



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP – 0293-10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Yaskawa

Manufacturer's Technical Representative: John Cairo

Mailing Address: 2121 Norman Drive South, Waukegan, IL 60085

Telephone: (847) 887-7000 Email: john_cairo@yaskawa.com

Product Information

Product Name: Yaskawa 1000 Series Drives

Product Type: Variable Frequency Drives

Product Model Number: A1000 & Z1000 Series VFD's

(List all unique product identification numbers and/or part numbers)

General Description: Variable Frequency Drives that can be constructed of plastic or carbon steel. Seismic Enhancements made to the test units and modifications required to address anomalies observed during the tests shall be Incorporated into the production units.

Mounting Description: Rigid or Flexible wall mounted.

Applicant Information

Applicant Company Name: The VMC Group

Contact Person: John P. Giuliano PE

Mailing Address: 113 Main St, Bloomingdale, NJ 07403

Telephone: 973-838-1780 Email: john.giuliano@thevmcgroup.com

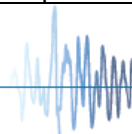
I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant:  Date: 9/27/16

Title: President Company Name: The VMC Group

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY
OSH-FD-759 (REV 12/16/15)



OSHPD

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OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

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

Company Name: The VMC Group

Name: Mr. Ken Tarlow California License Number: SE2851

Mailing Address: 113 Main St, Bloomingdale, NJ 07403

Telephone: 973-838-1780 Email: ken.tarlow@thvmcgroup.com

Supports and Attachments Preapproval

- ☐ Supports and attachments are preapproved under OPM-
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- ☒ Supports and attachments are not preapproved

Certification Method

- ☒ Testing in accordance with: ☒ ICC-ES AC156
- ☐ Other (Please Specify): _____
- _____
- _____

Testing Laboratory

Company Name: Clark Testing

Contact Name: Robert Francis

Mailing Address: 1801 Route 51, Jefferson Hills, PA 15025

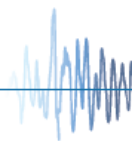
Telephone: 417-387-1001 Email: rfrancis@clarktesting.com

Company Name: Pacific Earthquake Engineering Research Center UC Berkeley (PEER)

Contact Name: Clément Barthès

Mailing Address: 1301 S. 46th Street, Building 420, Richmond, CA 94804

Telephone: 510-665-3409 Email: clementbarthes@berkeley.edu





OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = 4.50 (Flexible) & 1.5 (Rigid)

S_{DS} (Design spectral response acceleration at short period, g) = 2.0

a_p (In-structure equipment or component amplification factor) = 2.5

R_p (Equipment or component response modification factor) = 2.0 (Flexible) & 6.0 (Rigid)

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See Attachments

Overall dimensions and weight (or range thereof) = See Attachments

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ No

Design Basis of Equipment or Components (V/W) = _____

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

S_{D1} (Design spectral response acceleration at 1 second period, g) = _____

R (Response modification coefficient) = _____

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = _____

I_p (Importance factor) = 1.5

Height to Center of Gravity above base = _____

Equipment or Component Natural Frequencies (Hz) = _____

Overall dimensions and weight (or range thereof) = _____

Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☐ Calculations ☒ Manufacturer's Catalog

☐ Other(s) (Please Specify): _____

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature: [Signature] Date: 11/2/16

Print Name: M. R. Karim Title: SHFR

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.0 z/h = 1.0

Condition of Approval (if applicable): _____

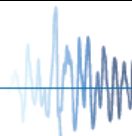


Table 1 - A1000 Series Standard VFDs (Industrial AC Drives)

Standard Drive Model Series	Output Current Rating	Nominal HP	Rated Input Voltage	NEMA Rating	Standard Drive Frame Size	Standard Drive Material	Maximum Cabinet Dims			Max. Cabinet Weight [lbs]	Mounting Method	Manufacturer	Tested / Interpolated / Extrapolated	S _{PS}	z/h
							Length [in]	Width [in]	Height [in]						
CIMR-AU2A	0360	150	208V	Type 1	12	Carbon Steel	13.8	23.2	46.0	238	Wall Mount	Yaskawa	UUT-3A / 3B	2.0	1.0
CIMR-AU2A	0415	175	208V	Type 1	12	Carbon Steel	13.8	23.2	46.0	240	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-AU4A	0250	200	480V	Type 1	12	Carbon Steel	13.8	23.2	46.0	233	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-AU4A	0296	250	480V	Type 1	12	Carbon Steel	13.8	23.2	46.0	246	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-AU4A	0362	300	480V	Type 1	12	Carbon Steel	13.8	23.2	46.0	257	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-AU5A	0192	200	600V	Type 1	12	Carbon Steel	13.8	23.2	46.0	233	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-AU5A	0242	250	600V	Type 1	12	Carbon Steel	13.8	23.2	46.0	235	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-AU4A	0414	350	480V	Type 1	13	Carbon Steel	14.6	24.1	48.3	292	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-AU4A	0515	400 & 450	480V	Type 1	14	Carbon Steel	14.6	30.4	61.3	504	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-AU4A	0675	500 & 600	480V	Type 1	14	Carbon Steel	14.6	30.4	61.3	515	Wall Mount	Yaskawa	UUT-4A / 4B	2.0	1.0

Table 2 - Z1000 Series Standard VFDs (Commercial HVAC Drives)

