

TRANSMITTAL OF SUBMITTAL

DATE: 3/3/23

TO: Scott Miller

CMG - City of Atlanta
2528 Chattahoochee Circle
Atlanta, GA 30318

New X-Submittal Resubmittal

Project: East Area Water Quality Control Facility Improvements

Specification Section No. : 16160

Supplier/Vendor/Subcontractor: Contessa

FROM: LAKESHORE ENGINEERING

_____ 1259 Ellsworth Drive
_____ Atlanta, GA 30318


Manufacturer: EATON

The following items are hereby submitted:

Number of Copies	Description of Item Submitted (Type, Size, Model Number, Etc.)	Submittal number	Submittal Type	Contains Variation to Contract	
				No	Yes
Email	Panelboards	16160-57.00	Product Data	X	

Comments/Variation:

CONTRACTOR hereby certifies that (i) CONTRACTOR has complied with the requirements of Contract Documents in preparation, review, and submission of designated Submittal and (ii) the Submittal is complete and in accordance with the Contract Documents and requirements of laws and regulations and governing agencies.

By:  _____
Brandon Dow

Project Name: East Area Water Control Facility
General Order No: MAT0011132

Negotiation No: AT130311X0K1
Alternate No: R003

Qty	List of Materials
1	Size 1 Freedom Starter - NC Aux Contact
18	Pushbutton, 10250T
18	NO Contact Block, 10250T
1	AFD Part
1	HFD, Series C Molded Case Circuit Breaker, 50A
1	HFD, Series C Molded Case Circuit Breaker, 100A
1	HJD, Series C Molded Case Circuit Breaker, 250A

Item No.	Qty	Product	Description
012	1	Drives - Enclosed	EGS 6-Pulse Enclosed Drive w/ 5% Dual DC Link Choke, 10 HP (7.5 KW) Low Overload (IL) Rated, 480VAC Three Phase Input, NEMA 4X Enclosure w/ Brake Chopper Circuit

Catalog No EGS0144B520BB10000*
Designation 5 HP VFD sludge

Qty	List of Materials
1	Circuit Breaker
2	Clear Keypad Cover
1	Engineered Options
1	Voltage Indicator
1	--->100KAIC Rated
1	3% Output Filter
1	22mm Start (Green) & Stop (Red) Buttons - M22 Series
1	22mm Power On (White), Drive Run (Green), & Drive Fault (Red) Light Kit - M22 Series
1	22mm HOA Switch - M22 Series
1	22mm Speed Pot - M22 Series
6	Control Relay
1	Varnished Boards (Standard)
1	Stainless Steel (304) with Air Conditioning
1	Nameplates

Item No.	Qty	Product	Description
013l	1	Panelboards	42 Circuits, 225A, Fully Rated, 120/240V 1Ph 3W, Aluminum Bus, 22kAIC, 150A, EDB Main Breaker[Top Fed], Surface Mounted

Catalog No P1C225BT42AH01
Designation LSDB

Qty	List of Materials
1	150A, EDB Main Breaker
16	20A, 1P QBHW Branch Breaker
2	30A, 1P QBHW Branch Breaker
1	20A, 2P QBHW Branch Breaker
22	1P QBHW Branch Provision Only
1	Surge Protective Device, 100 kA SPD Series - Standard
1	Std. Bolted Al Ground Bar (Al/Cu Cable)
1	Panel Nameplate - White with Black Letters
1	Type 1 Enclosure: EZB2060R
1	EZ Trim, Door in Door, Concealed Hardware: EZT2060S

Project Name: East Area Water Control Facility
General Order No: MAT0011132

Negotiation No: AT130311X0K1
Alternate No: R003

Item No.	Qty	Product	Description
014I	1	Panelboards	42 Circuits, 250A, Fully Rated, 480Y/277V 3Ph 4W, Aluminum Bus, 25kAIC, 225A, FD 3P Main Breaker[Top Fed], Surface Mounted

Catalog No P3D250BT48AH01
Designation HSP.1

- Qty List of Materials**
- 1 225A, FD 3P Main Breaker
 - 7 20A, 3P FD Branch Breaker
 - 12 20A, 1P HGHB Branch Breaker
 - 9 1P HGHB Branch Provision Only
 - 1 Std. Bolted Al Ground Bar (Al/Cu Cable)
 - 1 Panel Nameplate - White with Black Letters
 - 1 Type 1 Enclosure: EZB2072R
 - 1 EZ Trim, Door in Door, Concealed Hardware: EZT2072S

Item No.	Qty	Product	Description
015I	1	Panelboards	42 Circuits, 225A, Fully Rated, 208Y/120V 3Ph 4W, Aluminum Bus, 22kAIC, 100A, 3P QBHW-H Main Breaker[Top Fed], Surface Mounted

Catalog No P1A225BT42AH01
Designation LSP

- Qty List of Materials**
- 1 100A, 3P QBHW-H Main Breaker
 - 2 20A, 2P QBHW Branch Breaker
 - 32 20A, 1P QBHW Branch Breaker
 - 1 30A, 1P QBHW Branch Breaker
 - 1 40A, 1P QBHW Branch Breaker
 - 4 1P QBHW Branch Provision Only
 - 1 Std. Bolted Al Ground Bar (Al/Cu Cable)
 - 1 Panel Nameplate - White with Black Letters
 - 1 Type 1 Enclosure: EZB2042R
 - 1 EZ Trim, Door in Door, Concealed Hardware: EZT2042S

Item No.	Qty	Product	Description
016I	1	Panelboards	42 Circuits, 250A, Fully Rated, 480Y/277V 3Ph 4W, Aluminum Bus, 25kAIC, 100A, FD 3P Main Breaker[Top Fed], Surface Mounted

Catalog No P3D250BT42AH01
Designation HSB

- Qty List of Materials**
- 1 100A, FD 3P Main Breaker
 - 1 100A, 3P FD Branch Breaker
 - 3 20A, 3P FD Branch Breaker
 - 30 1P HGHB Branch Provision Only
 - 1 Std. Bolted Al Ground Bar (Al/Cu Cable)
 - 1 Panel Nameplate - White with Black Letters
 - 1 Type 1 Enclosure: EZB2060R
 - 1 EZ Trim, Door in Door, Concealed Hardware: EZT2060S

Project Name: East Area Water Control Facility
General Order No: MAT0011132

Negotiation No: AT130311X0K1
Alternate No: R003

Item No.	Qty	Product	Description
017I	1	Panelboards	42 Circuits, 100A, Fully Rated, 208Y/120V 3Ph 4W, Aluminum Bus, 18kAIC, 80A, 3P QBHW-H Main Breaker[Top Fed], Surface Mounted
		Catalog No	P1A100BT42AH01
		Designation	LSB
	Qty	List of Materials	
	1	80A, 3P QBHW-H Main Breaker	
	5	20A, 1P QBHW Branch Breaker	
	37	1P QBHW Branch Provision Only	
	1	Std. Bolted Al Ground Bar (Al/Cu Cable)	
	1	Panel Nameplate - White with Black Letters	
	1	Type 1 Enclosure: EZB2042R	
	1	EZ Trim, Door in Door, Concealed Hardware: EZT2042S	

Item No.	Qty	Product	Description
018I	1	Panelboards	30 Circuits, 100A, Fully Rated, 240/120V 3Ph 4W B HiLeg, Aluminum Bus, 18kAIC, 40A, 3P EHD Main Breaker[Top Fed], Surface Mounted
		Catalog No	P1F100BT30AH01
		Designation	SBCBP(FILTER BUILDING)
	Qty	List of Materials	
	1	40A, 3P EHD Main Breaker	
	1	20A, 1P QBHW Branch Breaker	
	1	30A, 3P QBHW-H Branch Breaker	
	17	1P QBHW Branch Provision Only	
	1	Surge Protective Device, 100 kA SPD Series - Standard	
	1	Std. Bolted Al Ground Bar (Al/Cu Cable)	
	1	Panel Nameplate - White with Black Letters	
	1	Type 1 Enclosure: Box, Refer To Factory	
	1	EZ Trim, Door in Door, Concealed Hardware: Trim, Refer To Factory	

Item No.	Qty	Product	Description
019I	1	Panelboards	30 Circuits, 225A, Fully Rated, 120/240V 1Ph 3W, Aluminum Bus, 18kAIC, 225A, Main Lugs Only[Top Fed], Surface Mounted
		Catalog No	P1C225LT30AH01
		Designation	SBCBP(SODIUM DOSING)
	Qty	List of Materials	
	1	225A, Main Lugs Only	
	1	30A, 1P QBHW Branch Breaker	
	12	20A, 1P QBHW Branch Breaker	
	17	1P QBHW Branch Provision Only	
	1	Surge Protective Device, 100 kA SPD Series - Standard	
	1	Std. Bolted Al Ground Bar (Al/Cu Cable)	
	1	Panel Nameplate - White with Black Letters	
	1	Type 1 Enclosure: EZB2042R	
	1	EZ Trim, Door in Door, Concealed Hardware: EZT2042S	

Project Name: East Area Water Control Facility
General Order No: MAT0011132

Negotiation No: AT130311X0K1
Alternate No: R003

Item No.	Qty	Product	Description
020I	1	Panelboards	24 Circuits, 250A, Fully Rated, 480V 3Ph 3W, Aluminum Bus, 65kAIC, 225A, HFD 3P Main Breaker[Top Fed], Surface Mounted
		Catalog No	P3E250BT24AH4X
		Designation	DP-SB
	Qty	List of Materials	
	1	225A, HFD 3P Main Breaker	
	1	100A, 3P HFD Branch Breaker	
	3	60A, 3P HFD Branch Breaker	
	4	20A, 3P HFD Branch Breaker	
	1	Surge Protective Device, 120 kA SPD Series - Standard	
	1	Std. Bolted Al Ground Bar (Al/Cu Cable)	
	1	Panel Nameplate - White with Black Letters	
	1	Type 4X Enclosure, 304 Stainless Steel: N4X2448N	

Item No.	Qty	Product	Description
021	1	Aftermarket Panelboards	SWBD Retrofit Kit
		Catalog No	KPRL4NGC31000SXX
		Designation	1600A
	Qty	List of Materials	
	1	SWBD Retrofit Kit Retrofit Kit Catalog Number: KPRL4NGC31000SXX Circuit Breaker, NGC, 1000A X Space Required: 6 PRLC, Legacy Retrofit Kit	
	1	N Frame Connector Kit	
	1	1000A, 3P NGC Breaker, [1200A Frame]	
	1	310+ ALSI Trip Unit, NG Frame, Included	
	3	Terminals, Mech. (4) 4/0-500 kcmil (Cu/Al)	

Item No.	Qty	Product	Description
022	1	Aftermarket Panelboards	SWBD Retrofit Kit
		Catalog No	KPRL4NGC3800SXX
		Designation	1600A
	Qty	List of Materials	
	1	SWBD Retrofit Kit Retrofit Kit Catalog Number: KPRL4NGC3800SXX Circuit Breaker, NGC, 800A X Space Required: 6 PRLC, Legacy Retrofit Kit	
	1	N Frame Connector Kit	
	1	800A, 3P NGC Breaker, [800A Frame]	
	1	310+ LS Trip Unit, NG Frame, Included	
	3	Terminals, Mech. (4) 4/0-500 kcmil (Cu/Al)	

Item No.	Qty	Product	Description
023	1	Aftermarket Panelboards	SWBD Retrofit Kit
		Catalog No	KPRL4LDC3600SXX
		Designation	1600A

Project Name: East Area Water Control Facility
General Order No: MAT0011132

Negotiation No: AT130311X0K1
Alternate No: R003

- Qty List of Materials**
- 1 SWBD Retrofit Kit Retrofit Kit Catalog Number: KPRL4LDC3600SXX Circuit Breaker, LDC, 600A X Space Required: 6 PRLC, Legacy Retrofit Kit
 - 1 L Frame Connector Kit
 - 1 600A, 3P LDC Breaker Frame
 - 1 310+LS Trip Unit, L Frame
 - 1 Fixed Rating Plug, L Frame, 600A
 - 1 Terminals, Mech. (2) 400-500 kcmil (Cu/Al), 3 Pole Kit

Item No.	Qty	Product	Description
0471	1	Panelboards	42 Circuits, 400A, Fully Rated, 480Y/277V 3Ph 4W, Aluminum Bus, 100kAIC, 400A, Main Lugs Only[Top Fed], Surface Mounted

Catalog No P3D400LT42AH01
Designation HSDB

- Qty List of Materials**
- 1 400A, Main Lugs Only
 - 1 60A, 3P FDC Branch Breaker
 - 7 20A, 3P FDC Branch Breaker
 - 6 3P FDC Branch Provision Only
 - 1 Std. Bolted Al Ground Bar (Al/Cu Cable)
 - 1 Panel Nameplate - White with Black Letters
 - 1 Type 1 Enclosure: EZB2072R
 - 1 EZ Trim, Door in Door, Concealed Hardware: EZT2072S

