APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0724

HCAI Special Seismic Certification Preapproval (OSP)

Type: [X] New [ ] Renewal

Manufacturer Information

Manufacturer: Amico Source Corporation

Manufacturer's Technical Representative: Aathi Rajendiran

Mailing Address: 85 Fulton Way, Richmond Hill, ON L4B2N4

Telephone: (905) 764-0800 Email: arajendiran@amico.com

Product Information

Product Name: Industrial Control Panels

Product Type: Control Panels

Product Model Number: Medical Air and Vacuum Systems Control Panel

General Description: Painted carbon steel frames, painted carbon steel enclosures

Mounting Description: 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.

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0724
BY: Mohammad Kashif
DATE: 04/07/2022
CALIFORNIA BUILDING CODE, 2019

Applicant Information

Applicant Company Name: Dynamic Certification Laboratories

Contact Person: Kelly Laplace

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

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

Title: Business Manager

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: Kelly Laplace

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

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

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Seismic Parameters

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

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

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6 (rigid), 2 (isolated)

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

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

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

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HCAI Approval (For Office Use Only) - Approval Expires on 04/07/2028

Date: 4/7/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

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

Condition of Approval (if applicable):

Table 1- Special Seismic Certification
Certified Components
Rigid and Flexible Wall Mount

DCL Project Number: 33353-2001

Manufacturer: Amico Source Corporation
Product Line: Air and Vacuum System Control Panels
Product Construction: Painted carbon steel frames, painted carbon steel enclosures, NEMA[1] 1/12
Mounting Description: Rigid and Flexible Wall Mount
Certification Levels: Sds= 2.5g, z/h=1.0

Model Number[3]	Manufacturer	Pump [HP]	Voltage	Control Panel Size	Dimensions [in]			Max Weight [lb]	Mounting	SDS [g] z/h=1	Fp/Wp [a][4]	Fp/Wp [b][5]	UUT
					Depth	Width	Height						
xx10xx-xxxxx-x	Amico	1.5-30	200 - 575	Simplex	8.0	16.0	20.0	50.0	Rigid and Flexible Wall Mount	2.5	1.875	5.625	Extrapolated[2]
					8.0	24.0	24.0	55.0		2.5	1.875	5.625	Extrapolated[2]
AMV1201-46063-5		1.5	460	Duplex	8.0	16.0	20.0	43.0		2.5	1.875	5.625	UUT21a,b
xx20xx-xxxxx-x		1.5 -30	200 - 575		8.0	24.0	24.0	65.0		2.5	1.875	5.625	Interpolated
AMV5203-B46063-5		1.5	460		8.0	24.0	32.0	104.0		2.5	1.875	5.625	UUT27a,b
xx20xx-xxxxx-x		1.5 -30	200 - 575		8.0	24.0	32.0	150.0		2.5	1.875	5.625	Interpolated
xx30xx-xxxxx-x		1.5 -30	200 - 575	Triplex	8.0	24.0	24.0	75.0		2.5	1.875	5.625	Interpolated
					8.0	24.0	32.0	160.0		2.5	1.875	5.625	Interpolated
					10.0	32.0	40.0	170.0		2.5	1.875	5.625	Interpolated
xx40x-xxxxx-x		1.5 -30	200 - 575	Quadruplex	8.0	24.0	24.0	80.0		2.5	1.875	5.625	Interpolated
					8.0	24.0	32.0	170.0		2.5	1.875	5.625	Interpolated
					10.0	32.0	40.0	180.0		2.5	1.875	5.625	Interpolated
AMA5404-B20863-75		30	208		10.0	32.0	40.0	202.0		2.5	1.875	5.625	UUT23a,b

1. Enclosures are rated for NEMA 1 and NEMA 12 ratings
2. Extrapolated units are depopulated versions of the tested units
3. Reference Table 2 for the model number nomenclature chart that denotes the "x" variables within the extrapolated/interpolated model numbers
4. Rigid mounting configuration
5. Flexible mounting configuration

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Table 2- Special Seismic Certification Nomenclature Chart Rigid and Flexible Wall Mount

DCL Project Number: 33353-2001

Manufacturer: Amico Source
Product Line: Medical Air and Vacuum System Control Panels
Product Construction: Painted carbon steel frames, painted carbon steel enclosures, NEMA 1/12

Amico Source Control Panel Nomenclature Chart				
A-B-C-D-E-F-G-H				
Variable	**Definition**	**Allowable Value**	**Allowable Value Description**	**UUT**
A	Air Compressor or Vacuum	AMA	Medical Air	UUT23a,b,
		AMV	Medical Vacuum	UUT21a,b, UUT27a,b
		AIA	Industrial Air	Extrapolated[1]
		AIV	Industrial Vacuum	Extrapolated[1]
		ALA	Laboratory Air	Extrapolated[1]
		ALV	Laboratory Vacuum	Extrapolated[1]
		AMD	Desiccant Dryer Control/ Dew Point/ CO monitor	Extrapolated[1]
B	Series	1	Value Line	UUT21a,b
		3	Premium UW	Interpolated
		5	Premium UW VFD	UUT23a,b, UUT27a,b
C	System Size	1	Simplex	Extrapolated[1]
		2	Duplex	UUT21a,b, UUT27a,b
		3	Triplex	Interpolated
		4	Quadruplex	UUT23a,b
D	Reserve	0	NA	UUT21a,b , UUT23a,b, UUT27a,b
E	Screen Type	0	No Screen	Extrapolated[1]
		1	2 line/ 3 line keypad display	UUT21a,b
		3	5 Touch Screen	UUT27a,b
		4	7 Touch Screen	UUT23a,b
F	Option	B	Bacnet	UUT23a,b, UUT27a,b
G	Power	12061	120V/60Hz/1Ph	Extrapolated
		20063	200V/60Hz/3Ph	Extrapolated
		20863	208V/60Hz/3Ph	UUT23a,b
		23063	230V/60Hz/3Ph	Interpolated
		38053	380V/50Hz/3Ph	Interpolated
		40063	400V/60Hz/3Ph	Interpolated
		46063	460V/60Hz/3Ph	UUT21a,b, UUT27a,b
		57563	575V/60Hz/3Ph	Extrapolated
H	Motor Current	0	FLA Amp, 0 amp	Extrapolated
		5	FLA Amp, 5 amp	UUT21a,b, UUT27a,b
		5-75	FLA Amp, 5 amp-75 amp	Interpolated
		75	FLA Amp, 75 amp	UUT23a,b

1. Extrapolated options are depopulated versions of what was tested

REVIEWED FOR CODE COMPLIANCE HCAi OSP-0724 BY: Mohammad Karimi DATE: 04/07/2022 CALIFORNIA BUILDING CODE Reference Only

Table 3- Special Seismic Certification
Certified Components
Rigid and Flexible Base Mount on Panel Stand and Braced at Top

DCL Project Number: 33353-2001

Manufacturer: Amico Source
Product Line: Air and Vacuum System Control Panels
Product Construction: Painted carbon steel frames, painted carbon steel enclosures, NEMA[1] 1/12
Mounting Description: Rigid and Flexible Base Mount on Panel Stand
Certification Levels: See Below

Model Number[2]	MFR	Pump [HP]	Voltage	Control Panel Size	Max. Dimensions [in]			Max. Weight [lb]	Panel Stand Model Number	Mounting	SDS [g] z/h=1	SDS [g] z/h=0	Fp/Wp [a][3]	Fp/Wp [b][4]	UUT
					Depth	Width	Height								
xx10xx-xxxxx-x	Amico	1.5 - 30	208 to 460	Simplex	10.0	23.5	48.0	90.0	STEEL-PDL-APANEL	Rigid and Flexible, Base Mount on Panel Stand and Braced at Top	2.5	2.5	1.875	5.625	Extrapolated[5]
AMV1201-46063-5		1.5	460	Duplex	10.0	23.5	48.0	123.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	UUT22a,b
xx20xx-xxxxx-x		1.5 - 30	208 to 460		10.0	23.5	56.0	150.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	Interpolated
					12.5	31.5	63.3	165.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	Interpolated
xx30xx-xxxxx-x		1.5 - 30	208 to 460	Triplex	10.0	23.5	48.0	150.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	Interpolated
					10.0	23.5	56.0	190.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	Interpolated
					12.5	31.5	63.3	210.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	Interpolated
					12.0	35.3	71.0	230.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	Interpolated
xx40xx-xxxxx-x		1.5 - 30	208 to 460	Quadruplex	12.5	31.5	63.3	220.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	Interpolated
AMA5403-B20863-75		15	208		12.5	31.5	63.3	272.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	UUT26a,b
AMV5403-46063-5		1.5	460		11.0	35.3	65.3	272.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	UUT25a,b
xx40xx-xxxxx-x		1.5 - 30	208 to 460		12.0	35.3	71.0	272.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	Interpolated
x150x-xxxxx-x		1.5 - 30	208 to 460	Pentaplex	12.5	31.5	63.3	180.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	Interpolated
x350x-xxxxx-x					12.5	31.5	63.3	190.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	Interpolated
x150x-xxxxx-x					11.0	35.3	65.3	250.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	Interpolated
x350x-xxxxx-x					11.0	35.3	65.3	255.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	Interpolated
x160x-xxxxx-x		1.5 - 30	208 to 460	Hexaplex	10.0	35.0	65.3	265.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	Interpolated
x360x-xxxxx-x					10.0	35.0	65.3	270.0	STEEL-PDL-APANEL		2.5	2.5	1.875	5.625	Interpolated

1. Enclosures are rated for NEMA 1 and NEMA 12 ratings
2. Reference Table 4 for the model number nomenclature chart that denotes the "x" variables within the extrapolated/interpolated model numbers
3. Rigid mounting configuration
4. Flexible mounting configuration
5. Extrapolated units are depopulated versions of the tested units

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Table 4- Special Seismic Certification
Nomenclature Chart
Rigid and Flexible Base Mount on Panel Stand and Braced at Top

DCL Project Number: 33353-2001

Manufacturer: Amico Source

Product Line: Medical Air and Vacuum System Control Panels

Product Construction: Painted carbon steel frames, painted carbon steel enclosures, NEMA 1/12

Amico Source Control Panel Nomenclature Chart				
A-B-C-D-E-F-G-H				
Variable	**Definition**	**Allowable Value**	**Allowable Value Description**	**UUT**
A	Air Compressor or Vacuum	AMA	Medical Air	UUT26a,b
		AMV	Medical Vacuum	UUT22a,b UUT25a,b
		AIA	Industrial Air	Extrapolated[1]
		AIV	Industrial Vacuum	Extrapolated[1]
		ALA	Laboratory Air	Extrapolated[1]
		ALV	Laboratory Vacuum	Extrapolated[1]
		AMD	Desiccant Dryer Control/ Dew Point/ CO monitor	Extrapolated[1]
B	Series	1	Value Line	UUT22a,b
		3	Premium UW	Interpolated
		5	Premium UW VFD	UUT25a,b UUT26a,b
C	System Size	1	Simplex	Extrapolated[1]
		2	Duplex	UUT22a,b
		3	Triplex	Interpolated
		4	Quadruplex	UUT25a,b UUT26a,b
D	Reserve	0	NA	UUT22a,b UUT25a,b UUT26a,b
E	Screen Type	0	No Screen	Extrapolated[1]
		1	2 line/ 3 line keypad display	UUT22a,b
		3	5 Touch Screen	UUT26a,b UUT25a,b
		4	7 Touch Screen	Extrapolated[1]
F	Option	B	Bacnet	UUT26a,b
G	Power	20063	200V/60Hz/3Ph	Extrapolated[1]
		20863	208V/60Hz/3Ph	UUT26a,b
		23063	230V/60Hz/3Ph	Interpolated
		38053	380V/50Hz/3Ph	Interpolated
		40063	400V/60Hz/3Ph	Interpolated
		46063	460V/60Hz/3Ph	UUT22a,b UUT25a,b
		57563	575V/60Hz/3Ph	Extrapolated[1]
H	Motor Current	0	FLA Amp, 0 amp	Extrapolated[1]
		5	FLA Amp, 5 amp	UUT22a,b UUT25a,b
		5-75	FLA Amp, 5 amp-75 amp	Interpolated
		75	FLA Amp, 75 amp	UUT26a,b

1. Extrapolated options are depopulated versions of what was tested
2. FLA rating is based on the FLA of each motor

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CALIFORNIA BUILDING CODE, 2019
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Table 5- Special Seismic Certification
Certified Components
Rigid Base Mount on Panel Stand

DCL Project Number: 33353-2001

Manufacturer: Amico Source
Product Line: Air and Vacuum System Control Panels
Product Construction: Painted carbon steel frames, painted carbon steel enclosures, NEMA[1] 1/12
Mounting Description: Rigid Base Mount on Panel Stand
Certification Levels: See Below

Model Number[2]	MFR	Pump [HP]	Voltage	Control Panel Size	Dimensions [in]			Weight [lb]	Panel Stand Model Number	Mounting	SDS [g] z/h=1	SDS [g] z/h=0	Fp/Wp	UUT
					Depth	Width	Height							
xx40xx-xxxxx-x	Amico	1.5 - 30	208 to 460	Quadruplex	24.0	53.3	65.5	775.0	STEEL-PDL-WELDED	Rigid Base Mount on Panel Stand	2.0	2.5	1.500	Interpolated
					24.0	53.3	73.5	785.0	STEEL-PDL-WELDED		2.0	2.5	1.500	Interpolated
xx50x-xxxxx-x		1.5 - 30	208 to 460	Pentaplex	24.0	53.3	65.5	800.0	STEEL-PDL-WELDED		2.0	2.5	1.500	Interpolated
xx50x-xxxxx-x					24.0	53.3	73.5	810.0	STEEL-PDL-WELDED		2.0	2.5	1.500	Interpolated
xx50x-xxxxx-x					24.0	53.3	81.5	840.0	STEEL-PDL-WELDED		2.0	2.5	1.500	Interpolated
xx50x-xxxxx-x					24.0	53.3	89.5	880.0	STEEL-PDL-WELDED		2.0	2.5	1.500	Interpolated
AMA3603-20863-55[4] (A-XXX-D-240P-SS-N-200-20863-TS)	Amico/ Axecon	20	208	Hexaplex	29.5	51.5	71.0	750.0	STEEL-PDL-WELDED-1		2.0	2.5	1.500	UUT28
xx60x-xxxxx-x	Amico	1.5 - 30	208 to 460		24.0	53.3	65.5	820.0	STEEL-PDL-WELDED		2.0	2.5	1.500	Interpolated
					24.0	53.3	73.5	830.0	STEEL-PDL-WELDED		2.0	2.5	1.500	Interpolated
					24.0	53.3	81.5	860.0	STEEL-PDL-WELDED		2.0	2.5	1.500	Interpolated
					24.0	53.3	89.5	890.0	STEEL-PDL-WELDED		2.0	2.5	1.500	Interpolated
xx70x-xxxxx-x		1.5 - 30	208 to 460	Septaplex	24.0	53.3	65.5	850.0	STEEL-PDL-WELDED		2.0	2.5	1.500	Interpolated
					24.0	53.3	73.5	860.0	STEEL-PDL-WELDED		2.0	2.5	1.500	Interpolated
					24.0	53.3	81.5	890.0	STEEL-PDL-WELDED		2.0	2.5	1.500	Interpolated
					24.0	53.3	89.5	913.0	STEEL-PDL-WELDED		2.0	2.5	1.500	Interpolated
AMA5404-B20863-75		30	208		24.0	53.3	89.5	913.0	STEEL-PDL-WELDED		2.0	2.5	1.500	UUT24