Standard Drive Model Series	Output Current Rating	Nominal HP	Rated Input Voltage	NEMA Rating	Standard Drive Frame Size	Standard Drive Material	Maximum Cabinet Dims			Max. Cabinet Weight [lbs]	Mounting Method	Manufacturer	Tested / Interpolated / Extrapolated	S _{PS}	z/h
							Length [in]	Width [in]	Height [in]						
CIMR-ZU2A	0011	3	208V	Type 1	1	Plastic	8.7	4.9	14.1	12.3	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
CIMR-ZU2A	0017	5	208V	Type 1	1	Plastic	8.7	4.9	14.1	13.0	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
CIMR-ZU4A	0005	3	480V	Type 1	1	Plastic	8.7	4.9	14.1	4.8	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
CIMR-ZU4A	0008	5	480V	Type 1	1	Plastic	8.7	4.9	14.1	7.6	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
CIMR-ZU4A	0011	7.5	480V	Type 1	1	Plastic	8.7	4.9	14.1	11.0	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
CIMR-ZU2A	0024	7.5	208V	Type 1	2	Plastic	9.3	4.9	14.1	16.3	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
CIMR-ZU2A	0031	10	208V	Type 1	2	Plastic	9.3	4.9	14.1	17.2	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
CIMR-ZU4A	0014	10	480V	Type 1	2	Plastic	9.3	4.9	14.1	16.1	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
CIMR-ZU4A	0021	15	480V	Type 1	2	Plastic	9.3	4.9	14.1	16.7	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
CIMR-ZU4A	0027	20	480V	Type 1	2	Plastic	9.3	4.9	14.1	18.5	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
CIMR-ZU2A	0046	15	208V	Type 1	3	Plastic	9.4	7.9	20.1	26.0	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
CIMR-ZU2A	0059	20	208V	Type 1	3	Plastic	9.4	7.9	20.1	29.0	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
CIMR-ZU4A	0034	25	480V	Type 1	3	Plastic	9.4	7.9	20.1	29.0	Wall Mount	Yaskawa	Internal to UUT-7A / 7B	2.0	1.0
CIMR-ZU4A	0040	30	480V	Type 1	3	Plastic	9.4	7.9	20.1	29.0	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU4A	0052	40	480V	Type 1	3	Plastic	9.4	7.9	20.1	29.0	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU2A	0075	25	208V	Type 1	4	Plastic	10.5	10	21.3	59.0	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU2A	0088	30	208V	Type 1	4	Plastic	10.5	10	21.3	62.0	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU2A	0114	40	208V	Type 1	4	Plastic	10.5	10	21.3	64.0	Wall Mount	Yaskawa	Internal to UUT-1A / 1B	2.0	1.0
CIMR-ZU4A	0052	40	480V	Type 1	4	Plastic	10.5	10	21.3	59.0	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU4A	0065	50	480V	Type 1	4	Plastic	10.5	10	21.3	64.0	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU4A	0077	60	480V	Type 1	4	Plastic	10.5	10	21.3	68.0	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU4A	0096	75	480V	Type 1	4	Plastic	10.5	10	21.3	70.0	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU4A	0124	100	480V	Type 1	5	Carbon Steel	11.5	10	27.6	101	Wall Mount	Yaskawa	Internal to UUT-2A / 2B / 9A/9B	2.0	1.0
CIMR-ZU2A	0143	50	208V	Type 1	6	Carbon Steel	15.9	13.4	30.5	143	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU2A	0169	60	208V	Type 1	6	Carbon Steel	15.9	13.4	30.5	150	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU2A	0211	75	208V	Type 1	6	Carbon Steel	15.9	13.4	30.5	154	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU2A	0273	100	208V	Type 1	6	Carbon Steel	15.9	13.4	30.5	161	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU4A	0156	125	480V	Type 1	6	Carbon Steel	15.9	13.4	30.5	161	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU4A	0180	150	480V	Type 1	6	Carbon Steel	15.9	13.4	30.5	167	Wall Mount	Yaskawa	Internal to UUT-5A / 5B	2.0	1.0
CIMR-ZU4A	0240	200	480V	Type 1	6	Carbon Steel	15.9	13.4	30.5	174	Wall Mount	Yaskawa	Internal to UUT-6A / 6B	2.0	1.0
CIMR-ZU4A	0302	250	480V	Type 1	7	Carbon Steel	19	17.9	41.1	286	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU2A	0343	125	208V	Type 1	8	Carbon Steel	13.8	23.2	46	238	Wall Mount	Yaskawa	Same as UUT-3A / 3B ⁽¹⁾	2.0	1.0
CIMR-ZU2A	0396	150	208V	Type 1	8	Carbon Steel	13.8	23.2	46	238	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU4A	0361	300	480V	Type 1	8	Carbon Steel	13.8	23.2	46	257	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU4A	0414	350	480V	Type 1	9	Carbon Steel	14.6	24.1	48.3	292	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU4A	0480	400	480V	Type 1	10	Carbon Steel	14.6	30.4	61.3	504	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU4A	0515	450	480V	Type 1	10	Carbon Steel	14.6	30.4	61.3	504	Wall Mount	Yaskawa	Interpolated	2.0	1.0
CIMR-ZU4A	0590	500	480V	Type 1	10	Carbon Steel	14.6	30.4	61.3	515	Wall Mount	Yaskawa	Same as UUT-4A / 4B ⁽¹⁾	2.0	1.0

Notes

¹⁾ Commercial Drives (Z1000 Series) are physically identical to Industrial Drives (A1000 Series) with the only differences being rating and labeling

Table 3 - Z1000 Series Bypass VFDs (Commercial HVAC Drives)

Model Number Designation			Output Current Rating	Nominal HP	Rated Input Voltage	NEMA Rating	Cabinet Size	Bypass Cabinet Material	Drive Material	Maximum Cabinet Dims			Max. Cabinet Weight [lbs]	Mounting Method	Manufacturer	Tested / Interpolated / Extrapolated	S _{OS}	z/h
Drive Base Model	Power Options	Control Options								Length [in]	Width [in]	Height [in]						
Z1B1D002	PXX	TXX	2.4	0.5	208V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	70	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1D003	PXX	TXX	3.5	0.75	208V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	70	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1D004	PXX	TXX	4.6	1	208V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	70	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1D007	PXX	TXX	7.5	2	208V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	70	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1D010	PXX	TXX	10.6	3	208V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	70	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1D016	PXX	TXX	16.7	5	208V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	70	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1B001	PXX	TXX	1.1 / 1.6	0.5 / 0.75	480V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	70	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1B002	PXX	TXX	2.1	1	480V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	70	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1B003	PXX	TXX	3.4	2	480V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	70	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1B004	PXX	TXX	4.8	3	480V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	70	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1B007	PXX	TXX	7.6	5	480V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	70	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1B011	PXX	TXX	11.0	7.5	480V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	70	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1D024	PXX	TXX	24.2	7.5	208V	Type 1	W2	Plastic	Plastic	45.1	6.8	12.9	80	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1D030	PXX	TXX	30.8	10	208V	Type 1	W2	Plastic	Plastic	45.1	6.8	12.9	80	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1B014	PXX	TXX	14.0	10	480V	Type 1	W2	Plastic	Plastic	45.1	6.8	12.9	80	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1B021	PXX	TXX	21.0	15	480V	Type 1	W2	Plastic	Plastic	45.1	6.8	12.9	80	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1B027	PXX	TXX	27.0	20	480V	Type 1	W2	Plastic	Plastic	45.1	6.8	12.9	80	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1D046	PXX	TXX	46.2	15	208V	Type 1	W3	Plastic	Plastic	48.2	10.2	13.2	90	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1D059	PXX	TXX	59.4	20	208V	Type 1	W3	Plastic	Plastic	48.2	10.2	13.2	90	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1B034	PXX	TXX	34.0	25	480V	Type 1	W3	Plastic	Plastic	48.2	10.2	13.2	90	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1B1B034	PMG	TD	34.0	25	480V	Type 1	W3	Plastic	Plastic	48.2	10.2	13.2	90	Wall Mount	Yaskawa	UUT-7A / 7B	2.0	1.0
Z1B1B040	PXX	TXX	40.0	30	480V	Type 1	W3	Plastic	Plastic	48.2	10.2	13.2	90	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1B1B052	PXX	TXX	52.0	40	480V	Type 1	W3	Plastic	Plastic	48.2	10.2	13.2	90	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1B1D074	PXX	TXX	74.8	25	208V	Type 1	W4	Plastic	Plastic	52.8	12.7	14.2	160	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1B1D088	PXX	TXX	88.0	30	208V	Type 1	W5	Carbon Steel	Plastic	42.8	25.8	16.1	280	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1B1D114	PXX	TXX	114.0	40	208V	Type 1	W5	Carbon Steel	Plastic	42.8	25.8	16.1	280	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1B1D114	PMB	TD	114.0	40	208V	Type 1	W5	Carbon Steel	Plastic	42.8	25.8	16.1	280	Wall Mount	Yaskawa	UUT-1A / 1B	2.0	1.0
Z1B1B052	PXX	TXX	52.0	40	480V	Type 1	W4	Plastic	Plastic	52.8	12.7	14.2	160	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1B1B065	PXX	TXX	65.0	50	480V	Type 1	W4	Plastic	Plastic	52.8	12.7	14.2	160	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1B1B077	PXX	TXX	77.0	60	480V	Type 1	W4	Plastic	Plastic	52.8	12.7	14.2	160	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1B1B096	PXX	TXX	96.0	75	480V	Type 1	W5	Carbon Steel	Plastic	42.8	25.8	16.1	280	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1B1B124	PXX	TXX	124.0	100	480V	Type 1	W5	Carbon Steel	Carbon Steel	42.8	25.8	16.1	280	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1B1B124	PMB	TD	124.0	100	480V	Type 1	W5	Carbon Steel	Carbon Steel	42.8	25.8	16.1	280	Wall Mount	Yaskawa	UUT-2A / 2B	2.0	1.0
Z1B1D143	PXX	TXX	143.0	50	208V	Type 1	W6	Carbon Steel	Carbon Steel	49.1	28.4	19.0	380	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1B1D169	PXX	TXX	169.0	60	208V	Type 1	W6	Carbon Steel	Carbon Steel	49.1	28.4	19.0	380	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1B1B156	PXX	TXX	156.0	125	480V	Type 1	W6	Carbon Steel	Carbon Steel	49.1	28.4	19.0	380	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1B1B180	PXX	TXX	180.0	150	480V	Type 1	W6	Carbon Steel	Carbon Steel	49.1	28.4	19.0	380	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1B1B180	PMG	TD	180.0	150	480V	Type 1	W6	Carbon Steel	Carbon Steel	49.1	28.4	19.0	380	Wall Mount	Yaskawa	UUT-5A / 5B	2.0	1.0
Z1B3B124	PFK23	TDM	124.0	100	480V	Type 3R	W4	Carbon Steel	Carbon Steel	51.1	39.0	21.4	550	Wall Mount	Yaskawa	UUT-9A/9B	2.0	1.0

