



**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION**

**APPLICATION FOR OSHPD SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY

APPLICATION #: **OSP – 0349 – 10**

**OSHPD Special Seismic Certification Preapproval (OSP)**

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: SyncroFlo, Inc.

Manufacturer's Technical Representative: Steve Bradley, Commercial Engineering Manager

Mailing Address: 2905 Pacific Drive, Norcross, GA 30071

Telephone: (770) 840-6750 Email: sbradley@syncroflo.com

**Product Information**

Product Name: Variable Frequency Drive – Custom Control Panels

Product Type: Electrical Equipment

Product Model Number: See Attached OSP Product Summary

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

General Description: The SyncroFlo units are each housed in a NEMA 12 enclosure and contain circuit breakers, contactors, mechanical interlocks, overload relays, filter fans, thermostats, variable frequency drives, alarm, control transformers, controller, pressure transmitter and pressure gage. Seismic enhancement made to the test units and modifications required to address the anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Each unit is certified for a rigid and flexible wall-mount configuration

**Applicant Information**

Applicant Company Name: DYNAMIC CERTIFICATION LABORATORIES

Contact Person: JOSEPH L. LA BRIE, S.E., PRESIDENT / CEO

Mailing Address: 1315 GREG STREET, SUITE 109, SPARKS, NV 89431

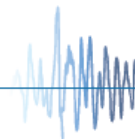
Telephone: (775) 358-5085 Email: LABRIE@MAKEITRIGHT.NET

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant:  Date: 7/16/13

Title: PRESIDENT / CEO Company Name: DYNAMIC CERTIFICATION LABORATORIES

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





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION**

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

Company Name: DYNAMIC CERTIFICATION LABORATORIES

Name: DR. AHMAD ITANI, S.E. California License Number: SE-5220

Mailing Address: 1315 GREG STREET, SUITE 109, SPARKS, NV 89431

Telephone: (775) 358-5085 Email: ITANI@SHAKETEST.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): \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

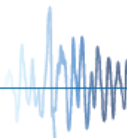
**Testing Laboratory**

Company Name: DYNAMIC CERTIFICATION LABORATORIES

Contact Name: AUSTIN BROWN, P.E., LABORATORY MANAGER

Mailing Address: 1315 GREG STREET, SUITE 109, SPARKS, NV 89431

Telephone: (775) 358-5085 Email: AUSTIN@SHAKETEST.COM





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**Seismic Parameters**

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

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.88

$S_{DS}$  (Design spectral response acceleration at short period, g) = 2.50

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

$R_p$  (Equipment or component response modification factor) = 6.0

$\Omega_0$  (System overstrength factor) = 2.5

$I_p$  (Importance factor) = 1.5

$z/h$  (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = SEE ATTACHMENT

Overall dimensions and weight (or range thereof) = SEE ATTACHMENT

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) = \_\_\_\_\_

$\Omega_0$  (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, 2010:  Yes  No

**List of Attachments Supporting Special Seismic Certification**

Test Report(s)  Drawings  Calculations  Manufacturer's Catalog

Other(s) (Please Specify): \_\_\_\_\_

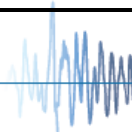
**OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2019**

Signature:  Date: 8/6/2013

Print Name: M. R. Karim Title: SHFR

Special Seismic Certification Valid Up to :  $S_{DS}$  (g) = 2.5  $z/h$  = 1.0

Condition of Approval (if applicable): \_\_\_\_\_



# Special Seismic Certification Certified Units



**Manufacturer:** SyncroFlo

**Product Line:** Variable Frequency Drive - Custom Control Panels

**Tested Product Construction:** NEMA 12 enclosures, carbon steel

**Tested Options:** 208V and 460V, Circuit breakers, contactors, mechanical interlocks, overload relays, filter fans, thermostats, variable frequency drives, alarm, control transformers, controller, interface, pressure transmitter and pressure gage

**Tested Mounting Description:** Rigid or flexible wall mount

Model Number	Description	Dimensions (in)			Approximate Operating Weight (lb)	Unit
		Height	Width	Depth		
Varies: Units are Custom	Custom Control Panel	30	24	12	90-145	Extrapolated
Tag CP 2	Duplex Control Panel	36	30	12	155	UUT1
Varies: Units are Custom	Custom Control Panel	36	30	12	100-185	Interpolated
		36	36	12	110-200	Interpolated
		36	42	12	180-250	Interpolated
		36	48	12	225-378	Interpolated
		36	60	12	200-378	Interpolated
		42	36	12	180-250	Interpolated
		42	60	12	250-378	Interpolated
		48	36	12	250-378	Interpolated
48	48	12	300-378	Interpolated		
Tag CP 3	Triplex Control Panel	48	48	12	378	UUT2

