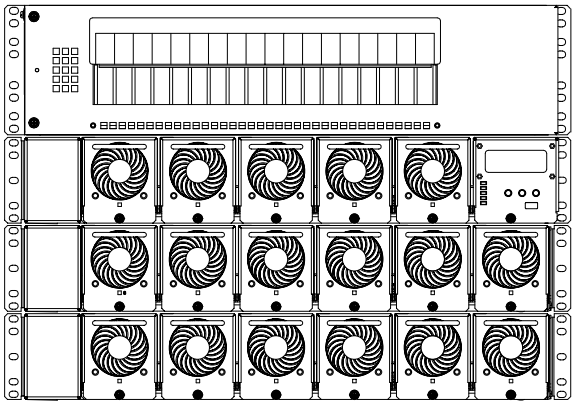
SYSTEM OVERVIEW



Description: -48VDC power system @ up to 555 Amperes, 25000 Watts max.

The Model LXP48F1 is a complete Power System containing power conversion, intelligent monitoring and control, and distribution. An LXP Power System typically consists of...

- **Distribution Cabinets**

  The system always includes a minimum of one Distribution Cabinet, which provides DC distribution through fuses and/or circuit breakers.

  A variety of distribution options are available that provide combinations of load distribution, and Low Voltage Load or Battery Disconnect. Each Distribution Cabinet accepts Bullet Nose-type circuit breakers and TPS/TLS-type fuse holders.

- **Power Shelf**

  The system can include from one to three front access Power Shelves. The Main Power Shelf houses the MCA and up to five (5) PCUs. Expansion Power Shelves each house up to six (6) PCUs.

- **MCA**

  Located in the Main Power Shelf, the Meter-Control-Alarm assembly (MCA) controls the operation of all PCUs (17 max.) and provides system metering, control, and alarm functions. The MCA features a Web Interface for comprehensive remote monitoring and control capability.

- **PCUs**

  Housed in the Power Shelves, the Power Conversion Units (PCUs) provide load power, battery float current, and battery recharge current during normal operating conditions.

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Family:	LXP
Spec. No.:	582135000
Model:	LXP48F1
Output Voltage:	-48 Volts DC System
Output Capacity:	
System (Three Power Shelves):	555 Amperes, 25500 Watts max. (208/240V) 277.5 Amperes, 12750 Watts max. (120V)
Main Power Shelf:	163 Amperes, 7500 Watts max. (208/240V) 81.5 Amperes, 3750 Watts max. (120V)
Expansion Power Shelf:	196 Amperes, 9000 Watts max. (208/240V) 98 Amperes, 4500 Watts max. (120V)
PCU:	25A @ -58.0VDC to 32.6A @ -46VDC, 1500 Watts max. (208/240V) 12.5 @ -58.0VDC to 16.3A @ -46VDC, 750 Watts max. (120V)
Distribution Cabinet:	Varies. See individual List Number.
Agency Approval:	UL 1801 Listed (“c UL”)
Framework Type:	Cabinets Designed for Relay Rack Mounting
Mounting Width:	23”
Mounting Depth:	12”
Front Projection:	5”
Access:	Front and sides for installation; front for operation and maintenance
Control:	Microprocessor
Color:	Textured Cool Gray (M500-146)
Accessories:	Circuit Breakers, Fuses, GMT-Type Fuse Distribution Assembly, Lugs, Relay Racks, Load Shed Card
Environment:	+65°C (+149°F)

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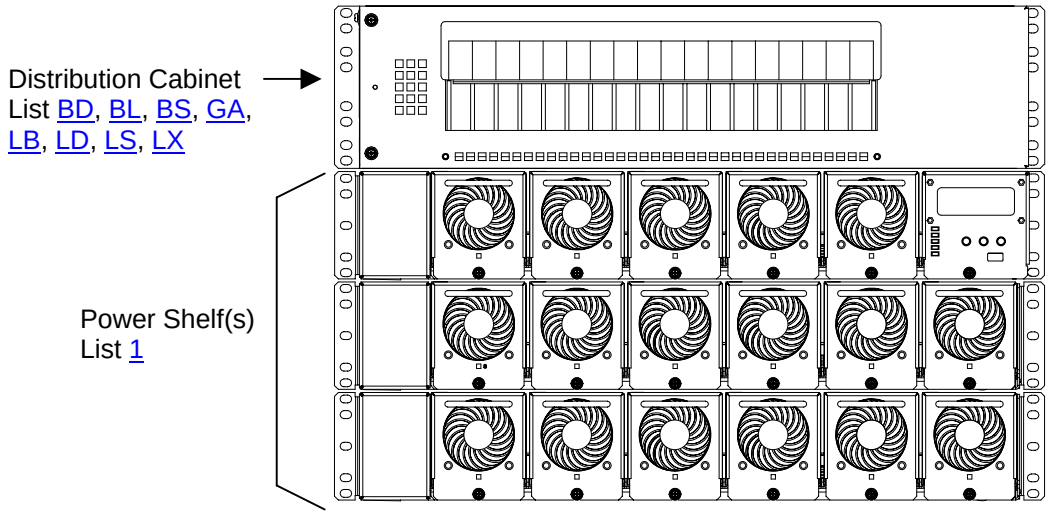
582135000