Item No.	Qty	Product	Description
024	1	Dry Type Transformers	Transformer Type: General Purpose Vented 3 Phase, 30 KVA, 1 K-Factor 480 Primary Volts 208Y/120 Secondary Volts Temperature Rise 150C with 220C Insulation System Aluminum Winding Material Sound Reduction : 0 NEMA ST-20 Audible Sound Level: 45 Efficiency : DOE 10 CFR Part 431 (2016) UL Listed : Y Enclosure Type: NEMA 2 (for N3R, select Weather Shield in Mods tab) Operating Frequency: 60 HZ

Catalog No V48M28T3016
Designation TX-LSP

- Qty List of Materials**
- 1 3 Phase, 30 KVA, 480 Primary Volts, 208Y/120 Secondary Volts, 150C with 220C Insulation System Temperature Rise, Aluminum Winding Material, 60 HZ
 - 1 TRANSFORMER WEATHERSHIELD KIT FITS FRAME FR940

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Negotiation No: AT130311X0K1
Alternate No: R003

Item No.	Qty	Product	Description
021	1	Aftermarket Panelboards	SWBD Retrofit Kit
		Catalog No	KPRL4NGC31000SXX
		Designation	1600A
	Qty	List of Materials	
	1	SWBD Retrofit Kit Retrofit Kit Catalog Number: KPRL4NGC31000SXX Circuit Breaker, NGC, 1000A X Space Required: 6 PRLC, Legacy Retrofit Kit	
	1	N Frame Connector Kit	
	1	1000A, 3P NGC Breaker, [1200A Frame]	
	1	310+ ALSI Trip Unit, NG Frame, Included	
	3	Terminals, Mech. (4) 4/0-500 kcmil (Cu/Al)	

Item No.	Qty	Product	Description
022	1	Aftermarket Panelboards	SWBD Retrofit Kit
		Catalog No	KPRL4NGC3800SXX
		Designation	1600A
	Qty	List of Materials	
	1	SWBD Retrofit Kit Retrofit Kit Catalog Number: KPRL4NGC3800SXX Circuit Breaker, NGC, 800A X Space Required: 6 PRLC, Legacy Retrofit Kit	
	1	N Frame Connector Kit	
	1	800A, 3P NGC Breaker, [800A Frame]	
	1	310+ LS Trip Unit, NG Frame, Included	
	3	Terminals, Mech. (4) 4/0-500 kcmil (Cu/Al)	

Item No.	Qty	Product	Description
023	1	Aftermarket Panelboards	SWBD Retrofit Kit
		Catalog No	KPRL4LDC3600SXX
		Designation	1600A
	Qty	List of Materials	
	1	SWBD Retrofit Kit Retrofit Kit Catalog Number: KPRL4LDC3600SXX Circuit Breaker, LDC, 600A X Space Required: 6 PRLC, Legacy Retrofit Kit	
	1	L Frame Connector Kit	
	1	600A, 3P LDC Breaker Frame	
	1	310+LS Trip Unit, L Frame	
	1	Fixed Rating Plug, L Frame, 600A	
	1	Terminals, Mech. (2) 400-500 kcmil (Cu/Al), 3 Pole Kit	

Item No.	Qty	Product	Description
013I	1	Panelboards	42 Circuits, 225A, Fully Rated, 120/240V 1Ph 3W, Aluminum Bus, 22kAIC, 150A, EDB Main Breaker[Top Fed], Surface Mounted
		Catalog No	P1C225BT42AH01
		Designation	LSDB

Project Name: East Area Water Control Facility
General Order No: MAT0011132

Negotiation No: AT130311X0K1
Alternate No: R003

Qty	List of Materials
1	150A, EDB Main Breaker
16	20A, 1P QBHW Branch Breaker
2	30A, 1P QBHW Branch Breaker
1	20A, 2P QBHW Branch Breaker
22	1P QBHW Branch Provision Only
1	Surge Protective Device, 100 kA SPD Series - Standard
1	Std. Bolted Al Ground Bar (Al/Cu Cable)
1	Panel Nameplate - White with Black Letters
1	Type 1 Enclosure: EZB2060R
1	EZ Trim, Door in Door, Concealed Hardware: EZT2060S

Item No.	Qty	Product	Description
014I	1	Panelboards	42 Circuits, 250A, Fully Rated, 480Y/277V 3Ph 4W, Aluminum Bus, 25kAIC, 225A, FD 3P Main Breaker[Top Fed], Surface Mounted
		Catalog No	P3D250BT48AH01
		Designation	HSP.1

Qty	List of Materials
1	225A, FD 3P Main Breaker
7	20A, 3P FD Branch Breaker
12	20A, 1P HGHB Branch Breaker
9	1P HGHB Branch Provision Only
1	Std. Bolted Al Ground Bar (Al/Cu Cable)
1	Panel Nameplate - White with Black Letters
1	Type 1 Enclosure: EZB2072R
1	EZ Trim, Door in Door, Concealed Hardware: EZT2072S

Item No.	Qty	Product	Description
015I	1	Panelboards	42 Circuits, 225A, Fully Rated, 208Y/120V 3Ph 4W, Aluminum Bus, 22kAIC, 100A, 3P QBHW-H Main Breaker[Top Fed], Surface Mounted
		Catalog No	P1A225BT42AH01
		Designation	LSP

Qty	List of Materials
1	100A, 3P QBHW-H Main Breaker
2	20A, 2P QBHW Branch Breaker
32	20A, 1P QBHW Branch Breaker
1	30A, 1P QBHW Branch Breaker
1	40A, 1P QBHW Branch Breaker
4	1P QBHW Branch Provision Only
1	Std. Bolted Al Ground Bar (Al/Cu Cable)
1	Panel Nameplate - White with Black Letters
1	Type 1 Enclosure: EZB2042R
1	EZ Trim, Door in Door, Concealed Hardware: EZT2042S

Project Name: East Area Water Control Facility
General Order No: MAT0011132

Negotiation No: AT130311X0K1
Alternate No: R003

Item No.	Qty	Product	Description
016I	1	Panelboards	42 Circuits, 250A, Fully Rated, 480Y/277V 3Ph 4W, Aluminum Bus, 25kAIC, 100A, FD 3P Main Breaker[Top Fed], Surface Mounted
		Catalog No	P3D250BT42AH01
		Designation	HSB
	Qty	List of Materials	
	1	100A, FD 3P Main Breaker	
	1	100A, 3P FD Branch Breaker	
	3	20A, 3P FD Branch Breaker	
	30	1P HGHB Branch Provision Only	
	1	Std. Bolted Al Ground Bar (Al/Cu Cable)	
	1	Panel Nameplate - White with Black Letters	
	1	Type 1 Enclosure: EZB2060R	
	1	EZ Trim, Door in Door, Concealed Hardware: EZT2060S	

Item No.	Qty	Product	Description
017I	1	Panelboards	42 Circuits, 100A, Fully Rated, 208Y/120V 3Ph 4W, Aluminum Bus, 18kAIC, 80A, 3P QBHW-H Main Breaker[Top Fed], Surface Mounted
		Catalog No	P1A100BT42AH01
		Designation	LSB
	Qty	List of Materials	
	1	80A, 3P QBHW-H Main Breaker	
	5	20A, 1P QBHW Branch Breaker	
	37	1P QBHW Branch Provision Only	
	1	Std. Bolted Al Ground Bar (Al/Cu Cable)	
	1	Panel Nameplate - White with Black Letters	
	1	Type 1 Enclosure: EZB2042R	
	1	EZ Trim, Door in Door, Concealed Hardware: EZT2042S	

Item No.	Qty	Product	Description
018I	1	Panelboards	30 Circuits, 100A, Fully Rated, 240/120V 3Ph 4W B HiLeg, Aluminum Bus, 18kAIC, 40A, 3P EHD Main Breaker[Top Fed], Surface Mounted
		Catalog No	P1F100BT30AH01
		Designation	SBCBP(FILTER BUILDING)
	Qty	List of Materials	
	1	40A, 3P EHD Main Breaker	
	1	20A, 1P QBHW Branch Breaker	
	1	30A, 3P QBHW-H Branch Breaker	
	17	1P QBHW Branch Provision Only	
	1	Surge Protective Device, 100 kA SPD Series - Standard	
	1	Std. Bolted Al Ground Bar (Al/Cu Cable)	
	1	Panel Nameplate - White with Black Letters	
	1	Type 1 Enclosure: Box, Refer To Factory	
	1	EZ Trim, Door in Door, Concealed Hardware: Trim, Refer To Factory	

Project Name: East Area Water Control Facility
General Order No: MAT0011132

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Item No.	Qty	Product	Description
019I	1	Panelboards	30 Circuits, 225A, Fully Rated, 120/240V 1Ph 3W, Aluminum Bus, 18kAIC, 225A, Main Lugs Only[Top Fed], Surface Mounted

Catalog No P1C225LT30AH01
Designation SBCBP(SODIUM DOSING)

Qty	List of Materials
1	225A, Main Lugs Only
1	30A, 1P QBHW Branch Breaker
12	20A, 1P QBHW Branch Breaker
17	1P QBHW Branch Provision Only
1	Surge Protective Device, 100 kA SPD Series - Standard
1	Std. Bolted Al Ground Bar (Al/Cu Cable)
1	Panel Nameplate - White with Black Letters
1	Type 1 Enclosure: EZB2042R
1	EZ Trim, Door in Door, Concealed Hardware: EZT2042S

Item No.	Qty	Product	Description
020I	1	Panelboards	24 Circuits, 250A, Fully Rated, 480V 3Ph 3W, Aluminum Bus, 65kAIC, 225A, HFD 3P Main Breaker[Top Fed], Surface Mounted

Catalog No P3E250BT24AH4X
Designation DP-SB

Qty	List of Materials
1	225A, HFD 3P Main Breaker
1	100A, 3P HFD Branch Breaker
3	60A, 3P HFD Branch Breaker
4	20A, 3P HFD Branch Breaker
1	Surge Protective Device, 120 kA SPD Series - Standard
1	Std. Bolted Al Ground Bar (Al/Cu Cable)
1	Panel Nameplate - White with Black Letters
1	Type 4X Enclosure, 304 Stainless Steel: N4X2448N

Item No.	Qty	Product	Description
047I	1	Panelboards	42 Circuits, 400A, Fully Rated, 480Y/277V 3Ph 4W, Aluminum Bus, 100kAIC, 400A, Main Lugs Only[Top Fed], Surface Mounted

Catalog No P3D400LT42AH01
Designation HSDB

Qty	List of Materials
1	400A, Main Lugs Only
1	60A, 3P FDC Branch Breaker
7	20A, 3P FDC Branch Breaker
6	3P FDC Branch Provision Only
1	Std. Bolted Al Ground Bar (Al/Cu Cable)
1	Panel Nameplate - White with Black Letters
1	Type 1 Enclosure: EZB2072R
1	EZ Trim, Door in Door, Concealed Hardware: EZT2072S

Eaton Selling Policy 25-000 applies.

All orders must be released for manufacture within 90 days of date of order entry. If approval drawings are required, drawings must be returned approved for release within 60 days of mailing. If drawings are not returned accordingly, and/or if shipment is delayed for any reason, the price of the order will increase by 1.0% per month or fraction thereof for the time the shipment is delayed.



Detail Bill of Material

Project Name: East Area Water Control Facility
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Negotiation No: AT130311X0K1
Alternate No: R003

Seller shall not be responsible for any failure to perform, or delay in performance of, its obligations resulting from the COVID-19 pandemic or any future epidemic, and Buyer shall not be entitled to any damages resulting thereof.

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General Information

(Section 1 of 1)

Main Breaker 150A
EDB3150, Vert Mtd.