1. Enclosures are rated for NEMA 1 and NEMA 12 ratings
2. Reference Table 6 for the model number nomenclature chart that denotes the "x" variables within the extrapolated/interpolated model numbers
3. Extrapolated units are depopulated versions of the tested units
4. Model Number using Nomenclature Chart on Table 6

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Table 6- Special Seismic Certification Nomenclature Chart
Rigid Base Mount on Panel Stand

DCL Project Number: 33353-2001

Manufacturer: Amico Source

Product Line: Medical Air and Vacuum System Control Panels

Product Construction: Painted carbon steel frames, painted carbon steel enclosures, NEMA 1/12

Amico Source Control Panel Nomenclature Chart

A-B-C-D-E-F-G-H

Variable	Definition	Allowable Value	Allowable Value Description	UUT
A	Air Compressor or Vacuum	AMA	Medical Air	UUT24
		AMV	Medical Vacuum	Extrapolated[1]
		AIA	Industrial Air	Extrapolated[1]
		AIV	Industrial Vacuum	Extrapolated[1]
		ALA	Laboratory Air	Extrapolated[1]
		ALV	Laboratory Vacuum	Extrapolated[1]
B	Series	1	Value Line	Interpolated
		3	Premium UW	UUT28
		5	Premium UW VFD	UUT24
C	System Size	4	Quadruplex	Extrapolated[1]
		5	Pentaplex	Extrapolated[1]
		6	Hexaplex	UUT28
		7	Septaplex	UUT24
D	Reserve	0	NA	UUT24, UUT28
E	Screen Type	0	No Screen	Extrapolated[1]
		1	2 line/ 3 line keypad display	Extrapolated[1]
		3	5 Touch Screen	UUT28
		4	7 Touch Screen	UUT24
F	Option	B	Bacnet	UUT24
G	Power	20063	200V/60Hz/3Ph	Extrapolated[1]
		20863	208V/60Hz/3Ph	UUT24, UUT28
		23063	230V/60Hz/3Ph	Extrapolated[1]
		38053	380V/50Hz/3Ph	Extrapolated[1]
		40063	400V/60Hz/3Ph	Extrapolated[1]
		46063	460V/60Hz/3Ph	Extrapolated[1]
		57563	575V/60Hz/3Ph	Extrapolated[1]
H	Motor Current	0	FLA Amp, 0 amp	Extrapolated[1]
		5	FLA Amp, 5 amp	Extrapolated[1]
		5-75	FLA Amp, 5 amp-75 amp	Extrapolated[1]
		55	FLA Amp, 55 amp	UUT28
		75	FLA Amp, 75 amp	UUT24

1. Extrapolated options are depopulated versions of what was tested
2. FLA rating is based on the FLA of each motor

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Table 7- Special Seismic Certification
Certified Subcomponents
Rigid and Flexible Wall Mount

DCL Project Number: 33353-2001

Product Line: Air and Vacuum System Control Panels

Certified Levels: Sds=2.5g, z/h=1.0

Enclosures								
Model Number	**Manufacturer**	**NEMA Rating[1]**	**Max. Dimensions [in]**			**Material**	**Max. Weight [lb]**	**UUT**
			Depth	**Width**	**Height**			
NSYS3DC5420	Schneider Electric	1	8	16	20	Carbon Steel	20	Extrapolated
		12						UUT21a,b
NSYS3DC6620		1	8	24	24		31	Interpolated
		12						
NSYS3DC8620		1	8	24	32		44	Interpolated
		12					44	UUT27a,b
NSYS3DC10825		1	10	32	40		72	Interpolated
		12					72	UUT23a,b

1. Enclosures are rated for NEMA 1 and NEMA 12 ratings

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Table 8- Special Seismic Certification
Certified Subcomponents
Rigid and Flexible Wall Mount

DCL Project Number: 33353-2001

Product Line: Air and Vacuum System Control Panels

Certified Levels: Sds=2.5g, z/h=1.0

Controller Subcomponents						
Subcomponent	**MFR**	**Model Number**	**Description**	**Material**	**Weight [lbs]**	**UUT**
Contactor	Schneider Electric	LC1D09F7	3 pole, 9 AMPS AC-3 with a 110v50/60Hz AC coil.	Plastic Cover	< 1	UUT21a,b, UUT27a,b
		LC1D12F7	3 pole, 12 AMPS AC-3 with a 110v50/60Hz AC coil.	Plastic Cover	< 1	Interpolated
		LC1D18F7	3 pole, 18 AMPS AC-3 with a 110v50/60Hz AC coil.	Plastic Cover	< 1	Interpolated
		LC1D25F7	3 pole, 25 AMPS AC-3 with a 110v50/60Hz AC coil.	Plastic Cover	< 1	Interpolated
		LC1D32F7	3 pole, 32 AMPS AC-3 with a 110v50/60Hz AC coil.	Plastic Cover	< 1	Interpolated
		LC1D38F7	3 pole, 38 AMPS AC-3 with a 110v50/60Hz AC coil.	Plastic Cover	< 1	Interpolated
		LC1D40AF7	3 pole, 40 AMPS AC-3 with a 110v50/60Hz AC coil.	Plastic Cover	2	Interpolated
		LC1D50AF7	3 pole, 50 AMPS AC-3 with a 110v50/60Hz AC coil.	Plastic Cover	2	Interpolated
		LC1D65AF7	3 pole, 65 AMPS AC-3 with a 110v50/60Hz AC coil.	Plastic Cover	2	Interpolated
		LC1D80AF7	3 pole, 80 AMPS AC-3 with a 110v50/60Hz AC coil.	Plastic Cover	2	UUT23a,b
Overload Relay	Schneider Electric	LRD07	3-pole Thermal Overload Relay	Plastic Cover	< 1	UUT27a,b
		LRD08	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD10	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD12	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD14	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD16	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD21	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD22	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD32	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD35	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD340	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD350	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD365	3-pole Thermal Overload Relay	Plastic Cover	< 1	UUT23a,b
Motor Protector	Schneider Electric	GV2ME01	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	UUT21a,b
		GV2ME02	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME03	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME04	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME05	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME06	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME07	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME08	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME14	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME16	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME20	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME21	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME32	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV3P40	3-pole, horsepower-rated manual starters	Plastic Cover	2	Interpolated
		GV3P50	3-pole, horsepower-rated manual starters	Plastic Cover	2	Interpolated
		GV3P65	3-pole, horsepower-rated manual starters	Plastic Cover	2	UUT23a,b
Variable Frequency Drive	Schneider Electric	ATV320U11M3C	Compact variable speed drive 208V	Plastic Cover	4	Extrapolated
		ATV320U11N4C	Compact variable speed drive 460V	Plastic Cover	4	UUT27a,b
		ATV320U15M3C	Compact variable speed drive 208V	Plastic Cover	4	Interpolated
		ATV320U15N4C	Compact variable speed drive 460V	Plastic Cover	4	Interpolated
		ATV320U22M3C	Compact variable speed drive 208V	Plastic Cover	4	Interpolated
		ATV320U22N4C	Compact variable speed drive 460V	Plastic Cover	7	Interpolated
		ATV320U40M3C	Compact variable speed drive 208V	Plastic Cover	5	Interpolated
		ATV320U40N4C	Compact variable speed drive 460V	Plastic Cover	5	Interpolated
		ATV320U55M3C	Compact variable speed drive 208V	Plastic Cover	8	Interpolated
		ATV320U55N4C	Compact variable speed drive 460V	Plastic Cover	8	Interpolated

1. Extrapolated subcomponents are similar in construction to the tested subcomponents

REVIEWED FOR CODE COMPLIANCE OSP-0724 BY: Mohammad Kalim DATE: 04/07/2022 CALIFORNIA BUILDING CODE 2019

Table 8- Special Seismic Certification
Certified Subcomponents
Rigid and Flexible Wall Mount

DCL Project Number: 33353-2001

Product Line: Air and Vacuum System Control Panels

Certified Levels: Sds=2.5g, z/h=1.0

Controller Subcomponents (Continued)						
Subcomponent	**MFR**	**Model Number**	**Description**	**Material**	**Weight [lbs]**	**UUT**
Variable Frequency Drive	Schneider Electric	ATV320U75M3C	Compact variable speed drive 208V	Plastic Cover	8	Interpolated
		ATV320U75N4C	Compact variable speed drive 460V	Plastic Cover	8	Interpolated
		ATV320D11M3C	Compact variable speed drive 208V	Plastic Cover	8	Interpolated
		ATV320D11N4C	Compact variable speed drive 460V	Plastic Cover	15	Interpolated
		ATV320D15M3C	Compact variable speed drive 208V	Plastic Cover	15	UUT23a,b
		ATV320D15N4C	Compact variable speed drive 460V	Plastic Cover	15	Extrapolated
Control Circuit Breaker	Schneider Electric	BDL36015	Powerpact, type BDL, 3P, 3PH, 15A, 600V, 18kA@480V	Plastic	2	UUT27a,b
		BDL36020	Powerpact, type BDL, 3P, 3PH, 20A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36030	Powerpact, type BDL, 3P, 3PH, 30A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36040	Powerpact, type BDL, 3P, 3PH, 40A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36060	Powerpact, type BDL, 3P, 3PH, 60A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36070	Powerpact, type BDL, 3P, 3PH, 70A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36080	Powerpact, type BDL, 3P, 3PH, 80A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36090	Powerpact, type BDL, 3P, 3PH, 90A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36100	Powerpact, type BDL, 3P, 3PH, 100A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36110	Powerpact, type BDL, 3P, 3PH, 110A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36125	Powerpact, type BDL, 3P, 3PH, 125A, 600V, 18kA@480V	Plastic	2	Interpolated
		HJL36015	Powerpact, type HJL, 3P, 3PH, 15A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36020	Powerpact, type HJL, 3P, 3PH, 20A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36030	Powerpact, type HJL, 3P, 3PH, 30A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36040	Powerpact, type HJL, 3P, 3PH, 40A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36050	Powerpact, type HJL, 3P, 3PH, 50A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36060	Powerpact, type HJL, 3P, 3PH, 60A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36070	Powerpact, type HJL, 3P, 3PH, 70A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36080	Powerpact, type HJL, 3P, 3PH, 80A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36100	Powerpact, type HJL, 3P, 3PH, 100A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36110	Powerpact, type HJL, 3P, 3PH, 110A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36125	Powerpact, type HJL, 3P, 3PH, 125A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36150	Powerpact, type HJL, 3P, 3PH, 150A, 600V, 65kA@480V	Plastic	5	UUT23a,b
Operating Mechanism for Circuit Breaker	Schneider Electric	9421LB3	Rotary handle, 600A mechanism, 3 inch handle, long shaft	Carbon Steel	6	UUT27a,b
		9421LJ3	Rotary handle, 600A mechanism, 3 inch handle, long shaft	Carbon Steel	6	UUT23a,b
Power Distribution Block	Schneider Electric	9080LBA262104	2-POLE, 1-LINE, 4-LOAD, 175A	Plastic	< 1	Extrapolated[1]
		9080LBA362104	3-POLE, 1-LINE, 4-LOAD, 175A	Plastic	< 1	UUT21a,b, UUT27a,b
		9080LBA362106	3-POLE, 1-LINE, 6-LOAD, 175A	Plastic	< 1	Interpolated
		9080LBA363104	3-POLE, 1-LINE, 4-LOAD, 335A	Plastic	2	Interpolated
		9080LBA363106	3-POLE, 1-LINE, 6-LOAD, 335A	Plastic	2	UUT23a,b
Control Transformer	Micron Transformer	B100MBT713RK	Class 105C/130C, 100 VA with primary voltage at 208/230/460 and secondary voltage at 24/115.	Carbon Steel	6	UUT21a,b
	Schneider Electric	9070TF100D33	Control Transformers for Primary voltage at 208/230/460 and secondary voltage at 24/115.	Carbon Steel	4	Extrapolated[1]
		9070TF150D50		Carbon Steel	9	Extrapolated[1]
		9070TF250D50		Carbon Steel	11	UUT27a,b
		9070TF500D1		Carbon Steel	12	Interpolated
		9070TF500D50		Carbon Steel	11	UUT23a,b

1. Extrapolated subcomponents are similar in construction to the tested subcomponents

Table 8- Special Seismic Certification
Certified Subcomponents
Rigid and Flexible Wall Mount

DCL Project Number: 33353-2001

Product Line: Air and Vacuum System Panel Controls
Certified Levels: Sds=2.5g, z/h=1.0