Table 4 - Z1000 Series Configured VFDs (Commercial HVAC Drives)

Model Number Designation			Output Current Rating	Nominal HP	Rated Input Voltage	NEMA Rating	Cabinet Size	Configured Cabinet Material	Configured Drive Material	Maximum Cabinet Dims			Max. Cabinet Weight [lbs]	Mounting Method	Manufacturer	Tested / Interpolated / Extrapolated	S _{OS}	z/h
Drive Base Model	Power Options	Control Options								Length [in]	Width [in]	Height [in]						
Z1C1D002	PXXX	TXX	2.4	0.5	208V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	65	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1D003	PXXX	TXX	3.5	0.75	208V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	65	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1D004	PXXX	TXX	4.6	1	208V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	65	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1D007	PXXX	TXX	7.5	2	208V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	65	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1D010	PXXX	TXX	10.6	3	208V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	65	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1D016	PXXX	TXX	16.7	5	208V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	65	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1B001	PXXX	TXX	1.1 / 1.6	0.5 / 0.75	480V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	65	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1B002	PXXX	TXX	2.1	1	480V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	65	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1B003	PXXX	TXX	3.4	2	480V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	65	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1B004	PXXX	TXX	4.8	3	480V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	65	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1B007	PXXX	TXX	7.6	5	480V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	65	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1B011	PXXX	TXX	11.0	7.5	480V	Type 1	W1	Plastic	Plastic	41.6	6.8	12.9	65	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1D024	PXXX	TXX	24.2	7.5	208V	Type 1	W2	Plastic	Plastic	45.1	6.8	12.9	75	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1D030	PXXX	TXX	30.8	10	208V	Type 1	W2	Plastic	Plastic	45.1	6.8	12.9	75	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1B014	PXXX	TXX	14.0	10	480V	Type 1	W2	Plastic	Plastic	45.1	6.8	12.9	75	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1B021	PXXX	TXX	21.0	15	480V	Type 1	W2	Plastic	Plastic	45.1	6.8	12.9	75	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1B027	PXXX	TXX	27.0	20	480V	Type 1	W2	Plastic	Plastic	45.1	6.8	12.9	75	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1D046	PXXX	TXX	46.2	15	208V	Type 1	W3	Plastic	Plastic	48.2	10.2	13.2	85	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1D059	PXXX	TXX	59.4	20	208V	Type 1	W3	Plastic	Plastic	48.2	10.2	13.2	85	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1B034	PXXX	TXX	34.0	25	480V	Type 1	W3	Plastic	Plastic	48.2	10.2	13.2	85	Wall Mount	Yaskawa	Extrapolated	2.0	1.0
Z1C1B034	PMG	TD	34.0	25	480V	Type 1	W3	Plastic	Plastic	48.2	10.2	13.2	85	Wall Mount	Yaskawa	Similar to UUT-7A / 7B ⁽¹⁾	2.0	1.0
Z1C1B040	PXXX	TXX	40.0	30	480V	Type 1	W3	Plastic	Plastic	48.2	10.2	13.2	85	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1B052	PXXX	TXX	52.0	40	480V	Type 1	W3	Plastic	Plastic	48.2	10.2	13.2	85	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1D074	PXXX	TXX	74.8	25	208V	Type 1	W4	Plastic	Plastic	52.8	12.7	14.2	160	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1D088	PXXX	TXX	88.0	30	208V	Type 1	W4	Plastic	Plastic	52.8	12.7	14.2	160	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1D114	PXXX	TXX	114.0	40	208V	Type 1	W4	Plastic	Plastic	52.8	12.7	14.2	160	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1D114	PMB	TD	114.0	40	208V	Type 1	W4	Plastic	Plastic	52.8	12.7	14.2	160	Wall Mount	Yaskawa	Similar to UUT-1A / 1B ⁽²⁾	2.0	1.0
Z1C1B052	PXXX	TXX	52.0	40	480V	Type 1	W4	Plastic	Plastic	52.8	12.7	14.2	160	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1B065	PXXX	TXX	65.0	50	480V	Type 1	W4	Plastic	Plastic	52.8	12.7	14.2	160	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1B077	PXXX	TXX	77.0	60	480V	Type 1	W4	Plastic	Plastic	52.8	12.7	14.2	160	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1B096	PXXX	TXX	96.0	75	480V	Type 1	W4	Plastic	Plastic	52.8	12.7	14.2	180	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1B124	PXXX	TXX	124.0	100	480V	Type 1	W5	Carbon Steel	Carbon Steel	42.8	25.8	16.1	240	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1B124	PMB	TD	124.0	100	480V	Type 1	W5	Carbon Steel	Carbon Steel	42.8	25.8	16.1	240	Wall Mount	Yaskawa	Similar to UUT-2A / 2B ⁽³⁾	2.0	1.0
Z1C1D143	PXXX	TXX	143.0	50	208V	Type 1	W6	Carbon Steel	Carbon Steel	49.1	28.4	19.0	385	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1D169	PXXX	TXX	169.0	60	208V	Type 1	W6	Carbon Steel	Carbon Steel	49.1	28.4	19.0	385	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1D211	PXXX	TXX	211.0	75	208V	Type 1	W6	Carbon Steel	Carbon Steel	49.1	28.4	19.0	385	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1D273	PXXX	TXX	273.0	100	208V	Type 1	W6	Carbon Steel	Carbon Steel	49.1	28.4	19.0	450	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1B156	PXXX	TXX	156.0	125	480V	Type 1	W6	Carbon Steel	Carbon Steel	49.1	28.4	19.0	385	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1B180	PXXX	TXX	180.0	150	480V	Type 1	W6	Carbon Steel	Carbon Steel	49.1	28.4	19.0	385	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1B180	PMG	TD	180.0	150	480V	Type 1	W6	Carbon Steel	Carbon Steel	49.1	28.4	19.0	385	Wall Mount	Yaskawa	Similar to UUT-5A / 5B ⁽⁴⁾	2.0	1.0
Z1C1B240	PXXX	TXX	240.0	200	480V	Type 1	W6	Carbon Steel	Carbon Steel	49.1	28.4	19.0	450	Wall Mount	Yaskawa	Interpolated	2.0	1.0
Z1C1B240	PMG	TL	240.0	200	480V	Type 1	W6	Carbon Steel	Carbon Steel	49.1	28.4	19.0	450	Wall Mount	Yaskawa	UUT-6A / 6B	2.0	1.0