SPD Standard
100 kA SPD, Bus Connected

1	QBHW1030	QBHW1030	2
3	QBHW1020	QBHW1020	4
5	QBHW1020	QBHW1020	6
7	QBHW1020	QBHW1020	8
9	QBHW1020	QBHW1020	10
11	QBHW2020	QBHW1020	12
13		QBHW1020	14
15	QBHW1020	QBHW1020	16
17	QBHW1020	QBHW1020	18
19	QBHW1020	QBHW1020	20
21	PROV	PROV	22
23	PROV	PROV	24
25	PROV	PROV	26
27	PROV	PROV	28
29	PROV	PROV	30
31	PROV	PROV	32
33	PROV	PROV	34
35	PROV	PROV	36
37	PROV	PROV	38
39	PROV	PROV	40
41	PROV	PROV	42

Blank Cover
8 inches

Service Voltage: 120/240V 1Ph 3W
Bus Rating & Type: 225A Aluminum
Ground Bar: Std. Bolted Aluminum, Al or Cu cable
S.C. Rating: 22k A.I.C. Fully Rated

Enclosure: Type 1
Neutral Rating: 225A

Main Device Type: Main Breaker - Top Cable Entry - A & C Phase Connection
Main Terminals: Mechanical - (1) #4-4/0 (Cu/Al)
Neutral Terminals: Mechanical - (1) #6-300 kcmil (Cu/Al)
Box Catalog No.: EZB2060R
Trim: EZ Trim, Door in Door, Concealed Hardware (EZT2060S)

Surface Mounted

Box Dimensions: 60.00" [1524.0mm]H x 20.00" [508.0mm]W x 5.75" [146.1mm]D
Min. Gutter Size: Top = 5.5" [139.7mm] Bottom = 5.5" [139.7mm]
Left = 6.0" [152.4mm] Right = 6.0" [152.4mm]

Panel ID Nameplate: (1) LSDB
Type: Plastic, adhesive-backed (2) 120/240V 1Ph 3W
Color: White with Black Letters (3)

UL *Non-Interchangeable Main Device*****

Trim Lock: Standard Lock & Key (Keyed WEM2)
Circuit Directory: Plastic Sleeve with Card
Main Circuit Breaker Trip Type: Thermal-Magnetic.
Seismic Label (IBC/CBC Seismic Qualified).
Heat Loss - Watts (Est.) = 117
Weight - lbs (Est.) = 144
Wire shall be based on the ampacity of 75°C rated conductors unless otherwise indicated.

Device Modifications:

Ref #	Description

Branch Devices

Qty	Poles	Trip	Frame	Amps	kAIC
16	1	20	QBHW	100	22
2	1	30	QBHW	100	22
1	2	20	QBHW	100	22
22	1		PROV		

Main Devices

Qty	Poles	Trip	Frame	Amps	kAIC
1	3	150	EDB	225	22

Notes:

The information on this document is created by Eaton Corporation. It is disclosed in confidence and it is only to be used for the purpose in which it is supplied.

PREPARED BY NICHOLAS NATALE	DATE 2/16/2023	Eaton			
APPROVED BY	DATE	JOB NAME East Area Water Control Facility	DESIGNATION LSDB		
VERSION 1.0.0.48	TYPE PRL1a	DRAWING TYPE Customer Approval			
NEG-ALT Number AT130311X0K1-R003	REVISION 0	DWG SIZE A	G.O. MAT0011132	ITEM 013I	SHEET 1 of 1

Main Breaker 225A
FD3225, Vert Mtd.

Neutral

1	HGHB1020	HGHB1020	2
3	HGHB1020	HGHB1020	4
5	HGHB1020	HGHB1020	6
7	HGHB1020	HGHB1020	8
9	HGHB1020	HGHB1020	10
11	HGHB1020	HGHB1020	12
13	PROVHGB1	PROVHGB1	14
15	PROVHGB1	PROVHGB1	16
17	PROVHGB1	PROVHGB1	18
19	PROVHGB1	PROVHGB1	20
21	PROVHGB1	Blank	22
23	Blank	Blank	24
25	FD3020	FD3020	26
27	20A	20A	28
29			30
31	FD3020	FD3020	32
33	20A	20A	34
35			36
37	FD3020	FD3020	38
39	20A	20A	40
41			42
43	FD3020	Blank	44
45	20A	Blank	46
47		Blank	48

Bus Cover
6X

General Information

(Section 1 of 1)

Service Voltage: 480Y/277V 3Ph 4W
Bus Rating & Type: 250A Aluminum
Ground Bar: Std. Bolted Aluminum, Al or Cu cable
S.C. Rating: 25k A.I.C. Fully Rated
Enclosure: Type 1
Neutral Rating: 250A

Main Device Type: Main Breaker - Top Cable Entry
Main Terminals: Mechanical - (1) #4-4/0 (Cu/Al)
Neutral Terminals: Mechanical - (1) #6-350 kcmil (Cu/Al)
Box Catalog No.: EZB2072R
Trim: EZ Trim, Door in Door, Concealed Hardware (EZT2072S)

Surface Mounted

Box Dimensions: 72.00" [1828.8mm]H x 20.00" [508.0mm]W x 5.75" [146.1mm]D
Min. Gutter Size: Top = 5.5" [139.7mm] Bottom = 5.5" [139.7mm]
Left = 4" [101.6mm] Right = 4" [101.6mm]

Panel ID Nameplate: (1) HSP.1
Type: Plastic, adhesive-backed (2) 480Y/277V 3Ph 4W
Color: White with Black Letters (3)

UL

Trim Lock: Standard Lock & Key (Keyed WEM2)
Circuit Directory: Plastic Sleeve with Card
Main Circuit Breaker Trip Type: Thermal-Magnetic.
Seismic Label (IBC/CBC Seismic Qualified).
Heat Loss - Watts (Est.) = 126
Wire shall be based on the ampacity of 75°C rated conductors unless otherwise indicated.

Device Modifications:

Ref #	Description

Branch Devices

Qty	Poles	Trip	Frame	Amps	kAIC
7	3	20	FD	100	25
12	1	20	HGHB	100	25
9	1		PROVHGB1		

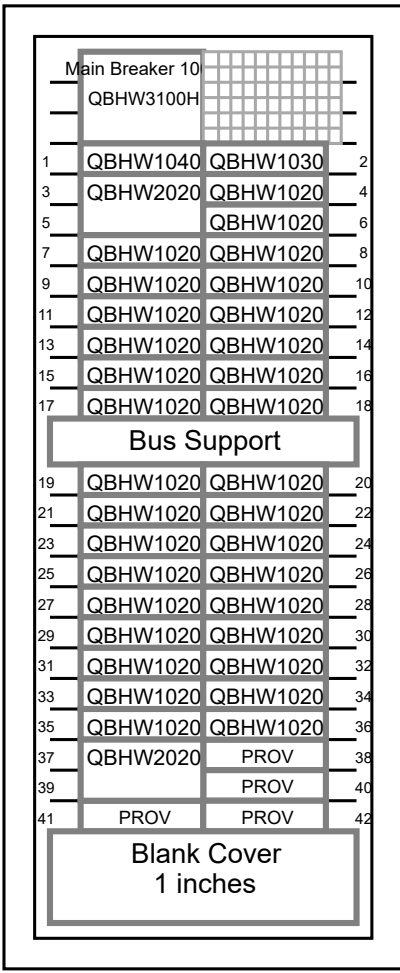
Main Devices

Qty	Poles	Trip	Frame	Amps	kAIC
1	3	225	FD	225	25

Notes:

The information on this document is created by Eaton Corporation. It is disclosed in confidence and it is only to be used for the purpose in which it is supplied.

PREPARED BY	DATE	Eaton			
NICHOLAS NATALE	2/16/2023	JOB NAME	East Area Water Control Facility		
APPROVED BY	DATE	DESIGNATION	HSP.1		
	VERSION	TYPE	DRAWING TYPE		
	1.0.0.48	PRL3a	Customer Approval		
NEG-ALT Number	REVISION	DWG SIZE	G.O.	ITEM	SHEET
AT130311X0K1-R003	0	A	MAT0011132	014I	1 of 1



General Information (Section 1 of 1)

Service Voltage: 208Y/120V 3Ph 4W **Enclosure:** Type 1
Bus Rating & Type: 225A Aluminum **Neutral Rating:** 225A
Ground Bar: Std. Bolted Aluminum, Al or Cu cable
S.C. Rating: 22k A.I.C. Fully Rated

Main Device Type: Main Breaker - Top Cable Entry
Main Terminals: Mechanical - (1) #8-1/0 (Cu/Al)
Neutral Terminals: Mechanical - (1) #6-300 kcmil (Cu/Al)
Box Catalog No.: EZB2042R
Trim: EZ Trim, Door in Door, Concealed Hardware (EZT2042S)
 Surface Mounted

Box Dimensions: 42.00" [1066.8mm]H x 20.00" [508.0mm]W x 5.75" [146.1mm]D
Min. Gutter Size: Top = 5.5" [139.7mm] Bottom = 5.5" [139.7mm]
 Left = 6.0" [152.4mm] Right = 6.0" [152.4mm]

Panel ID Nameplate: (1) LSP
Type: Plastic, adhesive-backed (2) 208Y/120V 3Ph 4W
Color: White with Black Letters (3)

UL ***Non-Interchangeable Main Device***

Trim Lock: Standard Lock & Key (Keyed WEM2)
 Circuit Directory: Plastic Sleeve with Card
 Main Circuit Breaker Trip Type: Thermal-Magnetic.
 Seismic Label (IBC/CBC Seismic Qualified).
 Heat Loss - Watts (Est.) = 104
 Weight - lbs (Est.) = 101
 Wire shall be based on the ampacity of 75°C rated conductors unless otherwise indicated.

Device Modifications:

Ref #	Description

Branch Devices

Qty	Poles	Trip	Frame	Amps	kAIC
2	2	20	QBHW	100	22
32	1	20	QBHW	100	22
1	1	30	QBHW	100	22
1	1	40	QBHW	100	22
4	1		PROV		

Main Devices

Qty	Poles	Trip	Frame	Amps	kAIC
1	3	100	QBHW-H	100	22

Notes:

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PREPARED BY NICHOLAS NATALE	DATE 2/16/2023	Eaton	
APPROVED BY	DATE	JOB NAME East Area Water Control Facility	DESIGNATION LSP
VERSION 1.0.0.48	TYPE PRL1a	DRAWING TYPE Customer Approval	
NEG-ALT Number AT130311X0K1-R003	REVISION 0	DWG SIZE A	G.O. MAT0011132
		ITEM 015I	SHEET 1 of 1

Main Breaker 100A
FD3100, Vert Mtd.

Neutral

1	PROVHGHB1	PROVHGHB1	2
3	PROVHGHB1	PROVHGHB1	4
5	PROVHGHB1	PROVHGHB1	6
7	PROVHGHB1	PROVHGHB1	8
9	PROVHGHB1	PROVHGHB1	10
11	PROVHGHB1	PROVHGHB1	12
13	PROVHGHB1	PROVHGHB1	14
15	PROVHGHB1	PROVHGHB1	16
17	PROVHGHB1	PROVHGHB1	18
19	PROVHGHB1	PROVHGHB1	20
21	PROVHGHB1	PROVHGHB1	22
23	PROVHGHB1	PROVHGHB1	24
25	PROVHGHB1	PROVHGHB1	26
27	PROVHGHB1	PROVHGHB1	28
29	PROVHGHB1	PROVHGHB1	30
31	FD3100	FD3020	32
33	100A	20A	34
35			36
37	FD3020	FD3020	38
39	20A	20A	40
41			42

General Information

(Section 1 of 1)

Service Voltage: 480Y/277V 3Ph 4W
Bus Rating & Type: 250A Aluminum
Ground Bar: Std. Bolted Aluminum, Al or Cu cable
S.C. Rating: 25k A.I.C. Fully Rated

Enclosure: Type 1
Neutral Rating: 250A

Main Device Type: Main Breaker - Top Cable Entry
Main Terminals: Mechanical - (1) #14-1/0 (Cu/Al)
Neutral Terminals: Mechanical - (1) #6-350 kcmil (Cu/Al)
Box Catalog No.: EZB2060R
Trim: EZ Trim, Door in Door, Concealed Hardware (EZT2060S)

Surface Mounted

Box Dimensions: 60.00" [1524.0mm]H x 20.00" [508.0mm]W x 5.75" [146.1mm]D
Min. Gutter Size: Top = 5.5" [139.7mm] Bottom = 5.5" [139.7mm]
 Left = 4" [101.6mm] Right = 4" [101.6mm]

Panel ID Nameplate: (1) HSB
Type: Plastic, adhesive-backed (2) 480Y/277V 3Ph 4W
Color: White with Black Letters (3)

UL

Trim Lock: Standard Lock & Key (Keyed WEM2)
 Circuit Directory: Plastic Sleeve with Card
 Main Circuit Breaker Trip Type: Thermal-Magnetic.
 Seismic Label (IBC/CBC Seismic Qualified).
 Heat Loss - Watts (Est.) = 117
 Wire shall be based on the ampacity of 75°C rated conductors unless otherwise indicated.

