



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

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

OFFICE USE ONLY	
APPLICATION #:	OSP – 0009 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Eaton Corporation

Manufacturer's Technical Representative: Eddie Wilkie

Mailing Address: 175 Vista Blvd., Arden, NC 28704

Telephone: 828-651-0707 Email: eddiwilkie@eaton.com

Product Information

Product Name: Pow-R-Line (PRL) and Pow-R-Command Panelboards

Product Type: Distribution Panelboards

Product Model Number: PRL 1a, 1af, 1a-LX, 2a, 2af, 2a-LX, 3a, 3E, 4B, Pow-R-Command
(List all unique product identification numbers and/or part numbers)

General Description: Lighting, Appliance or Distribution Panelboards for connection of feeder and branch circuit devices in electrical distribution systems. 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 Wall Mounted

Applicant Information

Applicant Company Name: Eaton Corporation

Contact Person: Eddie Wilkie

Mailing Address: 175 Vista Blvd., Arden, NC 28704

Telephone: 828-651-0707 Email: eddiwilkie@eaton.com

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: *Eddie Wilkie* Date: 2/19/13

Title: Engineering Manager Company Name: Eaton Corporation





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

Company Name: ISAT

Name: William V. Joerger California License Number: SE 4545

Mailing Address: 1020 Crews Road, Suite Q, Matthews, NC 28105

Telephone: 510-714-0216 Email: wvjoerger@isatsb.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: Wyle Laboratories

Contact Name: Phil McNaught

Mailing Address: PO Box 77777, Huntsville, AL 35807

Telephone: 256-716-4130 Email: Phil.mcnaught@wyle.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) = 2.27

S_{DS} (Design spectral response acceleration at short period, g) = 3.02

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

R_p (Equipment or component response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.5

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1

Equipment or Component Natural Frequencies (Hz) = See Resonance Summary

Overall dimensions and weight (or range thereof) = See Product Range Summary

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, 2010: Yes No

List of Attachments Supporting Special Seismic Certification

Test Report(s) Drawings Calculations Manufacturer's Catalog

Other(s) (Please Specify): Product Range Summary

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

Signature:  Date: April 5, 2013

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 3.02 z/h = 1.0

Condition of Approval (if applicable): _____





Certified Product Range Summary PRL Panelboards (Wall Mounted)⁶

Model/(UUT Identifier)	Maximum Voltage Rating (Volts)	Maximum Continuous Current Rating (Amperes)	Maximum Enclosure Dimensions			Bus Material	Maximum Weight (lbs.)	S _{DS}	Notes	UUT
			Width (in.)	Depth (in.)	Height (in.)					
PRL 1a/2a (MEDP092012-022)	480	225	32.5	6.44	90.25	Al	298	3.02	1,3	19
PRL 1a/2a (MEDP092012-021)	240	400	20.75	6.44	60.25	Cu	138	3.02	1,3	18
PRL1a, 1aF, 1a-LX, Pow-R-Command	240	400	20 - 32 ⁴	16.25 ⁴	24 - 90 ⁴	Cu/Al	298		1,2,3	Interpolated
PRL2aF	240	400	20 - 32 ⁴	16.25 ⁴	24 - 90 ⁴	Cu/Al	298		1,2,3	Interpolated
PRL2a, 2a-LX, Pow-R-Command	480	400	20 - 32 ⁴	16.25 ⁴	24 - 90 ⁴	Cu/Al	298		1,2,3	Interpolated
PRL3a (MEDP092012-025)	100	480	20.5	6.44	72.25	Al	194	3.02	1,3	20
PRL3a	600	800	20 - 32 ⁴	16.25 ⁴	24 - 90 ⁴	Cu/Al	194		1,2,3	Interpolated
PRL3E (MEDP092012-027)	480	600	32.5	6.5	90.25	Cu	300	3.02	1,3	21
PRL3E	480	800	20 - 32 ⁴	16.25 ⁴	24 - 90 ⁴	Cu/Al	300		1,2,3	Interpolated
PRL4B	600	1200	24 - 44 ^{4,5}	10.4-16.25 ⁴	57 - 90 ⁴	Cu/Al	904		1,2,3	Interpolated
PRL4B (MEDP092012-029)	480	1200	40	17.25	91.5	Cu	904	3.02	2,3	22

1. NEMA Type 1 Enclosure
2. NEMA Type 3R/12 Enclosure
3. Mild Carbon Steel construction
4. Nominal Dimensions - does not include extraneous hardware or operator extensions
5. Maximum depth for 44" panels is 10.4".
6. Manufactured by Eaton