Notes

- 1) The difference between Z1C1B034 and shake tested Z1B1D034 (UUT-07A / 07B) is that Z1C1B034 does not have the bypass contactor and related bypass wiring.
- 2) The difference between Z1C1D114 and shake tested Z1B1D114 (UUT-01A / 01B) is that Z1C1D114 does not have the bypass contactor and related bypass wiring. The Z1C1D114 is also installed in a smaller cabinet (W4).
- 3) The difference between Z1C1D124 and shake tested Z1B1D124 (UUT-02A / 02B) is that Z1C1B124 does not have the bypass contactor and related bypass wiring.
- 4) The difference between Z1C1B180 and shake tested Z1B1B180 (UUT-05A / 05B) is that Z1C1B180 does not have the bypass contactor and related circuitry.

Table 5 - Certified Subcomponents: Current Transformers

Manufacturer	Model	Rating [Amps]	UUT / Int / Ext
Dent Instruments	CT-HSC-020-U	20	UUT-5A / 5B
Dent Instruments	CT-HSC-050-U	50	Interpolated
Dent Instruments	CT-HMC-0100-U	100	UUT-7A / 7B
Dent Instruments	CT-HMC-0200-U	200	Interpolated
Dent Instruments	CT-SCM-0400-U	400	UUT-5A / 5B

Table 6 - Certified Subcomponents: Circuit Breakers

Manufacturer	Model	Rating [Amps]	UUT / Int / Ext
Schneider	HLL36015	15	Extrapolated
Schneider	HLL36020	20	Extrapolated
Schneider	HLL36025	25	Extrapolated
Schneider	HLL36035	35	Extrapolated
Schneider	HLL36040	40	Extrapolated
Schneider	HLL36050	50	Extrapolated
Schneider	HLL36060	60	Extrapolated
Schneider	HLL36070	70	UUT-7A / 7B
Schneider	HLL36080	80	Interpolated
Schneider	HLL36100	100	Interpolated
Schneider	HLL36110	110	Interpolated
Schneider	HLL36150	150	Interpolated
Schneider	HLL36150M74	150	UUT-1A / 1B
Schneider	JLL36175	175	Interpolated
Schneider	JLL36250M75	250	UUT-2A / 2B / 5A / 5B
Schneider	JLM36250M75	250	Interpolated
Schneider	LJM36400U31X	400	Interpolated
Schneider	LLM36400U31X	400	Interpolated
Schneider	LLM36400U31X	400	UUT-6A / 6B

Table 7 - Certified Subcomponents: Drive I/O & Bypass Contactors

Manufacturer	Model	Rating [Amps]	UUT / Int / Ext
Schneider	LC1D09G7	25	UUT-5A / 5B
Schneider	LC1D12G7	25	Interpolated
Schneider	LC1D18G7	32	Interpolated
Schneider	LC1D25G7	40	Interpolated
Schneider	LC1D32G7	50	Interpolated
Schneider	LC1D40AG7	60	UUT-7A / 7B
Schneider	LC1D50AG7	70	Interpolated
Schneider	LC1D65AG7	80	Interpolated
Schneider	LC1D80G7	110	Interpolated
Schneider	LC1D115G7	160	Interpolated
Schneider	LC1D150G7	160	UUT-1A / 1B / 2A / 2B / 5A / 5B
Schneider	LC1F185G7	200	Interpolated
Schneider	LC1F265G7	285	UUT-9A / 9B

Table 8 - Certified Subcomponents: Bypass Control Board

Manufacturer	Model	UUT / Int / Ext
Yaskawa	UTC00046X (where X denotes number 0 through 9)	UUT-1A / 1B / 2A / 2B / 5A / 5B / 6A / 6B / 7A / 7B / 9A / 9B

Table 9 - Certified Subcomponents: Bypass Power Supply

Manufacturer	Model	Rating [Watts]	UUT / Int / Ext
XP POWER	VCT40US05	40	UUT-1A / 1B / 2A / 2B / 5A / 5B / 9A / 9B

Table 10 - Certified Subcomponents: Overload Relays

Manufacturer	Model	UUT / Int / Ext
Schneider	LRD06	UUT-6A / 6B
Schneider	LRD07	Interpolated
Schneider	LRD1508	Interpolated
Schneider	LRD1510	Interpolated
Schneider	LRD1512	Interpolated
Schneider	LRD1516	Interpolated
Schneider	LRD1521	Interpolated
Schneider	LR9-F7575	Interpolated
Schneider	LRD06	Interpolated
Schneider	LRD1522	Interpolated
Schneider	LRD1532	Interpolated
Schneider	LRD340L	UUT-7A / 7B
Schneider	LRD365L	Interpolated
Schneider	LRD350L	Interpolated
Schneider	LR2D3563	Interpolated
Schneider	LR9-F5567	Interpolated
Schneider	LR9-F5569	UUT-1A / 1B / 2A / 2B / 9A / 9B
Schneider	LR9-F5571	UUT-5A / 5B
Schneider	LR9-F7575	Extrapolated

Table 11 - Certified Subcomponents: Control Transformers

Manufacturer	Model	Rating [VA]	UUT / Int / Ext
Schneider	TF100D3	100	Extrapolated
Schneider	TF100D1	100	UUT-6A / 6B
Schneider	TF150D3	150	UUT-1A / 1B
Schneider	TF150D1	150	UUT-2A / 2B
Schneider	TF300D3	300	Interpolated
Schneider	TF300D1	300	UUT-5A / 5B
Schneider	TF500D3	500	Interpolated
Schneider	TF750D1	750	UUT-9A/9B

Table 12 - Certified Subcomponents: Cabinet Cooling Fans

Manufacturer	Model	Rating [CFM]	UUT / Int / Ext
NMB	4715FS-12T-B50 (4" dia., 5 blade, plastic fan, 14.4W motor, alum casing)	80	UUT-1A / 1B / 2A / 2B
NMB	5915PC-12T-B30-A00 (6" dia., 5 blade, plastic fan, 32.0W motor, alum casing)	200	UUT-5A / 5B / 6A / 6B

Table 13 - Certified Subcomponents: Drive Input Fuses

Manufacturer	Model	Rating [Amps]	UUT / Int / Ext
Bussmann	LPJ-2SP	2	UUT-5A / 5B
Bussmann	LPJ-2 1/2SP	2.5	Interpolated
Bussmann	LPJ-3 1/2SP	3.5	Interpolated
Bussmann	LPJ-5SP	5	Interpolated
Bussmann	LPJ-7SP	7	Interpolated
Bussmann	LPJ-10SP	10	Interpolated
Bussmann	LPJ-12SP	12	Interpolated
Bussmann	LPJ-15SP	15	Interpolated
Bussmann	LPJ-20SP	20	Interpolated
Bussmann	LPJ-25SP	25	Interpolated
Bussmann	LPJ-30SP	30	Interpolated
Bussmann	LPJ-35SP	35	Interpolated
Bussmann	LPJ-40SP	40	Interpolated
Bussmann	LPJ-45SP	45	Interpolated
Bussmann	LPJ-50SP	50	Interpolated
Bussmann	LPJ-60SP	60	Interpolated
Bussmann	LPJ-70SP	70	Interpolated
Bussmann	LPJ-80SP	80	Interpolated
Bussmann	LPJ-90SP	90	Interpolated
Bussmann	LPJ-110SP	110	Interpolated
Bussmann	LPJ-150SP	150	Interpolated
Bussmann	LPJ-175SP	175	UUT-1A / 1B / 2A / 2B