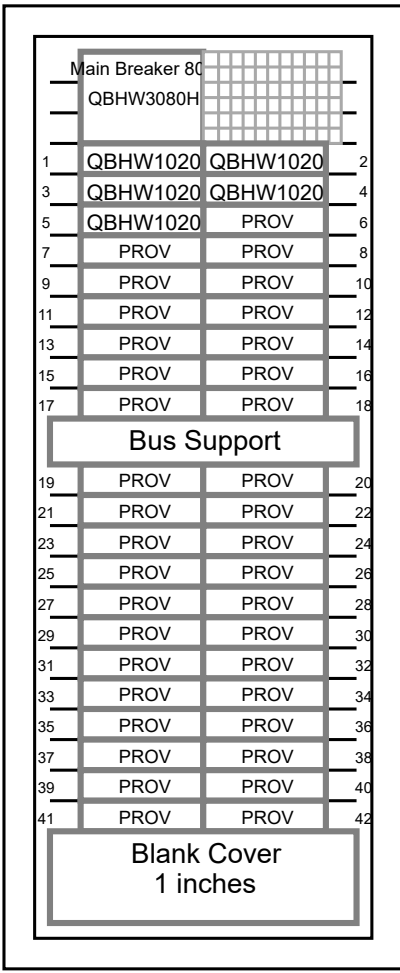
Device Modifications:
 Ref # Description

Branch Devices						
Qty	Poles	Trip	Frame	Amps	kAIC	
1	3	100	FD	100	25	
3	3	20	FD	100	25	
30	1		PROVHGHB1			
Main Devices						
Qty	Poles	Trip	Frame	Amps	kAIC	
1	3	100	FD	225	25	

Notes:

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PREPARED BY NICHOLAS NATALE	DATE 2/16/2023	Eaton			
APPROVED BY	DATE	JOB NAME East Area Water Control Facility	DESIGNATION HSB		
VERSION 1.0.0.48	TYPE PRL3a	DRAWING TYPE Customer Approval			
NEG-ALT Number AT130311X0K1-R003	REVISION 0	DWG SIZE A	G.O. MAT0011132	ITEM 016I	SHEET 1 of 1



General Information (Section 1 of 1)

Service Voltage: 208Y/120V 3Ph 4W
Bus Rating & Type: 100A Aluminum
Ground Bar: Std. Bolted Aluminum, Al or Cu cable
S.C. Rating: 18k A.I.C. Fully Rated

Enclosure: Type 1
Neutral Rating: 100A

Main Device Type: Main Breaker - Top Cable Entry
Main Terminals: Mechanical - (1) #8-1/0 (Cu/Al)
Neutral Terminals: Mechanical - (1) #14-1/0 (Cu/Al)
Box Catalog No.: EZB2042R
Trim: EZ Trim, Door in Door, Concealed Hardware (EZT2042S)

Surface Mounted

Box Dimensions: 42.00" [1066.8mm]H x 20.00" [508.0mm]W x 5.75" [146.1mm]D
Min. Gutter Size: Top = 5.5" [139.7mm] Bottom = 5.5" [139.7mm]
Left = 6.0" [152.4mm] Right = 6.0" [152.4mm]

Panel ID Nameplate: (1) LSB
Type: Plastic, adhesive-backed (2) 208Y/120V 3Ph 4W
Color: White with Black Letters (3)

UL ***Non-Interchangeable Main Device***

Trim Lock: Standard Lock & Key (Keyed WEM2)
Circuit Directory: Plastic Sleeve with Card
Main Circuit Breaker Trip Type: Thermal-Magnetic.
Seismic Label (IBC/CBC Seismic Qualified).
Heat Loss - Watts (Est.) = 52
Weight - lbs (Est.) = 70
Wire shall be based on the ampacity of 75°C rated conductors unless otherwise indicated.

Device Modifications:

Ref #	Description

Branch Devices

Qty	Poles	Trip	Frame	Amps	kAIC
5	1	20	QBHW	100	18
37	1		PROV		

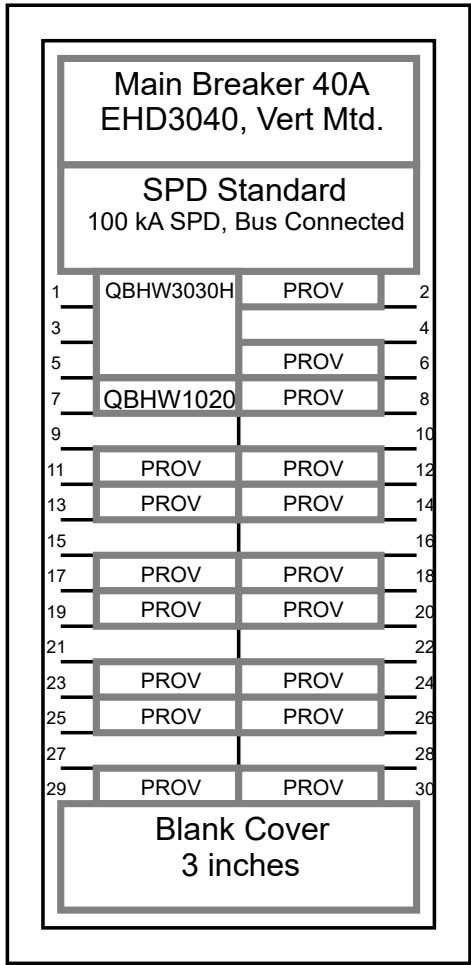
Main Devices

Qty	Poles	Trip	Frame	Amps	kAIC
1	3	80	QBHW-H	100	18

Notes:

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PREPARED BY NICHOLAS NATALE	DATE 2/16/2023	Eaton	
APPROVED BY	DATE	JOB NAME East Area Water Control Facility	DESIGNATION LSB
VERSION 1.0.0.48	TYPE PRL1a	DRAWING TYPE Customer Approval	
NEG-ALT Number AT130311X0K1-R003	REVISION 0	DWG SIZE A	G.O. MAT0011132
		ITEM 0171	SHEET 1 of 1



General Information

(Section 1 of 1)

Service Voltage: 240/120V 3Ph 4W B HiLeg
Bus Rating & Type: 100A Aluminum
Ground Bar: Std. Bolted Aluminum, Al or Cu cable
S.C. Rating: 18k A.I.C. Fully Rated
Enclosure: Type 1
Neutral Rating: 100A

Main Device Type: Main Breaker - Top Cable Entry
Main Terminals: Mechanical - (1) #14-1/0 (Cu/Al)
Neutral Terminals: Mechanical - (1) #14-1/0 (Cu/Al)
Box Catalog No.: Box, Refer To Factory
Trim: EZ Trim, Door in Door, Concealed Hardware (Trim, Refer To Factory)
 Surface Mounted

Box Dimensions: Factory to size
Min. Gutter Size: Top = 5.5" [139.7mm] Bottom = 5.5" [139.7mm]
 Left = 6.0" [152.4mm] Right = 6.0" [152.4mm]

Panel ID Nameplate: (1) SBCBP(FILTER BUILDING)
Type: Plastic, adhesive-backed (2) 240/120V 3Ph 4W B HiLeg
Color: White with Black Letters (3)

UL ***Non-Interchangeable Main Device***

Trim Lock: Standard Lock & Key (Keyed WEM2)
 Circuit Directory: Plastic Sleeve with Card
 Main Circuit Breaker Trip Type: Thermal-Magnetic.
 Seismic Label (IBC/CBC Seismic Qualified).
 Heat Loss - Watts (Est.) = 53
 Weight - lbs (Est.) = 106
 Wire shall be based on the ampacity of 75°C rated conductors unless otherwise indicated.

Device Modifications:

Ref # Description

Branch Devices

Qty	Poles	Trip	Frame	Amps	kAIC
1	1	20	QBHW	100	18
1	3	30	QBHW	100	18
17	1		PROV		

Main Devices

Qty	Poles	Trip	Frame	Amps	kAIC
1	3	40	EHD	100	18

Notes:

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PREPARED BY NICHOLAS NATALE	DATE 2/16/2023	Eaton			
APPROVED BY	DATE	JOB NAME East Area Water Control Facility	DESIGNATION SBCBP(FILTER BUILDING)		
VERSION 1.0.0.48	TYPE PRL1a	DRAWING TYPE Customer Approval			
NEG-ALT Number AT130311X0K1-R003	REVISION 0	DWG SIZE A	G.O. MAT0011132	ITEM 018I	SHEET 1 of 1

**Main Lugs Only
225A**

**SPD Standard
100 kA SPD, Bus Connected**

1	QBHW1030	QBHW1020	2
3	QBHW1020	QBHW1020	4
5	QBHW1020	QBHW1020	6
7	QBHW1020	QBHW1020	8
9	QBHW1020	QBHW1020	10
11	QBHW1020	QBHW1020	12
13	QBHW1020	PROV	14
15	PROV	PROV	16
17	PROV	PROV	18
19	PROV	PROV	20
21	PROV	PROV	22
23	PROV	PROV	24
25	PROV	PROV	26
27	PROV	PROV	28
29	PROV	PROV	30

**Blank Cover
1 inches**

General Information

(Section 1 of 1)

Service Voltage: 120/240V 1Ph 3W
Bus Rating & Type: 225A Aluminum
Ground Bar: Std. Bolted Aluminum, Al or Cu cable
S.C. Rating: 18k A.I.C. Fully Rated

Enclosure: Type 1
Neutral Rating: 225A

Main Device Type: Main Lugs Only - Top Cable Entry - A & C Phase Connection
Main Terminals: Mechanical - (1) #6-300 kcmil (Cu/Al)
Neutral Terminals: Mechanical - (1) #6-300 kcmil (Cu/Al)
Box Catalog No.: EZB2042R
Trim: EZ Trim, Door in Door, Concealed Hardware (EZT2042S)

Surface Mounted

Box Dimensions: 42.00" [1066.8mm]H x 20.00" [508.0mm]W x 5.75" [146.1mm]D
Min. Gutter Size: Top = 5.5" [139.7mm] Bottom = 5.5" [139.7mm]
 Left = 6.0" [152.4mm] Right = 6.0" [152.4mm]

Panel ID Nameplate: (1) **SBCBP(SODIUM DOSING)**
Type: Plastic, adhesive-backed (2) **120/240V 1Ph 3W**
Color: White with Black Letters (3)

UL ***Non-Interchangeable Main Device***

Trim Lock: Standard Lock & Key (Keyed WEM2)
 Circuit Directory: Plastic Sleeve with Card
 Seismic Label (IBC/CBC Seismic Qualified).
 Heat Loss - Watts (Est.) = 104
 Weight - lbs (Est.) = 84
 Wire shall be based on the ampacity of 75°C rated conductors unless otherwise indicated.

Device Modifications:

Ref # Description

Branch Devices

Qty	Poles	Trip	Frame	Amps	kAIC
1	1	30	QBHW	100	18
12	1	20	QBHW	100	18
17	1		PROV		

Notes:

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PREPARED BY NICHOLAS NATALE	DATE 2/16/2023	Eaton	
APPROVED BY	DATE	JOB NAME East Area Water Control Facility	DESIGNATION SBCBP(SODIUM DOSING)
VERSION 1.0.0.48	TYPE PRL1a	DRAWING TYPE Customer Approval	
NEG-ALT Number AT130311X0K1-R003	REVISION 0	DWG SIZE A	G.O. MAT0011132
		ITEM 019I	SHEET 1 of 1

General Information

(Section 1 of 1)

Service Voltage: 480V 3Ph 3W **Enclosure:** Type 4X 304 SST
Bus Rating & Type: 250A Aluminum **Neutral Rating:** None
Ground Bar: Std. Bolted Aluminum, Al or Cu cable
S.C. Rating: 65k A.I.C. Fully Rated

Main Device Type: Main Breaker - Top Cable Entry
Main Terminals: Mechanical - (1) #4-4/0 (Cu/Al)
Neutral Terminals: None
Box Catalog No.: N4X2448N
Trim: Complete Enclosure (WP2448AT)

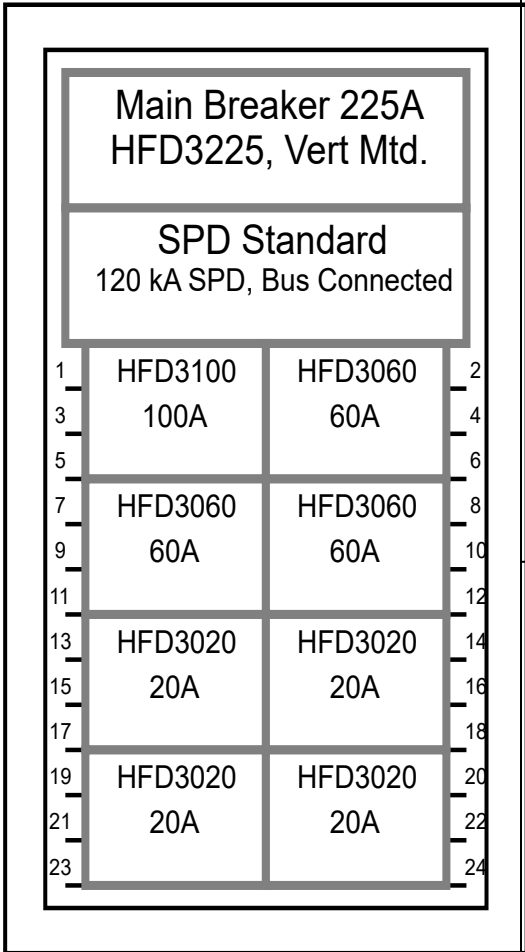
 Surface Mounted

Box Dimensions: 48.00" [1219.2mm]H x 24.00" [609.6mm]W x 6" [152.4mm]D
Min. Gutter Size: Top = 5.5" [139.7mm] Bottom = 5.5" [139.7mm]
 Left = 6" [152.4mm] Right = 6" [152.4mm]

Panel ID Nameplate: (1) DP-SB
Type: Plastic, adhesive-backed (2) 480V 3Ph 3W
Color: White with Black Letters (3)

UL

Trim Lock: Padlockable Hasp
 Circuit Directory: Plastic Sleeve with Card
 Main Circuit Breaker Trip Type: Thermal-Magnetic.
 Seismic Label (IBC/CBC Seismic Qualified).
 Heat Loss - Watts (Est.) = 109
 Wire shall be based on the ampacity of 75°C rated conductors unless otherwise indicated.