SEE ALSO

System Overview
Table of Contents
List Structure Table
Distribution Devices
Lugs
Relay Rack Options
Replacement Cables
List of Parts
Specifications
Dimensional Drawings
Related Documentation

OTHER OPTIONS and ACCESSORIES

List 61: 1U Wireway
List 62: 2 U Wireway
List 93: Battery Tray
Load Shed Card

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TABLE OF CONTENTS

System Overview | Picture | List Information | Accessory Information | List of Parts | Specifications | Physical Size Information | Related Documentation

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LIST INFORMATION

(If viewed electronically, more detailed information is available for each option by clicking on the desired number in the column entitled *List No.* in the table below.)

Main List Numbers

List No.	Part Number	Description	Mounting Positions (1U = 1-3/4")	Notes
1	58213500001	Model LXP9000SHF Integrated Power System	2 per shelf, 6 max.	1, 2
61	58213500061	Wireway, 19" x 1-3/4"	1	--
62	58213500062	Wireway, 19" x 3-1/2"	2	--
93	58213500093	Battery Tray, Pre-cabled	As Requested	--

Notes:

1) Order all List 1 components (Power Shelves, PCUs and MCA per System Application Guide SAG589200100.

2) Separately order relay racks as required. See Relay Rack Options for available relay racks.

Distribution List Numbers

List No.	Part Number	Description	Mounting Positions (1U = 1-3/4")	Single or Dual Voltage	Low Voltage Discon-nect	Shunts
BD	582135000BD	Distribution Cabinet: (18) Bullet Nose Positions	3	Single	Battery	Battery
BL	582135000BL	Distribution Cabinet: (18) Bullet Nose Positions	3	Single	Battery	Battery & Load
BS	582135000BS	Distribution Cabinet: (18) Bullet Nose Positions	3	Single	None	Battery
GA	582135000GA	Distribution Cabinet: (20) GMT Fuse Positions, Split Bus	1	Single	None	None
LB	582135000LB	Distribution Cabinet: (18) Bullet Nose Positions	3	Single	Load	Battery & Load
LD	582135000LD	Distribution Cabinet: (18) Bullet Nose Positions	3	Single	Load	Load
LS	582135000LS	Distribution Cabinet: (18) Bullet Nose Positions	3	Single	None	Load
LX	582135000LX	Distribution Cabinet: (18) Bullet Nose Positions	3	Single	None	Battery & Load

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List Descriptions

List 1: Model LXP9000SHF Integrated Power System List of Parts

Features

- Complete LXP Integrated Power System platform, provides Main Power Shelf, MCA, up to two Expansion Power Shelves, and up to 17 PCUs.
- For more information, refer to System Application Guide SAG589200100.

Restrictions

- List 20 of 589200100 (Bulk Termination Panel) cannot be used when system is ordered with any of the available distribution options (List BD, BL, BS, GA, LB, LD, LS, LX).

Ordering Notes

1) Order Power Shelves, PCUs and MCA, per SAG589200100.
2) If required, order relay rack per Table 6.
3) Order Distribution Cabinets, as required, per Distribution List Numbers table.
4) Order load distribution fuses and/or circuit breakers, as required, per Tables 1, 2 and 3.
5) Order load distribution lugs, as required, per Table 4.
6) Order battery lugs, as required, per Table 5.

List 61: 1U Wireway List of Parts

Features

- Designed to mount immediately above any 3U-high LXP Distribution Cabinet—provides protection for load, battery, alarm and control cabling routed from top of Distribution Cabinet to rear of system.
- See Wireway Dimensions—List 61 and 62 under Physical Size Information.