Table 14 - Certified Subcomponents: Drive Input Fuses

Manufacturer	Model	Rating [Amps]	UUT / Int / Ext
Bussmann	FWH-40B	40	UUT-5A / 5B
Bussmann	FWH-45B	45	Interpolated
Bussmann	FWH-50B	50	Interpolated
Bussmann	FWH-60B	60	Interpolated
Bussmann	FWH-80B	80	Interpolated
Bussmann	FWH-100B	100	Interpolated
Bussmann	FWH-125B	125	Interpolated
Bussmann	FWH-150B	150	Interpolated
Bussmann	FWH-175B	175	Interpolated
Bussmann	FWH-200B	200	Interpolated
Bussmann	FWH-225A	225	Interpolated
Bussmann	FWH-250A	250	UUT-1A / 1B / 2A / 2B / 9A / 9B
Bussmann	FWH-275A	275	Interpolated
Bussmann	FWH-300A	300	Interpolated
Bussmann	FWH-350A	350	Interpolated
Bussmann	FWH-400A	400	UUT-6A / 6B
Bussmann	FWH-450A	450	UUT-9A / 9B

Table 15 - Certified Subcomponents: Input Line Reactor

Manufacturer	Model	Rating [Amps]	Weight [lbs]	UUT / Int / Ext
MTE	RLW-01P603	1.6	1.7	UUT-6A / 6B
MTE	RLW-02P103	2.1	1.6	Interpolated
MTE	RLW-03P401	3.4	1.6	Interpolated
MTE	RLW-03P403	3.4	1.6	Interpolated
MTE	RLW-04P801	4.8	1.7	Interpolated
MTE	RLW-04P803	4.8	1.8	Interpolated
MTE	RLW-07P601	7.6	1.8	Interpolated
MTE	RLW-07P603	7.6	2.8	Interpolated
MTE	RLW-001101	11	2.7	Interpolated
MTE	RLW-001103	11	4.2	Interpolated
MTE	RLW-001403	14	4.3	Interpolated
MTE	RLW-002101	21	4.2	Interpolated
MTE	RLW-002103	21	7.2	Interpolated
MTE	RLW-002801	28	5.1	Interpolated
MTE	RLW-002803	28	9.5	Interpolated
MTE	RLW-003501	35	10	Interpolated
MTE	RLW-003503	35	13	Interpolated
MTE	RLW-004603	46	17	Interpolated
MTE	RLW-005501	55	18	Interpolated
MTE	RLW-006503	65	22	Interpolated
MTE	RLW-008301	83	19	Interpolated
MTE	RLW-008303	83	26	Interpolated
MTE	RLW-010401	104	22	Interpolated
MTE	RLW-010403	104	28	Interpolated
MTE	RLW-013001	130	26	Interpolated
MTE	RLW-013002	130	37	Interpolated
MTE	RLW-016001	160	34	Interpolated
MTE	RLW-016003	160	49	Interpolated
MTE	RLW-020001	200	34	Interpolated
MTE	RLW-020003	200	49	Interpolated
MTE	RLW-025001	250	35	Interpolated
MTE	RLW-025003	250	55	UUT-6A / 6B
MTE	RLW-020005	200	75	Interpolated
MTE	RLW-032203	322	76	Interpolated
MTE	RLW-041401	414	78	UUT-9A / 9B

Table 16 - Certified Subcomponents: Noise Filter

Manufacturer	Model	UUT / Int / Ext
MTE	M-1786	UUT-1A / 1B / 2A / 2B / 6A / 6B

Table 17 - Certified Subcomponents: Lonworks

Manufacturer	Model	UUT / Int / Ext
YASKAWA	SI-W3	UUT-1A / 1B / 2A / 2B / 6A / 6B

Table 18 - Certified Subcomponents: Ethernet / IP

Manufacturer	Model	UUT / Int / Ext
YASKAWA	SI-EN3	UUT-1A / 1B / 2A / 2B / 5A / 5B

Table 19 - Certified Subcomponents: Terminal & Power Distribution Blocks

Manufacturer	Model	Rating [Amps]	UUT / Int / Ext
Cooper Bussman	NDN63-WH-UL	65	UUT-5A / 5B
Cooper Bussman	NDN111-WH-UL	90	Interpolated
Cooper Bussman	14002-3	115	UUT-5A / 5B
Cooper Bussman	PDB370-3	175	Interpolated
Cooper Bussman	16280-3	175	Interpolated
Cooper Bussman	1BS102	400	Interpolated
Cooper Bussman	1BS104	600	UUT-9A / 9B
Marathon Special Projects	EPBAD21	115	UUT-9A / 9B
Marathon Special Projects	1421572	150	Interpolated
Marathon Special Projects	1323572	175	UUT-5A / 5B
Marathon Special Projects	1333126	310	Interpolated
Marathon Special Projects	1333320	510	UUT-5A / 5B
Marathon Special Projects	1453301	760	UUT-6A / 6B
Mersen	MPDB63153	175	UUT-9A / 9B
Mersen	MPDB67001	310	Interpolated
Mersen	MPDB67523	460	Interpolated
Mersen	MPDB69093	760	UUT-9A / 9B
Phoenix	3044102	30	UUT-9A / 9B

Table 20 - Certified Subcomponents: Disconnect Switches

Manufacturer	Model	Rating [Amps]	UUT / Int / Ext
Schneider	V0	20	UUT-9A / 9B
Schneider	V3	45	UUT-7A / 7B
Schneider	V4	63	Interpolated
Schneider	V5	100	Interpolated
Schneider	V6	115	Interpolated
Schneider	HLL36000S15	150	Interpolated
Schneider	JLL36000S17	175	Interpolated
Schneider	JGL36000S17	175	UUT-1A / 1B / 2A / 2B
Schneider	JLM36000S25	250	Interpolated
Schneider	JLL36000S25	250	UUT-5A / 5B
Schneider	JGF36000S25	250	Interpolated
Schneider	JGL36000S25	250	Interpolated
Schneider	LLM36000S40X	400	Interpolated
Schneider	LLM36400U31X	400	UUT-6A / 6B



UNIT UNDER TEST (UUT) Summary Sheet

UUT-01A

VMA-47676-01

Model Line	Model Number	Manufacturer
Z1000	Z1B1D114	Yaskawa

Product Construction Summary

Carbon Steel NEMA 1 Enclosure

Options / Subcomponent Summary

Circuit Breaker-150A; Drive I/O Contactor-160A; Bypass Contactor-160A; Power Supply-40W; Overload Relay- 114A,208V; Control Transformer-150VA; Cabinet Cooling Fans-80CFM; Drive Input Fuses-175A & 250A; Disconnect Switch-175A

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
245	43	26	16	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

UUT-01A was wall-mounted to the fixture using qty (4) 1/2"-13 Grade 5 bolts in the manufacturer-provided holes. The wall fixture was rigidly mounted to the shake table using qty (12) 3" welds, 1/4" wide.