Device Modifications:
 Ref # Description

Branch Devices

Qty	Poles	Trip	Frame	Amps	kAIC
1	3	100	HFD	100	65
3	3	60	HFD	100	65
4	3	20	HFD	100	65

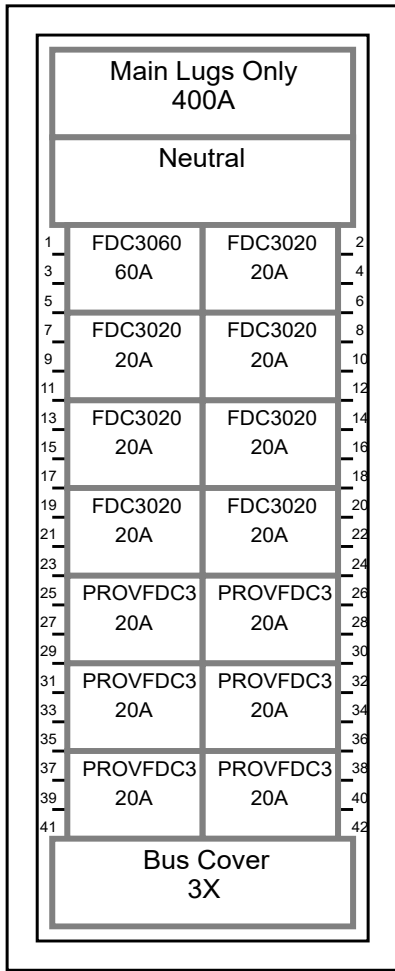
Main Devices

Qty	Poles	Trip	Frame	Amps	kAIC
1	3	225	HFD	225	65

Notes:

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PREPARED BY NICHOLAS NATALE	DATE 2/16/2023	Eaton			
APPROVED BY	DATE	JOB NAME East Area Water Control Facility	DESIGNATION DP-SB		
VERSION 1.0.0.48	TYPE PRL3a	DRAWING TYPE Customer Approval			
NEG-ALT Number AT130311X0K1-R003	REVISION 0	DWG SIZE A	G.O. MAT0011132	ITEM 020I	SHEET 1 of 1



General Information

(Section 1 of 1)

Service Voltage: 480Y/277V 3Ph 4W
Bus Rating & Type: 400A Aluminum
Ground Bar: Std. Bolted Aluminum, Al or Cu cable
S.C. Rating: 100k A.I.C. Fully Rated
Enclosure: Type 1
Neutral Rating: 400A

Main Device Type: Main Lugs Only - Top Cable Entry
Main Terminals: Mechanical - (2) #4-500 kcmil (Cu/Al)
Neutral Terminals: Mechanical - (2) #4-500 kcmil (Cu/Al)
Box Catalog No.: EZB2072R
Trim: EZ Trim, Door in Door, Concealed Hardware (EZT2072S)
 Surface Mounted

Box Dimensions: 72.00" [1828.8mm]H x 20.00" [508.0mm]W x 5.75" [146.1mm]D
Min. Gutter Size: Top = 5.5" [139.7mm] Bottom = 5.5" [139.7mm]
 Left = 4" [101.6mm] Right = 4" [101.6mm]

Panel ID Nameplate: (1) **HSDB**
Type: Plastic, adhesive-backed (2) **480Y/277V 3Ph 4W**
Color: White with Black Letters (3)

UL

Trim Lock: Standard Lock & Key (Keyed WEM2)
 Circuit Directory: Plastic Sleeve with Card
 Seismic Label (IBC/CBC Seismic Qualified).
 Heat Loss - Watts (Est.) = 242
 Wire shall be based on the ampacity of 75°C rated conductors unless otherwise indicated.

Device Modifications:
 Ref # Description

Branch Devices		Qty	Poles	Trip	Frame	Amps	kAIC
1		3		60	FDC	100	100
7		3		20	FDC	100	100
6		3			PROVFDC3		

Notes:

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PREPARED BY NICHOLAS NATALE	DATE 2/16/2023	Eaton	
APPROVED BY	DATE	JOB NAME East Area Water Control Facility	DESIGNATION HSDB
VERSION 1.0.0.48	TYPE PRL3a	DRAWING TYPE Customer Approval	
NEG-ALT Number AT130311X0K1-R003	REVISION 0	DWG SIZE A	G.O. MAT0011132
		ITEM 0471	SHEET 1 of 1

EATON

Powering Business Worldwide

Pow-R-Line C Panelboards**Product Description****Lighting and Distribution Panelboards**

Eaton's assembled panelboards are designed for sequence phase connection of branch circuit devices. This allows complete flexibility of circuit arrangement (single-, two- or three-pole) to allow balance of the electrical load on each phase.

Sturdy, rigid chassis assembly ensures accurate alignment of interior with panel front; prevents flexing and minimizes possibility of loosening or damage to current carrying parts during and after installation.

Four-point in-and-out adjustment of panel interior is provided to meet critical depth dimensions on flush installations. This compensates for possible misalignment of box at installation.

Main lugs are mechanical solderless type and approved for copper or aluminum conductors.

Enclosures

Boxes are code-gauge galvanized steel, which include a painted box finished in ANSI-61 light gray to match the trim.

Standard panelboard cabinets are designed for indoor use. Alternate types are available for indoor and special purpose applications.

All enclosures are furnished in accordance with Underwriters Laboratories standards and include wiring gutters with proper wire bending space. Special cabinets can be provided at an additional charge.

The box dimensions shown are inside dimensions. For outside dimensions, add 1/4-inch (6.4 mm).

Standard panelboard boxes are supplied without knockouts (blank endwalls).

Fronts

Fronts (trims) for all panelboards are made of code-gauge steel and have a high durability ANSI-61 light gray finish applied by a baked-on polyester powder coating paint system.

The fronts for lighting and appliance branch circuit panelboards and small power distribution panelboards include a door with rounded corners and concealed hinges. A flush-type latch and lock assembly is included. All locks are keyed alike. These trims are available in both surface- and flush-mounted designs.



The Three-Piece Trim for Larger Power Distribution Panelboards Provides for Easy Handling and Installation

Fronts for power distribution panelboards utilize a unique breaker front cover design in which each device has a dedicated bolt-on steel cover. The individual covers form a single deadfront for the panelboard that is used in conjunction with two wiring gutter covers to complete the trim. A door is not finished as part of the standard offering on these panelboards but can be provided, for an additional charge, using a deeper than standard box.



EZ Trim Features Standard Door-in-Door with No Exposed Hardware or Sharp Edges (no Tools are Required for Installation)

Application Description

Panelboard Selection Factors

In selecting a panelboard, the following factors must be considered:

- Service (voltage and frequency)
- Interrupting capacity (fully or series rated)
- Ampere rating of main
- Ampere ratings of branches
- Environment

Panelboard Short-Circuit Rating

The short-circuit rating of Eaton's assembled panelboards are test verified by, and listed with, Underwriters Laboratories (UL). Generally, these ratings are that of the lowest interrupting rated device in the panel.

Certain exceptions to this rule exist where branch devices have been UL tested in combination with specific main devices having a higher interrupting rating. Where these defined main devices and branch breaker combinations are utilized, the series short-circuit rating of the assembled panelboard will be the same as the tested rating of the approved rated main device in series with the branches. Available main and branch breaker combinations are tabulated starting on **Page V2-T3-16**. All combinations shown are UL tested and listed.

These series ratings apply to panels having main devices, or main lug only panelboards fed remotely by the device listed in the series ratings chart as the main, for which UL listed tests were conducted.

Service Entrance Equipment

The National Electrical Code (NEC) requires that:

- A panel used as service entrance equipment must be located near the point where the supply conductors enter the building
- A panelboard having main lugs only shall have a maximum of six service disconnects to de-energize the entire panelboard from the supply conductors. Where more than six disconnects are required, a main service disconnect must be provided
- A disconnectable electrical bond must be provided between the neutral and ground
- A service entrance type UL label must be factory installed
- Ground fault protection of equipment shall be provided for each service disconnect rated 1000A or more if the electrical service is a solidly grounded wye system of more than 150V to ground, but not exceeding 600V phase-to-phase

Note: Service entrance panels must be identified as such on the order.

Panelboard Standards

In 2008, both the National Electrical Code (Article 408) and UL 67 were updated to remove the mandated 42-circuit limitation. Eaton offers panelboards with more than 42 circuits for those jurisdictions that have adopted the 2008 NEC or later.

For jurisdictions that have not adopted the 2008 or later version of the National Electrical Code, the 42-circuit limitation for Lighting and Appliance Branch Panelboards remains in place. Check with your local code officials to determine specific jurisdiction status.

Panelboard Installation

NEC requires that the operating handle of the topmost mounted device be no more than 6 feet 7 inches (2006.6 mm) above the finished floor and should be installed per NEC and manufacturer's instructions.

Additional boxes and fronts are required when the components required for one panelboard exceed the standard box dimensions.

Multi-Section Panelboards

When two or more separate enclosures are required, separate fronts for each box are standard. A common front can be furnished at additional charge.

Interconnecting Multi-Section Panelboards

When a panelboard, for connection to one feeder, must be furnished in more than one section (Box), each section must be furnished with main bus and terminals of the same rating, unless a main overcurrent device is provided in each section.

Sub-feed or through-feed provisions must also be included (and priced) to provide connection capability to the second section.

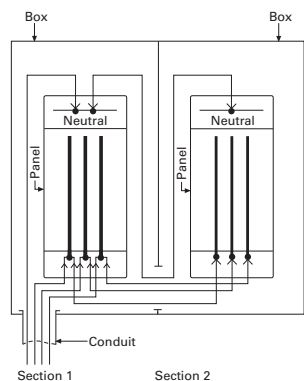
Note: Sub-feed or through-feed lugs cannot be used on any panelboard that is not protected by a single main overcurrent device either in the panelboard or immediately upstream, i.e., service entrance panelboards with main lugs only using the six disconnect rule.

Sub-Feed Lugs

Sub-feed lugs (see figure below) are one means of interconnecting multi-section panels. The sub-feed (second set of) lugs are mounted directly beside the main lugs. These are required in each section except the last panel in the lineup. The feeder cables are brought into the wiring gutter of the first section and connected to the main lugs. Another set of the same size cables are connected to the sub-feed lugs (Section 1) and are carried over to the main lugs of the adjacent panel. Cross connection cables are not furnished by Eaton. Sub-feed lugs are only available on main lug only panels.

Note: Sub-feed lugs may not be used on main lug only (six disconnect rule) service entrance panels.

Sub-Feed Lugs

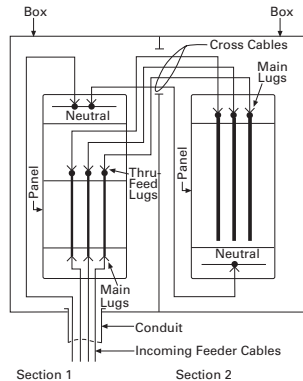


Through-Feed Lugs

Through-feed lugs (see figure below) are another method to interconnect multi-section panelboards. The incoming feeder cables are connected to the main lugs or main breaker at the bottom of panel (Section 1). Another set of lugs (through-feed) are located at the opposite end of the main bus. The interconnecting cables are connected to the through-feed lugs in Section 1 and are carried over to the main lugs in Section 2. The connection arrangement could be reversed, i.e., main lugs at top; through-feed lugs at bottom end of panel. Cross cables are not furnished by Eaton.