List 62: 2U Wireway List of Parts

Features

- Designed to mount immediately above any 3U-high LXP Distribution Cabinet—provides protection for load, battery, alarm and control cabling routed from top of Distribution Cabinet to rear of system.
- See Wireway Dimensions—List 61 and 62 under Physical Size Information.

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List 93: Battery Tray, Pre-cabled

List of Parts

Features

- Provides one battery tray that mounts four (4) 12V front terminal VLRA batteries. Batteries are configured as one (1) 48V string. Battery cabling is factory-connected to Power System main bus.
- Accepts various Valve Regulated Lead Acid (VLRA) batteries. See **Ordering Notes** below.
- Tray dimensions are 21.3" wide X 22.4" deep. See Dimensions of System Configured with List 93 Battery Trays under Physical Size Information for a typical battery tray arrangement.
- 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 circuit breakers per tray).

Ordering Notes

1) Order multiples of List 93 for more than one (1) battery tray. See **Restrictions** below.

2) Order batteries separately. The following table lists batteries recommended for use with List 93.

Manufacturer*	Model	Emerson Network Power Part No.	Rated 8-Hr. Capacity (Ah)	Dimension W x L x H (Inches)	Required Tray Spacing	Weight (lbs)
GNB Marathon	M12V125FT	--	125	4.90 x 22.00 x 11.15	7U	105
GNB Marathon	M12V155FT	112795	155	4.90 x 22.00 x 11.15	7U	119
Northstar	NSB110FT	--	110	4.92 x 22.05 x 8.94	7U	91.3
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	7U	115
C&D	FA 12-150F	FA12150	150	4.92 x 21.97 x 12.70	8U	131
Douglas	DGS12-150F	125453	150	4.90 x 22.00 x 12.70	8U	137
Douglas	DGS12-170F	--	170.8	4.92 x 22.05 x 12.60	8U	129.6

* *See* Battery Manufacturer Information.

3) 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 following table. The table is provided for reference only.

Battery Lug Kit Part Numbers (Kit provides two lugs for one tray.)			
Battery Specified	**Ordered Without Circuit Breaker**	**Ordered With Circuit Breaker 125A or Higher**	**Ordered With Circuit Breaker 100A or Lower**
GNB Marathon M12V125FT	528235	528235	528234
GNB Marathon M12V155FT	528235	528235	528234
Northstar NSB110FT	528235	528235	528234
Northstar NSB170FT	528235	528235	528234
Deka Unigy I 12AVR-150ET	528235	528235	528234
C&D FA 12-150F	528235	528235	528234
Douglas DGS12-150F	528237	528237	528236
Douglas DGS12-170F	528235	528235	528234

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4) Specify rack spacing of 7U (12.25") or 8U (14") between trays and above top tray as required for battery clearance. See table above.

5) Specify with or without Battery Disconnect circuit breakers. ***Note:*** *All List 93 trays in a bay will be furnished with or without Battery Disconnect circuit breakers as specified for the first tray ordered.*

6) If ordering List 93 with circuit breakers, order one (1) circuit breaker per List 93 from the following table.

Ampere Rating	Part Number	
	Electrical/Mechanical Trip[1] (Black Handle)	Electrical Trip[2] (White Handle)
50	256694300	256694400
60	256694700	256694800
70	256695100	256695200
75	256695500	256695600
100	256695900	256696000
125	100765	100762
150	100763	100764
200	121810	121809

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.

7) If ordering List 93 with circuit breakers, specify breaker mounting on left side or right side of tray.

Restrictions

Maximum number of List 93's per bay is five (5).

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

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List BD: Distribution Cabinet

List of Parts

(18) Fuse/Circuit Breaker Positions with Low Voltage Battery Disconnect and Battery Shunt

Features

- Single Voltage Distribution (-48V)
- Maximum Capacity: Input: 500A max.
  Total Distribution: 300A max.
  Battery Recharge Current: 500A max. @ +50°C; 400A @ +65°C.
  Battery Terminals as Remote Feed: 200A max.
- (18) Mounting Positions for Load Distribution Fuses or Circuit Breakers, or accepts Alarm-Type Fuse Distribution Assembly (Kit P/N 524679).
- Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 100A)

  Caution: ***A circuit breaker or fuse with a rating greater than 75 amperes SHALL HAVE an empty mounting position between it and any other overcurrent protective device.***

  Caution: ***The maximum size circuit breaker or fuse used in ambient temperatures above +50°C ambient shall be 40 amperes.***
- Includes (1) Low Voltage Battery Disconnect Contactor (LVBD)
- Includes (1) Battery Shunt
- See Distribution Cabinet Electrical Connection Locations and Dimensions.