Controller Subcomponents (Continued)						
Subcomponent	**MFR**	**Model Number**	**Description**	**Material**	**Weight [lbs]**	**UUT**
Control Circuit Breaker	Schneider Electric	M9F22103	Multi9, 1P, 3A, Miniature	Plastic Cover	< 1	UUT21a,b, UUT23a,b, UUT27a,b
		M9F22102	Multi9, 1P, 2A, Miniature	Plastic Cover	< 1	UUT23a,b, UUT27a,b
		M9F22101	Multi9, 1P, 1A, Miniature	Plastic Cover	< 1	UUT21a,b, UUT23a,b, UUT27a,b
PLC Base Controller	Schneider Electric	TM221C24R	24 input/output	Plastic Cover	< 1	UUT27a,b
		TM221C40R	40 input/output	Plastic Cover	1	UUT23a,b
Analog, Digital Expansion Cards	Schneider Electric	TM3AM6	Analog, 4 Inputs, 2 Outputs, 24VDC	Plastic Cover	< 1	UUT23a,b, UUT27a,b
		TM3TI4	Analog, 4 universal Inputs, 24VDC	Plastic Cover	< 1	Interpolated
		TM3DI16	Modicon TM3 - 16 inputs, 24Vdc	Plastic Cover	< 1	Interpolated
		TM3DQ16R	Modicon TM3 - 16 outputs	Plastic Cover	< 1	UUT23a,b
Serial Communication Module	Schneider Electric	TMC2SL1	Modicon M221, 2 Inputs	Plastic Cover	< 1	UUT23a,b, UUT27a,b
Bacnet Bridge PLC Base	Schneider Electric	TM172PDG07R	Modicon M172 Performance Display 7 Inputs/Outputs	Plastic Cover	< 1	UUT23a,b, UUT27a,b
HMI	Unitronics	JZ20-J-R31	16 Digital Inputs, 2 D/A Inputs, 2 Analog Inputs, 11 Relay Outlets, 24VDC, HMI w/ PLC Controller	Plastic Cover	1	UUT21a,b
		V130-J-T38	24VDC, LCD 2.4" graphic display, HMI w/ PLC Controller	Plastic Cover	1	Interpolated
		US5-B10-B1	Unistream 5" Pro	Plastic Cover	1	UUT27a,b
		US7-B10-B1	Unistream 7" Pro	Plastic Cover	1	UUT23a,b
Control Relay	Schneider Electric	RPM22F7	120VAC Plug-In Relay, 2CO	Plastic	< 1	UUT21a,b, UUT23a,b, UUT27a,b
		RPM22BD	24VDC Plug-In Relay, 2CO	Plastic	< 1	UUT21a,b, UUT27a,b
		RXM4AB2BD	24 VDC Miniature plug-in relay, 6 A, 4 CO, LED	Plastic	< 1	UUT23a,b
Relay Socket	Schneider Electric	RPZF2	2 C/O, 16 A, relay type RPM2, 250 V AC	Plastic	< 1	UUT21a,b, UUT23a,b, UUT27a,b
		RXZE2M114M	4 C/O, relay type RXM2 RXM4, 250 V AC	Plastic	< 1	UUT23a,b
Push Button	Schneider Electric	ZB4BA1	Spring return push button	Plastic	< 1	UUT23a,b, UUT27a,b
Green LED	Schneider Electric	ZBV-BG3	Light block for head Ø22, integral LED 24...120 V AC/DC	Plastic	< 1	UUT21a,b, UUT23a,b, UUT27a,b
Contact Block	Schneider Electric	ZBE-101	Single contact block, silver alloy, screw clamp terminal, 1 NO	Plastic	< 1	UUT21a,b, UUT23a,b, UUT27a,b
Control/Alarm Relay 24VDC	Phoenix Contact	2966171	PLC relay, consisting of base terminal block PLC-BSC.../21 with screw connection and pluggable miniature relay with power contact, for assembly on DIN rail NS 35/7.5, 1 PDT, input voltage 24 V DC	Plastic	< 1	UUT21a,b, UUT23a,b, UUT27a,b
General Purpose Illuminated Touch Buttons	Banner	K30APT2RGF2	K30 Core Series 30 MM	Plastic	< 1	UUT21a,b
Exhaust Filter	Finder	7F.05.0.000.2000	150 mm, Finder 7F Series Size 2 Filter Fans	Plastic	< 1	UUT23a,b, UUT27a,b
Exhaust Fan	Finder	7F.20.8.120.2055	Axial Fan, 7F Series, IP54, 120 V, AC, 150 mm, 71 mm, 43 dBA, 32.4 cu.ft/min	Plastic	1	UUT23a,b, UUT27a,b

1. Extrapolated subcomponents are similar in construction to the tested subcomponents

REVIEWED FOR CODE COMPLIANCE HCAI OSP-0724 BY: Mohammad Rahimi DATE: 04/07/2022 CALIFORNIA BUILDING CODE 2019

Table 8- Special Seismic Certification
Certified Subcomponents
Rigid and Flexible Wall Mount

DCL Project Number: 33353-2001

Product Line: Air and Vacuum System Panel Controls
Certified Levels: Sds=2.5g, z/h=1.0

Controller Subcomponents (Continued)						
Subcomponent	**MFR**	**Model Number**	**Description**	**Material**	**Weight [lbs]**	**UUT**
24VDC Power Supply	Mean Well	HDR-15-24	DIN Rail Power Supplies 15.2W 24V 0.63A Class II DIN Rail	Plastic Cover	< 1	UUT21a,b
		HDR-60-24	DIN Rail Power Supplies 60W 24V 2.5A Class II DIN Rail		< 1	UUT23a,b, UUT27a,b
Audible Alarm Annunciator	Floyd Bell, Inc.	TMB-86-531	Medium Loud Fast Beep Tone Buzzer, Flame Retardant, Internal Circuit	Plastic Cover	< 1	UUT21a,b, UUT23a,b, UUT27a,b
Primary Transformer Fuse	Littelfuse	KLDR0.5	KLDR 600 Volt fuses are time-delay fuses designed to protect control transformers.	Melamine	< 1	UUT21a,b
		KLDR1		Melamine	< 1	UUT27a,b
		KLDR2		Melamine	< 1	Interpolated
		KLDR3		Melamine	< 1	UUT23a,b
		KLDR4		Melamine	< 1	Extrapolated[1]
Secondary Transformer Fuse	Littelfuse	FLM1	FLM 250V time-delay fuses	Melamine	< 1	Interpolated
		FLM2		Melamine	< 1	UUT21a,b
		FLM3		Melamine	< 1	UUT27a,b
		FLM4		Melamine	< 1	Interpolated
		FLM5		Melamine	< 1	UUT23a,b
		FLM10		Melamine	< 1	Extrapolated[1]
Ground Modular Terminal Block	Phoenix Contact	3044241	1.5 mm² - 35 mm², AWG: 16 - 2, width: 16 mm, height: 65.1 mm	Plastic	< 1	UUT21a,b, UUT23a,b, UUT27a,b
		3206555	0.5 mm² - 2.5 mm², AWG: 20 - 14, width: 6.2 mm	Plastic	< 1	UUT23a,b, UUT27a,b
Mounting Collar	Schneider Electric	ZB4BZ009	Body/fixing collar for electrical block, metal	Metal	< 1	UUT21a,b, UUT23a,b, UUT27a,b
HOA Switch	Schneider Electric	ZB4BK1313	Illuminated 3-pos. switch, maintained	Plastic	< 1	UUT21a,b, UUT23a,b, UUT27a,b
		ZB4BK1713	Illuminated 3-pos. switch, spring return from left	Plastic	< 1	UUT23a,b
Thermostat	Finder	7T.81.0.000.2303	250V - 0-60°C Temperature range	Plastic Cover	< 1	UUT23a,b, UUT27a,b
Power Relay	Schneider Electric	CA2KN22L7	200 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	UUT23a,b
		CA2KN22U7	230-240 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	Interpolated
		CA2KN22Q7	380-400 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	Interpolated
		CA2KN22N7	400-415 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	Interpolated
		CA2KN22R7	440 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	UUT27a,b

1. Extrapolated subcomponents are similar in construction and weight to the tested subcomponents.

REVIEWED FOR CODE COMPLIANCE HCAi OSP-0724 BY: Mohammad Karim DATE: 04/07/2022 CALIFORNIA BUILDING CODE 2019

Table 9- Special Seismic Certification
Certified Subcomponents
Rigid and Flexible Base Mount on Panel Stand and Braced at Top

DCL Project Number: 33353-2001

Product Line: Air and Vacuum System Control Panels
Certified Levels: Sds=2.5g, z/h=1.0

Enclosures								
Model Number	**Manufacturer**	**NEMA Rating[1]**	**Dimensions [in]**			**Material**	**Weight [lb]**	**UUT**
			Depth	**Width**	**Height**			
NSYS3DC6620	Schneider Electric	1	8	24	24	Carbon Steel	31	Extrapolated
		12						UUT22a,b
NSYS3DC8620	Schneider Electric	1	8	24	32		44	Interpolated
		12						
NSYS3DC10825	Schneider Electric	1	10	32	40		72	Interpolated
		12						UUT26a,b
WM423610NC	RITTAL	1	10	35	41		163	Interpolated
		12						UUT25a,b

1. Enclosures are rated for NEMA 1 and NEMA 12 ratings

REVIEWED FOR CODE COMPLIANCE
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BY: Mohammad Karim
DATE: 04/07/2022
CALIFORNIA BUILDING CODE, 2019

Table 10- Special Seismic Certification
Certified Subcomponents
Rigid and Flexible Base Mount on Panel Stand and Braced at Top

DCL Project Number: 33353-2001

Product Line: Air and Vacuum System Control Panels

Certified Levels: Sds=2.5g, z/h=1.0

Controller Subcomponents						
Subcomponent	**MFR**	**Model Number**	**Description**	**Material**	**Weight [lbs]**	**UUT**
Contactor	Schneider Electric	LC1D09F7	3 pole, 9 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	< 1	UUT22a,b, UUT25a,b
		LC1D12F7	3 pole, 12 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	< 1	Interpolated
		LC1D18F7	3 pole, 18 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	< 1	Interpolated
		LC1D25F7	3 pole, 25 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	< 1	Interpolated
		LC1D32F7	3 pole, 32 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	< 1	Interpolated
		LC1D38F7	3 pole, 38 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	< 1	Interpolated
		LC1D40AF7	3 pole, 40 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	2	Interpolated
		LC1D50AF7	3 pole, 50 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	2	Interpolated
		LC1D65AF7	3 pole, 65 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	2	Interpolated
		LC1D80AF7	3 pole, 80 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	2	UUT26a,b
Overload Relay	Schneider Electric	LRD07	3-pole Thermal Overload Relay	Plastic Cover	< 1	UUT25a,b
		LRD08	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD10	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD12	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD14	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD16	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD21	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD22	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD32	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD35	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD340	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD350	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD365	3-pole Thermal Overload Relay	Plastic Cover	< 1	UUT26a,b
Motor Protector	Schneider Electric	GV2ME01	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	UUT22a,b
		GV2ME02	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME03	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME04	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME05	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME06	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME07	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME08	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME14	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME16	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME20	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME21	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV2ME32	3-pole, horsepower-rated manual starters	Plastic Cover	< 1	Interpolated
		GV3P40	3-pole, horsepower-rated manual starters	Plastic Cover	2	Interpolated
		GV3P50	3-pole, horsepower-rated manual starters	Plastic Cover	2	Interpolated
		GV3P65	3-pole, horsepower-rated manual starters	Plastic Cover	2	UUT26a,b
Power Relay	Schneider Electric	CA2KN22F7	110 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	Extrapolated[1]
		CA2KN22L7	200 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	UUT26a,b
		CA2KN22U7	230-240 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	Interpolated
		CA2KN22Q7	380-400 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	Interpolated
		CA2KN22N7	400-415 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	Interpolated
		CA2KN22R7	440 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	UUT25a,b
		CA3KN22BD	24 VDC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	Extrapolated[1]

1. Extrapolated subcomponents are similar in construction and weight to the tested subcomponents.

REVIEWED FOR CODE COMPLIANCE BY: Mohammad Kamil DATE: 04/07/2022 CALIFORNIA BUILDING CODE, 2019

Table 10- Special Seismic Certification
Certified Subcomponents
Rigid and Flexible Base Mount on Panel Stand and Braced at Top

DCL Project Number: 33353-2001

Product Line: Air and Vacuum System Control Panels

Certified Levels: Sds=2.5g, z/h=1.0

Controller Subcomponents (Continued)

Subcomponent	MFR	Model Number	Description	Material	Weight [lbs]	UUT
Variable Frequency Drive	Schneider Electric	ATV320U11M3C	Compact variable speed drive 208V	Plastic Cover	4	Interpolated
		ATV320U11N4C	Compact variable speed drive 460V	Plastic Cover	4	UUT25a,b
		ATV320U15M3C	Compact variable speed drive 208V	Plastic Cover	4	Interpolated
		ATV320U15N4C	Compact variable speed drive 460V	Plastic Cover	4	Interpolated
		ATV320U22M3C	Compact variable speed drive 208V	Plastic Cover	4	Interpolated
		ATV320U22N4C	Compact variable speed drive 460V	Plastic Cover	7	Interpolated
		ATV320U40M3C	Compact variable speed drive 208V	Plastic Cover	5	Interpolated
		ATV320U40N4C	Compact variable speed drive 460V	Plastic Cover	5	Interpolated
		ATV320U55M3C	Compact variable speed drive 208V	Plastic Cover	8	Interpolated
		ATV320U55N4C	Compact variable speed drive 460V	Plastic Cover	8	Interpolated
		ATV320U75M3C	Compact variable speed drive 208V	Plastic Cover	8	Interpolated
		ATV320U75N4C	Compact variable speed drive 460V	Plastic Cover	8	Interpolated
		ATV320D11M3C	Compact variable speed drive 208V	Plastic Cover	8	Interpolated
		ATV320D11N4C	Compact variable speed drive 460V	Plastic Cover	15	Interpolated
		ATV320D15M3C	Compact variable speed drive 208V	Plastic Cover	15	UUT26a,b
		ATV320D15N4C	Compact variable speed drive 460V	Plastic Cover	15	Interpolated
Molded Case Circuit Breaker	Schneider Electric	BDL36015	Powerpact, type BDL, 3P, 3PH, 15A, 600V, 18kA@480V	Plastic	2	UUT25a,b
		BDL36020	Powerpact, type BDL, 3P, 3PH, 20A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36030	Powerpact, type BDL, 3P, 3PH, 30A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36040	Powerpact, type BDL, 3P, 3PH, 40A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36060	Powerpact, type BDL, 3P, 3PH, 60A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36070	Powerpact, type BDL, 3P, 3PH, 70A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36080	Powerpact, type BDL, 3P, 3PH, 80A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36090	Powerpact, type BDL, 3P, 3PH, 90A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36100	Powerpact, type BDL, 3P, 3PH, 100A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36110	Powerpact, type BDL, 3P, 3PH, 110A, 600V, 18kA@480V	Plastic	2	Interpolated
		BDL36125	Powerpact, type BDL, 3P, 3PH, 125A, 600V, 18kA@480V	Plastic	2	Interpolated
		HJL36015	Powerpact, type HJL, 3P, 3PH, 15A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36020	Powerpact, type HJL, 3P, 3PH, 20A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36030	Powerpact, type HJL, 3P, 3PH, 30A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36040	Powerpact, type HJL, 3P, 3PH, 40A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36050	Powerpact, type HJL, 3P, 3PH, 50A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36060	Powerpact, type HJL, 3P, 3PH, 60A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36070	Powerpact, type HJL, 3P, 3PH, 70A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36080	Powerpact, type HJL, 3P, 3PH, 80A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36100	Powerpact, type HJL, 3P, 3PH, 100A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36110	Powerpact, type HJL, 3P, 3PH, 110A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36125	Powerpact, type HJL, 3P, 3PH, 125A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36150	Powerpact, type HJL, 3P, 3PH, 150A, 600V, 65kA@480V	Plastic	5	UUT26a,b
Operating Mechanism for Circuit Breaker	Schneider Electric	9421LB3	Rotary handle, 600A mechanism, 3 inch handle, long shaft	Carbon Steel	6	UUT25a,b
		9421LJ3	Rotary handle, 600A mechanism, 3 inch handle, long shaft	Carbon Steel	6	UUT26a,b
Relay Socket	Schneider Electric	RPZF2	2 C/O, 16 A, relay type RPM2, 250 V AC	Plastic	< 1	UUT22a,b, UUT25a,b, UUT26a,b
		RXZE2M114M	4 C/O, relay type RXM2 RXM4, 250 V AC	Plastic	< 1	UUT25a,b, UUT26a,b