Note: Through-feed lugs may not be used on main lug only (six disconnect rule) service entrance panels.

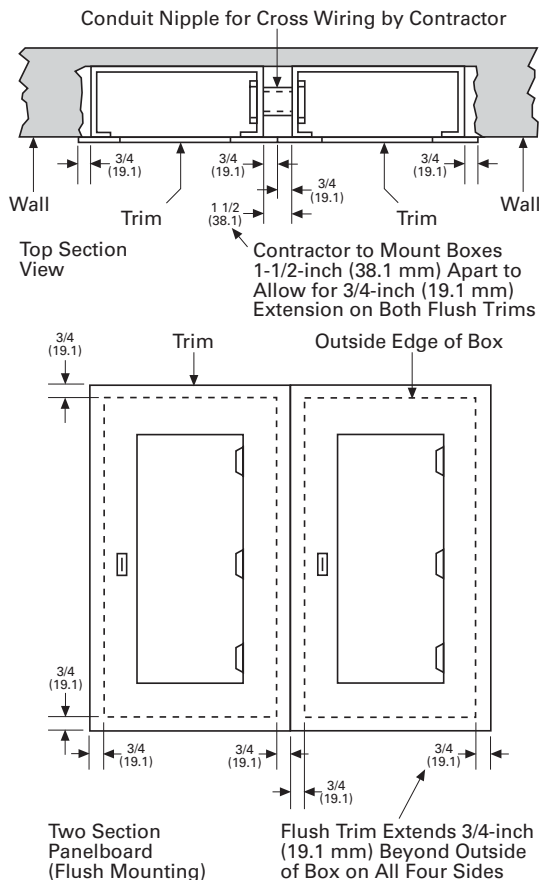
Through-Feed Lugs



Multiple Section Panelboard—Flush Mounted

Shown below is the standard method for flush mounting multiple section lighting and distribution panelboards using standard flush trims.

Multiple Section Panelboard Flush Mounted—Dimensions in Inches (mm)



Overcurrent Protection

The following requirements will be found in the NEC:

Each lighting and appliance branch circuit panelboard shall be individually protected on the supply side by not more than two main circuit breakers or two sets of fuses having a combined rating not greater than that on the panelboard.

Branch Circuit Loading for Lighting Panels

The size of mains and branches should be selected based on the following:

- Motor circuits: NEC Article 430
- Diversity factor
- Provision for future loading

Exception Number 1:

Individual protection for a lighting panelboard is not required when the panelboard feeder has overcurrent protection not greater than that of the panelboard.

Exception Number 2:

For existing installations, individual protection for lighting panelboards is not required where such panelboards are used as service equipment in supplying an individual residential occupancy and where any bus supplying 15 or 20A circuits is protected on the supply side by an overcurrent device.

Ambient Temperatures

The primary function of an overcurrent device is to protect the conductor and its insulation against overheating. In selecting the size of the devices and conductors, consideration should be given to the ambient temperature surrounding the conductors within and external to the panelboard. Cumulative heating within the panelboard may cause premature operation of the overcurrent protective devices.

Underwriters Laboratories test procedures are based, in part, on 80% loading of panelboard branch circuit devices. The NEC limits the loading of overcurrent devices in panelboards to 80% of rating where in normal operation the load will continue for three hours or more. Further derating may be required, depending on such factors as ambient temperature, duty cycle, frequency or altitude.

Exception: There is one exception to this rule in both UL and NEC. It applies to assemblies and overcurrent devices that have been listed for continuous duty at 100% of its rating.

Special Conditions

Standard panelboards, assembled with standard components, are adequate for most applications. However, special consideration should be given to those required for application under special conditions such as:

- Excessive vibration or shock
- Frequencies above 60 cycles
- Altitudes above 6600 feet (2011.7m)
- Damp environment (possible fungus growth)
- Compliance with federal, state and municipal electrical codes and standards

Seismic Considerations

The Uniform Building Code® and the International Building Code, as well as local and state building codes, place an emphasis on seismic building design requirements. Electrical distribution systems are treated as attachments to the building and therefore, fall into this category.

All Eaton panelboards are seismic qualified at the highest possible level, and have been tested in accordance with ANSI C37.81. This standard quantifies actual earthquake conditions, as well as equipment seismic capability.

Harmonic Currents

Standard panelboard neutrals are rated for 100% of the panelboard current. However, since harmonic currents can cause overheated neutrals, an option is provided for neutrals to be rated at 200% (1200A maximum neutral for 600A main bus) of the panelboard phase current.

Panelboards with the 200% rated neutral are UL listed as suitable for use with non-linear loads.

Prior to specifying the 200% rated neutral, Eaton recommends a harmonic survey be conducted of the distribution system, be it new or existing.

Surge Protective Devices

The quality of power feeding sensitive electronic loads is critical to the reliable operation of any facility. In modern offices, hospitals, and manufacturing facilities, the most frequent causes of microprocessor-based equipment downtime and damage are voltage transients and electrical noise.

Electrical loads and microprocessor-based equipment are highly susceptible to both high and low energy transients. High energy transients include lightning induced surges and power company switching. These high energy transients can destroy components instantly.

More frequently the electrical system experiences low energy transients and high frequency noise.

The effects of continual low energy transients and high frequency noise can cause erratic equipment performance or sudden failure of electronic circuit board components.

Eaton can provide protective and diagnostic systems integral to panelboards. The surge protective device (SPD) is integrated into the panelboards using a “zero lead length” direct bus bar connection.



Pow-R-Line 4

The SPD protects sensitive electronic equipment from the damaging effects of high and low energy transients, as well as high frequency noise.

Standards and Certifications

Eaton’s panelboards are designed to meet the following applicable industry standards, except where noted:

- Underwriters Laboratories:
 - Panelboards: UL 67
 - Cabinets and Boxes: UL 50

Note: Only panelboards containing UL listed devices can be UL labeled.

- National Electrical Code
- NEMA Standards: PB 1
- Federal Specification W-P-115c:
 - Circuit Breakers—Type I Class I
 - Fusible Switch—Type II Class I



Technical Data and Specifications

Panelboard Selection Guide

Panelboard Type	Device Type	Maximum Voltage Rating		Maximum Main Rating (Amperes)		Branch Circuits Ampere Range	Sub-Feed Breaker Maximum Amperes	AC Interrupting Capacity rms Symmetrical Amperes (kA)	
		AC	DC	MLO	Main Device			Fully Rated	Series Rated
PRL1a	Breaker	240	—	600	600	15–100	600	10–22	22–100
PRL1R	Breaker	240	—	225	225	15–100	—	10–22	22–100
PRL1aF	Fusible	240	—	400	400	15–30	400	200	—
PRL1a-LX	Breaker	240	—	225	225	15–100	—	10–22	22–100
PRL2a	Breaker	240	250	600	600	15–100	600	65	65–200
	Breaker	480Y/277	250	600	600	15–100	600	14	22–150
PRL2R	Breaker	240	—	225	225	15–100	—	10–22	22–200
	Breaker	480Y/277	—	225	225	15–100	—	14	22–100
PRL2aF	Fusible	480Y/277	—	400	400	15–30	400	200	—
PRL2a-LX	Breaker	240	250	225	225	15–100	—	65	65–200
	Breaker	480Y/277	250	225	225	15–100	—	14	22–150
PRL3a	Breaker	240	250	800	600	15–225	600	10–200	22–200
	Breaker	480	250	800	600	15–225	600	14–100	22–150
	Breaker	600	250	800	600	15–225	600	14–35	—
PRL3E	Breaker	240	250	600	600	15–125	400	25–100	100–200
	Breaker	480Y/277	250	600	600	15–125	400	18–65	65–100
	Breaker	480	250	600	600	15–125	400	18–65	65–100
PRL4B	Breaker	240	600	1200	1200	15–1200	—	10–200	22–200
	Breaker	480	600	1200	1200	15–1200	—	14–200	22–150
	Breaker	600	600	1200	1200	15–1200	—	14–200	—
PRL4D	Breaker	240	—	1200	1200 ^①	600	—	65–200	—
	Breaker	480	—	1200	1200 ^①	600	—	35–100	—
	Breaker	600	—	1200	1200 ^①	600	—	18–50	—
PRL4F	Fusible	240	250	1200	1200	30–1200	—	100–200	—
	Fusible	600	250	1200	1200	30–1200	—	100–200	—
PRL5P	Breaker	240	250	1200	1200	15–1200	—	10–200	22–200
	Breaker	480	250	1200	1200	15–1200	—	14–200	22–150
	Breaker	600	250	1200	1200	15–1200	—	14–200	—
Pow-R-Command™	Breaker	240	—	400	400	15–225	—	10–65	22–100
	Breaker	480Y/277	—	400	400	15–225	—	14	65–100
Elevator Control	Fusible	240	—	800	800	15–200	—	200	—
	Fusible	480Y/277	—	800	800	15–200	—	200	—
	Fusible	480	—	800	800	15–200	—	200	—

Note

① Fixed mounted only.

3.3

Panelboards and Lighting Control

Pow-R-Line C Panelboards

3

Terminal Wire Ranges, Pressure-Type Al/Cu Terminals Except as Noted

Note: All terminal sizes are based on wire ampacities corresponding to those shown in NEC Table 310.16 under the 75°C insulation columns (75°C wire). The use of smaller size, (in circular mills), regardless of insulation temperature rating, is not permitted.

Where copper-aluminum terminals are supplied on designated panelboard types, best results are obtained if a suitable joint compound is applied when aluminum conductors are used.

Check Eaton's standard terminal sizes versus customer requirements. In particular, 400 and 800A breakers often require nonstandard lugs.

Optional 750 kcmil mechanical screw-type terminals are available upon request. Panelboard dimensions may be affected, refer to Eaton.

Standard Main Lug Terminals

Panel Type	Wire Size Ranges for Ampere Capacity						
	100 A	225 A	250 A	400 A	600 A	800 A	1200 A
PRL1a	#12-1/0	#6-300 kcmil	—	(2) #4-500 kcmil	(2) 4/0-500 kcmil	—	—
PRL2a	#12-1/0	#6-300 kcmil	—	(2) #4-500 kcmil	(2) 4/0-500 kcmil	—	—
PRL1R	#12-1/0	#6-300 kcmil	—	(2) #4-500 kcmil	—	—	—
PRL2R	#12-1/0	#6-300 kcmil	—	(2) #4-500 kcmil	—	—	—
PRL1aF	#12-1/0	#6-300 kcmil	—	(2) #4-500 kcmil	—	—	—
PRL2aF	#12-1/0	#6-300 kcmil	—	(2) #4-500 kcmil	—	—	—
PRL3a	#12-1/0	—	#6-350 kcmil	(2) #4-500 kcmil	(2) #4-500 kcmil	(3) #4-500 kcmil	—
PRL3E	#12-1/0	—	#6-350 kcmil	(2) #4-500 kcmil	(2) #4-500 kcmil	—	—
PRL4	—	—	#4-500 kcmil	(2) #4-500 kcmil	(2) #4-500 kcmil	(3) #4-500 kcmil	(4) #4-500 kcmil
PRL1a-LX	#12-1/0	#6-300 kcmil	—	—	—	—	—
PRL2a-LX	#12-1/0	#6-300 kcmil	—	—	—	—	—
PRCE	#12-1/0	#6-300 kcmil	—	(2) #4-500 kcmil	—	—	—
PRC100	#12-1/0	—	#6-350 kcmil	(2) #4-500 kcmil	—	—	—
PRC25	#12-1/0	#6-300 kcmil	—	(2) #4-500 kcmil	—	—	—
PRL5P	—	—	—	(1) #1/0-500 kcmil or (2) #1/0-250 kcmil	(2) #4-500 kcmil	(2) #2-500 kcmil or (3) #2-400 kcmil	(4) #4-750 kcmil
Elevator Control	—	—	#4-500 kcmil	(2) #4/0-500 kcmil	(2) #4/0-500 kcmil	(3) #4/0-500 kcmil	—