Restrictions

The maximum number of Distribution Cabinets in a system is three (3). Each Distribution Cabinet must be mounted immediately above a Power Shelf with zero (0) inches of rack space between units to accommodate the furnished busbar links. 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 fuseholder or circuit breaker position is 2 AWG.

Ordering Notes

1) Order circuit breakers, as required, per Table 1.
2) Order fuses, as required, per Tables 2.
3) Order one (1) Part No. 117201 fuseholder per fuse ordered in 2) above.
4) Order one (1) Part No. 524690 mounting kit per circuit breaker or fuseholder ordered in 1) or 3) above. Kit includes bullet socket busbar and hardware for mounting load and return lugs for one distribution position.
5) Order one (1) Load lug (one-hole, 1/4” bolt clearance hole) and one (1) Load Return lug (two-hole, 1/4” bolt clearance holes on 5/8” centers) as required for each distribution position per Table 4.

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List BL: Distribution Cabinet

List of Parts

(18) Fuse/Circuit Breaker System Positions with Low Voltage Battery Disconnect, Battery Shunt and Load Shunt

Features

- Single Voltage Distribution (-48V)
- Maximum Capacity: Input: 500A max.
  Total Distribution: 300A max.
  Battery Recharge Current: 500A max. @ +50°C; 400A @ +65°C.
  Battery Terminals as Remote Feed: 200A max.
- (18) Mounting Positions for Load Distribution Fuses or Circuit Breakers, or accepts Alarm-Type Fuse Distribution Assembly (Kit P/N 524679).
- Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 100A)

  Caution: ***A circuit breaker or fuse with a rating greater than 75 amperes SHALL HAVE an empty mounting position between it and any other overcurrent protective device.***

  Caution: ***The maximum size circuit breaker or fuse used in ambient temperatures above +50°C ambient shall be 40 amperes.***
- Includes (1) Low Voltage Battery Disconnect Contactor
- Includes and (1) Load Shunt (total distribution load) and (1) Battery Shunt
- Busbars are provided for power connections between Distribution Cabinet and Power Shelf.
- See Distribution Cabinet Electrical Connection Locations and Dimensions.

Restrictions

The maximum number of Distribution Cabinets in a system is three (3). Each Distribution Cabinet must be mounted immediately above a Power Shelf with zero (0) inches of rack space between units to accommodate the furnished busbar links. Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Fuses and/or circuit breakers are to be 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 fuseholder or circuit breaker position is 2 AWG.

Ordering Notes

1) Order circuit breakers, as required, per Table 1.
2) Order fuses, as required, per Tables 2.
3) Order one (1) Part No. 117201 fuseholder per fuse ordered in 2) above.
4) Order one (1) Part No. 524690 mounting kit per circuit breaker or fuseholder ordered in 1) or 3) above. Kit includes bullet socket busbar and hardware for mounting load and return lugs for one distribution position.
5) Order one (1) Load lug (one-hole, 1/4” bolt clearance hole) and one (1) Load Return lug (two-hole, 1/4” bolt clearance holes on 5/8” centers) as required for each distribution position per Table 4.

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List BS: Distribution Cabinet

List of Parts

(18) Fuse/Circuit Breaker System Positions with Battery Shunt

Features

- Single Voltage Distribution (-48V)
- Maximum Capacity: Input: 500A max.
  Total Distribution: 300A max.
  Battery Recharge Current: 500A max. @ +50°C; 400A @ +65°C.
  Battery Terminals as Remote Feed: 200A max.
- (18) Mounting Positions for Load Distribution Fuses or Circuit Breakers, or accepts Alarm-Type Fuse Distribution Assembly (Kit P/N 524679).
- Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 100A)

  Caution: ***A circuit breaker or fuse with a rating greater than 75 amperes SHALL HAVE an empty mounting position between it and any other overcurrent protective device.***

  Caution: ***The maximum size circuit breaker or fuse used in ambient temperatures above +50°C ambient shall be 40 amperes.***
- Includes (1) Battery Shunt
- See Distribution Cabinet Electrical Connection Locations and Dimensions.