1. Extrapolated subcomponents are similar in construction and weight to the tested subcomponents.

REVIEWED FOR THE COMPANY BY: Mohammad Kamal DATE: 04/07/2022 OSP-0724

Table 10- Special Seismic Certification
Certified Subcomponents
Rigid and Flexible Base Mount on Panel Stand and Braced at Top

DCL Project Number: 33353-2001

Product Line: Air and Vacuum System Control Panels

Certified Levels: Sds=2.5g, z/h=1.0

Controller Subcomponents (Continued)

Subcomponent	MFR	Model Number	Description	Material	Weight [lbs]	UUT
Power Distribution Block	Schneider Electric	9080LBA362104	3-POLE, 1-LINE, 4-LOAD, 175A	Plastic	< 1	UUT22a,b
		9080LBA362106	3-POLE, 1-LINE, 6-LOAD, 175A	Plastic	< 1	UUT25a,b
		9080LBA363104	3-POLE, 1-LINE, 4-LOAD, 335A	Plastic	2	Interpolated
		9080LBA363106	3-POLE, 1-LINE, 6-LOAD, 335A	Plastic	2	UUT26a,b
		9080LBA364108	3-POLE, 1-LINE, 8-LOAD, 335A	Plastic	2	Extrapolated[1]
Control Transformer	Micron Transformer	B100MBT713RK	Class 105C/130C, 100 VA with primary voltage at 208/230/460 and secondary voltage at 24/115.	Carbon Steel	6	UUT22a,b
	Schneider Electric	9070TF100D33	Control Transformers for Primary voltage at 208/230/460 and secondary voltage at 24/115.	Carbon Steel	4	Extrapolated[1]
		9070TF150D50		Carbon Steel	9	Extrapolated[1]
		9070TF250D50		Carbon Steel	11	Extrapolated[1]
		9070TF500D1		Carbon Steel	12	UUT25a,b
		9070TF500D50		Carbon Steel	11	UUT26a,b
		9070TF750D50		Carbon Steel	21	Extrapolated[1]
Control Circuit Breaker	Schneider Electric	M9F22103	Multi9, 1P, 3A, Miniature	Plastic Cover	< 1	UUT22a,b, UUT25a,b, UUT26a,b
		M9F22102	Multi9, 1P, 2A, Miniature	Plastic Cover	< 1	UUT22a,b, UUT25a,b, UUT26a,b
		M9F22101	Multi9, 1P, 1A, Miniature	Plastic Cover	< 1	UUT22a,b, UUT25a,b, UUT26a,b
PLC Base Controller	Schneider Electric	TM221C24R	24 input/output	Plastic Cover	< 1	UUT25a,b,
		TM221C40R	40 input/output	Plastic Cover	1	UUT26a,b
Analog, Digital Expansion Cards	Schneider Electric	TM3TI4	Analog, 4 universal Inputs, 24VDC	Plastic Cover	< 1	Extrapolated[1]
		TM3AM6	Analog, 4 Inputs, 2 Outputs, 24VDC	Plastic Cover	< 1	UUT25a,b, UUT26a,b
		TM3DI16	Modicon TM3 - 16 inputs, 24Vdc	Plastic Cover	< 1	UUT25a,b
		TM3DQ16R	Modicon TM3 - 16 outputs	Plastic Cover	< 1	UUT25a,b, UUT26a,b
Serial Communication Module	Schneider Electric	TMC2SL1	Modicon M221, 2 Inputs	Plastic Cover	< 1	UUT26a,b
Bacnet Bridge PLC Base	Schneider Electric	TM172PDG07R	Modicon M172 Performance Display 7 Inputs/Outputs	Plastic Cover	< 1	UUT26a,b
HMI	Unitronics	JZ20-J-R31	16 Digital Inputs, 2 D/A Inputs, 2 Analog Inputs, 11 Relay Outlets, 24VDC, HMI with PLC Controller	Plastic Cover	1	UUT22a,b
		V130-J-T38	24VDC, LCD 2.4" graphic display, HMI with PLC Controller	Plastic Cover	1	Interpolated
		US5-B10-B1	Unistream 5" Pro	Plastic Cover	1	UUT25a,b, UUT26a,b
		US7-B10-B1	Unistream 7" Pro	Plastic Cover	1	Extrapolated[1]
Switch	Schneider Electric	ZB4BK1313	Illuminated 3-pos. switch, maintained	Plastic	< 1	UUT22a,b, UUT25a,b, UUT26a,b
		ZB4BK1713	Illuminated 3-pos. switch, spring return from left	Plastic	< 1	UUT26a,b
Thermostat	Finder	7T.81.0.000.2303	250V - 0-60°C Temperature range	Plastic Cover	< 1	UUT25a,b, UUT26a,b
Mounting Collar	Schneider Electric	ZB4BZ009	Body/fixing collar for electrical block, metal	Metal	< 1	UUT22a,b, UUT25a,b, UUT26a,b
Ground Modular Terminal Block	Phoenix Contact	3044241	1.5 mm² - 35 mm², AWG: 16 - 2, width: 16 mm, height: 65.1 mm	Plastic	< 1	UUT22a,b, UUT25a,b, UUT26a,b
		3206555	0.5 mm² - 2.5 mm², AWG: 20 - 14, width: 6.2 mm	Plastic	< 1	UUT25a,b, UUT26a,b

1. Extrapolated subcomponents are similar in construction and weight to the tested subcomponents.

ICAI OSP-0724 APPROVED FOR CODE COMPLIANCE BY: Mohammad Karim DATE: 04/07/2022 CALIFORNIA BUILDING CODE 2019

Table 10- Special Seismic Certification
Certified Subcomponents
Rigid and Flexible Base Mount on Panel Stand and Braced at Top

DCL Project Number: 33353-2001

Product Line: Air and Vacuum System Control Panels

Certified Levels: Sds=2.5g, z/h=1.0

Controller Subcomponents (Continued)						
Subcomponent	**MFR**	**Model Number**	**Description**	**Material**	**Weight [lbs]**	**UUT**
Control Relay	Schneider Electric	RPM22F7	120VAC Plug-In Relay, 2CO	Plastic	< 1	UUT22a,b, UUT25a,b, UUT26a,b
		RPM22BD	24VDC Plug-In Relay, 2CO	Plastic	< 1	UUT22a,b
		RXM4AB2BD	24 VDC Miniature plug-in relay, 6 A, 4 CO, LED	Plastic	< 1	UUT25a,b, UUT26a,b
Push Button	Schneider Electric	ZB4BA1	Spring return push button	Plastic	< 1	UUT25a,b, UUT26a,b
Green LED	Schneider Electric	ZBV-BG3	Light block for head Ø22, integral LED 24…120 V AC/DC	Plastic	< 1	UUT22a,b, UUT25a,b, UUT26a,b
Contact Block	Schneider Electric	ZBE-101	Single contact block, silver alloy, screw clamp terminal, 1 NO	Plastic	< 1	UUT22a,b, UUT25a,b, UUT26a,b
Control/Alarm Relay 24VDC	Schneider Electric	2966171	PLC relay, consisting of base terminal block PLC-BSC/21 with screw connection and pluggable miniature relay with power contact, for assembly on DIN rail NS 35/7.5, 1 PDT, input 24VDC	Plastic	< 1	UUT22a,b, UUT25a,b, UUT26a,b
Illuminated Touch Buttons	Banner	K30APT2RGF2	K30 Core Series 30 MM	Plastic	< 1	UUT22a,b
Exhaust Filter	Finder	7F.05.0.000.2000	150 mm, Finder 7F Series Size 2 Filter Fans	Plastic	< 1	UUT25a,b, UUT26a,b
		7F.05.0.000.3000	204 mm, Finder 7F Series Size 3 Filter Fans	Plastic	< 1	Extrapolated[1]
		7F.05.0.000.4000	250 mm, Finder 7F Series Size 4 Filter Fans	Plastic	< 1	Extrapolated[1]
		7F.05.0.000.5000	320 mm, Finder 7F Series Size 5 Filter Fans	Plastic	< 1	Extrapolated[1]
Exhaust Fan	Finder	7F.20.8.120.2055	Axial Fan, 7F Series, IP54, 120 V, AC, 150 mm, 71 mm, 43 dBA, 32.4 cu.ft/min	Plastic	1	UUT25a,b, UUT26a,b
		7F.20.8.120.3100	Axial Fan, 7F Series, IP54, 120 V, AC, 204 mm, 92 mm, 43 dBA, 58.9 cu.ft/min	Plastic	1	Extrapolated[1]
		7F.20.8.120.4250	Axial Fan, 7F Series, IP54, 120 V, AC, 250 mm, 104 mm, 65 dBA, 217.8 cu.ft/min	Plastic	1	Extrapolated[1]
		7F.20.8.120.4400	Axial Fan, 7F Series, IP54, 120 V, AC, 320 mm, 145 mm, 65 dBA, 294.3 cu.ft/min	Plastic	1	Extrapolated[1]
		7F.50.8.120.5500	Axial Fan, 7F Series, IP54, 120 V, AC, 320 mm, 145 mm, 65 dBA, 294.3 cu.ft/min	Plastic	1	Extrapolated[1]
24VDC Power Supply	Mean Well	HDR-15-24	DIN Rail Power Supplies 15.2W 24V 0.63A Class II DIN Rail	Plastic Cover	< 1	UUT22a,b
		HDR-60-24	DIN Rail Power Supplies 60W 24V 2.5A Class II DIN Rail	Plastic Cover	< 1	UUT25a,b, UUT26a,b
Audible Alarm Annunciator	Floyd Bell, Inc.	TMB-86-531	Medium Loud Fast Beep Tone Buzzer, Flame Retardant, Internal Circuit	Plastic Cover	< 1	UUT22a,b, UUT25a,b, UUT26a,b
Primary Transformer Fuse	Littelfuse	KLDR0.5	KLDR 600 Volt fuses are time-delay fuses designed to protect control transformers.	Melamine	< 1	UUT22a,b
		KLDR1		Melamine	< 1	Interpolated
		KLDR2		Melamine	< 1	UUT25a,b
		KLDR3		Melamine	< 1	UUT26a,b
		KLDR4		Melamine	< 1	Extrapolated[1]
Secondary Transformer Fuse	Littelfuse	FLM1	FLM 250V time-delay fuses	Melamine	< 1	Extrapolated[1]
		FLM2		Melamine	< 1	UUT22a,b
		FLM3		Melamine	< 1	Interpolated
		FLM4		Melamine	< 1	Interpolated
		FLM5		Melamine	< 1	UUT25a,b, UUT26a,b
		FLM10		Melamine	< 1	Extrapolated[1]

1. Extrapolated subcomponents are similar in construction and weight to the tested subcomponents.

REVIEWED FOR CODE COMPLIANCE OSP-0724 BY: Mohammad Karim DATE: 04/07/2022 INTERNATIONAL BUILDING CODE 2018

Table 11- Special Seismic Certification
Certified Subcomponents
Rigid Base Mount on Panel Stand

DCL Project Number: 33353-2001

Product Line: Air and Vacuum System Control Panels
Certified Levels: Sds=2.0g, z/h=1.0

Enclosures								
Model Number	**Manufacturer**	**NEMA Rating[1]**	**Dimensions, in.**			**Material**	**Weight [lb]**	**Unit**
			Depth	**Width**	**Height**			
TS 8245.500	RITTAL	1	20	47	55	Carbon Steel	360	Interpolated
		12						UUT28
TS 8265.500	RITTAL	1	20	47	63		351	Interpolated
		12						
TS 8285.500	RITTAL	1	20	47	71		381	Interpolated
		12						
TS 8205.500	RITTAL	1	20	47	79		420	Interpolated
		12						UUT24

1. Enclosures are rated for NEMA 1 and NEMA 12 ratings

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0724
BY: Mohammad Karim
DATE: 04/07/2022
CALIFORNIA BUILDING CODE, 2019

Table 12- Special Seismic Certification
Certified Subcomponents
Rigid Base Mount on Panel Stand

DCL Project Number: 33353-2001

Product Line: Air and Vacuum System Control Panels

Certified Levels: Sds=2.0g, z/h=1.0

Controller Subcomponents						
Subcomponent	**MFR**	**Model Number**	**Description**	**Material**	**Weight [lbs]**	**UUT**
Contactor	Schneider Electric	LC1D09F7	3 pole, 9 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	< 1	Extrapolated
		LC1D12F7	3 pole, 12 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	< 1	Extrapolated
		LC1D18F7	3 pole, 18 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	< 1	Extrapolated
		LC1D25F7	3 pole, 25 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	< 1	Extrapolated
		LC1D32F7	3 pole, 32 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	< 1	Extrapolated
		LC1D38F7	3 pole, 38 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	< 1	Extrapolated
		LC1D40AF7	3 pole, 40 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	2	Interpolated
		LC1D50AF7	3 pole, 50 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	2	Interpolated
		LC1D65AF7	3 pole, 65 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	2	UUT28
		LC1D80AF7	3 pole, 80 AMPS AC-3 with a 110v50/60Hz AC coil	Plastic Cover	2	UUT24
Overload Relay	Schneider Electric	LRD07	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD08	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD10	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD12	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD14	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD16	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD21	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD22	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD32	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD35	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD340	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD350	3-pole Thermal Overload Relay	Plastic Cover	< 1	Interpolated
		LRD365	3-pole Thermal Overload Relay	Plastic Cover	< 1	UUT24, UUT28
Power Relay	Schneider Electric	CA2KN22F7	110 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	UUT24
		CA2KN22L7	200 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	UUT24
		CA2KN22U7	230-240 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	Interpolated
		CA2KN22Q7	380-400 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	Interpolated
		CA2KN22N7	400-415 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	Interpolated
		CA2KN22R7	440 VAC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	Interpolated
		CA3KN22BD	24 VDC Control Circuit, 10 A, IP2X	Plastic Cover	< 1	UUT24
Audible Alarm Annunciator	Floyd Bell, Inc.	TMB-86-531	Medium Loud Fast Beep Tone Buzzer, Flame Retardant, Internal Circuit	Plastic Cover	< 1	UUT24, UUT28
Primary Transformer Fuse	Littelfuse	KLDR0.5	KLDR 600 Volt fuses are time-delay fuses designed to protect control transformers.	Melamine	< 1	Interpolated
		KLDR1		Melamine	< 1	Interpolated
		KLDR2		Melamine	< 1	Interpolated
		KLDR3		Melamine	< 1	UUT24, UUT28
		KLDR4		Melamine	< 1	Interpolated
Secondary Transformer Fuse	Littelfuse	FLM1	FLM 250V time-delay fuses	Melamine	< 1	Interpolated
		FLM2		Melamine	< 1	Interpolated
		FLM3		Melamine	< 1	Interpolated
		FLM4		Melamine	< 1	Interpolated
		FLM5		Melamine	< 1	UUT28
		FLM10		Melamine	< 1	UUT24
Ground Modular Terminal Block	Phoenix Contact	3044241	1.5 mm² - 35 mm², AWG: 16 - 2, width: 16 mm, height: 65.1 mm	Plastic	< 1	UUT24
		3206555	0.5 mm² - 2.5 mm², AWG: 20 - 14, width: 6.2 mm	Plastic	< 1	UUT24