# Special Seismic Certified Components



**Manufacturer:** SyncroFlo

**Product Line:** Variable Frequency Drive - Custom Control Panels

**Component:** Enclosures

Model Number	Manufacturer	Material	NEMA Rating	Door(s)	Dimensions (in)			Unit
					Height	Width	Depth	
WM302412NC	Rittal	Powder-coated carbon steel	12	1	30	24	12	Extrapolated
WM363012NC				1	36	30	12	UUT1
WM363612NC				1	36	36	12	Interpolated
WM364212NC				2	36	42	12	Interpolated
WM364812NC				2	36	48	12	Interpolated
WM366012NC				2	36	60	12	Interpolated
WM423612NC				1	42	36	12	Interpolated
WM426012NC				2	42	60	12	Interpolated
WM483612NC				1	48	36	12	Interpolated
WM484812NC				2	48	48	12	UUT2

# Special Seismic Certification Certified Components



**Manufacturer:** SyncroFlo

**Product Line:** Variable Frequency Drive - Custom Control Panels

**Component:** Circuit Breakers

Model Number	Manufacturer	Description	Approximate Weight (lb)	Unit
EGH3015FFG	Eaton	Series G, Three-Pole, Fixed Thermal, Fixed Magnetic	3.0 to 5.0	Extrapolated
EGH3016FFG				Extrapolated
EGH3020FFG				UUT1
EGH3025FFG				Interpolated
EGH3030FFG				Interpolated
EGH3032FFG				Interpolated
EGH3035FFG				Interpolated
EGH3040FFG				Interpolated
EGH3045FFG				Interpolated
EGH3050FFG				Interpolated
EGH3060FFG				Interpolated
EGH3063FFG				Interpolated
EGH3070FFG				Interpolated
EGH3080FFG				UUT2
EGH3090FFG				Extrapolated
EGH3100FFG				Extrapolated
EGH3125FFG				Extrapolated
JGH3175FAG				Extrapolated

**Special Seismic  
Certified Components**



**Manufacturer:** SyncroFlo

**Product Line:** Variable Frequency Drive - Custom Control Panels

**Component:** Contactors

Model Number	Manufacturer	UL General Purpose Amp Rating	Description	Approximate Operating Weight (lb)	Unit
XTCE007B10_	Eaton	20	Full Voltage Non-Reversing 3-Pole Contactors	0.5 - 3.0	Extrapolated
XTCE007B01_		20			Extrapolated
XTCE009B10_		20			UUT1
XTCE009B01_		20			Interpolated
XTCE012B10_		20			Interpolated
XTCE012B01_		20			Interpolated
XTCE015B10_		20			Interpolated
XTCE015B01_		20			Interpolated
XTCE018C10_		40			Interpolated
XTCE018C01_		40			Interpolated
XTCE025C10_		40			Interpolated
XTCE025C01_		40			Interpolated
XTCE032C10_		40			Interpolated
XTCE032C01_		40			Interpolated
XTCE040D00_		63			UUT2
XTCE040DS1_		63			Extrapolated
XTCE050D00_		80			Extrapolated
XTCE050DS1_		80			Extrapolated
XTCE065D00_		88			Extrapolated
XTCE065DS1_		88			Extrapolated
XTCE072D00_		88			Extrapolated
XTCE072DS1_		88			Extrapolated
XTCE080F00_		125			Extrapolated
XTCE080FS1_		125			Extrapolated
XTCE095F00_		125			Extrapolated
XTCE095FS1_		125			Extrapolated

**Special Seismic  
Certified Components**



**Manufacturer:** SyncroFlo

**Product Line:** Variable Frequency Drive - Custom Control Panels

**Component:** Mechanical Interlocks and Overload Relays

**Mechanical Interlocks**

Model Number	Manufacturer	For Use with Eaton Contactor Number	Unit
XTCEXMLB	Eaton	XTCE007B-XTCE015B, XTCE020B	UUT1
XTCEXMLC		XTCE018C-XTCE032C, XTCE032C-XTCE045C	Interpolated
XTCEXMLD		XTCE040D-XTCE072D, XTCE063D-XTCE080D	UUT2
XTCEXMLG		XTCE080F-XTCE170G, XTCE125G-XTCE200G	Extrapolated

**Overload Relays**

Model Number	Manufacturer	Overload Range (Amps)	Description	Unit
XTOE1P6CCSS	Eaton	0.33-1.65	XT Electronic Overload Relays for Separate Mount	Extrapolated
XTOE005CCSS		1-5		Extrapolated
XTOE020CCSS		4-20		UUT1
XTOE045CCSS		9-45		Interpolated
XTOE100GCSS		20-100		UUT2