Restrictions

The maximum number of Distribution Cabinets in a system is three (3). Each Distribution Cabinet must be mounted immediately above a Power Shelf with zero (0) inches of rack space between units to accommodate the furnished busbar links. Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling. Fuses and/or circuit breakers are to be 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 fuseholder or circuit breaker position is 2 AWG.

Ordering Notes

1) Order circuit breakers, as required, per Table 1.
2) Order fuses, as required, per Tables 2.
3) Order one (1) Part No. 117201 fuseholder per fuse ordered in 2) above.
4) Order one (1) Part No. 524690 mounting kit per circuit breaker or fuseholder ordered in 1) or 3) above. Kit includes bullet socket busbar and hardware for mounting load and return lugs for one distribution position.
5) Order one (1) Load lug (one-hole, 1/4" bolt clearance hole) and one (1) Load Return lug (two-hole, 1/4" bolt clearance holes on 5/8" centers) as required for each distribution position per Table 4.

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List GA: Distribution Cabinet

List of Parts

(20) GMT Fuse System Positions with Split Bus

Features

- Single Voltage Distribution (-48V)
- Maximum Capacity: Input: 163A @ +40°C; 155A @ 50°C; 110A @ +65°C.
  Total Distribution: 30A per bus, 60A total @ +65°C
  Battery Recharge Current: 163A @ +40°C; 155A @ 50°C; 110A @ +65°C.
  Battery Terminals as Remote Feed: 103A @ +40°C; 95A @ 50°C; 50A @ +65°C.
- (20) Mounting Positions for Alarm-Type Load Distribution Fuses, (10) per bus.
- Accepts GMT-Type Fuses (1/4A to 15A).
- Includes (20) dummy fuses equipped with safety fuse covers.
- Provides local and external fuse alarm.
- See Distribution Cabinet Electrical Connection Locations and Dimensions.

Restrictions

Maximum distribution fuse size: 15A

Maximum size wire each fuse position accepts is 14 AWG.

Input is cable-fed only.

Maximum size wire input terminals accept is (1) 2 AWG per polarity.

No load or battery shunts are provided.

Ordering Notes

1) Order fuses, as required, per Tables 3.

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List LB: Distribution Cabinet

List of Parts

(18) Fuse/Circuit Breaker Positions with Low Voltage Load Disconnect, Battery Shunt and Load Shunt

Features

- Single Voltage Distribution (-48V)
- Maximum Capacity:
- Maximum Capacity: Input: 500A max.
  Total Distribution: 300A max.
  Battery Recharge Current: 500A max. @ +50°C; 400A @ +65°C.
  Battery Terminals as Remote Feed: 200A max.
- (18) Mounting Positions for Load Distribution Fuses or Circuit Breakers, or accepts Alarm-Type Fuse Distribution Assembly (Kit P/N 524679).
- Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 100A)

  Caution: ***A circuit breaker or fuse with a rating greater than 75 amperes SHALL HAVE an empty mounting position between it and any other overcurrent protective device.***

  Caution: ***The maximum size circuit breaker or fuse used in ambient temperatures above +50°C ambient shall be 40 amperes.***
- Includes (1) Low Voltage Load Disconnect Contactor (LVLD)
- Includes and (1) Load Shunt (total distribution load) and (1) Battery Shunt
- See Distribution Cabinet Electrical Connection Locations and Dimensions.

Restrictions

The maximum number of Distribution Cabinets in a system is three (3). Each Distribution Cabinet must be mounted immediately above a Power Shelf with zero (0) inches of rack space between units to accommodate the furnished busbar links. Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Fuses and/or circuit breakers are to be 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 fuseholder or circuit breaker position is 2 AWG.

Ordering Notes

1) Order circuit breakers, as required, per Table 1.
2) Order fuses, as required, per Tables 2.
3) Order one (1) Part No. 117201 fuseholder per fuse ordered in 2) above.
4) Order one (1) Part No. 524690 mounting kit per circuit breaker or fuseholder ordered in 1) or 3) above. Kit includes bullet socket busbar and hardware for mounting load and return lugs for one distribution position.
5) Order one (1) Load lug (one-hole, 1/4" bolt clearance hole) and one (1) Load Return lug (two-hole, 1/4" bolt clearance holes on 5/8" centers) as required for each distribution position per Table 4.