1. Extrapolated subcomponents are similar in construction and weight to the tested subcomponents.

Table 12- Special Seismic Certification
Certified Subcomponents
Rigid Base Mount on Panel Stand

DCL Project Number: 33353-2001

Product Line: Air and Vacuum System Control Panels

Certified Levels: Sds=2.0g, z/h=1.0

Controller Subcomponents (Continued)						
Subcomponent	**MFR**	**Model Number**	**Description**	**Material**	**Weight [lbs]**	**UUT**
Variable Frequency Drive	Schneider Electric	ATV320U11M3C	Compact variable speed drive 208V	Plastic Cover	4	Extrapolated[1]
		ATV320U11N4C	Compact variable speed drive 460V	Plastic Cover	4	Extrapolated[1]
		ATV320U15M3C	Compact variable speed drive 208V	Plastic Cover	4	Extrapolated[1]
		ATV320U15N4C	Compact variable speed drive 460V	Plastic Cover	4	Extrapolated[1]
		ATV320U22M3C	Compact variable speed drive 208V	Plastic Cover	4	Extrapolated[1]
		ATV320U22N4C	Compact variable speed drive 460V	Plastic Cover	7	Extrapolated[1]
		ATV320U40M3C	Compact variable speed drive 208V	Plastic Cover	5	Extrapolated[1]
		ATV320U40N4C	Compact variable speed drive 460V	Plastic Cover	5	Extrapolated[1]
		ATV320U55M3C	Compact variable speed drive 208V	Plastic Cover	8	Extrapolated[1]
		ATV320U55N4C	Compact variable speed drive 460V	Plastic Cover	8	Extrapolated[1]
		ATV320U75M3C	Compact variable speed drive 208V	Plastic Cover	8	Extrapolated[1]
		ATV320U75N4C	Compact variable speed drive 460V	Plastic Cover	8	Extrapolated[1]
		ATV320D11M3C	Compact variable speed drive 208V	Plastic Cover	8	Extrapolated[1]
		ATV320D11N4C	Compact variable speed drive 460V	Plastic Cover	15	Extrapolated[1]
		ATV320D15M3C	Compact variable speed drive 208V	Plastic Cover	15	UUT24
		ATV320D15N4C	Compact variable speed drive 460V	Plastic Cover	15	Interpolated
Molded Case Circuit Breaker	Schneider Electric	BDL36015	Powerpact, type BDL, 3P, 3PH, 15A, 600V, 18kA@480V	Plastic	2	Extrapolated[1]
		BDL36020	Powerpact, type BDL, 3P, 3PH, 20A, 600V, 18kA@480V	Plastic	2	Extrapolated[1]
		BDL36030	Powerpact, type BDL, 3P, 3PH, 30A, 600V, 18kA@480V	Plastic	2	Extrapolated[1]
		BDL36040	Powerpact, type BDL, 3P, 3PH, 40A, 600V, 18kA@480V	Plastic	2	Extrapolated[1]
		BDL36060	Powerpact, type BDL, 3P, 3PH, 60A, 600V, 18kA@480V	Plastic	2	Extrapolated[1]
		BDL36070	Powerpact, type BDL, 3P, 3PH, 70A, 600V, 18kA@480V	Plastic	2	Extrapolated[1]
		BDL36080	Powerpact, type BDL, 3P, 3PH, 80A, 600V, 18kA@480V	Plastic	2	Extrapolated[1]
		BDL36090	Powerpact, type BDL, 3P, 3PH, 90A, 600V, 18kA@480V	Plastic	2	Extrapolated[1]
		BDL36100	Powerpact, type BDL, 3P, 3PH, 100A, 600V, 18kA@480V	Plastic	2	Extrapolated[1]
		BDL36110	Powerpact, type BDL, 3P, 3PH, 110A, 600V, 18kA@480V	Plastic	2	Extrapolated[1]
		BDL36125	Powerpact, type BDL, 3P, 3PH, 125A, 600V, 18kA@480V	Plastic	2	Extrapolated[1]
		HJL36015	Powerpact, type HJL, 3P, 3PH, 15A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36020	Powerpact, type HJL, 3P, 3PH, 20A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36030	Powerpact, type HJL, 3P, 3PH, 30A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36040	Powerpact, type HJL, 3P, 3PH, 40A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36050	Powerpact, type HJL, 3P, 3PH, 50A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36060	Powerpact, type HJL, 3P, 3PH, 60A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36070	Powerpact, type HJL, 3P, 3PH, 70A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36080	Powerpact, type HJL, 3P, 3PH, 80A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36100	Powerpact, type HJL, 3P, 3PH, 100A, 600V, 65kA@480V	Plastic	5	UUT28
		HJL36110	Powerpact, type HJL, 3P, 3PH, 110A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36125	Powerpact, type HJL, 3P, 3PH, 125A, 600V, 65kA@480V	Plastic	5	Interpolated
		HJL36150	Powerpact, type HJL, 3P, 3PH, 150A, 600V, 65kA@480V	Plastic	5	UUT24
Operating Mechanism for Circuit Breaker	Schneider Electric	9421LB3	Rotary handle, 600A mechanism, 3 inch handle, long shaft	Carbon Steel	6	Interpolated
		9421LJ3	Rotary handle, 600A mechanism, 3 inch handle, long shaft	Carbon Steel	6	UUT24, UUT28
Relay Socket	Schneider Electric	RPZF2	2 C/O, 16 A, relay type RPM2, 250 V AC	Plastic	< 1	UUT24
		RXZE2M114M	4 C/O, relay type RXM2 RXM4, 250 V AC	Plastic	< 1	Interpolated

1. Extrapolated subcomponents are similar in construction and weight to the tested subcomponents.

Table 12- Special Seismic Certification
Certified Subcomponents
Rigid Base Mount on Panel Stand

DCL Project Number: 33353-2001

Product Line: Air and Vacuum System Control Panels

Certified Levels: Sds=2.0g, z/h=1.0

Controller Subcomponents (Continued)						
Subcomponent	**MFR**	**Model Number**	**Description**	**Material**	**Weight [lbs]**	**UUT**
Power Distribution Block	Schneider Electric	9080LBA362104	3-POLE, 1-LINE, 4-LOAD, 175A	Plastic	< 1	Extrapolated[1]
		9080LBA362106	3-POLE, 1-LINE, 6-LOAD, 175A	Plastic	< 1	Extrapolated[1]
		9080LBA363104	3-POLE, 1-LINE, 4-LOAD, 335A	Plastic	2	Interpolated
		9080LBA363106	3-POLE, 1-LINE, 6-LOAD, 335A	Plastic	2	UUT28
		9080LBA364108	3-POLE, 1-LINE, 8-LOAD, 335A	Plastic	2	UUT24
Control Transformer	Schneider Electric	9070TF100D33	Control Transformers for Primary voltage at 208/230/460 and secondary voltage at 24/115.	Carbon Steel	4	Extrapolated[1]
		9070TF150D50		Carbon Steel	9	Extrapolated[1]
		9070TF250D50		Carbon Steel	11	Interpolated
		9070TF500D50		Carbon Steel	11	UUT28
		9070TF500D1		Carbon Steel	12	Interpolated
		9070TF750D50		Carbon Steel	21	UUT24
Control Circuit Breaker	Schneider Electric	M9F22103	Multi9, 1P, 3A, Miniature	Plastic Cover	< 1	UUT24
		M9F22102	Multi9, 1P, 2A, Miniature	Plastic Cover	< 1	UUT24
		M9F22101	Multi9, 1P, 1A, Miniature	Plastic Cover	< 1	UUT24
PLC Base Controller	Schneider Electric	TM221C24R	24 input/output	Plastic Cover	< 1	Interpolated
		TM221C40R	40 input/output	Plastic Cover	1	UUT24
		TM221CE40R	40 input/output with Ethernet	Plastic Cover	1	UUT28
Analog, Digital Expansion Cards	Schneider Electric	TM3TI4	Analog, 4 universal Inputs, 24VDC	Plastic Cover	< 1	UUT28
		TM3AM6	Analog, 4 Inputs, 2 Outputs, 24VDC	Plastic Cover	< 1	UUT24
		TM3DI16	Modicon TM3 - 16 inputs, 24Vdc	Plastic Cover	< 1	UUT24
		TM3DQ16R	Modicon TM3 - 16 outputs	Plastic Cover	< 1	UUT24, UUT28
Serial Communication Module	Schneider Electric	TMC2SL1	Modicon M221, 2 Inputs	Plastic Cover	< 1	UUT24
Bacnet Bridge PLC Base	Schneider Electric	TM172PDG07R	Modicon M172 Performance Display 7 Inputs/Outputs	Plastic Cover	< 1	UUT24
HMI	Unitronics	JZ20-J-R31	16 Digital Inputs, 2 D/A Inputs, 2 Analog Inputs, 11 Relay Outlets, 24VDC, HMI with PLC Controller	Plastic Cover	1	Interpolated
		V130-J-T38	24VDC, LCD 2.4" graphic display, HMI with PLC Controller	Plastic Cover	1	Interpolated
		US5-B10-B1	Unistream 5" Pro	Plastic Cover	1	Interpolated
		US7-B10-B1	Unistream 7" Pro	Plastic Cover	1	UUT24
Switch	Schneider Electric	ZB4BK1313	Illuminated 3-pos. switch, maintained	Plastic	< 1	Interpolated
		ZB4BK1713	Illuminated 3-pos. switch, spring return from left, clear	Plastic	< 1	UUT24
		ZB4BK1733	Illuminated 3-pos. switch, spring return from left, green	Plastic	< 1	UUT28
Thermostat	Finder	7T.81.0.000.2303	250V - 0-60°C Temperature range	Plastic Cover	< 1	UUT24

1. Extrapolated subcomponents are similar in construction and weight to the tested subcomponents.

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Table 12- Special Seismic Certification
Certified Subcomponents
Rigid Base Mount on Panel Stand

DCL Project Number: 33353-2001

Product Line: Air and Vacuum System Control Panels

Certified Levels: Sds=2.0g, z/h=1.0

Controller Subcomponents (Continued)						
Subcomponent	**MFR**	**Model Number**	**Description**	**Material**	**Weight [lbs]**	**UUT**
Mounting Collar	Schneider Electric	ZB4BZ009	Body/fixing collar for electrical block, metal	Metal	< 1	UUT24
Control Relay	Schneider Electric	RPM22F7	120VAC Plug-In Relay, 2CO	Plastic	< 1	UUT24
		RPM22BD	24VDC Plug-In Relay, 2CO	Plastic	< 1	Interpolated
		RXM4AB2BD	24 VDC Miniature plug-in relay, 6 A, 4 CO, LED	Plastic	< 1	Interpolated
Push Button	Schneider Electric	ZB4BA1	Spring return push button	Plastic	< 1	UUT24
Green LED	Schneider Electric	ZBV-BG3	Light block for head Ø22, integral LED 24…120 V AC/DC	Plastic	< 1	UUT24
Contact Block	Schneider Electric	ZBE-101	Single contact block, silver alloy, screw clamp terminal, 1 NO	Plastic	< 1	UUT24
Control/Alarm Relay 24VDC	Schneider Electric	2966171	PLC relay, consisting of base terminal block PLC-BSC/21 with screw connection and pluggable miniature relay with power contact, for assembly on DIN rail NS 35/7.5, 1 PDT, input voltage 24 V DC	Plastic	< 1	UUT24
Exhaust Filter	Finder	7F.05.0.000.2000	150 mm, Finder 7F Series Size 2 Filter Fans	Plastic	< 1	Interpolated
		7F.05.0.000.3000	204 mm, Finder 7F Series Size 3 Filter Fans	Plastic	< 1	Interpolated
		7F.05.0.000.4000	250 mm, Finder 7F Series Size 4 Filter Fans	Plastic	< 1	Interpolated
		7F.05.0.000.5000	320 mm, Finder 7F Series Size 5 Filter Fans	Plastic	< 1	UUT24
Exhaust Fan	Finder	7F.20.8.120.2055	Axial Fan, 7F Series, IP54, 120 V, AC, 150 mm, 71 mm, 43 dBA, 32.4 cu.ft/min	Plastic	1	Interpolated
		7F.20.8.120.3100	Axial Fan, 7F Series, IP54, 120 V, AC, 204 mm, 92 mm, 43 dBA, 58.9 cu.ft/min	Plastic	1	Interpolated
		7F.20.8.120.4250	Axial Fan, 7F Series, IP54, 120 V, AC, 250 mm, 104 mm, 65 dBA, 217.8 cu.ft/min	Plastic	1	Interpolated
		7F.20.8.120.4400	Axial Fan, 7F Series, IP54, 120 V, AC, 320 mm, 145 mm, 65 dBA, 294.3 cu.ft/min	Plastic	1	Interpolated
		7F.50.8.120.5500	Axial Fan, 7F Series, IP54, 120 V, AC, 320 mm, 145 mm, 65 dBA, 294.3 cu.ft/min	Plastic	1	UUT24
24VDC Power Supply	Mean Well	HDR-15-24	DIN Rail Power Supplies 15.2W 24V 0.63A Class II DIN Rail	Plastic Cover	< 1	Interpolated
		HDR-60-24	DIN Rail Power Supplies 60W 24V 2.5A Class II DIN Rail	Plastic Cover	< 1	UUT24

1. Extrapolated subcomponents are similar in construction and weight to the tested subcomponents.

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Table 13- Special Seismic Certification
Tested Components

DCL Project Number: 33353-2001

Manufacturer: Amico Source Corporation
Product Line: Air and Vacuum System Control Panels
Product Construction: Painted carbon steel frames, painted carbon steel enclosures, NEMA 12
Mounting Description: See Below
Certified Levels: See Below

