolated	
3RT2036-1AK60			120VAC coil; 50A, 250VAC contacts		2	Interpolated	
3RT2035-1AK60			120VAC coil; 40A, 250VAC contacts		2	Interpolated	
3RT2037-1AK60			120VAC coil; 65A, 250VAC contacts		2	Interpolated	
3RT2045-1AK60			120VAC coil; 80A, 250VAC contacts		4	Interpolated	
3RT2046-1AK60			120VAC coil; 95A, 250VAC contacts		4	UUT17a,b	
Resistors							
Model Number	Manufacturer	Materials	Power	Description	Weight (lb)	Unit	
AVT025-XX	Vishay	Element: Copper-Nickel Alloy or Nickel-Chrome Alloy, Depending on Resistance Value Core: Ceramic, Steatite or Cordierite	25W	Wirewound resistors, industrial power, adjustable tubular	<1	UUT1a,b; UUT3a,b	
AVT050-XX			50W		<1	Interpolated	
AVT100-XX			100W		<1	Interpolated	
AVT200-XX			225W		<1	UUT1a,b; UUT3a,b	
FVT025-XX			25W		<1	UUT1a,b; UUT3a,b	
FVT050-XX			50W		<1	Interpolated	
FVT100-XX			100W		<1	Interpolated	
FVT200-XX			225W		<1	UUT1a,b; UUT3a,b	
Transformers							
Model Number	Manufacturer	Core Material	Winding Material	Capacity (VA)	Voltages (VAC)	Weight (lb)	Unit
4-06-5024	MCI	Carbon Steel	 Copper	12	12/24	<1	UUT1a,b
4-06-6016				30	115-16 C.T.	1	Interpolated
4-49-6016				80	115/230-8/16	3	UUT1a,b, UUT3a,b, UUT2a,b, UUT4a,b
4-06-8020				100	115-20 C.T.	3	Interpolated
4-49-8036				175	115V-36VCT	6	Interpolated
4-49-9048-C				200	115/230-24/48	6	Interpolated
4-54-0540				650	110, 120, 160, 220, 240, 16, 24	15	UUT3a,b
4-54-0740				900	110, 120, 160, 220, 240, 16, 24	20	Interpolated
4-54-1540				1650	110, 120, 160, 220, 240, 16, 24	31	UUT1a,b
37701-2	Pacific	Silicon Steel	Copper	850	208-600V 18/24/120V	25	UUT17a,b
37682-2				1400	208-600V 18/24/120V	35	UUT17a,b

Special Seismic Certification

Table 8 - Certified Subcomponents: RESIST-R-C, RESISTOR-V

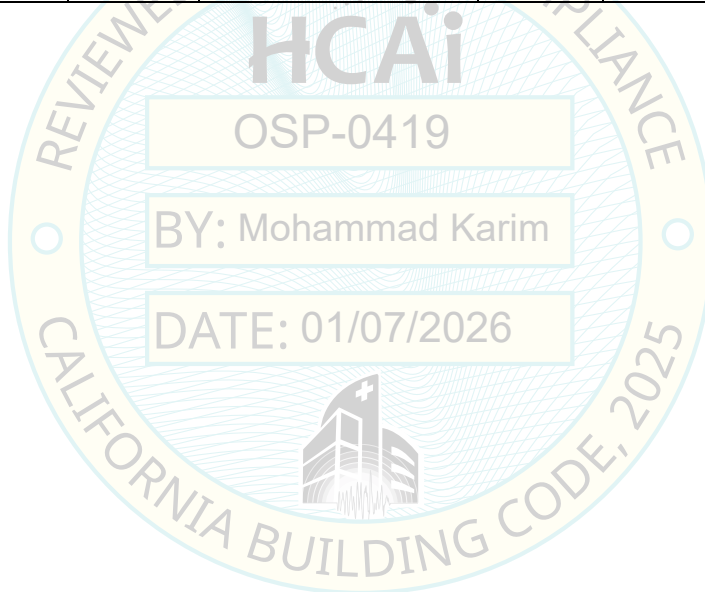


DCL Project Number: 30489-2501

Product Line: RESIST-R-C (alternately branded RESISTOR-V)

Certified Seismic Levels: Sds 2.5 g at z/h=1.0 and z/h=0.0

Enclosures									
Model Number	MCE Part #	Manufacturer	Material	Dimensions (in)			NEMA Type	Weight (lb)	Unit
				Depth	Width	Height			
49-0009.800-08-P1279	31-RA-0008	Milwaukee	Aluminum	18.0	32.0	10.0	1	40	UUT15a,b
PRO 1278	31-RA-0001			18.0	32.0	10.0	1	45	Interpolated
PRO 1285	31-RA-0002			18.0	32.0	10.0	1	45	Interpolated
PRO 1280	31-RA-0003			18.0	32.0	10.0	1	45	Interpolated
PRO 1414	31-RA-0010			18.0	32.0	10.0	1	45	Interpolated
PRO 1415	31-RA-0011			18.0	32.0	10.0	1	45	Interpolated
PRO 1281	31-RA-0005			21.0	32.0	10.0	1	51	UUT16a,b
Terminal Block									
Model Number		Manufacturer	Materials			Power		Unit	
1322572		Marathon	Copper and Aluminum Box Lug			175A		UUT15a,b; UUT16a,b	
Resistors									
Model Number		Manufacturer	Material		Description	Power	Weight (lb)	Unit	
M-214881		Vishay	Stainless Steel, Copper-Nickel, Nickel-Chrome, Electrical Porcelain		Edgewound Power Resistors	1600W	3	UUT16a,b	
M-214882							3	Interpolated	
M-214883							3	Interpolated	
M-214884							3	Interpolated	
M-214885							3	UUT15a,b	



Special Seismic Certification

Table 9 - Certified Subcomponents: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF



DCL Project Number: 30489-2501

Product Line: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF

Certified Seismic Levels: Sds 2.1 g at z/h=1.0 and z/h=0.0

i-CENTRAL-CUE Enclosures									
Model Number	MCE Part #	Manufacturer	Material	Dimensions (in)			NEMA Type	Weight (lb)	Unit
				Depth	Width	Height			
AL008	15-50-0018	Hoffman	Painted Carbon Steel	14.0	27.0	66.0	1	149	Extrapolated
331RH	15-50-0003			23.0	28.0	72.0	1	234	UUT11, UUT12
M4000-AC, i-AC, and REMOTE-HF Enclosures									
349RH	15-02-0012	Hoffman	Painted Carbon Steel	13.0	13.0	39.0	1	52	UUT6 ¹ , UUT8 ¹
321RH-TAN	15-02-0016			14.0	39.0	26.0	1	88	UUT20, UUT21
Y9266-A606010LP	15-50-0019			16.0	36.0	68.0	1	203	UUT19
300RH	15-50-0002			16.0	42.0	72.0	1	211	UUT5, UUT7
329RH	15-50-0001			17.0	46.0	72.0	1	324	UUT6 ¹ , UUT8 ¹ , UUT18
Fuses									
Model Number	Manufacturer	Description		Material			Unit		
AGC-9	Bussmann	Fuse 250V 9AMP GLASS		Glass, Thermoplastic			UUT7, UUT8		
312002	Littelfuse	Fuse 250V 2AMP GLASS		Glass, Thermoplastic			UUT7, UUT8		
312003		Fuse 250V 3AMP GLASS					UUT5, UUT6, UUT11		
313001		Fuse Slo-Blo 250V 1A MDQ/313					UUT5, UUT6, UUT7, UUT8, UUT11, UUT12		
313002		Fuse Slo-Blo 250V 2A MDQ/313					UUT5, UUT6, UUT7, UUT8, UUT11		
313003		Fuse Slo-Blo 250V 3A MDQ/313					UUT5, UUT6, UUT7, UUT8, UUT11, UUT12		
313004		Fuse Slo-Blo 250V 4A MDQ/313					UUT5, UUT6, UUT7, UUT8, UUT11, UUT12		
313600		Fuse Slo-Blo 250V 6/10A MDQ/313					UUT5, UUT6		
0313.500HXP		Fuse Slo-Blo 250V 1/2A MDQ/313					UUT11, UUT12		
01LS030.T		Fuse Fast-Blo 600V 30A JLS UL/CSA					UUT7		
01LS090.T		Fuse Fast-Blo 600V 90A JLS UL/CSA					UUT5, UUT6		
312.500H		Fuse 250V .5AMP GLASS					UUT5, UUT6, UUT11, UUT12		
312001.HXP		Fuse 250V 1AMP GLASS					UUT5, UUT6, UUT7, UUT8, UUT11, UUT12		
313.250MXP		Fuse Slo-Blo 250V 1/4A MDQ/313					UUT5, UUT6		
354 812-GY		Fuse Block 300V 1 POSITION					Interpolated		
A50QS80-4		Fuse 500VAC 80 AMP Semiconductor					Interpolated		
FLN-R 12		Fuse 250V 12AMP FRN-R					UUT5		
FLQ-12		Fuse SLOBLO 500V 12A FNQ/FLQ					UUT7, UUT8		
FLQ-20		Fuse SLOBLO 500V 20A FNQ/FLQ					Interpolated		
FLQ-25		Fuse Slo-Blo 500V 25A FNQ/FLQ					Interpolated		
FLQ-3		Fuse SLOBLO 500V 3A FNQ/FLQ					UUT6		
FLQ-30		Fuse Slo-Blo 500V 30A FNQ/FLQ					Interpolated		
FLQ-4		Fuse SLOBLO 500V 4A FNQ/FLQ					UUT6, UUT7, UUT8		
FLQ-5		Fuse SLOBLO 500V 5A FNQ/FLQ					UUT7		
FLQ-6		Fuse SLOBLO 500V 6A FNQ/FLQ					UUT5		
FLQ-7		Fuse Slo-Blo 500V 7A FNQ/FLQ					UUT5		
FLQ-8		Fuse SLOBLO 500V 8A FNQ/FLQ					UUT11, UUT12		
FLSR90		Fuse 600V 90A FuseTRON					UUT7, UUT8		
JTD150		Fuse 600V 150A Class J Time Delay CSA					UUT8		
KLDR005		Fuse Time Delay 600V 5A Class CC KLDR					UUT6		
KLDR007		Fuse Time Delay 600V 7A Class CC KLDR					UUT7, UUT8		
LSCR001		Fuse Block L50S 60-400A STUD					Interpolated		
L60030C-1SQ		Fuse Holder Class CC 30A 1P Scr Lug					UUT6		
L60030M2SQ		Fuse BLK 600V FNQ 30AMP 2 POS					UUT5, UUT6, UUT11, UUT12		
LFJ600303CID		Fuse Holder Class J 30A 3P PNL Box Lug					UUT7		
LFJ601003CID		Fuse Holder Class J 100A 3P PNL Box Lug					UUT5, UUT6		
LFJ602003C		Fuse Holder Class J 200A 3P PNL Box Lug					UUT8		
LFJ601003CID		Fuse Block 600V 100AMP 3POSN FRS-R					UUT7, UUT8		
31.1661	Schruter	Fuse Cap Fau for 17-03-0067		Glass, Thermoplastic			UUT8, UUT11, UUT12		

Note:

1. UUT6 and UUT8 were tested with a main enclosure and a side enclosure. The main enclosure model number is Model 15-50-0001 and the side enclosure model number Model 15-02-0012.

Special Seismic Certification

Table 10 - Certified Subcomponents: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF



DCL Project Number: 30489-2501

Product Line: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF

Certified Seismic Levels: Sds 2.1 g at z/h=1.0 and z/h=0.0

Terminals				
Model Number	Manufacturer	Description	Material	Unit
1320574	Marathon	Terminal Block Adder 600V CU9AL 90	Thermoplastics, Copper	UUT5, UUT6
1423553		Terminal Block 3 Pos 175A 1/4 Stud		UUT5, UUT6, UUT7, UUT8
1423572		Power TB 3 POS 600V 175A		UUT7, UUT8, UUT20, UUT21
1431559		Shunt Block TB 1 POS 600V 350A		UUT6, UUT7, UUT8
1432126		Power TB 2 POS 600V 310A		UUT7, UUT8
1433559		Terminal Block 3POS 350A 3/8 Stud		UUT7, UUT8
970-5100		Lug, Double Ground	Aluminum	UUT6, UUT7, UUT8, UUT20, UUT21
687900000		Bracket Mounting Steel Base M4	Carbon Steel	UUT7
1853950000	Weidmuller	Terminal Pnlmnt 1R 1P 4 26-10AWG GRY	Thermoplastics	UUT5, UUT6, UUT7, UUT8, UUT11, UUT12, UUT20, UUT21
1853960000		Terminal Pnlmnt 1R 1P 10 14-6AWG GRY		UUT7, UUT8, UUT11, UUT12
1853970000		Terminal End Cover for 37-03-0001 & 0002		UUT5, UUT6, UUT7, UUT8, UUT11, UUT12, UUT20, UUT21
1854410000		Terminal End Cap for standard din rail		UUT5, UUT6, UUT7, UUT8, UUT11, UUT12, UUT20, UUT21
995451		Terminal Jumper 6P for 37-03-0001		UUT7, UUT8, UUT11, UUT12
23650		DIN RAIL PERFORATED FOR UKH PWR BLKS		UUT7
282600000		FERRULES 20 AWG		UUT7
1612170000		Plug Panel Mount 9 Pin 25A 600V		UUT7
1859200000		Terminal End Cap for UKH terminal blocks		UUT5, UUT6, UUT11, UUT12
1943640000		Terminal Plugin 1R 8P 5.08 26-12AWG 180 ORG		UUT5, UUT6
1948040000		Terminal Plugin 1R 6P 5.08 26-12AWG 90 ORG		UUT5, UUT6
1137460000		Terminal Plugin 1R 2P 5.08 26-12AWG 270 BLU		UUT5, UUT6
1137360000		Terminal Plugin 1R 3P 5.08 26-12AWG 270 BLU		UUT6
336800000		Terminal Jumper 3P for 37-03-0001		UUT5, UUT6, UUT11, UUT12
336700000		Terminal Jumper 2P for 37-03-0001		UUT5, UUT6, UUT11, UUT12
6760004258 REV B		Plug Set for HC-CTL J27, J12 Printed		UUT5, UUT6
1948150000	Terminal Plugin 1R 16P 5.08 26-12AWG 90 Org	UUT5		
3010013	Phoenix C	Power TB, 1 Pos 200A	Thermoplastics	UUT6
3003541		Pick Off TB AGK10 For UKH95		UUT6
MPDB63141	Mersen	Terminal Block 1 POS Box To Stud	Thermoplastics	UUT5, UUT6
3008	Abbatron	Terminal Strip 8 POS	Thermoplastics	UUT8
3010		Terminal Strip 10 POS		UUT6, UUT8, UUT11, UUT12
Capacitors				
Model Number	Manufacturer	Material	Electrical Ratings / Power	Unit
940C10W1K-F	CDE	UL510 Polyester Tape Wrap; UL94V-0 Epoxy Fill; Tin Plated Copper	1uF, 500VAC/1000VDC	UUT6, UUT7, UUT8
E81D630VNN682MA50T	UCC	Aluminum	6800uF, 63V	UUT5, UUT6, UUT7, UUT8, UUT11, UUT12
97F5300BX	Genteq	Metalized Polypropylene Film	10uF, 440VAC	UUT5, UUT6
97F9622			50uF, 370VAC	UUT7, UUT8
Contactors ¹				
3RT1026-1AK60	Siemens	Plastic; Silver Tin Oxide	7.5/15HP; 25A	UUT5, UUT7, UUT8
3RT2026-1AK60			7.5/15HP; 25A	Interpolated
3RT1033-1AK60			10/20HP; 28A	Interpolated
3RT1034-1AK60			10/25HP; 32A	Interpolated
3RT1035-1AK60			15/30HP; 40A	UUT5, UUT6
3RT2035-1AK60			15/30HP; 40A	Interpolated
3RT2046-1AK60			30/75HP; 95A	Interpolated
3RT1054-6AF36			50/100HP; 115A	Interpolated
3RT1055-6AF36			60/125HP; 150A	Interpolated
3RT1056-6AF36			60/125HP; 185A	Interpolated
3RT1064-6AF36			75/150HP; 225A	Interpolated
3RT1065-6AF36			100/200HP; 265A	Interpolated
3RT1066-6AF36			125/250HP; 300A	UUT6, UUT8

Note:

1. Contactors are bookended by horse power (HP).

Special Seismic Certification

Table 11 - Certified Subcomponents: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF



DCL Project Number: 30489-2501

Product Line: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF

Certified Seismic Levels: Sds 2.1 g at z/h=1.0 and z/h=0.0

Drives						
Model Number	Manufacturer	Material	Description	Power	Weight (lb)	Unit
13.F5.A1E-PP00	KEBCO	Printed Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing	TORQMAX F5 Inverter Drives	180-260VAC; 7.5-100 HP; 22-224 FLA	11	UUT5, UUT7
14.F5.A1E-PP00					11	Interpolated
15.F5.A1G-PP00					22	Interpolated
15.F5.A1G-PP0A					22	Interpolated
15.F5.A1H-PP00					31	Interpolated
16.F5.A1H-PP00					31	Interpolated
17.F5.A1H-PP00					31	Interpolated
17.F5.A1H-PP0A					31	Interpolated
19.F5.A1R-PP00					71	Interpolated
19.F5.A1R-PP0A					55	Interpolated
20.F5.A1R-PP00					71	Interpolated
21.F5.A1R-PP00					71	UUT6, UUT8
23.F5.A1U-PP00					166	Extrapolated ¹
CLF6132-2001	KEBCO	Printed Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing	TORQMAX F6 Inverter Drives	180-260VAC; 7.5-40 HP; 24-115 FLA	11	Interpolated
CLF6142-2001					11	Interpolated
CLF6153-2001					21	Interpolated
CLF6164-2001					31	Interpolated
CLF6174-2001					31	Interpolated
CLF6186-2001					48	Interpolated
CLF6196-2001	KEBCO	Printed Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing	TORQMAX F6 Inverter Drives	305-500VAC; 7.5-75 HP; 11-96 FLA	48	Interpolated
CLF6132-4001					11	Interpolated
CLF6142-4001					11	Interpolated
CLF6152-4001					11	Interpolated
CLF6173-4001					21	Interpolated
CLF6184-4001					31	Interpolated
CLF6194-4001	KEBCO	Printed Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing	TORQMAX F5 Inverter Drives	305-500VAC; 7.5-175 HP; 11-231 FLA	31	Interpolated
CLF6216-4001					48	Interpolated
CLF6226-4001					48	Interpolated
13.F5.A1E-RP00	KEBCO	Printed Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing	TORQMAX F5 Inverter Drives	305-500VAC; 7.5-175 HP; 11-231 FLA	11	UUT5, UUT7
14.F5.A1E-RP00					11	Interpolated
15.F5.A1E-RP00					11	Interpolated
16.F5.A1G-RP00					22	Interpolated
17.F5.A1G-RP00					22	Interpolated
18.F5.A1H-RP00					31	Interpolated
19.F5.A1H-RP00					31	Interpolated
20.F5.A1H-RP00					31	Interpolated
21.F5.A1R-RP00					71	Interpolated
22.F5.A1R-RP00					71	Interpolated
22.F5.A1R-RP0A					55	Interpolated
22.F5.A1R-RP0C					55	Interpolated
24.F5.A1U-RP00					166	Interpolated
26.F5.A1U-RP0A					166	Interpolated
26.F5.A1U-RP00					166	UUT6, UUT8

Continued on the next page

Note:

1. Extrapolated drive has the same dimensions and weight as the 305-500VAC drives tested in UUT6 and UUT8. The only difference is the voltage range.