# Special Seismic Certification Certified Components



**Manufacturer:** SyncroFlo

**Product Line:** Variable Frequency Drive - Custom Control Panels

**Component:** Filter Fans, Thermostats, Variable Frequency Drives

### Filter Fans

Model Number	Manufacturer	Rated Operating Voltage V, Hz	Unit
3239.110	Rittal	115, 50/60	UUT1
3240.110		115, 50/60	UUT2
3241.110		115, 50/60	Extrapolated

### Thermostats

Model Number	Manufacturer	Description	Unit
FLZ530	Pfannenberg	Normally Open with Spring Contact	UUT1, UUT2

### VFD

Model Number	Manufacturer	HP Rating	Series	Voltage	Unit	
FR-D720-042-NA	Mitsubishi	1	D-700	200V	Extrapolated	
FR-D720-070-NA		2			Extrapolated	
FR-D720-100-NA		3			UUT1	
FR-D720-165-NA		5			Interpolated	
FR-D720-238-NA		7.5			Interpolated	
FR-D720-318-NA		10			Interpolated	
FR-D740-036-NA		1.5-2		D-700	400V	Extrapolated
FR-D740-050-NA		3				Interpolated
FR-D740-080-NA		5				Interpolated
FR-D740-120-NA		7.5				Interpolated
FR-D740-160-NA		10	Interpolated			
FR-D740-230-NA		15	Interpolated			
FR-D740-295-NA		20	Interpolated			
FR-F720-00046-NA		1	F-700		200V	Extrapolated
FR-F720-00077-NA		2				Extrapolated
FR-F720-00105-NA		3				Interpolated
FR-F720-00167-NA		5		Interpolated		
FR-F720-00250-NA		7.5		Interpolated		
FR-F720-00340-NA		10		Interpolated		
FR-F720-00490-NA		15		Interpolated		
FR-F720-00630-NA		20		Interpolated		
FR-F720-00770-NA		25		Interpolated		
FR-F720-00930-NA		30		Interpolated		
FR-F720-01250-NA		40		Interpolated		
FR-F740-00052-NA		3		F-700	400V	Interpolated
FR-F740-00083-NA		5				Interpolated
FR-F740-00126-NA		7.5				Interpolated
FR-F740-00170-NA		10				Interpolated
FR-F740-00250-NA		15				Interpolated
FR-F740-00310-NA		20				Interpolated
FR-F740-00380-NA	25	Interpolated				
FR-F740-00470-NA	30	UUT2				
FR-F740-00620-NA	40	Extrapolated				

# Special Seismic Certification Certified Components



**Manufacturer:** SyncroFlo

**Product Line:** Variable Frequency Drive - Custom Control Panels

**Component:** Alarm, Transformer

### Alarm

Model Number	Manufacturer	Description	Unit
MC-09-201-Q	Floyd Bell Inc	AudioLarm II, 30-120 Vac	UUT1

### Control Transformers

Model Number	Manufacturer	Description	VA	Approximate Weight (lb)	Unit
B100MBT13XK	Micron Power Delivery	Series 2 Impervitran	100	5.2	Extrapolated
B100MBT13RK			100	5.2	Extrapolated
B150MBT13XKF			150	6.0	Extrapolated
B150MBT13RKF			150	6.0	Extrapolated
B200MBT13XKF			200	8.0	UUT1
B200MBT13RKF			200	8.0	Interpolated
B250MBT13XKF			250	10.0	Interpolated
B250MBT13RKF			250	10.0	Interpolated
B300MBT13XKF			300	12.0	Interpolated
B300MBT13RKF			300	12.0	Interpolated
B350MBT13XKF			350	14.0	Interpolated
B350MBT13RKF			350	14.0	Interpolated
B500MBT13XKF			500	16.0	UUT2
B500MBT13RKF			500	16.0	Extrapolated

# Special Seismic Certification Certified Components



**Manufacturer:** SyncroFlo

**Product Line:** Variable Frequency Drive - Custom Control Panels

**Component:** Controller, Interface, Pressure Transmitter and Pressure Gage

### Controller and Interface

Model Number	Manufacturer	Description	Unit
FX1S	Mitsubishi Electric	Programmable logic controller	UUT1
FX3U	Mitsubishi Electric	Programmable logic controller	UUT2
GT1020	Mitsubishi Electric	3.7" 4 color human machine interface	UUT1
GT1455	Mitsubishi Electric	5.7" 256 color human machine interface	UUT2

### Pressure Transmitter

Model Number	Manufacturer	Description	Unit
AST4700	American Sensor Technology	Stainless steel media isolated pressure sensor	UUT1, UUT2