Model Number	MFR	Voltage	Control Panel Size	NEMA Rating	Dimensions [in]			Weight [lb]	Panel Stand Model Number[2]	Mounting	SDS [g] z/h=1	Fp/Wp	UUT
					Depth	Width	Height[1]						
AMV1201-46063-5	Amico	460/60/3	Duplex	12	8.0	16.0	20.0	43	N/A	Rigid wall mount	2.5	1.875	UUT21a
AMV1201-46063-5	Amico	460/60/3	Duplex	12	8.0	16.0	20.0	43	N/A	Flexible wall mount	2.5	5.625	UUT21b
AMV1201-46063-5	Amico	460/60/3	Duplex	12	10.0	23.5	48.0	123	STEEL-PDL-APANEL	Rigid base mount, to panel stand	2.5	1.875	UUT22a
AMV1201-46063-5	Amico	460/60/3	Duplex	12	10.0	23.5	48.0	123	STEEL-PDL-APANEL	Flexible base mount, to panel stand	2.5	5.625	UUT22b
AMA5404-B20863-75	Amico	208/60/3	Quadruplex	12	10.0	32.0	40.0	202	N/A	Rigid wall mount	2.5	1.875	UUT23a
AMA5404-B20863-75	Amico	208/60/3	Quadruplex	12	10.0	32.0	40.0	202	N/A	Flexible wall mount	2.5	5.625	UUT23b
AMA5704-B20863-75	Amico	208/60/3	Septaplex	12	24.0	53.3	89.5	913	STEEL-PDL-WELDED	Rigid base mount, to panel stand	2.0	1.500	UUT24
AMV5403-46063-5	Amico	460/60/3	Quadruplex	12	11.0	35.3	65.3	272	STEEL-PDL-APANEL	Rigid base mount, to panel stand	2.5	1.875	UUT25a
AMV5403-46063-5	Amico	460/60/3	Quadruplex	12	11.0	35.3	65.3	272	STEEL-PDL-APANEL	Flexible base mount, to panel stand	2.5	5.625	UUT25b
AMA5403-B20863-75	Amico	208/60/3	Quadruplex	12	12.5	31.5	63.3	272	STEEL-PDL-APANEL	Rigid base mount to panel stand	2.5	1.875	UUT26a
AMA5403-B20863-75	Amico	208/60/3	Quadruplex	12	12.5	31.5	63.3	272	STEEL-PDL-APANEL	Flexible base mount, to panel stand	2.5	5.625	UUT26b
AMV5203-B46063-5	Amico	460/60/3	Duplex	12	8.0	24.0	32.0	104	N/A	Rigid wall mount	2.5	1.875	UUT27a
AMV5203-B46063-5	Amico	460/60/3	Duplex	12	8.0	24.0	32.0	104	N/A	Flexible wall mount	2.5	5.625	UUT27b
AMA3603-20863-55 (A-XXX-D-240P-SS-N-200-20863-TS)	Amico/ Axecon	Fill in	Hexaplex	12	29.5	51.5	71.0	750	STEEL-PDL-WELDED-1	Rigid base mount, to panel stand	2.5	1.875	UUT28

1. For base mounted units height includes panel stand
2. Model Number includes required seismic bracing as tested

REVIEWED FOR CODE COMPLIANCE BY: Mohammad Karimi DATE: 04/07/2022 OSP-0724 CALIFORNIA BUILDING CODE 2019

UNIT UNDER TEST (UUT)
Summary Sheet
UUT-21a

DCL Project Number: 33353-2001

Manufacturer: Amico Source Corporation

Product Line: Air and Vacuum Systems Control Panels

Model Number: AMV1201-46063-5

Mounting: Rigid Wall Mount

Product Construction Summary: Painted carbon steel enclosures, NEMA 12

Options / Component Summary:

Enclosures; Contactor; Motor Protector; Power Distribution Block; Control Transformer; Control Circuit Breaker; HMI; Control Relay; Relay Socket; Green LED; Contact Block; Control/Alarm Relay 24VDC; General Purpose Illuminated Touch Buttons; 24VDC Power Supply; Audible Alarm Annunciator; Primary Transformer Fuse; Secondary Transformer Fuse; Ground Modular Terminal Block; Mounting Collar; HOA Switch

Unit Mounting Description:

UUT-21a was wall mounted to the DCL test fixture using (4) 3/8" Grade 5 bolts.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
43	8.0	16.0	20.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.68



Figure 1. Overall view of UUT-21a

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.

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BY: Mohammad Karim
DATE: 04/07/2022
CALIFORNIA BUILDING CODE 2019

UNIT UNDER TEST (UUT)
Summary Sheet
UUT-21b

DCL Project Number: 33353-2001

Manufacturer: Amico Source Corporation

Product Line: Air and Vacuum Systems Control Panels

Model Number: AMV1201-46063-5

Mounting: Flexible Wall Mount

Product Construction Summary: Painted carbon steel enclosures, NEMA 12

Options / Component Summary:

Enclosures; Contactor; Motor Protector; Power Distribution Block; Control Transformer; Control Circuit Breaker; HMI; Control Relay; Relay Socket; Green LED; Contact Block; Control/Alarm Relay 24VDC; General Purpose Illuminated Touch Buttons; 24VDC Power Supply; Audible Alarm Annunciator; Primary Transformer Fuse; Secondary Transformer Fuse; Ground Modular Terminal Block; Mounting Collar; HOA Switch

Unit Mounting Description:

UUT-21b was wall mounted to the DCL test fixture using (4) 3/8" Grade 5 bolts. The test fixture was attached to (4) VMC MSSH-1 spring isolators with (1) ¾" threaded rod per isolator.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
43	8.0	16.0	20.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.68

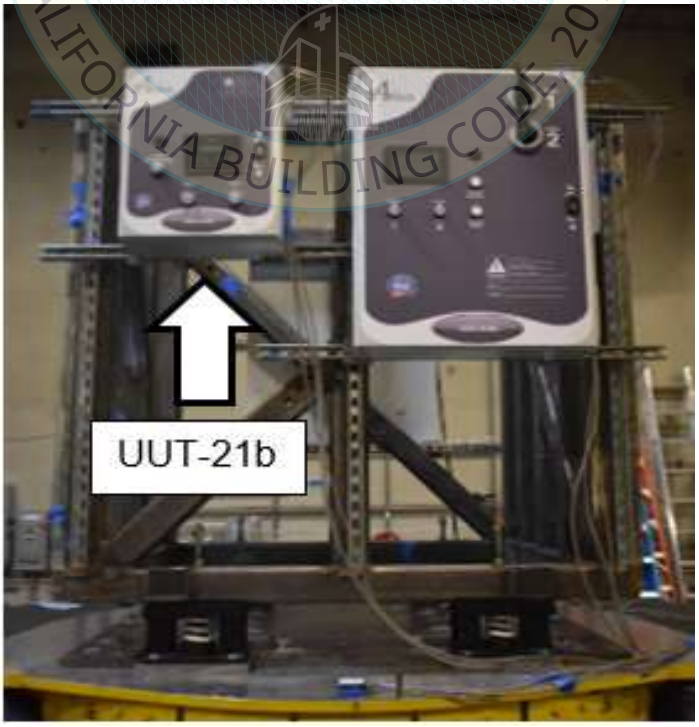


Figure 1. Overall view of UUT-21b

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.

REVIEWED FOR CODE COMPLIANCE HCAI OSP-0724 BY: Mohammad Karim DATE: 04/07/2022 CALIFORNIA BUILDING CODE 2019

UNIT UNDER TEST (UUT)
Summary Sheet
UUT-22a

DCL Project Number: 33353-2001

Manufacturer: Amico Source Corporation

Product Line: Air and Vacuum Systems Control Panels

Model Number: AMV1201-46063-5

Mounting: Rigid Base Mount on STEEL-PDL-APANEL Panel Stand and Braced at Top

Product Construction Summary: Painted carbon steel frames, painted carbon steel enclosures, NEMA 12

Options / Component Summary:

Enclosure; Contactor; Motor Protector; Audible Alarm Annunciator; Relay Socket; Power Distribution Block; Control Transformer; Control Circuit Breaker; HMI; Switch; Mounting Collar; Control Relay; Green LED; Contact Block; Control/Alarm Relay 24VDC; Illuminated Touch Buttons; 24VDC Power Supply; Primary Transformer Fuse; Secondary Transformer Fuse; Ground Modular Terminal Block

Unit Mounting Description:

UUT-22a was mounted on STEEL-PDL-APANEL panel stand with (8) 3/8" Grade 5 bolts. The panel stand was base mounted to the shake table with (4) 3/8" Grade 5 bolts per stand leg and (1) 3/8" Grade 5 bolt with lock nut per brace. Bracing was 2"x¼" A36 steel.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
123	10.0	23.5	48.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.68



Figure 1. Overall view of UUT-22a

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.

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BY: Mohammad Tarim
DATE: 04/07/2022
CALIFORNIA BUILDING CODE, 2019

UNIT UNDER TEST (UUT)
Summary Sheet
UUT-22b

DCL Project Number: 33353-2001

Manufacturer: Amico Source Corporation

Product Line: Air and Vacuum Systems Control Panels

Model Number: AMV1201-46063-5

Mounting: Flexible Base Mount on STEEL-PDL-APANEL Panel Stand and Braced at Top

Product Construction Summary: Painted carbon steel frames, painted carbon steel enclosures, NEMA 12

Options / Component Summary:

Enclosure; Contactor; Motor Protector; Audible Alarm Annunciator; Relay Socket; Power Distribution Block; Control Transformer; Control Circuit Breaker; HMI; Switch; Mounting Collar; Control Relay; Green LED; Contact Block; Control/Alarm Relay 24VDC; Illuminated Touch Buttons; 24VDC Power Supply; Primary Transformer Fuse; Secondary Transformer Fuse; Ground Modular Terminal Block

Unit Mounting Description:

UUT-22b was mounted on STEEL-PDL-APANEL panel stand with (8) 3/8" Grade 5 bolts. The panel stand was base mounted to the shake table plate with (4) 3/8" Grade 5 bolts per stand leg and (1) 3/8" Grade 5 bolt with lock nut per brace. Bracing was 2"x¼" A36 steel. The shake table interface plate was mounted on top of (4) VMC Group MSSH-1 spring isolators with (1) ½" Grade 5 bolt per isolator.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
123	10.0	23.5	48.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.68



Figure 1. Overall view of UUT-22b

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.

REVIEWED FOR CODE COMPLIANCE
OSP-0724
DSA
Dr. Mohammad Karim
DATE: 04/07/2022
CALIFORNIA BUILDING CODE

UNIT UNDER TEST (UUT)
Summary Sheet
UUT-23a

DCL Project Number: 33353-2001

Manufacturer: Amico Source Corporation

Product Line: Air and Vacuum Systems Control Panels

Model Number: AMA5404-B20863-75

Mounting: Rigid Wall Mount

Product Construction Summary: Painted carbon steel enclosures, NEMA 12

Options / Component Summary:
Enclosure; Contactor; Overload Relay; Motor Protector; Variable Frequency Drive; Control Circuit Breaker; Operating Mechanism for Circuit Breaker; Power Distribution Block; Control Transformer; PLC Base Controller; Analog, Digital Expansion Cards; Serial Communication Module; Bacnet Bridge PLC Base; HMI; Control Relay; Relay Socket; Push Button; Green LED; Contact Block; Control/Alarm Relay 24VDC; Exhaust Filter; Exhaust Fan; 24VDC Power Supply, Audible Alarm Annunciator; Primary Transformer Fuse; Secondary Transformer Fuse; Ground Modular Terminal Block; Mounting Collar; HOA Switch; Thermostat; Power Relay

Unit Mounting Description:
UUT-23a was wall mounted to the DCL test fixture using (4) 3/8" Grade 5 bolts.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
202	10.0	32.0	40.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.68



Figure 1. Overall view of UUT-23a

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.

HCAi OSP-0724 BY Mohammad Karim DATE 04/07/2022 REVIEWED FOR CODE COMPLIANCE CALIFORNIA BUILDING CODE

UNIT UNDER TEST (UUT)
Summary Sheet
UUT-23b

DCL Project Number: 33353-2001

Manufacturer: Amico Source Corporation

Product Line: Air and Vacuum Systems Control Panels

Model Number: AMA5404-B20863-75

Mounting: Flexible Wall Mount

Product Construction Summary: Painted carbon steel enclosures, NEMA 12

Options / Component Summary:

Enclosure; Contactor; Overload Relay; Motor Protector; Variable Frequency Drive; Control Circuit Breaker; Operating Mechanism for Circuit Breaker; Power Distribution Block; Control Transformer; PLC Base Controller; Analog, Digital Expansion Cards; Serial Communication Module; Bacnet Bridge PLC Base; HMI; Control Relay; Relay Socket; Push Button; Green LED; Contact Block; Control/Alarm Relay 24VDC; Exhaust Filter; Exhaust Fan; 24VDC Power Supply, Audible Alarm Annunciator; Primary Transformer Fuse; Secondary Transformer Fuse; Ground Modular Terminal Block; Mounting Collar; HOA Switch; Thermostat; Power Relay

Unit Mounting Description:

UUT-23b was wall mounted to the DCL test fixture using (4) 3/8" Grade 5 bolts. The test fixture was attached to (4) VMC MSSH-1 spring isolators with (1) ¾" threaded rod per isolator.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
202	10.0	32.0	40.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.68



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.

REVIEWED FOR CODE COMPLIANCE HCAi OSP-0724 By: Mohammad Karim DATE: 04/07/2022 CALIFORNIA BUILDING CODE, 2019

UNIT UNDER TEST (UUT)
Summary Sheet
UUT-24

DCL Project Number: 33353-2001

Manufacturer: Amico Source Corporation

Product Line: Air and Vacuum Systems Control Panels

Model Number: AMA5404-B20863-75

Mounting: Rigid Base Mount on STEEL-PDL-WELDED Panel Stand

Product Construction Summary: Painted carbon steel frames, painted carbon steel enclosures, NEMA 12

Options / Component Summary:

Enclosure; Contactor; Overload Relay; Motor Protector; Power Relay; Audible Alarm Annunciator; VFD; Molded Case Circuit Breaker; Operating Mechanism for Circuit Breaker; Relay Socket; Power Distribution Block; Control Transformer; Control Circuit Breaker; PLC Base Controller; Analog, Digital Expansion Cards; Serial Communication Module; Bacnet Bridge PLC Base; HMI; Switch; Thermostat; Mounting Collar; Control Relay; Push Button; Green LED; Contact Block; Control/Alarm Relay 24VDC; Exhaust Filter/Fan; 24VDC Power Supply; Primary/Secondar Transformer Fuse; Ground Modular Terminal Block

Unit Mounting Description:

UUT-24 was mounted on STEEL-PDL-WELDED panel stand with (4) 3"x1/4" carbon steel plates welded to the base with 1/8" thick by 1" diameter pipe spacers added underneath the plates and (4) 2"x1/4" carbon steel plates with (4) 1/2" Grade 5 bolts. The panel stand was rigid base mounted to the shake table plate with (8) 1/2" Grade 5 bolts.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
913	24.0	53.3	89.5	4.3	26.5	>33.3

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40		
		2.5	0				1.68	0.68



Figure 1. Overall view of UUT-24

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.