Special Seismic Certification

Table 12 - Certified Subcomponents: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF



DCL Project Number: 30489-2501

Product Line: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF

Certified Seismic Levels: Sds 2.1 g at z/h=1.0 and z/h=0.0

Drives (continued)						
Model Number	Manufacturer	Material	Description	Power	Weight (lb)	Unit
15.R6.N3E-RP00	KEBCO	Printed Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing	R6 Regen Unit	208/230/480VAC; 26A	12	Interpolated
15.R6.N3E-RP01					12	Interpolated
15.R6.S1E-RP00					12	Interpolated
15.R6.S3E-RP00					12	Interpolated
15.R6.S1E-RP01					12	Interpolated
15.R6.S3E-RP01					12	Interpolated
19.R6.S1E-RP00				208/230/480VAC; 65A	12	Interpolated
19.R6.N3E-RP00					12	Interpolated
19.R6.S1E-RP01					12	Interpolated
19.R6.N3E-RP01					12	Interpolated
19.R6.S3E-RP01					12	Interpolated
19.R6.S3E-RP00					12	UUT5, UUT6, UUT7, UUT8
13.F5.A1E-RP01	KEBCO	Printed Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing	TORQMAX F5 Inverter Drives	305-500VAC; 7.5-175 HP; 11-231 FLA	11	Interpolated
14.F5.A1E-RP01					11	Interpolated
15.F5.A1E-RP01					11	Interpolated
16.F5.A5G-RP01					19	Interpolated
17.F5.A5G-RP01					19	Interpolated
18.F5.A5H-RP01					34	Interpolated
19.F5.A5H-RP01					35	Interpolated
20.F5.A5H-RP01					36	Interpolated
22.F5.A5R-RP01					68	Interpolated
22.F5.A5R-RP0B					66	Interpolated
22.F5.A5R-RP0D					55	Interpolated
24.F5.A5U-RP01					141	Interpolated
26.F5.A5U-RP01					162	Interpolated
26.F5.A5U-RP0B					165	Interpolated
13.F5.A1E-PP01	KEBCO	Printed Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing	TORQMAX F5 Inverter Drives	180-260VAC; 7.5-100 HP; 22-224 FLA	11	Interpolated
14.F5.A1E-PP01					11	Interpolated
15.F5.A5G-PP01					18	Interpolated
15.F5.A5G-PP0B					18	Interpolated
16.F5.A5H-PP01					33	Interpolated
17.F5.A5H-PP01					34	Interpolated
17.F5.A5H-PP0B					34	Interpolated
19.F5.A5R-PP0B					61	Interpolated
21.F5.A5R-PP01					48	Interpolated
23.F5.A5U-PP01					155	Interpolated
23.F5.A5U-PP0B					155	Interpolated
E300-05200250A	Control Techniques	Printed Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing	E300 Series Inverter Drives	180-260VAC; 7.5-50 HP; 25-132 FLA	16	UUT19
E300-06200330A					31	Interpolated
E300-06200440A					31	Interpolated
E300-07200610A					62	Interpolated
E300-07200750A					62	Interpolated
E300-07200830A					62	Interpolated
E300-08201160A					115	Interpolated
E300-08201320A	Control Techniques	Printed Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing	E300 Series Inverter Drives	305-500VAC; 7.5-100 HP; 15-134 FLA	115	Interpolated
E300-04400150A					14	Extrapolated
E300-05400270A					16	Interpolated
E300-05400300A					16	Interpolated
E300-06400350A					31	Interpolated
E300-06400420A					31	Interpolated
E300-07400770A					62	Interpolated
E300-07401000A					62	Interpolated
E300-08401570A					115	Interpolated
E300-08401340A					115	UUT18

Special Seismic Certification

Table 13 - Certified Subcomponents: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF



DCL Project Number: 30489-2501

Product Line: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF

Certified Seismic Levels: Sds 2.1 g at z/h=1.0 and z/h=0.0

Fans						
Model Number	Manufacturer	Material	Electrical Ratings		Unit	
SP100A-1123XBT.GN	Sunon	Aluminum Alloy	115V, 60 Hz, 12W		UUT6, UUT7, UUT8	
A1175-HBT-TC.GN			115V, 60 Hz, 33W		UUT5, UUT6, UUT11, UUT12, UUT20, UUT21	
Power Modules						
Model Number	Manufacturer	Material	Power		Unit	
i-Box-1	MCE	Circuit Boards, Solid State Devices and Terminal Blocks, in Plastic Housing	120VAC / 110VDC		UUT7, UUT8	
I-PowerBox-2			600V, 30A		UUT7, UUT8	
M-BRAKE-MODULE		Circuit Boards, Solid State Devices, Transformer, Terminal Blocks, in Open Housing	Input: 300 VAC max., 1 or 3 Phase, 50/60 Hz, 15 A max. Output: 300 VDC, 15 A max.		UUT5, UUT6	
Power Supplies						
Model Number	Manufacturer	Material	Power	Weight (lb)	Unit	
DSP 100-24	Lamda	Plastic Housing	Input: 100VAC-240VAC Output: 24V	1	UUT5, UUT6, UUT7, UUT8	
LFWLT40-3002-A	EOS	PC Board	Input: 90 ~ 264 V, Universal Output: 5.2V, 14.6V, 14.8V	<1	UUT7, UUT8	
81.000.6340.0	Wieland	Plastic Housing	Input: 90 ~ 264 V, Universal Output: 24VDC, 4, 2A	<1	UUT19	
81.000.6540.0		Aluminum Housing	Input: 90 ~ 264 V, Universal Output: 24VDC, 10A	2	UUT19	
81.000.6130.0			Input: 115/230 V, Universal Output: 24VDC, 5A	2	Interpolated	
81.000.6550.0			Output: 24VDC, 10A	3	UUT19	
8951360000	Weidmuller	Stainless Steel Housing	Input: 100-240 V AC Output: 22.5-29.5 V	3	UUT11, UUT12	
Filters & Chokes						
Model Number	Manufacturer	Material	Description	Electrical Ratings	Weight (lb)	Unit
19.Z1.B05-1000	KEBCO	Carbon Steel Housing	Commutation choke	550VAC, 70A (max)	30	UUT5, UUT6, UUT7, UUT8
2-30-2173F-CHINA	MCI	Iron, Copper; Extruded Brass	EMI filter assembly	70A	3	UUT5, UUT7
2-30-2135		Iron, Copper; Copper Buss Bar		140A	7	UUT6, UUT8
RL-01802	MTE	Electrical Steel, Copper	Line inductor	18A, 1.5mH	12	UUT5, UUT7
RL-02502				25A, 1.2mH	14	Interpolated
RL-03502				35A, 0.8mH	16	Interpolated
RL-04502				45A, 0.7mH	28	Interpolated
RL-08002				80A, 0.4mH	33	Interpolated
RL-10002				100A, 0.3mH	37	Interpolated
RL-13002				130A, 0.2mH	43	Interpolated
RL-16002				160A, 0.15mH	51	Interpolated
RL-20002B14				200A, 0.11mH	54	UUT6, UUT8
19.Z1.B04-1000	KEBCO	Carbon Steel Housing	Commutation choke	550VAC, 63A (max)	23	UUT18
16.Z1.C05-1001	KEBCO	Iron, Copper Cores	Harmonic Filter	480VAC 20HP 23A	57	Extrapolated
17.Z1.C05-1001				480VAC 25HP 28A	71	Extrapolated
18.Z1.C05-1001				480VAC 30HP 34A	86	UUT18
13Z1C03-1001				208/230VAC 7.5HP 18/20A	88	Interpolated
19.Z1.C05-1001				480VAC 40HP 46A	103	UUT20
14Z1C03-1001				208/230VAC 10HP 22/26A	106	Interpolated
20.Z1.C05-1001				480VAC 50HP 55A	126	Interpolated
15Z1C03-1001				208/230VAC 15HP 29/37A	128	Interpolated
16Z1C03-1001				208/230VAC 20HP 42/49A	141	UUT19
21.Z1.C05-1001				480VAC 60HP 62A	141	UUT21

Special Seismic Certification

Table 14 - Certified Subcomponents: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF

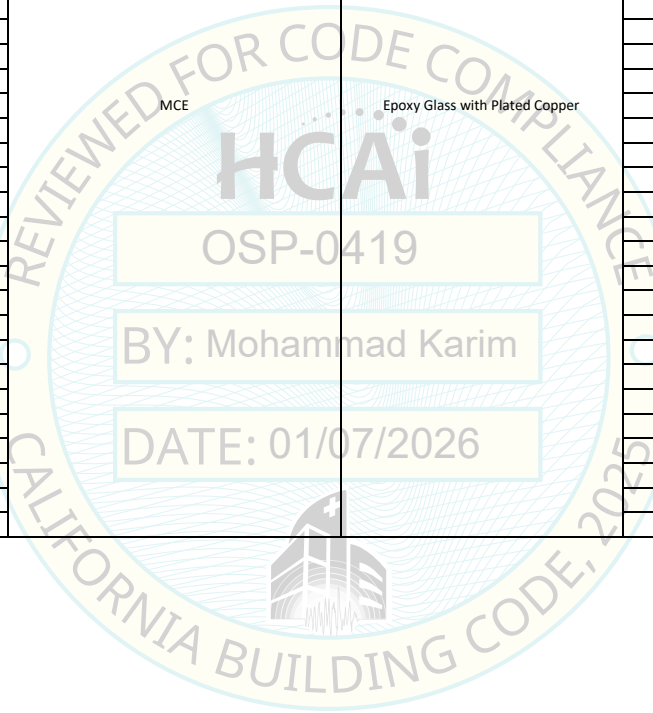


DCL Project Number: 30489-2501

Product Line: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF

Certified Seismic Levels: Sds 2.1 g at z/h=1.0 and z/h=0.0

Printed Circuit Boards				
Model Number	Manufacturer	Material	Weight (lb)	Unit
CE2849F with M00393 Piggyback board			<1	UUT5, UUT6
HC-CHP			<1	UUT5, UUT6
HC-CTL			<1	UUT5, UUT6
HC-DAB			<1	UUT5, UUT6, UUT11, UUT12
HC-DB-MOD			<1	UUT5, UUT6
HC-DB-MOD-R			<1	UUT5, UUT6
HC-GB-4			<1	UUT5, UUT6
HC-MPU			<1	UUT5, UUT6
HC-OA			<1	UUT7, UUT8, UUT11, UUT12
HC-RDR			<1	UUT5, UUT6
HC-RT20			<1	UUT5, UUT6
HC-UIO			<1	UUT5, UUT6
ICE-FB1P			<1	UUT7, UUT8
ICE-FB2P			<1	UUT7, UUT8
ICE-FB4			<1	UUT7, UUT8, UUT11, UUT12
ICE-IEQ			<1	UUT7, UUT8
ICE-IMP			<1	UUT7, UUT8
ICE-IRB-2			<1	UUT7, UUT8
ICE-IRD			<1	UUT7, UUT8
ICE-MIAC			<1	UUT7, UUT8
ICE-MOR			<1	UUT7, UUT8
ICE-PFD			<1	UUT7, UUT8
ICE-PRB			<1	UUT7, UUT8
ICE-RG			<1	UUT7, UUT8
ICE-SAF			<1	UUT7, UUT8
ICE-SF			<1	UUT7, UUT8
MC-DLC			<1	UUT5, UUT6
MC-M2C			<1	UUT5, UUT6
SC-HCDA			<1	UUT11, UUT12
SC-HCE-2			<1	UUT11, UUT12
SC-ION			<1	UUT11, UUT12
TC-MPI			<1	UUT5, UUT6
TC-DBR			<1	UUT18
MC-TSB			<1	UUT19
SC-3HN-2			<1	UUT19



Special Seismic Certification

Table 15 - Certified Subcomponents: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF



DCL Project Number: 30489-2501

Product Line: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF

Certified Seismic Levels: Sds 2.1 g at z/h=1.0 and z/h=0.0

Computers & Peripherals						
Model Number	Manufacturer	Material	Description	Electrical Ratings	Weight (lb)	Unit
1240900000	Weidmuller	Aluminum	8 port ethernet switch	N/A	<1	UUT11, UUT12
UR-12-PLUS	Connectpro	Painted Carbon Steel	KVM switch, 2 PORT USB	5VDC	<1	UUT11, UUT12
920002478	Logitech	Plastic	Keyboard USB Internet Black	5V; 100mA	2	UUT11, UUT12
UM.CV6AA.001	Acer	Plastic	Monitor 19" Black LCD Wide Screen	Input Voltage: 110 / 220 VAC Operating Power Consumption: 13 W	6	UUT11
UM.BV6AA.002			Monitor 17" Black LCD	Input Voltage: 110 / 220 VAC Operating Power Consumption: 13 W	7	UUT12
OPTIPLEX 3050 Tower	Dell	Painted Carbon Steel	PC DELL OPTIPLEX 3050 Mini Tower	Computer: 100-240V, 4A, 50-60 Hz Mouse: 5V; 100mA	17	UUT11, UUT12
OPTIPLEX 3020MT CTO (210-ABIW)			DELL OptiPlex 3020 P.C. w/WIN 7 64BIT	Computer: 100-240V, 5.4A, 50-60 Hz Mouse: 5V; 100mA	21	UUT11, UUT12
MCE-HX500	OnLogic	Folded Aluminum Housing	PC	24VDC +/-12.5% 96W max	4	UUT19
Computers & Peripherals (continued)						
Model Number	Manufacturer	Material	Description	Electrical Ratings	Unit	
TED-ASSY-BSE-Y	MCE	Painted Carbon Steel	Test Enable Device Assembly	110 V dc; 24 V dc, 25 mA.	UUT19	
Rescue Control Panel Assembly			Rescue Control Panel Assembly	Uses a 12 V battery and an inverter to power up the control logic, brake, and door operator.	UUT19	
Receptacles & Power Strips						
Model Number	Manufacturer	Material	Description	Power	Weight (lb)	Unit
5325W	Leviton	Thermoplastic	Duplex Receptacle	15A, 125V	<1	UUT11, UUT12
PS2408	Tripp Lite	Aluminum	Power Strip, AC	15A, 120V	3	UUT11, UUT12
Relays & Relay Sockets, Timers, Surge Protectors, Contactors						
KUP-14A15-120	Potter & Brumfield	Silver Alloy, Plastic	Relay	120VAC coil, 10A contacts	<1	UUT5, UUT6
PRD-11AY0-120			Relay	120VAC coil; 25A, 240VAC contacts	<1	UUT7, UUT8, UUT11, UUT12
PRD-11AH0-120V			Relay	120VAC coil; 20A, 125VDC contacts	<1	UUT5, UUT6
MY4-DC24(S)	Omron	Silver Alloy, Plastic	Relay	24VDC coil, 3A contacts	<1	UUT7, UUT8, UUT11, UUT12
MY4N-AC110/120(S)			Relay	120VAC coil, 5A	<1	UUT5, UUT6, UUT7, UUT8, UUT11, UUT12
PYF14A-C		Plastic	Relay Socket	Used for relays with up to 120VAC coils, 5A contacts	<1	UUT5, UUT6, UUT7, UUT8, UUT11, UUT12
438A-115-1	Artisan	Silver alloy, Plastic	Timer	115VAC, 1A	<1	UUT7, UUT8
438-USA			Timer	19 - 288 VAC/DC; 1A	1	UUT7, UUT8
70-463-1	Magnecraft	Copper, Zinc Plated Carbon Steel, Thermoplastic	Relay Sockets	15A, 300V	<1	UUT5, UUT6
BSPM3208WYGR	Cooper-Bussmann	Thermoplastic UL 94VO	Surge Protector	120/208VAC 3	<1	UUT5
RL4RA031TJ	G.E.	Silver Alloy, Plastic	Auxiliary contactors	120VAC coil, 10A	1	UUT5, UUT6
Contactors						
Model Number	Manufacturer	Material	Description	Power	Weight (lb)	Unit
3RT1017-1AK62	Siemens	Plastic Casing	Power Contactor	120VAC coil; 12A, 500VAC contacts	<1	Extrapolated
3RT2017-1AK62				120VAC coil; 12A, 500VAC contacts	<1	Extrapolated
3RT1024-1AK60				120VAC coil; 12A, 500VAC contacts	<1	Extrapolated
3RT1027-1AK60				120VAC coil; 32A, 500VAC contacts	<1	Extrapolated
3RT1025-1AK60				120VAC coil; 17A, 500VAC contacts	<1	Extrapolated
3RT2025-1AK60				120VAC coil; 17A, 500VAC contacts	<1	Extrapolated
3RT2024-1AK60				120VAC coil; 12A, 500VAC contacts	<1	Extrapolated
3RT2026-1AK60				120VAC coil; 25A, 500VAC contacts	1	UUT18, UUT19
3RT1026-1AK60				120VAC coil; 25A, 500VAC contacts	1	UUT5, UUT6, UUT7, UUT8
3RT2027-1AK60				120VAC coil; 32A, 500VAC contacts	1	Interpolated
3RT1035-1AK60				120VAC coil; 40A, 500VAC contacts	2	UUT5, UUT6, UUT7, UUT8
3RT1036-1AK60				120VAC coil; 50A, 500VAC contacts	2	Interpolated
3RT1037-1AK60				120VAC coil; 65A, 500VAC contacts	2	Interpolated
3RT1038-1AK60				120VAC coil; 80A, 500VAC contacts	2	Interpolated
3RT2038-1AK60				120VAC coil; 80A, 500VAC contacts	2	Interpolated
3RT2036-1AK60				120VAC coil; 50A, 500VAC contacts	2	Interpolated
3RT2035-1AK60				120VAC coil; 40A, 500VAC contacts	2	Interpolated
3RT2037-1AK60				120VAC coil; 65A, 500VAC contacts	2	Interpolated
3RT2046-1AK60				120VAC coil; 95A, 500VAC contacts	4	Interpolated
3RT2045-1AK60				120VAC coil; 80A, 500VAC contacts	4	Interpolated
3RT1046-1AK60				120VAC coil; 95A, 500VAC contacts	4	Interpolated
3RT1045-1AK60				120VAC coil; 80A, 500VAC contacts	4	Interpolated
3RT1055-6AF36				120VAC coil; 150A, 500VAC contacts	7	UUT7, UUT8, UUT18
3RT1066-6AF36				120VAC coil; 300A, 500VAC contacts	15	UUT6, UUT8