All units were filled with contents and maintained structural integrity and functionality



UNIT UNDER TEST (UUT) Summary Sheet

UUT-01B

VMA-47676-01

Model Line	Model Number	Manufacturer
Z1000	Z1B1D114	Yaskawa

Product Construction Summary

Carbon Steel NEMA 1 Enclosure

Options / Subcomponent Summary

Circuit Breaker-150A; Drive I/O Contactor-160A; Bypass Contactor-160A; Power Supply-40W; Overload Relay- 114A,208V; Control Transformer-150VA; Cabinet Cooling Fans-80CFM; Drive Input Fuses-175A & 250A; Disconnect Switch-175A

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
245	43	26	16	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

UUT-01B was wall-mounted to the fixture using qty (4) 1/2"-13 Grade 5 bolts in the manufacturer-provided holes. The wall fixture was mounted on qty (4) VMC-Manufactured AWMR-R-1 spring isolators using qty (3) 1/2"-13 Grade 5 bolts per isolator. Each isolator was attached to the fixture using qty (2) 4" welds, 1/4" wide.



All units were filled with contents and maintained structural integrity and functionality



UNIT UNDER TEST (UUT) Summary Sheet

UUT-02A

VMA-47676-01

Model Line	Model Number	Manufacturer
Z1000	Z1B1D114	Yaskawa

Product Construction Summary

Carbon Steel NEMA 1 Enclosure

Options / Subcomponent Summary

Circuit Breaker-250A; Drive I/O Contactor-160A; Bypass Contactor-160A; Power Supply-40W; Overload Relay- 124A,480V; Control Transformer-150VA; Cabinet Cooling Fans-80CFM; Drive Input Fuses-175A & 250A; Disconnect Switch-175A

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
245	43	26	16	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

UUT-02A was wall-mounted to the fixture using qty (4) 1/2"-13 Grade 5 bolts in the manufacturer-provided holes. The wall fixture was rigidly mounted to the shake table using qty (12) 3" welds, 1/4" wide.



All units were filled with contents and maintained structural integrity and functionality



UNIT UNDER TEST (UUT) Summary Sheet

UUT-02B

VMA-47676-01

Model Line	Model Number	Manufacturer
Z1000	Z1B1D114	Yaskawa

Product Construction Summary

Carbon Steel NEMA 1 Enclosure

Options / Subcomponent Summary

Circuit Breaker-250A; Drive I/O Contactor-160A; Bypass Contactor-160A; Power Supply-40W; Overload Relay- 124A,480V; Control Transformer-150VA; Cabinet Cooling Fans-80CFM; Drive Input Fuses-175A & 250A; Disconnect Switch-175A

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
245	43	26	16	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

UUT-02B was wall-mounted to the fixture using qty (4) 1/2"-13 Grade 5 bolts in the manufacturer-provided holes. The wall fixture was mounted on qty (4) VMC-Manufactured AWMR-R-1 spring isolators using qty (3) 1/2"-13 Grade 5 bolts per isolator. Each isolator was attached to the fixture using qty (2) 4" welds, 1/4" wide.



All units were filled with contents and maintained structural integrity and functionality



UNIT UNDER TEST (UUT) Summary Sheet

UUT-03A

VMA-47676-01

Model Line	Model Number	Manufacturer
A1000	CIMR-AU2A0360XXX	Yaskawa

Product Construction Summary

Carbon Steel NEMA 1 Enclosure

Options / Subcomponent Summary

Cabinet Cooling Fan-NMB; (6) Insolated Gate Bipolar Transistor-630V,400A; (6) Diode- 800 V 150 A; Contactor 532A

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
216	14	23	32	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

UUT-03A was wall-mounted to the fixture using qty (4) 1/2"-13 Grade 5 bolts in the manufacturer-provided holes. The wall fixture was rigidly mounted to the shake table using qty (12) 3" welds, 1/4" wide.



All units were filled with contents and maintained structural integrity and functionality



UNIT UNDER TEST (UUT) Summary Sheet

UUT-03B

VMA-47676-01

Model Line	Model Number	Manufacturer
A1000	CIMR-AU2A0360XXX	Yaskawa

Product Construction Summary

Carbon Steel NEMA 1 Enclosure

Options / Subcomponent Summary

Cabinet Cooling Fan-NMB; (6) Insolated Gate Bipolar Transistor-630V,400A; (6) Diode- 800 V 150 A; Contactor 532A

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
216	14	23	32	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

UUT-03B was wall-mounted to the fixture using qty (4) 1/2"-13 Grade 5 bolts in the manufacturer-provided holes. The wall fixture was mounted on qty (4) VMC-Manufactured AWMR-R-1 spring isolators using qty (3) 1/2"-13 Grade 5 bolts per isolator. Each isolator was attached to the fixture using qty (2) 4" welds, 1/4" wide.



All units were filled with contents and maintained structural integrity and functionality



UNIT UNDER TEST (UUT) Summary Sheet

UUT-04A

VMA-47676-01

Model Line	Model Number	Manufacturer
A1000	CIMR-ZU4A590XXX	Yaskawa

Product Construction Summary

Carbon Steel NEMA 1 Enclosure

Options / Subcomponent Summary

Cabinet Cooling Fan-NMB; (6) Insolated Gate Bipolar Transistor-630V,400A; (6) Diode- 800 V 150 A; Contactor 532A, DC24V

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
486	14	30	44	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

UUT-04A was wall-mounted to the fixture using qty (6) 1/2"-13 Grade 5 bolts in the manufacturer-provided holes. The wall fixture was rigidly mounted to the shake table using qty (12) 3" welds, 1/4" wide.



All units were filled with contents and maintained structural integrity and functionality



UNIT UNDER TEST (UUT) Summary Sheet

UUT-04B

VMA-47676-01

Model Line	Model Number	Manufacturer
A1000	CIMR-ZU4A590XXX	Yaskawa

Product Construction Summary

Carbon Steel NEMA 1 Enclosure

Options / Subcomponent Summary

Cabinet Cooling Fan-NMB; (6) Insolated Gate Bipolar Transistor-630V,400A; (6) Diode- 800 V 150 A; Contactor 532A, DC24V

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
486	14	30	44	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

UUT-04B was wall-mounted to the fixture using qty (6) 1/2"-13 Grade 5 bolts in the manufacturer-provided holes. The wall fixture was mounted on qty (4) VMC-Manufactured AWMR-R-1 spring isolators using qty (3) 1/2"-13 Grade 5 bolts per isolator. Each isolator was attached to the fixture using qty (2) 4" welds, 1/4" wide.



All units were filled with contents and maintained structural integrity and functionality



UNIT UNDER TEST (UUT) Summary Sheet

UUT-05A

VMA-47676-01

Model Line	Model Number	Manufacturer
Z1000	Z1B1B180	Yaskawa

Product Construction Summary

Carbon Steel NEMA 1 Enclosure

Options / Subcomponent Summary

Current Transformer-20A & 400A; Circuit Breaker-250A; Drive I/O Contactor-25A & 400A; Bypass Contactor-25A; Power Supply-40W; Overload Relay-Schneider; Control Transformer-300VA; Cabinet Cooling Fans-200CFM; Drive Input Fuses-2A & 40A; Disconnect Switch-250A; Terminal & Power Distribution Blocks-65A, 115A, 175A, & 510A

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
380	28	19	49	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

UUT-05A was wall-mounted to the fixture using qty (4) 1/2" Grade 8 bolts in the manufacturer-provided holes. The wall fixture was rigidly mounted to the base plates using qty (6) 1" Grade 8 bolts. The base plate was attached to the shake table using qty (9) high-strength rods with a minimum diameter of 1".