Powering Business Worldwide

**Panelboards
Certified Major Component Data**

Miniature Circuit Breakers (MCB) 1 - 3 Poles (1 Pole Data Shown^)								
Model	Current Range (Amperes)	Maximum Voltage (Volts)	Dimensions / Weights				Manufacturer	UUT
			Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
BAB1020	20	120/240	1.00	2.91	3.13	1.13	Eaton	19
BAB1070	70	120/240	1.00	2.91	3.13	1.13	Eaton	19
BA*	10-125A	120/240	1.00^	2.91	3.13	1.13	Eaton	Interpolated
QBAF1015	15	120/240	1.00	2.38	3.19	0.75	Eaton	19
QBAF1020	20	120/240	1.00	2.38	3.19	0.75	Eaton	19
QBAF*	15-20A	120/240	1.00^	2.38	3.19	0.75	Eaton	Interpolated
QBGF*	15-50A	120/240	1.00^	2.38	3.19	1.75	Eaton	Interpolated
QBGF1040	40	120/240	1.00	2.38	3.19	1.75	Eaton	19
QBGF2015	15	120/240	2.00	2.38	3.19	1.75	Eaton	19
GHQSRP*	15-20	120/240	1.00^	2.81	4.63	2.25	Eaton	Interpolated
GHQSRP1020	20	120/240	1.00	2.81	4.63	2.25	Eaton	18
GHQSRP2020	20	120/240	2.00	2.81	4.63	4.50	Eaton	18

* - All breakers are 1" width per pole

Molded Case Circuit Breakers (MCCB) 1 - 3 Poles (3 Pole Data Shown)								
Frame	Current Range (Amperes)	Maximum Voltage (Volts)	Dimensions / Weights				Manufacturer	UUT
			Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
GHB3020	20	480	3	2.63	4	1.37	Eaton	18
GHB3100	100	480	3	2.63	4	1.37	Eaton	18
GHB	15-100	480	3	2.63	4	1.37	Eaton	Interpolated
EGB3020FFB	20	480	3	3	5.5	2.28	Eaton	21
EGB3125FFB	125	480	3	3	5.5	2.28	Eaton	21
EG	15-125	480	3	3	5.5	2.28	Eaton	Interpolated
EHD2020	20	600	2.75	3.38	6	3	Eaton	22
EHD3020	20	600	4.13	3.38	6	4.5	Eaton	22
F	10-225	600	4.13	3.38	6	4.5	Eaton	Interpolated
JD3250	250	600	4.13	4.06	10	13.5	Eaton	22
J	70-250	600	4.13	4.06	10	13.5	Eaton	Interpolated
KD3400	400	600	5.49	4.31	10.13	11.5	Eaton	21
K	70-400	600	5.49	4.31	10.13	11.5	Eaton	Interpolated
LG3600	600	600	8.25	3.81	10.75	20	Eaton	21
L	125-600	600	8.25	3.81	10.75	20	Eaton	Interpolated
M	300-800	600	8.25	4.06	16	30	Eaton	Interpolated
MDL3800	800	600	8.25	4.06	16	30	Eaton	22
N	400-1200	600	8.25	5.5	16	45	Eaton	Interpolated
NGS312033E	1200	600	8.25	5.5	16	45	Eaton	22



Powering Business Worldwide

**Panelboards
Certified Major Component Data**

Surge Protective Devices (SPD)								
Model	Maximum Voltage (Volts)	kA (Amperes)	Dimensions / Weights				Manufacturer	UUT
			Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
SPD050480Y2A	480	50	8.8	2.52 (3.45)	5.4	3.5	Eaton	21
SPDXXXXXXY2A	240-600	50-200	8.8	2.52 (3.45)	5.4	3.5	Eaton	Interpolated
		250-400	8.8	4.85 (5.78)	5.4	7	Eaton	Interpolated
SPD200480Y2A	480	200	8.8	4.85 (5.78)	5.4	7	Eaton	18,22

Pow-R-Command Controllers							
Family	Model	Dimensions / Weights				Manufacturer	UUT
		Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
Pow-R-Command	PRC25	11	3.25	4.75	7.25	Eaton	19
	PRC750	13.63	4.25	5.1	6.95	Eaton	Interpolated
	PRC1000	13.63	4.25	5.1	6.95	Eaton	Interpolated
	PRC2000	13.63	4.25	5.1	6.95	Eaton	18

Contactors							
Family	Model	Dimensions / Weights				Manufacturer	UUT
		Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)		
ASCO 920	920310060	8	3.5	9.5	7	Emerson	20

Enclosures (Carbon steel)					
NEMA Type	Dimensions / Weights			Manufacturer	UUT
	Width (in.)	Depth (in.)	Height (in.)		
1	20.75	6.44	60.25	Eaton	18
1	20.5	6.44	72.25	Eaton	20
1	20 - 32	5.75	24, 30, 36, 42, 48, 60, 72, 90	Eaton	Interpolated
1	32.5	6.5	90.25	Eaton	21
1	32.5	6.44	90.25	Eaton	19
1	24 - 44	10.4	57, 73.5, 90	Eaton	Interpolated
3R	20, 28	7.19	24, 30, 36, 42, 48, 60, 72, 90	Eaton	Interpolated
3R	24, 36	14.75	57, 73.5, 90	Eaton	Interpolated
3R	40	17.25	91.5	Eaton	22



PRL Panelboards
Resonant Frequency Summary

Report	UUT	Front to Back (Hz)	Side to Side (Hz)	Vertical (Hz)
70566R12	18	N/A*	N/A*	N/A*
70566R12	19	N/A*	N/A*	N/A*
70566R12	20	N/A*	N/A*	N/A*
70566R12	21	N/A*	N/A*	N/A*
70566R12	22	N/A*	N/A*	N/A*

* - UUT secured rigidly to wall fixture.