REVIEWED FOR CODE COMPLIANCE HCAi OSP-0724 By: Mohammad Karim DATE: 04/07/2022 CALIFORNIA BUILDING CODE 2019

UNIT UNDER TEST (UUT)
Summary Sheet
UUT-25a

DCL Project Number: 33353-2001

Manufacturer: Amico Source Corporation

Product Line: Air and Vacuum Systems Control Panels

Model Number: AMV5404-46063-5

Mounting: Rigid Base Mount on STEEL-PDL-APANEL Panel Stand and Braced at Top

Product Construction Summary: Painted carbon steel frames, painted carbon steel enclosures, NEMA 12

Options / Component Summary:

Enclosure; Contactor; Overload Relay; Power Relay; VFD; Molded Case Circuit Breaker; Operating Mechanism for Circuit Breaker; Relay Socket; Power Distribution Block; Control Transformer; Control Circuit Breaker; PLC Base Controller; Analog, Digital Expansion Cards; Serial Communication Module; Bacnet Bridge PLC Base; HMI; Switch; Thermostat; Mounting Collar; Control Relay; Push Button; Green LED; Contact Block; Control/Alarm Relay 24VDC; Exhaust Filter; Exhaust Fan; 24VDC Power Supply; Audible Alarm Annunciator; Primary Transformer Fuse; Secondary Transformer Fuse; Ground Modular Terminal Block

Unit Mounting Description:

UUT-25a was mounted on STEEL-PDL-APANEL panel stand with (10) 3/8" Grade 5 bolts. The panel stand was base mounted to the shake table interface plate with (4) 3/8" Grade 5 bolts per stand leg and (1) 3/8" Grade 5 bolt with lock nut per brace. Bracing was 2"x¼" A36 steel.

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OSP-0724
BY: Mohammad Karim
DATE: 04/07/2022
CALIFORNIA BUILDING CODE 2019

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
272	11.0	35.3	65.3	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.68



Figure 1. Overall view of UUT-25a

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.

UNIT UNDER TEST (UUT)
Summary Sheet
UUT-25b

DCL Project Number: 33353-2001

Manufacturer: Amico Source Corporation

Product Line: Air and Vacuum Systems Control Panels

Model Number: AMV5404-46063-5

Mounting: Flexible Base Mount on STEEL-PDL-APANEL Panel Stand and Braced at Top

Product Construction Summary: Painted carbon steel frames, painted carbon steel enclosures, NEMA 12

Options / Component Summary:

Enclosure; Contactor; Overload Relay; Power Relay; VFD; Molded Case Circuit Breaker; Operating Mechanism for Circuit Breaker; Relay Socket; Power Distribution Block; Control Transformer; Control Circuit Breaker; PLC Base Controller; Analog, Digital Expansion Cards; Serial Communication Module; Bacnet Bridge PLC Base; HMI; Switch; Thermostat; Mounting Collar; Control Relay; Push Button; Green LED; Contact Block; Control/Alarm Relay 24VDC; Exhaust Filter; Exhaust Fan; 24VDC Power Supply; Audible Alarm Annunciator; Primary Transformer Fuse; Secondary Transformer Fuse; Ground Modular Terminal Block

Unit Mounting Description:

UUT-25b was mounted on STEEL-PDL-APANEL panel stand with (10) Grade 5 bolts. The panel stand was base mounted to the shake table plate with (4) 3/8" Grade 5 bolts per stand leg and (1) 3/8" Grade 5 bolt with lock nut per brace. Bracing was 2"x¼" A36 steel. The shake table interface plate was mounted on top of (4) VMC Group MSSH-1 spring isolators with (1) ½" Grade 5 bolt per isolator.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
272	11.0	35.3	65.3	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.68



Figure 1. Overall view of UUT-25b

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.

REVIEWED FOR CODE COMPLIANCE BY: Mohammad Karim DATE: 04/07/2022 HCAi OSP-0724 CALIFORNIA BUILDING CODE 2019

UNIT UNDER TEST (UUT)
Summary Sheet
UUT-26a

DCL Project Number: 33353-2001

Manufacturer: Amico Source Corporation

Product Line: Air and Vacuum Systems Control Panels

Model Number: AMA5404-B20863-75

Mounting: Rigid Base Mount on STEEL-PDL-APANEL Panel Stand and Braced at Top

Product Construction Summary: Painted carbon steel frames, painted carbon steel enclosures, NEMA 12

Options / Component Summary:

Enclosure; Contactor; Overload Relay; Motor Protector; Power Relay; VFD; Molded Case Circuit Breaker; Operating Mechanism for Circuit Breaker; Relay Socket; Power Distribution Block; Control Transformer; Control Circuit Breaker; PLC Base Controller; Analog, Digital Expansion Cards; Serial Communication Module; Bacnet Bridge PLC Base; HMI; Switch; Thermostat; Mounting Collar; Control Relay; Push Button; Green LED; Contact Block; Control/Alarm Relay 24VDC; Exhaust Fan/Filter; 24VDC Power Supply; Audible Alarm Annunciator; Primary/Secondary Transformer Fuse; Ground Modular Terminal Block

Unit Mounting Description:

UUT-26a was mounted on STEEL-PDL-APANEL panel stand with (10) 3/8" Grade 5 bolts. The panel stand was base mounted to the shake table interface plate with (4) 3/8" Grade 5 bolts per stand leg and (1) 3/8" Grade 5 bolt with lock nut per brace. Bracing was 2"x¼" A36 steel.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
272	12.5	31.5	63.3	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.68

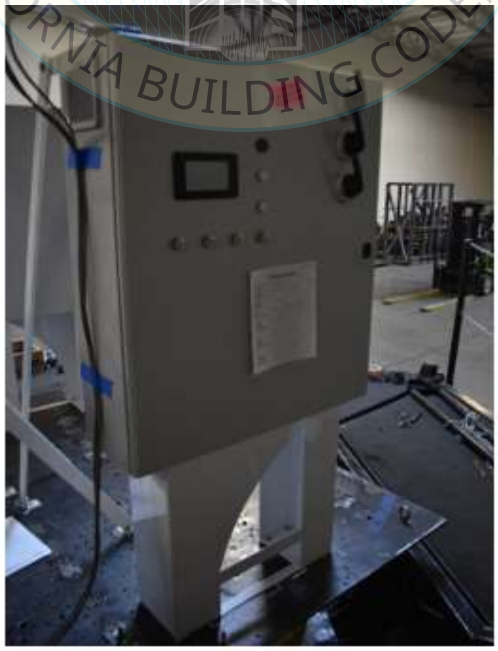


Figure 1. Overall view of UUT-26a

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.

REVIEWED FOR CODE COMPLIANCE HCAi OSP-0724 Dr. Mohammad Karim DATE: 04/07/2022 CALIFORNIA BUILDING CODE 2019

UNIT UNDER TEST (UUT)
Summary Sheet
UUT-26b

DCL Project Number: 33353-2001

Manufacturer: Amico Source Corporation

Product Line: Air and Vacuum Systems Control Panels

Model Number: AMA5404-B20863-75

Mounting: Flexible Base Mount on STEEL-PDL-APANEL Panel Stand and Braced at Top

Product Construction Summary: Painted carbon steel frames, painted carbon steel enclosures, NEMA 12

Options / Component Summary:

Enclosure; Contactor; Overload Relay; Motor Protector; Power Relay; VFD; Molded Case Circuit Breaker; Operating Mechanism for Circuit Breaker; Relay Socket; Power Distribution Block; Control Transformer; Control Circuit Breaker; PLC Base Controller; Analog, Digital Expansion Cards; Serial Communication Module; Bacnet Bridge PLC Base; HMI; Switch; Thermostat; Mounting Collar; Control Relay; Push Button; Green LED; Contact Block; Control/Alarm Relay 24VDC; Exhaust Fan/Filter; 24VDC Power Supply; Audible Alarm Annunciator; Primary/Secondary Transformer Fuse; Ground Modular Terminal Block

Unit Mounting Description:

UUT-26b was mounted on STEEL-PDL-APANEL panel stand with (10) 3/8" Grade 5 bolts. The panel stand was base mounted to the shake table interface plate with (4) 3/8" Grade 5 bolts per stand leg and (1) 3/8" Grade 5 bolt with lock nut per brace. Bracing was 2"x¼" A36 steel. The shake table interface plate was mounted on top of (4) VMC Group MSSH-1 spring isolators with (1) ½" Grade 5 bolt per isolator.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
272	12.5	31.5	63.3	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.68



Figure 1. Overall view of UUT-26b

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.

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UNIT UNDER TEST (UUT)
Summary Sheet
UUT-27a

DCL Project Number: 33353-2001

Manufacturer: Amico Source Corporation

Product Line: Air and Vacuum Systems Control Panels

Model Number: AMA5203-46063-5

Mounting: Rigid Wall Mount

Product Construction Summary: Painted carbon steel enclosures, NEMA 12

Options / Component Summary:

Enclosure; Contactor; Overload Relay; Variable Frequency Drive; Control Circuit Breaker; Operating Mechanism for Circuit Breaker; Power Distribution Block; Control Transformer; PLC Base Controller; Analog Digital Expansion Cards; Serial Communication Module; Bacnet Bridge PLC Base; HMI; Control Relay; Relay Socket; Push Button; Green LED; Contact Block; Control/Alarm Relay 24VDC; Exhaust Filter; Exhaust Fan; 24VDC Power Supply; Audible Alarm Annunciator; Primary Transformer Fuse; Secondary Transformer Fuse; Ground Modular Terminal Block; Mounting Collar; HOA Switch; Thermostat; Power Relay

Unit Mounting Description:

UUT-27a was wall mounted to the DCL test fixture using (4) 3/8" Grade 5 bolts.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
104	8.0	24.0	32.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.68



Figure 1. Overall view of UUT-27a

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.

HCAi OSP-0724 BY: Mohammad Karim UPDATE: 04/07/2022 REVIEWED FOR CODE COMPLIANCE CALIFORNIA BUILDING CODE 2019

UNIT UNDER TEST (UUT)
Summary Sheet
UUT-27b

DCL Project Number: 33353-2001

Manufacturer: Amico Source Corporation

Product Line: Air and Vacuum Systems Control Panels

Model Number: AMA5203-46063-5

Mounting: Flexible Wall Mount

Product Construction Summary: Painted carbon steel enclosures, NEMA 12

Options / Component Summary:

Enclosure; Contactor; Overload Relay; Variable Frequency Drive; Control Circuit Breaker; Operating Mechanism for Circuit Breaker; Power Distribution Block; Control Transformer; PLC Base Controller; Analog Digital Expansion Cards; Serial Communication Module; Bacnet Bridge PLC Base; HMI; Control Relay; Relay Socket; Push Button; Green LED; Contact Block; Control/Alarm Relay 24VDC; Exhaust Filter; Exhaust Fan; 24VDC Power Supply; Audible Alarm Annunciator; Primary Transformer Fuse; Secondary Transformer Fuse; Ground Modular Terminal Block; Mounting Collar; HOA Switch; Thermostat; Power Relay

Unit Mounting Description:

UUT-27b was wall mounted to the DCL test fixture using (4) 3/8" Grade 5 bolts. The test fixture was attached to (4) VMC MSSH-1 spring isolators with (1) ¾" threaded rod per isolator.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
104	8.0	24.0	32.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.68

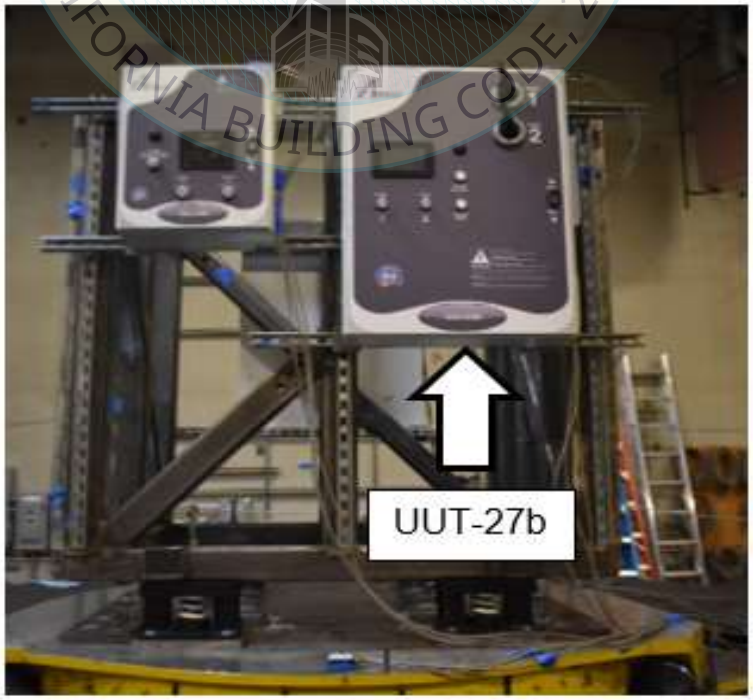


Figure 1. Overall view of UUT-27b

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.

HCAi OSP-0724 REVIEWED FOR CODE COMPLIANCE BY: Mohammad Karim DATE: 04/07/2022 CALIFORNIA BUILDING CODE, 2019

UNIT UNDER TEST (UUT)
Summary Sheet
UUT-28

DCL DYNAMIC CERTIFICATION LABORATORIES,LLC

DCL Project Number: 71743-1501

Manufacturer: Amico Source Corporation in collaboration with Axecon

Product Line: Air and Vacuum Systems Control Panels

Model Number: AMA3603-20863-55 (A-XXX-D-240P-SS-N-200-20863-TS)

Mounting: Rigid Base Mount on STEEL-PDL-WELDED-1 Panel Stand

Product Construction Summary: Painted carbon steel enclosures, NEMA 12

Options / Component Summary:

Enclosure, Contactor, Overload Relay, Audible Alarm Annunciator, Molded Case Circuit Breaker, Operating Mechanism for Circuit Breaker, Power Distribution Block, Control Transformer, PLC Base Controller, Analog, Digital Expansion Cards, Switch, Primary Transformer Fuse, Secondary Transformer Fuse

Unit Mounting Description:

UUT-28 was rigid base mounted to the shake table with (8) 1/2" Grade 5 bolts.