All units were filled with contents and maintained structural integrity and functionality



UNIT UNDER TEST (UUT) Summary Sheet

UUT-05B

VMA-47676-01

Model Line	Model Number	Manufacturer
Z1000	Z1B1B180	Yaskawa

Product Construction Summary

Carbon Steel NEMA 1 Enclosure

Options / Subcomponent Summary

Current Transformer-20A & 400A; Circuit Breaker-250A; Drive I/O Contactor-25A & 400A; Bypass Contactor-25A; Power Supply-40W; Overload Relay-Schneider; Control Transformer-300VA; Cabinet Cooling Fans-200CFM; Drive Input Fuses-2A & 40A; Disconnect Switch-250A; Terminal & Power Distribution Blocks-65A, 115A, 175A, & 510A

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
380	28	19	49	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

UUT-05B was wall-mounted to the fixture using qty (4) 1/2" Grade 8 bolts in the manufacturer-provided holes. The wall fixture was mounted on qty (6) VMC-Manufactured MSSH-1E spring isolators using each mount's 3/4" diameter adjusting bolt. Each isolator was attached to the base plate using qty (4) 3/4" Grade 8 bolts. The base plate was attached to the shake table using qty (9) high-strength rods with a minimum diameter of 1".



All units were filled with contents and maintained structural integrity and functionality



UNIT UNDER TEST (UUT) Summary Sheet

UUT-06A

VMA-47676-01

Model Line	Model Number	Manufacturer
Z1000	Z1C1B240	Yaskawa

Product Construction Summary

Carbon Steel NEMA 1 Enclosure

Options / Subcomponent Summary

Disconnect Breaker: 400 A; Cooling Fan: 200 CFM; Drive Input Fuses: 400 A; Input Line Reactors-1.6A & 250A; Control Transformer-100VA; Terminal & Power Distribution Blocks-760A; Disconnect Switch-400A

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
420	28	19	49	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

UUT-06A was wall-mounted to the fixture using qty (4) 1/2" Grade 8 bolts in the manufacturer-provided holes. The wall fixture was rigidly mounted to the base plates using qty (6) 1" Grade 8 bolts. The base plate was attached to the shake table using qty (9) high-strength rods with a minimum diameter of 1".



All units were filled with contents and maintained structural integrity and functionality



UNIT UNDER TEST (UUT) Summary Sheet

UUT-06B

VMA-47676-01

Model Line	Model Number	Manufacturer
Z1000	Z1C1B240	Yaskawa

Product Construction Summary

Carbon Steel NEMA 1 Enclosure

Options / Subcomponent Summary

Disconnect Breaker: 400 A; Cooling Fan: 200 CFM; Drive Input Fuses: 400 A; Input Line Reactors-1.6A & 250A; Control Transformer-100VA; Terminal & Power Distribution Blocks-760A; Disconnect Switch-400A

UUT Properties

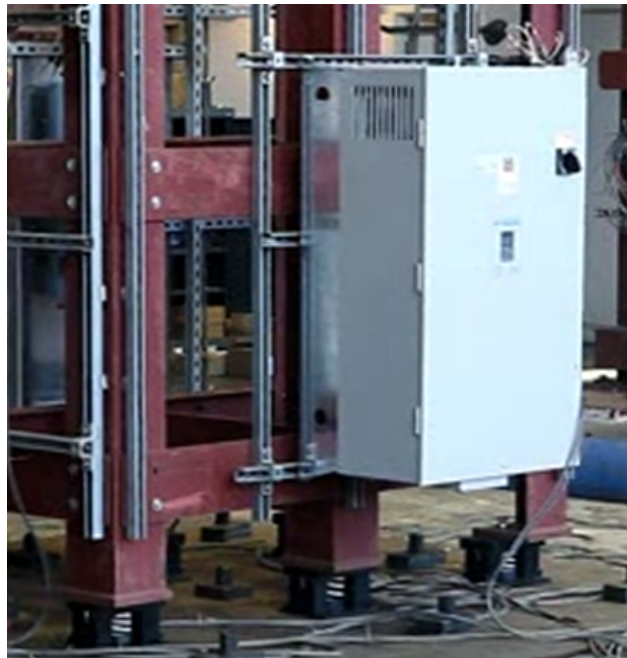
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
420	28	19	49	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

UUT-06B was wall-mounted to the fixture using qty (4) 1/2" Grade 8 bolts in the manufacturer-provided holes. The wall fixture was mounted on qty (6) VMC-Manufactured MSSH-1E spring isolators using each mount's 3/4" diameter adjusting bolt. Each isolator was attached to the base plate using qty (4) 3/4" Grade 8 bolts. The base plate was attached to the shake table using qty (9) high-strength rods with a minimum diameter of 1".



All units were filled with contents and maintained structural integrity and functionality



UNIT UNDER TEST (UUT) Summary Sheet

UUT-07A

VMA-47676-01

Model Line	Model Number	Manufacturer
Z1000	Z1B1B034	Yaskawa

Product Construction Summary

Carbon Steel NEMA 1 Enclosure

Options / Subcomponent Summary

Current Transformer-100A; Circuit Breaker-70A; Drive I/O Contactor-60A; Bypass Contactor-6A; Overload Relay-Schneider; Disconnet Switches-45A

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
70	13	10	48	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

UUT-07A was wall-mounted to the fixture using qty (4) 3/4" Grade 8 bolts in the manufacturer-provided holes. The wall fixture was rigidly mounted to the base plates using qty (6) 1" Grade 8 bolts. The base plate was attached to the shake table using qty (9) high-strength rods with a minimum diameter of 1".



All units were filled with contents and maintained structural integrity and functionality



UNIT UNDER TEST (UUT) Summary Sheet

UUT-07B

VMA-47676-01

Model Line	Model Number	Manufacturer
Z1000	Z1B1B034	Yaskawa

Product Construction Summary

Carbon Steel NEMA 1 Enclosure

Options / Subcomponent Summary

Current Transformer-100A; Circuit Breaker-70A; Drive I/O Contactor-60A; Bypass Contactor-6A; Overload Relay-Schneider; Disconnet Switches-45A

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
70	13	10	48	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

UUT-07B was wall-mounted to the fixture using qty (4) 3/4" Grade 8 bolts in the manufacturer-provided holes. The wall fixture was mounted on qty (6) VMC-Manufactured MSSH-1E spring isolators using each mount's 3/4" diameter adjusting bolt. Each isolator was attached to the base plate using qty (4) 3/4" Grade 8 bolts. The base plate was attached to the shake table using qty (9) high-strength rods with a minimum diameter of 1".