UUT 18 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage Panelboards

Model Number: PRL1a/2a (MEDP092012-021)

Product Construction Summary: Cabinet constructed of powder-coated carbon steel, NEMA Type 1 enclosure rating.

400A Copper Bus.

Options/Component Summary: LGH Main Breaker (LGH3400); KD Sub Feed Bkr (KD3400);

Pow-R-CMD 2000 (42C2588G02); Feeder Bkrs - (2) GHB3100, (1) GHB3020, (2) GHQRSP1020, (2) GHQRSP2020,

(6) BAB3020H; 200kA Surge Protective Device - (1) SPD200480Y2A

UUT Properties (As Tested)

Weight (lbs.)	Enclosure Dimensions (in.)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
138	20.75	6.44	60.25	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	3.02	1	1.5	4.83	3.62	2.02	0.82

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Unit (right) was mounted to a rigid frame using (4) 1/2" bolts. The steel frame was welded to the shake table.

UUT 19 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage Panelboards

Model Number: PRL1a/2a (MEDP092012-022)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure.
225A Aluminum Bus.

Options/Component Summary: Pow-R-Command Controller (PRC25)

Feeder Bkrs - (1) BAB1070, (9) BAB1020, (2) QBGH2050, (1) QBGF1040, (1) QBAF1020, (2) QBGF2015, (1) QBAF1015, (1) QBGF1015

UUT Properties (As Tested)								
Weight (lbs.)	Enclosure Dimensions (in.)			Lowest Natural Frequency (Hz)				
	Width	Depth	Height	Front-Back	Side-Side	Vertical		
298	32.5	6.44	90.25	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	3.02	1	1.5	4.83	3.62	2.02	0.82

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Unit (center) was mounted to a rigid frame using (4) 1/2" bolts. The steel frame was welded to the shake table.

UUT 20 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage Panelboards

Model Number: PRL3a (MEDP092012-025)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure.
100A Aluminum Bus.

Options/Component Summary: Main Lugs; ASCO Contactor (920310060);

Feeder Bkrs - (8) BAB3020H, (2) BAB3020

UUT Properties (As Tested)								
Weight (lbs.)	Enclosure Dimensions (in.)			Lowest Natural Frequency (Hz)				
	Width	Depth	Height	Front-Back	Side-Side	Vertical		
194	20.5	6.44	72.25	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	3.02	1	1.5	4.83	3.62	2.02	0.82

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Unit (left) was mounted to a rigid frame using (4) 1/2" bolts. The steel frame was welded to the shake table.

UUT 21 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage Panelboards

Model Number: PRL3E (MEDP092012-027)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 1 enclosure.

600A Copper Bus.

Options/Component Summary: LG Main Breaker (LG3600); KD Sub Feed Bkr (KD3400);

Feeder Bkrs - (6) EGB3020FFB, (2) EGB3125FFB; 50kA Surge Protective Device - (1) SPD050480Y2A

UUT Properties (As Tested)

Weight (lbs.)	Enclosure Dimensions (in.)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
300	32.5	6.5	90.25	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	3.02	1	1.5	4.83	3.62	2.02	0.82

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Unit was mounted to a rigid frame using (4) 1/2" bolts. The steel frame was welded to the shake table.

UUT 22 (Unit Under Test) Summary Sheet

Manufacturer: Eaton Corporation

Product Line: Low Voltage Panelboards

Model Number: PRL4b (MEDP092012-029)

Product Construction Summary: Cabinet is constructed of powder-coated carbon steel, NEMA Type 3R enclosure.

1200A Copper Bus.

Options/Component Summary: NG Main Breaker (NGS312033E),

Feeder Bkrs - (1) MDL3800 (1) LGE3600, (2) KD3400, (2) JD3250, (2) EHD3020, (2) EHD2020;

200kA Surge Protective Device - (1) SPD200480Y2A

UUT Properties (As Tested)

Weight (lbs.)	Enclosure Dimensions (in.)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
904	40	17.25	91.5	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	3.02	1	1.5	4.83	3.62	2.02	0.82

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



Unit was mounted to a rigid frame using (4) 1/2" bolts. The steel frame was welded to the shake table.