Standard Circuit Breaker Terminals

Breaker Type	Ampere Rating	Wire Range
BAB, QBHW, BABRSP, HQP, QPHW	15–70	#14–#4
	90–100	#8–1/0
EDB, EDS, ED, EDH, EDC	100–225	#4–4/0 or #6–300 kcmil
EGB, EGE, EGS, EGH	15–50	#14–3/0 AL/CU
	60–125	#6–3/0 AL/CU
EHD, FDB, FD, HFD, FDC, HFDDC ②	15–100	#14–1/0
	125–225	#4–4/0
FCL	15–100	#14–1/0
GHB, HGHB, GHQ, GHQRSP	15–30	#14–#10
	25–100	#10–1/0
EGB, EGS, EGH	15–50	#14–1/0
	60–125	#6–2/0
JD, HJD, JDC, HJDDC ②	70–250	#4–350 kcmil
DK	250–350	250–500 kcmil
	400	(2) 3/0–250 kcmil or (1) 3/0–500 kcmil
KD, HKD, KDC, HKDDC, ② CKD, CHKD	225	(1) #3–350 kcmil
	350	(2) 3/0–250 kcmil or
	400	(2) 3/0–250 kcmil or (1) 3/0–500 kcmil
LHH	150–400	#2–500 kcmil
	150–400	(2) #2–500 kcmil
	150–400	(1) 500–750 kcmil
LGE, LGH, LGC, LGU, LHH ①	250–400	(1) #2–500 kcmil
	500–600	(2) #2–500 kcmil
LD, HLD, LDC, HLDDC ② CLD, CHLD	300–500	(2) 250–350 kcmil
	600	(2) 400–500 kcmil
MDL, HMDL, HMDLDC ② CMDL, CHMDL	400–600	(2) #1–500 kcmil
	700–800	(3) 3/0–400 kcmil
ND, HND, CND, CHND, NDC, CNDC	800–1000	(3) 3/0–400 kcmil
	1200	(4) 4/0–500 kcmil
LCL	125–225	(1) #6–350 kcmil
	250–400	(1) #4–250 kcmil and (1) 3/0–600 kcmil
FB-P	15–100	#14–1/0
LA-P	70–225	#6–350 kcmil
	250–400	(1) #4–250 kcmil and (1) 3/0–600 kcmil
NB-P, NBDC ②	300–700	(2) #1–500 kcmil
	800	(3) 3/0–400 kcmil
NGS, NGH, NGC NGS-C, NGH-C, NGC-C	400–1200	(4) 4/0–500 kcmil (Cu/Al)

FDPW Switch Terminals

Ampere Rating	Wire Range
30	#14–1/0
60	#14–1/0
100	#14–1/0
200	#4–300 kcmil
400	250–750 kcmil or (2) 3/0–250 kcmil
600	(2) #4–600 kcmil or (4) 3/0–250 kcmil
800	(3) 250–750 kcmil or (6) 3/0–250 kcmil
1200	(4) 250–750 kcmil or (8) 3/0–250 kcmil

Elevator Control Panel Feeder Terminals

Ampere Rating	Wire Range
30	#14–1/0
60	#14–1/0
100	#14–1/0
200	#4–300 kcmil

Notes

- ① LHH is 400A maximum.
- ② Suitable for DC applications only.

The Eaton logo consists of the word "EATON" in a bold, blue, sans-serif font. The letter "O" is stylized as a white circle with a blue dot in the center, creating a visual effect of a power symbol or a stylized letter.

Powering Business Worldwide

Eaton's SPD Series for integration into electrical distribution equipment



Contents

Description	Page
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Powering Business Worldwide

Introduction

Eaton's SPD Series surge protective devices

Eaton's SPD Series surge protective devices are the latest and most advanced UL® 1449 3rd Edition certified surge protectors. Units are available integrated within Eaton electrical assemblies, including panelboards, switchboards, motor control centers, switchgear, and bus plugs. Side-mount versions of the SPD Series are also available for installation external to an electrical assembly. Application of SPD Series units throughout a facility will ensure that equipment is protected with the safest and most reliable surge protective devices available.

SPD Series units are available in all common voltages and configurations and also in a variety of surge current capacity ratings from 50 through 400 kA. Three feature package options are also available to choose from. The breadth of the SPD Series' features, options, and configurations ensures that the correct unit is available for all electrical applications, including service entrances, distribution switchboards, panelboards, and point-of-use applications.

Applications

The SPD Series is available as an integrated device within the following Eaton electrical assemblies:

- Panelboards
- Switchboards
- Motor control centers
- Switchgear
- Automatic transfer switches
- Bus plugs

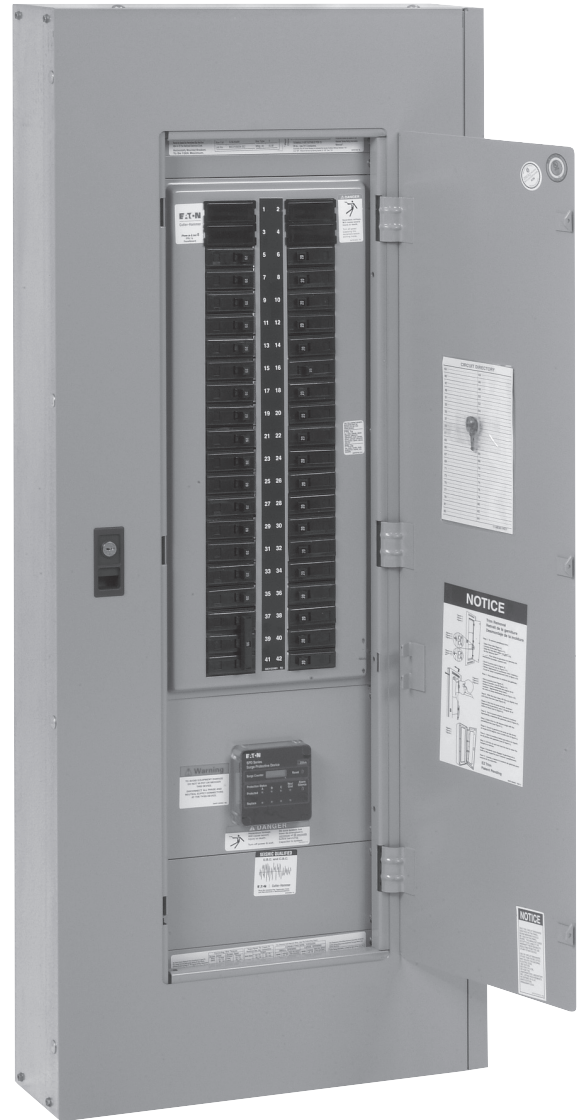
Features

- Uses thermally protected metal oxide varistor (MOV) technology
- 20 kA nominal discharge current (I_n) rating (maximum rating assigned by UL)
- 50 through 400 kA surge current capacity ratings
- Three feature package options
- 200 kA short circuit current rating (SCCR)
- 10-year warranty

Standards and certifications



- UL 1449 3rd Edition recognized component for the United States and Canada, covered by Underwriters Laboratories certification and follow-up service



SPD Series Unit Integrated Within an Eaton Panelboard

Feature package options

The SPD Series provides users with the option of selecting between three feature packages. These feature packages are the basic, standard, and standard with surge counter. The proper feature package can be selected based on the requirements of the application or specification.

Table 1. Feature Package Comparison

Feature	Basic	Standard	Standard with Surge Counter
Surge protection using thermally protected MOV technology	✓	✓	✓
Dual-colored protection status indicators for each phase	✓	✓	✓
Dual-colored protection status indicators for the neutral-ground protection mode	✓	✓	✓
Audible alarm with silence button		✓	✓
Form C relay contact		✓	✓
EMI/RFI filtering, providing up to 50 dB of noise attenuation from 10 kHz to 100 MHz		✓	✓
Surge counter with reset button			✓

Remote display mounting option

The SPD Series offers the option of mounting its display remotely from the device. This is useful for applications where OEMs or other integrators would like to embed the unit within a piece of equipment and still be able to view its display.

SPD Series unit catalog numbers ending with 'B' (refer to catalog number configuration on **Page 7**) should be ordered for applications where the display is to be mounted remotely. These units include the SPD Series unit and the remote display panel.

In addition to the unit itself, a remote display cable will have to be purchased. Remote display cables are available in 4, 8, and 12 foot lengths.

Table 2. Remote Display Cables

Description	Catalog Number
4 ft remote display cable	SPDRDCAB04
8 ft remote display cable	SPDRDCAB08
12 ft remote display cable	SPDRDCAB12

Note: Integrated units factory-installed with Eaton switchgear assemblies do not require the purchase of a remote display cable. The cable is provided and all required mounting is performed at the factory.

Existing SPD Series units previously installed without a remote display also have the capability of mounting their displays remotely from the device. Complete remote display kits are available that contain all items required to mount the display remotely, including the remote display cable. Remote display kits are available in 4, 8, and 12 foot cable length options.

Table 3. Remote Display Kits

Description	Catalog Number
Remote display kit with 4 ft remote display cable	SPDRDKIT04
Remote display kit with 8 ft remote display cable	SPDRDKIT08
Remote display kit with 12 ft remote display cable	SPDRDKIT12

For the dimensions of the cutout required to accommodate the remote display panel, see **Figure 1** below.

Dimensions

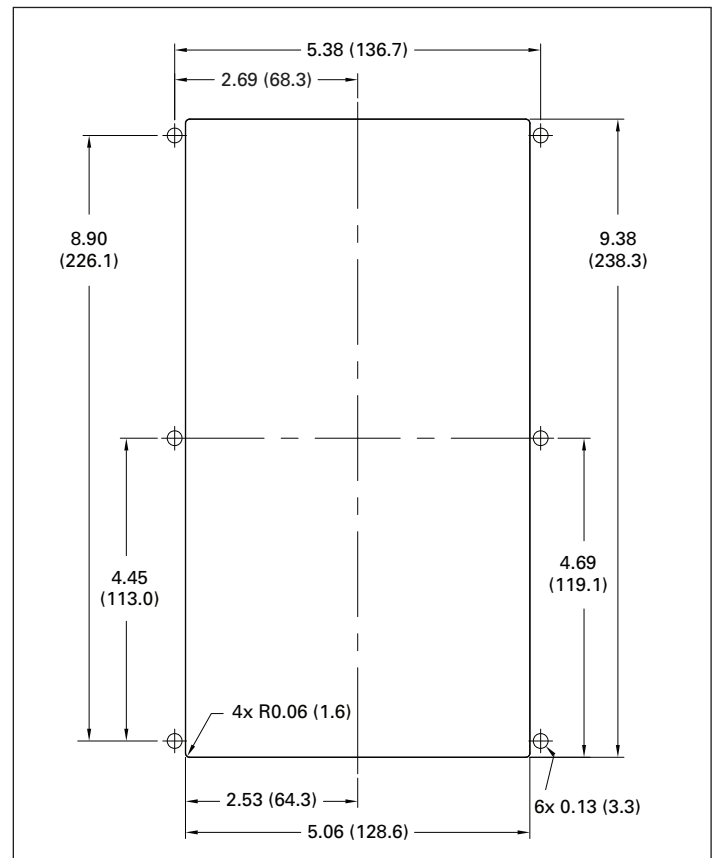


Figure 1. Dimensions of the Cutout Required to Accommodate the Optional Remote Display Panel

Dimensions (continued)