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
750	29.5	51.5	71.0	7.8	20.3	21.3

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.5	1.0	1.5	4.00	3.00	1.68	0.68

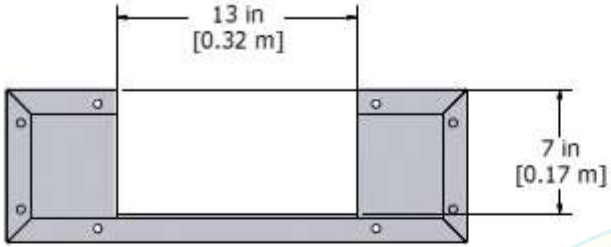
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BY Mohammad Kazemi
DATE: 04/07/2022
CALIFORNIA BUILDING CODE

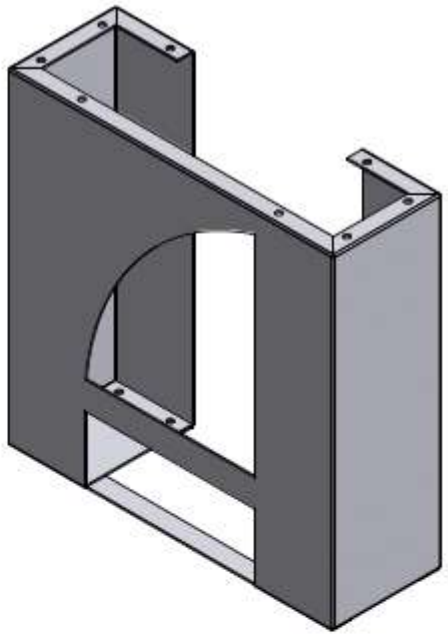


Figure 1. Overall view of UUT-28

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.

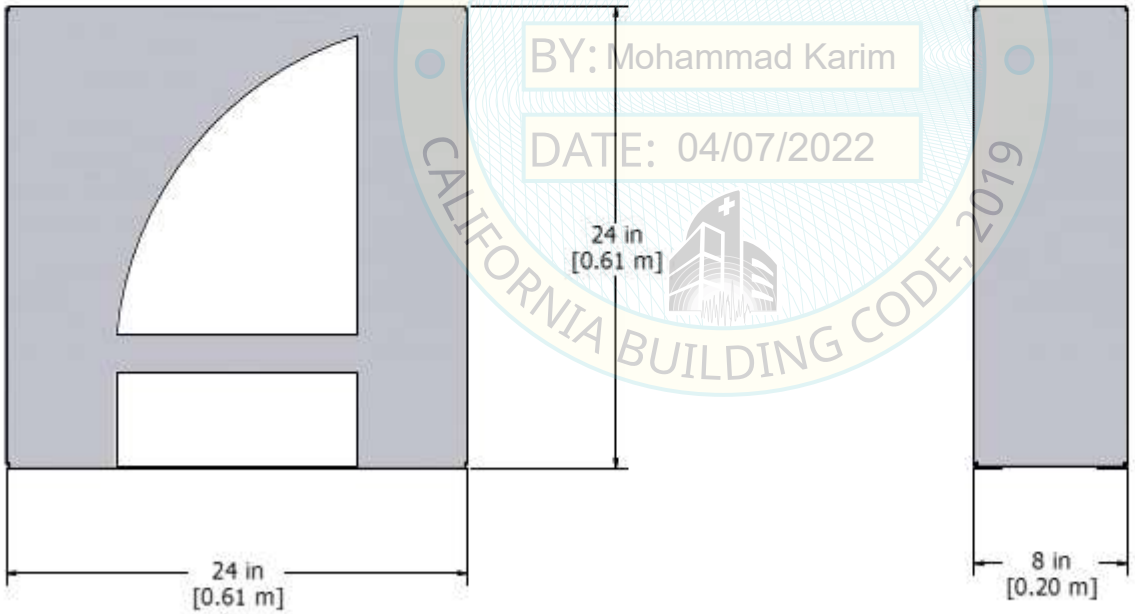
STEEL-PDL-APANEL





Controls panels using STEEL-PDL-APANEL will include seismic bracing using 2" x ¼" A36 Steel and 3/8" Grade 5 bolt with lock nut per brace.

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OSP-0724
BY: Mohammad Karim
DATE: 04/07/2022
CALIFORNIA BUILDING CODE, 2019



Amico
600 Prime Place, Hauppauge
NY 11788, USA
Direct Tel: 905.764.0800
Tel: 1.877.462.6426
Fax: 1.866.440.4986

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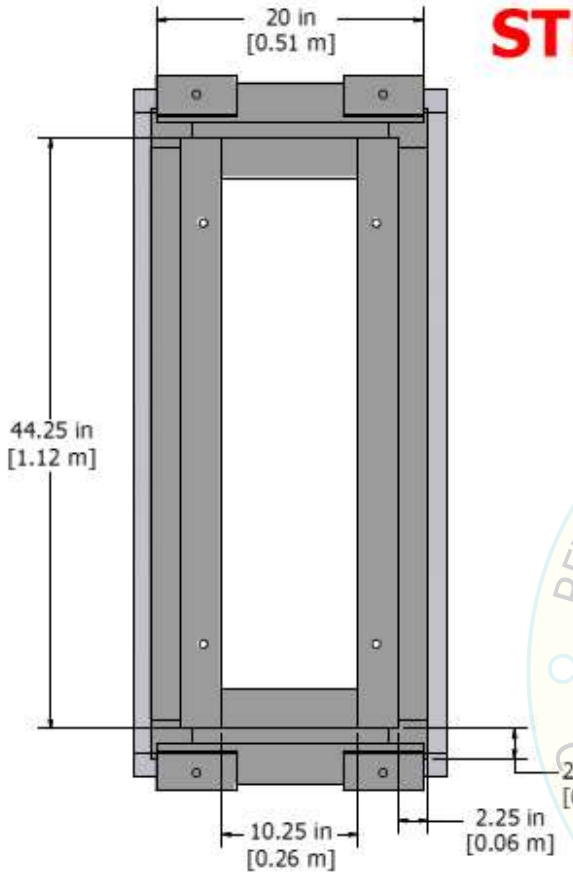
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MATERIAL: AS PROVIDED	
FINISH: AMICO SOURCE	DATE: 11/08/2021
DRAWN BY: KR	SHEET: 1 OF 1

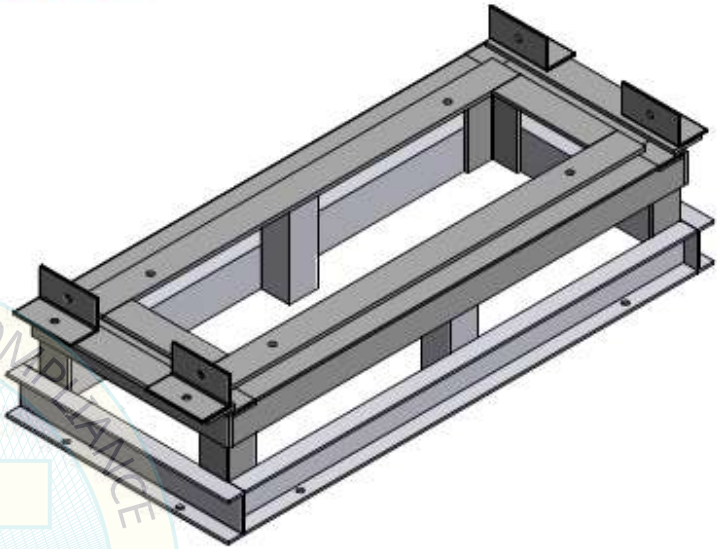
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SURFACE FINISH 63 Ufn
BREAK ALL EDGES 0.005-0.010
REMOVE SHARP EDGES AND BURRS
ANGLE TOLERANCE ±1°

DECIMAL TOLERANCES:
X.XX ±.05
X.XXX ±.005
X.XXXX ±.0005

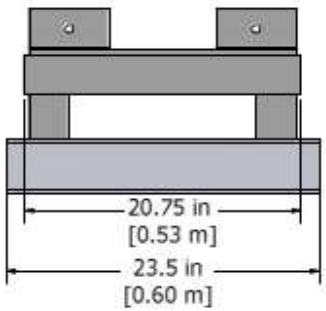
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PROJECT MANAGER:_____
ENGINEERING:_____
PRODUCTION:_____

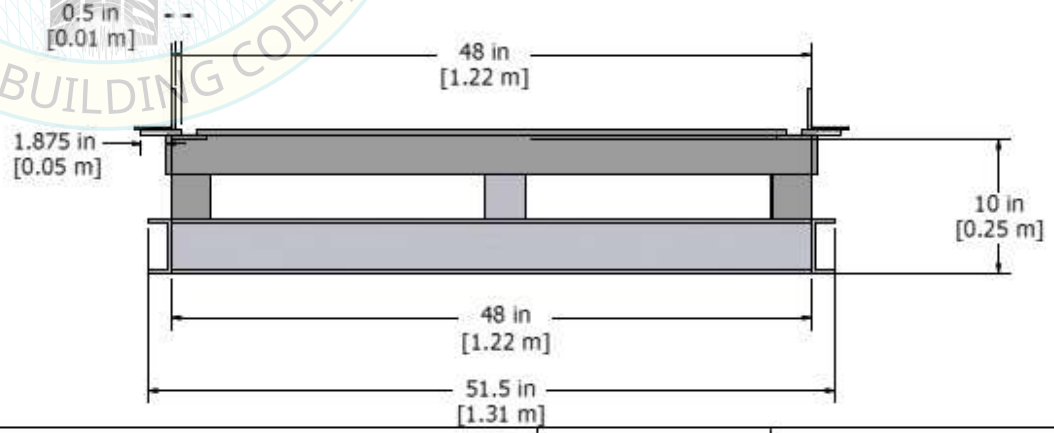
STEEL-PDL-WELDED





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OSP-0724
BY: Mohammad Karim
DATE: 04/07/2022
CALIFORNIA BUILDING CODE, 2019





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600 Prime Place, Hauppauge
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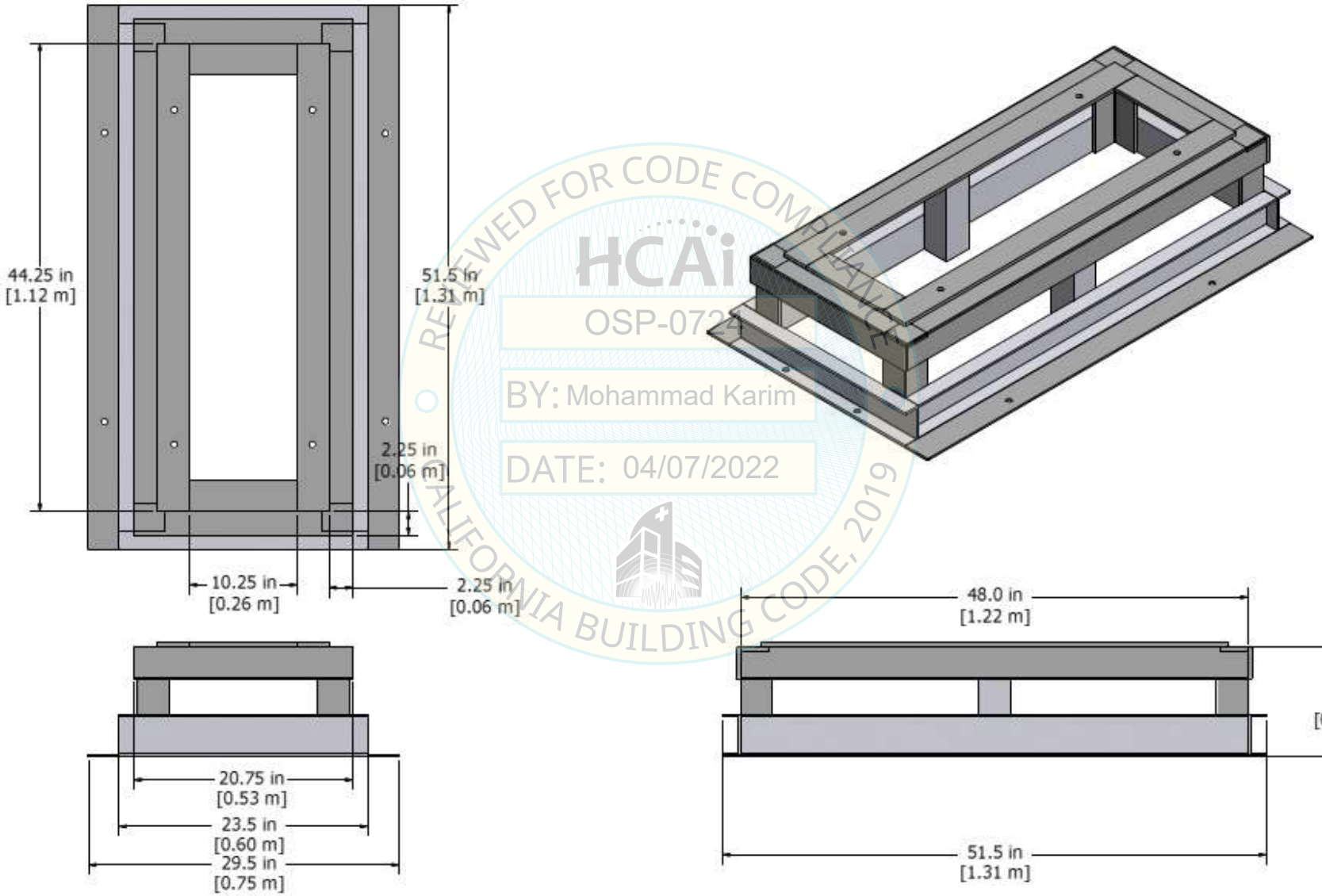
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MATERIAL: AS PROVIDED	
FINISH: AMICO SOURCE	DATE: SEP 13, 2021
DRAWN BY: KR	SHEET: 1 OF 1

UNLESS SPECIFIED:
ALL DIMENSIONS IN INCHES
SURFACE FINISH 63 uIn
BREAK ALL EDGES 0.005-0.010
REMOVE SHARP EDGES AND BURRS
ANGLE TOLERANCE ±1°

DECIMAL TOLERANCES:
XXX ±.05
XXXX ±.005
XXXXX ±.0025

APPROVED BY:
PROJECT MANAGER:_____
ENGINEERING:_____
PRODUCTION:_____

STEEL-PDL-WELDED-1



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HCAi
OSP-0724
BY: Mohammad Karim
DATE: 04/07/2022
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PART #: xxxxxxxxxxxxxxxxxx
DESCRIPTION: STEEL-PDL-WELDED
MATERIAL: AS PROVIDED
FINISH: AMICO SOURCE
DATE: 17/11/2021
DRAWN BY: ZW
SHEET: 1 OF 1

UNLESS SPECIFIED:
ALL DIMENSIONS IN INCHES
SURFACE FINISH 63 uIn
BREAK ALL EDGES 0.005-0.010
REMOVE SHARP EDGES AND BURRS
ANGLE TOLERANCE ±1°

DECIMAL TOLERANCES:
X.XX ±.05
X.XXX ±.005
X.XXXX ±.0005

APPROVED BY:
PROJECT MANAGER:
ENGINEERING:
PRODUCTION: