

SYSTEM OVERVIEW

Description: The Vertiv™ NetSure™ 502NGFB DC Power System is a complete integrated power system containing rectifiers, intelligent control, metering, and monitoring. This power system is available in configurations for 19" and 23" relay rack mounting.

- **Individual Shelves with Bulk Output Rear Bus Bars**

List No.	19" or 23" Relay Rack Mounting	Number of Power Shelves	No. of Rectifier Mounting Positions	Output Capacity (Amperes)
1	19"	1 (Main)	4	See Table 6
2	19"	1 (Expansion)	5	
3	23"	1 (Main)	5	
4	23"	1 (Expansion)	6	

Table 1

- **Assembled Shelves with Top AC Input, and DC Output Termination Panel**

List No.	19" or 23" Relay Rack Mounting	Number of Power Shelves	No. of Rectifier Mounting Positions	Output Capacity (Amperes)
5	19"	1 (Main)	4	See Table 6
6	19"	2 (Main and Expansion)	9	
7	23"	1 (Main)	5	
8	23"	2 (Main and Expansion)	11	

Table 2

- **Assembled Shelves with Rear AC Input, Configured for Top DC Distribution Cabinet**

List No.	19" or 23" Relay Rack Mounting	Number of Power Shelves	No. of Rectifier Mounting Positions	Output Capacity (Amperes)
10	19"	1 (Main)	4	See Table 6
11	19"	2 (Main and Expansion)	9	
12	23"	1 (Main)	5	
13	23"	2 (Main and Expansion)	11	
16	19"	3 (1 Main, 2 Expansion)	14	
17	23"	3 (1 Main, 2 Expansion)	17	

Table 3

- **Field Expansion Shelves with Rear AC Input**

List No.	19" or 23" Relay Rack Mounting	Number of Power Shelves	No. of Rectifier Mounting Positions	Output Capacity (Amperes)
14	19"	1 (Field Expansion)	5	See Table 6
15	23"	1 (Field Expansion)	6	

Table 4

- Assembled Shelves with Rear AC Input, Configured for GMT Distribution Panel and Top DC Distribution Cabinet

List No.	19" or 23" Relay Rack Mounting	Number of Power Shelves	No. of Rectifier Mounting Positions	Output Capacity (Amperes)
20	19"	1 (Main)	4	See Table 6
21	19"	2 (Main and Expansion)	9	
22	23"	1 (Main)	5	
23	23"	2 (Main and Expansion)	11	
26	19"	3 (1 Main, 2 Expansion)	14	
27	23"	3 (1 Main, 2 Expansion)	17	

Table 5

- Output Capacities

List No.	208/240VAC Input		120VAC Input	
	+40°C	+65°C	+40°C	+65°C
1	166A	133A	105A	84A
2	208A	166A	131A	105A
3	208A	166A	131A	105A
4	250A	200A	157A	126A
5	166A	133A	105A	84A
6	374A	299A	236A	189A
7	208A	166A	131A	105A
8	400A*	365A	290A	230A
10	166A	133A	105A	84A
11	374A	299A	236A	189A
12	208A	166A	131A	105A
13	458A	366A	288A	231A
14	208A	166A	131A	105A
15	250A	200A	157A	126A
16	582A	400A	367A	294A
17	600A	400A	445A	357A
20	166A	133A	105A	84A
21	374A	299A	236A	189A
22	208A	166A	131A	105A
23	458A	366A	288A	231A
26	582A	400A	367A	294A
27	600A	400A	445A	357A

* - Maximum busbar capacity.

Table 6

- **2000W Rectifier Modules**

The Rectifier Modules provide load power, battery float current, and battery recharge current during normal operating conditions. They are designed with the latest patented switch-mode technology using DSP (Digital Signal Processing) functionality for efficient operation. The Rectifier Modules are a constant power design. This means that, within the normal operating ambient temperature range and input voltage range, the maximum available output power is a constant 2000W. Within these ranges, the Rectifier Modules operate in one of three modes, depending upon load demands. Transition between modes is completely automatic. If ambient temperature rises above or input voltage falls below acceptable values, Rectifier Modules continue to operate, but at de-rated output power levels.

- 1) **Constant Voltage Mode:** For any initial output voltage setting from 48 to 58 volts, output voltage remains constant regardless of load. This is the normal operating condition, in which loads are being supplied and batteries are float charged. Rectifier Modules operate in the Constant Voltage Mode unless load increases to the point where the product of load current and output voltage is approximately 2000W.
- 2) **Constant Power Mode:** As load increases above approximately 2000W (non-adjustable), output current continues to increase, but output voltage decreases as required to maintain constant output power. Rectifier Modules operate in the Constant Power Mode unless load continues to increase to the point where the current limit setting is reached.
- 3) **Constant Current Mode:** If load increases above the current limit setting, output voltage decreases as required to maintain output current at current limit.

- **Controller**

The controller controls the operation of the rectifier modules. The controller also provides power system control, metering, monitoring, and alarm functions.

NCU (NetSure™ Control Unit): The controller provides power system control (including optional low voltage battery disconnect (LVBD) and low voltage load disconnect (LVLD) control), rectifier control (including a charge control function), metering functions, monitoring functions, local/remote alarm functions, and connections for binary inputs and programmable relay outputs. The controller also supports rectifier temperature compensation if the system is equipped with a temperature probe(s). Temperature probe(s) may also be designated to monitor ambient temperature and/or battery temperature. The controller also provides data acquisition, system alarm management, and advanced battery and energy management. The controller contains a color TFT display and keypad for local access. The controller provides an Ethernet port and comes with comprehensive webpages for remote access. The controller has SNMP V3 capability for remote system management. The controller supports software upgrade via its USB port. Refer to the NCU Controller Instructions (UM1M830BNA) for more information.

General Specifications

See detailed specifications starting on page 105.

Family:	Vertiv™ NetSure™
Spec. No.:	582136800
Model:	502NGFB
Input Voltage	Nominal 120/208/240 volts AC, single phase, and 3-wire, 50/60 Hz, with an operating range of 100 to 250 volts. Acceptable input frequency range is 45 to 65 Hz.
Output Voltage:	-48 Volts DC
Output Capacity:	
Rectifier Module:	2000W (41.6A) @ 208/240VAC Input and +45°C (R48-2000) or +55°C (R48-2000e) 1262W (26.3A) @ 120VAC Input and +45°C (R48-2000) or +55°C (R48-2000e)
System:	See Table 6 .

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Agency Approval:	58213680001 – 58213680004, and 58213680014, 58213680015: UL 60950 Recognized, CAN/CSA 22.2 58213680005 – 58213680008, 58213680010 – 58213680013, 58213680016, 58213680017, 58213680020 – 58213680023, and 58213680026, 58213680027: UL 60950 and UL 1801 Listed, CAN/CSA 22.2
Framework Type:	Relay Rack Mounted
Mounting Width:	19" or 23", nominal
Mounting Depth:	Lists 1 – 4: 13.625" Lists 5 – 8: 12.5" Lists 10 – 27: 13.19"
Mounting Height:	Lists 1 – 4, 10 [†] , 12 [†] , 14 and 15: 3.5" (2RU) List 20 ^{††} and 22 ^{††} : 5.25" (3RU) Lists List 5, 7, 11 [†] and 13 [†] : 7" (4RU) Lists List 21 ^{††} and 23 ^{††} : 8.75" (5RU) Lists List 6, 8, 16 [†] and 17 [†] : 10.5" (6RU) Lists List 26 ^{††} and 27 ^{††} : 12.25" (7RU) <i>† Note: Heights refer to power shelves only. Add the following for each selected Distribution Cabinet:</i> <ul style="list-style-type: none">• 1-row Distribution Cabinet – 7" (4RU)• 2-row Distribution Cabinet – 14" (8RU) <i>†† Note: Heights refer to power shelves and space for List KG only. Add the following for each selected Distribution Cabinet:</i> <ul style="list-style-type: none">• 1-row Distribution Cabinet – 7" (4RU)• 2-row Distribution Cabinet – 14" (8RU) Access: Front and Rear for Installation, Front for Operation and Maintenance
Control:	Microprocessor
Color:	Front Panels are Gray, Shelves are Galvaneal
Environment:	-40°C (-40°F) to +65°C (+149°F), with deratings (see SPECIFICATIONS section)

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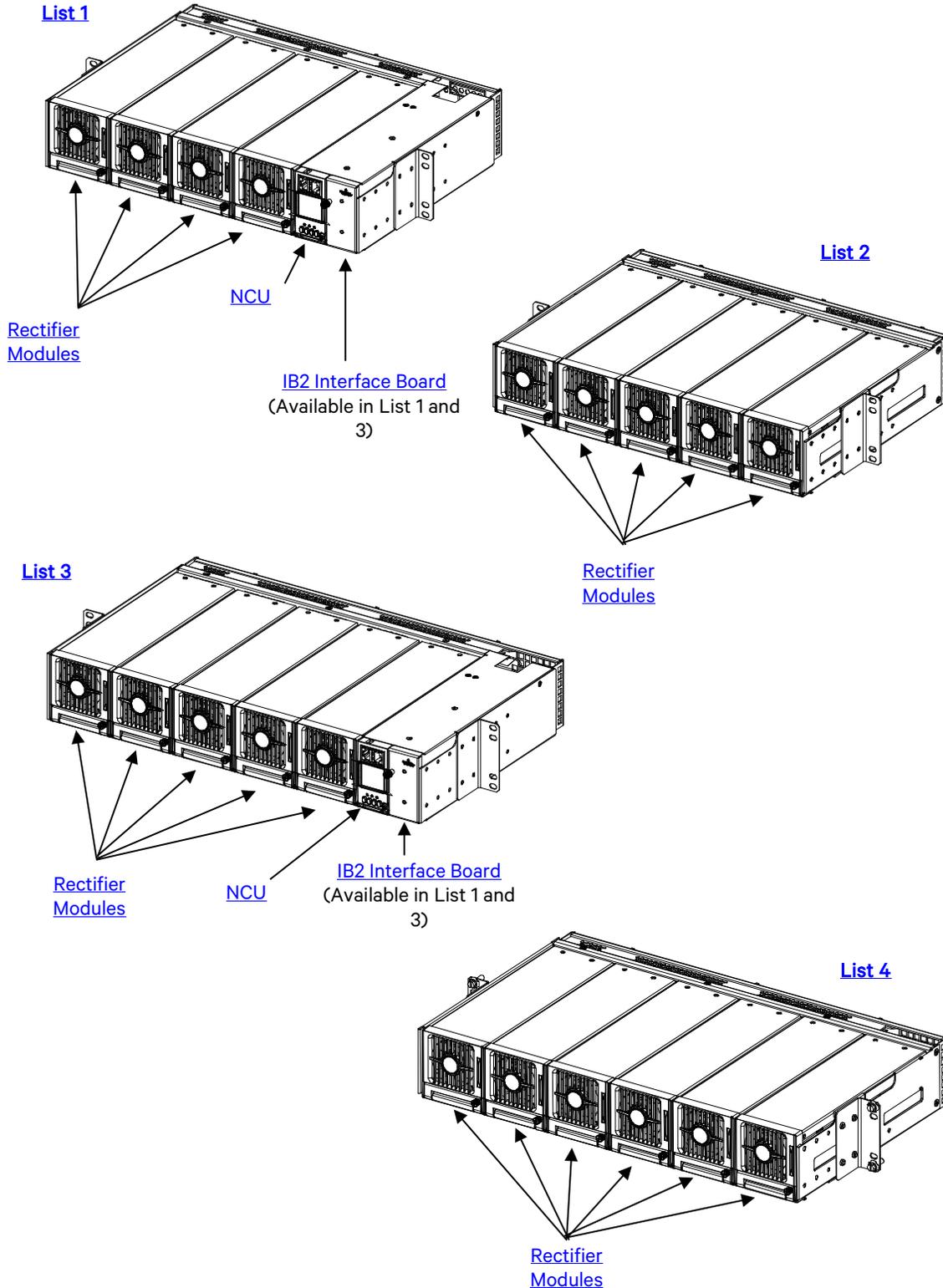
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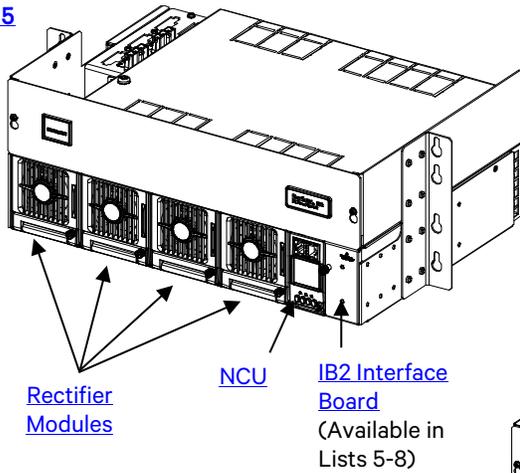
Lists 1 - 4

Rear Plug-In AC Input Connectors.
Rear DC Output Busbars.



Lists 5-8

List 5



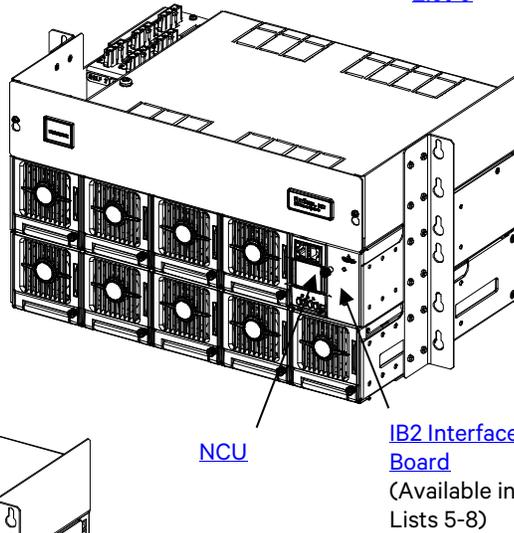
Rectifier Modules

NCU

IB2 Interface Board
 (Available in Lists 5-8)

Top Plug-In AC Input Connectors.
 Top DC Output Busbars.

List 6

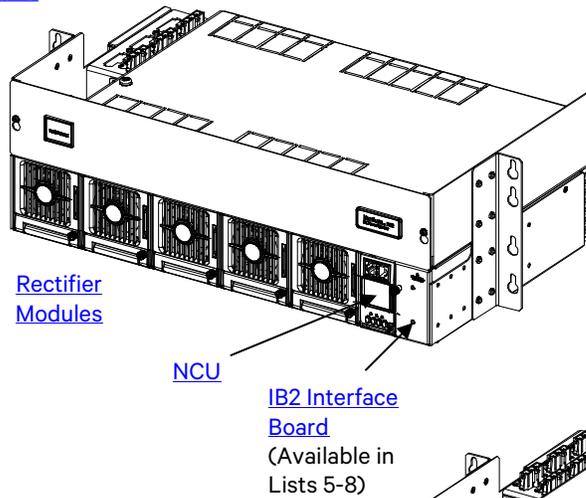


Rectifier Modules

NCU

IB2 Interface Board
 (Available in Lists 5-8)

List 7

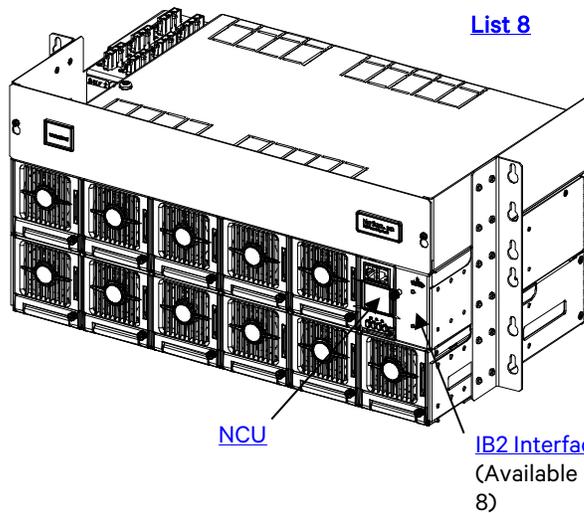


Rectifier Modules

NCU

IB2 Interface Board
 (Available in Lists 5-8)

List 8



Rectifier Modules

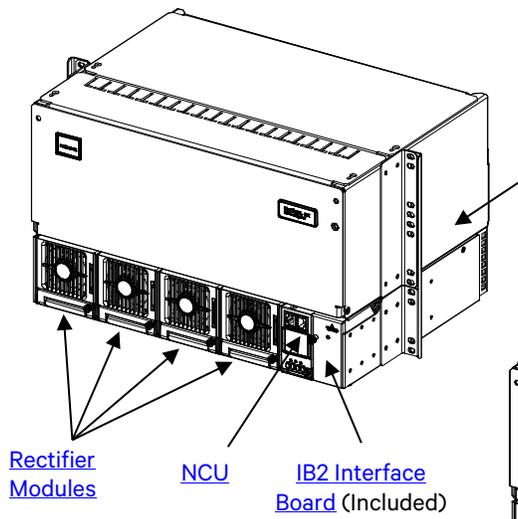
NCU

IB2 Interface Board
 (Available in Lists 5-8)

Lists 10-13

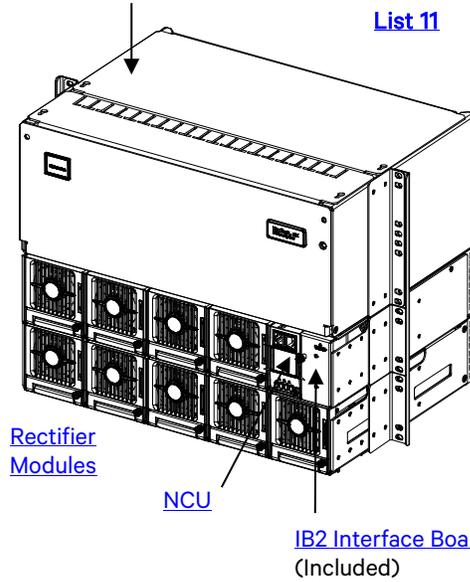
**Rear Plug-In AC Input Connectors.
Top DC Output Distribution Cabinet.**

List 10

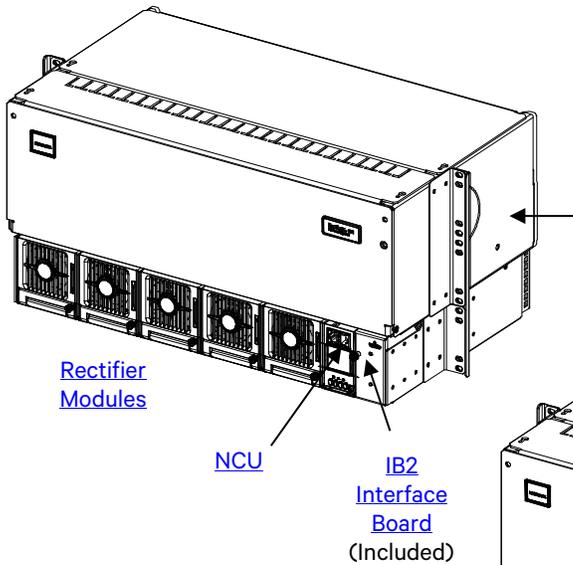


Distribution Cabinet
Ordered under Lists FA-
GC, 1-row (shown) or RA-
RD, 2-row

List 11

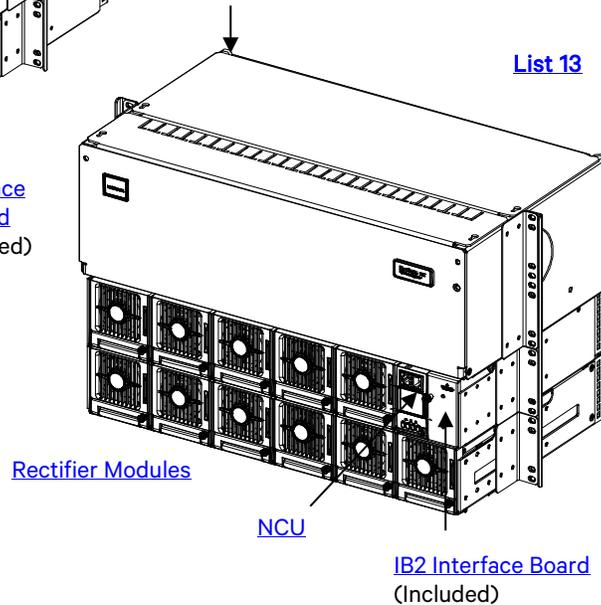


List 12



Distribution Cabinet Ordered under Lists AA-
CC, 1-row (shown) or MA-MD, MV, NA-ND, 2-
row

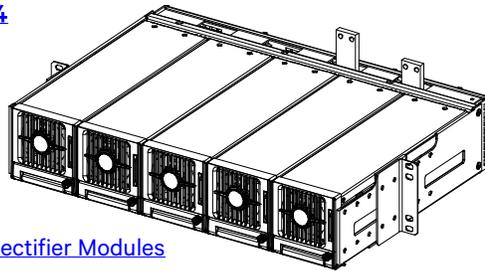
List 13



Lists 14 - 17

Rear Plug-In AC Input Connectors.
Top DC Output Bus bars link to existing shelf.

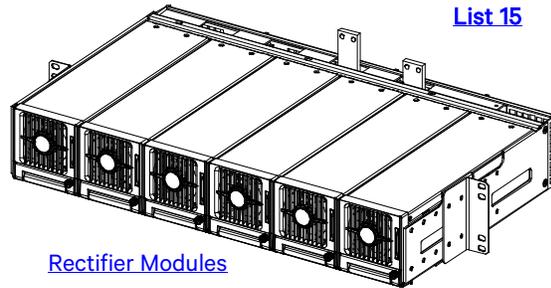
[List 14](#)



[Rectifier Modules](#)

Rear Plug-In AC Input Connectors.
Top DC Output Bus bars link to existing shelf.

[List 15](#)

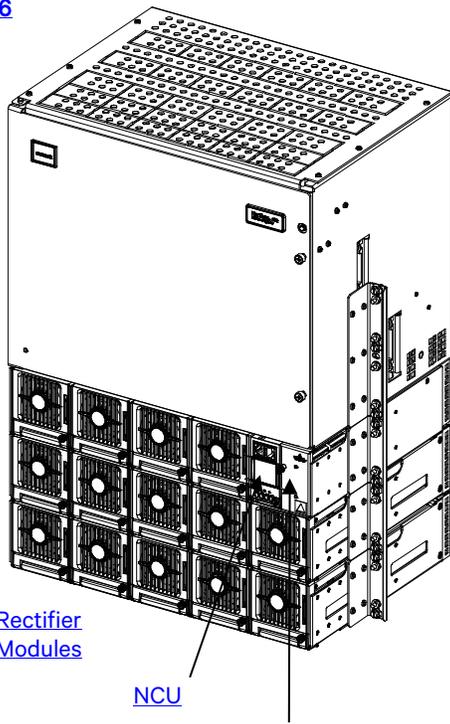


[Rectifier Modules](#)

[List 16](#)

[Distribution Cabinet](#)

Ordered under Lists FA-GC, 1-row or RA-RD, 2-row (shown)



[Rectifier Modules](#)

[NCU](#)

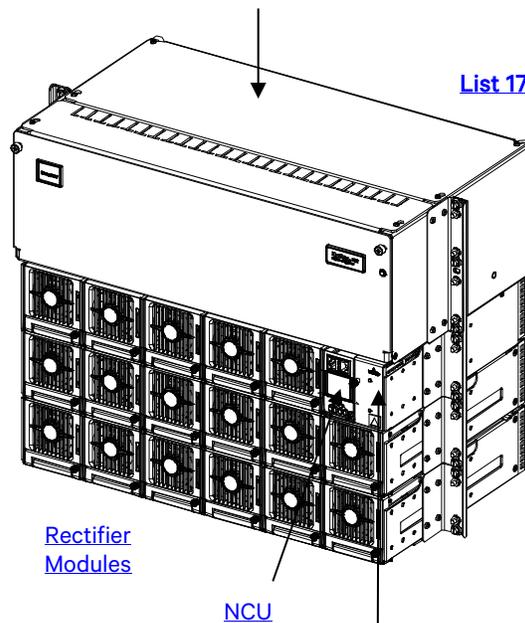
[IB2 Interface Board \(Included\)](#)

Rear Plug-In AC Input Connectors.
Top DC Output Distribution Cabinet.

[Distribution Cabinet](#)

Ordered under Lists AA-CC, 1-row (shown) or MA-MD, MV, NA-ND, 2-row

[List 17](#)



[Rectifier Modules](#)

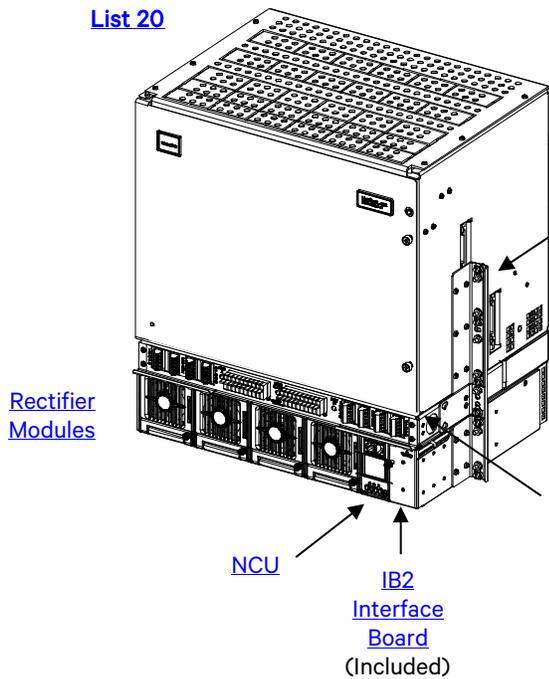
[NCU](#)

[IB2 Interface Board \(Included\)](#)

Lists 20 - 23

Rear Plug-In AC Input Connectors and
Top DC Output Distribution Cabinet

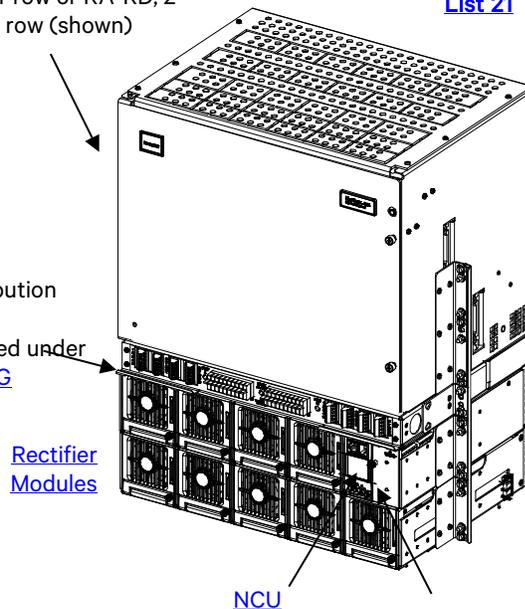
List 20



[Distribution Cabinet](#)
Ordered under Lists FA-
GC, 1-row or RA-RD, 2-
row (shown)

GMT
Distribution
Panel,
Ordered under
[List KG](#)

List 21

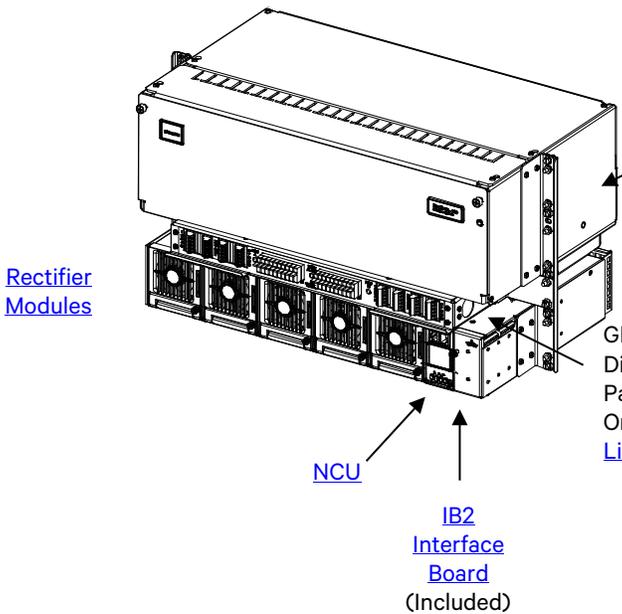


[Rectifier
Modules](#)

NCU

[IB2
Interface
Board
\(Included\)](#)

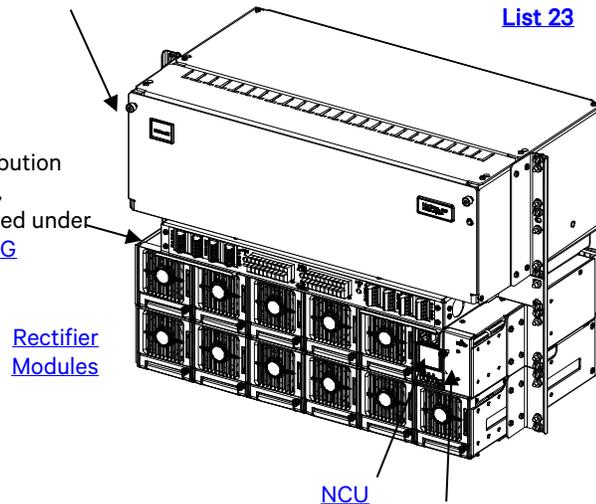
List 22



[Distribution Cabinet](#) Ordered
under Lists AA-CC, 1-row
(shown) or MA-MD, MV, NA-
ND, 2-row

GMT
Distribution
Panel,
Ordered under
[List KG](#)

List 23



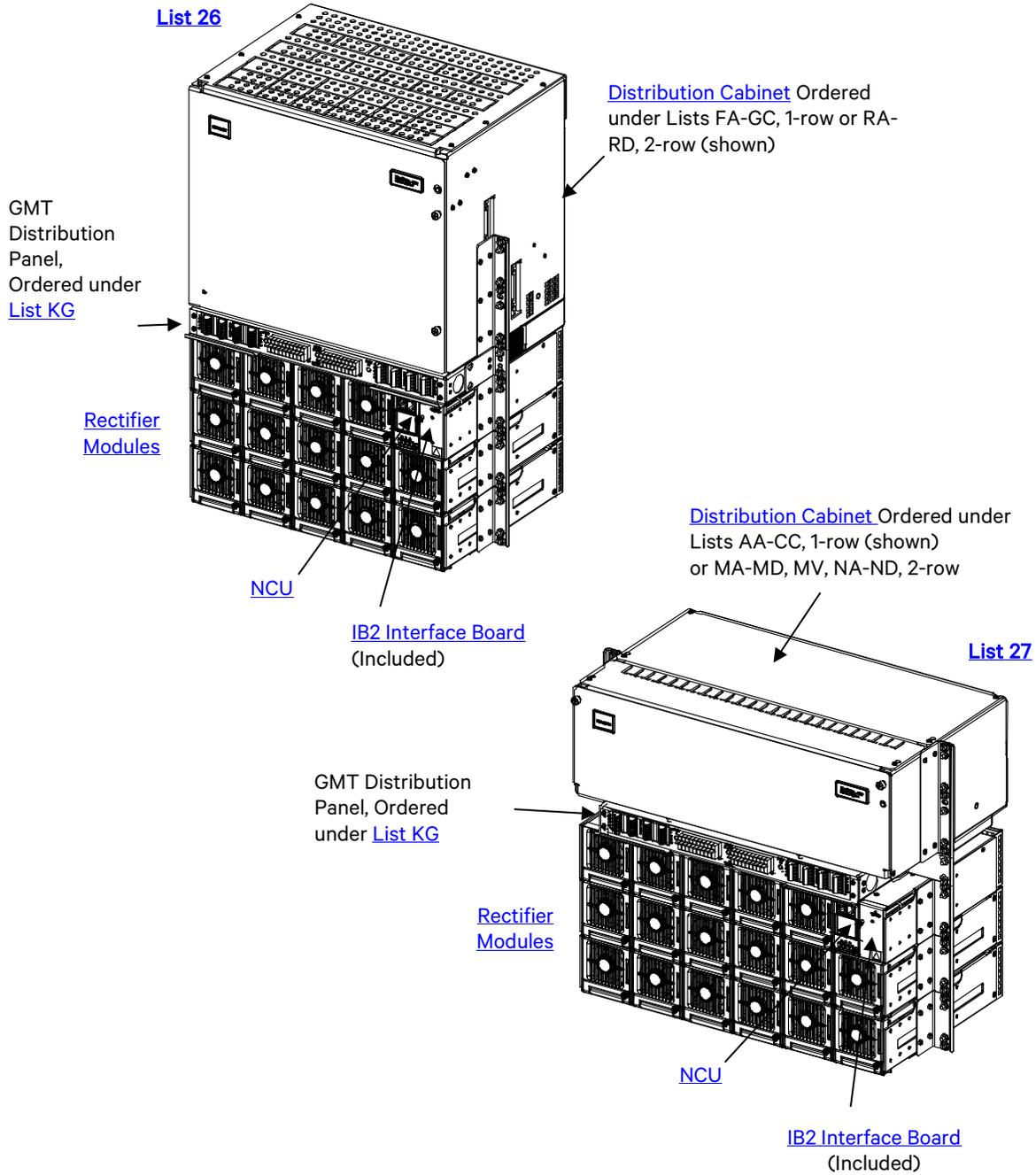
[Rectifier
Modules](#)

NCU

[IB2 Interface Board
\(Included\)](#)

Lists 26, 27

**Rear Plug-In AC Input Connectors and
 Top DC Output Distribution Cabinet**



Other

Other List Options

[List 89](#): Relay Rack Earthquake Anchor Kit

[List KG](#): GMT Distribution Cabinet

[List 90](#): Temperature Probe

[List 93](#): Battery Tray (23")

[List 94](#): Batter Tray (19")

LIST DESCRIPTIONS

List Numbers

List 1: 19" Main Shelf

Features

- ◆ Consists of one (1) 2RU high by 19" wide shelf.
- ◆ Includes AC input connectors and bulk DC output rear bus bars.
- ◆ Houses up to four (4) Rectifier Modules and one (1) Controller.
- ◆ For additional capacity, see List 2.

Ordering Notes

- 1) Order List 1 as required. Also order the following as required.
- 2) Order up to four (4) Rectifier Modules (P/N [1R482000e](#)) per List 1.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per List 1. Also specify appropriate configuration file for your site.
- 5) Order one (1) IB2 Interface Board Assembly, (P/N [548181](#)) per List 1 if required.
- 6) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See "Optional Temperature Probes" on page 68 for temperature probe options with a mounting tab.
- 7) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 8) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 9) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 10) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.
- 12) Order one (1) standard mounting bracket kit (P/N [553336](#)) or one (1) optional Knurr data cabinet flush mounting bracket kit (P/N [555231](#)), as required. See descriptions under the "Accessory Descriptions" section.

List 2: 19" Expansion Shelf

Features

- ◆ Consists of one (1) 2RU high by 19" wide shelf.
- ◆ Includes AC input connectors and bulk output rear bus bars.
- ◆ Houses up to five (5) Rectifier Modules.

Restrictions

Requires one (1) List 1.

A maximum of five (5) List 2 expansion shelves can be used with one (1) List 1.

A List 2 MUST be mounted directly beneath List 1 or another List 2 (for CAN bus connection).

Customer wiring must connect the DC outputs of List 1 and all List 2's in a system in parallel.

Ordering Notes

- 1) Order List 2 as required. Also order the following as required.
- 2) Order up to five (5) Rectifier Modules (P/N [1R482000e](#)) per List 2.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 5) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.
- 6) Order one (1) standard mounting bracket kit (P/N [553336](#)) or one (1) optional Knurr data cabinet flush mounting bracket kit (P/N [555231](#)), as required. See descriptions under the "Accessory Descriptions" section.

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List 3: 23" Main Shelf

Features

- ◆ Consists of one (1) 2RU high by 23" wide shelf.
- ◆ Includes AC input connectors and bulk output rear bus bars.
- ◆ Houses up to five (5) Rectifier Modules and one (1) Controller.
- ◆ For additional capacity, see List 4.

Ordering Notes

- 1) Order List 3 as required. Also order the following as required.
- 2) Order up to five (5) Rectifier Modules (P/N [1R482000e](#)) per List 3.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per List 3. Also specify appropriate configuration file for your site.
- 5) Order one (1) IB2 Interface Board Assembly, (P/N [548181](#)) per List 3 if required.
- 6) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See "Optional Temperature Probes" on page 68 for temperature probe options with a mounting tab.
- 7) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 8) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 9) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 10) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

List 4: 23" Expansion Shelf

Features

- ◆ Consists of one (1) 2RU high by 23" wide shelf.
- ◆ Includes AC input connectors and bulk output rear bus bars.
- ◆ Houses up to six (6) Rectifier Modules.

Restrictions

Requires one (1) List 3.

A maximum of four (4) List 4 expansion shelves can be used with one (1) List 3.

A List 4 MUST be mounted directly beneath List 3 or another List 4 (for CAN bus connection).

Customer wiring must connect the DC outputs of List 3 and all List 4's in a system in parallel.

Ordering Notes

- 1) Order List 4 as required. Also order the following as required.
- 2) Order up to six (6) Rectifier Modules (P/N [1R482000e](#)) per List 4.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 5) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

List 5: 19" Assembled System with One (1) Main Shelf and AC Input / Bulk DC Output

Termination Panel

Features

- ◆ Consists of one (1) 2RU high by 19" wide rectifier shelf and one (1) 2RU high by 19" termination panel (pre-assembled for 4RU total).
- ◆ Termination panel includes AC input and DC output Bus bars.
- ◆ System houses up to four (4) Rectifier Modules and one (1) Controller.
- ◆ A screw-type terminal block is provided for connection of a battery and a load remote shunt.

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Restrictions

System is non-expandable.

Ordering Notes

- 1) Order List 5 as required. Also order the following as required.
- 2) Order up to four (4) Rectifier Modules (P/N [1R482000e](#)) per List 5.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per List 5. Also specify appropriate configuration file for your site.
- 5) Order one (1) IB2 Interface Board Assembly, (P/N [548181](#)) per List 5 if required.
- 6) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. One probe is used with the Battery Charge Temperature Compensation feature, the other to monitor ambient temperature. See “Optional Temperature Probes” on page 68 for temperature probe options with a mounting tab.
- 7) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 8) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 9) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 10) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

List 6: 19” Assembled System with One (1) Main Shelf, One (1) Expansion Shelf, and AC Input / Bulk DC Output Termination Panel

Features

- ◆ Consists of two (2) 2RU high by 19” wide rectifier shelves and one (1) 2RU high by 19” termination panel (pre-assembled for 6RU total).
- ◆ Termination panel includes AC input and DC output Bus bars.
- ◆ System houses up to nine (9) Rectifier Modules and one (1) Controller.
- ◆ A screw-type terminal block is provided for connection of a battery and a load remote shunt.

Restrictions

System is non-expandable.

Ordering Notes

- 1) Order List 6 as required. Also order the following as required.
- 2) Order up to nine (9) Rectifier Modules (P/N [1R482000e](#)) per List 6.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per List 6. Also specify appropriate configuration file for your site.
- 5) Order one (1) IB2 Interface Board Assembly, (P/N [548181](#)) per List 6 if required.
- 6) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See “Optional Temperature Probes” on page 68 for temperature probe options with a mounting tab.
- 7) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 8) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 9) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 10) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

List 7: 23” Assembled System with One (1) Main Shelf and AC Input / Bulk DC Output Termination Panel

Features

- ◆ Consists of one (1) 2RU high by 23” wide rectifier shelf and one (1) 2RU high by 23” termination panel (pre-assembled for 4RU total).
- ◆ Termination panel includes AC input and DC output Bus bars.

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- ◆ System houses up to five (5) Rectifier Modules and one (1) Controller.
- ◆ A screw-type terminal block is provided for connection of a battery and a load remote shunt.

Restrictions

System is non-expandable.

Ordering Notes

- 1) Order List 7 as required. Also order the following as required.
- 2) Order up to five (5) Rectifier Modules (P/N [1R482000e](#)) per system.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per system. Also specify appropriate configuration file for your site.
- 5) Order IB2 Interface Board Assembly, (P/N [548181](#)) as required.
- 6) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See “Optional Temperature Probes” on page 68 for temperature probe options with a mounting tab.
- 7) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 8) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 9) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 10) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

List 8: 23” Assembled System with One (1) Main Shelf, One (1) Expansion Shelf, and AC Input / Bulk DC Output Termination Panel

Features

- ◆ Consists of two (2) 2RU high by 23” wide rectifier shelves and one (1) 2RU high by 23” termination panel (pre-assembled for 6RU total).
- ◆ Termination panel includes AC input and DC output Bus bars.
- ◆ System houses up to eleven (11) Rectifier Modules and one (1) Controller.
- ◆ A screw-type terminal block is provided for connection of a battery and a load remote shunt.

Restrictions

System is non-expandable.

Ordering Notes

- 1) Order List 8 as required. Also order the following as required.
- 2) Order up to eleven (11) Rectifier Modules (P/N [1R482000e](#)) per system.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per system. Also specify appropriate configuration file for your site.
- 5) Order IB2 Interface Board Assembly, (P/N [548181](#)) as required.
- 6) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See “Optional Temperature Probes” on page 68 for temperature probe options with a mounting tab.
- 7) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 8) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 9) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 10) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

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List 10: 19" Assembled System with One (1) Main Shelf and Space for One (1) Distribution Cabinet

Features

- ◆ Consists of one (1) 2RU high by 19" wide rectifier shelf and interface for pre-assembled distribution.
- ◆ Includes AC input connectors.
- ◆ System accepts up to four (4) Rectifier Modules, one (1) Controller, and one (1) 19" Distribution Cabinet.
- ◆ Includes IB2 Interface Board.

Restrictions

One (1) field expansion shelf allowed (List 14).

Ordering Notes

- 1) Order List 10 as required. Also order the following as required.
- 2) Order up to four (4) Rectifier Modules (P/N [1R482000e](#)) per system.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per system. Also specify appropriate configuration file for your site.
- 5) Order one (1) Distribution Cabinet (List [FA](#), [FB](#), [FC](#), [GA](#), [GB](#), [GC](#), [RA](#), [RB](#), [RC](#), or [RD](#)) per system.
- 6) Order Battery Trays ([List 94](#)) as required.
- 7) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 8) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See "Optional Temperature Probes" on page 68 for temperature probe options with a mounting tab.
- 9) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 10) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 12) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

List 11: 19" Assembled System with One (1) 19" Main Shelf, One (1) Expansion Shelf, and Space for One (1) Distribution Cabinet

Features

- ◆ Consists of two (2) 2RU high by 19" wide rectifier shelves and interface for pre-assembled distribution.
- ◆ Includes AC input connectors.
- ◆ System accepts up to nine (9) Rectifier Modules, one (1) Controller, and one (1) 19" Distribution Cabinet.
- ◆ Includes IB2 Interface Board.

Restrictions

One (1) field expansion shelf allowed (List 14).

Ordering Notes

- 1) Order List 11 as required. Also order the following as required.
- 2) Order up to nine (9) Rectifier Modules (P/N [1R482000e](#)) per system.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per system. Also specify appropriate configuration file for your site.
- 5) Order one (1) Distribution Cabinet (List [FA](#), [FB](#), [FC](#), [GA](#), [GB](#), [GC](#), [RA](#), [RB](#), [RC](#), or [RD](#)) per system.
- 6) Order Battery Trays ([List 94](#)) as required.
- 7) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 8) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See "Optional Temperature Probes" on page 68 for temperature probe options with a mounting tab.
- 9) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 10) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 12) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

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List 12: 23" Assembled System with One (1) Main Shelf and Space for One (1) Distribution Cabinet

Features

- ◆ Consists of a 2RU high by 23" wide rectifier shelf and interface for pre-assembled distribution.
- ◆ Includes AC input connectors.
- ◆ System accepts up to five (5) Rectifier Modules, one (1) Controller, and one (1) 23" Distribution Cabinet.
- ◆ Includes IB2 Interface Board.

Restrictions

One (1) field expansion shelf allowed (List 15).

Ordering Notes

- 1) Order List 12 as required. Also order the following as required.
- 2) Order up to five (5) Rectifier Modules (P/N [1R482000e](#)) per system.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per system. Also specify appropriate configuration file for your site.
- 5) Order one (1) Distribution Cabinet (List [AA](#), [AB](#), [AC](#), [BA](#), [BB](#), [BC](#), [CA](#), [CB](#), [CC](#), [MA](#), [MB](#), [MC](#), [MD](#), [MV](#), [NA](#), [NB](#), [NC](#), or [ND](#)) per system.
- 6) Order Battery Trays ([List 93](#)) as required.
- 7) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 8) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See "Optional Temperature Probes" on page 68 for temperature probe options with a mounting tab.
- 9) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 10) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 12) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

List 13: 23" Assembled System with One (1) Main Shelf, One (1) Expansion Shelf, and Space for One (1) Distribution Cabinet

Features

- ◆ Consists of two (2) 2RU high by 23" wide rectifier shelves and interface for pre-assembled distribution.
- ◆ Includes AC input connectors.
- ◆ System accepts up to eleven (11) Rectifier Modules, one (1) Controller, and one (1) 23" Distribution Cabinet.
- ◆ Includes IB2 Interface Board.

Restrictions

One (1) field expansion shelf allowed (List 15).

Ordering Notes

- 1) Order List 13 as required. Also order the following as required.
- 2) Order up to eleven (11) Rectifier Modules (P/N [1R482000e](#)) per system.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per system. Also specify appropriate configuration file for your site.
- 5) Order one (1) Distribution Cabinet (List [AA](#), [AB](#), [AC](#), [BA](#), [BB](#), [BC](#), [CA](#), [CB](#), [CC](#), [MA](#), [MB](#), [MC](#), [MD](#), [MV](#), [NA](#), [NB](#), [NC](#), or [ND](#)) per system.
- 6) Order Battery Trays ([List 93](#)) as required.
- 7) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 8) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See "Optional Temperature Probes" on page 68 for temperature probe options with a mounting tab.
- 9) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.

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- 10) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 12) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

List 14: 19" Field Expansion Shelf

Features

- ◆ Consists of one (1) 2RU high by 19" wide shelf.
- ◆ Includes AC input connectors and DC output bus bar links.
- ◆ Accepts up to five (5) Rectifier Modules.

Restrictions

For use with List 10, 11, 16, 20, 21 or 26 only.

Maximum of (1) expansion shelf per system. Total number of shelves with (1) row Distribution Cabinet is (3): (2) Factory-installed + (1) Expansion.

Ordering Notes

- 1) Order List 14 as required. Also order the following as required.
- 2) Order up to five (5) Rectifier Modules (P/N [1R482000e](#)) per shelf.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.

List 15: 23" Field Expansion Shelf

Features

- ◆ Consists of a 2RU high by 23" wide shelf.
- ◆ Includes AC input connectors and DC output bus bar links.
- ◆ Accepts up to six (6) Rectifier Modules.

Restrictions

For use with List 12, 13, 17, 22, 23 or 27 only.

Maximum of (1) expansion shelf per system. Total number of shelves with (1) row Distribution Cabinet is (3): (2) Factory-installed + (1) Expansion.

Ordering Notes

- 1) Order List 15 as required. Also order the following as required.
- 2) Order up to six (6) Rectifier Modules (P/N [1R482000e](#)) per shelf.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.

List 16: 19" Assembled System with One (1) Main Shelf, Two (2) Expansion Shelves, and Space for One (1) Distribution Cabinet

Features

- ◆ Consists of three (3) 2RU high by 19" wide rectifier shelves and interface for pre-assembled distribution.
- ◆ Includes AC input connectors.
- ◆ System accepts up to fourteen (14) Rectifier Modules, one (1) Controller, and one (1) Distribution Cabinet.
- ◆ Includes IB2 Interface Board.

Restrictions

When equipped with a 2-row Distribution Cabinet, the system is expandable by one (1) rectifier shelf in the field (List 14).

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Ordering Notes

- 1) Order List 16 as required. Also order the following as required.
- 2) Order up to fourteen (14) Rectifier Modules (P/N [1R482000e](#)) per system.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per system. Also specify appropriate configuration file for your site.
- 5) Order one (1) Distribution Cabinet (List [FA](#), [FB](#), [FC](#), [GA](#), [GB](#), [GC](#), [RA](#), [RB](#), [RC](#), or [RD](#)) per system.
- 6) Order Battery Trays ([List 94](#)) as required.
- 7) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 8) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See “Optional Temperature Probes” on page 68 for temperature probe options with a mounting tab.
- 9) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 10) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 12) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

List 17: 23” Assembled System with One (1) Main Shelf, Two (2) Expansion Shelves, and Space for One (1) Distribution Cabinet

Features

- ◆ Consists of three (3) 2RU high by 23” wide rectifier shelves and interface for pre-assembled distribution.
- ◆ Includes AC input connectors.
- ◆ System accepts up to seventeen (17) Rectifier Modules, one (1) Controller, and one (1) Distribution Cabinet.
- ◆ Includes IB2 Interface Board.

Restrictions

The system is expandable by one (1) rectifier shelf in the field (List 15).

Ordering Notes

- 1) Order List 17 as required. Also order the following as required.
- 2) Order up to seventeen (17) Rectifier Modules (P/N [1R482000e](#)) per system.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per system. Also specify appropriate configuration file for your site.
- 5) Order one (1) Distribution Cabinet (List [AA](#), [AB](#), [AC](#), [BA](#), [BB](#), [BC](#), [CA](#), [CB](#), [CC](#), [MA](#), [MB](#), [MC](#), [MD](#), [MV](#), [NA](#), [NB](#), [NC](#), or [ND](#)) per system.
- 6) Order Battery Trays ([List 93](#)) as required.
- 7) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 8) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See “Optional Temperature Probes” on page 68 for temperature probe options with a mounting tab.
- 9) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 10) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 12) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

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List 20: 19" Assembled System with One (1) Main Shelf and Space for One (1) GMT Distribution Panel and One (1) Distribution Cabinet

Features

- ◆ Consists of a 2RU high by 19" wide rectifier shelf, and interface for pre-assembled distribution.
- ◆ Includes AC input connectors.
- ◆ System houses up to four (4) Rectifier Modules, one (1) Controller, one (1) GMT Distribution Panel, and one (1) Distribution Cabinet.
- ◆ Includes IB2 Interface Board.

Restrictions

One (1) field expansion shelf is allowed (List 14).

Ordering Notes

- 1) Order List 20 as required. Also order the following as required.
- 2) Order up to four (4) Rectifier Modules (P/N [1R482000e](#)) per system.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per system. Also specify appropriate configuration file for your site.
- 5) Order one (1) Distribution Cabinet (List [FA](#), [FB](#), [FC](#), [GA](#), [GB](#), [GC](#), [RA](#), [RB](#), [RC](#), or [RD](#)) per system.
- 6) Order one (1) GMT Panel ([List KG](#)) per system.
- 7) Order Battery Trays ([List 94](#)) as required.
- 8) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 9) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See "Optional Temperature Probes" on page 68 for temperature probe options with a mounting tab.
- 10) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 12) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 13) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

List 21: 19" Assembled System with One (1) Main Shelf, One (1) Expansion Shelf, and Space for One (1) GMT Distribution Panel and One (1) Distribution Cabinet

Features

- ◆ Consists of two (2) 2RU high by 19" wide rectifier shelves, and interface for pre-assembled distribution.
- ◆ Includes AC input connectors.
- ◆ System houses up to nine (9) Rectifier Modules, one (1) Controller, one (1) GMT Distribution Panel, and one (1) Distribution Cabinet.
- ◆ Includes IB2 Interface Board.

Restrictions

One field expansion shelf is allowed (List 14).

Ordering Notes

- 1) Order List 21 as required. Also order the following as required.
- 2) Order up to nine (9) Rectifier Modules (P/N [1R482000e](#)) per system.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per system. Also specify appropriate configuration file for your site.
- 5) Order one (1) Distribution Cabinet (List [FA](#), [FB](#), [FC](#), [GA](#), [GB](#), [GC](#), [RA](#), [RB](#), [RC](#) or [RD](#)) per system.
- 6) Order one (1) GMT Panel ([List KG](#)) per system.
- 7) Order Battery Trays ([List 94](#)) as required.
- 8) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.

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- 9) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See “Optional Temperature Probes” on page 68 for temperature probe options with a mounting tab.
- 10) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 12) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 13) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

List 22: 23” Assembled System with One (1) Main Shelf and Space for One (1) GMT Distribution Panel and One (1) Distribution Cabinet

Features

- ◆ Consists of a 2RU high by 23” wide rectifier shelf, and interface for pre-assembled distribution.
- ◆ Includes AC input connectors.
- ◆ System houses up to five (5) Rectifier Modules, one (1) Controller, one (1) GMT Distribution Panel, and one (1) Distribution Cabinet.
- ◆ Includes IB2 Interface Board.

Restrictions

One field expansion shelf is allowed (List 15).

Ordering Notes

- 1) Order List 22 as required. Also order the following as required.
- 2) Order up to five (5) Rectifier Modules (P/N [1R482000e](#)) per system.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per system. Also specify appropriate configuration file for your site.
- 5) Order one (1) Distribution Cabinet (List [AA](#), [AB](#), [AC](#), [BA](#), [BB](#), [BC](#), [CA](#), [CB](#), [CC](#), [MA](#), [MB](#), [MC](#), [MD](#), [MV](#), [NA](#), [NB](#), [NC](#), or [ND](#)) per system.
- 6) Order one (1) GMT Panel ([List KG](#)) per system.
- 7) Order Battery Trays ([List 93](#)) as required.
- 8) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 9) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See “Optional Temperature Probes” on page 68 for temperature probe options with a mounting tab.
- 10) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 12) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 13) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

List 23: 23” Assembled System with One (1) Main Shelf, One (1) Expansion Shelf, and Space for One (1) GMT Distribution Panel and One (1) Distribution Cabinet

Features

- ◆ Consists of two (2) 2RU high by 23” wide rectifier shelves, and interface for pre-assembled distribution.
- ◆ Includes AC input connectors.
- ◆ System houses up to eleven (11) Rectifier Modules, one (1) Controller, one (1) GMT Distribution Panel, and one (1) Distribution Cabinet.
- ◆ Includes IB2 Interface Board.

Restrictions

One field expansion shelf is allowed (List 15).

Ordering Notes

- 1) Order List 23 as required. Also order the following as required.
- 2) Order up to eleven (11) Rectifier Modules (P/N [1R482000e](#)) per system.

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- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per system. Also specify appropriate configuration file for your site.
- 5) Order one (1) Distribution Cabinet (List [AA](#), [AB](#), [AC](#), [BA](#), [BB](#), [BC](#), [CA](#), [CB](#), [CC](#), [MA](#), [MB](#), [MC](#), [MD](#), [MV](#), [NA](#), [NB](#), [NC](#), or [ND](#)) per system.
- 6) Order one (1) GMT Panel ([List KG](#)) per system.
- 7) Order Battery Trays ([List 93](#)) as required.
- 8) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 9) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See “Optional Temperature Probes” on page 68 for temperature probe options with a mounting tab.
- 10) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 12) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 13) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

List 26: 19” Assembled System with One (1) Main Shelf, Two (2) Expansion Shelves, and Space for One (1) GMT Distribution Panel and One (1) Distribution Cabinet

Features

- ◆ Consists of three (3) 2RU high by 19” wide rectifier shelves, and interface for pre-assembled distribution.
- ◆ Includes AC input connectors.
- ◆ System houses up to fourteen (14) Rectifier Modules, one (1) Controller, one (1) GMT Distribution Panel, and one (1) Distribution Cabinet.
- ◆ Includes IB2 Interface Board.

Restrictions

When equipped with a two-row Distribution Cabinet, the system is expandable by one (1) rectifier shelf in the field (List 14).

Ordering Notes

- 1) Order List 26 as required. Also order the following as required.
- 2) Order up to fourteen (14) Rectifier Modules (P/N [1R482000e](#)) per system.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per system. Also specify appropriate configuration file for your site.
- 5) Order one (1) Distribution Cabinet (List [FA](#), [FB](#), [FC](#), [GA](#), [GB](#), [GC](#), [RA](#), [RB](#), [RC](#) or [RD](#)) per system.
- 6) Order one (1) GMT Panel ([List KG](#)) per system.
- 7) Order Battery Trays ([List 94](#)) as required.
- 8) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 9) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See “Optional Temperature Probes” on page 68 for temperature probe options with a mounting tab.
- 10) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 12) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 13) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

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List 27: 23" Assembled System with One (1) Main Shelf, Two (2) Expansion Shelves, and Space for One (1) GMT Distribution Panel and One (1) Distribution Cabinet

Features

- ◆ Consists of three (3) 2RU high by 23" wide rectifier shelves, and interface for pre-assembled distribution.
- ◆ Includes AC input connectors.
- ◆ System houses up to seventeen (17) Rectifier Modules, one (1) Controller, one (1) GMT Distribution Panel, and one (1) Distribution Cabinet.
- ◆ Includes IB2 Interface Board.

Restrictions

When equipped with a two-row Distribution Cabinet, the system is expandable by one (1) rectifier shelf in the field (List 15).

Ordering Notes

- 1) Order List 27 as required. Also order the following as required.
- 2) Order up to seventeen (17) Rectifier Modules (P/N [1R482000e](#)) per system.
- 3) Order one (1) optional Rectifier Module Mounting Position Blank Cover Panel (P/N PSK4830R-1) for each empty rectifier module mounting position in the system if required.
- 4) Order one (1) NCU (P/N [1M830BNA](#)) Controller per system. Also specify appropriate configuration file for your site.
- 5) Order one (1) Distribution Cabinet (List [AA](#), [AB](#), [AC](#), [BA](#), [BB](#), [BC](#), [CA](#), [CB](#), [CC](#), [MA](#), [MB](#), [MC](#), [MD](#), [MV](#), [NA](#), [NB](#), [NC](#), or [ND](#)) per system.
- 6) Order one (1) GMT Panel ([List KG](#)) per system.
- 7) Order Battery Trays ([List 93](#)) as required.
- 8) Order Relay Rack Anchor Kit(s) ([List 89](#)) as required.
- 9) Order up to two (2) Temperature Probes ([List 90](#) or [91](#)) as required. See "Optional Temperature Probes" on page 68 for temperature probe options with a mounting tab.
- 10) Order [Relay Racks](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 11) Order [AC Input Cables and Line Cords](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 12) Order [Alarm Cables](#) per [ACCESSORY DESCRIPTIONS](#) section.
- 13) Order output lugs per [Wiring Notes](#) under [ACCESSORY DESCRIPTIONS](#) section.

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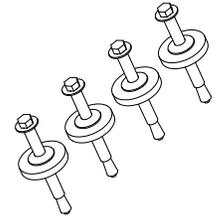
List 89: Relay Rack Earthquake Anchor Kit, P/N P0987167

Features

- ◆ Provides four (4) sets of hardware for anchoring the relay rack to the floor.

Ordering Notes

- 1) Order as required.



List 90: Optional Temperature Probe, 12-Ft. Total Cable Length

Features

- ◆ Up to two (2) temperature probes can be connected to the Customer Interface (IB2) Board. Either or both probes can be programmed to monitor ambient temperature or battery temperature.
- ◆ A temperature probe set as a battery probe can also be designated to be used for the battery charge temperature compensation feature. If the system is equipped with the ACU+ or NCU Controller, the battery charge temperature compensation feature can be programmed to use one probe or the average or highest value of all probes programmed to monitor battery temperature. The battery charge temperature compensation feature allows the controller to automatically increase or decrease the output voltage of the system to maintain battery float current as battery temperature decreases or increases, respectively. Battery life can be extended when an optimum charge voltage to the battery with respect to temperature is maintained.
- ◆ If the system is equipped with the ACU+ or NCU Controller, a temperature probe set as a battery probe can also be used for controlling against battery thermal runaway (BTRM feature).
- ◆ The Temperature Probe assembly consists of two pieces that plug together to make a complete probe. When ordered, P/N 04118246 (3 feet long) is pre-wired to the shelf. P/N 04118247 (9 feet long) is shipped loose. Total length: 12 ft.



Restrictions

A temperature probe programmed to monitor battery temperature should be mounted on the top or side of a battery cell to sense battery temperature. A temperature probe used for battery charge temperature compensation or BTRM (Battery Thermal Runaway Management) should also be mounted on the top or side of a battery cell. A temperature probe programmed to monitor ambient temperature should be mounted in a convenient location, away from direct sources of heat or cold.

Ordering Notes

- 1) Requires IB2 Interface Board (not included as standard in Lists 1, 3, 5, 6, 7 and 8).
- 2) Order up to two (2) Temperature Probes for each system, as required. (Each List 90 includes one (1) P/N 04118246 and one (1) P/N 04118247, and together makes up one temperature probe.)
- 3) Only one (1) Temperature Probe can be used for compensation (in the SCU+). If multiple probes are required, order (1) SM-TEMP Temperature Concentrator.
- 4) See “Optional Temperature Probes” on page 68 for temperature probe options with a mounting tab.

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List 91: Optional Temperature Probe, 33-Ft. Total Cable Length

Features

- ◆ See above for description of Temperature Probes.
- ◆ The Temperature Probe assembly consists of two pieces that plug together to make a complete probe. When ordered, P/N 04118246 (3 feet long) is pre-wired to the shelf and P/N 04116740 (30 feet long) is shipped loose. Total length: 33 ft.

Restrictions

See above for restrictions.

Ordering Notes

- 1) Requires IB2 Interface Board (**not** included as standard in Lists 1, 3, 5, 6, 7 and 8).
- 2) Order up to two (2) Temperature Probes for each system, as required. (Each List 91 includes one (1) P/N 04118246 and one (1) P/N 04118247, and together makes up one temperature probe.)
- 3) Only one (1) Temperature Probe can be used for compensation (in the SCU+). If multiple probes are required, order (1) SM-TEMP Temperature Concentrator.
- 4) See “Optional Temperature Probes” on page 68 for temperature probe options with a mounting tab.

List 93: Battery Tray Assembly, Pre-Cabled, for 23” Relay Rack

Features

- ◆ Provides one battery tray that mounts four (4) 12V front-terminal Valve Regulated Lead Acid (VRLA) batteries. Batteries are configured as one (1) 48V string.
- ◆ Accepts various VRLA batteries. See **Ordering Notes** below.
- ◆ See [Overall Dimensions – List 93 \(23” Battery Tray\)](#) under *PHYSICAL SIZE INFORMATION* for battery tray dimensions and typical arrangement. Note that two battery trays are available to accommodate the various size batteries listed in **Ordering Notes**.
- ◆ Trays can be ordered with or without battery disconnect circuit breakers. When circuit breakers are ordered, one is provided in the -48V lead of each battery string (1 breaker per tray).

Restrictions

For 23” relay racks only.

A system e/w a one-row Distribution Cabinet can accommodate up to four (4) List 93’s, depending on rack size and tray spacing.

A system e/w a two-row Distribution Cabinet can accommodate up to three (3) List 93’s, depending on rack size and tray spacing.

When used with a List BA, BB or BC Distribution Cabinet equipped with 100A-200A battery disconnect circuit breakers, a maximum of (3) battery trays can be used.

When used with a List BA, BB, BC, CA, CB or CC Distribution Cabinet equipped with 250A battery disconnect circuit breakers, a maximum of (2) battery trays can be used.

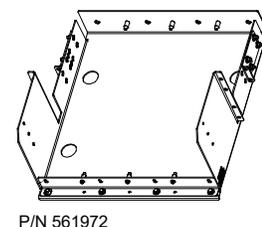
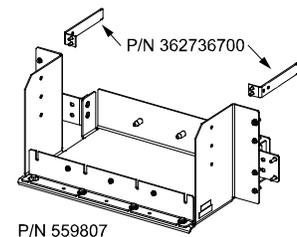
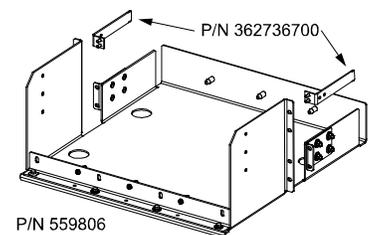
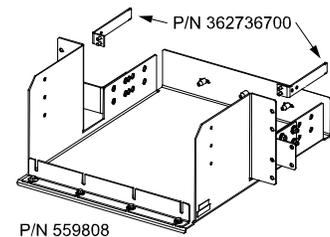
Maximum gauge of factory-installed battery cabling is 1/0. If 250A battery disconnect is used, this permits operation up through 40°C.

A single List 93 must mount at bottom of rack. Multiple List 93’s must mount starting at bottom of rack and working upward.

561972 will fit into a 23” relay rack with upright depth of 5.00” (Telect Part Number:12300KW201).

Ordering Notes

- 1) Order multiples of List 93 for more than one (1) battery tray. See **Restrictions** above.
- 2) Order one (1) or more P/N 362736700 Cable Bracket(s) as required.
- 3) Order batteries separately. Tables A, B, C, and D list the batteries recommended for use with List 93.
- 4) Specify rack spacing of 6U (10.5”), 7U (12.25”), or 8U (14”) between trays and above top tray as required for battery clearance. See Tables A, B, C, and D.



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- 5) Specify the batteries you intend to use with each List 93 ordered. Lugs for battery connections vary according to the batteries to be installed. Battery cables will be lugged as shown in the Table E. The table is provided for reference only.
Note: If battery model is *not* specified, lugs will *not* be installed at factory. Instead, both available lug kits for the furnished wire size will be shipped loose with the order.
- 6) Specify with or without tray-mounted battery disconnect circuit breakers.
Note: All List 93 trays in a rack will be furnished with or without battery disconnect circuit breakers as specified for the first tray ordered.
- 7) If ordering List 93 with tray-mounted circuit breakers, order one (1) breaker per List 93 from Table F.
- 8) If ordering List 93 with tray-mounted circuit breakers, specify breaker mounting on left or right side of tray. Circuit breaker mounting kits shown in the Table F will be installed. Kit numbers are provided for reference only.
- 9) If ordering List 93 with tray-mounted circuit breakers, order Alarm Jumper P/N 524384 for each system to connect the alarm terminal of up to three (3) battery disconnect circuit breakers.

Battery Tray P/N 559806						
Manufacturer*	Model	Vertiv P/N	Rated 8-Hr. Capacity (Ah)	Dimension W x L x H (Inches)	Required Tray Spacing	Weight (per battery) (lbs)
Northstar	NSB110FT	--	110	4.92 X 22.05 X 8.94	7U	91
Northstar	NSB170FT	--	167	4.92 X 22.05 X 12.60	8U	131
Deka Unigy I	12AVR-150ET	122018	150	4.90 X 22.00 X 11.75	8U	115
C&D	TEL12-210F	554579	202	4.90 X 22.00 X 12.80	8U	132
Douglas	DGS12-150F	125453	150	4.90 X 22.00 X 12.70	8U	137
Douglas	DSN12-170F	--	170.8	4.92 X 22.05 X 12.60	8U	130

* See [Battery Manufacturer Information](#) located at the end of this document.

Table A

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Battery Tray P/N 559807						
Manufacturer*	Model	Vertiv P/N	Rated 8-Hr. Capacity (Ah)	Dimension W x L x H (Inches)	Required Tray Spacing	Weight (per battery) (lbs)
Northstar	NSB40FT**	--	38.1	3.80 X 9.80 X 8.20	6U	34
Northstar	NSB60FT**	--	57.9	4.20 X 11.30 X 10.40	7U	49
Douglas	DGS12-25F	--	25	3.94 X 10.80 X 7.60	6U	27
Douglas	DGS12-50F	--	50	3.94 X 10.80 X 11.60	8U	48
Energys	12TD50F	--	48	4.2 X 10.9 X 8.7	6U	38

* See [Battery Manufacturer Information](#) located at the end of this document.

** Batteries MUST be equipped with front access terminal option. See Battery Manufacturer for ordering information.

Table B

Battery Tray P/N 559808						
Manufacturer*	Model	Vertiv P/N	Rated 8-Hr. Capacity (Ah)	Dimension W x L x H (Inches)	Required Tray Spacing	Weight (per battery) (lbs)
Energys	12TD150F	--	143	4.3 X 21.7 X 11.3	8U	105

* See [Battery Manufacturer Information](#) located at the end of this document.

Table C

Battery Tray P/N 561972						
Manufacturer*	Model	Vertiv P/N	Rated 8-Hr. Capacity (Ah)	Dimension W x L x H (Inches)	Required Tray Spacing	Weight (per battery) (lbs)
Northstar	NSB110FT	--	110	4.92 X 22.05 X 8.94	7U	91
Northstar	NSB170FT	--	167	4.92 X 22.05 X 12.60	8U	131
Deka Unigy I	12AVR-150ET	122018	150	4.90 X 22.00 X 11.75	8U	115
C&D	TEL12-210F	554579	202	4.90 X 22.00 X 12.80	8U	132
Douglas	DGS12-150F	125453	150	4.90 X 22.00 X 12.70	8U	137
Douglas	DSN12-170F	--	170.8	4.92 X 22.05 X 12.60	8U	130

* See [Battery Manufacturer Information](#) located at the end of this document.

Table D

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Battery Specified	Battery Lug Kit Part Number (Kit provides two lugs for one tray.)	
	Up to 150A Battery Disconnect	Above 150A or No Battery Disconnect chosen
Northstar NSB110FT	528234 (2 AWG)	528235 (1/0 AWG)
Northstar NSB170FT		
Deka Unigy I 12AVR-150ET		
C&D TEL12-210F	528236 (2 AWG)	528237 (1/0 AWG)
Douglas DGS12-150F		
Douglas DSN12-170F	528234 (2 AWG)	528235 (1/0 AWG)
Northstar NSB40FT		
Northstar NSB60FT		
Douglas DGS12-25F		
Douglas DGS12-50F		
Enersys 12TD50F		
Enersys 12TD150F		

Table E

Ampere Rating	Part No., Circuit Breaker, Electrical/Mechanical Trip ¹ (Black Handle)	Part No., Left-Side Breaker Mtg. Kit (For Reference Only)	Part No., Right-Side Breaker Mtg. Kit (For Reference Only)
50	256694300	559814	559813
60	256694700		
70	256695100		
75	256695500		
100	256695900	559816	559815
125	100765		
150	100763		
200	121810	559816	559815

¹ Provides an alarm during an electrical or manual trip condition.

Table F

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List 94: Battery Tray Assembly, Pre-Cabled, for 19" Relay Rack

Features

- ◆ Provides one battery tray that mounts four (4) 12V front-terminal Valve Regulated Lead Acid (VRLA) batteries. Batteries are configured as one (1) 48V string.
- ◆ Accepts various VRLA batteries. See **Ordering Notes** below.
- ◆ See **Overall Dimensions – List 94 (19" Battery Tray)** under *PHYSICAL SIZE INFORMATION* for battery tray dimensions and typical arrangement. Note that three battery trays are available to accommodate the various size batteries listed in **Ordering Notes**.
- ◆ Trays can be ordered with or without battery disconnect circuit breakers. When circuit breakers are ordered, one is provided in the -48V lead of each battery string (1 breaker per tray).

Restrictions

For 19" relay racks only.

A system e/w a one-row Distribution Cabinet can accommodate up to four (4) List 94's, depending on rack size and tray spacing.

A system e/w a two-row Distribution Cabinet can accommodate up to three (3) List 94's, depending on rack size and tray spacing.

When used with a List GA, GB or GC Distribution Cabinet equipped with 100A-200A battery disconnect breakers, a maximum of (2) battery trays can be used.

When used with a List GA, GB or GC Distribution Cabinet equipped with a 250A battery disconnect breaker, a maximum of (1) battery tray can be used.

Maximum gauge of factory-installed battery cabling is 1/0. If 250A battery disconnect is used, this permits operation up through 40C.

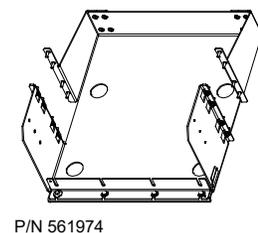
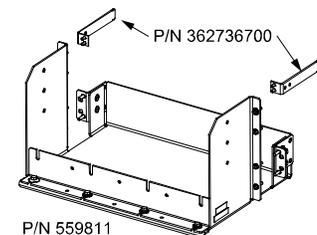
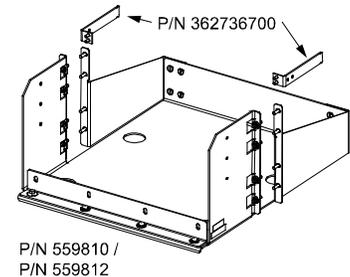
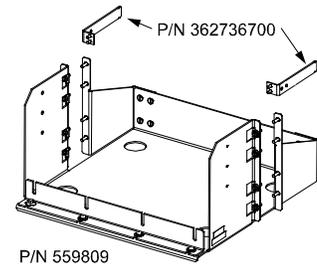
A single List 94 must mount at bottom of rack. Multiple List 94's must mount starting at bottom of rack and working upward.

561974 will fit into a 19" relay rack with upright depth of 5.00"

(Telect Part Number: 12545-300).

Ordering Notes

- 1) Order multiples of List 94 for more than one (1) battery tray. See **Restrictions** above.
- 2) Order one (1) or more P/N 362736700 Cable Bracket(s) as required.
- 3) Order batteries separately. Tables G, H, I, J, and K list batteries recommended for use with List 94.
- 4) Specify rack spacing of 6U (10.5"), 7U (12.25"), or 8U (14") between trays and above top tray as required for battery clearance. See Tables G, H, I, J, and K.
- 5) Specify the batteries you intend to use with each List 94 ordered. Lugs for battery connections vary according to the batteries to be installed. Battery cables will be lugged as shown in Table L. The table is provided for reference only.
Note: If battery model is **not** specified, lugs will **not** be installed at factory. Instead, both available lug kits for the furnished wire size will be shipped loose with the order.
- 6) Specify with or without tray-mounted battery disconnect circuit breakers.
Note: All List 94 trays in a rack will be furnished with or without battery disconnect circuit breakers as specified for the first tray ordered.
- 7) If ordering List 94's with tray-mounted breakers, order one (1) circuit breaker per List 94 from Table M.
- 8) If ordering List 94 with tray-mounted circuit breakers, specify breaker mounting on left side or right side of tray. Circuit breaker mounting kits shown in the from Table M will be installed. Kit numbers are provided for reference only.
- 9) If ordering List 94 with tray-mounted circuit breakers, order Alarm Jumper P/N 524384 for each system to connect the alarm terminal of up to three (3) battery disconnect circuit breakers to the system.



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Battery Tray P/N 559809						
Manufacturer*	Model	Vertiv P/N	Rated 8-Hr. Capacity (Ah)	Dimension W x L x H (Inches)	Required Tray Spacing	Weight per Battery (lbs)
Northstar	NSB90FT	--	90	4.25 X 15.59 X 10.04	7U	71
Northstar	NSB100FT	--	100	4.25 X 15.59 X 11.03	7U	78
Enersys	12TD100F4	--	96	4.3 X 15.5 X 11.3	8U	71

* See [Battery Manufacturer Information](#) located at the end of this document.

Table G

Battery Tray P/N 559810						
Manufacturer*	Model	Vertiv P/N	Rated 8-Hr. Capacity (Ah)	Dimension W x L x H (Inches)	Required Tray Spacing	Weight per Battery (lbs)
Enersys	12TD100F6	--	97	4.3 X 20.0 X 9.4	7U	73

* See [Battery Manufacturer Information](#) located at the end of this document.

Table H

Battery Tray P/N 559811						
Manufacturer*	Model	Vertiv P/N	Rated 8-Hr. Capacity (Ah)	Dimension W x L x H (Inches)	Required Tray Spacing	Weight per Battery (lbs)
Northstar	NSB40FT**	--	38.1	3.80 X 9.80 X 8.20	6U	34
Northstar	NSB60FT**	--	57.9	4.20 X 11.30 X 10.40	7U	49
Douglas	DGS12-25F	--	25	3.94 X 10.80 X 7.60	6U	27
Douglas	DGS12-50F	--	50	3.94 X 10.80 X 11.60	8U	48
Enersys	12TD50F	--	48	4.2 X 10.9 X 8.7	6U	38

* See [Battery Manufacturer Information](#) located at the end of this document.

** Batteries MUST be equipped with front access terminal option. See Battery Manufacturer for ordering information.

Table I

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Battery Tray P/N 561974						
Manufacturer*	Model	Vertiv P/N	Rated 8-Hr. Capacity (Ah)	Dimension W x L x H (Inches)	Required Tray Spacing	Weight (per battery) (lbs)
Enersys	12TD100F6	--	97	4.3 X 20.0 X 9.4	7U	73

* See [Battery Manufacturer Information](#) located at the end of this document.

Table J

Battery Tray P/N 559812						
Manufacturer*	Model	Vertiv P/N	Rated 8-Hr. Capacity (Ah)	Dimension W x L x H (Inches)	Required Tray Spacing	Weight (per battery) (lbs)
Enersys	12V125F	122009	125	4.10 X 22.10 X 12.40	8U	124
Enersys	12TD150F	--	143	4.3 X 21.7 X 11.3	8U	105

* See [Battery Manufacturer Information](#) located at the end of this document.

Table K

Battery Specified	Battery Lug Kit Part Number (Kit provides two lugs for one tray.)	
	Up to 150A Battery Disconnect	Above 150A or No Battery Disconnect chosen
Northstar NSB90FT	528234 (2 AWG)	528235 (1/0 AWG)
Northstar NSB100FT		
Northstar NSB40FT		
Northstar NSB60FT		
Douglas DGS12-25F		
Douglas DGS12-50F		
Enersys 12TD50F		
Enersys 12TD100F4		
Enersys 12TD100F6		
Enersys 12TD150F		
Enersys 12V125F	528236 (2 AWG) 90°	528237 (1/0 AWG) 90°

Table L

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Ampere Rating	Part No., Circuit Breaker, Electrical/Mechanical Trip ¹ (Black Handle)	Part No., Left-Side Breaker Mtg. Kit (For Reference Only)	Part No., Right-Side Breaker Mtg. Kit (For Reference Only)
50	256694300	559814	559813
60	256694700		
70	256695100		
75	256695500		
100	256695900		
125	100765	559816	559815
150	100763		
200	121810	559816	559815

¹ Provides an alarm during an electrical or manual trip condition.

Table M

Distribution Cabinets

List AA: 23" 1-Row Distribution Cabinet with (24) Load Positions and Low Voltage Battery Disconnect (LVBD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 400A @ +40°C;
 300A @ +65°C
- ◆ 1 Row, (24) Mounting Positions for Load Distribution Fuses or Circuit Breakers.
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: *In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.*

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Battery Disconnect Contactor (LVBD).

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from right to left, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 545333](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

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System Application Guide

List AB: 23" 1-Row Distribution Cabinet with (24) Load Positions and Low Voltage Load Disconnect (LVLD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 400A @ +40°C;
 300A @ +65°C
- ◆ 1 Row, (24) Mounting Positions for Load Distribution Fuses or Circuit Breakers.
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: *In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.*

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Load Disconnect Contactor (LVLD).

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from right to left, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 545333](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

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System Application Guide

List AC: 23" 1-Row Distribution Cabinet with (24) Load Positions and NO Low Voltage Disconnect (LVD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 400A @ +40°C;
 300A @ +65°C
- ◆ 1 Row, (24) Mounting Positions for Load Distribution Fuses or Circuit Breakers.
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from right to left, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 545333](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

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System Application Guide

List BA: 23" 1-Row Distribution Cabinet with (18) Load Positions, (6) Battery Disconnect Positions and Low Voltage Battery Disconnect (LVBD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 400A @ +40°C;
 300A @ +65°C
- ◆ 1 Row, (6) Battery Disconnect Positions and (18) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Battery Disconnect Contactor (LVBD).

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from right to left, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 545333](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

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System Application Guide

List BB: 23" 1-Row Distribution Cabinet with (18) Load Positions, (6) Battery Disconnect Positions and Low Voltage Load Disconnect (LVLD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 400A @ +40°C;
 300A @ +65°C
- ◆ 1 Row, (6) Battery Disconnect Positions and (18) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Load Disconnect Contactor (LVLD).

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from right to left, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 545333](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

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System Application Guide

List BC: 23" 1-Row Distribution Cabinet with (18) Load Positions, (6) Battery Disconnect Positions and NO Low Voltage Disconnect (LVD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 400A @ +40°C;
 300A @ +65°C
- ◆ 1 Row, (6) Battery Disconnect Positions and (18) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from right to left, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 545333](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

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System Application Guide

List CA: 23" 1-Row Distribution Cabinet with (16) Load Positions, (8) Battery Disconnect Positions and Low Voltage Battery Disconnect (LVBD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 400A @ +40°C;
 300A @ +65°C
- ◆ 1 Row, (8) Battery Disconnect Positions and (16) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Battery Disconnect Contactor (LVBD).

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from right to left, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 545333](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

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System Application Guide

List CB: 23" 1-Row Distribution Cabinet with (16) Load Positions, (8) Battery Disconnect Positions and Low Voltage Load Disconnect (LVLD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 400A @ +40°C;
 300A @ +65°C
- ◆ 1 Row, (8) Battery Disconnect Positions and (16) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Load Disconnect Contactor (LVLD).

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from right to left, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 545333](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

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System Application Guide

List CC: 23" 1-Row Distribution Cabinet with (16) Load Positions, (8) Battery Disconnect Positions and NO Low Voltage Disconnect (LVD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 400A @ +40°C;
 300A @ +65°C
- ◆ 1 Row, (8) Battery Disconnect Positions, (16) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from right to left, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 545333](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

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List FA: 19" 1-Row Distribution Cabinet with (19) Load Positions and Low Voltage Battery Disconnect (LVBD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 400A @ +40°C;
 300A @ +65°C
- ◆ 1 Row, (19) Mounting Positions for Load Distribution Fuses or Circuit Breakers.
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: *In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.*

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Battery Disconnect Contactor (LVBD).

Restrictions

This Distribution Cabinet can be used in List 10, 11, 16, 20, 21 or 26 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from right to left, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 545333](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

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System Application Guide

List FB: 19" 1-Row Distribution Cabinet with (19) Load Positions and Low Voltage Load Disconnect (LVLD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 400A @ +40°C;
 300A @ +65°C
- ◆ 1 Row, (19) Mounting Positions for Load Distribution Fuses or Circuit Breakers.
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: *In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.*

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Load Disconnect Contactor (LVLD).

Restrictions

This Distribution Cabinet can be used in List 10, 11, 16, 20, 21 or 26 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from right to left, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 545333](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

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List FC: 19" 1-Row Distribution Cabinet with (19) Load Positions and NO Low Voltage Disconnect (LVD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 400A @ +40°C;
 300A @ +65°C
- ◆ 1 Row, (19) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: *In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.*

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

Restrictions

This Distribution Cabinet can be used in List 10, 11, 16, 20, 21 or 26 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from right to left, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 545333](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

Vertiv™ NetSure™ 502NGFB DC Power System

System Application Guide

List GA: 19" 1-Row Distribution Cabinet with (14) Load Positions, (5) Battery Disconnect Positions and Low Voltage Battery Disconnect (LVBD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 400A @ +40°C;
 300A @ +65°C
- ◆ 1 Row (5) Battery Disconnect Positions and (14) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Battery Disconnect Contactor (LVBD).

Restrictions

This Distribution Cabinet can be used in List 10, 11, 16, 20, 21 or 26 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from right to left, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 545333](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

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System Application Guide

List GB: 19" 1-Row Distribution Cabinet with (14) Load Positions, (5) Battery Disconnect Positions and Low Voltage Load Disconnect (LVLD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 400A @ +40°C;
 300A @ +65°C
- ◆ 1 Row, (5) Battery Disconnect Positions and (14) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Load Disconnect Contactor (LVLD).

Restrictions

This Distribution Cabinet can be used in List 10, 11, 16, 20, 21 or 26 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from right to left, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 545333](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

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System Application Guide

List GC: 19" 1-Row Distribution Cabinet with (14) Load Positions, (5) Battery Disconnect Positions and NO Low Voltage Disconnect (LVD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 400A @ +40°C;
 300A @ +65°C
- ◆ 1 Row, (5) Battery Disconnect Positions and (14) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

Restrictions

This Distribution Cabinet can be used in List 10, 11, 16, 20, 21 or 26 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from right to left, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly (P/N 545333), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

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System Application Guide

List KG: 19"/23" 20-Position GMT Fuse Panel (P/N 545590)

Features

- ◆ 1U-high GMT fuse panel that provides Single Load Distribution (-48V).
- ◆ Provides twenty (20) 0A to 15A GMT fuse load distribution positions.

Caution: At +40°C and +65°C ambient, a fuse with a rating of greater than 10 amperes SHALL HAVE an empty mounting position between it and any other fuse.

- ◆ Maximum Capacity: 80A @ +40°C and 80A @ +65°C.
- ◆ Can be mounted in 19" or 23" racks.
- ◆ Factory mounted and connected when ordered with power system.
- ◆ If the Distribution Cabinet in the system is equipped with Low Voltage Load Disconnect (LVLD), all List KG loads are unaffected by the LVLD.
- ◆ If one or more distribution fuses opens, one set of Form-C relay contacts changes state, and resistive battery is provided to an alarm terminal. Alarm circuit is factory connected to activate the Power System Controller fuse alarm.

Restrictions

Available only in List 20, 21, 22, 23, 26 and 27 systems.

Ordering Notes

- 1) Order one (1) List KG for each List 20, 21, 22, 23, 26 or 27 system ordered.
- 2) Order fuses, as required, per Table 9.

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System Application Guide

List MA: 23" 2-Row Distribution Cabinet with (39) Load Positions, (9) Battery Disconnect Positions and Low Voltage Battery Disconnect (LVBD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 600A @ +40°C;
 400A @ +65°C
- ◆ Bottom Row: (9) Battery Disconnect Positions with LVBD
 (15) Load Positions
- ◆ Top Row: (24) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. 100 A fuses, 150 A and 250 A circuit breakers do not require a space adjacent to it.

At or above +65°C, the maximum size circuit breaker used shall be 125 A. The maximum size fuse used shall be 70 A. Devices rated at 50 A or greater shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Battery Disconnect Contactor (LVBD).

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from left to right for loads, and right to left for battery, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

If battery disconnects are located outside the Distribution Cabinet, order (1) P/N 549019.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 549017](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).
- 6) Order rear-facing return bus-bar [P/N 556891](#), as required.

Vertiv™ NetSure™ 502NGFB DC Power System

System Application Guide

List MB: 23" 2-Row Distribution Cabinet with (39) Load Positions, (9) Battery Disconnect Positions and Low Voltage Load Disconnect (LVLD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 600A @ +40°C;
 400A @ +65°C
- ◆ Bottom Row: (9) Battery Disconnect Positions
 (15) Load Positions
- ◆ Top Row: (24) Load Positions with LVLD
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. 100 A fuses, 150 A and 250 A circuit breakers do not require a space adjacent to it.

At or above +65°C, the maximum size circuit breaker used shall be 125 A. The maximum size fuse used shall be 70 A. Devices rated at 50 A or greater shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Load Disconnect Contactor (LVLD) that disconnects (24) positions in Top Row.

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from left to right for loads, and right to left for battery, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

If battery disconnects are located outside the Distribution Cabinet, order (1) P/N 549019.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 549017](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).
- 6) Order rear-facing return bus-bar [P/N 556891](#), as required.

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System Application Guide

List MC: 23" 2-Row Distribution Cabinet with (39) Load Positions, (9) Battery Disconnect Positions and NO Low Voltage Disconnect (LVD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 600A @ +40°C;
 400A @ +65°C
- ◆ Bottom Row: (9) Battery Disconnect Positions
 (15) Load Positions
- ◆ Top Row: (24) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. 100 A fuses, 150 A and 250 A circuit breakers do not require a space adjacent to it.

At or above +65°C, the maximum size circuit breaker used shall be 125 A. The maximum size fuse used shall be 70 A. Devices rated at 50 A or greater shall have an empty mounting position between it and any other overcurrent protective device.

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from left to right for loads, and right to left for battery, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

If battery disconnects are located outside the Distribution Cabinet, order (1) P/N 549019.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 549017](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).
- 6) Order rear-facing return bus-bar [P/N 556891](#), as required.

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System Application Guide

List MD: 23" 2-Row Distribution Cabinet with (39) Load Positions, (9) Battery Disconnect Positions, Low Voltage Load Disconnect (LVLD) and Low Voltage Battery Disconnect (LVBD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 600A @ +40°C;
 400A @ +65°C
- ◆ Bottom Row: (9) Battery Disconnect Positions with LVBD
 (15) Load Positions
- ◆ Top Row: (24) Load Positions with LVLD
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: *In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. 100 A fuses, 150 A and 250 A circuit breakers do not require a space adjacent to it.*

At or above +65°C, the maximum size circuit breaker used shall be 125 A. The maximum size fuse used shall be 70 A. Devices rated at 50 A or greater shall have an empty mounting position between it and any other overcurrent protective device.

System contains a low-voltage load disconnect that disconnects the (24) load positions in the top row. It also contains a low-voltage battery disconnect.

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from left to right for loads, and right to left for battery, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

If battery disconnects are located outside the Distribution Cabinet, order (1) P/N 549019.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 549017](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).
- 6) Order rear-facing return bus-bar [P/N 556891](#), as required.

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System Application Guide

List MV: 23" 2-Row Distribution Cabinet with (48) Load Positions, and NO Low Voltage Disconnect (LVD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 600A @ +40°C;
 400A @ +65°C
- ◆ Bottom Row: (24) Load Positions
- ◆ Top Row: (24) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)
- ◆ Two (2) Battery Lead Lug Mounting Positions

Caution: *In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. 100 A fuses, 150 A and 250 A circuit breakers do not require a space adjacent to it.*

At or above +65°C, the maximum size circuit breaker used shall be 125 A. The maximum size fuse used shall be 70 A. Devices rated at 50 A or greater shall have an empty mounting position between it and any other overcurrent protective device.

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from left to right, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

58213680093 battery trays are not available with this distribution option.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 549017](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).

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System Application Guide

List NA: 23" 2-Row Distribution Cabinet with (28) Load Positions, (20) Battery Disconnect Positions and Low Voltage Battery Disconnect (LVBD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 600A @ +40°C;
 400A @ +65°C
- ◆ Bottom Row: (20) Battery Disconnect Positions with LVBD
 (4) Load Positions
- ◆ Top Row: (24) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. 100 A fuses, 150 A and 250 A circuit breakers do not require a space adjacent to it.

At or above +65°C, the maximum size circuit breaker used shall be 125 A. The maximum size fuse used shall be 70 A. Devices rated at 50 A or greater shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Battery Disconnect Contactor (LVBD).

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from left to right for loads, and right to left for battery, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 549017](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).
- 6) Order rear-facing return bus-bar [P/N 556891](#), as required.

Vertiv™ NetSure™ 502NGFB DC Power System

System Application Guide

List NB: 23" 2-Row Distribution Cabinet with (28) Load Positions, (20) Battery Disconnect Positions and Low Voltage Load Disconnect (LVLD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 600A @ +40°C;
 400A @ +65°C
- ◆ Bottom Row: (20) Battery Disconnect Input Positions
 (4) Load Positions
- ◆ Top Row: (24) Load Positions with LVLD
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. 100 A fuses, 150 A and 250 A circuit breakers do not require a space adjacent to it.

At or above +65°C, the maximum size circuit breaker used shall be 125 A. The maximum size fuse used shall be 70 A. Devices rated at 50 A or greater shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Load Disconnect Contactor (LVLD) that disconnects (24) positions in Top Row.

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from left to right for loads, and right to left for battery, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 549017](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).
- 6) Order rear-facing return bus-bar [P/N 556891](#), as required.

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System Application Guide

List NC: 23" 2-Row Distribution Cabinet with (28) Load Positions, (20) Battery Disconnect Positions and NO Low Voltage Disconnect (LVD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 600A @ +40°C;
 400A @ +65°C
- ◆ Bottom Row: (20) Battery Disconnect Positions
 (4) Load Positions
- ◆ Top Row: (24) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. 100 A fuses, 150 A and 250 A circuit breakers do not require a space adjacent to it.

At or above +65°C, the maximum size circuit breaker used shall be 125 A. The maximum size fuse used shall be 70 A. Devices rated at 50 A or greater shall have an empty mounting position between it and any other overcurrent protective device.

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from left to right for loads, and right to left for battery, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 549017](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).
- 6) Order rear-facing return bus-bar [P/N 556891](#), as required.

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System Application Guide

List ND: 23" 2-Row Distribution Cabinet with (28) Load Positions, (20) Battery Disconnect Positions, Low Voltage Load Disconnect (LVLD) and Low Voltage Battery Disconnect (LVBD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 600A @ +40°C;
 400A @ +65°C
- ◆ Bottom Row: (20) Battery Disconnect Positions with LVBD
 (4) Load Positions
- ◆ Top Row: (24) Load Positions with LVLD
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. 100 A fuses, 150 A and 250 A circuit breakers do not require a space adjacent to it.

At or above +65°C, the maximum size circuit breaker used shall be 125 A. The maximum size fuse used shall be 70 A. Devices rated at 50 A or greater shall have an empty mounting position between it and any other overcurrent protective device.

System contains a low-voltage load disconnect that disconnects the (24) load positions in the top row. It also contains a low-voltage battery disconnect.

Restrictions

This Distribution Cabinet can be used in List 12, 13, 17, 22, 23 or 27 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from left to right for loads, and right to left for battery, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 549017](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).
- 6) Order rear-facing return bus-bar [P/N 556891](#), as required.

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System Application Guide

List RA: 19" 2-Row Distribution Cabinet with (29) Load Positions, (9) Battery Disconnect Positions and with Low Voltage Battery Disconnect (LVBD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 600A @ +40°C;
 400A @ +65°C
- ◆ Bottom Row: (9) Battery Disconnect Positions with LVBD
 (10) Load Positions
- ◆ Top Row: (19) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. 100 A fuses, 150 A and 250 A circuit breakers do not require a space adjacent to it.

At or above +65°C, the maximum size circuit breaker used shall be 125 A. The maximum size fuse used shall be 70 A. Devices rated at 50 A or greater shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Battery Disconnect Contactor (LVBD).

Restrictions

This Distribution Cabinet can be used in List 10, 11, 16, 20, 21 or 26 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from left to right for loads, and right to left for battery, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

If battery disconnects are located outside the Distribution Cabinet, order (1) P/N 549019.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 549017](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).
- 6) Order rear-facing return bus-bar [P/N 557233](#), as required.

Vertiv™ NetSure™ 502NGFB DC Power System

System Application Guide

List RB: 19" 2-Row Distribution Cabinet with (29) Load Positions, (9) Battery Disconnect Positions and Low Voltage Load Disconnect (LVLD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 600A @ +40°C;
 400A @ +65°C
- ◆ Bottom Row: (9) Battery Disconnect Positions
 (10) Load Positions
- ◆ Top Row: (19) Load Positions with LVLD
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. 100 A fuses, 150 A and 250 A circuit breakers do not require a space adjacent to it.

At or above +65°C, the maximum size circuit breaker used shall be 125 A. The maximum size fuse used shall be 70 A. Devices rated at 50 A or greater shall have an empty mounting position between it and any other overcurrent protective device.

- ◆ Includes (1) Low Voltage Load Disconnect Contactor (LVLD) that disconnects the (19) load positions in the Top Row.

Restrictions

This Distribution Cabinet can be used in List 10, 11, 16, 20, 21 or 26 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from left to right for loads, and right to left for battery, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

If battery disconnects are located outside the Distribution Cabinet, order (1) P/N 549019.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 549017](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).
- 6) Order rear-facing return bus-bar [P/N 557233](#), as required.

Vertiv™ NetSure™ 502NGFB DC Power System

System Application Guide

List RC: 19" 2-Row Distribution Cabinet with (29) Load Positions, (9) Battery Disconnect Positions and NO Low Voltage Disconnect (LVD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 600A @ +40°C;
 400A @ +65°C
- ◆ Bottom Row: (9) Battery Disconnect Positions
 (10) Load Positions
- ◆ Top Row: (19) Load Positions
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. 100 A fuses, 150 A and 250 A circuit breakers do not require a space adjacent to it.

At or above +65°C, the maximum size circuit breaker used shall be 125 A. The maximum size fuse used shall be 70 A. Devices rated at 50 A or greater shall have an empty mounting position between it and any other overcurrent protective device.

Restrictions

This Distribution Cabinet can be used in List 10, 11, 16, 20, 21 or 26 only..

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from left to right for loads, and right to left for battery, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

If battery disconnects are located outside the Distribution Cabinet, order (1) P/N 549019.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 549017](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).
- 6) Order rear-facing return bus-bar [P/N 557233](#), as required.

Vertiv™ NetSure™ 502NGFB DC Power System

System Application Guide

List RD: 19" 2-Row Distribution Cabinet with (29) Load Positions, (9) Battery Disconnect Positions, Low Voltage Battery Disconnect (LVBD) and Low Voltage Load Disconnect (LVLD)

Features

- ◆ Single Voltage Distribution (-48V)
- ◆ Maximum Capacity: 600A @ +40°C;
 400A @ +65°C
- ◆ Bottom Row: (9) Battery Disconnect Positions with LVBD
 (10) Load Positions
- ◆ Top Row: (19) Load Positions with LVLD
- ◆ Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 250A)

Caution: *In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. 100 A fuses, 150 A and 250 A circuit breakers do not require a space adjacent to it.*

At or above +65°C, the maximum size circuit breaker used shall be 125 A. The maximum size fuse used shall be 70 A. Devices rated at 50 A or greater shall have an empty mounting position between it and any other overcurrent protective device.

System contains a low-voltage load disconnect that disconnects the (19) load positions in the top row. It also contains a low-voltage battery disconnect.

- ◆ Includes (1) Low Voltage Battery Disconnect contactor (LVBD) and (1) Low Voltage Load Disconnect contactor (LVLD).

Restrictions

This Distribution Cabinet can be used in List 10, 11, 16, 20, 21 or 26 only.

The system is designed for a maximum of one (1) Distribution Cabinet. The Distribution Cabinet is assembled immediately above the power shelf.

Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Unless otherwise specified, fuses and/or circuit breakers are mounted from left to right for loads, and right to left for battery, starting with the highest capacity and working to the lowest capacity.

Maximum size of wire to be connected to a single fuse holder or circuit breaker position is 2 AWG.

If battery disconnects are located outside the Distribution Cabinet, order (1) P/N 549019.

Ordering Notes

- 1) Order circuit breakers, as required, per [Table 7](#).
- 2) Order fuses, as required per [Table 8](#).
- 3) Order one (1) Part No. 117201 fuse holder per fuse ordered in 2) above.
- 4) Order Plug-In GMT Fuse Distribution Assembly ([P/N 549017](#)), as required. Order fuses per [Table 9](#).
- 5) Order load lugs (two-hole, 1/4" bolt clearance hole, 5/8" centers) as required for each distribution position per [Table 15](#).
- 6) Order rear-facing return bus-bar [P/N 557233](#), as required.

ACCESSORY DESCRIPTIONS

Rectifier

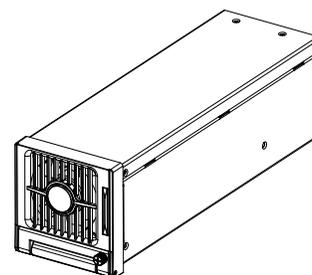
Rectifier Module, High Efficiency

Features

- ◆ Provides one (1) Model R48-2000e, Spec. No. 1R482000e, 2000 watt / 48-volt High Efficiency Rectifier Module.

Ordering Notes

- 1) Order by P/N (1R482000e) as required.



Optional eSure™ Power Extend Converter

Features

- ◆ The eSure Power Extend Converter (Model C48/58-1000B, Spec. No. 1C48581000B) is a compact DC/DC converter unit which offers efficient power conversion. It operates from a nominal -48 VDC source to provide regulated -58 VDC to the load for continuous operation to end of battery discharge. Refer to UM565050 and IM565649 for further information.

Restrictions

Only install the power extend converter into a -48 VDC distribution position. Non-repairable damage will occur if the power extend converter is plugged into a +24 VDC distribution position.

2-row version, row-1 only.

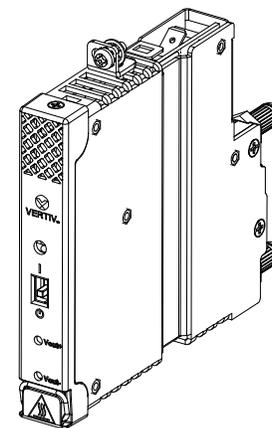
1-row 23-inch wide version. 1-row distribution cabinet front door must be removed to install kit. If door is required, see kit P/N 10010670.

1-row 19-inch wide version. 1-row distribution cabinet front door must be removed to install kit. If door is required, see kit P/N 60018725.

Ordering Notes

- 1) To add an eSure Power Extend Converter to a 582136800 power system; refer to the material list in the eSure Power Extend Converter Calculator (link provided below).

<https://www.vertiv.com/en-us/products-catalog/critical-power/dc-power-systems/esure-power-extend-converter-c4858-1000/#/downloads>



Controller

NCU (NetSure™ Control Unit), P/N 1M830BNA

Features

- ◆ Provides the NCU Controller.
- ◆ Factory programmed with the configuration file specified when ordered.

Restrictions

Only one (1) controller per power system is required.

For use with Lists 1, 3, 5, 6, 7, 8, 10, 11, 12, 13, 16, 17, 20, 21, 22, 23, 26 and 27 only.

Each List 1, 3, 5, 6, 7, 8, 10, 11, 12, 13, 16, 17, 20, 21, 22, 23, 26 and 27 shelf must contain one (1) controller.

Ordering Notes

- 1) Order one (1) controller for each List 1, 3, 5, 6, 7, 8, 10, 11, 12, 13, 16, 17, 20, 21, 22, 23, 26 and 27.

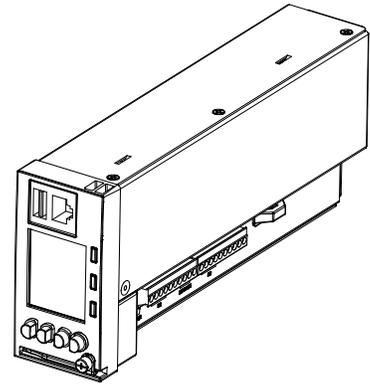
Note: The controller is provided with the factory default configuration unless otherwise specified.

Ordering an NCU for replacing an NCU or as a spare NCU.

If the NCU is to be used as a replacement in a specific system it should be ordered with the same configuration file as the original NCU controller. This is identified by a six digit number. If the controller part number ends with a six digit number, for example, 1M830BNA559242, the configuration file number is the last six characters. If the part number does not have these characters, the configuration file number can be found on the controller nameplate – “Programmed with Configuration File #####”. The user manual provided with the controller provides instructions for replacing and programming the controller. It is important to follow these instructions carefully. The user manual also provides instructions for saving certain controller files that are created when changes are made to the system after leaving the factory. These files can be programmed into the replacement controller so it can match the latest saved state of the original controller.

If the NCU is being ordered as a spare part for any of a group of power plants, the same procedure can be followed. If the replacement controller’s configuration does not match that of the original controller, contact the factory or technical assistance center to obtain a copy of the original configuration file (all package) so it can be programmed into the new controller.

The NCU programming files are unique to the NCU. Files from an SCU+ or ACU+ are not compatible with the NCU and MUST NOT BE loaded into an NCU.



IB2 Interface Board Assembly, P/N MA4C5U31 / 548181

Features

- ◆ Provides input and output connections to two (2) temperature sensors, digital signals and eight (8) alarm relay dry contacts
- ◆ Includes output connections for eight (8) alarm relays and connections for seven (7) digital control inputs.
- ◆ Connects to the controller via cables

Restrictions

For use in Lists 1, 3, 5, 6, 7, 8, 10, 11, 12, 13, 16, 17, 20, 21, 22, 23, 26 and 27 only.

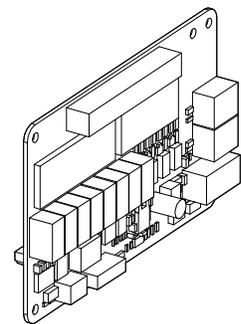
Always included in Lists 10, 11, 12, 13, 16, 17, 20, 21, 22, 23, 26 and 27.

Required for Lists 1, 3, 5, 6, 7 and 8 when used with NCU (P/N [1M830BNA](#)).

Ordering Notes

Order one (1) IB2 Interface Board Assembly (P/N 548181) for each List 1, 3, 5, 6, 7 or 8 as required.

If NCU (P/N [1M830BNA](#)) controller is ordered, (1) IB2 Interface Board Assembly (P/N 548181) is required.



Optional Temperature Probes

Features

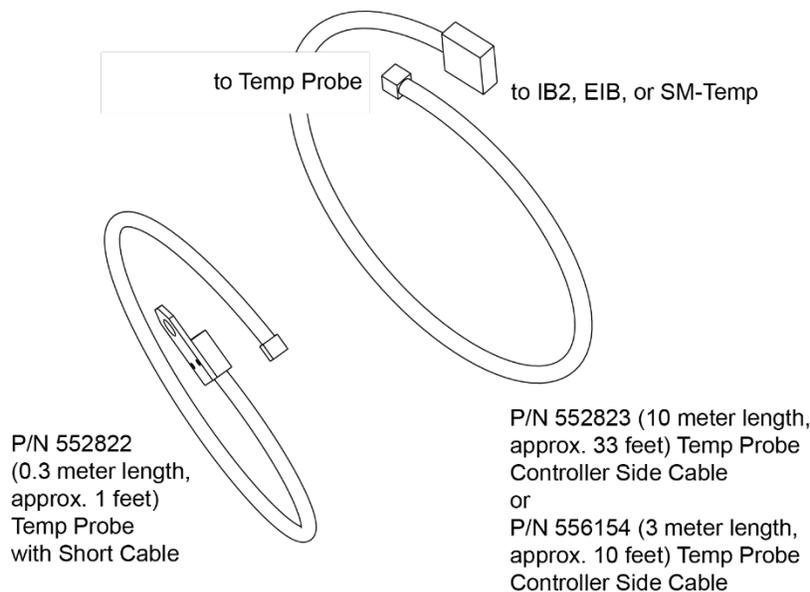
- ◆ Up to two (2) temperature probes can be connected to the Customer Interface (IB2) Board. Either or both probes can be programmed to monitor ambient temperature or battery temperature.
- ◆ A temperature probe set as a battery probe can also be designated to be used for the battery charge temperature compensation feature. If the system is equipped with the ACU+ or NCU Controller, the battery charge temperature compensation feature can be programmed to use one probe or the average or highest value of all probes programmed to monitor battery temperature. The battery charge temperature compensation feature allows the controller to automatically increase or decrease the output voltage of the system to maintain battery float current as battery temperature decreases or increases, respectively. Battery life can be extended when an optimum charge voltage to the battery with respect to temperature is maintained.
- ◆ If the system is equipped with the ACU+ or NCU Controller, a temperature probe set as a battery probe can also be used for controlling against battery thermal runaway (BTRM feature).
- ◆ The temperature sensor end of the probe contains a tab with a 5/16" clearance hole for mounting.
- ◆ The Temperature Probe assembly consists of two pieces that plug together to make a complete probe.

Restrictions

A temperature probe programmed to monitor battery temperature should be mounted on the top or side of a battery cell to sense battery temperature. A temperature probe used for battery charge temperature compensation or BTRM (Battery Thermal Runaway Management) should also be mounted on the top or side of a battery cell. A temperature probe programmed to monitor ambient temperature should be mounted in a convenient location, away from direct sources of heat or cold.

Ordering Notes

- 1) Order temperature probes as required. Note that each temperature probe consists of two pieces which plug together to make a complete probe (see the following illustration). For a complete temperature probe, order one (1) P/N 552992 (10.3 meters) or one (1) P/N 556155 (3.3 meters).
- 2) See "[List 90](#)" on page 28 and "[List 91](#)" on page 29 for additional temperature probe options.



Temp Probe Kits

P/N 552992 (includes P/Ns 552822 and 552823)
P/N 556155 (includes P/Ns 552822 and 556154)

Distribution Devices

Bullet Nose Type Circuit Breakers

Features

- ◆ Circuit breakers with ratings of 1A through 100A each plug into a single mounting position. Circuit breakers with ratings of 125A, 150A and 200A each plug into two (2) mounting positions, and those with ratings of 250A each plug into three (3) mounting positions.

Restrictions

Load should not exceed 80% of device rating.

Single Row Distribution Assembly: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. Overcurrent protective devices greater than 100 A shall have an empty mounting position between it and any other overcurrent protective device.

At or above +65 °C, the maximum size overcurrent device used shall be 70 A. Devices rated at 70 A or less shall have an empty mounting position between it and any other overcurrent protective device.

Two Row Distribution Assembly: In a +40 °C ambient, 100 A circuit breakers can be used without a space provided the continuous current in each device does not exceed 64 A. 100 A fuses, 150 A and 250 A circuit breakers do not require a space adjacent to it.

At or above +65°C, the maximum size circuit breaker used shall be 125 A. The maximum size fuse used shall be 70 A. Devices rated at 50 A or greater shall have an empty mounting position between it and any other overcurrent protective device.

Ordering Notes

- 1) Order circuit breakers, as required, per Table 7.
- 2) For lug and wire size selection, refer to [Table 15](#).

BULLET NOSE-TYPE CIRCUIT BREAKERS					
Ampere Rating	Part Number Electrical/ Mechanical Trip ¹ (Black Handle)	Part Number Electrical Trip ² (White Handle)	Ampere Rating	Part Number Electrical/ Mechanical Trip ¹ (Black Handle)	Part Number Electrical Trip ² (White Handle)
1	101596	102272	50	101606	102282
3	101597	102273	60	101607	102283
5	101598	102274	70	101608	102284
10	101599	102275	75	101609	102285
15	101600	102276	80	121995	121996
20	101601	102277	90	138888	138887
25	101602	102278	100	101610	102286
30	101603	102279	125	516838	516991
35	101604	102280	150	516839	516993
40	101605	102281	200	121832	121831
45	121997	121998	250	121836	121835

Circuit Breaker Alarm Operation:

- 1 Provides an alarm during an electrical or manual trip condition.
- 2 Provides an alarm during an electrical trip condition only.

Unless otherwise specified, breakers are to be mounted from right to left starting with the highest capacity and working to the lowest capacity.

For 2-pole devices, either order lugs from [Table 10](#), or adapter kit 545404 and lugs from [Table 16](#).

For 3-pole devices, order adapter kit 545571 and lugs from [Table 16](#).

Table 7

Vertiv™ NetSure™ 502NGFB DC Power System

System Application Guide

TPS/TLS-Type Fuses

Features

- ◆ A single fuseholder provides for installation of a 3 to 100 ampere Bussmann TPS-type or Littelfuse TLS-type fuse.
- ◆ Fuseholder plugs into a single mounting position in the compatible Distribution Cabinets described in this document.
- ◆ Fuseholder provides a GMT-A alarm type fuse, which operates open to provide an alarm indication if the distribution fuse opens.

Restrictions

Load should not exceed 80% of device rating.

Ordering Notes

- 1) Order fuses per Table 8.
- 2) Order one (1) Part No. 117201 TPS/TLS-type fuse holder for each fuse.
- 3) For lug and wire size selection, refer to refer to [Table 15](#).

TPS/TLS-TYPE FUSES			
Ampere Rating	Part Number	Ampere Rating	Part Number
3	248230900	40	248233300
5	248231000	50	248233900
6	248231200	60	248234200
10	248231500	70	248234500
15	248231800	80	118413
20	248232100	90	118414
25	248232400	100	118415
30	248232700	TPS/TLS-Type Fuseholder*	117201

* Fuseholders are not furnished and must be ordered as required. Order (1) Part No. 117201 for each fuse position required. Fuseholder includes (1) alarm fuse (Bussmann GMT-A 18/100 amp; Vertiv 248610301) and (1) alarm fuse safety cover (Vertiv P/N 248898700).

Unless otherwise specified, fuses are to be mounted from right to left starting with the highest capacity and working to the lowest capacity.

Table 8

Vertiv™ NetSure™ 502NGFB DC Power System

System Application Guide

GMT Load Distribution Fuses

Features

- ◆ For use in the List KG Distribution Panel or Plug-In GMT Fuse Distribution Assemblies P/N 545333 and P/N 549017.

Restrictions

When used for power distribution, load should not exceed 80% of device rating, except 10 and 15 amp fuses, for which load should not exceed 70% of device rating.

Ordering Notes

- 1) Order GMT fuses per Table 9.

GMT FUSES						
Ampere Rating	Part Number	Fuse Color		Ampere Rating	Part Number	Fuse Color
18/100 GMT-A	248610301	--		5	248611000	Green
1/4	248610200	Violet		7-1/2	248611300	Black-White
1/2	248610300	Red		10	248611200	Red-White
3/4	248610500	Brown		15	248611500	Red-Blue
1-1/3	248610700	White		Replacement Dummy Fuse	248872600	--
2	248610800	Orange		Replacement Safety Fuse Cover	102774	--
3	248610900	Blue				

Table 9

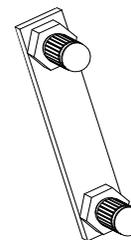
Bullet Nose Bypass Bus Bar, P/N 535015

Features

- ◆ Replaces bullet nose circuit breaker or fuseholder where protective or disconnect device is not required.

Ordering Notes

- 1) Order by P/N 535015 as required.



Vertiv™ NetSure™ 502NGFB DC Power System

System Application Guide

Plug-In GMT Fuse Distribution Assembly, P/N 545333 for 1-Row Distribution Cabinet / P/N 549017 for 2-row Distribution Cabinet

Features

- ◆ Mounts in (2) distribution positions of any Distribution Cabinet.
- ◆ Provides (6) Load Distribution Fuse Positions (0.25 to 15A GMT Alarm-Type Fuses)
- ◆ Maximum Total Current: 42A @ +40°C, 21A @ +65°C.
- ◆ Maximum fuse size @ +65°C is 10A.

Caution: *At 40°C ambient, GMT fuses greater than 10A SHALL have an empty mounting position between it and any other fuse. At 65°C ambient, GMT fuses greater than 5A SHALL have an empty mounting position between it and any other fuse.*

- ◆ Screw clamp type terminals
- ◆ Includes (6) dummy fuses equipped with safety fuse covers.

Restrictions

When factory-ordered, assembly will be installed starting at left-hand side of cabinet, unless otherwise specified.

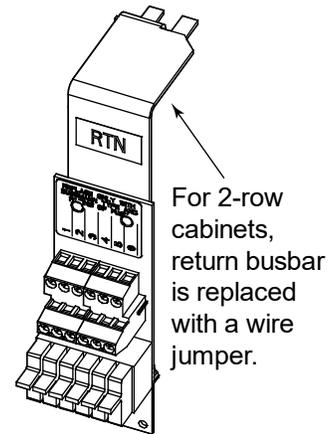
Maximum size of wire to be connected to a single fuse position is 14 AWG.

Cannot be installed in positions 3, 4, 5, 12 or 13 of all 23", 1-row cabinets (Lists AA, AB, AC, BA, BB, BC, CA, CB, CC).

Cannot be installed in positions 3, 4, 5, 9 or 10 of all 19", 1-row cabinets (lists FA, FB, FC, GA, GB, GC).

Ordering Notes

- 1) Order P/N 545333 for 1-row Distribution Cabinets and P/N 549017 for 2-Row Distribution Cabinets. Provides one alarm fuse distribution assembly, ground return link, and hardware.
- 2) Order fuses, as required, per [Table 9](#).



Special Application Lugs, Busbar Adapter Kits and Hardware Kits

Special Application Crimp Lugs

Features

- ◆ Lug connects one (1) cable to two (2) distribution positions. 1/4" bolt clearance holes on 5/8" centers.
- ◆ See Table 10 for part numbers for various cable sizes.

Lead Size	Part Number	
1/0 AWG	245393500	
2/0 AWG	245393600	
3/0 AWG	245393700	
4/0 AWG	245393800	
250 kcmil	514872	
350 kcmil	514873	

Table 10
Special Application Crimp Lugs / Strap Combination
(Two-hole Lug, 1/4" Bolt Clearance Hole, 5/8" Centers)

Vertiv™ NetSure™ 502NGFB DC Power System

System Application Guide

Busbar Adapter and Hardware Kits

Features

- ◆ See Table 11 for part numbers and descriptions of available kits.
- ◆ Kits include hardware shown.
- ◆ Unless otherwise specified, Busbar Adapter Kits are factory-installed when ordered with cabinet.

Part Number	Description
545404	Busbar Adapter Kit – Converts (2) load positions (1/4-20 on 5/8" centers) to (1) landing (3/8-16 on 1" centers). Right-angle Load busbar & straight Return busbar for rear wiring egress.
545405	Busbar Adapter Kit – Converts (1) load position (1/4-20 on 5/8" centers) to (1) load landing (1/4-20 on 5/8" centers), right angle
545571	Busbar Adapter Kit – Converts (3) load positions (1/4-20 on 5/8" centers) to (1) landing (3/8-16 on 1" centers). Right-angle Load busbar & straight Return busbar for rear wiring egress.
545412	Lug Hardware kit – (4) 1/4-20 nuts, lock washers and flat washers

Table 11

Vertiv™ NetSure™ 502NGFB DC Power System

System Application Guide

Rear-facing Return Busbars for 2-Row Distribution Cabinets

Features

- ◆ P/N 556891 is for 23" 2-Row distribution cabinets and has (24) return-landing positions (1/4-20 x 0.75 studs provided).
- ◆ P/N 557233 is for 19" 2-Row distribution cabinets and has (19) return-landing positions (1/4-20 x 0.75 studs provided).

Restrictions

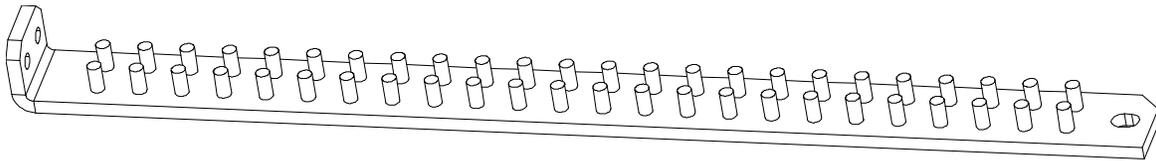
P/N 556891 is for use with lists MA, MB, MC, MD, NA, NB, NC, and ND only.

P/N 557233 is for use with lists RA, RB, RC, and RD only.

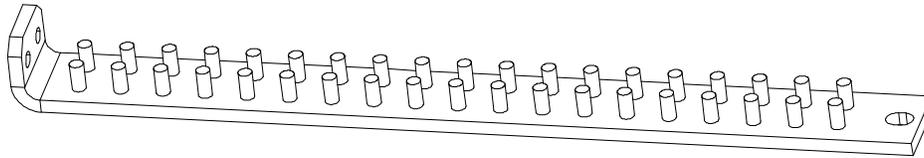
Ordering Notes

- 1) Order P/N 556891 or P/N 557233 for 2-row distribution cabinets as required.

Note: Existing front facing bars will need to be removed and these bars installed in the field.



P/N 556891

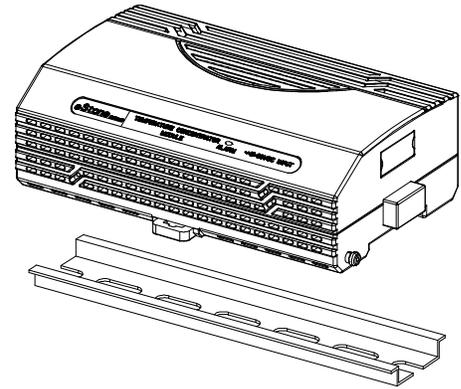


P/N 557233

SM TEMP Temperature Concentrator (P/N 547490)

Features

- ◆ Allows for multiple temperature probes to be used for temperature compensation. Compensation can be based on highest probe temperature or average probe temperature.
- ◆ In the ACU+ and NCU, allows for multiple temperature probes to be used for ambient temperature monitoring, battery temperature monitoring, temperature compensation, and/or BTRM (Battery Thermal Runaway Management).
- ◆ Provides (8) temperature probe inputs per SM TEMP.
- ◆ Can be cascaded up to (8) SM TEMP modules, connecting up to sixty-four (64) temperature probes.
- ◆ Provides analog output for all controllers. Provides CAN output for ACU+ and NCU. In the ACU+ and NCU, the SM Temp Concentrator can be connected at the end of the ACU+ or NCU CAN bus. Via the CAN Bus, the ACU+ and NCU reads each temperature probe from each SM-Temp Concentrator.



Restrictions

Requires ACU+ version 3.02 or later when SM-Temp is connected into the ACU+ CAN bus.

Ordering Notes

- 1) Order P/N 547490.
- 2) Order up to (8) 3-meter (P/N 547749) or 10-meter (P/N 547750) temperature probes for each concentrator.
- 3) Order one (1) 25' CAN bus cable (P/N 559932) to connect a List 1 through 8 shelf to the SM-Temp, as required.

Mounting Bracket Kits (P/N 553336 and P/N 555231)

Features

- ◆ P/N 553336 consists of two brackets and hardware for mounting a List 1 or List 2 power shelf into a 19" wide relay rack.
- ◆ P/N 555231 consists of two brackets and hardware for flush mounting a List 1 or List 2 into a 19.4" (493mm) wide rack of a Knurr data cabinet.

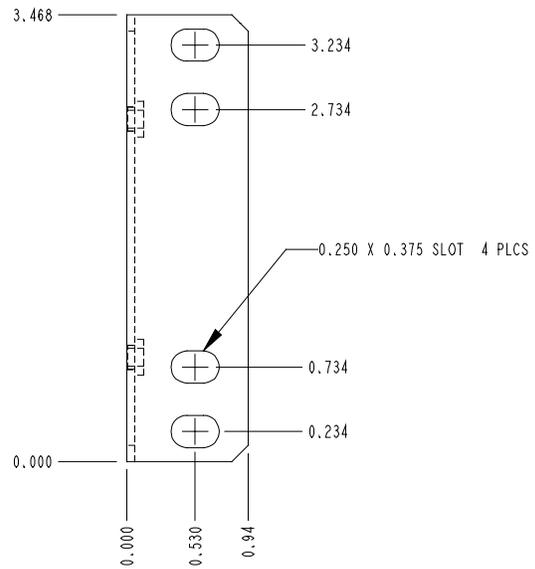
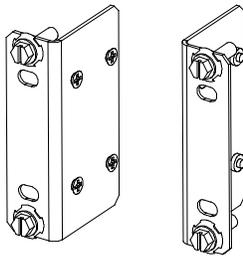
Restrictions

For use with List 1 and List 2 only.

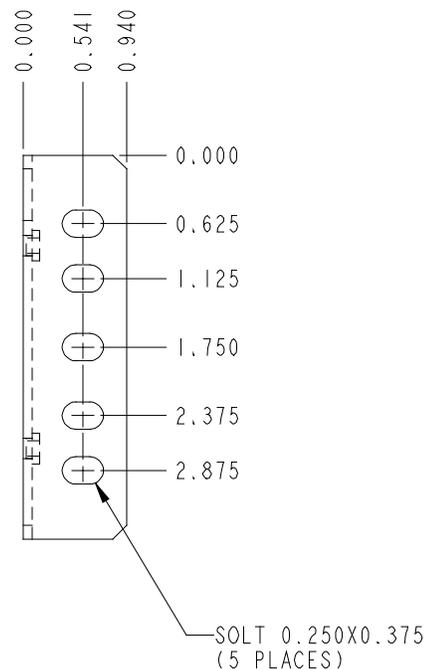
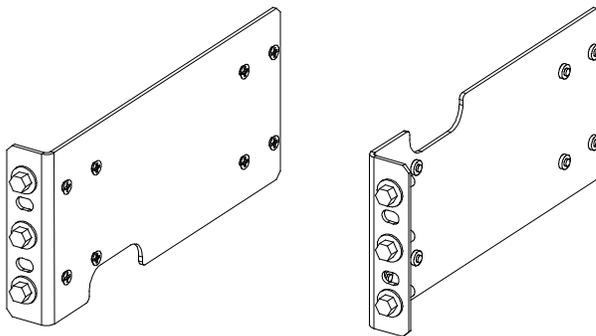
Ordering Notes

- 1) Order mounting kit P/N 553336 or P/N 555231, as required.

P/N 553336



P/N 555231



Mounting Bracket Kits (P/N 556342, P/N 556343, and P/N 556346)

Features

- ◆ P/N 556342 consists of two brackets and hardware for mounting a List FA, FB, FC, GA, GB, or GC distribution shelf into a 19" wide relay rack.
- ◆ P/N 556343 consists of two bracket assemblies and hardware for mounting a List 10 power shelf into a 19" wide relay rack.
- ◆ P/N 556346 consists of two brackets and hardware for mounting a List 10 power shelf and a List FA, FB, FC, GA, GB, or GC distribution shelf into a 19" wide rack of a Knurr data cabinet (one set of brackets mounts both shelves).

Restrictions

P/N 556342 is for use with List FA, FB, FC, GA, GB, or GC only.

P/N 556343 is for use with List 10 only.

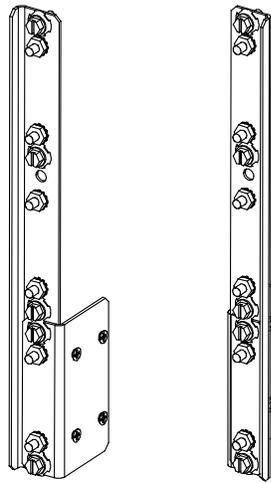
P/N 556346 is for use with a List 10 and List FA, FB, FC, GA, GB, or GC together only (only one set of mounting brackets required, the mounting brackets span the height of both cabinets).

Ordering Notes

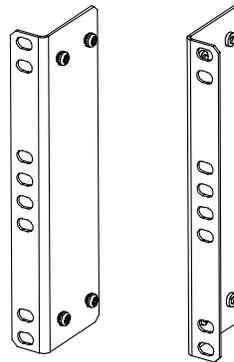
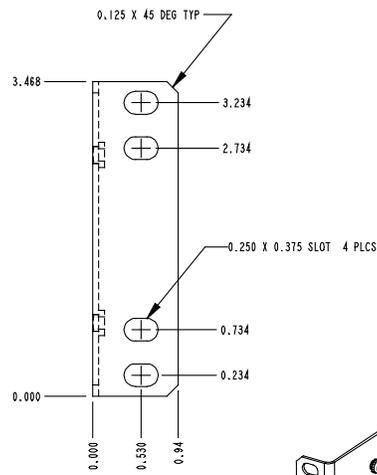
- 1) Mounting kits P/N 556342 and P/N 556343 are normally provided whenever a List 10 power shelf and a List FA, FB, FC, GA, GB, or GC distribution panel is ordered. Order mounting kit P/N 556346 as required.

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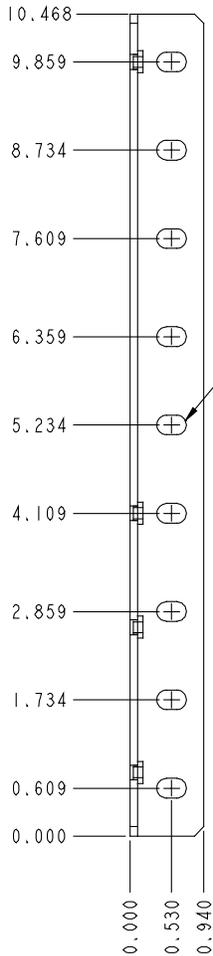
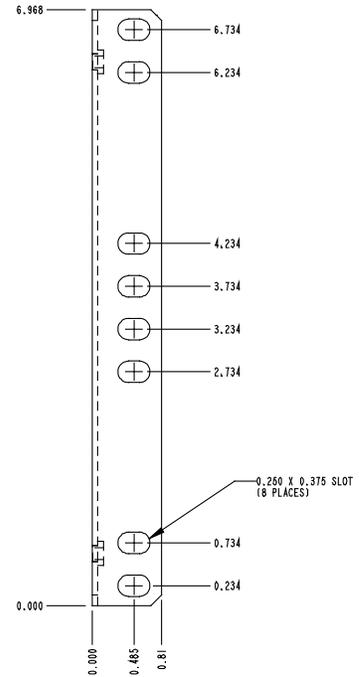
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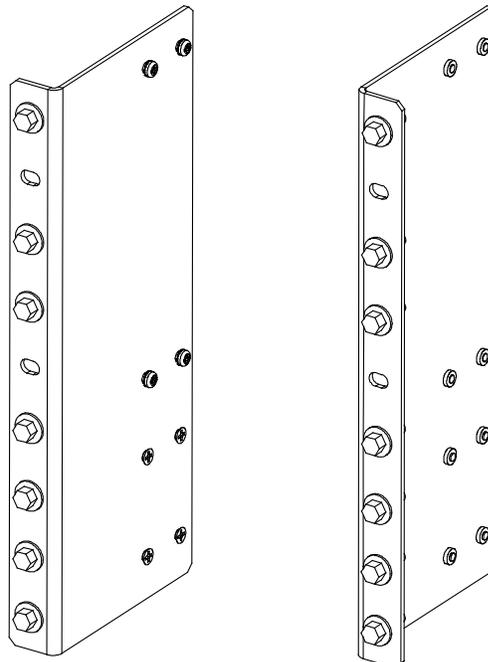
P/N 556343



P/N 556342



0.250X0.375
SLOT (12X)



P/N 556346

Optional Wall Mounting Bracket Kits

Optional 19" 6RU Wall Mount Bracket Kit, P/N 552537

Features

- ◆ Allows for horizontal wall mounting of 19" systems.
- ◆ See "Overall Dimensions - System with 19" 6RU Wall Mount Kit P/N 552537 (cont'd on next page)" on page 112 for mounting dimensions.

Restrictions

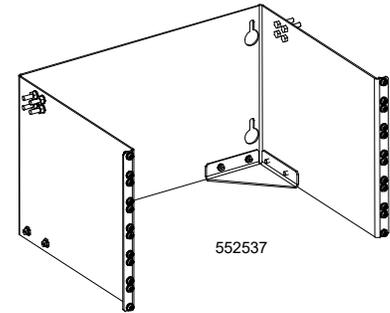
For horizontal mount only.

Customer must supply mounting fasteners for securing the wall mount bracket to the wall.

System mounting angles cannot be in the flush-front mount position.

Ordering Notes

- 1) Order by P/N 552537 as required.



Optional 23" 6RU Wall Mount Bracket Kit, P/N 552535

Features

- ◆ Allows for horizontal wall mounting of 23" systems.
- ◆ See "Overall Dimensions - System with 23" 6RU Wall Mount Kit P/N 552535 (cont'd on next page)" on page 114 for mounting dimensions.

Restrictions

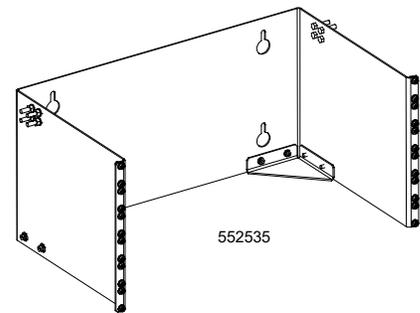
For horizontal mount only.

Customer must supply mounting fasteners for securing the wall mount bracket to the wall.

System mounting angles cannot be in the flush-front mount position.

Ordering Notes

- 1) Order by P/N 552535 as required.



19" Termination Panel Kit (P/N 555234)

Features

- ◆ Provides a termination panel that is mounted into a 19.4" (493mm) wide rack rail of a Knurr Data Cabinet.
- ◆ Ten (10) termination points (1/4-20 x 0.875" studs on 0.625" centers) per polarity provided for PDU and power shelf connections.
- ◆ Pre-terminated cables available for connection from termination panel to power shelf output terminals.
- ◆ Removable center link provided in each polarity.

Restrictions

For use with List 1 and List 2 only.

Ordering Notes

- 1) Order a 19" Termination Panel, P/N 555234, as required.
- 2) Order rectifier shelf cables as required.
 - P/N 555232: One (1) 24" long, 2/0 AWG, cable provided for each polarity. Two-hole lug (3/8" clearance holes on 1" centers) for power shelf connection. Two-hole lug (1/4" clearance holes on 5/8" centers) for termination panel connection. For use with 582136800 List 1.
 - P/N 555233: One (1) 24" long, 4/0 AWG, cable provided for each polarity. Two-hole lug (3/8" clearance holes on 1" centers) for power shelf connection. Two-hole lug (1/4" clearance holes on 5/8" centers) for termination panel connection. For use with 582136800 List 2.
 - P/N 556440: One (1) 24" long, 2/0 AWG, cable provided for each polarity. Two-hole lug (3/8" clearance holes on 1" centers) for power shelf connection. Two-hole 90-degree lug (1/4" clearance holes on 5/8" centers) for termination panel connection. For use with 582136800 List 1.
 - P/N 556441: One (1) 24" long, 4/0 AWG, cable provided for each polarity. Two-hole lug (3/8" clearance holes on 1" centers) for power shelf connection. Two-hole 90-degree lug (1/4" clearance holes on 5/8" centers) for termination panel connection. For use with 582136800 List 2.

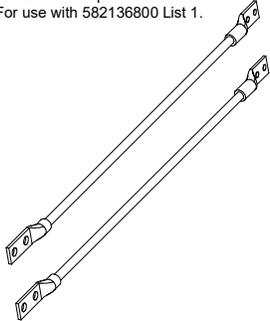
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Cable Assemblies

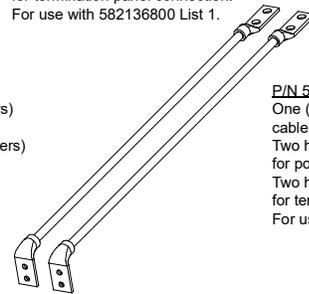
P/N 555232

One (1) 24" long, 2/0 AWG, cable provided for each polarity.
 Two hole lug (3/8" clearance holes on 1" centers) for power shelf connection.
 Two hole lug (1/4" clearance holes on 5/8" centers) for termination panel connection.
 For use with 582136800 List 1.



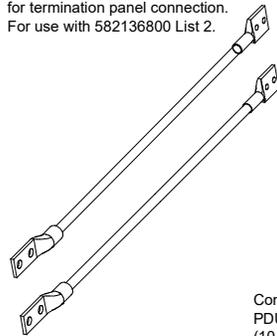
P/N 556440

One (1) 24" long, 2/0 AWG, cable provided for each polarity.
 Two hole lug (3/8" clearance holes on 1" centers) for power shelf connection.
 Two hole 90-degree lug (1/4" clearance holes on 5/8" centers) for termination panel connection.
 For use with 582136800 List 1.



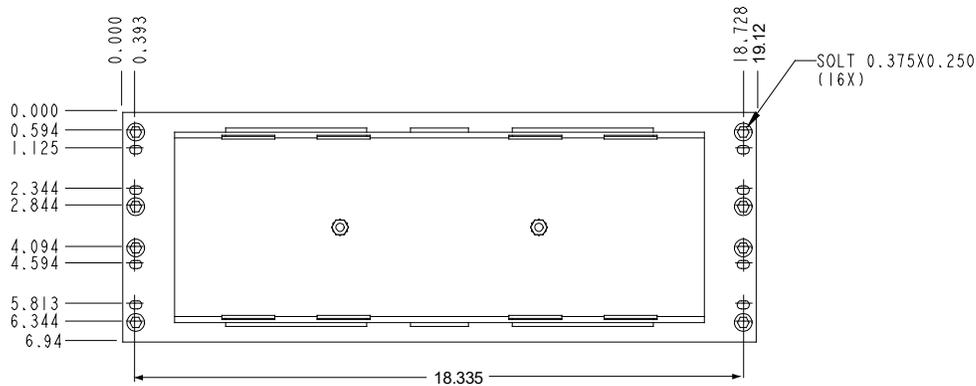
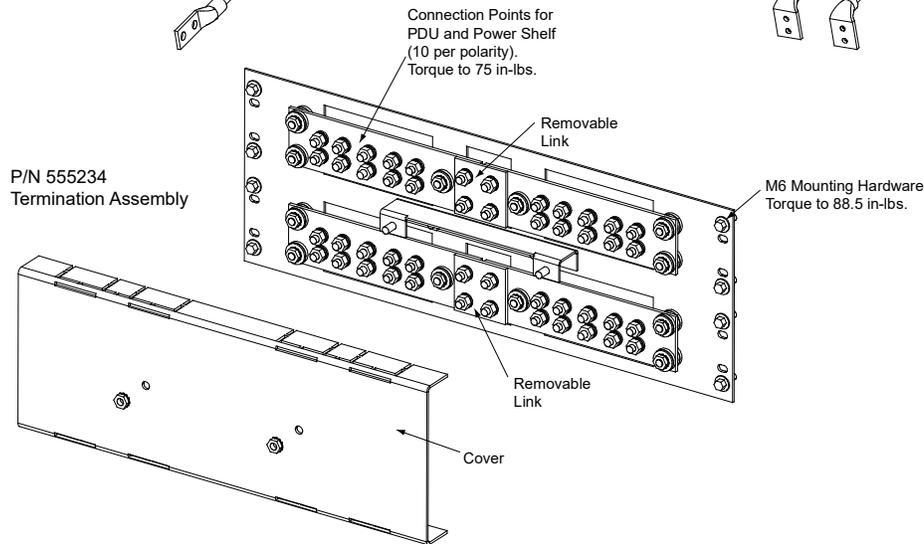
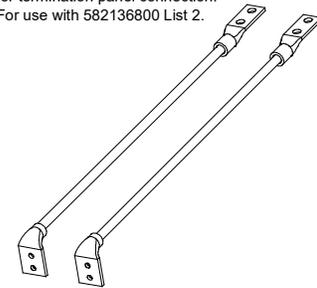
P/N 555233

One (1) 24" long, 4/0 AWG, cable provided for each polarity.
 Two hole lug (3/8" clearance holes on 1" centers) for power shelf connection.
 Two hole lug (1/4" clearance holes on 5/8" centers) for termination panel connection.
 For use with 582136800 List 2.



P/N 556441

One (1) 24" long, 4/0 AWG, cable provided for each polarity.
 Two hole lug (3/8" clearance holes on 1" centers) for power shelf connection.
 Two hole 90-degree lug (1/4" clearance holes on 5/8" centers) for termination panel connection.
 For use with 582136800 List 2.



Relay Racks

Features

- ◆ The following relay racks are available.

Ordering Notes

- 1) Order from relay racks listed in Table 12.

Part Number	Size	Available Mounting Positions (1RU = 1-3/4")	Notes
23" Relay Racks			
562356	25.66" H x 23" W	13RU	Welded
559817	51-3/8" H x 23" W	28RU	Welded
559818	6'0" H x 23" W	37RU	Welded
559819	7'0" H x 23" W	45RU	Seismic (complies with Bellcore Seismic Zone 4 requirements)
559820	84.00" H x 23" W	45RU	Welded
562353 (See Note)	7'0" H x 23" W (6"W Mounting Rails)	45RU	Seismic (complies with Bellcore Seismic Zone 4 requirements)
562355	85.75" H x 23" W	46RU	Seismic (complies with Bellcore Seismic Zone 4 requirements)
559821	90.00" H x 23" W	48RU	Welded
559822	8'0" H x 23" W	51RU	Welded
19" Relay Racks			
559823	7'0" H x 19" W	45RU	Seismic (complies with Bellcore Seismic Zone 4 requirements)
559824	7'0" H x 19" W	45RU	Welded
563922 (See Note)	7'0" H x 19" W (6"W Mounting Rails)	45RU	Seismic (complies with Bellcore Seismic Zone 4 requirements)

Table 12
Available Relay Racks

Note: For power systems mounted in relay racks with more than one battery tray.

- 2) Order shipping rails per P/N 509638 and P/N 509639.

Transition Plates to Mount Relay Rack on Top of GNB Absolyte® IIP Batteries

Features

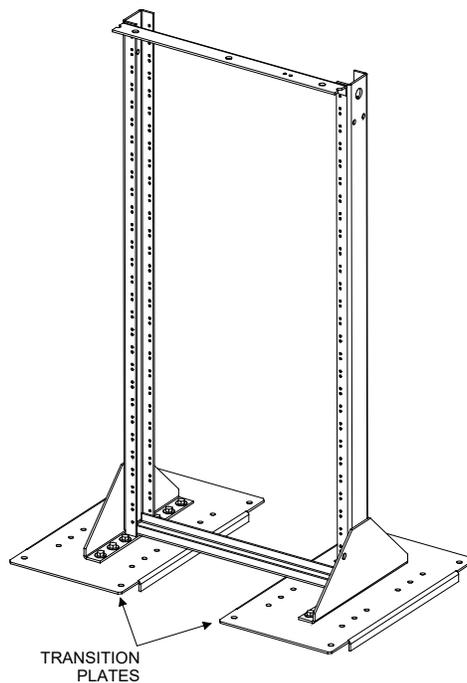
- ◆ Transition Plate Kits can be ordered to mount relay rack P/N 559817 on top of GNB Absolyte IIP Battery Stands.
- ◆ Each kit consists of two transition plates with three hole patterns and hardware (3/8") to mount the plates to the above listed relay racks. Customer must supply hardware to mount the transition plates to the battery stands.

Restrictions

Used with relay rack P/N 543156 only.

Ordering Notes

- 1) Order P/N 509819 for a Transition Plate Kit to mount relay rack on top of battery with outside dimensions of...
26.75" x 26.38",
35.75" x 26.38", or
42.50" x 26.38".
- 2) Order P/N 514880 for a Transition Plate Kit to mount relay rack on top of battery with outside dimensions of...
29.00" x 26.38",
35.50" x 26.35", or
40.25" x 26.38".



AC Input Cables and Line Cords

AC Input Cable Assembly, P/N 535232

Features

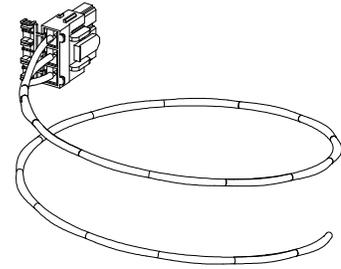
- ◆ Provides one (1) 30" long, 8 AWG, AC Input Cable Assembly that is
 - ◆ Terminated on one end with a Molex plug which mates with AC input receptacle on the Power Shelf, and
 - ◆ Not terminated on the remaining end.

Restrictions

Rated for 30A.

Ordering Notes

- 1) Order AC Input Cable Assemblies or Line Cords as required.
 - Lists 1, 5, 10 and 20 require two (2) AC Input Cable Assemblies or Line Cords.
 - Lists 2, 3, 4, 7, 12, 14, 15 and 22 require three (3) AC Input Cable Assemblies or Line Cords.
 - Lists 6, 11 and 21 require five (5) AC Input Cable Assemblies or Line Cords.
 - Lists 8, 13 and 23 require six (6) AC Input Cable Assemblies or Line Cords.
 - Lists 16 and 26 require eight (8) AC Input Cable Assemblies or Line Cords.
 - Lists 17 and 27 require nine (9) AC Input Cable Assemblies or Line Cords.



AC Input Cable Assembly, P/N 553202

Features

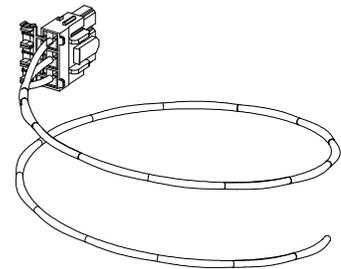
- ◆ Provides one (1) 12' long, 8 AWG, AC Input Cable Assembly that is
 - ◆ Terminated on one end with a Molex plug which mates with AC input receptacle on the Power Shelf, and
 - ◆ Not terminated on the remaining end.

Restrictions

Rated for 30A.

Ordering Notes

- 1) Order AC Input Cable Assemblies or Line Cords as required.
 - Lists 1, 5, 10 and 20 require two (2) AC Input Cable Assemblies or Line Cords.
 - Lists 2, 3, 4, 7, 12, 14, 15 and 22 require three (3) AC Input Cable Assemblies or Line Cords.
 - Lists 6, 11 and 21 require five (5) AC Input Cable Assemblies or Line Cords.
 - Lists 8, 13 and 23 require six (6) AC Input Cable Assemblies or Line Cords.
 - Lists 16 and 26 require eight (8) AC Input Cable Assemblies or Line Cords.
 - Lists 17 and 27 require nine (9) AC Input Cable Assemblies or Line Cords.



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AC Input Line Cord, P/N 540946

Features

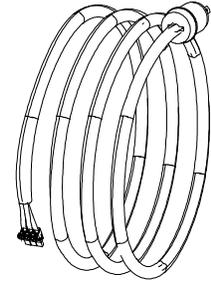
- ◆ Provides one (1) 14' long, 8/3 AWG, AC Input Line Cord that is:
 - ◆ Terminated on one end with a Molex plug which mates with AC input receptacle on the Power Shelf, and
 - ◆ Terminated on the remaining end with a NEMA L6-30P twist-lock plug.

Restrictions

For 208/240 VAC only (rated for 30A at 208/240VAC).

Ordering Notes

- 1) Order AC Input Cable Assemblies or Line Cords as required.
 - Lists 1, 5, 10 and 20 require two (2) AC Input Cable Assemblies or Line Cords.
 - Lists 2, 3, 4, 7, 12, 14, 15 and 22 require three (3) AC Input Cable Assemblies or Line Cords.
 - Lists 6, 11 and 21 require five (5) AC Input Cable Assemblies or Line Cords.
 - Lists 8, 13 and 23 require six (6) AC Input Cable Assemblies or Line Cords.
 - Lists 16 and 26 require eight (8) AC Input Cable Assemblies or Line Cords.
 - Lists 17 and 27 require nine (9) AC Input Cable Assemblies or Line Cords.



AC Input Line Cord, P/N 559301

Features

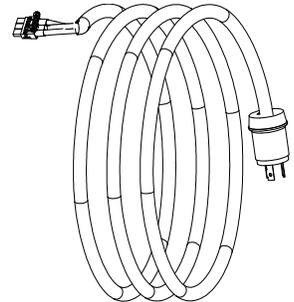
- ◆ Provides one (1) 14' long, 8/3 AWG, AC Input Line Cord that is:
 - ◆ terminated on one end with a Molex plug at a 90 degree angle bend which mates with AC input receptacle on the Power/Distribution Shelf,
 - ◆ and on the remaining end with a NEMA L6-30P twist-lock plug.

Restrictions

For 208/240 VAC only (rated for 30A at 208/240VAC).

Ordering Notes

- 1) Order AC Input Cable Assemblies or Line Cords as required.
 - Lists 1, 5, 10 and 20 require two (2) AC Input Cable Assemblies or Line Cords.
 - Lists 2, 3, 4, 7, 12, 14, 15 and 22 require three (3) AC Input Cable Assemblies or Line Cords.
 - Lists 6, 11 and 21 require five (5) AC Input Cable Assemblies or Line Cords.
 - Lists 8, 13 and 23 require six (6) AC Input Cable Assemblies or Line Cords.
 - Lists 16 and 26 require eight (8) AC Input Cable Assemblies or Line Cords.
 - Lists 17 and 27 require nine (9) AC Input Cable Assemblies or Line Cords.



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AC Input Line Cord, P/N 545616

Features

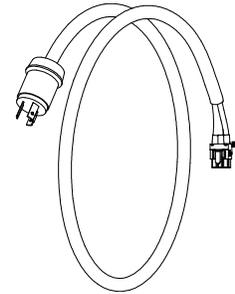
- ◆ Provides one (1) 6' long, 8 AWG, AC Input Line Cord that is:
 - ◆ Terminated on one end with a Molex plug which mates with AC input receptacle on the Power/Distribution Shelf, and
 - ◆ Terminated on the remaining end with a NEMA L6-30P twist-lock plug.

Restrictions

For 208/240 VAC only (rated for 30A at 208/240VAC).

Ordering Notes

- 1) Order AC Input Cable Assemblies or Line Cords as required.
 - Lists 1, 5, 10 and 20 require two (2) AC Input Cable Assemblies or Line Cords.
 - Lists 2, 3, 4, 7, 12, 14, 15 and 22 require three (3) AC Input Cable Assemblies or Line Cords.
 - Lists 6, 11 and 21 require five (5) AC Input Cable Assemblies or Line Cords.
 - Lists 8, 13 and 23 require six (6) AC Input Cable Assemblies or Line Cords.
 - Lists 16 and 26 require eight (8) AC Input Cable Assemblies or Line Cords.
 - Lists 17 and 27 require nine (9) AC Input Cable Assemblies or Line Cords.



AC Input Line Cord, P/N 559302

Features

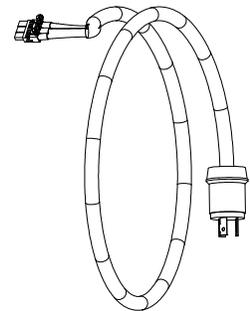
- ◆ Provides one (1) 6' long, 8 AWG, AC Input Line Cord that is:
 - ◆ terminated on one end with a Molex plug at a 90 degree angle bend which mates with AC input receptacle on the Power/Distribution Shelf,
 - ◆ and on the remaining end with a NEMA L6-30P twist-lock plug.

Restrictions

For 208/240 VAC only (rated for 30A at 208/240VAC).

Ordering Notes

- 1) Order AC Input Cable Assemblies or Line Cords as required.
 - Lists 1, 5, 10 and 20 require two (2) AC Input Cable Assemblies or Line Cords.
 - Lists 2, 3, 4, 7, 12, 14, 15 and 22 require three (3) AC Input Cable Assemblies or Line Cords.
 - Lists 6, 11 and 21 require five (5) AC Input Cable Assemblies or Line Cords.
 - Lists 8, 13 and 23 require six (6) AC Input Cable Assemblies or Line Cords.
 - Lists 16 and 26 require eight (8) AC Input Cable Assemblies or Line Cords.
 - Lists 17 and 27 require nine (9) AC Input Cable Assemblies or Line Cords.



AC Input Line Cord, P/N 545252

Features

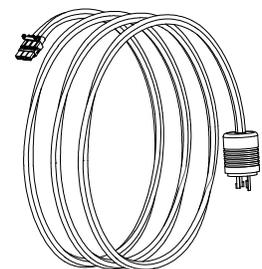
- ◆ Provides one (1) 14' long, 8/3 AWG, AC Input Line Cord that is:
 - ◆ Terminated on one end with a Molex plug which mates with AC input receptacle on the Power Shelf, and
 - ◆ Terminated on the remaining end with a NEMA L5-30P twist-lock plug.

Restrictions

For 120 VAC only (rated for 30A at 120VAC).

Ordering Notes

- 1) Order AC Input Cable Assemblies or Line Cords as required.
 - Lists 1, 5, 10 and 20 require two (2) AC Input Cable Assemblies or Line Cords.
 - Lists 2, 3, 4, 7, 12, 14, 15 and 22 require three (3) AC Input Cable Assemblies or Line Cords.



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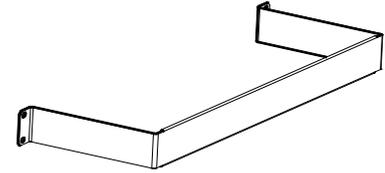
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- Lists 6, 11 and 21 require five (5) AC Input Cable Assemblies or Line Cords.
- Lists 8, 13 and 23 require six (6) AC Input Cable Assemblies or Line Cords.
- Lists 16 and 26 require eight (8) AC Input Cable Assemblies or Line Cords.
- Lists 17 and 27 require nine (9) AC Input Cable Assemblies or Line Cords.

AC Cord Bracket Kits (P/N 560161 and P/N 560162)

Features

- ◆ P/N 560161 consists of a bracket 559871 and hardware for mounting to the rear of a 23" relay rack that will support the AC cables that plug into the molex connectors. The customer will tie the AC cables to this bracket using lacing or ty-raps.
- ◆ P/N 560162 consists of a bracket 559872 and hardware for mounting to the rear of a 19" relay rack that will support the AC cables that plug into the molex connectors. The customer will tie the AC cables to this bracket using lacing or ty-raps.



Restrictions

For use with List 1,2,3,4,10,11,12,13,14,15,16,17,21,23,26,27.

Ordering Notes

- 1) Order mounting kit P/N 556161 or P/N 556162, as required.

Note: If a relay rack and power system are ordered along with the brackets, the brackets will be mounted to the rack at the factory.

Battery Cables, P/N 559124

Features

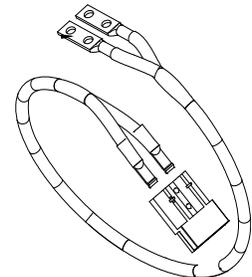
- ◆ Provides two (2) 3' long, 2 AWG, battery cables terminated in a 2-position Red SB120 Anderson connector. Remaining end terminated in lugs for connection to the distribution unit.

Restrictions

For use with Lists AA, AB, AC, FA, FB and FC only.

Ordering Notes

- 2) Order as required. Each shelf provides landings for up to three (3) battery strings.



Alarm Cables

Features

- ◆ Two sets of Alarm Cables are available, each set consisting of two pieces that plug together to make a complete set. One set for the Digital Inputs and another set for the Relay Outputs. One half of each set connects in the shelf. The other half of each set is unterminated on one end.

Ordering Notes

- 1) For the Relay Outputs Alarm Cable, order both P/Ns 541308 (shelf side) and P/N 541309 (10' customer side).

For the Digital Inputs Alarm Cable, order both P/Ns 541310 (shelf side) and P/N 541311 (10' customer side).

The P/N 545644, which is the 50' version of the P/N 541309, is also available.

A custom digital input cable and internal wiring kit is available, P/N 559963. This kit is factory installed only. (Provides -48 VDC pre-wired to the negative side of digital inputs #4 through #7 and a 10' alarm cable factory wired to the positive side of digital inputs #4 through #7.)

User Replaceable Components

Ordering Notes

- 1) Refer to Table 13.

Item	Part Number
Rectifier Module, High Efficiency	1R482000e
Rectifier Module Fan	32010096 for 1R482000 32010106 for 1R482000e
NCU (Advanced Controller Unit Plus)	Order per P/N 1M830BNA
IB2 Interface Board	Order per P/N MA4C5U31
Temperature Probe, 3 Meter	Order per List 90 (or if only one piece of the two piece probe is needed, see the list 90 description for part numbers). See “Optional Temperature Probes” on page 68 for temperature probe options with a mounting tab.
Temperature Probe, 10 Meter	Order per List 91. See “Optional Temperature Probes” on page 68 for temperature probe options with a mounting tab.

Table 13
 Replacement Part Numbers

Wiring Notes

Refer also to the next section, [Wiring Illustrations](#).

AC Input Connections

Features

- ◆ Each system contains multiple plug-in AC input connectors. For details, refer to the illustration provided in the [Wiring Illustrations](#) section.
- ◆ AC input branch circuits are connected via AC Input Cable Assemblies/Line Cords ordered with the system.

Restrictions

For correct AC input wire size, order AC Input Cable Assembly or Line Cords per the ACCESSORY DESCRIPTIONS section.

Each system requires multiple AC input branch circuits. Each AC input branch circuit feeds one (1) or (2) rectifiers.

Recommended branch circuit protection is 30 amperes.

Branch circuit protective devices should be of the time-delay or high inrush type.

DC Output Connections

Features

- ◆ **Lists 1 – 4:** Bus bars with 3/8" clearance holes on 1" centers are provided for installation of customer-furnished DC output cables terminated in two-hole lugs.
- ◆ **Lists 5 – 8:** 3/8-16 studs on 1" centers are provided for installation of customer-furnished DC output cables terminated in two-hole lugs.
- ◆ **Lists 10 – 13 and 16 – 27:** Distribution Cabinets provide 1/4-20 studs on 5/8" centers for installation of customer-furnished DC Load and Load Return distribution cables terminated in two-hole lugs.
- ◆ **Lists 14 – 15:** These field expansion shelves are furnished with output busbars for connection to existing power system buswork.
- ◆ For lug landing details, refer to the illustration provided in the [Wiring Illustrations](#) section.

Restrictions

List 1 – 4: Customer wiring must connect the DC outputs of the main shelf and all expansion shelves in a system in parallel. When connecting the outputs of multiple shelves, the wiring from all shelves should be of the same gauge and similar length.

Ordering Notes

- 1) All lugs for customer connections must be ordered separately. Customer to supply lug mounting hardware.
- 2) The rating of the distribution device determines the wire size requirements. For wire size and lug selection, refer to the following:
 - **Lists 1 – 8:** Tables 14A – 14E
 - **Lists 10 – 13 and 16 – 27:** Table 15
- 3) For other available lugs and hardware, refer to drawings 031110100 through 031110300.

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Input Voltage (VAC)	Ambient Operating Temp. ⁽¹⁾	Max. Total Output Curr. (Amps)	Loop Length (Ft.) 1.0 Volt Drop ⁽²⁾	Recm. 90°C Wire Size	Recm. Crimp Lug ⁽³⁾
120	40	105	45	(2) 6 AWG	(2) 245349900
			56	(1) 2 AWG	(1) 245348200
			90	(1) 1/0 AWG	(1) 245347100
	65	84	56	(2) 6 AWG	(2) 245349900
			89	(2) 4 AWG	(2) 245350000
			113	(1) 1/0 AWG	(1) 245347100
240	40	166	57	(1) 2/0 AWG	(1) 245347200
			91	(1) 3/0 AWG	(1) 245347300
			114	(2) 1/0 AWG	(2) 245347100
	65	133	89	(2) 2 AWG	(2) 245348200
			143	(2) 1/0 AWG	(2) 245347100

Table 14A
Recommended DC Output Wire Size PER SHELF and Lug Selection
LISTS 1 and 5

Input Voltage (VAC)	Ambient Operating Temp. ⁽¹⁾	Max. Total Output Curr. (Amps)	Loop Length (Ft.) 1.0 Volt Drop ⁽²⁾	Recm. 90°C Wire Size	Recm. Crimp Lug ⁽³⁾
120	40	131	36	(2) 6 AWG	(2) 245349900
			72	(1) 1/0 AWG	(1) 245347100
			91	(1) 2/0 AWG	(1) 245347200
	65	105	114	(1) 2/0 AWG	(1) 245347200
			144	(1) 3/0 AWG	(1) 245347300
			181	(2) 1/0 AWG	(2) 245347100
240	40	208	57	(2) 2 AWG	(2) 245348200
			91	(2) 1/0 AWG	(2) 245347100
			114	(2) 1/0 AWG	(2) 245347100
			144	(2) 2/0 AWG	(2) 245347200

Table 14B
Recommended DC Output Wire Size PER SHELF and Lug Selection
LISTS 2, 3 and 7

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Input Voltage (VAC)	Ambient Operating Temp. ⁽¹⁾	Max. Total Output Curr. (Amps)	Loop Length (Ft.) 1.0 Volt Drop ⁽²⁾	Recm. 90°C Wire Size	Recm. Crimp Lug ⁽³⁾
120	40	157	76	(1) 2/0 AWG	(1) 245347200
			96	(1) 3/0 AWG	(1) 245347300
			121	(2) 1/0 AWG	(2) 245347100
	65	126	120	(1) 3/0 AWG	(1) 245347300
			151	(2) 1/0 AWG	(2) 245347100
			190	(2) 2/0 AWG	(2) 245347200
			76	(2) 1/0 AWG	(2) 245347100
	65	200	95	(2) 2/0 AWG	(2) 245347200
119			(2) 2/0 AWG	(2) 245347200	
			151	(2) 3/0 AWG	(2) 245347300

Table 14C
Recommended DC Output Wire Size PER SHELF and Lug Selection
LIST 4

Input Voltage (VAC)	Ambient Operating Temp. ⁽¹⁾	Max. Total Output Curr. (Amps)	Loop Length (Ft.) 1.0 Volt Drop ⁽²⁾	Recm. 90°C Wire Size	Recm. Crimp Lug ⁽³⁾
120	40	236	50	(2) 2 AWG	(2) 245348200
			76	(3) 2 AWG	(3) 245348200
			80	(2) 1/0 AWG	(2) 245347100
	65	189	94	(3) 2 AWG	(3) 245348200
			100	(2) 1/0 AWG	(2) 245347100
			126	(2) 2/0 AWG	(2) 245347200
240	40	374	80	(2) 3/0 AWG	(2) 245347300
			96	(3) 2/0 AWG	(2) 245347200
			121	(3) 3/0 AWG	(3) 245347300
	65	299	120	(3) 2/0 AWG	(3) 245347200
			151	(3) 3/0 AWG	(3) 245347300
			160	(4) 2/0 AWG	(4) 245347200

Table 14D
Recommended DC Output Wire Size PER SYSTEM and Lug Selection
LIST 6

Vertiv™ NetSure™ 502NGFB DC Power System
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Input Voltage (VAC)	Ambient Operating Temp. ⁽¹⁾	Max. Total Output Curr. (Amps)	Loop Length (Ft.) 1.0 Volt Drop ⁽²⁾	Recm. 90°C Wire Size	Recm. Crimp Lug ⁽³⁾
120	40	290	65	(2) 1/0 AWG	(2) 245347100
			82	(2) 2/0 AWG	(2) 245347200
			104	(2) 3/0 AWG	(2) 245347300
	65	230	131	(2) 3/0 AWG	(2) 245347300
			156	(3) 2/0 AWG	(3) 245347200
			197	(3) 3/0 AWG	(3) 245347300
240	40	400	71	(3) 1/0 AWG	(3) 245347100
			75	(2) 3/0 AWG	(3) 245347100
			89	(3) 2/0 AWG	(3) 245347200
	65	365	124	(3) 3/0 AWG	(3) 245347300
			131	(4) 2/0 AWG	(4) 245347200
			165	(4) 3/0 AWG	(4) 245347300

Table 14E
Recommended DC Output Wire Size PER SYSTEM and Lug Selection
LIST 8

Notes to Tables 14A – 14E:

1. Wire sizes are based on recommendations of the American National Standards Institute (ANSI) approved National Fire Protection Association's (NFPA) National Electrical Code (NEC). Table 310-16 for copper wire rated at 90°C conductor temperature operating in ambient temperatures of 40°C and 65°C was used. For other operating ambient temperatures, refer to the NEC. For operation in countries where the NEC is not recognized, follow applicable codes.
2. Recommended wire sizes are sufficient to restrict maximum voltage drop to 1.0 volt at rated full load output current of the shelf for the loop lengths shown in this column. Loop length is the sum of the lengths of the positive and negative leads.
3. Two-hole lug, 3/8" bolt clearance hole, 1" centers. Refer to drawing 031110100 for lug crimping information.

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Fuse/Circuit Breaker Amperage	Recm 90°C Wire Size ⁽¹⁾						
	14 AWG	12 AWG	10 AWG	8 AWG	6 AWG	4 AWG	2 AWG
	Loop Length (feet) ⁽²⁾						
1, 3, 5, 6, 10A	37 ^(3, 4, 5)	58 ^(3, 4, 5)	93 ^(3, 4, 5)	148 ^(3, 4, 5)	236 ^(3, 4, 5)	376 ^(3, 4, 5)	597 ^(3, 4, 5)
15A	24 ^(3, 4)	39 ^(3, 4, 5)	62 ^(3, 4, 5)	99 ^(3, 4, 5)	157 ^(3, 4, 5)	250 ^(3, 4, 5)	398 ^(3, 4, 5)
20A	--	29 ^(3, 4)	46 ^(3, 4, 5)	74 ^(3, 4, 5)	118 ^(3, 4, 5)	188 ^(3, 4, 5)	298 ^(3, 4, 5)
25A	--	--	37 ^(3, 4)	59 ^(3, 4, 5)	94 ^(3, 4, 5)	150 ^(3, 4, 5)	239 ^(3, 4, 5)
30A	--	--	31 ^(3, 4)	49 ^(3, 4, 5)	78 ^(3, 4, 5)	125 ^(3, 4, 5)	199 ^(3, 4, 5)
35A	--	--	--	42 ^(3, 4)	67 ^(3, 4, 5)	107 ^(3, 4, 5)	170 ^(3, 4, 5)
40A	--	--	--	37 ^(3, 4)	59 ^(3, 4, 5)	94 ^(3, 4, 5)	149 ^(3, 4, 5)
45A	--	--	--	33 ^(3, 4)	52 ^(3, 4)	83 ^(3, 4)	132 ^(3, 4)
50A	--	--	--	29 ⁽³⁾	47 ^(3, 4)	75 ^(3, 4)	119 ^(3, 4)
60A	--	--	--	--	39 ^(3, 4)	62 ^(3, 4)	99 ^(3, 4)
70A	--	--	--	--	--	53 ^(3, 4)	85 ^(3, 4)
75A	--	--	--	--	--	50 ^(3, 4)	79 ^(3, 4)
80A	--	--	--	--	--	47 ⁽³⁾	74 ^(3, 4)
Recommended Crimp Lug ⁽⁶⁾							
Lug	245342300	245342300	245342300	245390200	245346700	245346800	245346900

Fuse/Circuit Breaker Amperage	Recm 90°C Wire Size ⁽¹⁾						
	2 AWG	1/0 AWG	2/0 AWG	3/0 AWG	4/0 AWG	250 kcmil	350 kcmil
	Loop Length (feet) ⁽²⁾						
90A	66 ^(3, 4)	105 ⁽³⁾	133 ⁽³⁾	--	--	--	--
100A	59 ^(3, 4)	95 ⁽³⁾	119 ⁽³⁾	--	--	--	--
125A	47 ⁽³⁾	76 ⁽³⁾	95 ⁽³⁾	120 ⁽³⁾	--	--	--
150A	--	63 ⁽³⁾	79 ⁽³⁾	100 ⁽³⁾	--	--	--
200A	--	--	--	75 ⁽³⁾	95 ⁽³⁾	112 ⁽³⁾	--
250A	--	--	--	--	76 ^(3, 8)	90 ^(3, 8)	126 ^(3, 8)
Recommended Crimp Lug							
Lug	245346900 ⁽⁶⁾	245393500 ⁽⁷⁾	245393600 ⁽⁷⁾	245393700 ⁽⁷⁾	245393800 ⁽⁷⁾	514872 ⁽⁷⁾	514873 ⁽⁷⁾

Table 15
Recommended Distribution (Load) Wire Size and Lug Selection for
TLS/TPS Fuse and Bullet Nose-Type Circuit Breaker (Load and Load Return)
(Notes on next page.)

Vertiv™ NetSure™ 502NGFB DC Power System

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Notes to Table 15:

- ¹ Wire sizes are based on recommendations of the American National Standards Institute (ANSI) approved National Fire Protection Association's (NFPA) National Electrical Code (NEC). **Table 310-16** for wire rated at **90°C** conductor temperature operating in ambient temperatures of **40°C, 50°C, and 65°C** was used. For other operating ambient temperatures, refer to the NEC. For operation in countries where the NEC is not recognized, follow applicable codes.
- ² Recommended wire sizes are sufficient to restrict voltage drop to 1.0 volt or less at listed branch current for the loop lengths shown. Loop length is the sum of the lengths of the positive and negative leads.
- ³ Wire Size / Loop Length Combination Calculated using 40°C Ambient Operating Temperature.
- ⁴ Wire Size / Loop Length Combination Calculated using 50°C Ambient Operating Temperature.
- ⁵ Wire Size / Loop Length Combination Calculated using 65°C Ambient Operating Temperature.
- ⁶ These lugs are two-hole for 1/4" bolt clearance on 5/8" centers. Refer to drawing 031110100 for lug crimping information.
- ⁷ Special application crimp lug / strap combination.

Table 15 (cont'd from previous page)

Recommended Distribution (Load) Wire Size and Lug Selection for
TLS/TPS Fuse and Bullet Nose-Type Circuit Breaker (Load and Load Return)

Battery Connections

Features

- ◆ In each Distribution Cabinet, lug-terminated battery conductors are connected to the battery terminals as follows: Each Distribution Cabinet provides the following connection points for two-hole lug-terminated battery wires:
 - **Lists AA, AB, AC, FA, FB, FC and MV:** Battery and Battery Return busbars provide 3/8" threaded studs on 1" centers.
 - **All Other 1-Row Distribution Cabinets:** Battery disconnect positions provide 1/4" threaded studs on 5/8" centers. Return connections can be made to Battery Return busbar, which provides 3/8" threaded studs on 1" centers. Return connections can also be made to Load Return busbar, which provides 1/4" threaded studs on 5/8" centers.
 - **All Other 2-Row Distribution Cabinets:** Battery disconnect positions provide 1/4" threaded studs on 5/8" centers. Return connections are made to Load Return busbar, which provides 1/4" threaded studs on 5/8" centers.
- ◆ For lug landing details, refer to the illustration provided in the [Wiring Illustrations](#) section.

Restrictions

Customer must supply lug-mounting hardware.

Ordering Notes

- 1) Battery wire size varies depending on battery capacity; therefore no specific information is provided for wire size.
- 2) All lugs for customer connections must be ordered separately. For available lugs for Lists AA, AB, AC, FA, FB, FC and MV, refer to [Table 16](#). For available lugs for all other 1-Row Distribution Cabinets and for all other 2-Row Distribution Cabinets, refer to [Table 15](#). Refer to drawing 031110100 for lug crimping information.

Wire Size	Part Number
6 AWG	245349900
4 AWG	245350000
2 AWG	245348200
1/0 AWG	245347100
2/0 AWG	245347200
3/0 AWG	245347300
4/0 AWG	245347400
250 kcmil	245347500
300 kcmil	245347600
350 kcmil	245347700
400 kcmil	245347800
500 kcmil	245347900
600 kcmil	245348000
750 kcmil	245348100

CABLE INSPECTION HOLE (WHEN PROVIDED)

BOLT SIZE

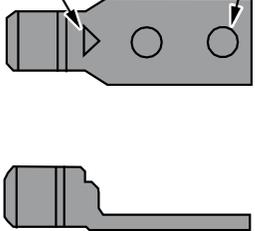


Table 16
Crimp Lugs
(Two-hole Lug, 3/8" Bolt Clearance Hole, 1" Centers)

C.O. Ground Connection

Features

- ◆ For Lists 5 – 8, and Lists AA – RD, 3/8-16 studs on 1" centers are provided on the Return Bus for C.O. Ground wiring.

Restrictions

No specific information is provided for cable size. Refer to the current edition of the American National Standards Institute (ANSI) approved National Fire Protection Association's (NFPA) National Electrical Code (NEC), applicable local codes, and your specific site requirements.

All lugs for customer connections must be ordered separately.

Customer to supply lug mounting hardware.

External Alarm and Monitoring Connections

Features

- ◆ Alarm output and monitoring input leads are connected to screw-type terminal blocks located on the IB2 Interface Board located inside the shelf. These leads enter the right side (as viewed from the front) of the shelf and are accessible from the front of the shelf.
- ◆ Alarm cables are available; refer to [ACCESSORY DESCRIPTIONS](#).

Restrictions

IB2 Interface Board not standard with Lists 1 thru 8.

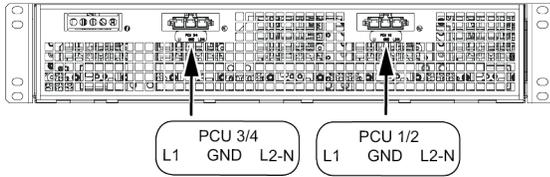
Terminal block wire size capacity is 16 to 26 AWG.

Recommended Wire Size: 22 AWG for Loop Lengths Up to 200 ft.
18-20 AWG for Loop Lengths Over 200 ft.

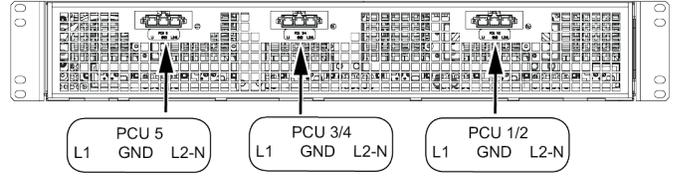
Wiring Illustrations

AC Input Connections (All Lists)

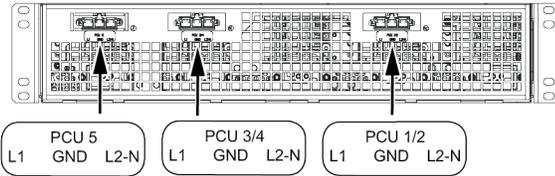
19" Main Shelf in
List 1, 10, 11, 16, 20, 21 and 26



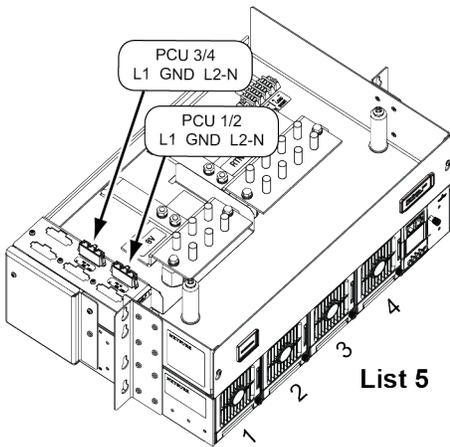
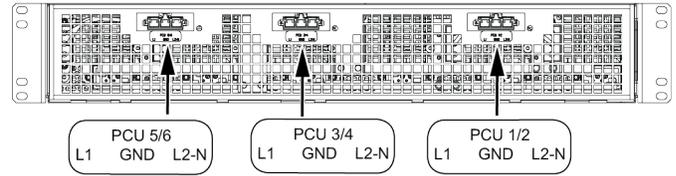
23" Main Shelf in
List 3, 12, 13, 17, 22, 23 and 27



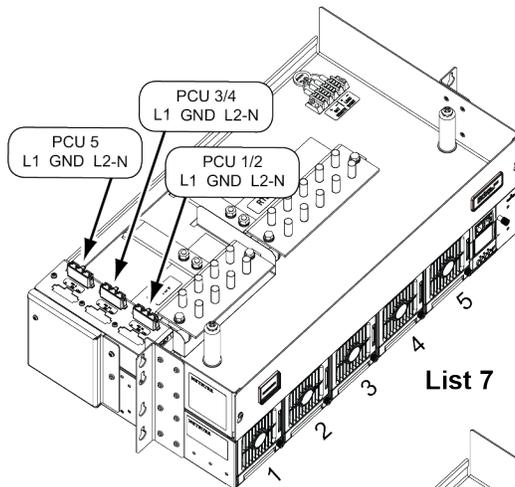
19" Expansion Shelf(s) in
List 2, 11, 14, 16, 21 and 26



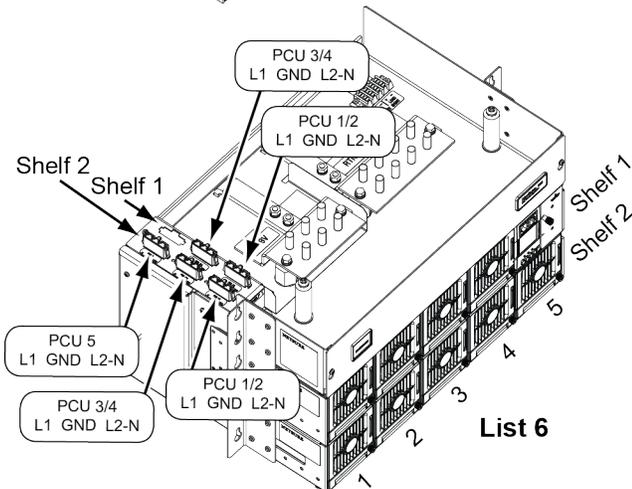
23" Expansion Shelf(s) in
List 4, 13, 15, 17, 23 and 27



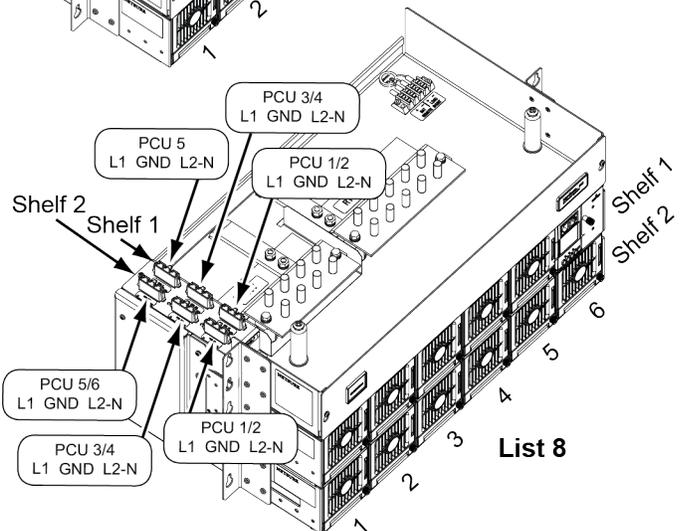
List 5



List 7



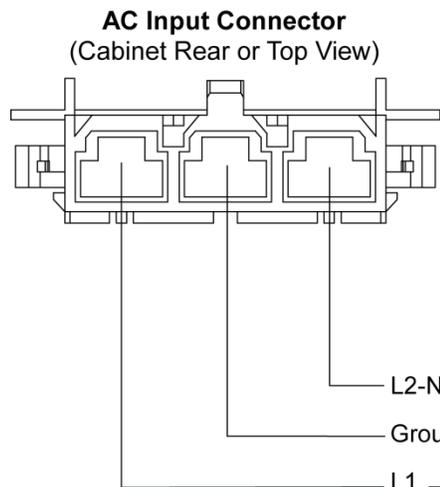
List 6



List 8

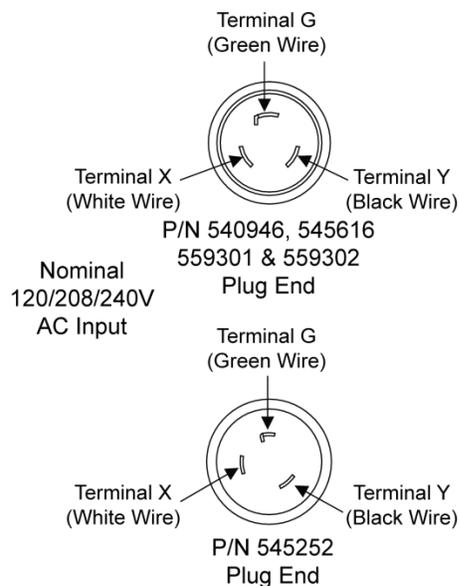
For All Lists See Detail A

Detail A



AC input connections are made using the ordered AC Input Cable Assemblies / Line Cords.

AC Input Cable Assembly	AC Input Line Cords
P/N 535232	P/N 540946
P/N 553202	P/N 545252
	P/N 545616
	P/N 559301
	P/N 559302



* color of AC Input Cable Assembly/Line Cord Lead.

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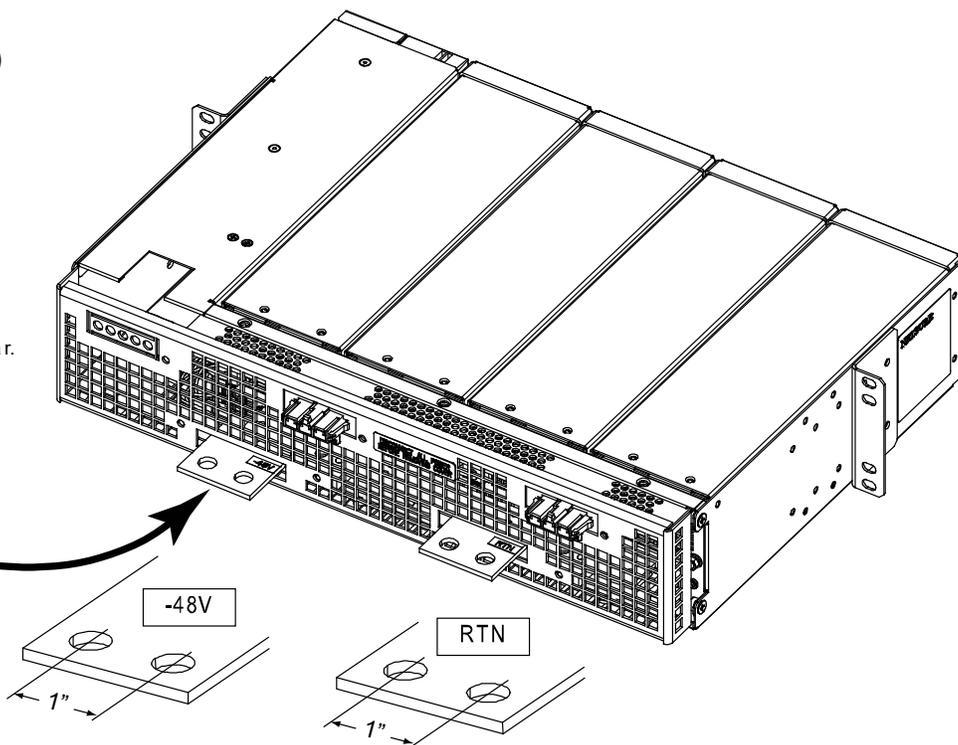
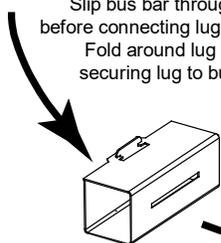
Bulk DC Output Connections (Lists 1 – 4)

DC Output List 1-4 (List 1 Shown)

Two (2) DC Output Lug Insulating Shields



Slip bus bar through slot
before connecting lug to busbar.
Fold around lug after
securing lug to busbar.

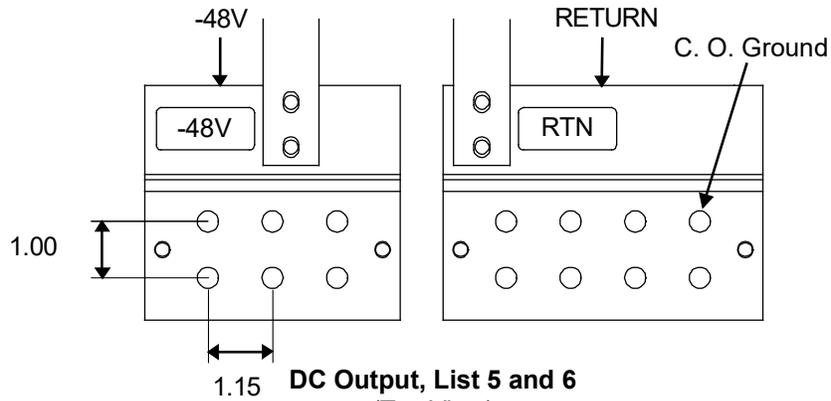
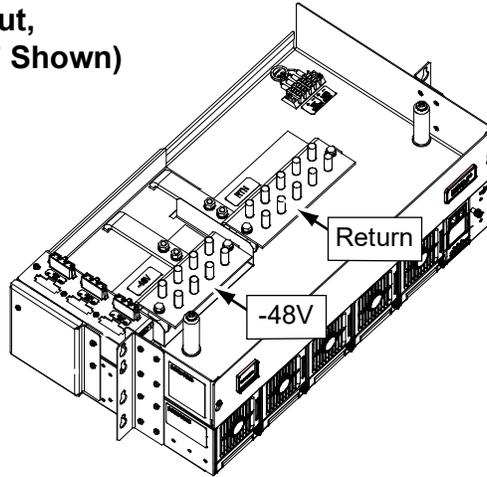


DC Output Busbars

Clearance Holes for 3/8" Bolts
for Installation of Customer-Furnished
Two-hole Lugs

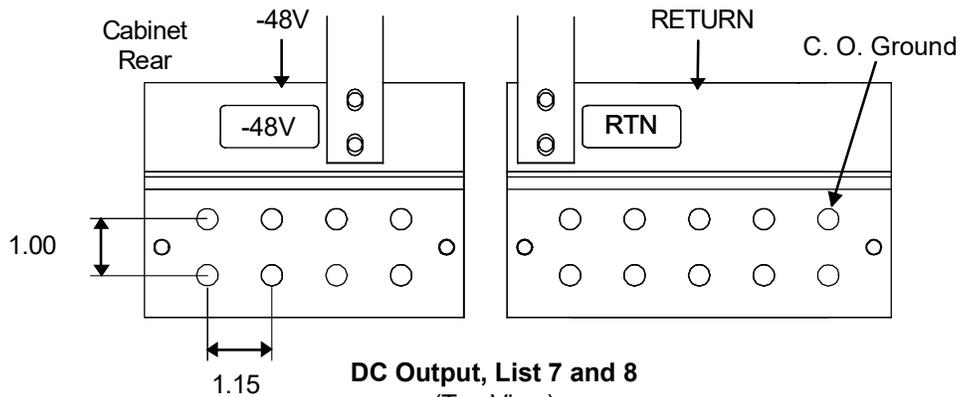
Bulk DC Output and C.O. Ground Connections (Lists 5 – 8)

**DC Output,
 List 5-8 (List 7 Shown)**



**DC Output, List 5 and 6
 (Top View)**

3/8-16 threaded studs for installation of customer-furnished two-hole lugs.



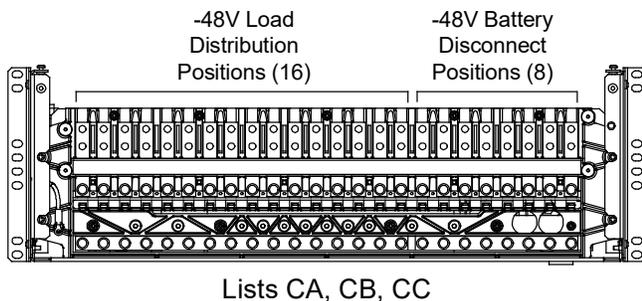
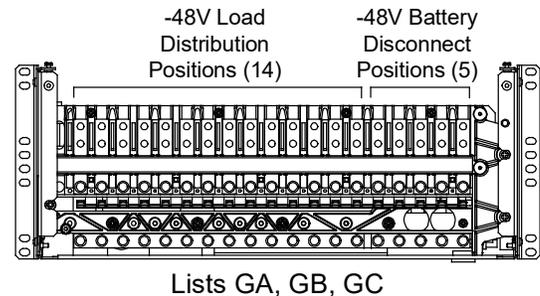
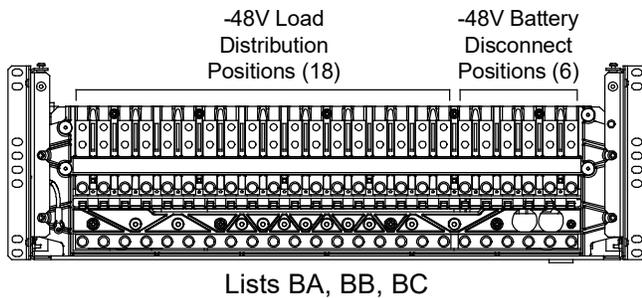
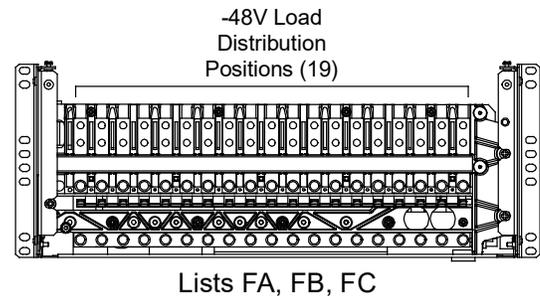
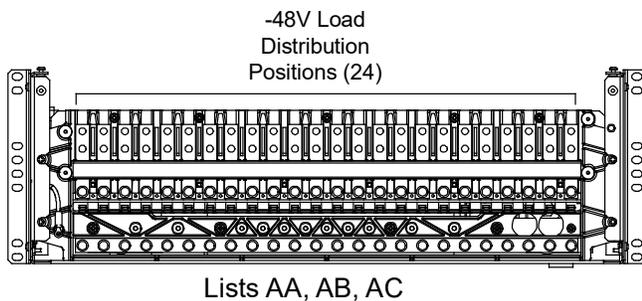
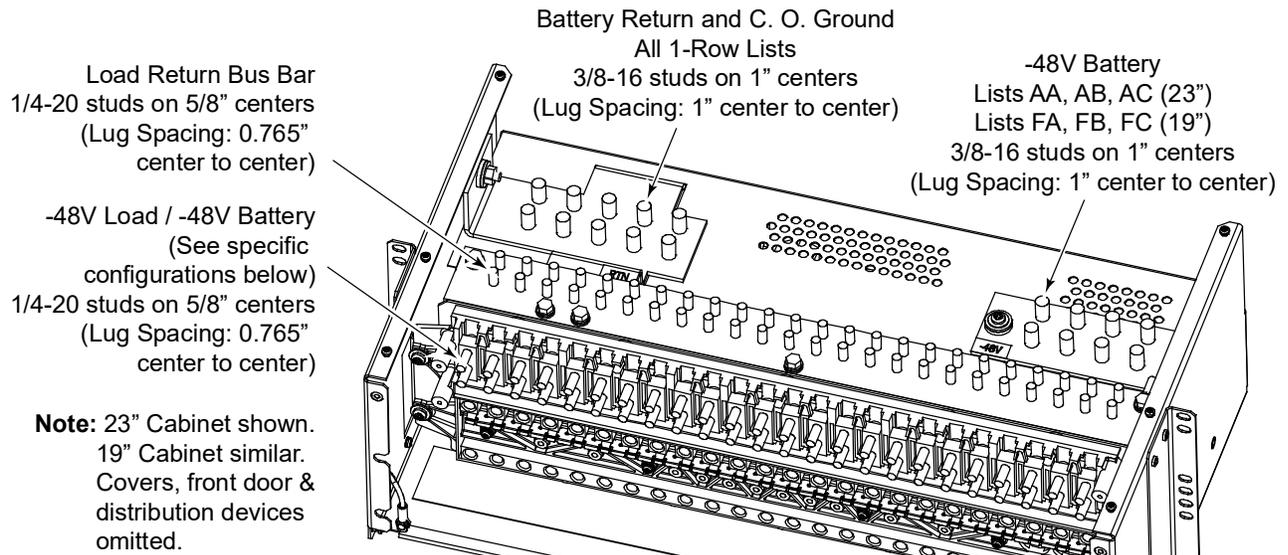
**DC Output, List 7 and 8
 (Top View)**

3/8-16 threaded studs for installation of customer-furnished two-hole lugs.

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System Application Guide

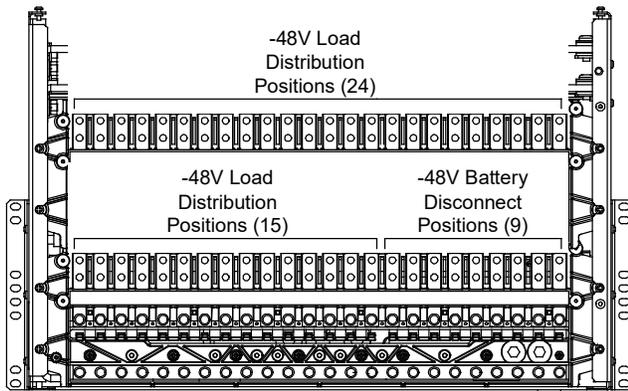
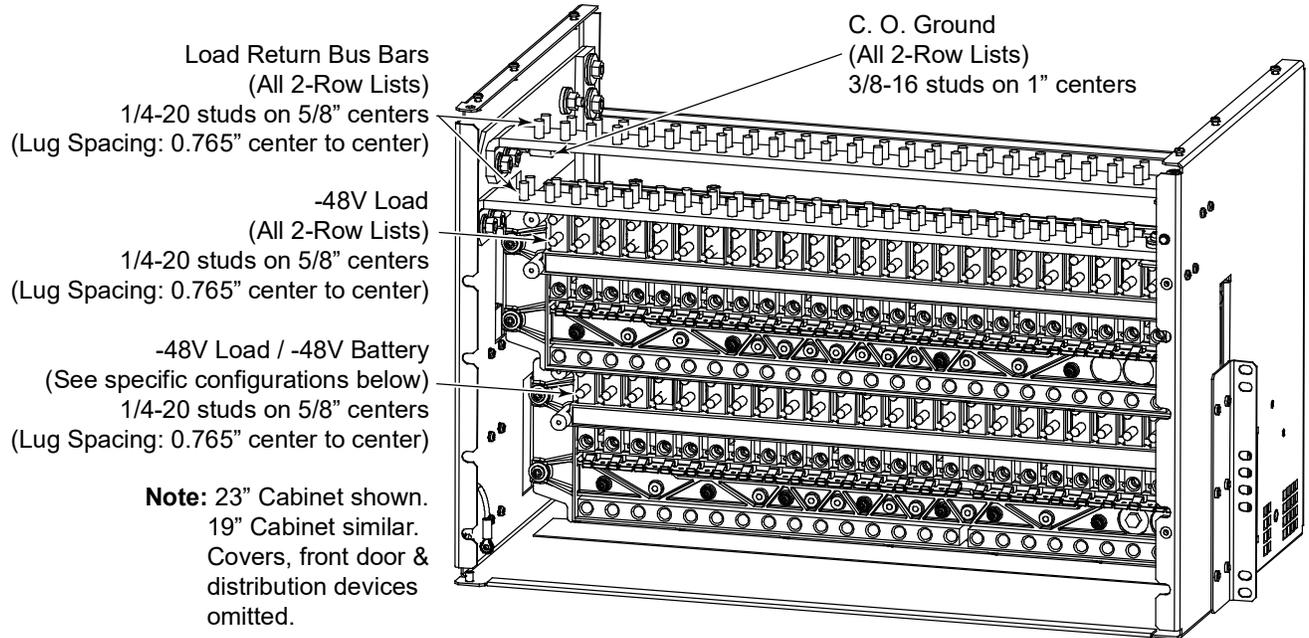
DC Load, C.O. Ground and Battery Connections (1-Row Distribution Cabinets)



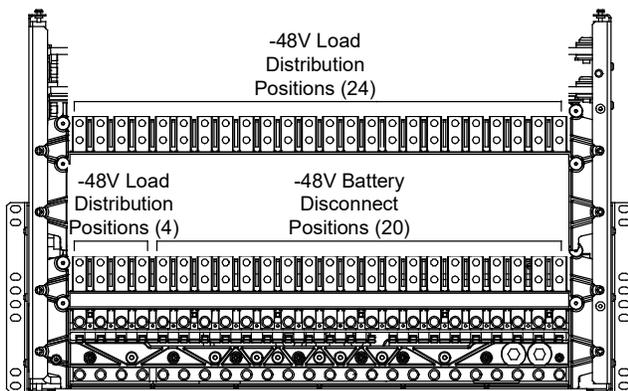
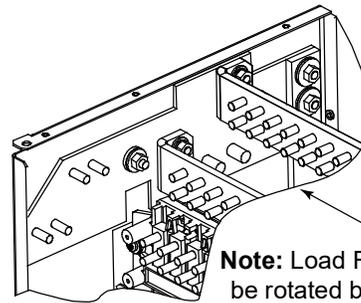
Vertiv™ NetSure™ 502NGFB DC Power System

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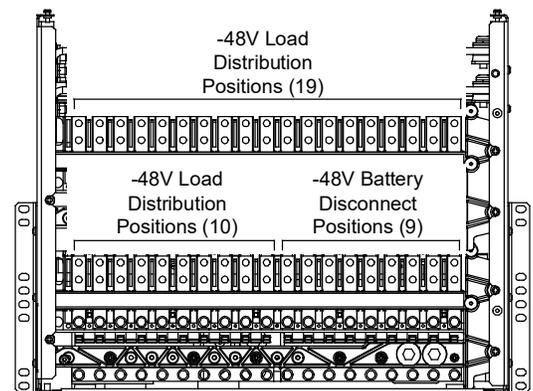
List MA-MD, NA-ND, RA-RD DC Load, C.O. Ground and Battery Connections (2-Row Distribution Cabinets)



Lists MA, MB, MC, MD



Lists NA, NB, NC, ND



Lists RA, RB, RC, RD

Vertiv™ NetSure™ 502NGFB DC Power System

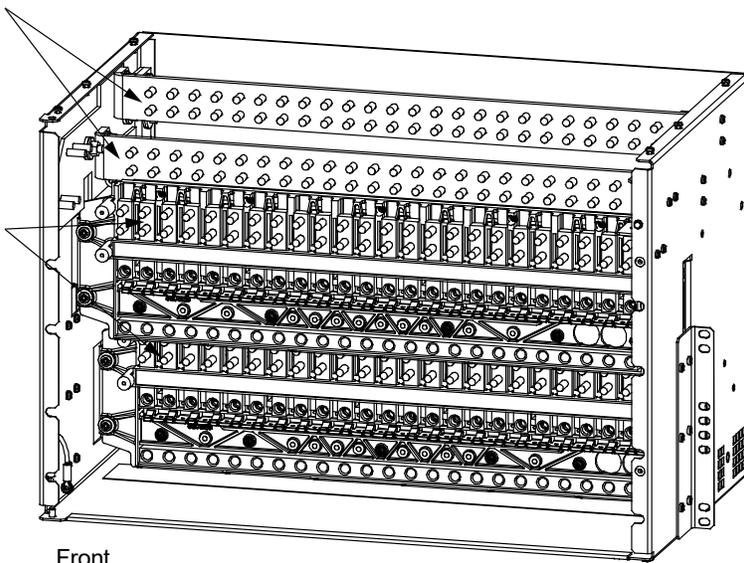
System Application Guide

List MV

DC Load, C.O. Ground and Battery Connections (2-Row Distribution Cabinet)

Load Return Busbars
(Qty. 48 Lug Positions)
1/4-20 studs on 5/8" centers
(Lug Spacing: 0.765" center to center)

-48V Load
(Qty. 48 Breaker and Lug Positions)
1/4-20 studs on 5/8" centers
(Lug Spacing: 0.765" center to center)

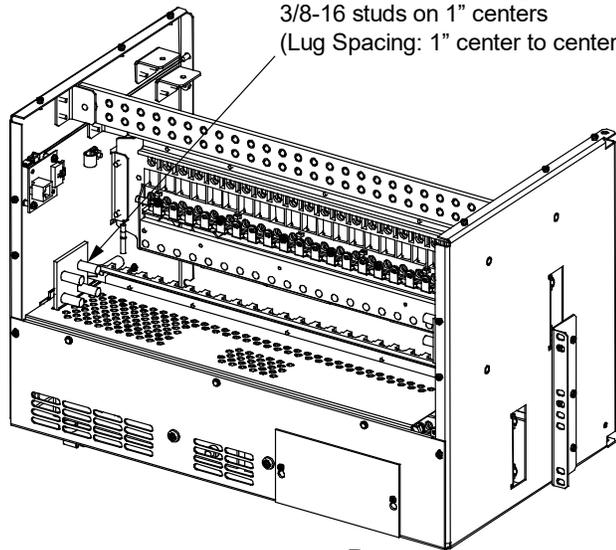


Front

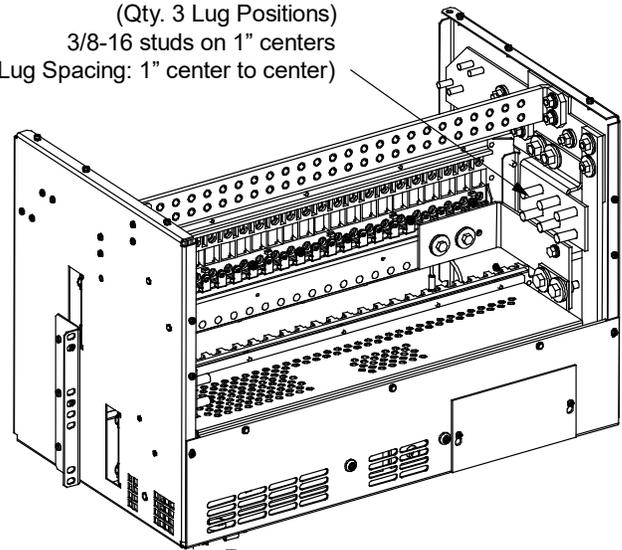
Note: Covers, front door & distribution devices omitted.

-48V Battery (Qty. 2 Lug Positions)
3/8-16 studs on 1" centers
(Lug Spacing: 1" center to center)

Battery Return and C.O. Ground
(Qty. 3 Lug Positions)
3/8-16 studs on 1" centers
(Lug Spacing: 1" center to center)



Rear



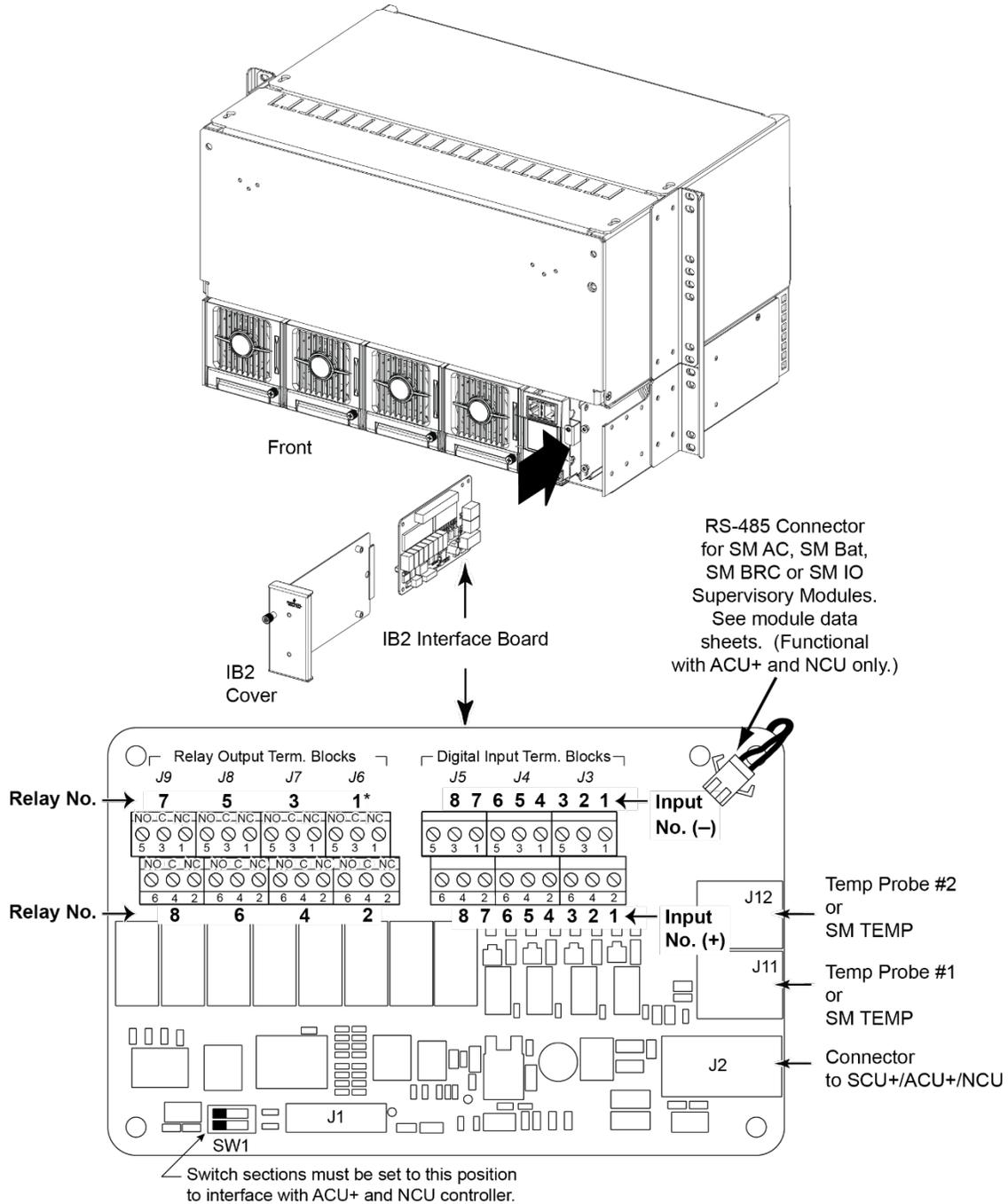
Rear

Vertiv™ NetSure™ 502NGFB DC Power System

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External Alarm and Monitoring Wiring

Note: A custom digital input cable and internal wiring kit is available, P/N 559963. This kit is factory installed only. (Provides -48 VDC pre-wired to the negative side of digital inputs #4 through #7 and a 10' alarm cable factory wired to the positive side of digital inputs #4 through #7.)



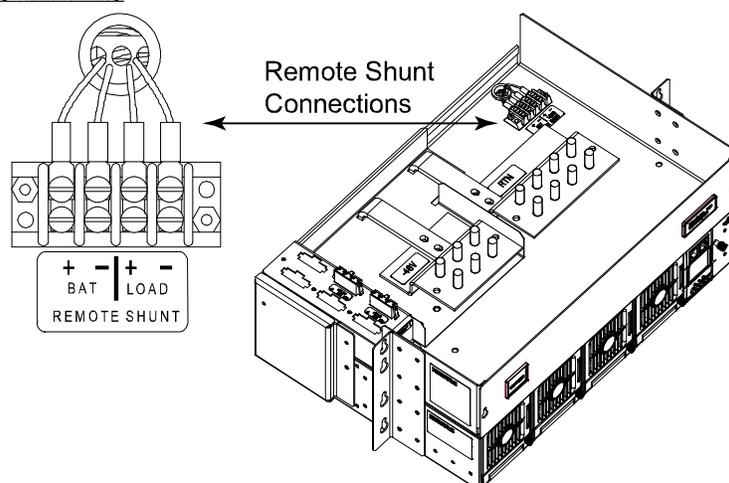
★ The Controller relay assigned to "Critical Summary" (ACU+ and NCU) or "Major Summary" (SCU+) alarm (relay 1 by default) will operate in the "Fail Safe Mode". "Fail Safe Mode" means Relay 1 is de-energized during an alarm condition, opening the contacts between the C and NO terminals, and closing the contacts between the C and NC terminals. The SCU+/ACU+/NCU's remaining seven (7) relays energize during an alarm condition, closing the contacts between the C and NO terminals, and opening the contacts between the C and NC terminals.

A factory-connected jumper supplies +BAT (battery Return) to the positive (+) side of Digital Input #2. If List KG is provided, a factory-connected jumper supplies +BAT (battery Return) to the positive (+) side of Digital Input #3.

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Remote Shunt Connections (Lists 5 – 8)



Nominal Input Voltage	40°C Ambient			65°C Ambient		
	Max. Output Current (Amps)	90°C Cable Size	Max. Loop Length at .4V Drop (Ft.)	65C Output Current (Amps)	90°C Cable Size	Max. Loop Length at .4V Drop (Ft.)
208/240VAC						
List 5	166.6	2 AWG	12.3	133.3	1/0 AWG	24.5
List 6	374.9	250 kcmil	20.6	300	350 kcmil	36.1
List 7	208.3	1/0 AWG	15.7	166.6	2/0 AWG	24.7
List 8	400	250 kcmil	19.3	366.6	500 kcmil	42.2
120VAC						
List 5	105.1	4 AWG	12.3	84.1	2 AWG	24.4
List 6	236.6	1/0 AWG	13.8	189.3	3/0 AWG	27.4
List 7	131.4	2 AWG	15.5	105.2	2 AWG	19.5
List 8	289.2	4/0 AWG	22.7	231.4	4/0 AWG	28.3

Notes:

1. The shunt connected to these terminals must be connected to the output cables of this plant within these maximum distances for the cable sizes used. Loop length is the sum of the lengths of the positive and negative leads.
2. Wire sizes are based on recommendations of the American National Standards Institute (ANSI) approved National Fire Protection Association's (NFPA) National Electrical Code (NEC). Table 310-17 for wire rated at 90°C conductor temperature operating in ambient temperatures of 40°C and 65°C was used.

Table 17
Cable Sizes

SPECIFICATIONS

1. SYSTEM

1.1 Environmental Ratings

1.1.1 Operating Ambient Temperature Range:

(A) -40°C (-40°F) to +65°C (+149°F) with derating output.

(B) -40°C (-40°F) to +40°C (+104°F) with full power performance.

1.1.2 Storage Ambient Temperature Range: -40°C (-40°F) to +80°C (+176°F).

1.1.3 **Humidity:** This Power System is capable of operating in an ambient relative humidity range of 0% to 93%, non-condensing.

1.1.4 **Altitude:** 2000 m (6560 ft) at full power (power limited for heights above 2000 m).

1.1.5 **Mounting:** This product is intended only for installation in a Restricted Access Location on or above a non-combustible surface.

This product must be located in a Controlled Environment with access to Crafts persons only.

This product is intended for installation in Network Telecommunication Facilities (CO, vault, hut, or other environmentally controlled electronic equipment enclosure).

This product is intended to be connected to the common bonding network in a Network Telecommunication Facility (CO, vault, hut, or other environmentally controlled electronic equipment enclosure).

Typical industry standards recommend minimum aisle space clearance of 2'6" for the front of the relay rack and 2' for the rear of the relay rack.

Separate shelves are available for mounting in either a 19" or 23" wide relay rack (1" or 1-3/4" multiple drilling).

Mounting angles are positioned for a 5-inch front projection mounting only.

1.1.6 **Ventilation Requirements:** Rectifier and mounting shelf ventilating openings must not be blocked and temperature of air entering rectifiers must not exceed rated Operating Ambient Temperature Range stated above.

1.2 Compliance Information

1.2.1 Safety Compliance:

(A) **Spec. Nos. 58213680001, 58213680002, 58213680003, 58213680004, 58213680014, 58213680015:** This unit meets the requirements of UL 60950, Standard for Information Technology Equipment, and is UL Recognized as a power supply for use in Telephone, Electronic Data Processing, or Information Processing Equipment. This unit also meets the requirements of CAN/CSA 22.2, No. 60950-00 and is tested and Certified by UL ("c UR") as a Component Type Power Supply.

(B) **Spec. No. 58213680005, 58213680006, 58213680007, 58213680008, 58213680010, 5821368011, 58213680012, 5821368013, 58213680016, 5821368017, 5821368020, 58213680021, 5821368022, 58213680023, 58213680026, 58213680027:** This power distribution system is UL LISTED as a DC Power Distribution Center for Communications Equipment and meet the requirements of UL 60950-1; 2003 and UL subject 1801 and meets the requirements of Canadian Standard C22.2 No. 225-M90 Telecommunications Equipment and C22.2, No. 60950-1-03 (cULus).

1.2.2 EMC and Safety:

Complies with the Low-Voltage Directive, 73/23/EEC.

SAFETY	
EN 60950-1: 2001	Safety of Information Technology Equipment, including Electrical Business Equipment

1.2.3 **NEBS Compliance:** Compliance verified by a Nationally Recognized Testing Laboratory (NRTL) per GR-1089-CORE and GR-63-CORE. Contact Vertiv for NEBS compliance reports.

1.3 Standard Features

1.3.1 **AC Input Connections:** Refer to [Wiring Notes](#) and [Wiring Illustrations](#) under [ACCESSORY DESCRIPTIONS](#).

1.3.2 **Battery Connections:** Refer to [Wiring Notes](#) and [Wiring Illustrations](#) under [ACCESSORY DESCRIPTIONS](#).

1.3.3 **Alarm and Monitoring Connections:** Alarm output and monitoring input leads are connected to screw-type terminal blocks located on the IB2 Interface Board located inside the shelf. These leads enter the right side (as viewed from the front) of the shelf and are accessible from the front of the shelf. Alarm cables are available.

1.3.4 **Dimensions and Weights:** Refer to the illustrations under [Physical Size Information](#).

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1.4 IB2 (Controller Interface Board) Ratings

1.4.1 Digital Input Ratings

(A) Maximum Voltage Rating: 60V DC.

(B) Active High: > 19V DC.

(C) Active Low: < 1V DC.

1.4.2 Relay Ratings

(A) Steady State: 0.5 A @ 60V DC; 1.0 A @ 30V DC.

(B) Peak: 3 A @ 30V DC.

2. RECTIFIER

Refer to the Rectifier Instructions (UM1R482000e).

3. CONTROLLER

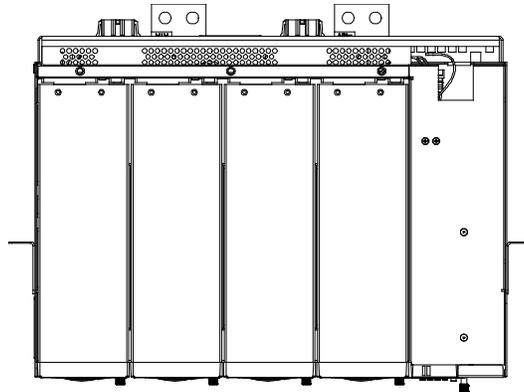
Refer to the Controller Instructions (UM1M521BNA or UM1M820BNA or UM1M830BNA).

For controller factory settings, refer to the Controller Configuration Drawing (C-drawing).

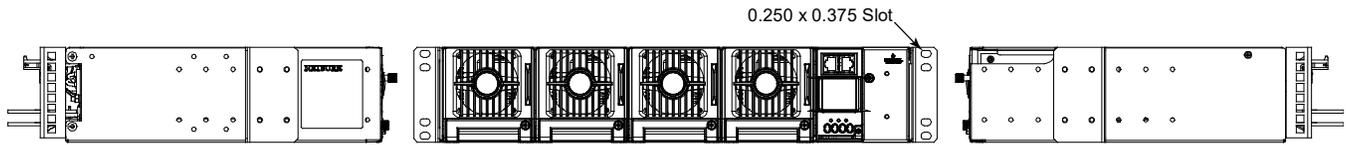
MECHANICAL SPECIFICATIONS

Overall Dimensions – List 1, List 2

(Rectifiers Ordered Separately)



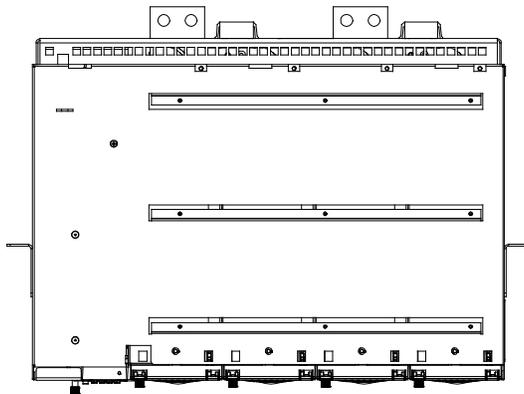
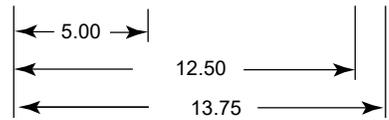
Top View



Left Side View

Front View

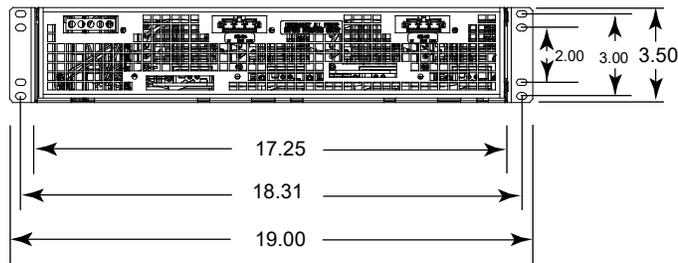
Right Side View



Bottom View

Notes:

1. All dimensions are in inches, unless otherwise specified.
2. Finish: Galvanized steel with light gray paint on front face.
3. Weight (without rectifiers):
 List 1 - 12.21 lbs
 List 2 - 10.21 lbs



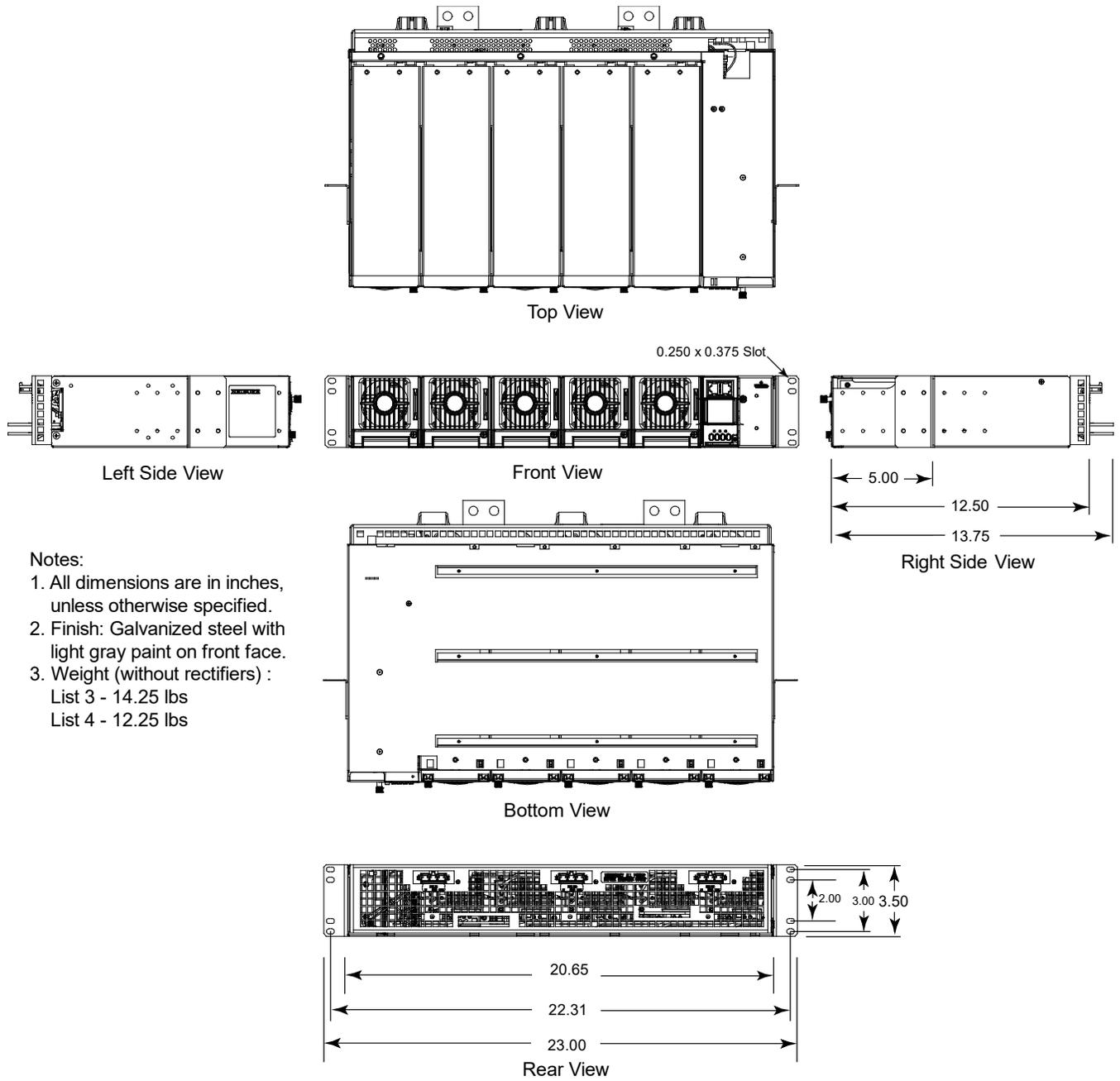
Rear View

Vertiv™ NetSure™ 502NGFB DC Power System

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Overall Dimensions – List 3, List 4

(Rectifiers Ordered Separately)



Notes:

1. All dimensions are in inches, unless otherwise specified.
2. Finish: Galvanized steel with light gray paint on front face.
3. Weight (without rectifiers) :
List 3 - 14.25 lbs
List 4 - 12.25 lbs

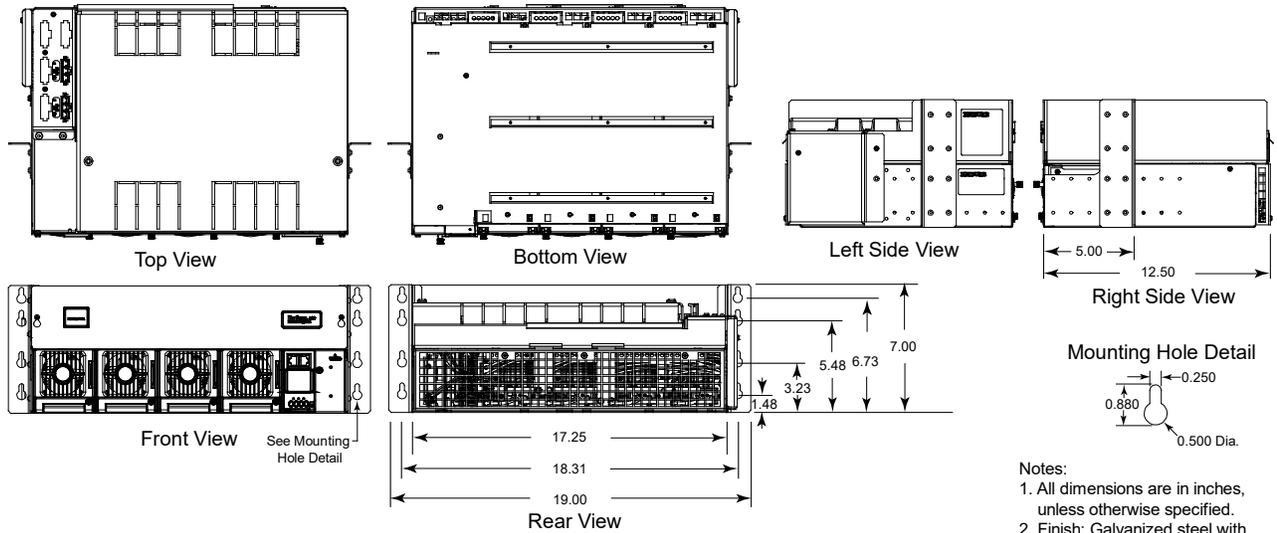
Vertiv™ NetSure™ 502NGFB DC Power System

System Application Guide

Overall Dimensions – List 5, List 6

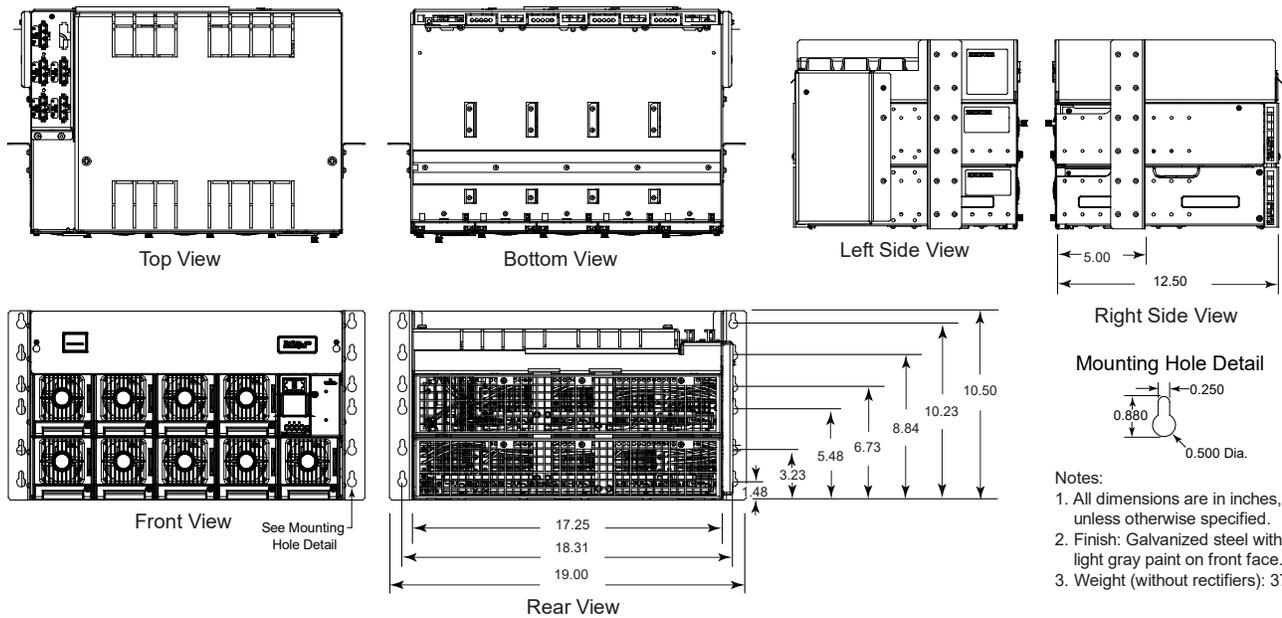
(Rectifiers Ordered Separately)

List 5



- Notes:
1. All dimensions are in inches, unless otherwise specified.
 2. Finish: Galvanized steel with light gray paint on front face.
 3. Weight (without rectifiers): 27.00 lbs

List 6



- Notes:
1. All dimensions are in inches, unless otherwise specified.
 2. Finish: Galvanized steel with light gray paint on front face.
 3. Weight (without rectifiers): 37.00 lbs

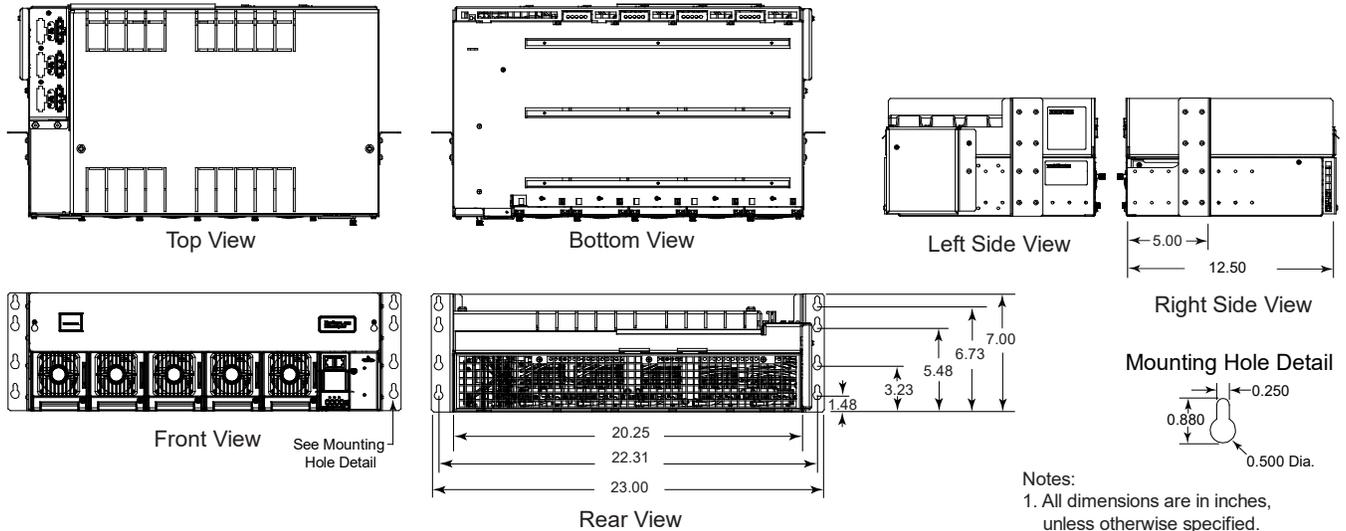
Vertiv™ NetSure™ 502NGFB DC Power System

System Application Guide

Overall Dimensions – List 7, List 8

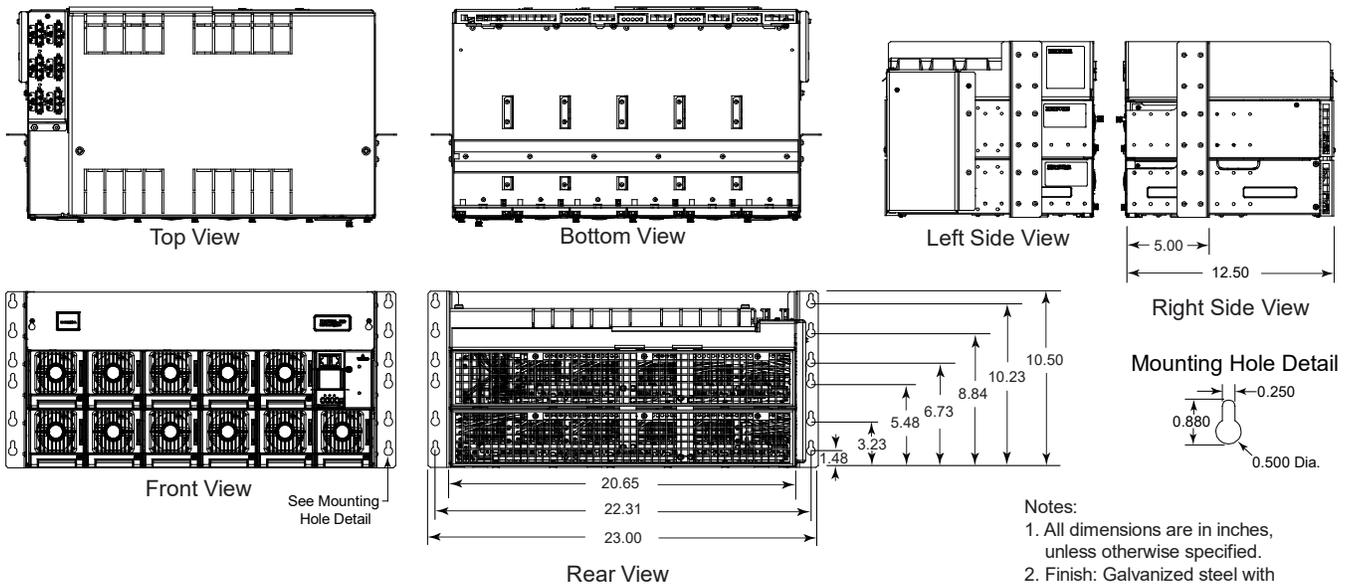
(Rectifiers Ordered Separately)

List 7



- Notes:
1. All dimensions are in inches, unless otherwise specified.
 2. Finish: Galvanized steel with light gray paint on front face.
 3. Weight (without rectifiers): 30.00 lbs

List 8



- Notes:
1. All dimensions are in inches, unless otherwise specified.
 2. Finish: Galvanized steel with light gray paint on front face.
 3. Weight (without rectifiers): 42.25 lbs

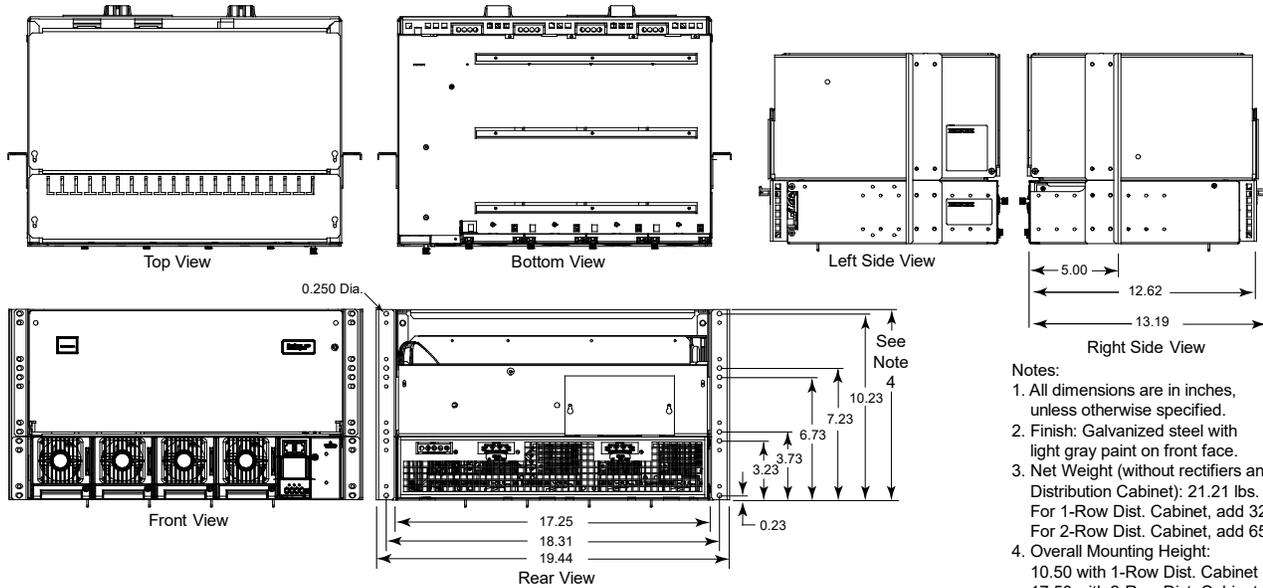
Vertiv™ NetSure™ 502NGFB DC Power System

System Application Guide

Overall Dimensions – List 10, List 11, with Distribution

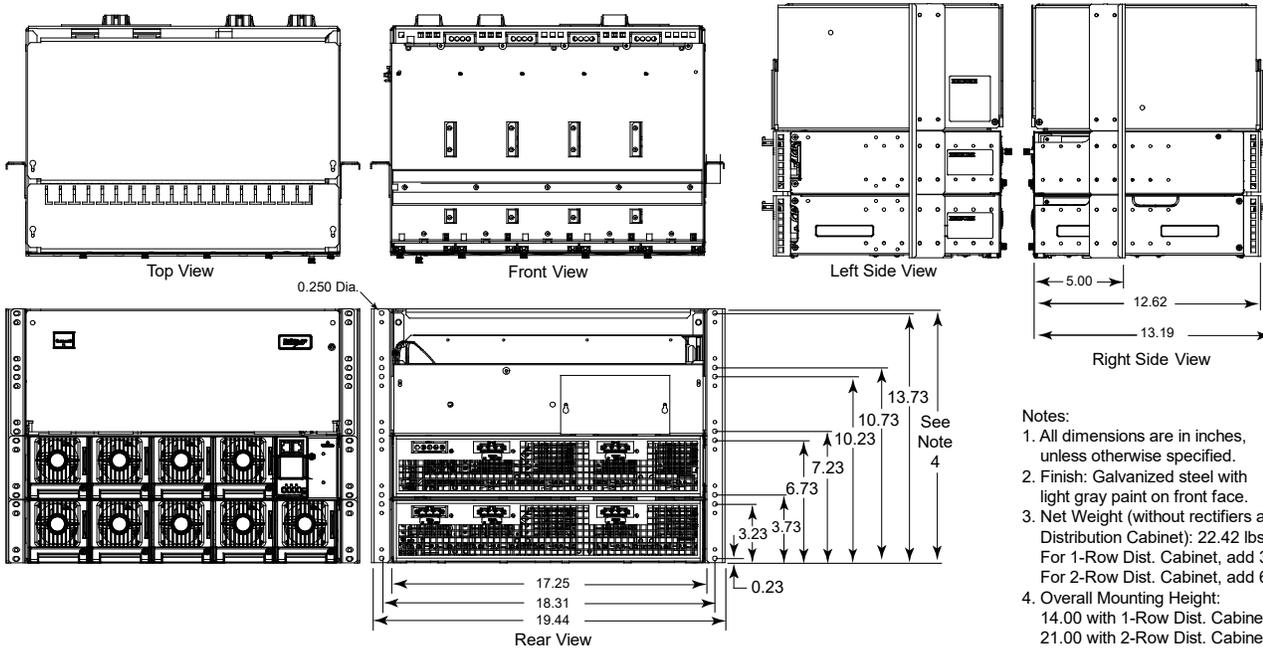
(Distribution Cabinet and Rectifiers Ordered Separately)

List 10



- Notes:
1. All dimensions are in inches, unless otherwise specified.
 2. Finish: Galvanized steel with light gray paint on front face.
 3. Net Weight (without rectifiers and Distribution Cabinet): 21.21 lbs.
For 1-Row Dist. Cabinet, add 32.75 lbs.
For 2-Row Dist. Cabinet, add 65.5 lbs.
 4. Overall Mounting Height:
10.50 with 1-Row Dist. Cabinet (shown).
17.50 with 2-Row Dist. Cabinet.

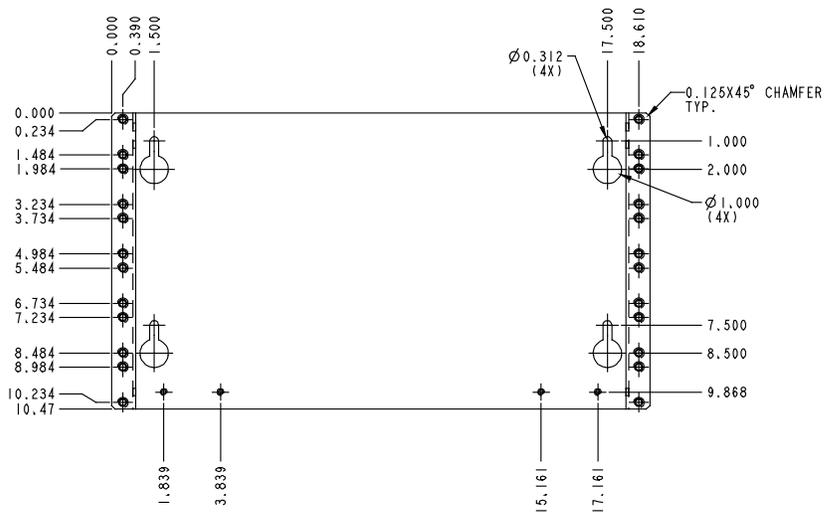
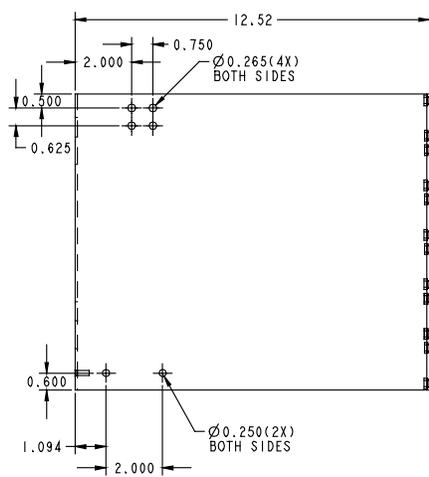
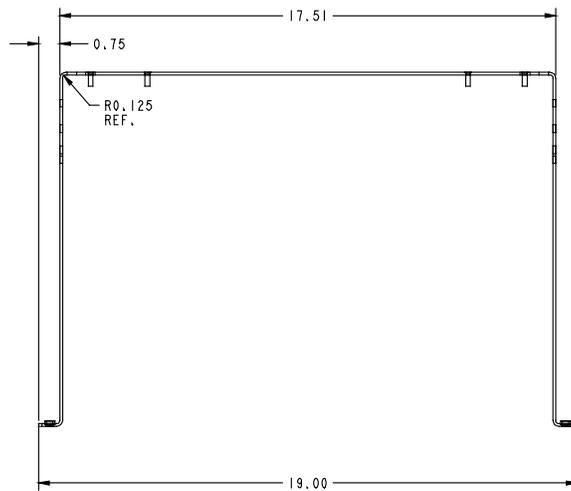
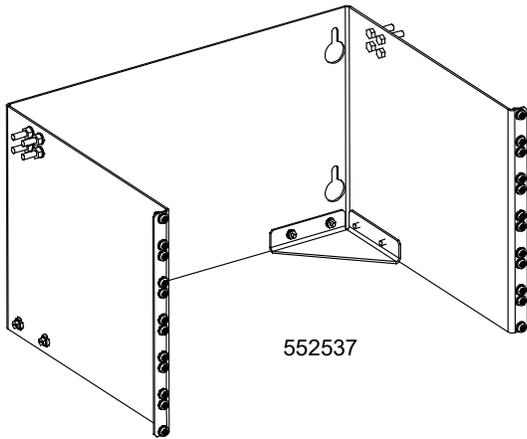
List 11



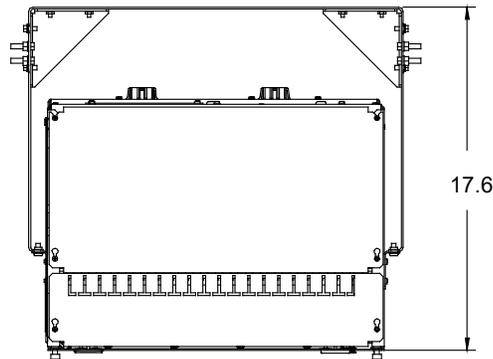
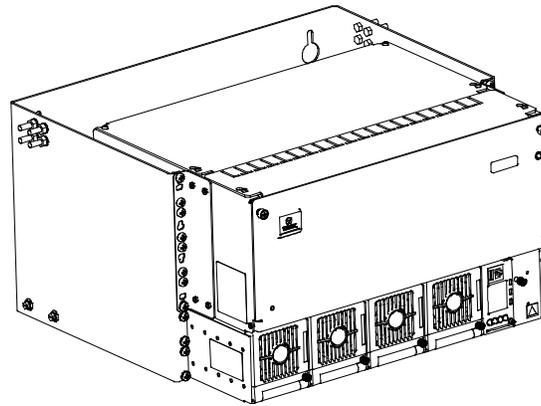
- Notes:
1. All dimensions are in inches, unless otherwise specified.
 2. Finish: Galvanized steel with light gray paint on front face.
 3. Net Weight (without rectifiers and Distribution Cabinet): 22.42 lbs.
For 1-Row Dist. Cabinet, add 32.75 lbs.
For 2-Row Dist. Cabinet, add 65.5 lbs.
 4. Overall Mounting Height:
14.00 with 1-Row Dist. Cabinet (shown).
21.00 with 2-Row Dist. Cabinet.

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 System Application Guide

Overall Dimensions - System with 19" 6RU Wall Mount Kit P/N 552537 (cont'd on next page)



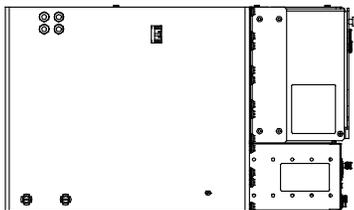
Overall Dimensions - System with 19" 6RU Wall Mount Kit P/N 552537 (cont'd from previous page)



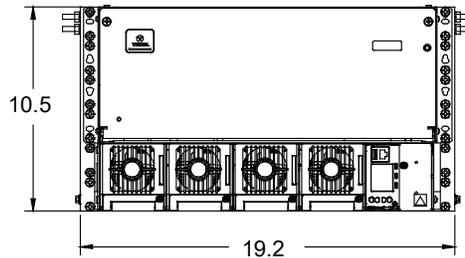
Top View

Notes:

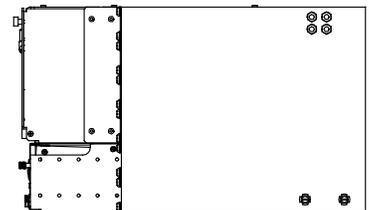
1. All dimensions are in inches, unless otherwise specified.



Left Side View

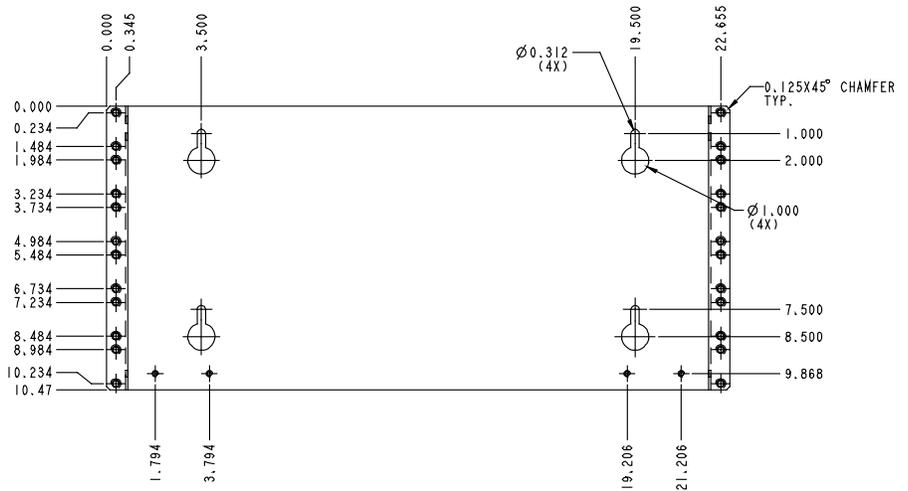
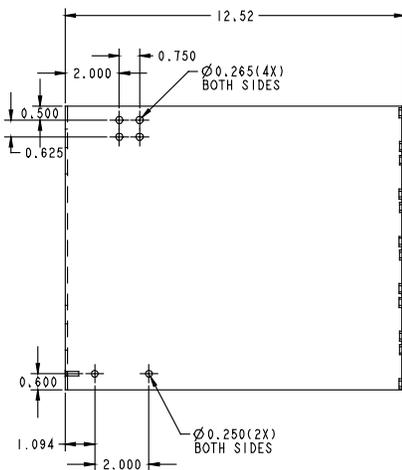
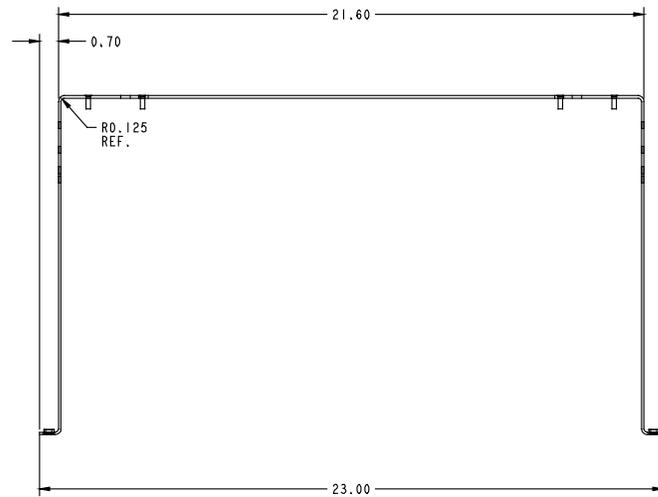
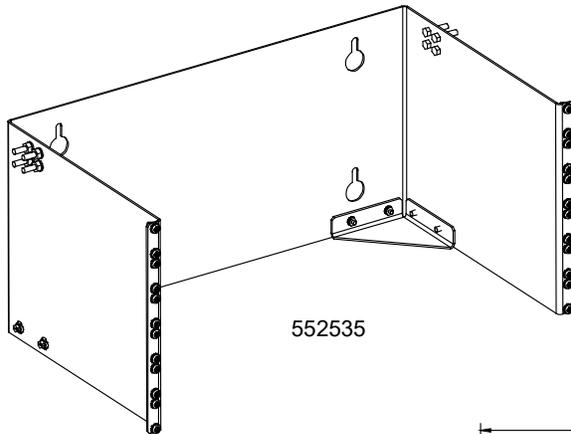


Front View

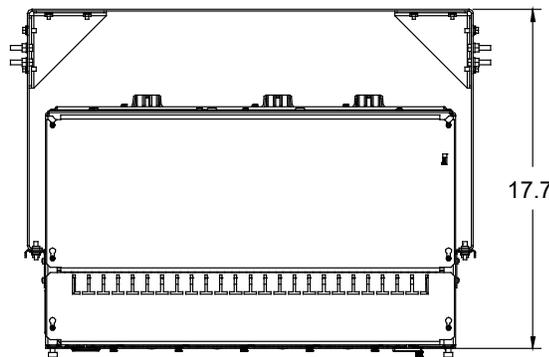
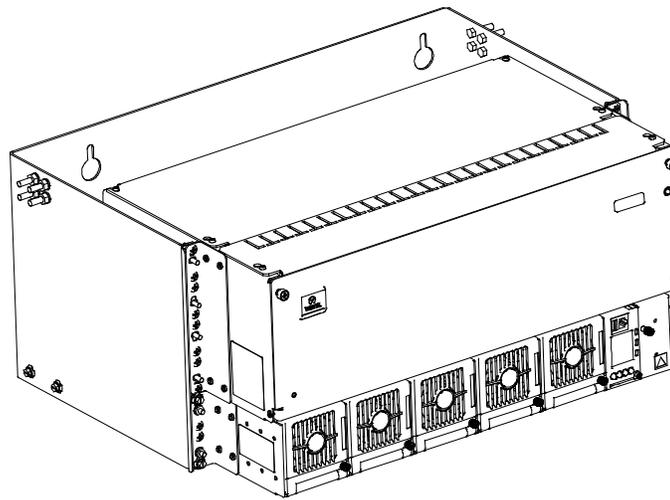


Right Side View

Overall Dimensions - System with 23" 6RU Wall Mount Kit P/N 552535 (cont'd on next page)



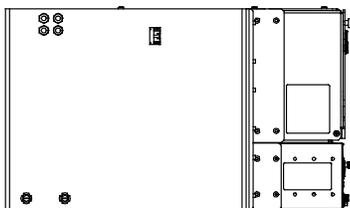
Overall Dimensions - System with 23" 6RU Wall Mount Kit P/N 552535 (cont'd from previous page)



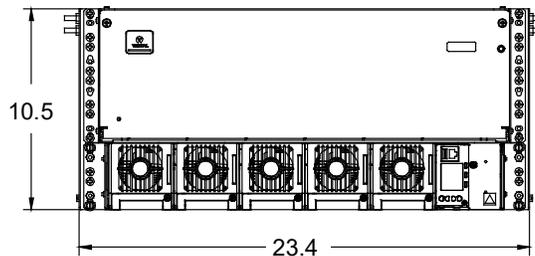
Top View

Notes:

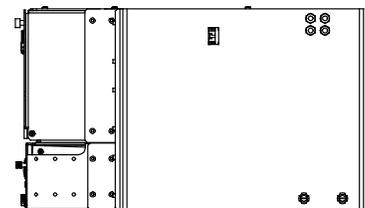
1. All dimensions are in inches, unless otherwise specified.



Left Side View



Front View



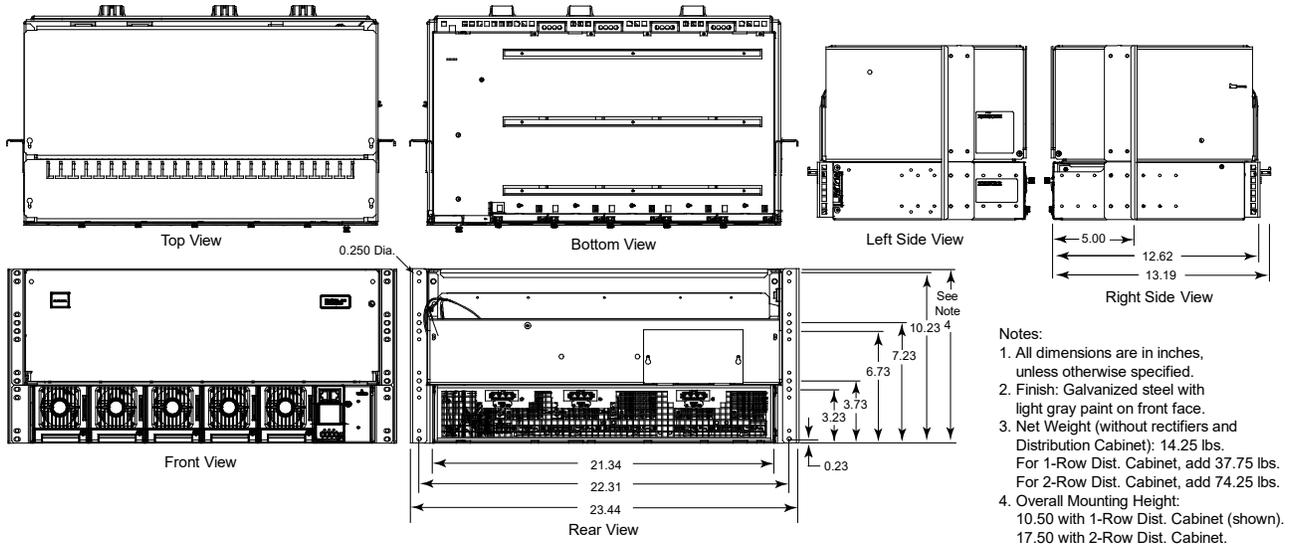
Right Side View

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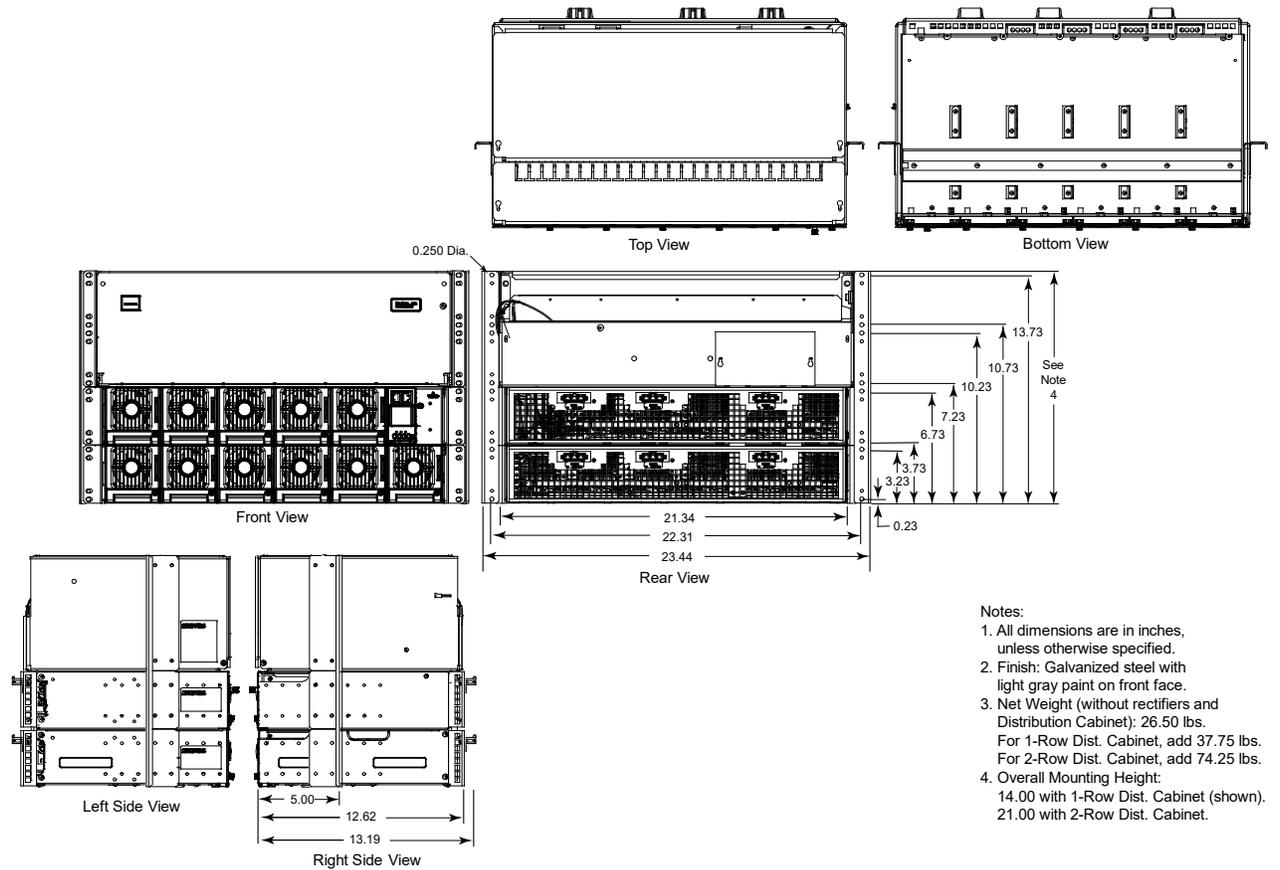
Overall Dimensions – List 12, List 13, with Distribution

(Distribution Cabinet and Rectifiers Ordered Separately)

List 12



List 13



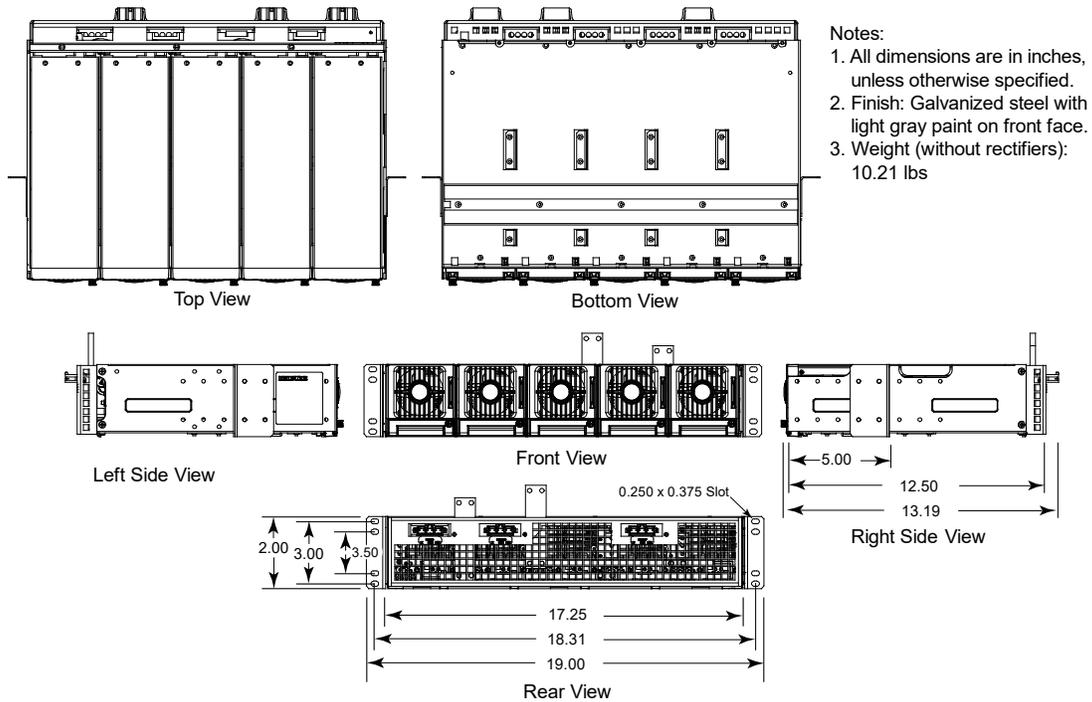
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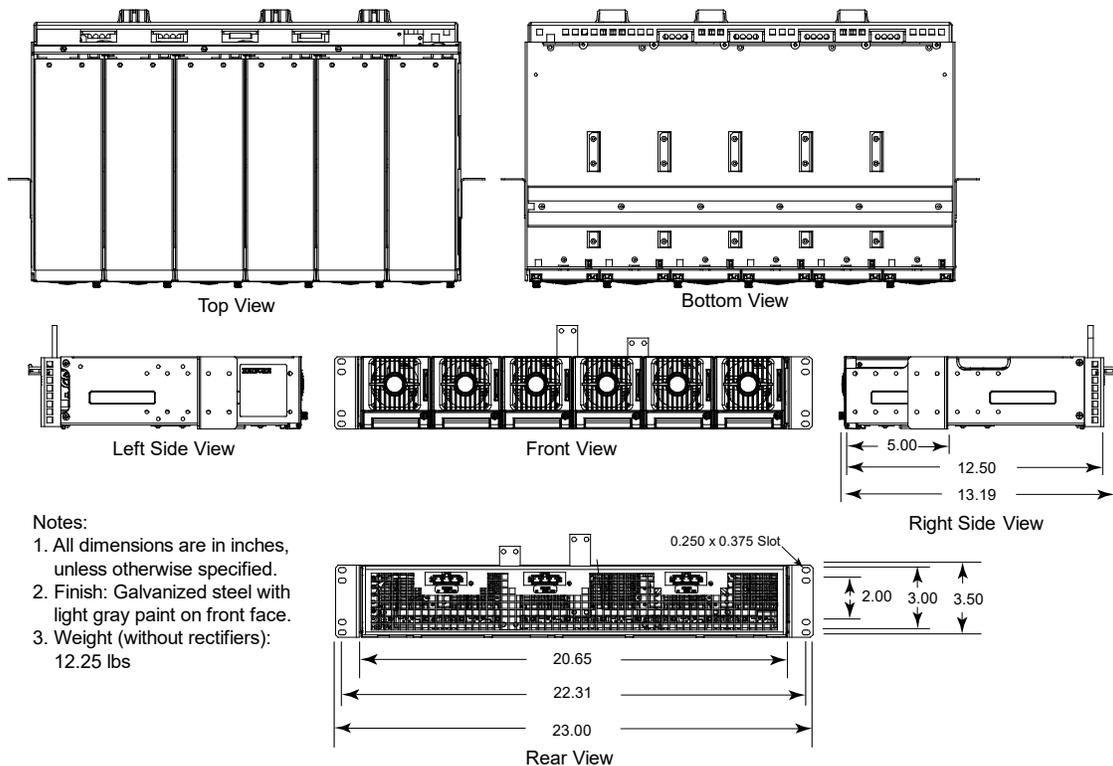
Overall Dimensions – List 14, List 15

(Rectifiers ordered separately)

List 14



List 15

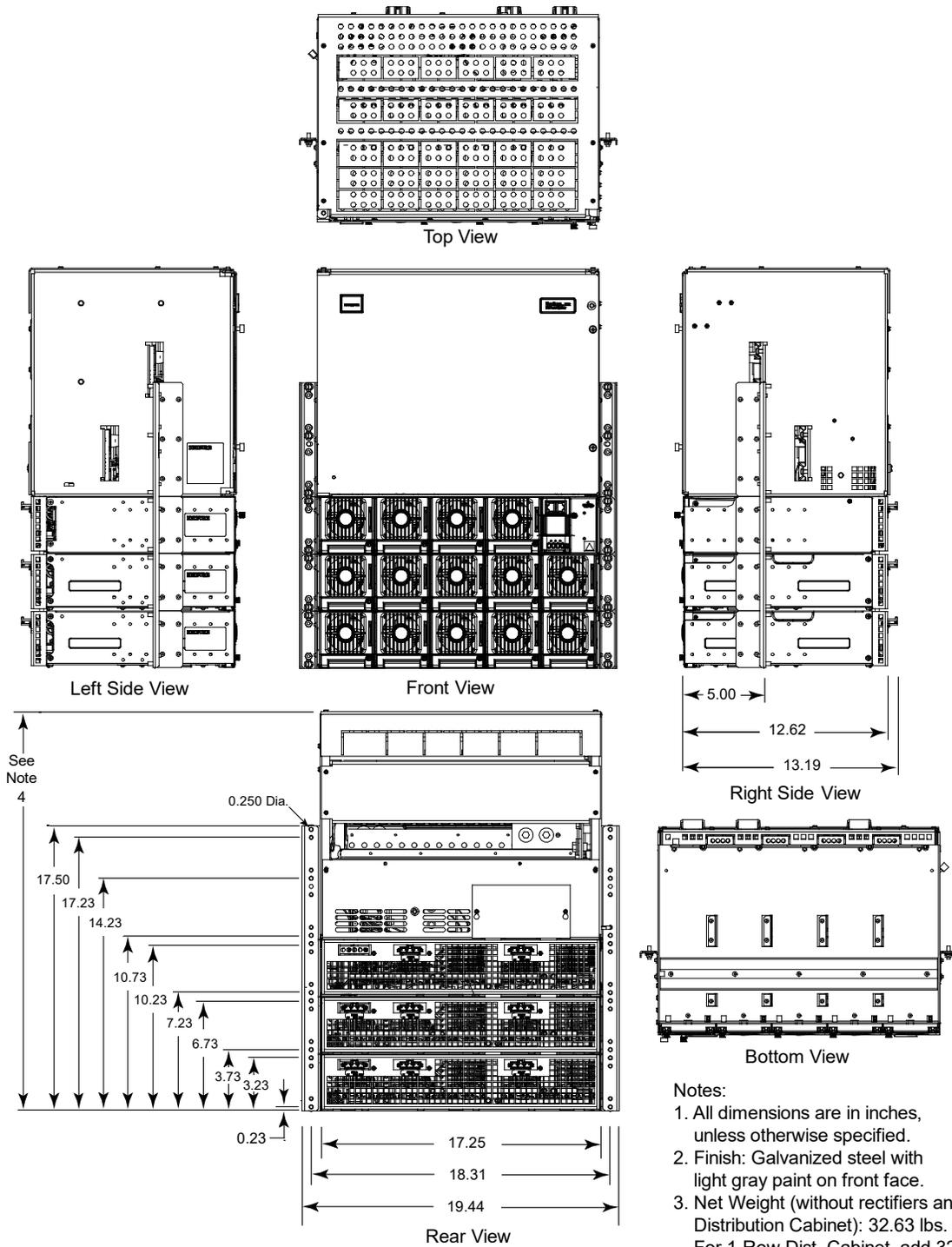


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Overall Dimensions – List 16 with Distribution

(Distribution Cabinet and Rectifiers Ordered Separately)



Notes:

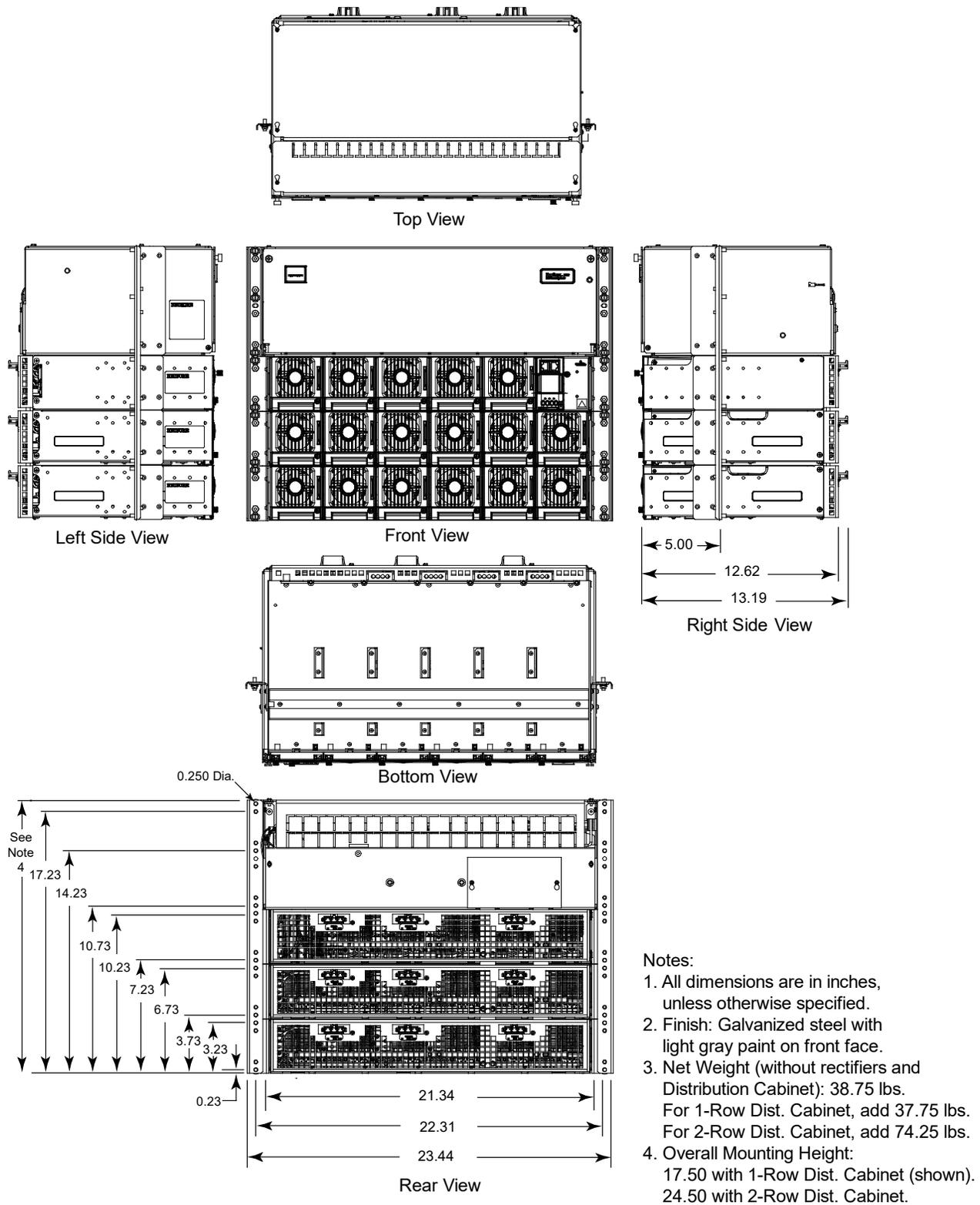
1. All dimensions are in inches, unless otherwise specified.
2. Finish: Galvanized steel with light gray paint on front face.
3. Net Weight (without rectifiers and Distribution Cabinet): 32.63 lbs.
For 1-Row Dist. Cabinet, add 32.75 lbs.
For 2-Row Dist. Cabinet, add 65.5 lbs.
4. Overall Mounting Height:
17.50 with 1-Row Dist. Cabinet.
24.50 with 2-Row Dist. Cabinet (shown).

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Overall Dimensions – List 17 with Distribution

(Distribution Cabinet and Rectifiers Ordered Separately)

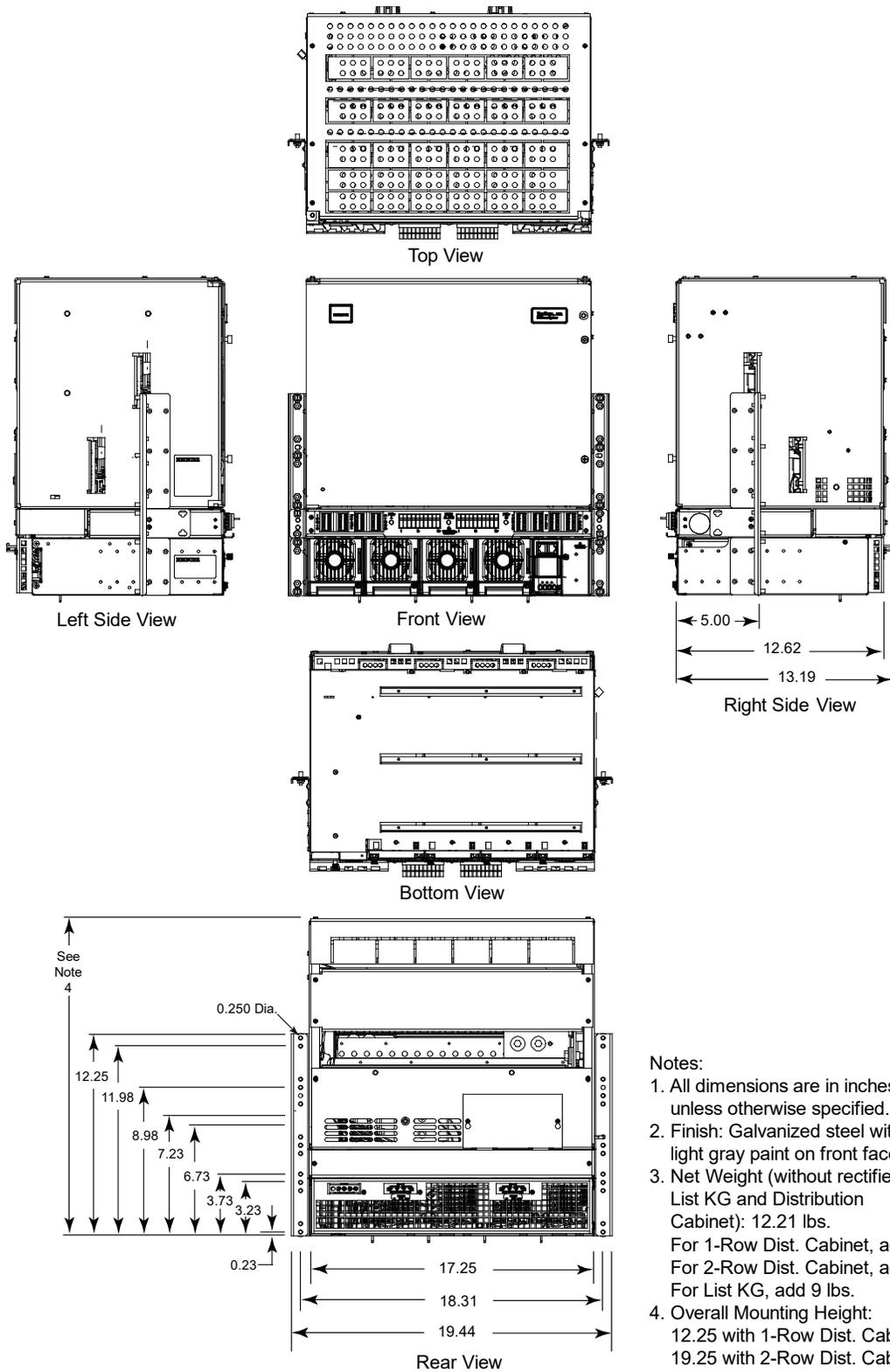


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Overall Dimensions – List 20 with Distribution

(Distribution Cabinet, List KG and Rectifiers Ordered Separately)



Notes:

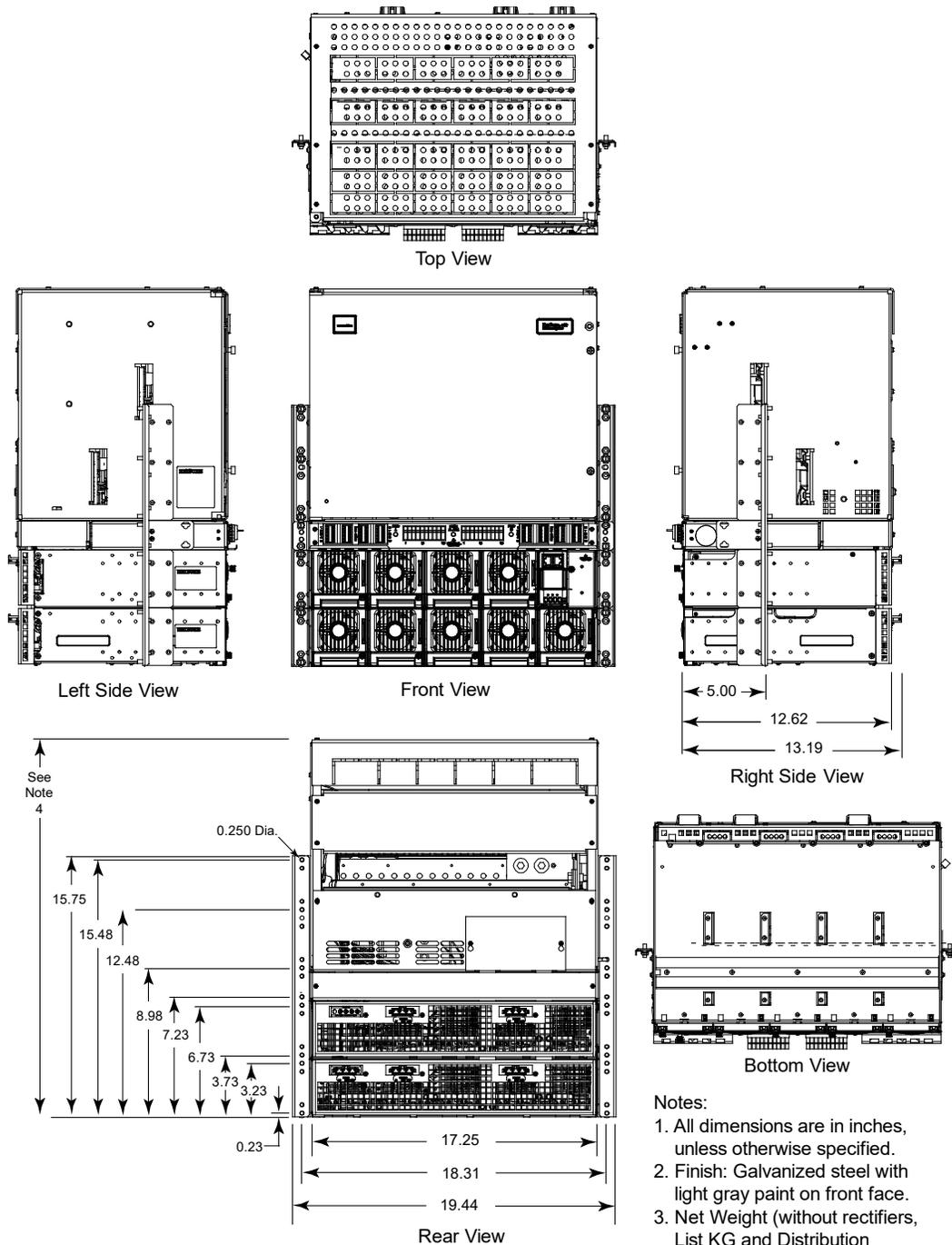
1. All dimensions are in inches, unless otherwise specified.
2. Finish: Galvanized steel with light gray paint on front face.
3. Net Weight (without rectifiers, List KG and Distribution Cabinet): 12.21 lbs.
For 1-Row Dist. Cabinet, add 32.75 lbs.
For 2-Row Dist. Cabinet, add 65.5 lbs.
For List KG, add 9 lbs.
4. Overall Mounting Height:
12.25 with 1-Row Dist. Cabinet.
19.25 with 2-Row Dist. Cabinet (shown).

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System Application Guide

Overall Dimensions – List 21 with Distribution

(Distribution Cabinet, List KG and Rectifiers Ordered Separately)



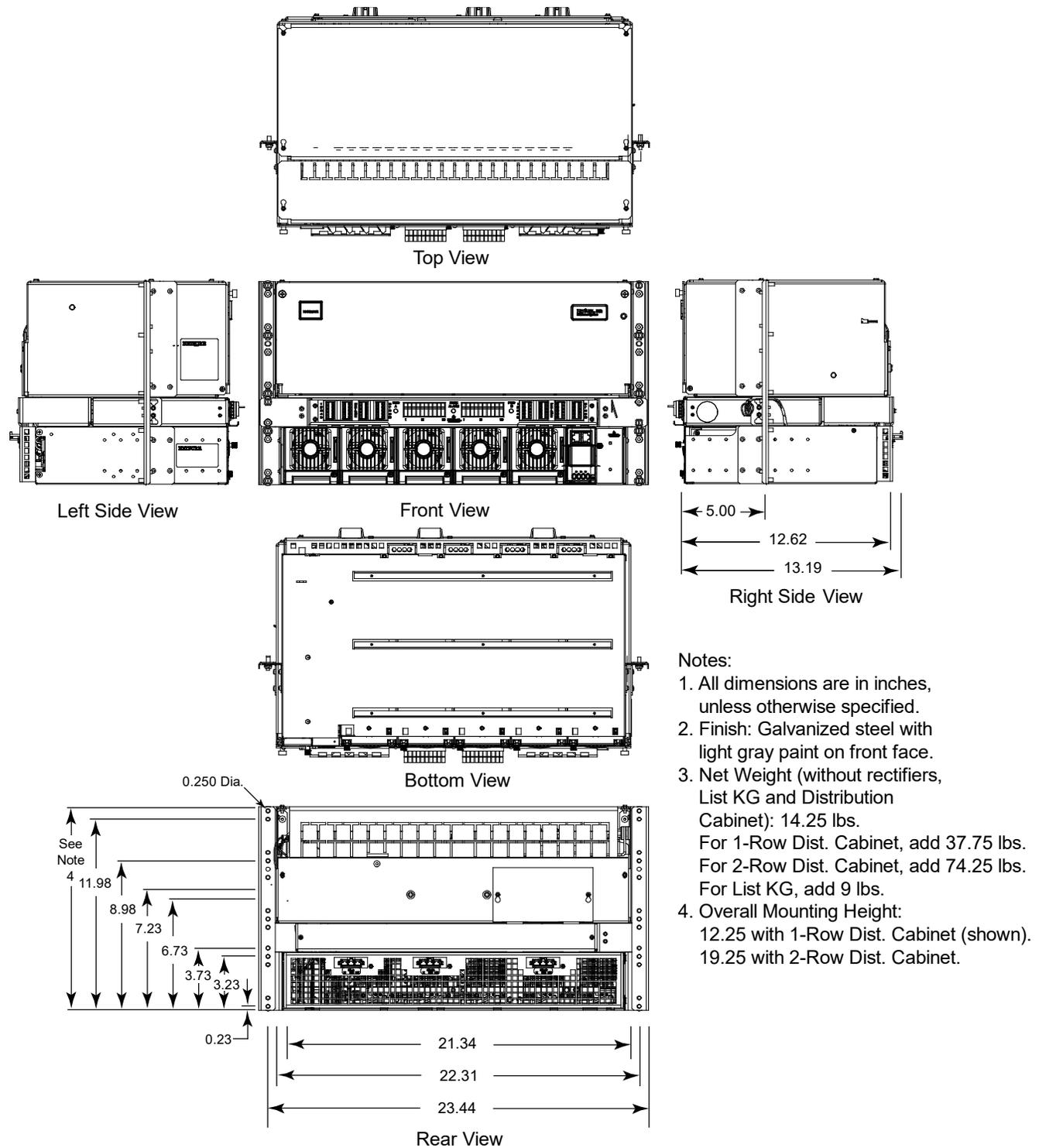
- Notes:
1. All dimensions are in inches, unless otherwise specified.
 2. Finish: Galvanized steel with light gray paint on front face.
 3. Net Weight (without rectifiers, List KG and Distribution Cabinet): 22.42 lbs.
For 1-Row Dist. Cabinet, add 32.75 lbs.
For 2-Row Dist. Cabinet, add 65.5 lbs.
For List KG, add 9 lbs.
 4. Overall Mounting Height:
15.75 with 1-Row Dist. Cabinet.
22.75 with 2-Row Dist. Cabinet (shown).

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Overall Dimensions – List 22 with Distribution

(Distribution Cabinet, List KG and Rectifiers Ordered Separately)

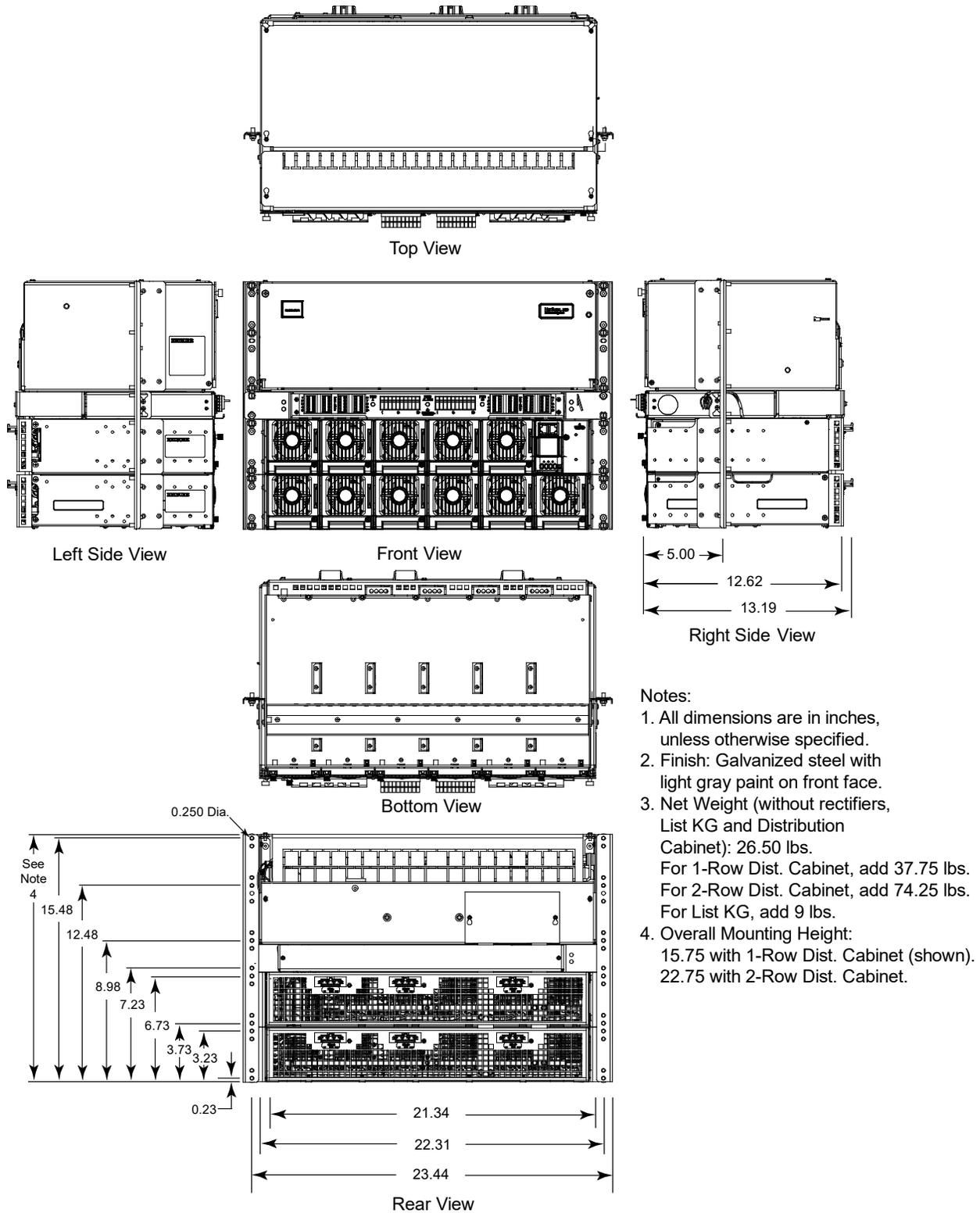


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System Application Guide

Overall Dimensions – List 23 with Distribution

(Distribution Cabinet, List KG and Rectifiers Ordered Separately)

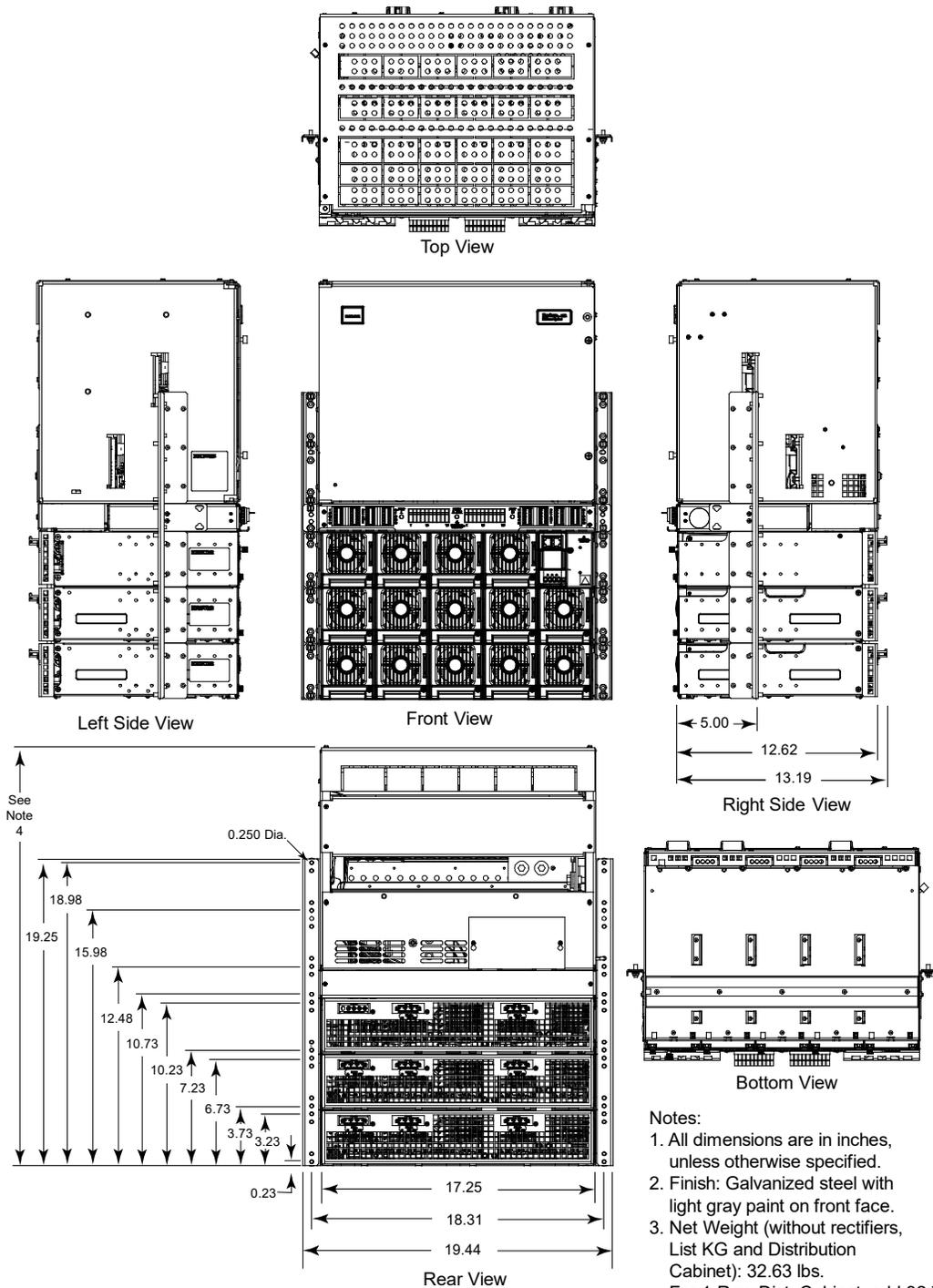


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System Application Guide

Overall Dimensions – List 26 with Distribution

(Distribution Cabinet, List KG and Rectifiers Ordered Separately)



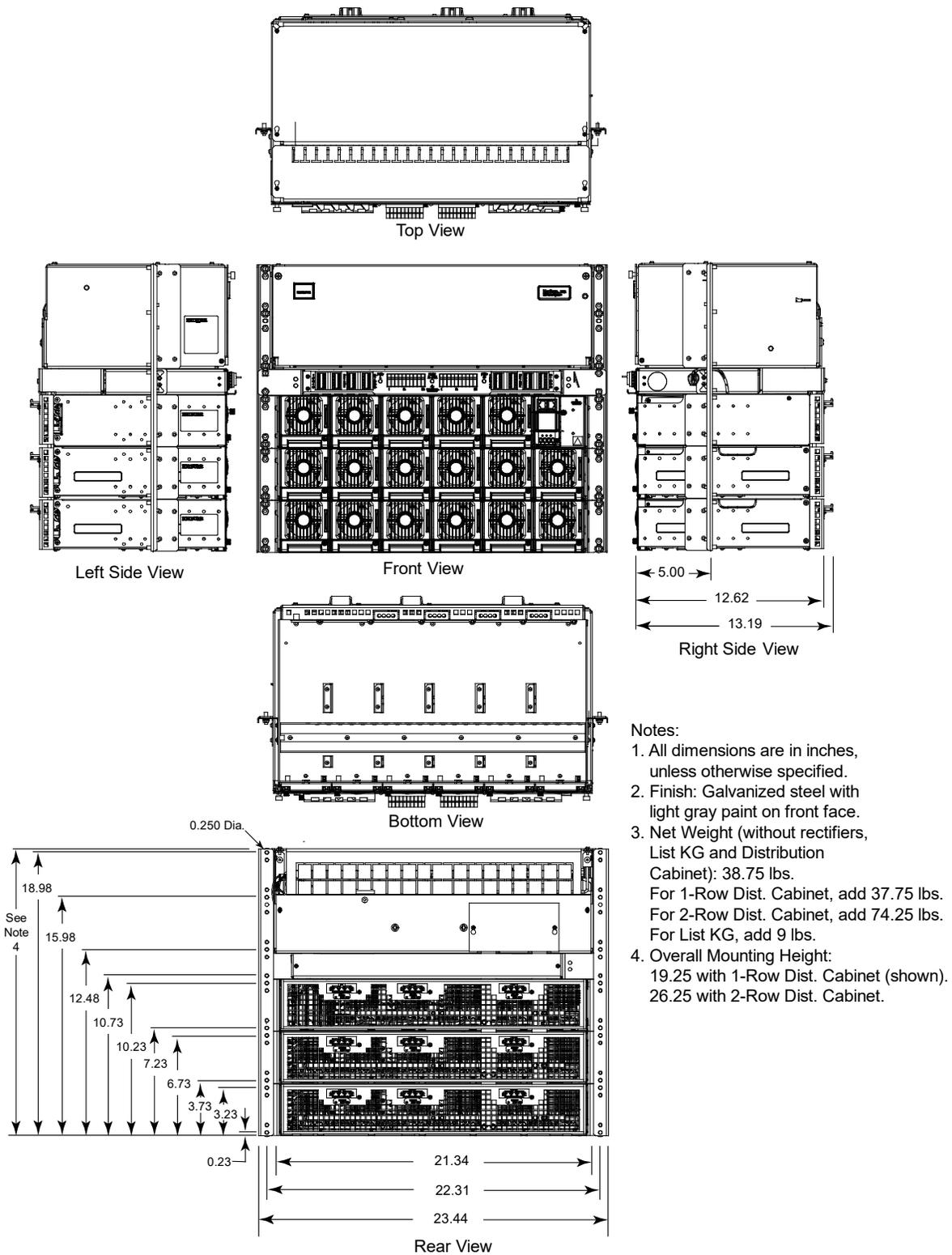
- Notes:
1. All dimensions are in inches, unless otherwise specified.
 2. Finish: Galvanized steel with light gray paint on front face.
 3. Net Weight (without rectifiers, List KG and Distribution Cabinet): 32.63 lbs.
For 1-Row Dist. Cabinet, add 32.75 lbs.
For 2-Row Dist. Cabinet, add 65.5 lbs.
For List KG, add 9 lbs.
 4. Overall Mounting Height:
19.25 with 1-Row Dist. Cabinet.
26.25 with 2-Row Dist. Cabinet (shown).

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Overall Dimensions – List 27 with Distribution

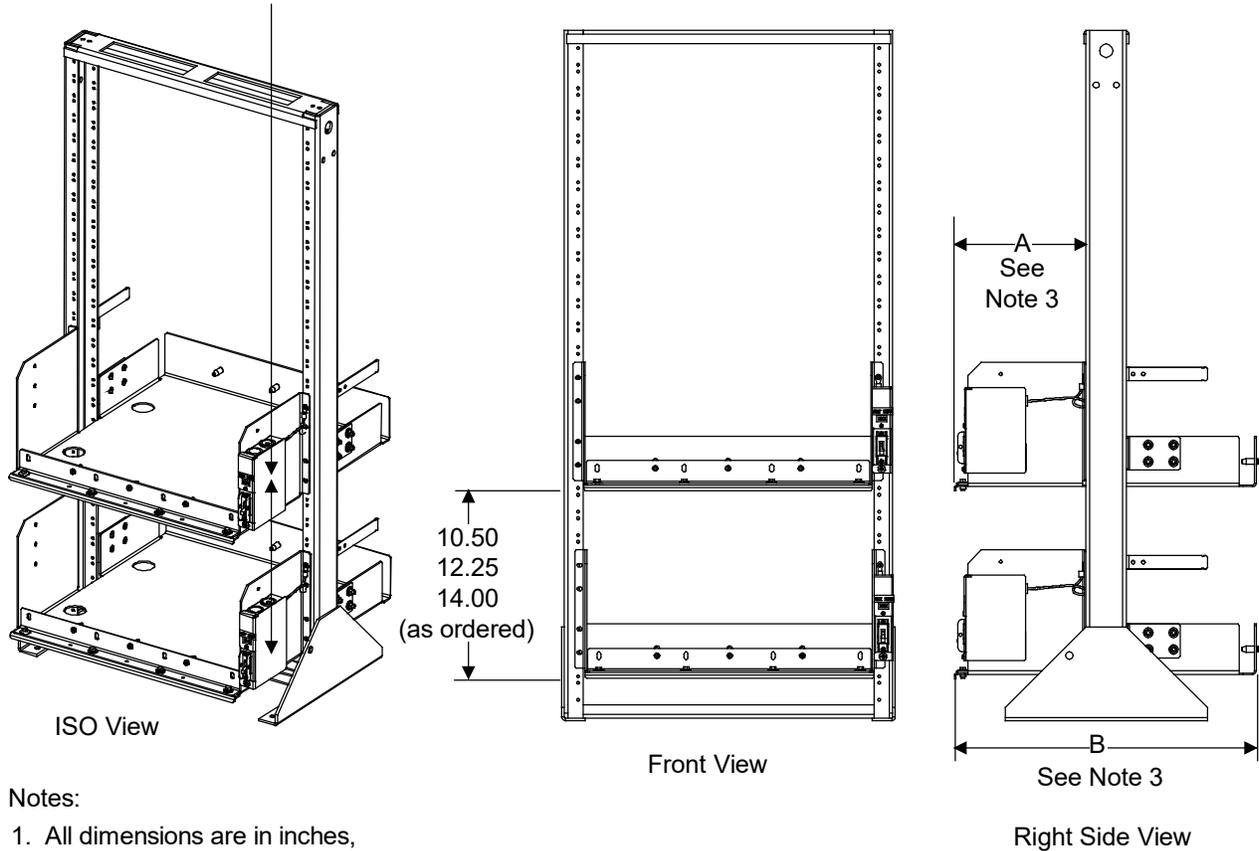
(Distribution Cabinet, List KG and Rectifiers Ordered Separately)



- Notes:
1. All dimensions are in inches, unless otherwise specified.
 2. Finish: Galvanized steel with light gray paint on front face.
 3. Net Weight (without rectifiers, List KG and Distribution Cabinet): 38.75 lbs.
For 1-Row Dist. Cabinet, add 37.75 lbs.
For 2-Row Dist. Cabinet, add 74.25 lbs.
For List KG, add 9 lbs.
 4. Overall Mounting Height:
19.25 with 1-Row Dist. Cabinet (shown).
26.25 with 2-Row Dist. Cabinet.

Overall Dimensions – List 93 (23” Battery Tray)

Optional Battery Disconnect Circuit Breakers
(Shown on Right Side, Available on Either Side)



Notes:

1. All dimensions are in inches, unless otherwise specified.
2. P/N 559806 tray shown. P/N 559807 and 559808 similar.

3.

Tray P/N	Dimension A	Dimension B
559806	9.781	22.44
559807	6.90	12.50
559808	10.48	23.14
561972	9.781	22.44

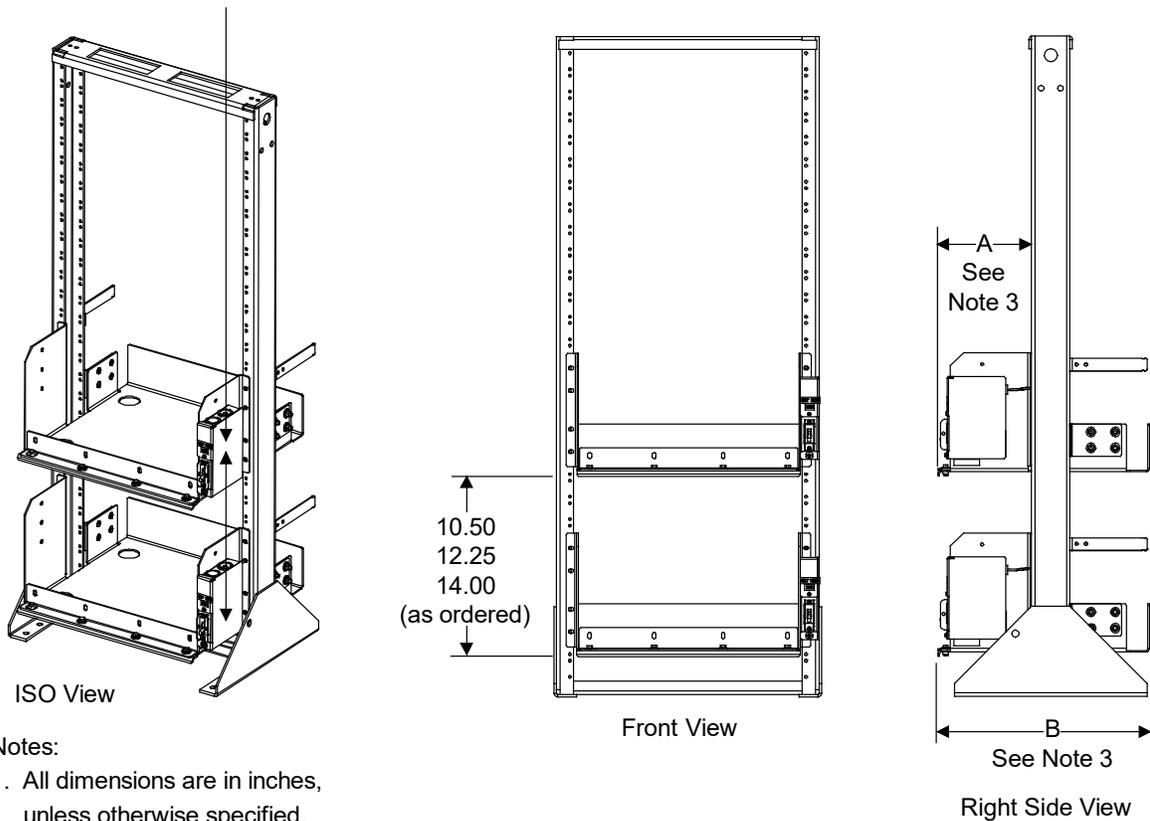
4. Weight in LBS.
(per tray, less batteries).

Part No.	With Circuit Breaker Option	Without Circuit Breaker Option
559806	33 lbs	29 lbs
559807	20 lbs	18 lbs
559808	25 lbs	23 lbs
561972	33 lbs	29 lbs

5. Finish: Gray
6. Maximum trays available per rack is three (3).

Overall Dimensions – List 94 (19” Battery Tray)

Optional Battery Disconnect Circuit Breakers
(Shown on Right Side, Available on Either Side)



Notes:

1. All dimensions are in inches, unless otherwise specified.
2. P/N 559809 tray shown. P/Ns 559810, 559811, and 559812 similar.

3.

Tray P/Ns	Dimension A	Dimension B
559809	7.78	17.60
559810	7.03	20.95
559811	6.90	12.50
559812	7.28	22.35
561974	7.03	20.95

4. Weight in LBS.
(per tray, less batteries).

Tray P/Ns	With Circuit Breaker Option	Without Circuit Breaker Option
559809	25.0 lbs	23.0 lbs
559810	25.3 lbs	23.3 lbs
559811	18.5 lbs	16.5 lbs
559812	26.0 lbs	24.0 lbs
561974	25.3 lbs	23.3 lbs

5. Finish: Gray
6. Maximum trays available per rack is three (3).

BATTERY MANUFACTURER INFORMATION

Some equipment described in this System Application Guide is designed to accommodate batteries from various manufacturers. The following are referenced in this document.

C&D: C&D Technologies, Inc., Powercom Div., 1400 Union Meeting Road, Blue Bell, PA 19422-0858

Deka: East Penn Mfg. Co., Inc., Lyon Station, PA 19536-0147

Douglas: Douglas Battery Mfg. Co., 500 Battery Dr., Winston-Salem, NC 27117-2159

Northstar: NorthStar Battery Co. LLC, 4000 Continental Way, Springfield, MO 65803

PowerSafe EnerSys™: EnerSys Inc., Reading, PA, 196212-4145

RELATED DOCUMENTATION

Installation Instructions:	Section 6025
User Instructions:	Section 6026
Rectifier User Instructions:	UM1R482000e
NCU Controller User Instructions:	UM1M830BNA
ACU+ Controller User Instructions:	UM1M820BNA
SCU+ Controller User Instructions:	UM1M521BNA
SM TEMP Installation and User Instructions:	UM547490

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