### Pressure Gage

Model Number	Manufacturer	Description	Unit
202L	Precision Instrument Company	Glycerin-filled 0-100psi pressure gage	Extrapolated
202L	Precision Instrument Company	Glycerin-filled 0-160psi pressure gage	UUT1, UUT2
202L	Precision Instrument Company	Glycerin-filled 0-200psi pressure gage	Interpolated
202L	Precision Instrument Company	Glycerin-filled 0-300psi pressure gage	UUT2

UUT1a

### Unit Under Test Summary Sheet

**Manufacturer:** SyncroFlo

**Product Line:** Variable Frequency Drive - Custom Control Panels

**Model Number:** Tag CP 2, S/N 331249

**Product Construction Summary:**

NEMA 12 enclosure, powder-coated carbon steel

**Options / Component Summary:**

208V, Circuit breakers, contactors, mechanical interlocks, overload relays, filter fans, thermostats, variable frequency drives, alarm, control transformers, controller, interface, pressure transmitter and pressure gage

**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.**

**UUT Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Height	Width	Depth	Front-Back	Side-Side	Vertical
155	30	36	12	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2012 ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	1.67	0.67

**Unit Mounting Description:**



**Rigid Wall Mount:** UUT1a was wall mounted to the DCL steel shake table interface wall frame with (4) 3/8-inch diameter Grade 5 bolts, using the manufacturer-provided holes at the back of the panel. The unit was tested with the wall frame rigidly mounted to the shake table using M12 threaded rod.

UUT1b

### Unit Under Test Summary Sheet

**Manufacturer:** SyncroFlo

**Product Line:** Variable Frequency Drive - Custom Control Panels

**Model Number:** Tag CP 2, S/N 331249

**Product Construction Summary:**

NEMA 12 enclosure, powder-coated carbon steel

**Options / Component Summary:**

208V, Circuit breakers, contactors, mechanical interlocks, overload relays, filter fans, thermostats, variable frequency drives, alarm, control transformers, controller, interface, pressure transmitter and pressure gage

**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.**

**UUT Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Height	Width	Depth	Front-Back	Side-Side	Vertical
155	30	36	12	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2012 ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	1.67	0.67

**Unit Mounting Description:**



**Flexible Wall Mount:** UUT1b was wall mounted to the DCL steel shake table interface wall frame with (4) 3/8-inch diameter Grade 5 bolts, using the manufacturer-provided holes at the back of the panel. The unit was tested with the steel wall frame mounted to the shake table using spring isolators, in order to represent a flexible-mount condition. The flexible steel wall frame test setup was mounted to the shake table using M12 threaded rod.

UUT2a

### Unit Under Test Summary Sheet

**Manufacturer:** SyncroFlo

**Product Line:** Variable Frequency Drive - Custom Control Panels

**Model Number:** Tag CP 3, S/N 331250

**Product Construction Summary:**

NEMA 12 enclosure, powder-coated carbon steel

**Options / Component Summary:**

460V, Circuit breakers, contactors, mechanical interlocks, overload relays, filter fans, thermostats, variable frequency drives, alarm, control transformers, controller, interface, pressure transmitter and pressure gage

**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.**

**UUT Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Height	Width	Depth	Front-Back	Side-Side	Vertical
378	48	48	12	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2012 ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	1.67	0.67

**Unit Mounting Description:**



**Rigid Wall Mount:** UUT2a was wall mounted to the DCL steel shake table interface frame stud wall with (6) 3/8-inch diameter Grade 5 bolts, using the manufacturer-provided holes at the back of the panel. The unit was tested with the stud wall rigidly mounted to the shake table using M12 threaded rod.

UUT2b

### Unit Under Test Summary Sheet

**Manufacturer:** SyncroFlo

**Product Line:** Variable Frequency Drive - Custom Control Panels

**Model Number:** Tag CP 3, S/N 331250

**Product Construction Summary:**

NEMA 12 enclosure, powder-coated carbon steel

**Options / Component Summary:**

460V, Circuit breakers, contactors, mechanical interlocks, overload relays, filter fans, thermostats, variable frequency drives, alarm, control transformers, controller, interface, pressure transmitter and pressure gage

**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.**

**UUT Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Height	Width	Depth	Front-Back	Side-Side	Vertical
378	48	48	12	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2012 ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	1.67	0.67

**Unit Mounting Description:**



**Flexible Wall Mount:** UUT2b was wall mounted to the DCL steel shake table interface wall frame with (6) 3/8-inch diameter Grade 5 bolts, using the manufacturer-provided holes at the back of the panel. The unit was tested with the steel wall frame mounted to the shake table using spring isolators, in order to represent a flexible-mount condition. The flexible steel wall frame test setup was mounted to the shake table using M12 threaded rod.