All units were filled with contents and maintained structural integrity and functionality



UNIT UNDER TEST (UUT) Summary Sheet

UUT-09A

DCL 97462-1503

Model Line	Model Number	Manufacturer
Z1000	Z1B3B124	Yaskawa

Product Construction Summary

Carbon Steel Enclosure

Options / Subcomponent Summary

Bypass Drive-CIMR-ZU4A0124; Contactors: LC1F265; Bypass Control Board: UTC00046X; Bypass Power Supply: VCT40US05; Overload Relays: LR9-F5569; Control Transformers: TF1500D1; Power Fuses: FWH-450A, JTD2, JTD400, AJT-350, AJT-450; Reactors: RLW-041401; Terminal & Power Distribution Blocks: 1BS104, EPBAD21, MPDB63153, MPDB69093, 3044102; Disconnect Switches: V0; Space Heater: D-AH4001B; Lightning Arrestor: S50A480V3D; Keypad Viewing Window: AWDH1612N4; Speed Pot: URSN0008

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Height	Width	Depth	F-B	S-S	V
520	51.1	39.0	21.4	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2016	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

Rigid wall mount (DCL fixture rigidly attached to shake table) using (4) 3/8" diameter bolts, Grade 8



All units were filled with contents and maintained structural integrity and functionality



UNIT UNDER TEST (UUT) Summary Sheet

UUT-09B

DCL 97462-1503

Model Line	Model Number	Manufacturer
Z1000	Z1B3B124	Yaskawa

Product Construction Summary

Carbon Steel Enclosure

Options / Subcomponent Summary

Bypass Drive-CIMR-ZU4A0124; Contactors: LC1F265; Bypass Control Board: UTC00046X; Bypass Power Supply: VCT40US05; Overload Relays: LR9-F5569; Control Transformers: TF1500D1; Power Fuses: FWH-450A, JTD2, JTD400, AJT-350, AJT-450; Reactors: RLW-041401; Terminal & Power Distribution Blocks: 1BS104, EPBAD21, MPDB63153, MPDB69093, 3044102; Disconnect Switches: V0; Space Heater: D-AH4001B; Lightning Arrestor: S50A480V3D; Keypad Viewing Window: AWDH1612N4; Speed Pot: URSN0008

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Height	Width	Depth	F-B	S-S	V
520	51.1	39.0	21.4	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2016	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.34	0.54

Test Mounting Details

Flexible wall mount (DCL fixture attached to (4) spring isolators) using (4) 3/8" diameter bolts, Grade 8



All units were filled with contents and maintained structural integrity and functionality

FOR REFERENCE ONLY

Table 22 - Model Number Designation for A1000 Drives

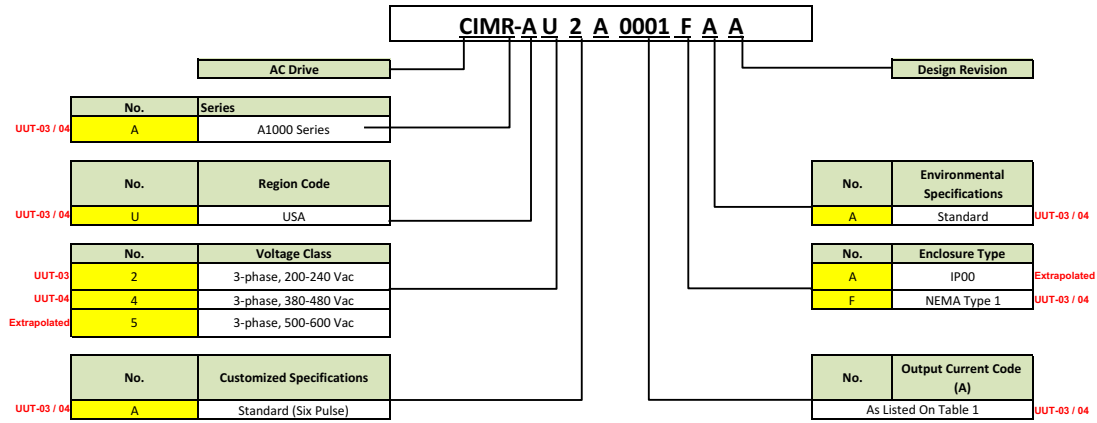
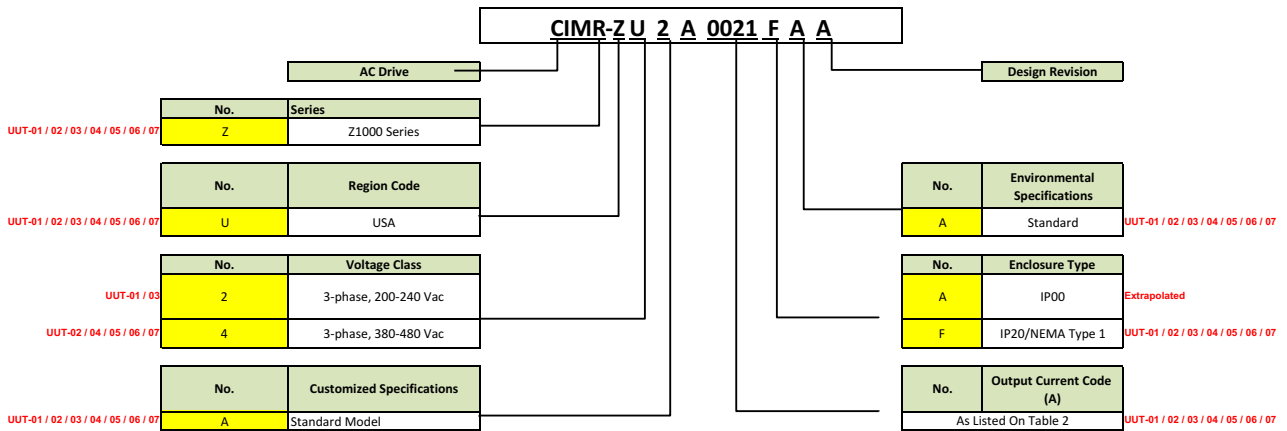


Table 23 - Model Number Designation for Z1000 Drives



FOR REFERENCE ONLY

Table 24 - Model Number Designation for Z1000 Bypass,

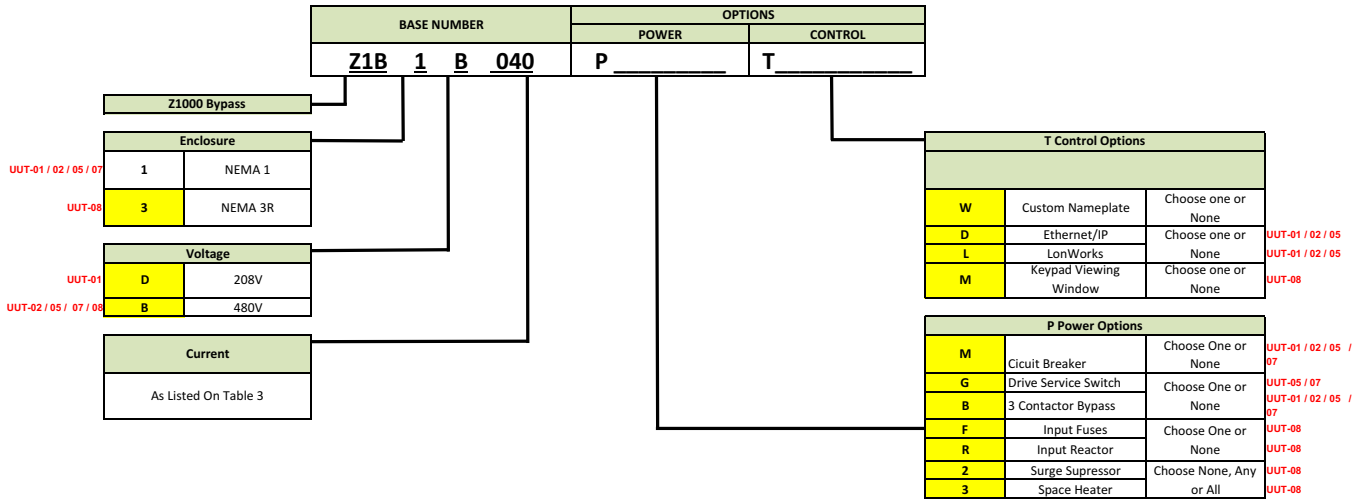


Table 25 - Model Number Designation for Z1000 Configured