Special Seismic Certification

Table 16 - Certified Subcomponents: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF



DCL Project Number: 30489-2501

Product Line: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF

Certified Seismic Levels: Sds 2.1 g at z/h=1.0 and z/h=0.0

Resistors						
Model Number	Manufacturer	Material	Description	Power	Weight (lb)	Unit
AVT025-XX	Vishay	Element: Copper-Nickel Alloy or Nickel-Chrome Alloy, Depending on Resistance Value	Wirewound Resistors, Industrial Power, Adjustable Tubular	25W	<1	UUT5, UUT6, UUT7, UUT8
AVT050-XX				50W	<1	Interpolated
AVT100-XX				100W	<1	Interpolated
AVT200-XX				225W	<1	UUT5, UUT6, UUT7, UUT8
FVT025-XX			Wirewound Resistors, Industrial Power, Fixed Tubular	25W	<1	UUT5, UUT6, UUT7, UUT8
FVT050-XX				50W	<1	Interpolated
FVT100-XX				100W	<1	Interpolated
FVT200-XX				225W	<1	UUT5, UUT6, UUT7, UUT8
40-240-30ARCXBKRT		Resistance-Alloy Ribbon Wire Is Coiled on Edge and Supported on Specially Designed Porcelain Insulators	Wirewound Resistors, Industrial Power, Tubular, Ribwound (RB), Adjustable, 1000W 30 OHM	1000W	<1	UUT5, UUT6, UUT7, UUT8
40-320-3RC		Element: Copper-Nickel, Nickel-Chrome, Iron-Chrome-Aluminum; Core: Cordierite, Steatite; Coating: Special High Temperature Silicone or Vitreous Enamel; Terminals: Nickel-Iron	Wirewound Resistors, Industrial Power, Tubular, Ribwound (RB), Fixed	1500W	<1	UUT5, UUT6, UUT7, UUT8
40-320-8RCX				1500W	<1	UUT5, UUT6, UUT7, UUT8
51-012.6-2-8313				1100W	<1	UUT5, UUT7
51-007.8-2-8313				1100W	<1	Interpolated
51-015.6-2-8313				1100W	<1	Interpolated
51-020.0-2-8313				1100W	<1	Interpolated
51-025.0-2-8313				1100W	<1	Interpolated
51-030.0-2-8313				1100W	<1	Interpolated
51-031.8-2-8313				1100W	<1	Interpolated
51-045.6-2-8313				1100W	<1	Interpolated
51-075.0-2-8313				1100W	<1	Interpolated
51-120.0-2-8313				1100W	<1	Interpolated
51-036.0-2-8313				1100W	<1	UUT6, UUT8
FSE1000-10 OHM	Vishay	Copper-Nickel, Iron, Chrome Aluminum	Wirewound Resistors, Industrial Power, Silicone Coated, Fixed Edgewound Tubular	1000W	2	UUT5, UUT6, UUT7, UUT8
PFESK1R00E	Ohmite	Heavy Resistance Alloy Mounted on Ceramic Insulators	Wirewound Resistors	1000W	3	UUT5, UUT6, UUT7, UUT8
PFESK1R100				1000W	2	UUT5, UUT6, UUT7, UUT8
PRM-214739	Powerohm	Resistance-Alloy Ribbon Wire is Coiled on Edge and Supported on Porcelain Insulators	Power Resistor	1000W	2	UUT5, UUT6, UUT7, UUT8

Special Seismic Certification

Table 17 - Certified Subcomponents: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF



DCL Project Number: 30489-2501

Product Line: M4000-AC, i-AC, i-CENTRAL-CUE, REMOTE-HF

Certified Seismic Levels: Sds 2.1 g at z/h=1.0 and z/h=0.0

Resistors (Continued) ¹							
Model Number	Manufacturer	Material	Description	Power	Unit		
M-214745	Vishay	Stainless Steel, Copper-Nickel, Nickel-Chrome, Electrical Porcelain	Edgewound Power Resistors	1000W	Interpolated		
M-214749				1000W	Interpolated		
M-214751				1000W	Interpolated		
M-214757				1000W	Interpolated		
M-214758				1000W	Interpolated		
M-214762				1000W	Interpolated		
M-214765				1000W	Interpolated		
M-214766				1000W	Interpolated		
M-214790				1200W	Interpolated		
M-214791				1100W	Interpolated		
M-214824				1400W	Interpolated		
M-214833				1400W	Interpolated		
M-214835				1400W	Interpolated		
M-214837				1400W	Interpolated		
M-214879				1600W	UUT5, UUT7		
M-214858				1600W	Interpolated		
M-214865				1600W	Interpolated		
M-214867				1600W	Interpolated		
M-214869				1600W	Interpolated		
M-214870				1600W	Interpolated		
M-214871				1600W	Interpolated		
M-214872				1600W	Interpolated		
M-214873				1600W	Interpolated		
M-214874				1600W	Interpolated		
M-214875				1600W	Interpolated		
M-214877				1600W	Interpolated		
M-214878				1600W	Interpolated		
M-214880				1600W	Interpolated		
M-214886	1600W	UUT6, UUT8					
Transformers							
Model Number	Manufacturer	Core Material	Winding Material	Capacity (VA)	Voltages (VAC)	Weight (lb)	Unit
4-06-5024	MCI	Carbon Steel	Copper	12	12/24	<1	UUT5, UUT6
4-06-6036				30	18/36	1	UUT11, UUT12
4-06-6016				30	16	1	UUT5, UUT6, UUT11, UUT12
4-06-8024				100	12/24	3	UUT5, UUT6, UUT11, UUT12
4-06-8020				100	20	3	UUT5, UUT6
4-49-6016				80	115/230-8/16	3	UUT5, UUT6, UUT11, UUT12
4-49-8036				175	115, 36/18	6	UUT7, UUT8
4-54-0540				650	110, 120, 160, 220, 240, 16, 24	15	UUT5, UUT6, UUT7, UUT8
4-54-0740				900	110, 120, 160, 220, 240, 16, 24	20	Interpolated
4-54-1040				1150	110, 120, 160, 220, 240, 16, 24	24	UUT5, UUT6, UUT7, UUT8
4-54-1540				1650	110, 120, 160, 220, 240, 16, 24	31	UUT5, UUT6
4-54-2040				2150	110, 120, 160, 220, 240, 16, 24	52	UUT7, UUT8
TCT40-01E07AB-B	Triad	Carbon Steel	Copper	40	24	2	UUT11, UUT12
A41-80-28-CSA	SIGNAL	Carbon Steel	Copper	80	115 /230, 14/28	3	UUT5, UUT6
37701-2	Pacific	Silicon Steel	Copper	850	208-600V 18/24/120V	25	UUT19
37682-2				1400	208-600V 18/24/120V	35	UUT18

Note:

1. Vishay Resistors are bookended by power (W).

Special Seismic Certification
Table 18 - Certified Subcomponents: i-DC, Filter



DCL Project Number: 30489-2501

Product Line: i-DC, Filter

Certified Seismic Levels: Sds 2.5 g at z/h=1.0 and z/h=0.0

Enclosures								
Model Number	MCE Part #	Manufacturer	Material	Dimensions (in)			NEMA Type	Unit
				Depth	Width	Height		
300RH	15-50-0002	Hoffman	Painted Carbon Steel	16.0	42.0	72.0	1	UUT9, UUT10
312RH-TAN	15-09-0050			14.0	26.0	26.0	1	UUT13, UUT14
Fuses								
Model Number		Manufacturer	Materials	Description			Unit	
312001.HXP		Littelfuse	Glass, Thermoplastic	Fuse 250V 1AMP GLASS			UUT9, UUT10	
312.500H				Fuse 250V .5AMP GLASS			Interpolated	
FLN-R 12				Fuse 250V 12AMP FRN-R			Interpolated	
312002				Fuse 250V 2AMP GLASS			UUT9, UUT10	
312003				Fuse 250V 3AMP GLASS			Interpolated	
A50QS80-4				Fuse 500VAC 80 AMP Semiconductor			UUT9, UUT10	
JTD150				Fuse 600V 150A Class J Time Delay CSA			Interpolated	
FLSR90				Fuse 600V 90A FuseTRON			Interpolated	
L60030M25Q				Fuse BLK 600V FNQ 30AMP 2 POS			UUT9, UUT10	
354 812-GY				Fuse Block 300V 1 POSITION			UUT9, UUT10	
LFR601003CID				Fuse Block 600V 100AMP 3POSN FRS-R			Interpolated	
LSCR001				Fuse Block L50S 60-400A STUD			UUT9, UUT10	
313002				Fuse Slo-Blo 250V 2A MDQ/313			UUT9, UUT10	
313001				Fuse Slo-Blo 250V 1A MDQ/313			Interpolated	
313003				Fuse Slo-Blo 250V 3A MDQ/313			Interpolated	
313004				Fuse Slo-Blo 250V 4A MDQ/313			UUT9, UUT10	
313600				Fuse Slo-Blo 250V 6/10A MDQ/313			Interpolated	
OILS030.T				Fuse Fast-Blo 600V 30A JLS UL/CSA			Interpolated	
OILS090.T				Fuse Fast-Blo 600V 90A JLS UL/CSA			Interpolated	
0313.500HXP				Fuse Slo-Blo 250V 1/2A MDQ/313			Interpolated	
313.250MXP				Fuse Slo-Blo 250V 1/4A MDQ/313			Interpolated	
FLQ-12				Fuse SLOBLO 500V 12A FNQ/FLQ			Interpolated	
FLQ-20				Fuse SLOBLO 500V 20A FNQ/FLQ			UUT9, UUT10	
FLQ-25				Fuse Slo-Blo 500V 25A FNQ/FLQ			UUT10	
FLQ-30				Fuse Slo-Blo 500V 30A FNQ/FLQ			UUT10	
FLQ-3				Fuse SLOBLO 500V 3A FNQ/FLQ			Interpolated	
FLQ-4				Fuse SLOBLO 500V 4A FNQ/FLQ			UUT9, UUT10	
FLQ-5				Fuse SLOBLO 500V 5A FNQ/FLQ			UUT9, UUT10	
31.1661		Schruter	Glass, Thermoplastic	Fuse Cap Fau for 17-03-0067			UUT9, UUT10	
Terminals								
Model Number		Manufacturer	Materials	Description		Weight (lb)	Unit	
1422572		Marathon	Thermoplastic, Copper	Power TB 2 POS 600V 175A		<1	UUT13, UUT14	
1432126				Power TB 2 POS 600V 310A		1	UUT9	
1423572				Power TB 3 POS 600V 175A		<1	UUT9, UUT10	
1423553				Terminal Block 3 Pos 175A 1/4 Stud		<1	UUT9, UUT10	
1431559				Shunt Block TB 1 POS 600V 350A		<1	Interpolated	
1320574				Terminal Block Adder 600V CU9AL 90		<1	Interpolated	
1433559				Terminal Block 3POS 350A 3/8 Stud		1.5	Interpolated	
1422570				Terminal Block 2POS 600V 175A 1/4O		1.5	UUT9, UUT10	
970-5100			Tin Plated Aluminum	Lug, Double Ground		<1	UUT9, UUT10, UUT13, UUT14	
1853950000		Weidmuller	Thermoplastic, Copper	Terminal Pnlmnt 1R 1P 4 26-10AWG GRY		<1	UUT9, UUT10, UUT13, UUT14	
MPDB63141		Mersen	Thermoplastic, Copper	Terminal Block 1 POS Box To Stud		<1	UUT9, UUT10	
3010		Abbatron	Thermoplastic, Copper	Terminal Strip 10 POS		<1	UUT9, UUT10	
LAM2A250-38-6		Panduit	Aluminum	Ground Lug Dual Barrel LAM2A		1	UUT10	
Capacitors								
Model Number		Manufacturer	Material	Electrical Ratings			Unit	
E81D630VNN682MA50T		UCC	Aluminum	6800uF, 63V			UUT9, UUT10	
97F5704		Genteq	Metalized Polypropylene Film	4uF, 370VAC			UUT9	
97F9622				50uF, 370VAC			UUT9	
97F5320BX				50uF, 440VAC			UUT10	
Fan								
SP100A-1123XBT.GN		Sunon	Aluminum Alloy	115V, 60 Hz, 12W			UUT13, UUT14	

Special Seismic Certification
Table 19 - Certified Subcomponents: i-DC, Filter



DCL Project Number: 30489-2501

Product Line: i-DC, Filter

Certified Seismic Levels: Sds 2.5 g at z/h=1.0 and z/h=0.0

Drives					
Model Number	Manufacturer	Material	Description	Power	Unit
DSL18-S	MCE	Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing	SCR Drive	Rated inputs: 120-240V ac, 6 phase, 50/60 Hz Rated output: 0-240V dc, 0-180A dc	UUT9
DSH18-S				Rated inputs: 240-600V ac, 6 phase, 50/60 Hz Rated output: 0-500V dc, 0-180A dc	UUT10
Filters & Chokes ¹					
Model Number	Manufacturer	Material	Description	Electrical Ratings	Unit
2-30-2052	MCI	Electrical Steel Laminate; Copper	Inductor for DC filter	110A, 240V, 0.75mH	UUT13
2-30-2036				190A, 240V, 0.75mH	Interpolated
2-30-2048				255A, 240V, 0.75mH	Interpolated
2-30-2047				340A, 240V, 0.75mH	Interpolated
2-30-2053				110A, 500V, 0.75mH	Interpolated
2-30-2035				190A, 500V, 0.75mH	UUT14
Printed Circuit Boards					
Model Number	Manufacturer	Material	Weight (lb)	Unit	
HC-OA	MCE	Epoxy Glass with Plated Copper	<1	UUT9, UUT10	
HC-RDR			<1	Interpolated	
HC-RT20			<1	Interpolated	
HC-UIO			<1	Interpolated	
HC-CHP			<1	Interpolated	
HC-CTL			<1	Interpolated	
HC-DAB			<1	Interpolated	
HC-DB-MOD			<1	Interpolated	
HC-DB-MOD-R			<1	Interpolated	
HC-GB-4			<1	Interpolated	
HC-MPU			<1	Interpolated	
ICE-FB1P			<1	UUT9, UUT10	
ICE-FB2P			<1	UUT9, UUT10	
ICE-FB4			<1	UUT9, UUT10	
ICE-IEQ			<1	UUT9, UUT10	
ICE-IMP			<1	UUT9, UUT10	
ICE-IRB-2			<1	UUT9, UUT10	
ICE-IRD			<1	UUT9, UUT10	
ICE-MIAC			<1	UUT9, UUT10	
ICE-MOR			<1	UUT9, UUT10	
ICE-PFD			<1	UUT9, UUT10	
ICE-PRB			<1	UUT9, UUT10	
ICE-RG			<1	UUT9, UUT10	
ICE-SAF			<1	UUT9, UUT10	
ICE-SF			<1	UUT9, UUT10	
MC-DLC			<1	Interpolated	
MC-M2C			<1	Interpolated	
MC-TSB			<1	Interpolated	
TC-DBR			<1	Interpolated	
TC-MPI			<1	Interpolated	
SC-3HN-2			<1	Interpolated	
SC-HCDA			<1	UUT9, UUT10	
SC-HCE-2			<1	Interpolated	
SC-ION			<1	UUT9, UUT10	

Note:

1. Filters & Chokes are bookended by voltage rating (V).

Special Seismic Certification
Table 20 - Certified Subcomponents: i-DC, Filter



DCL Project Number: 30489-2501

Product Line: i-DC, Filter

Certified Seismic Levels: Sds 2.5 g at z/h=1.0 and z/h=0.0

Relays & Relay Sockets, Timers						
Model Number	Manufacturer	Material	Description	Power	Weight (lb)	Unit
KUP-14A15-120	Potter & Brumfield	Silver Alloy, Plastic	Relay	120VAC coil, 10A contacts	<1	UUT9, UUT10
MY4-DC24(S)	Omron	Silver Alloy, Plastic	Relay	24VDC coil, 3A contacts	<1	UUT9, UUT10
MY4N-AC110/120(S)			Relay	120VAC coil, 5A	<1	UUT9, UUT10
PYF14A-C		Plastic	Relay Socket	Used for relays with up to 120VAC coils, 5A contacts	<1	UUT9, UUT10
70-463-1	Magnecraft	Copper Alloy, Zinc Plated Carbon Steel; Thermoplastic	Relay Socket	15A, 300V	<1	UUT9, UUT10
438-USA	Artisan	Silver Alloy, Plastic	Timer	19 - 288 VAC/DC; 1A	<1	UUT9, UUT10
Resistors						
Model Number	Manufacturer	Material	Description	Power	Weight (lb)	Unit
AVT025-XX	Vishay	Element: copper-nickel alloy or nickel-chrome alloy, depending on resistance value Core: ceramic, steatite or cordierite	Wirewound resistors, industrial power, adjustable tubular	25W	<1	UUT9, UUT10
AVT050-XX				50W	<1	Interpolated
AVT100-XX				100W	<1	Interpolated
AVT200-XX				225W	<1	UUT9, UUT10
FVT025-XX			Wirewound resistors, industrial power, fixed tubular	25W	<1	UUT9, UUT10
FVT050-XX				50W	<1	Interpolated
FVT100-XX				100W	<1	Interpolated
FVT200-XX				225W	<1	UUT9, UUT10
Transformers						
Model Number	Manufacturer	Core / Winding Material	Capacity (VA)	Voltages (VAC)	Weight (lb)	Unit
4-06-5024	MCI	Carbon Steel / Copper	12	12/24	<1	Extrapolated
4-06-6036			30	18/36	1	Extrapolated
4-06-6016			30	16	1	Extrapolated
4-06-8024			100	12/24	3	Extrapolated
4-06-8020			100	20	3	Extrapolated
4-49-6016			80	115/230-8/16	3	Extrapolated
4-49-8036			175	115, 36/18	6	UUT9, UUT10
4-54-0540			650	110, 120, 160, 220, 240, 16, 24	15	UUT9, UUT10
4-54-0740			900	110, 120, 160, 220, 240, 16, 24	20	Interpolated
4-54-1040			1150	110, 120, 160, 220, 240, 16, 24	24	UUT9, UUT10
Contactors						
Model Number	Manufacturer	Material	Description	Power	Weight (lb)	Unit
3RT1017-1AK62	Siemens	Plastic Case		120VAC coil; 12A, 500VAC contacts	<1	Extrapolated
3RT2017-1AK62				120VAC coil; 12A, 500VAC contacts	<1	Extrapolated
3RT1024-1AK60				120VAC coil; 12A, 500VAC contacts	<1	Extrapolated
3RT1027-1AK60				120VAC coil; 32A, 500VAC contacts	<1	Extrapolated
3RT1025-1AK60				120VAC coil; 17A, 500VAC contacts	<1	Extrapolated
3RT2025-1AK60				120VAC coil; 17A, 500VAC contacts	<1	Extrapolated
3RT2024-1AK60				120VAC coil; 12A, 500VAC contacts	<1	Extrapolated
3RT2026-1AK60				120VAC coil; 25A, 500VAC contacts	<1	Extrapolated
3RT1026-1AK60				120VAC coil; 25A, 500VAC contacts	<1	Extrapolated
3RT2027-1AK60				120VAC coil; 32A, 500VAC contacts	<1	Extrapolated
3RT1035-1AK60				120VAC coil; 40A, 500VAC contacts	1.8	Extrapolated
3RT1036-1AK60				120VAC coil; 50A, 500VAC contacts	2	UUT9
3RT1037-1AK60				120VAC coil; 65A, 500VAC contacts	2	Interpolated
3RT1038-1AK60				120VAC coil; 80A, 500VAC contacts	2	Interpolated
3RT2038-1AK60				120VAC coil; 80A, 500VAC contacts	2	Interpolated
3RT2036-1AK60				120VAC coil; 50A, 500VAC contacts	2	Interpolated
3RT2035-1AK60				120VAC coil; 40A, 500VAC contacts	2	Interpolated
3RT2037-1AK60				120VAC coil; 65A, 500VAC contacts	2	Interpolated
3RT2046-1AK60				120VAC coil; 95A, 500VAC contacts	4	Interpolated
3RT2045-1AK60				120VAC coil; 80A, 500VAC contacts	4	Interpolated
3RT1045-1AK60				120VAC coil; 80A, 500VAC contacts	4	Interpolated
3RT1046-1AK60				120VAC coil; 95A, 500VAC contacts	4	UUT10

Special Seismic Certification

Table 21 - Tested Units



DCL Project Number: 30489-2501

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Tested Product Construction: NEMA 1 Enclosures; Painted Carbon Steel or Aluminum

Tested Options: Solid state starters, battery rescue devices, capacitors, contactors, fuses and fuse blocks, p.c. boards, power modules, power supplies, receptacles, relays, resistors, terminals, transformers, drives, fans, filters and chokes, peripherals

Tested Mounting Description: Rigid or flexible wall mounted (HMC-2000 and mGroup), rigid base or wall mounted (RESIST-R-C), rigid base mounted (all other models)

Factors for Force Amplification and Structure Ductility Reduction: $H_f = 3.5$ at $z/h=1.0$; 1.0 at $z/h=0$ and $R_u = 1.3$ at $z/h=1.0$; 1.0 at $z/h=0$

Model	Description	Enclosure Material	Dimensions (inches)			Weight (lb)	Mounting	Sds (g), z/h=1 and z/h=0	Unit
			Depth	Width	Height				
HMC-2000-S1	Size 1	Painted Carbon Steel	13.0	48.5	36.5	318	Rigid Wall	2.50	UUT1a
HMC-2000-S1	Size 1		13.0	48.5	36.5	318	Flexible Wall	2.50	UUT1b
mGROUP	One Size	Painted Carbon Steel	6.3	18.3	44.0	96	Rigid Wall	2.50	UUT2a
mGROUP	One Size		6.3	18.3	44.0	96	Flexible Wall	2.50	UUT2b
HMC-2000-S2	Size 2	Painted Carbon Steel	12.5	36.3	42.6	250	Rigid Wall	2.50	UUT3a
HMC-2000-S2	Size 2		12.5	36.3	42.6	250	Flexible Wall	2.50	UUT3b
mGROUP	One Size	Painted Carbon Steel	6.3	18.3	44.0	95	Rigid Wall	2.50	UUT4a
mGROUP	One Size		6.3	18.3	44.0	95	Flexible Wall	2.50	UUT4b
M4000-AC-S1	Size 1	Painted Carbon Steel	16.0	42.0	72.0	481	Rigid Base	2.10	UUT5
M4000-AC-S2	Size 2		17.0	61.0*	72.0	960		2.10	UUT6
i-AC-S1	Size 1	Painted Carbon Steel	16.0	42.0	72.0	560		2.10	UUT7
i-AC-S2	Size 2		17.0	61.0*	72.0	1050		2.10	UUT8
i-DC	One Size	Painted Carbon Steel	16.0	42.0	72.0	540		2.50	UUT9
i-DC	One Size		16.0	42.0	72.0	550		2.50	UUT10
i-CENTRAL-S1	One Size	Painted Carbon Steel	23.0	28.0	72.0	402		2.10	UUT11
i-CENTRAL-S1	One Size		23.0	28.0	72.0	380		2.10	UUT12
Filter	One Size	Painted Carbon Steel	14.0	26.0	26.0	111		2.50	UUT13
Filter	One Size		14.0	26.0	26.0	166		2.50	UUT14
RESIST-R-C-S1	Size 1	Aluminum	10.3	18.0	32.0	40	Rigid Base	2.50	UUT15a
RESIST-R-C-S1	Size 1		10.3	18.0	32.0	40	Rigid Wall	2.50	UUT15b
RESIST-R-C-S2	Size 2		10.0	20.8	32.0	51	Rigid Base	2.50	UUT16a
RESIST-R-C-S2	Size 2		10.0	20.8	32.0	51	Rigid Wall	2.50	UUT16b
HMC-2000-S2	Size 2	Painted Carbon Steel	12.0	36.0	42.0	225	Rigid wall	2.50	UUT17a
HMC-2000-S2	Size 2		12.0	36.0	42.0	225	Flexible wall	2.50	UUT17b
i-AC-S3	Size 3	Painted carbon steel	17.0	46.0	71.3	830	Rigid Base	2.10	UUT18
M4000-AC-S4	Size 4		16.0	36.0	86.4	500		2.10	UUT19
REMOTE-HF	Size 3		14.0	39.0	27.5	320		2.10	UUT20
REMOTE-HF	Size 3		14.0	39.0	27.5	400		2.10	UUT21

UNIT UNDER TEST (UUT) Summary Sheet



UUT1a,b

DCL Report Number: 18039-1401

Test Date: 11/13/2014

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: HMC-2000-S1

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
318	13.0	48.5	36.5	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _e	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.5	1.0	3.5	1.3	1.5	4.00	2.69	N/A	N/A
	AC156-24	2.5	0.0	1.0	1.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

UUT1a,b were mounted to the DCL shake table interface frame with (4) 3/8" diameter Grade 5 bolts per panel. The bolts were spaced 38 inches on center width-wise and 34 inches on center height-wise.

Rigid wall mount (UUT1a): The DCL shake table interface frame was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.

Flexible wall mount (UUT1b): The DCL shake table interface frame was flexibly attached to four vibration spring isolators with two 3/4"-diameter Grade 5 bolts per isolator. The isolators were welded to the DCL shake table interface plate which was attached to the shake table with M12 threaded rod spaced approximately 8-inches on-center.



Rigid test setup (UUT1a), cover removed for photograph



Flexible test setup (UUT1b)

UNIT UNDER TEST (UUT) Summary Sheet



UUT1a,b

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosure		
115RS REV B	Hoffman	Painted Carbon Steel
Fuses		
312001P	Littelfuse	Glass, Thermoplastic
312003.P		
313001P		
313002		
313004		
FLQ-3 2/10		
FLQ-4		
FLSR 30_ID		
354 812-GY		
LFR600303SID		
Capacitor		
E81D630VNN682MA50T	UCC	Aluminum
Solid State Starter		
72RG32AFP	Siemens	Solid State Electronics, Plastic Housing
Battery Rescue Device		
HAPS-2B-208V	MCE	Circuit Board Assembly
Printed Circuit Boards		
CE2849F with M00393 Piggyback board	MCE	Epoxy Glass with Plated Copper
HC-CHP		
HC-CTL		
HC-DAB		
HC-DB-MOD		
HC-DB-MOD-R		
HC-DVR		
HC-GB-4		
HC-MPU		
HC-RDR		
HC-RT20		
HC-UIO		
MC-DLC		
MC-M2C		
MC-MCP		
Terminals		
970-5100	Marathon	Aluminum, Tin-plated
1433559		Aluminum, Plastic
1853950000	Weidmuller	Aluminum, Plastic
Power Module		
HAPS	MCE	Circuit Boards; Solid State Devices; Terminal Blocks; 12V, 5AH Batteries; Etc., in Open Housing

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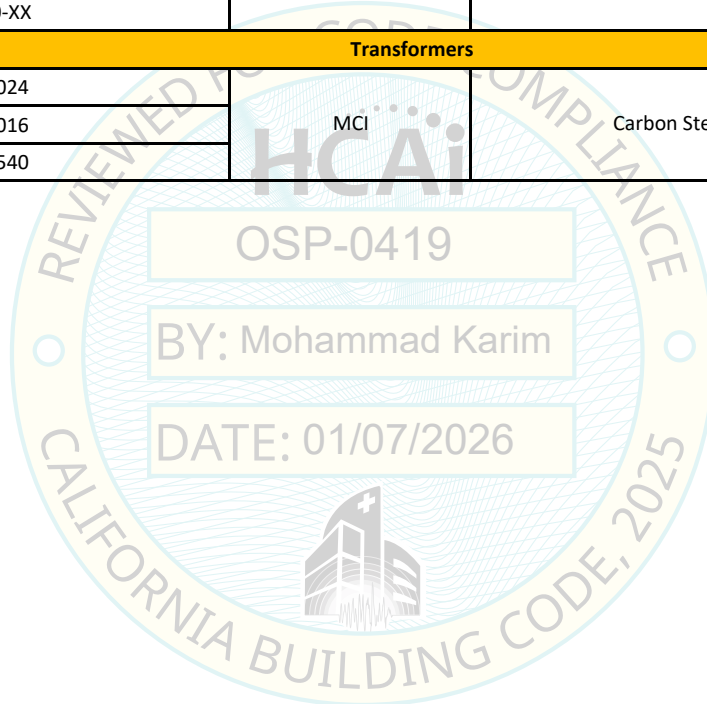
UNIT UNDER TEST (UUT) Summary Sheet



UUT1a,b

Options / Component Summary (continued):

Model Number	Manufacturer	Material
Relays & Relay Sockets, Surge Protectors, Contactors		
MY4N-AC110/120(S)	Omron	Silver, Plastic
PYF14A-C		Plastic
RL4RA031TJ	G.E.	Silver Alloy, Plastic
PRD-11AH0-120V	Potter & Brumfield	Silver Alloy, Plastic
Resistors		
AVT025-XX	Vishay	Element: Copper-Nickel Alloy or Nickel-Chrome Alloy, Depending on Resistance Value Core: Ceramic, Steatite or Cordierite
AVT200-XX		
FVT025-XX		
FVT200-XX		
Transformers		
4-06-5024	MCI	Carbon Steel Core & Copper Winding
4-49-6016		
4-54-1540		



UNIT UNDER TEST (UUT) Summary Sheet



UUT2a,b

DCL Report Number: 18039-1401

Test Date: 11/13/2014

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: mGROUP

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and 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	6.0	18.3	44.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _r	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.5	1.0	3.5	1.3	1.5	4.00	2.69	N/A	N/A
	AC156-24	2.5	0.0	1.0	1.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

UUT2a,b were mounted to the DCL shake table interface frame with (4) 1/4" diameter Grade 5 bolts per panel. The bolts were placed on the unit flanges that were spaced 22.75 inches on center width-wise, and 42.25 inches on center height-wise.

Rigid wall mount (UUT2a): The DCL shake table interface frame was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.

Flexible wall mount (UUT2b): The DCL shake table interface frame was flexibly attached to four vibration spring isolators with two 3/4"-dia Grade 5 bolts per isolator. The isolators were welded to the DCL shake table interface plate which was attached to the shake table with M12 threaded rod spaced approximately 8-inches on-center.



Rigid test setup (UUT2a)



Flexible test setup (UUT2b)

UNIT UNDER TEST (UUT) Summary Sheet



UUT2a,b

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosure		
190RQ	Hoffman	Painted Carbon Steel
Fuses		
312001P	Littelfuse	Glass, Thermoplastic
313001P		
313600.00		
354 812-GY		
Capacitor		
E81D630VNN682MA50T	UCC	Aluminum
Printed Circuit Boards		
HC-CHP	MCE	Epoxy Glass with Plated Copper
HC-DAB		
HC-UIO		
Terminals		
970-5100	Marathon	Aluminum, Tin-plated
1853950000	Weidmuller	Aluminum, Plastic
Power Supply		
DSP 100-24	Lamda	Plastic Housing
Relays & Relay Sockets, Surge Protectors, Contactors		
MY4N-AC110/120(S)	Omron	Silver, Plastic
PYF14A-C		Plastic
RL4RA031TJ		G.E.
Transformers		
4-49-6016	MCI	Carbon Steel Core, Copper Winding

UNIT UNDER TEST (UUT) Summary Sheet



UUT3a,b

DCL Report Number: 18039-1401

Test Date: 11/13/2014

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: HMC-2000-S2

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
250	12.5	36.3	42.6	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _i	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.5	1.0	3.5	1.3	1.5	4.00	2.69	N/A	N/A
	AC156-24	2.5	0.0	1.0	1.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

UUT3a,b were mounted to the DCL shake table interface frame with (4) 3/8" diameter Grade 5 bolts per panel. The bolts were spaced 28 inches on center width-wise and 40 inches on center height-wise.

Rigid wall mount (UUT3a): The DCL shake table interface frame was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.

Flexible wall mount (UUT3b): The DCL shake table interface frame was flexibly attached to four vibration spring isolators with two 3/4"-dia Grade 5 bolts per isolator. The isolators were welded to the DCL shake table interface plate which was attached to the shake table with M12 threaded rod spaced approximately 8-inches on-center.



Rigid test setup (UUT3a), cover removed for photograph



Flexible test setup (UUT3b)

UNIT UNDER TEST (UUT) Summary Sheet



UUT3a,b

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosure		
115RS REV B	Hoffman	Painted Carbon Steel
Fuses		
312004	Littlefuse	Glass, Thermoplastic
31303.2		
FLN-R 12		
FLQ-7		
78025802558		
L60030M-1SQ		
LFR250302S		
LFR604003C		
Capacitor		
E81D630VNN682MA50T	UCC	Aluminum
Solid State Starter		
72RG32AFP	Siemens	Solid State Electronics, Plastic Housing
Battery Rescue Devices		
HAPS-2B-208V	MCE	Circuit Board Assembly
Printed Circuit Boards		
CE2849F with M00393 Piggyback board		Epoxy Glass with Plated Copper
HC-CHP		
HC-CTL		
HC-DAB		
HC-DB-MOD		
HC-DB-MOD-R		
HC-DVR		
HC-GB-4		
HC-MPU		
HC-RDR		
HC-RT20		
HC-UIO		
MC-DLC		
MC-M2C		
MC-MCP		
Terminals		
970-5100	Marathon	Aluminum, Tin-plated
1433559		Aluminum, Plastic
1853950000	Weidmuller	Circuit Boards; Solid State Devices; Terminal Blocks
Relays & Relay Sockets, Surge Protectors, Contactors		
MY4N-AC110/120(S)	Omron	Silver, Plastic
PYF14A-C		Plastic
RL4RA031TJ	G.E.	Silver Alloy, Plastic
PRD-11AH0-120V	Potter & Brumfield	Silver Alloy, Plastic

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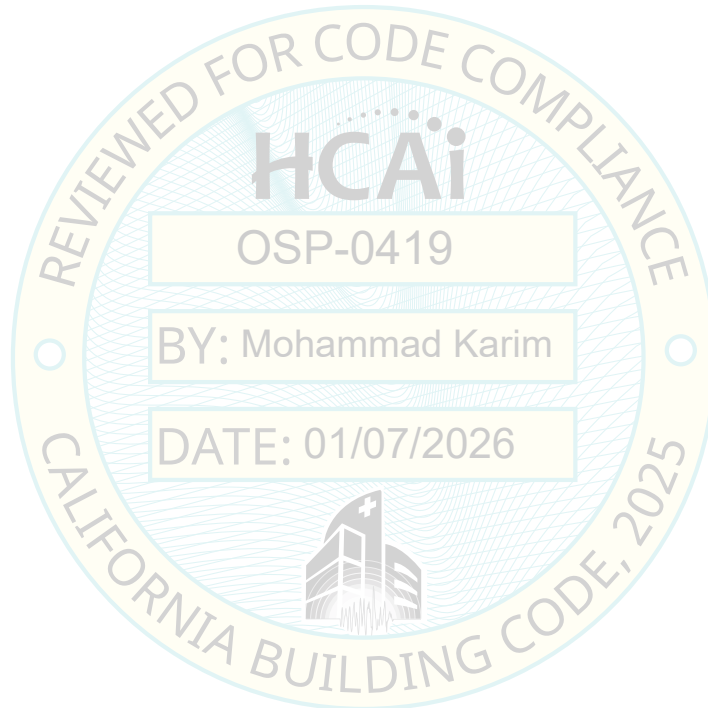
UNIT UNDER TEST (UUT) Summary Sheet



UUT3a,b

Options / Component Summary (continued):

Model Number	Manufacturer	Material
Resistors		
AVT025-XX	Vishay	Element: Copper-Nickel Alloy or Nickel-Chrome Alloy, Depending on Resistance Value Core: Ceramic, Steatite or Cordierite
AVT200-XX		
FVT025-XX		
FVT200-XX		
Transformers		
4-06-5024	MCI	Carbon Steel Core & Copper Winding
4-49-6016		
4-54-1540		



UNIT UNDER TEST (UUT) Summary Sheet



UUT4a,b

DCL Report Number: 18039-1401

Test Date: 11/13/2014

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: mGROUP

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
95	6.3	18.3	44.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _e	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.5	1.0	3.5	1.3	1.5	4.00	2.69	N/A	N/A
	AC156-24	2.5	0.0	1.0	1.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

UUT4a,b were mounted to the DCL shake table interface frame with (4) 1/4" diameter Grade 5 bolts per panel. The bolts were placed on the unit flanges that were spaced 22.75 inches on center width-wise, and 42.25 inches on center height-wise.

Rigid wall mount (UUT4a): The DCL shake table interface frame was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.

Flexible wall mount (UUT4b): The DCL shake table interface frame was flexibly attached to four vibration spring isolators with two 3/4"-dia Grade 5 bolts per isolator. The isolators were welded to the DCL shake table interface plate which was attached to the shake table with M12 threaded rod spaced approximately 8-inches on-center.



Rigid test setup (UUT4a)



Flexible test setup (UUT4b)

UNIT UNDER TEST (UUT) Summary Sheet



UUT4a,b

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosure		
190RQ	Hoffman	Painted Carbon Steel
Fuses		
312001P	Littelfuse	Glass, Thermoplastic
313001P		
313600.00		
354 812-GY		
Capacitor		
E81D630VNN682MA50T	UCC	Aluminum
Printed Circuit Boards		
HC-CHP	MCE	Epoxy Glass with Plated Copper
HC-DAB		
HC-UIO		
Terminals		
970-5100	Marathon	Aluminum, Tin-plated
1853950000	Weidmuller	Circuit Boards; Solid State Devices; Terminal Blocks
Power Supply		
DSP 100-24	Lamda	Plastic Housing
Relays & Relay Sockets, Surge Protectors, Contactors		
MY4N-AC110/120(S)	Omron	Silver, Plastic
PYF14A-C		Plastic
BSPM3480WYGR	Cooper-Bussmann	Thermoplastic
Transformers		
4-49-6016	MCI	Carbon Steel Core & Copper Winding

UNIT UNDER TEST (UUT) Summary Sheet



UUT5

DCL Report Number: 18039-1501a

Test Dates: 3/17/2015 - 3/19/2015

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: M4000-AC-S1

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
481	16.0	42.0	72.0	4.5	8.8	28

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _r	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.1	1.0	3.5	1.3	1.5	3.36	2.26	N/A	N/A
	AC156-24	2.1	0.0	1.0	1.0		N/A	N/A	1.40	0.56

Unit Mounting Description:

UUT5 was rigid base mounted to the DCL shake table interface plate with six 1/2-inch Grade 5 bolts. Four of the innermost bolts were spaced 27.5 inches on center width-wise and 12 inches on center length-wise. The two outermost bolts were spaced 33.5 inches on center width-wise and placed 8 inches from each edge of the unit length-wise. The DCL shake table interface plate was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.



Overall view of UUT5

UNIT UNDER TEST (UUT) Summary Sheet



UUT5

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosure		
300RH	Hoffman	Painted Carbon Steel
Fuses		
312002	Littelfuse	Glass, Thermoplastic
312003		
313001		
313002		
313003		
313004		
313600		
0JLS090.T		
312.500H		
312001.HXP		
313.250MXP		
FLN-R 12		
FLQ-6		
FLQ-7		
L60030M2SQ	Marathon	Thermoplastics, Copper
LFJ601003CID		
1320574		
1423553		
1853950000		
1853970000		
1854410000		
1859200000		
1943640000		
1948040000		
1137460000		
336800000		
336700000		
6760004258 REV B		
1948150000		
MPDB63141	Mersen	Thermoplastics
Capacitors		
E81D630VNN682MA50T	UCC	Aluminum
97F5300BX	Genteq	Metalized Polypropylene Film
Contactors		
3RT1026-1AK60	Siemens	Plastic; Silver Tin Oxide
3RT1035-1AK60		

Continued on next page

UNIT UNDER TEST (UUT) Summary Sheet



UUT5

Options / Component Summary (continued):

Model Number	Manufacturer	Material
Drives		
13.F5.A1E-PP00	KEBCO	Printed Circuit Boards, Solid State Devices & Terminal Blocks in Plastic Housing
19.R6.S3E-RP00		
Fan		
A1175-HBT-TC.GN	Sunon	Aluminum Alloy
Power Module		
M-BRAKE-MODULE	MCE	Circuit Boards, Solid State Devices, Transformer, Terminal Blocks, in Open Housing
Power Supply		
DSP 100-24	Lamda	Plastic Housing
Filters & Chokes		
19.Z1.B05-1000	KEBCO	Carbon Steel Housing
2-30-2173F-CHINA	MCI	Iron, Copper; Extruded Brass
RL-01802	MTE	Electrical Steel, Copper
Printed Circuit Boards		
CE2849F with M00393 Piggyback board	MCE	Epoxy Glass with Plated Copper
HC-CHP		
HC-CTL		
HC-DAB		
HC-DB-MOD		
HC-DB-MOD-R		
HC-GB-4		
HC-MPU		
HC-RDR		
HC-RT20		
HC-UIO		
MC-DLC		
MC-M2C		
TC-MPI		
Relays & Relay Sockets, Timers, Surge Protectors, Contactors		
KUP-14A15-120	Potter & Brumfield	Silver Alloy, Plastic
PRD-11AH0-120V		
MY4N-AC110/120(S)	Omron	Silver Alloy, Plastic
PYF14A-C		Plastic
70-463-1	Magnecraft	Copper, Zinc Plated Carbon Steel, Thermoplastic
BSPM3208WYGR	Cooper-Bussmann	Thermoplastic UL 94VO
RL4RA031TJ	G.E.	Silver Alloy, Plastic
Contactors		
3RT1026-1AK60	Siemens	Plastic Casing
3RT1035-1AK60		

Continued on next page

UNIT UNDER TEST (UUT) Summary Sheet



UUT5

Options / Component Summary (continued):

Model Number	Manufacturer	Material
Resistors		
AVT025-XX	Vishay	Element: Copper-Nickel Alloy or Nickel-Chrome Alloy, Depending on Resistance Value
AVT200-XX		
FVT025-XX		
FVT200-XX		
40-240-30ARCXBKRT		Resistance-Alloy Ribbon Wire Is Coiled on Edge and Supported on Specially Designed Porcelain Insulators
40-320-3RC		Element: Copper-Nickel, Nickel-Chrome, Iron-Chrome-Aluminum; Core: Cordierite, Steatite; Coating: Special High Temperature Silicone or Vitreous Enamel; Terminals: Nickel-Iron
40-320-8RCX		
51-012.6-2-8313		Stainless Steel, Copper-Nickel, Nickel-Chrome, Electrical Porcelain
M-214879		
FSE1000-10 OHM	Vishay	Copper-Nickel, Iron, Chrome Aluminum
PFE5K1R00E	Ohmite	Heavy Resistance Alloy Mounted on Ceramic Insulators
PFE5KR100		
PRM-214739	Powerohm	Resistance-Alloy Ribbon Wire is Coiled on Edge and Supported on Porcelain Insulators
Transformers		
4-06-6016	MCI	Carbon Steel Core, Copper Winding
4-06-8024	MCI	
4-06-8020	MCI	Carbon Steel Core, Copper Winding
4-49-6016		
4-54-0540		
4-54-1040		
4-54-1540	SIGNAL	Carbon Steel Core, Copper Winding
A41-80-28-CSA		

UNIT UNDER TEST (UUT) Summary Sheet



UUT6

DCL Report Number: 18039-1501a

Test Dates: 3/17/2015 - 3/19/2015

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: M4000-AC-S2

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width*	Height	Front-Back	Side-Side	Vertical
960	17.0	61.0	72.0	5.0	10.8	25.5

*Width with optional side enclosure is 61", and without optional side enclosure is 46".

Seismic Test Parameters

Building Code	Test Criteria	S _{ds} (g)	z/h	H _i	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.1	1.0	3.5	1.3	1.5	3.36	2.26	N/A	N/A
	AC156-24	2.1	0.0	1.0	1.0		N/A	N/A	1.40	0.56

Unit Mounting Description:

UUT6 was rigid base mounted to the DCL shake table interface plate with four 1/2-inch Grade 5 bolts for the main cabinet. The bolts were spaced 48 inches on center width-wise and 11 inches on center length-wise. Four 1/2-inch Grade 5 bolts for the optional side enclosure were used. The outermost bolts were spaced 8.75 inches on center length-wise while the innermost bolts were spaced 6 inches on center length-wise. The inner and outermost bolts were spaced 2 inches on center width-wise. The optional side enclosure was tested with the main cabinet. The DCL shake table interface plate was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.



Overall view of UUT6

UNIT UNDER TEST (UUT) Summary Sheet



UUT6

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosures		
349RH	Hoffman	Painted Carbon Steel
329RH		
Fuses		
312002	Littelfuse	Glass, Thermoplastic
312003		
313001		
313002		
313003		
313004		
313600		
0JLS090.T		
312.500H		
312001.HXP		
313.250MXP		
FLQ-3		
FLQ-4		
KLDR005		
L60030C-1SQ		
L60030M2SQ		
LFJ601003CID		
Terminals		
1320574	Marathon	Thermoplastics, Copper
1423553		
1431559		Aluminum
970-5100		
1853950000	Weidmuller	Thermoplastics
1853970000		
1854410000		
1859200000		
1943640000		
1948040000		
1137460000		
1137360000		
3368000000		
3367000000		
6760004258 REV B		
3010013		
3003541		
MPDB63141	Mersen	Thermoplastics
3010	Abbatron	Thermoplastics

Continued on next page

UNIT UNDER TEST (UUT) Summary Sheet



UUT6

Options / Component Summary (continued):

Model Number	Manufacturer	Material
Capacitors		
E81D630VNN682MA50T	UCC	Aluminum
97F5300BX	Genteq	Metalized Polypropylene Film
Contactors		
3RT1035-1AK60	Siemens	Plastic; Silver Tin Oxide
3RT1066-6AF36		
Drives		
21.F5.A1R-PP00	KEBCO	Printed Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing
26.F5.A1U-RP00		
19.R6.S3E-RP00		
Fans		
SP100A-1123XBT.GN	Sunon	Aluminum Alloy
A1175-HBT-TC.GN		
Power Supply		
DSP 100-24	Lamda	Plastic Housing
Filters & Chokes		
19.Z1.B05-1000	KEBCO	Carbon Steel Housing
2-30-2135	MCI	Iron, Copper; Copper Buss Bar
RL-20002B14	MTE	Electrical Steel, Copper
Printed Circuit Boards		
CE2849F with M00393 Piggyback board	MCE	Epoxy Glass with Plated Copper
HC-CHP		
HC-CTL		
HC-DAB		
HC-DB-MOD		
HC-DB-MOD-R		
HC-GB-4		
HC-MPU		
HC-RDR		
HC-RT20		
HC-UIO		
MC-DLC		
MC-M2C		
TC-MPI		
Relays & Relay Sockets, Timers, Surge Protectors, Contactors		
KUP-14A15-120	Potter & Brumfield	Silver Alloy, Plastic
PRD-11AH0-120V		
MY4N-AC110/120(S)	Omron	Silver Alloy, Plastic
PYF14A-C		Plastic
70-463-1	Magnecraft	Copper, Zinc Plated Carbon Steel, Thermoplastic
RL4RA031TJ	G.E.	Silver Alloy, Plastic

Continued on next page

UNIT UNDER TEST (UUT) Summary Sheet



UUT6

Options / Component Summary (continued):

Model Number	Manufacturer	Material
Contactors		
3RT1026-1AK60	Siemens	Plastic Casing
3RT1035-1AK60		
3RT1066-6AF36		
Resistors		
AVT025-XX	Vishay	Element: Copper-Nickel Alloy or Nickel-Chrome Alloy, Depending on Resistance Value
AVT200-XX		
FVT025-XX		
FVT200-XX		
40-240-30ARCXBKRT		Resistance-Alloy Ribbon Wire Is Coiled on Edge and Supported on Specially Designed Porcelain Insulators
40-320-3RC	Vishay	Element: Copper-Nickel, Nickel-Chrome, Iron-Chrome-Aluminum; Core: Cordierite, Steatite; Coating: Special High Temperature Silicone or Vitreous Enamel;Terminals: Nickel-Iron
40-320-8RCX		
M-214886		
FSE1000-10 OHM	Vishay	Copper-Nickel, Iron, Chrome Aluminum
PFE5K1R00E	Ohmite	Heavy Resistance Alloy Mounted on Ceramic Insulators
PFE5KR100		
PRM-214739	Powerohm	Resistance-Alloy Ribbon Wire is Coiled on Edge and Supported on Porcelain Insulators
Transformers		
4-06-6016	MCI	Carbon Steel Core, Copper Winding
4-06-8024	MCI	
4-06-8020	MCI	Carbon Steel Core, Copper Winding
4-49-6016		
4-54-0540		
4-54-1040		
4-54-1540		
A41-80-28-CSA	SIGNAL	Carbon Steel Core, Copper Winding

UNIT UNDER TEST (UUT) Summary Sheet



UUT7

DCL Report Number: 18039-1501a

Test Dates: 3/17/2015 - 3/19/2015

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: i-AC-S1

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
560	16.0	42.0	72.0	4.3	8.3	29.5

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _r	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.1	1.0	3.5	1.3	1.5	3.36	2.26	N/A	N/A
	AC156-24	2.1	0.0	1.0	1.0		N/A	N/A	1.40	0.56

Unit Mounting Description:

UUT7 was rigid base mounted to the DCL shake table interface plate with six 1/2-inch Grade 5 bolts per unit. Four of the innermost bolts were spaced 27.5 inches on center width-wise and 12 inches on center length-wise. The two outermost bolts were spaced 33.5 inches on center width-wise and placed 8 inches from each edge of the unit length-wise. The DCL shake table interface plate was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.

BY: Mohammad Karim



Overall view of UUT7

UNIT UNDER TEST (UUT) Summary Sheet



UUT7

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosures		
300RH	Hoffman	Painted Carbon Steel
Fuses		
AGC-9	Bussmann	Glass, Thermoplastic
312002	Littelfuse	Glass, Thermoplastic
313001	Littelfuse	Glass, Thermoplastic
313002	Littelfuse	Glass, Thermoplastic
313003	Littelfuse	Glass, Thermoplastic
313004	Littelfuse	Glass, Thermoplastic
0JLS030.T	Littelfuse	Glass, Thermoplastic
312001.HXP	Littelfuse	Glass, Thermoplastic
FLQ-12	Littelfuse	Glass, Thermoplastic
FLQ-4	Littelfuse	Glass, Thermoplastic
FLQ-5	Littelfuse	Glass, Thermoplastic
FLSR90	Littelfuse	Glass, Thermoplastic
KLDR007	Littelfuse	Glass, Thermoplastic
LFJ600303CID	Littelfuse	Glass, Thermoplastic
LFR601003CID	Littelfuse	Glass, Thermoplastic
Terminals		
1423553	Marathon	Thermoplastics, Copper
1423572	Marathon	Thermoplastics, Copper
1431559	Marathon	Thermoplastics, Copper
1432126	Marathon	Thermoplastics, Copper
1433559	Marathon	Thermoplastics, Copper
687900000	Weidmuller	Carbon Steel
1853950000	Weidmuller	Thermoplastics
1853960000	Weidmuller	Thermoplastics
1853970000	Weidmuller	Thermoplastics
1854410000	Weidmuller	Thermoplastics
995451	Weidmuller	Thermoplastics
23650	Weidmuller	Thermoplastics
282600000	Weidmuller	Thermoplastics
1612170000	Weidmuller	Thermoplastics
Capacitors		
940C10W1K-F	CDE	UL510 Polyester Tape Wrap; UL94V-0 Epoxy Fill; Tin Plated Copper
E81D630VNN682MA50T	UCC	Aluminum
97F5300BX	Genteq	Metalized Polypropylene Film
97F9622		
Contactors		
3RT1026-1AK60	Siemens	Plastic; Silver Tin Oxide
Continued on next page		

UNIT UNDER TEST (UUT) Summary Sheet



UUT7

Options / Component Summary (continued):

Model Number	Manufacturer	Material
Drives		
13.F5.A1E-PP00	KEBCO	Printed Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing
13.F5.A1E-RP00		
19.R6.S3E-RP00		
Fan		
SP100A-1123XBT.GN	Sunon	Aluminum Alloy
Power Modules		
i-Box-1	MCE	Circuit Boards, Solid State Devices and Terminal Blocks, in Plastic Housing
I-PowerBox-2		
Power Supplies		
DSP 100-24	Lamda	Plastic Housing
LFWLT40-3002-A	EOS	PC Board
Filters & Chokes		
19.Z1.B05-1000	KEBCO	Carbon Steel Housing
2-30-2173F-CHINA	MCI	Iron, Copper; Extruded Brass
RL-01802	MTE	Electrical Steel, Copper
Printed Circuit Boards		
CE2849F with M00393 Piggyback board	MCE	Epoxy Glass with Plated Copper
HC-OA	MCE	Epoxy Glass with Plated Copper
ICE-FB1P	MCE	Epoxy Glass with Plated Copper
ICE-FB2P	MCE	Epoxy Glass with Plated Copper
ICE-FB4	MCE	Epoxy Glass with Plated Copper
ICE-IEQ	MCE	Epoxy Glass with Plated Copper
ICE-IMP	MCE	Epoxy Glass with Plated Copper
ICE-IRB-2	MCE	Epoxy Glass with Plated Copper
ICE-IRD	MCE	Epoxy Glass with Plated Copper
ICE-MIAC	MCE	Epoxy Glass with Plated Copper
ICE-MOR	MCE	Epoxy Glass with Plated Copper
ICE-PFD	MCE	Epoxy Glass with Plated Copper
ICE-PRB	MCE	Epoxy Glass with Plated Copper
ICE-RG	MCE	Epoxy Glass with Plated Copper
ICE-SAF	MCE	Epoxy Glass with Plated Copper
ICE-SF	MCE	Epoxy Glass with Plated Copper

Continued on next page

UNIT UNDER TEST (UUT) Summary Sheet



UUT7

Options / Component Summary (continued):

Model Number	Manufacturer	Material
Relays & Relay Sockets, Timers, Surge Protectors, Contactors		
PRD-11AY0-120	Potter & Brumfield	Silver Alloy, Plastic
MY4-DC24(S)	Omron	Silver Alloy, Plastic
MY4N-AC110/120(S)	Omron	Silver Alloy, Plastic
PYF14A-C	Omron	Plastic
438A-115-1	Artisan	Silver alloy, Plastic
438-USA		
Contactors		
3RT1026-1AK60	Siemens	Plastic Casing
3RT1035-1AK60	Siemens	Plastic Casing
3RT1055-6AF36	Siemens	Plastic Casing
Resistors		
AVT025-XX	Vishay	Element: Copper-Nickel Alloy or Nickel-Chrome Alloy, Depending on Resistance Value
AVT200-XX		
FVT025-XX		
FVT200-XX		
40-240-30ARCXBKRT		Resistance-Alloy Ribbon Wire Is Coiled on Edge and Supported on Specially Designed Porcelain Insulators
40-320-3RC		Element: Copper-Nickel, Nickel-Chrome, Iron-Chrome-Aluminum; Core: Cordierite, Steatite; Coating: Special High Temperature Silicone or Vitreous Enamel; Terminals: Nickel-Iron
40-320-8RCX		
51-012.6-2-8313		
M-214879	Stainless Steel, Copper-Nickel, Nickel-Chrome, Electrical Porcelain	
FSE1000-10 OHM	Vishay	Copper-Nickel, Iron, Chrome Aluminum
PFE5K1R00E	Ohmite	Heavy Resistance Alloy Mounted on Ceramic Insulators
PFE5KR100		
PRM-214739	Powerohm	Resistance-Alloy Ribbon Wire is Coiled on Edge and Supported on Porcelain Insulators
Transformers		
4-06-5024	MCI	Carbon Steel Core, Copper Winding
4-49-8036	MCI	Carbon Steel Core, Copper Winding
4-54-0540	MCI	Carbon Steel Core, Copper Winding
4-54-1040	MCI	Carbon Steel Core, Copper Winding
4-54-2040	MCI	Carbon Steel Core, Copper Winding

UNIT UNDER TEST (UUT) Summary Sheet



UUT8

DCL Report Number: 18039-1501b

Test Dates: 4/15/2015 - 4/16/2015

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: i-AC-S2

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width*	Height	Front-Back	Side-Side	Vertical
1,050	17.0	61.0	72.0	5.5	5.8	20.3

*Width with optional side enclosure is 61", and without optional side enclosure is 46".

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _f	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.1	1.0	3.5	1.3	1.5	3.36	2.26	N/A	N/A
	AC156-24	2.1	0.0	1.0	1.0		N/A	N/A	1.40	0.56

Unit Mounting Description:

UUT8 was rigid base mounted to the DCL shake table interface plate with four 1/2-inch Grade 5 bolts for the main cabinet. The bolts were spaced 48 inches on center width-wise and 11 inches on center length-wise. Four 1/2-inch Grade 5 bolts for the optional side enclosure were used. The outermost bolts were spaced 8.75 inches on center length-wise while the innermost bolts were spaced 6 inches on center length-wise. The inner and outermost bolts were spaced 2 inches on center width-wise. The optional side enclosure was tested with the main cabinet. The DCL shake table interface plate was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.



Overall view of UUT8

UNIT UNDER TEST (UUT) Summary Sheet



UUT8

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosure		
300RH	Hoffman	Painted Carbon Steel
Fuses		
AGC-9	Bussmann	Glass, Thermoplastic
312002	Littelfuse	Glass, Thermoplastic
313001	Littelfuse	Glass, Thermoplastic
313002	Littelfuse	Glass, Thermoplastic
313003	Littelfuse	Glass, Thermoplastic
313004	Littelfuse	Glass, Thermoplastic
312001.HXP	Littelfuse	Glass, Thermoplastic
FLQ-12	Littelfuse	Glass, Thermoplastic
FLQ-4	Littelfuse	Glass, Thermoplastic
FLSR90	Littelfuse	Glass, Thermoplastic
JTD150	Littelfuse	Glass, Thermoplastic
KLDR007	Littelfuse	Glass, Thermoplastic
LFJ602003C	Littelfuse	Glass, Thermoplastic
LFR601003CID	Littelfuse	Glass, Thermoplastic
Terminals		
1423553	Marathon	Thermoplastics, Copper
1423572	Marathon	Thermoplastics, Copper
1431559	Marathon	Thermoplastics, Copper
1432126	Marathon	Thermoplastics, Copper
1433559	Marathon	Thermoplastics, Copper
970-5100	Marathon	Aluminum
1853950000	Weidmuller	Thermoplastics
1853960000	Weidmuller	Thermoplastics
1853970000	Weidmuller	Thermoplastics
1854410000	Weidmuller	Thermoplastics
995451	Weidmuller	Thermoplastics
Capacitors		
97F9622	Genteq	Metalized Polypropylene Film
Contactors		
3RT1026-1AK60	Siemens	Plastic; Silver Tin Oxide
3RT1066-6AF36		
Drives		
21.F5.A1R-PP00	KEBCO	Printed Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing
26.F5.A1U-RP00		
19.R6.S3E-RP00		
Fan		
SP100A-1123XBT.GN	Sunon	Aluminum Alloy

Continued on next page

UNIT UNDER TEST (UUT) Summary Sheet



UUT8

Options / Component Summary (continued):

Model Number	Manufacturer	Material
Power Modules		
i-Box-1	MCE	Circuit Boards, Solid State Devices and Terminal Blocks, in Plastic Housing
I-PowerBox-2	MCE	
Power Supplies		
DSP 100-24	Lamda	Plastic Housing
LFWLT40-3002-A	EOS	PC Board
Filters & Chokes		
2-30-2135	MCI	Iron, Copper; Copper Buss Bar
RL-20002B14	MTE	Electrical Steel, Copper
Printed Circuit Boards		
HC-OA	MCE	Epoxy Glass with Plated Copper
ICE-FB1P	MCE	Epoxy Glass with Plated Copper
ICE-FB2P	MCE	Epoxy Glass with Plated Copper
ICE-FB4	MCE	Epoxy Glass with Plated Copper
ICE-IEQ	MCE	Epoxy Glass with Plated Copper
ICE-IMP	MCE	Epoxy Glass with Plated Copper
ICE-IRB-2	MCE	Epoxy Glass with Plated Copper
ICE-IRD	MCE	Epoxy Glass with Plated Copper
ICE-MIAC	MCE	Epoxy Glass with Plated Copper
ICE-MOR	MCE	Epoxy Glass with Plated Copper
ICE-PFD	MCE	Epoxy Glass with Plated Copper
ICE-PRB	MCE	Epoxy Glass with Plated Copper
ICE-RG	MCE	Epoxy Glass with Plated Copper
ICE-SAF	MCE	Epoxy Glass with Plated Copper
ICE-SF	MCE	Epoxy Glass with Plated Copper
Relays & Relay Sockets, Timers, Surge Protectors, Contactors		
KUP-14A15-120	Potter & Brumfield	Silver Alloy, Plastic
PRD-11AY0-120	Potter & Brumfield	Silver Alloy, Plastic
MY4-DC24(S)	Omron	Silver Alloy, Plastic
MY4N-AC110/120(S)	Omron	Silver Alloy, Plastic
PYF14A-C	Omron	Plastic
438A-115-1	Artisan	Silver alloy, Plastic
438-USA		
Contactors		
3RT1026-1AK60	Siemens	Plastic Casing
3RT1035-1AK60	Siemens	Plastic Casing
3RT1055-6AF36	Siemens	Plastic Casing
3RT1066-6AF36	Siemens	Plastic Casing

Continued on next page

UNIT UNDER TEST (UUT) Summary Sheet



UUT8

Options / Component Summary (continued):

Model Number	Manufacturer	Material
Resistors		
AVT025-XX	Vishay	Element: Copper-Nickel Alloy or Nickel-Chrome Alloy, Depending on Resistance Value
AVT200-XX		
FVT025-XX		
FVT200-XX		
40-240-30ARCXBRKT		Resistance-Alloy Ribbon Wire Is Coiled on Edge and Supported on Specially Designed Porcelain Insulators
40-320-3RC		Element: Copper-Nickel, Nickel-Chrome, Iron-Chrome-Aluminum; Core: Cordierite, Steatite; Coating: Special High Temperature Silicone or Vitreous Enamel; Terminals: Nickel-Iron
40-320-8RCX		
51-036.0-2-8313		
M-214886	Stainless Steel, Copper-Nickel, Nickel-Chrome, Electrical Porcelain	
Transformers		
4-06-5024	MCI	Carbon Steel Core, Copper Winding
4-49-8036	MCI	Carbon Steel Core, Copper Winding
4-54-0540	MCI	Carbon Steel Core, Copper Winding
4-54-1040	MCI	Carbon Steel Core, Copper Winding
4-54-2040	MCI	Carbon Steel Core, Copper Winding

BY: Mohammad Karim

DATE: 01/07/2026



UNIT UNDER TEST (UUT) Summary Sheet



UUT9

DCL Report Number: 18039-1501b

Test Dates: 4/15/2015 - 4/16/2015

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: i-DC

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
540	16.0	42.0	72.0	7.5	11.5	20.3

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _i	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.5	1.0	3.5	1.3	1.5	4.00	2.69	N/A	N/A
	AC156-24	2.5	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description:

UUT9 was rigid base mounted to the DCL shake table interface plate with six 1/2-inch Grade 5 bolts per unit. Four of the innermost bolts were spaced 27.5 inches on center width-wise and 12 inches on center length-wise. The two outermost bolts were spaced 33.5 inches on center width-wise and placed 8 inches from each edge of the unit length-wise. The DCL shake table interface plate was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.

BY: Mohammad Karim



Overall view of UUT9

UNIT UNDER TEST (UUT) Summary Sheet



UUT9

Options / Component Summary:

Model Number	Manufacturer	Materials
Enclosures		
300RH	Hoffman	Painted Carbon Steel
Fuses		
312001.HXP	Littelfuse	Glass, Thermoplastic
312002		
A50QS80-4		
L60030M2SQ		
354 812-GY		
LSCR001		
313002		
313004		
FLQ-20		
FLQ-25		
FLQ-30		
FLQ-4		
FLQ-5		
31.1661	Schruter	Glass, Thermoplastic
Terminals		
1432126	Marathon	Thermoplastic, Copper
1423572		
1423553		
1422570		
970-5100		Tin Plated Aluminum
1853950000	Weidmuller	Thermoplastic, Copper
MPDB63141	Mersen	Thermoplastic, Copper
3010	Abbatron	Thermoplastic, Copper
Capacitors		
E81D630VNN682MA50T	UCC	Aluminum
97F5704	Genteq	Metalized Polypropylene Film
97F9622		
Drives		
DSL18-S	MCE	Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing
Power Modules		
i-Box-1	MCE	Circuit Boards, Solid State Devices and Terminal Blocks, in Plastic Housing
I-PowerBox-3		
Power Supplies		
DSP 100-24	Lamda	Plastic Housing
LFWLT40-3002-A	EOS	PCB
Transformers		
4-49-8036	MCI	Carbon Steel / Copper
4-54-0540		
4-54-1040		
Continued on next page		

Continued on next page

UNIT UNDER TEST (UUT) Summary Sheet



UUT9

Options / Component Summary (continued):

Model Number	Manufacturer	Material
Printed Circuit Boards		
HC-OA	MCE	Epoxy Glass with Plated Copper
ICE-FB1P		
ICE-FB2P		
ICE-FB4		
ICE-IEQ		
ICE-IMP		
ICE-IRB-2		
ICE-IRD		
ICE-MIAC		
ICE-MOR		
ICE-PFD		
ICE-PRB		
ICE-RG		
ICE-SAF		
ICE-SF		
SC-HCDA		
SC-ION		
Relays & Relay Sockets, Timers		
KUP-14A15-120	Potter & Brumfield	Silver Alloy, Plastic
MY4-DC24(S)	Omron	Silver Alloy, Plastic
MY4N-AC110/120(S)		Plastic
PYF14A-C	Magnecraft	Copper Alloy, Zinc Plated Carbon Steel; Thermoplastic
70-463-1		Silver Alloy, Plastic
438-USA		
Resistors		
AVT025-XX	Vishay	Element: copper-nickel alloy or nickel-chrome alloy, depending on resistance value Core: ceramic, steatite or cordierite
AVT200-XX		
FVT025-XX		
FVT200-XX		
Contactors		
3RT1036-1AK60	Siemens	Plastic Case

UNIT UNDER TEST (UUT) Summary Sheet



UUT10

DCL Report Number: 18039-1501b

Test Dates: 4/15/2015 - 4/16/2015

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: i-DC

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
550	16.0	42.0	72.0	7.0	11.0	19.8

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _i	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.5	1.0	3.5	1.3	1.5	4.00	2.69	N/A	N/A
	AC156-24	2.5	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description:

UUT10 was rigid base mounted to the DCL shake table interface plate with six 1/2-inch Grade 5 bolts per unit. Four of the innermost bolts were spaced 27.5 inches on center width-wise and 12 inches on center length-wise. The two outermost bolts were spaced 33.5 inches on center width-wise and placed 8 inches from each edge of the unit length-wise. The DCL shake table interface plate was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.



Overall view of UUT10

UNIT UNDER TEST (UUT) Summary Sheet



UUT10

Options / Component Summary:

Model Number	Manufacturer	Materials
Enclosures		
300RH	Hoffman	Painted Carbon Steel
Fuses		
312001.HXP	Littelfuse	Glass, Thermoplastic
312002		
A50QS80-4		
L60030M2SQ		
354 812-GY		
LSCR001		
313002		
313004		
FLQ-20		
FLQ-25		
FLQ-30		
FLQ-4		
FLQ-5		
31.1661	Schruter	Glass, Thermoplastic
Terminals		
1423572	Marathon	Thermoplastic, Copper
1423553		
1422570		
970-5100		Tin Plated Aluminum
1853950000	Weidmuller	Thermoplastic, Copper
MPDB63141	Mersen	Thermoplastic, Copper
3010	Abbatron	Thermoplastic, Copper
LAM2A250-38-6	Panduit	Aluminum
Capacitors		
E81D630VNN682MA50T	UCC	Aluminum
97F5320BX	Genteq	Metalized Polypropylene Film
Power Modules		
i-Box-1	MCE	Circuit Boards, Solid State Devices and Terminal Blocks, in Plastic Housing
I-PowerBox-3		
Power Supplies		
LFWLT40-3002-A	EOS	PCB
Drives		
DSH18-S	MCE	Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing
Contactors		
3RT1046-1AK60	Siemens	Plastic Case
AVT025-XX	Vishay	Element: copper-nickel alloy or nickel-chrome alloy, depending on resistance value Core: ceramic, steatite or cordierite
AVT200-XX		
FVT025-XX		
FVT200-XX		

Continued on next page

UNIT UNDER TEST (UUT) Summary Sheet



UUT10

Options / Component Summary (continued):

Model Number	Manufacturer	Materials
Printed Circuit Boards		
HC-OA	MCE	Epoxy Glass with Plated Copper
ICE-FB1P		
ICE-FB2P		
ICE-FB4		
ICE-IEQ		
ICE-IMP		
ICE-IRB-2		
ICE-IRD		
ICE-MIAC		
ICE-MOR		
ICE-PFD		
ICE-PRB		
ICE-RG		
ICE-SAF		
ICE-SF		
SC-HCDA		
SC-ION		
Relays & Relay Sockets, Timers		
KUP-14A15-120	Potter & Brumfield	Silver Alloy, Plastic
MY4-DC24(S)	Omron	Silver Alloy, Plastic
MY4N-AC110/120(S)		Plastic
PYF14A-C		
70-463-1	Magnecraft	Copper Alloy, Zinc Plated Carbon Steel; Thermoplastic
438-USA	Artisan	Silver Alloy, Plastic
Transformers		
4-49-8036	MCI	Carbon Steel / Copper
4-54-0540		
4-54-1040		

UNIT UNDER TEST (UUT) Summary Sheet



UUT11

DCL Report Number: 18039-1501a

Test Dates: 3/17/2015 - 3/19/2015

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: i-CENTRAL-CUE-S1

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
402	23.0	28.0	72.0	23.3	12.0	27.5

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _i	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.1	1.0	3.5	1.3	1.5	3.36	2.26	N/A	N/A
	AC156-24	2.1	0.0	1.0	1.0		N/A	N/A	1.41	0.57

Unit Mounting Description:

UUT11 was rigid base mounted to the DCL shake table interface plate with eight 1/2-inch Grade 5 bolts. Two bolts were spaced 3.5 inches on center length-wise apart from each other with an 11-inch gap between the next set of two bolts. Each bolt was spaced 30 inches on center width-wise. The DCL shake table interface plate was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.



Overall view of UUT11

UNIT UNDER TEST (UUT) Summary Sheet



UUT11

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosure		
331RH	Hoffman	Painted Carbon Steel
Fuses		
AGC-9	Bussmann	Glass, Thermoplastic
312003	Littelfuse	Glass, Thermoplastic
313001	Littelfuse	Glass, Thermoplastic
313002	Littelfuse	Glass, Thermoplastic
313003	Littelfuse	Glass, Thermoplastic
313004	Littelfuse	Glass, Thermoplastic
0313.500HXP	Littelfuse	Glass, Thermoplastic
312.500H	Littelfuse	Glass, Thermoplastic
312001.HXP	Littelfuse	Glass, Thermoplastic
FLQ-8	Littelfuse	Glass, Thermoplastic
L60030M2SQ	Littelfuse	Glass, Thermoplastic
Terminals		
1320574	Marathon	Thermoplastics, Copper
1853950000	Weidmuller	Thermoplastics
1853960000	Weidmuller	Thermoplastics
1853970000	Weidmuller	Thermoplastics
1854410000	Weidmuller	Thermoplastics
995451	Weidmuller	Thermoplastics
1859200000	Weidmuller	Thermoplastics
336800000	Weidmuller	Thermoplastics
336700000	Weidmuller	Thermoplastics
Capacitor		
E81D630VNN682MA50T	UCC	Aluminum
Fan		
A1175-HBT-TC.GN	Sunon	Aluminum Alloy
Power Supply		
8951360000	Weidmuller	Stainless Steel Housing
Printed Circuit Boards		
HC-DAB	MCE	Epoxy Glass with Plated Copper
HC-OA	MCE	Epoxy Glass with Plated Copper
ICE-FB4	MCE	Epoxy Glass with Plated Copper
SC-HCDA	MCE	Epoxy Glass with Plated Copper
SC-HCE-2	MCE	Epoxy Glass with Plated Copper
SC-ION	MCE	Epoxy Glass with Plated Copper
Computers & Peripherals		
1240900000	Weidmuller	Aluminum
UR-12-PLUS	Connectpro	Painted Carbon Steel
920002478	Logitech	Plastic
UM.CV6AA.001	Acer	Plastic

Continued on next page

UNIT UNDER TEST (UUT) Summary Sheet



UUT11

Options / Component Summary (continued):

Model Number	Manufacturer	Material
Computers & Peripherals (continued)		
OPTIPLEX 3050 Tower	Dell	Painted Carbon Steel
OPTIPLEX 3020MT CTO (210-ABIW)		
Receptacles & Power Strips		
5325W	Leviton	Thermoplastic
PS2408	Tripp Lite	Aluminum
Relays & Relay Sockets, Timers, Surge Protectors, Contactors		
PRD-11AY0-120	Potter & Brumfield	Silver Alloy, Plastic
MY4-DC24(S)	Omron	Silver Alloy, Plastic
MY4N-AC110/120(S)	Omron	Silver Alloy, Plastic
PYF14A-C	Omron	Plastic
Transformers		
4-06-6036	MCI	Carbon Steel Core, Copper Winding
4-06-6016	MCI	Carbon Steel Core, Copper Winding
4-06-8024	MCI	Carbon Steel Core, Copper Winding
4-49-6016	MCI	Carbon Steel Core, Copper Winding

BY: Mohammad Karim

DATE: 01/07/2026

UNIT UNDER TEST (UUT) Summary Sheet



UUT12

DCL Report Number: 18039-1501a

Test Dates: 3/17/2015 - 3/19/2015

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: i-CENTRAL-CUE-S1

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
380	23.0	28.0	72.0	23.3	12.0	27.5

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _i	R _u	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.1	1.0	3.5	1.3	1.5	3.36	2.26	N/A	N/A
	AC156-24	2.1	0.0	1.0	1.0		N/A	N/A	1.41	0.57

Unit Mounting Description:

UUT12 was rigid base mounted to the DCL shake table interface plate with eight 1/2-inch Grade 5 bolts. Two bolts were spaced 3.5 inches on center length-wise apart from each other with an 11-inch gap between the next set of two bolts. Each bolt was spaced 30 inches on center width-wise. The DCL shake table interface plate was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.



Overall view of UUT12

UNIT UNDER TEST (UUT) Summary Sheet



UUT12

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosure		
331RH	Hoffman	Painted Carbon Steel
Fuses		
AGC-9	Bussmann	Glass, Thermoplastic
312003	Littelfuse	Glass, Thermoplastic
313001	Littelfuse	Glass, Thermoplastic
313002	Littelfuse	Glass, Thermoplastic
313003	Littelfuse	Glass, Thermoplastic
313004	Littelfuse	Glass, Thermoplastic
0313.500HXP	Littelfuse	Glass, Thermoplastic
312.500H	Littelfuse	Glass, Thermoplastic
312001.HXP	Littelfuse	Glass, Thermoplastic
FLQ-8	Littelfuse	Glass, Thermoplastic
L60030M2SQ	Littelfuse	Glass, Thermoplastic
Terminals		
1320574	Marathon	Thermoplastics, Copper
1853950000	Weidmuller	Thermoplastics
1853960000	Weidmuller	Thermoplastics
1853970000	Weidmuller	Thermoplastics
1854410000	Weidmuller	Thermoplastics
995451	Weidmuller	Thermoplastics
1859200000	Weidmuller	Thermoplastics
336800000	Weidmuller	Thermoplastics
336700000	Weidmuller	Thermoplastics
Capacitor		
E81D630VNN682MA50T	UCC	Aluminum
Fan		
A1175-HBT-TC.GN	Sunon	Aluminum Alloy
Power Supply		
8951360000	Weidmuller	Stainless Steel Housing
Printed Circuit Boards		
HC-DAB	MCE	Epoxy Glass with Plated Copper
HC-OA	MCE	Epoxy Glass with Plated Copper
ICE-FB4	MCE	Epoxy Glass with Plated Copper
SC-HCDA	MCE	Epoxy Glass with Plated Copper
SC-HCE-2	MCE	Epoxy Glass with Plated Copper
SC-ION	MCE	Epoxy Glass with Plated Copper
Computers & Peripherals		
1240900000	Weidmuller	Aluminum
UR-12-PLUS	Connectpro	Painted Carbon Steel
920002478	Logitech	Plastic
UM.BV6AA.002	Acer	Plastic

Continued on next page

UNIT UNDER TEST (UUT) Summary Sheet



UUT12

Options / Component Summary (continued):

Model Number	Manufacturer	Material
Computers & Peripherals (continued)		
OPTIPLEX 3050 Tower	Dell	Painted Carbon Steel
OPTIPLEX 3020MT CTO (210-ABIW)		
Receptacles & Power Strips		
5325W	Leviton	Thermoplastic
PS2408	Tripp Lite	Aluminum
Relays & Relay Sockets, Timers, Surge Protectors, Contactors		
PRD-11AY0-120	Potter & Brumfield	Silver Alloy, Plastic
MY4-DC24(S)	Omron	Silver Alloy, Plastic
MY4N-AC110/120(S)	Omron	Silver Alloy, Plastic
PYF14A-C	Omron	Plastic
Transformers		
4-06-6036	MCI	Carbon Steel Core, Copper Winding
4-06-6016	MCI	Carbon Steel Core, Copper Winding
4-06-8024	MCI	Carbon Steel Core, Copper Winding
4-49-6016	MCI	Carbon Steel Core, Copper Winding

BY: Mohammad Karim

DATE: 01/07/2026

UNIT UNDER TEST (UUT) Summary Sheet



UUT13

DCL Report Number: 18039-1501b

Test Dates: 4/15/2015 - 4/16/2015

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: Filter

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
111	14.0	26.0	26.0	27.0	>33.3	26.5

Seismic Test Parameters

Building Code	Test Criteria	S _{ds} (g)	z/h	H _f	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.5	1.0	3.5	1.3	1.5	4.00	2.69	N/A	N/A
	AC156-24	2.5	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description:

UUT13 was rigid base mounted to the DCL shake table interface plate with four 1/2-inch Grade 5 bolts. The bolts were spaced approximately 28 inches on center width-wise and 11 inches on center length-wise. The DCL shake table interface plate was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.



Overall view of UUT13

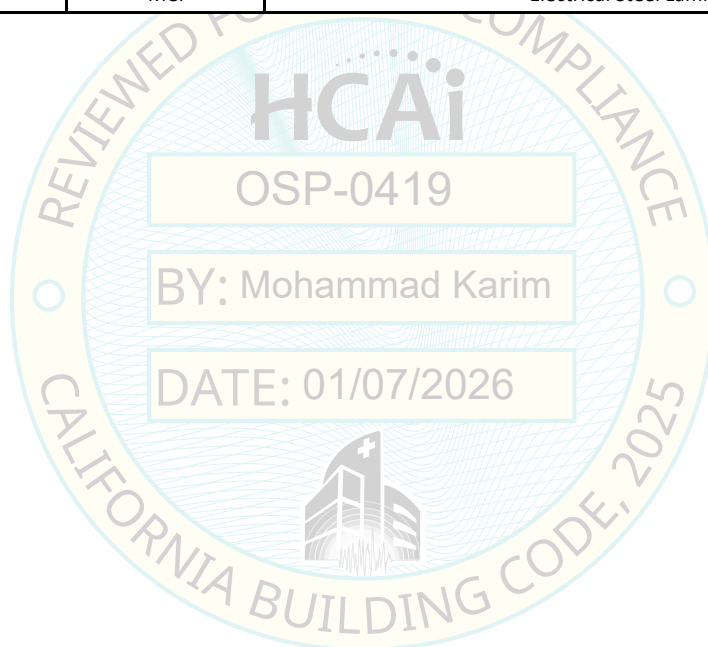
UNIT UNDER TEST (UUT) Summary Sheet



UUT13

Options / Component Summary:

Model Number	Manufacturer	Materials
Enclosures		
312RH-TAN	Hoffman	Painted Carbon Steel
Fuses		
Terminals		
1422572	Marathon	Thermoplastic, Copper
970-5100		Tin Plated Aluminum
1853950000	Weidmuller	Thermoplastic, Copper
Fan		
SP100A-1123XBT.GN	Sunon	Aluminum Alloy
Filters & Chokes		
2-30-2052	MCI	Electrical Steel Laminate; Copper



UNIT UNDER TEST (UUT) Summary Sheet



UUT14

DCL Report Number: 18039-1501b

Test Dates: 4/15/2015 - 4/16/2015

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: Filter

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
166	14.0	26.0	26.0	>33.3	>33.3	16.3

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _f	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.5	1.0	3.5	1.3	1.5	4.00	2.69	N/A	N/A
	AC156-24	2.5	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description:

UUT14 was rigid base mounted to the DCL shake table interface plate with eight 1/2-inch Grade 5 bolts. The bolts were spaced approximately 28 inches on center width-wise and 11 inches on center length-wise. The DCL shake table interface plate was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.



Overall view of UUT14

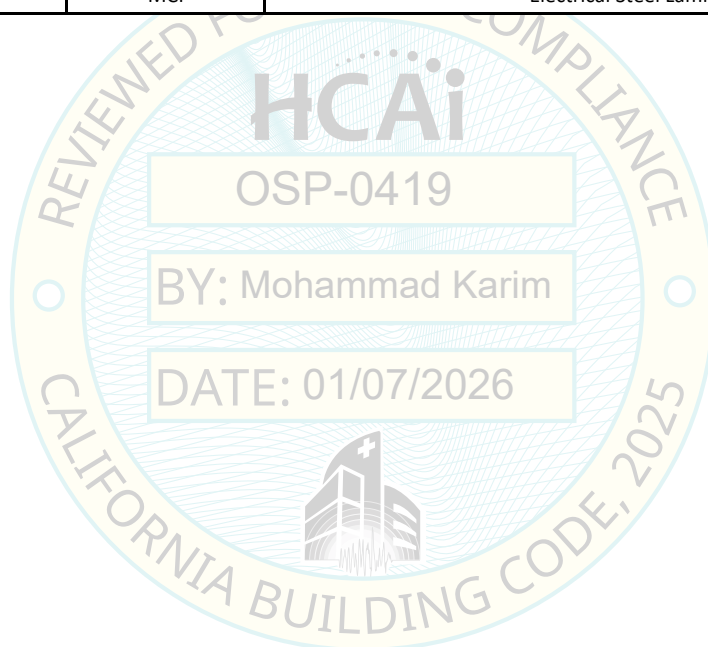
UNIT UNDER TEST (UUT) Summary Sheet



UUT14

Options / Component Summary:

Model Number	Manufacturer	Materials
Enclosures		
312RH-TAN	Hoffman	Painted Carbon Steel
Fuses		
Terminals		
1422572	Marathon	Thermoplastic, Copper
970-5100		Tin Plated Aluminum
1853950000	Weidmuller	Thermoplastic, Copper
Fan		
SP100A-1123XBT.GN	Sunon	Aluminum Alloy
Filters & Chokes		
2-30-2035	MCI	Electrical Steel Laminate; Copper



UNIT UNDER TEST (UUT) Summary Sheet



UUT15a

DCL Report Number: 18039-1501a

Test Dates: 3/17/2015 - 3/19/2015

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: RESIST-R-C-S1

Product Construction Summary: Aluminum Enclosure, NEMA 1

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 before and 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	10.3	18.0	32.0	20.8	>33.3	23.8

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _f	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.5	1.0	3.5	1.3	1.5	4.00	2.69	N/A	N/A
	AC156-24	2.5	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description:

UUT15a was rigid base mounted to the DCL shake table interface plate with six 1/2-inch Grade 8 bolts. The bolts were spaced 14.5 inches on center length-wise, and 16.5 inches on center width-wise. The DCL shake table interface plate was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.

BY: Mohammad Karim

DATE: 01/07/2026



Overall view of UUT15a

UNIT UNDER TEST (UUT) Summary Sheet



UUT15b

DCL Report Number: 18039-1501a

Test Dates: 3/17/2015 - 3/19/2015

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: RESIST-R-C-S1

Product Construction Summary: Aluminum Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

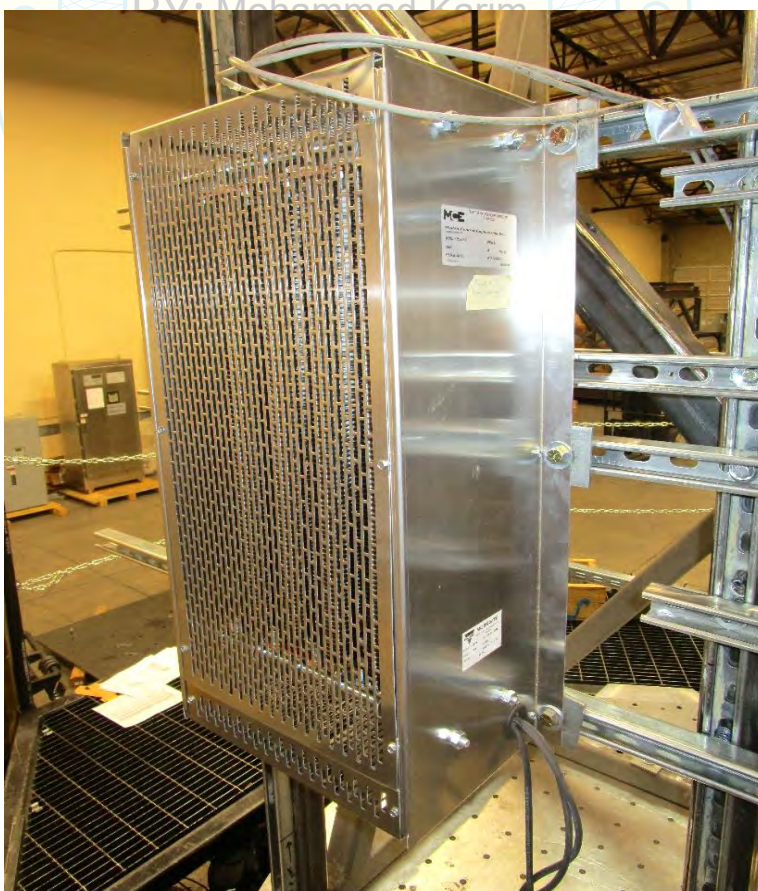
Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
40	10.3	18.0	32.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _r	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.5	1.0	3.5	1.3	1.5	4.00	2.69	N/A	N/A
	AC156-24	2.5	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description:

UUT15b was rigid wall mounted to the DCL shake table interface frame with six 1/2-inch Grade 8 bolts. The bolts were spaced 14.5 inches on center height-wise and 16.5 inches on center width-wise. The DCL shake table interface frame was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.



Overall view of UUT15b

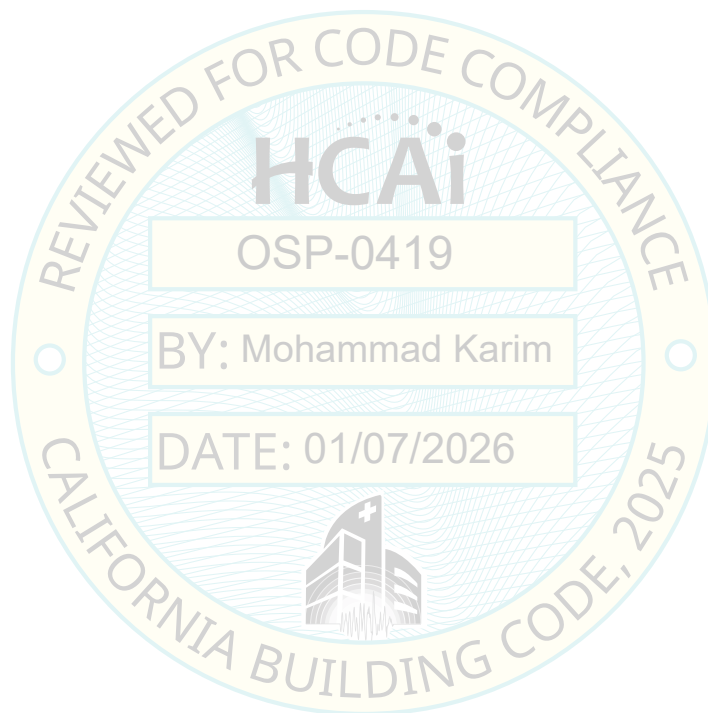
UNIT UNDER TEST (UUT) Summary Sheet



UUT15a,b

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosure		
49-0009.800-08-P1279	Milwaukee	Aluminum
Terminal Blocks		
1322572	Marathon	Copper and Aluminum Box Lug
Resistor		
M-214885	Vishay	Stainless Steel, Copper-Nickel, Nickel-Chrome; Electrical Porcelain



UNIT UNDER TEST (UUT) Summary Sheet



UUT16a

DCL Report Number: 18039-1501a

Test Dates: 3/17/2015 - 3/19/2015

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: RESIST-R-C-S2

Product Construction Summary: Aluminum Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
51	10.0	20.8	32.0	20.0	>33.3	19.3

Seismic Test Parameters

Building Code	Test Criteria	S _{ds} (g)	z/h	H _i	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.5	1.0	3.5	1.3	1.5	4.00	2.69	N/A	N/A
	AC156-24	2.5	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description:

UUT16a was rigid base mounted to the DCL shake table interface plate with six 1/2-inch Grade 8 bolts. The bolts were spaced 14.5 inches on center length-wise, and 19.5 inches on center width-wise. The DCL shake table interface plate was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.

BY: Mohammad Karim



Overall view of UUT16a

UNIT UNDER TEST (UUT) Summary Sheet



UUT16b

DCL Report Number: 18039-1501a

Test Dates: 3/17/2015 - 3/19/2015

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: RESIST-R-C-S2

Product Construction Summary: Aluminum Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
51	10.0	20.8	32.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _r	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.5	1.0	3.5	1.3	1.5	4.00	2.69	N/A	N/A
	AC156-24	2.5	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description:

UUT16b was rigid wall mounted to the DCL shake table interface frame with six 1/2-inch Grade 8 bolts. The bolts were spaced 14.5 inches on center height-wise, and 19.5 inches on center width-wise. The DCL shake table interface frame was rigidly attached to the shake table using M12 threaded rod spaced approximately 8-inches on-center.



Overall view of UUT16b

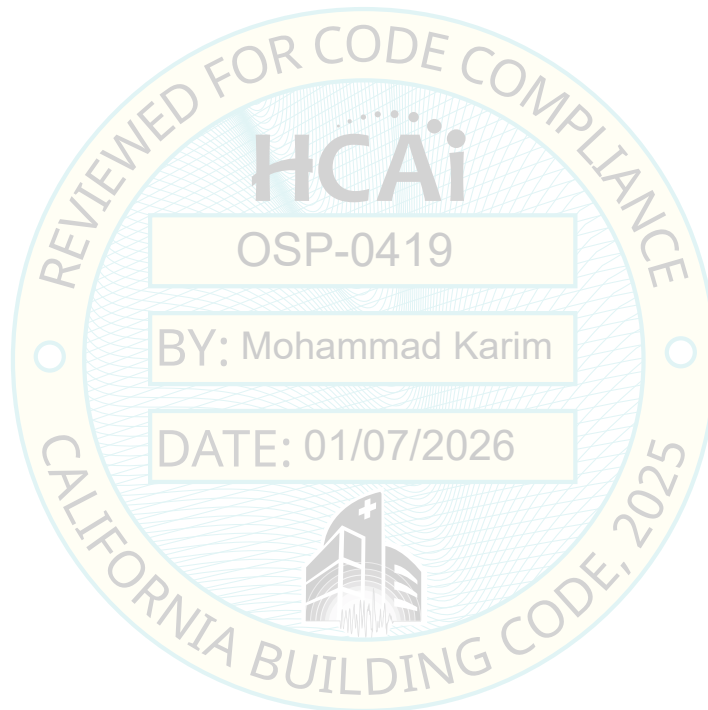
UNIT UNDER TEST (UUT) Summary Sheet



UUT16a,b

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosure		
PRO 1281	Milwaukee	Aluminum
Terminal Block		
1322572	Marathon	Copper and Aluminum Box Lug
Resistor		
M-214881	Vishay	Stainless Steel, Copper-Nickel, Nickel-Chrome; Electrical Porcelain



UNIT UNDER TEST (UUT) Summary Sheet



UUT17a

DCL Report Number: 30489-2501

Test Dates: 10/15/25 – 10/16/25

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: HMC-2000-S2

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
225	12.0	36.0	42.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _i	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.5	1.0	3.5	1.3	1.5	4.00	2.69	N/A	N/A
	AC156-24	2.5	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description:

UUT17a was wall mounted to the DCL wall fixture using (4) 3/8" Grade 5 bolts, flat washers, 1 5/8 x 1 5/8 x 1/4 carbon steel plate washers and channel nuts. The bolts were spaced approximately 26" apart in the side-side direction measured on-center and 40" apart in the vertical-direction measured on-center. The wall fixture was attached directly to the shake table.



UUT17a overall view



UUT17a interior view

UNIT UNDER TEST (UUT) Summary Sheet



UUT17b

DCL Report Number: 30489-2501

Test Dates: 10/15/25 – 10/16/25

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: HMC-2000-S2

Product Construction Summary: Painted Carbon Steel Enclosure, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
225	12.0	36.0	42.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _r	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.5	1.0	3.5	1.3	1.5	4.00	2.69	N/A	N/A
	AC156-24	2.5	0.0	1.0	1.0		N/A	N/A	1.68	0.68

Unit Mounting Description:

UUT17b was wall mounted to the DCL wall fixture using (4) 3/8" Grade 5 bolts, flat washers, 1 5/8 x 1 5/8 x 1/4 carbon steel plate washers and channel nuts. The bolts were spaced approximately 26" apart in the side-side direction measured on-center and 40" apart in the vertical direction measured on-center. The wall fixture was mounted to the shake table using (4) VMC MSSH-1E-650 spring isolators.

BY: Mohammad Karim

7/2026



UUT17b overall view



UUT17b interior view

UNIT UNDER TEST (UUT) Summary Sheet



UUT17a,b

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosure		
106RJ-TAN	Hoffman	Painted Carbon Steel
Fuse		
KLDR005	Littlefuse	Glass, Thermoplastic
Capacitor		
E81D630VNN682MA50T	UCC	Aluminum
Solid State Starter		
PCEC-032-600V-120V	Sprecher + Schuh	Solid State Electronics, Plastic Housing
Fan		
UF12A12-BTHR	Mechatronics	Die Cast Aluminum
Printed Circuit Board		
SC-HCE-2	MCE	Epoxy Glass with Plated Copper
Relays & Relay Sockets, Surge Protectors, Contactors		
GFNT1-W	Leviton	Thermoplastic
KUP-14A15-120	Potter & Brumfield	Silver Alloy, Plastic
3RH2131-1AK60	Siemens	Silver, Plastic
3RT2017-1AK62	Siemens	Silver, Plastic
3RT2046-1AK60	Siemens	Silver, Plastic
Transformers		
37701-2	Pacific	Silicon Steel Core, Copper Windings
37682-2		

UNIT UNDER TEST (UUT) Summary Sheet



UUT18

DCL Report Number: 30489-2501

Test Dates: 10/15/25 – 10/16/25

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: i-AC-S3

Product Construction Summary: Painted Carbon Steel, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
830	17.0	46.0	71.3	5.00	8.75	29.50

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _i	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.1	1.0	3.5	1.3	1.5	3.36	2.26	N/A	N/A
	AC156-24	2.1	0.0	1.0	1.0		N/A	N/A	1.40	0.56

Unit Mounting Description:

UUT18 was base mounted to the DCL interface plate using (4) 1/2" Grade 5 bolts and (2) flat washers per bolt. The bolts were spaced approximately 48" apart in the side-side direction measured on-center and 11" apart in the front-back direction measured on-center.



UUT18 overall view



UUT18 interior view

UNIT UNDER TEST (UUT) Summary Sheet



UUT18

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosure		
329RH	Hoffman	Painted Carbon Steel
Drive		
E300-08401340A	Control Techniques	Printed Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing
Filters & Chokes		
19.Z1.B04-1000	KEBCO	Carbon Steel Housing
18.Z1.C05-1001	KEBCO	Iron, Copper Cores
Printed Circuit Boards		
TC-DBR	MCE	Epoxy Glass with Plated Copper
Contactors		
3RT2026-1AK60	Siemens	Plastic Casing
3RT1055-6AF36	Siemens	Plastic Casing
Transformers		
37682-2	Pacific	Silicon Steel Core, Copper Windings



UNIT UNDER TEST (UUT) Summary Sheet



UUT19

DCL Report Number: 30489-2501

Test Dates: 10/15/25 – 10/16/25

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: M4000-AC-S4

Product Construction Summary: Painted Carbon Steel, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
500	16.0	36.0	86.4	10.25	10.25	>33.3

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _i	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.1	1.0	3.5	1.3	1.5	3.36	2.26	N/A	N/A
	AC156-24	2.1	0.0	1.0	1.0		N/A	N/A	1.40	0.56

Unit Mounting Description:

UUT19 was base mounted to the DCL interface plate using (4) 1/2" Grade 5 bolts and (2) flat washers per bolt.. The bolts were spaced approximately 38" apart in the side-side direction measured on-center and 11" apart in the front-back direction measured on-center.



UUT19 overall view



UUT19 interior view

UNIT UNDER TEST (UUT) Summary Sheet



UUT19

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosures		
Y9266-A606010LP	Hoffman	Painted Carbon Steel
Drive		
E300-05200250A	Control Techniques	Printed Circuit Boards, Solid State Devices and Terminal Blocks in Plastic Housing
Power Supplies		
81.000.6340.0	Wieland	Plastic Housing
81.000.6540.0	Wieland	Aluminum Housing
81.000.6550.0	Wieland	Aluminum Housing
Filters & Chokes		
16Z1C03-1001	KEBCO	Iron, Copper Cores
Printed Circuit Boards		
MC-TSB	MCE	Epoxy Glass with Plated Copper
SC-3HN-2	MCE	Epoxy Glass with Plated Copper
Computers & Peripherals		
MCE-HX500	OnLogic	Folded Aluminum Housing
TED-ASSY-BSE-Y	MCE	Painted Carbon Steel
Rescue Control Panel Assembly	MCE	Painted Carbon Steel
Contactors		
3RT2026-1AK60	Siemens	Plastic Casing
Transformers		
37701-2	Pacific	Silicon Steel Core, Copper Windings

UNIT UNDER TEST (UUT) Summary Sheet



UUT20

DCL Report Number: 30489-2501

Test Dates: 10/15/25 – 10/16/25

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: REMOTE-HF

Product Construction Summary: Painted Carbon Steel, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
320	14.0	39.0	27.5	>33.3	>33.3	>33.3

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _i	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.1	1.0	3.5	1.3	1.5	3.36	2.26	N/A	N/A
	AC156-24	2.1	0.0	1.0	1.0		N/A	N/A	1.40	0.56

Unit Mounting Description:

UUT20 was base mounted to the DCL interface plate using (4) 5/16" Grade 5 bolts and flat washers. The bolts were spaced approximately 42 1/2" apart in the side-side direction measured on-center and 11" apart in the front-back direction measured on-center.



UUT20 overall view



UUT20 interior view

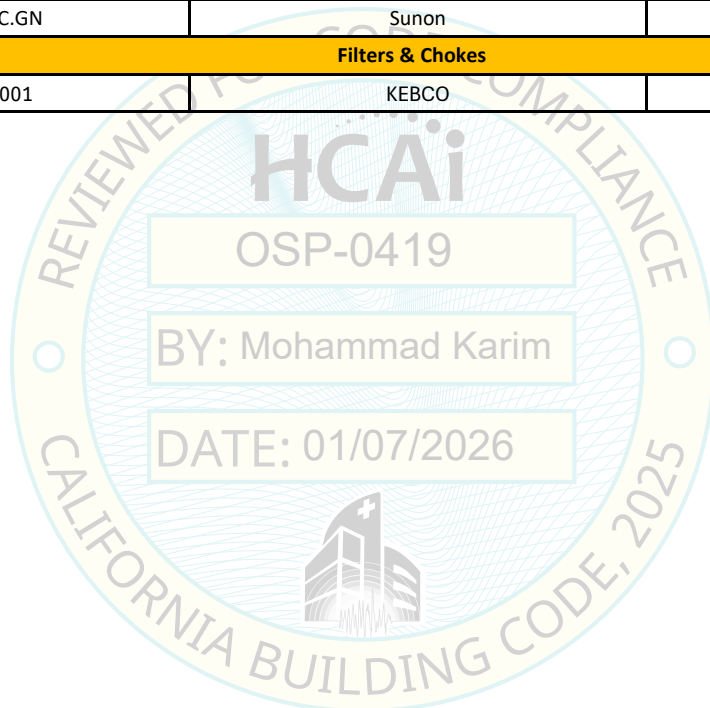
UNIT UNDER TEST (UUT) Summary Sheet



UUT20

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosure		
321RH-TAN	Hoffman	Painted Carbon Steel
Terminals		
1423572	Marathon	Thermoplastics, Copper
970-5100	Marathon	Aluminum
1853950000	Weidmuller	Thermoplastics
1853970000	Weidmuller	Thermoplastics
1854410000	Weidmuller	Thermoplastics
Fans		
A1175-HBT-TC.GN	Sunon	Aluminum Alloy
Filters & Chokes		
19.Z1.C05-1001	KEBCO	Iron, Copper Cores



UNIT UNDER TEST (UUT) Summary Sheet



UUT21

DCL Report Number: 30489-2501

Test Dates: 10/15/25 – 10/16/25

Manufacturer: Motion Control Engineering

Product Line: Elevator Control Panels

Model Number: REMOTE-HF

Product Construction Summary: Painted Carbon Steel, NEMA 1

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 before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
400	14.0	39.0	27.5	>33.3	>33.3	>33.3

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _r	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.1	1.0	3.5	1.3	1.5	3.36	2.26	N/A	N/A
	AC156-24	2.1	0.0	1.0	1.0		N/A	N/A	1.40	0.56

Unit Mounting Description:

UUT21 was base mounted to the DCL interface plate using (4) 5/16" Grade 5 bolts and flat washers. The bolts were spaced approximately 42 1/2" apart in the side-side direction measured on-center and 11" apart in the front-back direction measured on-center.



UUT21 overall view



UUT21 interior view

UNIT UNDER TEST (UUT) Summary Sheet



UUT21

Options / Component Summary:

Model Number	Manufacturer	Material
Enclosure		
321RH-TAN	Hoffman	Painted Carbon Steel
Terminals		
1423572	Marathon	Thermoplastics, Copper
970-5100	Marathon	Aluminum
1853950000	Weidmuller	Thermoplastics
1853970000	Weidmuller	Thermoplastics
1854410000	Weidmuller	Thermoplastics
Fans		
A1175-HBT-TC.GN	Sunon	Aluminum Alloy
Filters & Chokes		
21.Z1.C05-1001	KEBCO	Iron, Copper Cores