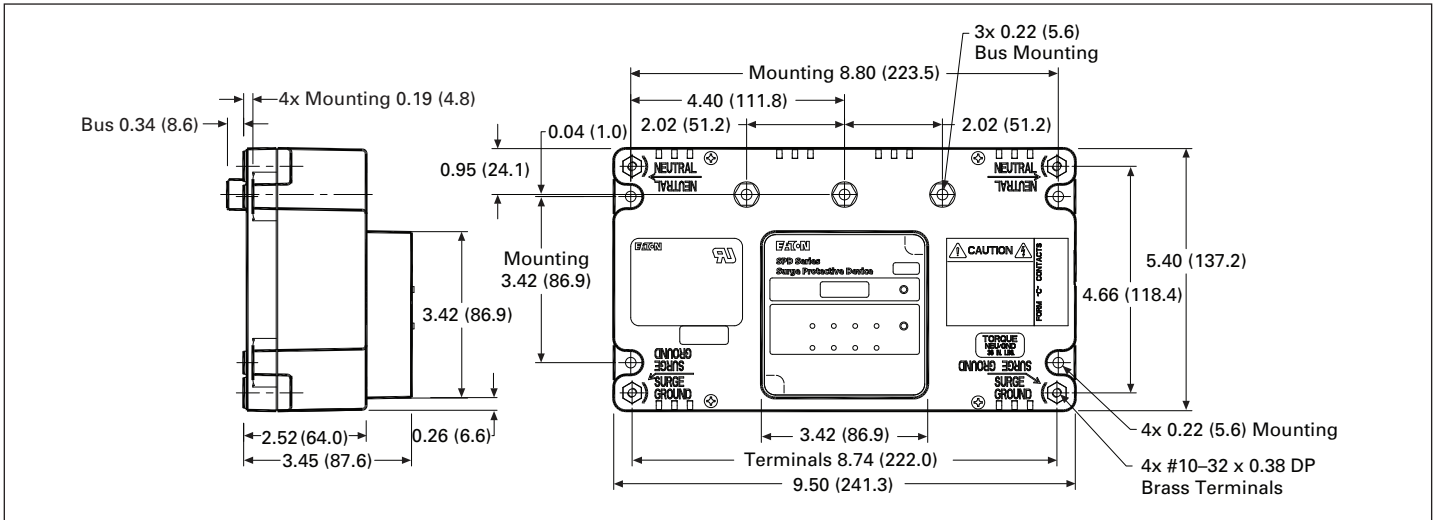


Figure 2. Dimensions of 50 through 200 kA Integrated Units

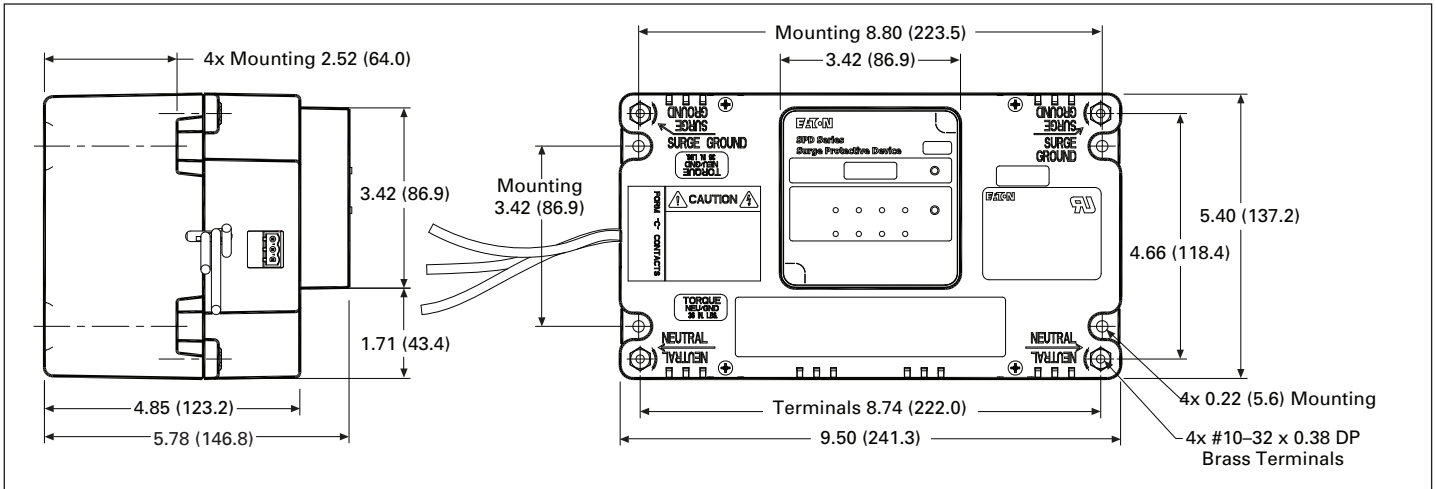


Figure 3. Dimensions of 250 through 400 kA Integrated Units

Performance data

ANSI/UL 1449 3rd Edition voltage protection ratings

Voltage protection rating (VPR) data is included for both direct bus mounted units (catalog number ending with 'A') and units interfaced to the electrical assembly via a circuit breaker (catalog number ending with 'B,' 'C,' or 'J'). Direct bus mounted units are available for installation within Eaton PRL1a, 2a, 3a, and 3E panelboards only.

Table 4. 50 kA Direct Bus Mounted Integrated Unit VPR

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	500	1000	500	1000
208Y and 220Y 400Y and 480Y 600Y	500 1000 1200	1000 2000 2500	500 1000 1200	1000 2000 2500
240D 480D 600D	N/A N/A N/A	1000 2000 2500	N/A N/A N/A	900 2000 2500
240H	500	1000	500	1000

Table 5. 80–100 kA Direct Bus Mounted Integrated Unit VPR

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	500	600	500	900
208Y and 220Y 400Y and 480Y 600Y	500 1000 1200	600 1200 1500	500 1000 1200	900 1800 2500
240D 480D 600D	N/A N/A N/A	1000 1800 2500	N/A N/A N/A	900 1800 2500
240H	500	600	500	900

Table 6. 120–200 kA Direct Bus Mounted Integrated Unit VPR

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	500	600	500	800
208Y and 220Y 400Y and 480Y 600Y	500 900 1200	600 1000 1200	500 900 1200	800 1800 2500
240D 480D 600D	N/A N/A N/A	900 1800 2500	N/A N/A N/A	900 1800 2500
240H	500	600	500	800

Table 7. 250–300 kA Circuit Breaker Interfaced Integrated Unit VPR

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	600 ^①	700	600	1000
208Y and 220Y 400Y and 480Y 600Y	600 ^① 1000 1500	700 1200 1500	600 900 1200	1000 1800 2500
240D 480D 600D	N/A N/A N/A	1000 1800 2500	N/A N/A N/A	1000 1800 2500
240H	600 ^①	700	600	1000

^① L-N VPR for 250–300 kA units containing the standard and standard with surge counter feature packages is 600V. L-N VPR for units containing the basic feature package is 700V. All other VPR numbers reported in all tables represent the VPR for all feature packages.

Table 8. 50 kA Circuit Breaker Interfaced Integrated Unit VPR

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	700	1200	700	1200
208Y and 220Y 400Y and 480Y 600Y	700 1200 1500	1200 2000 2500	700 1200 1500	1200 2000 2500
240D 480D 600D	N/A N/A N/A	1200 2000 2500	N/A N/A N/A	1200 2000 2500
240H	700	1200	700	1200

Table 9. 80–100 kA Circuit Breaker Interfaced Integrated Unit VPR

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	700	700	700	1000
208Y and 220Y 400Y and 480Y 600Y	700 1200 1500	700 1200 1500	700 1200 1500	1000 1800 2500
240D 480D 600D	N/A N/A N/A	1200 2000 2500	N/A N/A N/A	1200 2000 2500
240H	700	700	700	1000

Table 10. 120–200 kA Circuit Breaker Interfaced Integrated Unit VPR

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	700	700	600	1000
208Y and 220Y 400Y and 480Y 600Y	700 1000 1500	700 1200 1500	600 1000 1200	1000 1800 2500
240D 480D 600D	N/A N/A N/A	1000 2000 2500	N/A N/A N/A	1000 1800 2500
240H	700	700	600	1000

Table 11. 400 kA Circuit Breaker Interfaced Integrated Unit VPR

Voltage Code	Protection Mode			
	L-N	L-G	N-G	L-L
240S	700	700	600	1000
208Y and 220Y 400Y and 480Y 600Y	700 1000 1500	700 1200 1500	600 900 1200	1000 1800 2500
240D 480D 600D	N/A N/A N/A	1000 1800 2500	N/A N/A N/A	1000 1800 2500
240H	700	700	600	1000

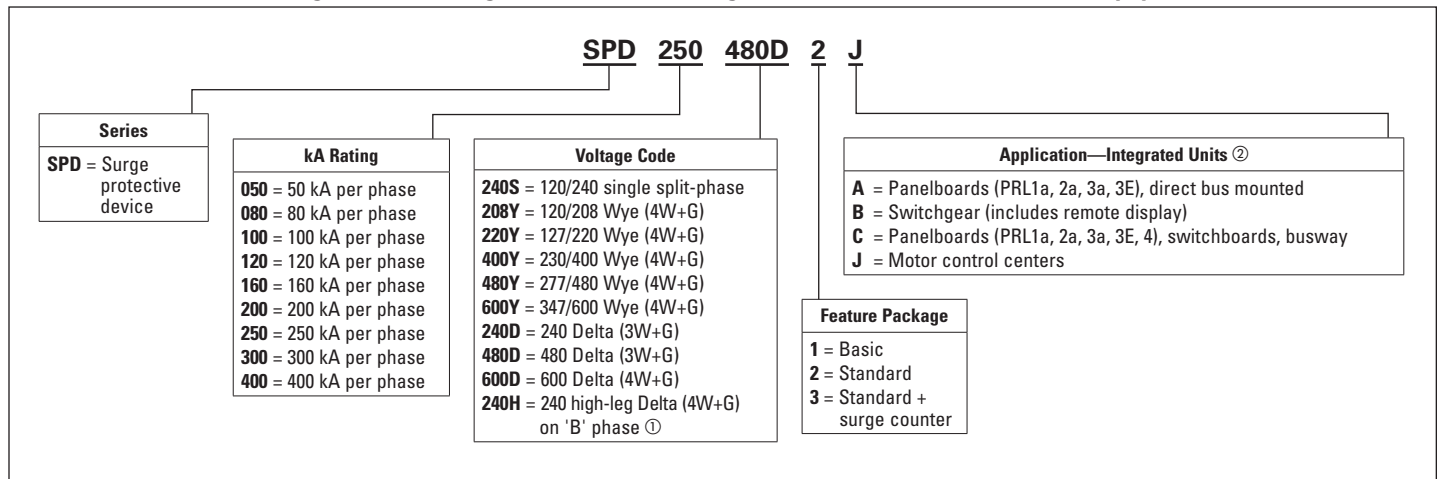
Specifications

Table 12. SPD Series Specifications

Description	Specification
Surge capacity ratings available	50, 80, 100, 120, 160, 200, 250, 300, 400 kA per phase
Nominal discharge current (I _n)	20 kA
Short circuit current rating (SCCR)	200 kA
SPD type	Basic feature package = Type 1 (can also be used in Type 2 applications) Standard and Standard with Surge Counter feature packages = Type 2
Single split phase voltages available	120/240
Three-phase Wye system voltages available	120/208, 127/220, 230/400, 277/480, 347/600
Three-phase Delta system voltages available	240, 480, 600
Input power frequency	50/60 Hz
Power consumption (basic units): 208Y, 220Y, 240S, 240D, and 240H voltage codes 400Y, 480Y, and 480D voltage codes 600Y and 600D voltage codes	0.5W 1.1W 1.3W
Power consumption (standard and standard with surge counter units): 208Y, 220Y, 240S, 240D, and 240H voltage codes 400Y, 480Y, and 480D basic voltage codes 600Y and 600D voltage codes	0.6W 1.7W 2.1W
Protection modes	Single split phase L-N, L-G, N-G, L-L Three-phase Wye L-N, L-G, N-G, L-L Three-phase Delta L-G, L-L Three-phase high-leg Delta . . . L-N, L-G, N-G, L-L
Maximum continuous operating voltage (MCOV): 240S, 208Y, 220Y, and 240H MCOV 400Y and 480Y MCOV 600Y MCOV 240D MCOV 480D MCOV 600D MCOV	150 L-N, 150 L-G, 150 N-G, 300 L-L 320 L-N, 320 L-G, 320 N-G, 640 L-L 420 L-N, 420 L-G, 420 N-G, 840 L-L 320 L-G, 320 L-L 640 L-G, 640 L-L 840 L-G, 840 L-L
Ports	1
Operating temperature	–4°F through 122°F (–20°C through 50°C)
Operating humidity	5% through 95%, noncondensing
Operating altitude	Up to 16,000 ft (5000m)
Seismic withstand capability	Meets or exceeds the requirements specified in IBC® 2006, CBC 2007, and UBC® Zone 4
Weight	50–200 kA units approximately 3.5 lbs (1.6 kg) 250–400 kA units approximately 7.0 lbs (3.2 kg)
Form C relay contact ratings	150 Vdc or 125 Vac, 1A maximum
Form C relay contact logic	Power ON, normal state—NO contact = open, NC contact = closed Power OFF or fault state—NO contact = closed, NC contact = open
EMI/RFI filtering attenuation	Up to 50 dB from 10 kHz to 100 MHz
Agency certifications and approvals	UL 1449 3rd Edition recognized component for the U.S. and Canada UL 1283 (Type 2 SPDs only)
Warranty	10 years

Catalog number selection

Table 13. SPD Series Catalog Number Configuration for Units Integrated into Electrical Distribution Equipment



Example: SPD250480D2J = SPD Series, 250 kA per phase, 480D voltage, standard feature package, motor control center application

① Please consult the factory for 240 high-leg Delta (4W+G) applications with high leg on 'C' phase.

② Units used in PRL1a, 2a, 3a, and 3E panelboard applications are available in 50–200 kA ratings only. Use the 'C' option for PRL1a, 2a, 3a, and 3E panelboard applications when unit is connected through a circuit breaker.

Technical support information

If you have any questions or need additional information, please contact the Eaton Technical Resource Center at 800-809-2772, option 4, option 2. You may also submit inquiries via e-mail: surgeprotection@eaton.com.

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