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List LD: Distribution Cabinet

List of Parts

(18) Fuse/Circuit Breaker System Positions with Low Voltage Load Disconnect and Load Shunt

Features

- Single Voltage Distribution (-48V)
- Maximum Capacity: Input: 500A max.
  Total Distribution: 300A max.
  Battery Recharge Current: 500A max. @ +50°C; 400A @ +65°C.
  Battery Terminals as Remote Feed: 200A max.
- (18) Mounting Positions for Load Distribution Fuses or Circuit Breakers, or accepts Alarm-Type Fuse Distribution Assembly (Kit P/N 524679).
- Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 100A)

  Caution: ***A circuit breaker or fuse with a rating greater than 75 amperes SHALL HAVE an empty mounting position between it and any other overcurrent protective device.***

  Caution: ***The maximum size circuit breaker or fuse used in ambient temperatures above +50°C ambient shall be 40 amperes.***
- Includes (1) Low Voltage Load Disconnect Contactor (LVLD)
- Includes and (1) Load Shunt (total distribution load)
- See Distribution Cabinet Electrical Connection Locations and Dimensions.

Restrictions

The maximum number of Distribution Cabinets in a system is three (3). Each Distribution Cabinet must be mounted immediately above a Power Shelf with zero (0) inches of rack space between units to accommodate the furnished busbar links. Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Fuses and/or circuit breakers are to be 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 fuseholder or circuit breaker position is 2 AWG.

Ordering Notes

1) Order circuit breakers, as required, per Table 1.
2) Order fuses, as required, per Tables 2.
3) Order one (1) Part No. 117201 fuseholder per fuse ordered in 2) above.
4) Order one (1) Part No. 524690 mounting kit per circuit breaker or fuseholder ordered in 1) or 3) above. Kit includes bullet socket busbar and hardware for mounting load and return lugs for one distribution position.
5) Order one (1) Load lug (one-hole, 1/4” bolt clearance hole) and one (1) Load Return lug (two-hole, 1/4” bolt clearance holes on 5/8” centers) as required for each distribution position per Table 4.

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List LS: Distribution Cabinet

List of Parts

(18) Fuse/Circuit Breaker System Positions with Load Shunt

Features

- Single Voltage Distribution (-48V)
- Maximum Capacity: Input: 500A max.
  Total Distribution: 300A max.
  Battery Recharge Current: 500A max. @ +50°C; 400A @ +65°C.
  Battery Terminals as Remote Feed: 200A max.
- (18) Mounting Positions for Load Distribution Fuses or Circuit Breakers, or accepts Alarm-Type Fuse Distribution Assembly (Kit P/N 524679).
- Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 100A)

  Caution: ***A circuit breaker or fuse with a rating greater than 75 amperes SHALL HAVE an empty mounting position between it and any other overcurrent protective device.***

  Caution: ***The maximum size circuit breaker or fuse used in ambient temperatures above +50°C ambient shall be 40 amperes.***
- Includes and (1) Load Shunt (total distribution load)
- See Distribution Cabinet Electrical Connection Locations and Dimensions.

Restrictions

The maximum number of Distribution Cabinets in a system is three (3). Each Distribution Cabinet must be mounted immediately above a Power Shelf with zero (0) inches of rack space between units to accommodate the furnished busbar links. Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Fuses and/or circuit breakers are to be 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 fuseholder or circuit breaker position is 2 AWG.

Ordering Notes

1) Order circuit breakers, as required, per Table 1.
2) Order fuses, as required, per Tables 2.
3) Order one (1) Part No. 117201 fuseholder per fuse ordered in 2) above.
4) Order one (1) Part No. 524690 mounting kit per circuit breaker or fuseholder ordered in 1) or 3) above. Kit includes bullet socket busbar and hardware for mounting load and return lugs for one distribution position.
5) Order one (1) Load lug (one-hole, 1/4" bolt clearance hole) and one (1) Load Return lug (two-hole, 1/4" bolt clearance holes on 5/8" centers) as required for each distribution position per Table 4.

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List LX: Distribution Cabinet

List of Parts

(18) Fuse/Circuit Breaker System Positions with Battery Shunt and Load Shunt

Features

- Single Voltage Distribution (-48V)
- Maximum Capacity: Input: 500A max.
  Total Distribution: 300A max.
  Battery Recharge Current: 500A max. @ +50°C; 400A @ +65°C.
  Battery Terminals as Remote Feed: 200A max.
- (18) Mounting Positions for Load Distribution Fuses or Circuit Breakers, or accepts Alarm-Type Fuse Distribution Assembly (Kit P/N 524679).
- Accepts TPS/TLS-Type Fuses (3 to 100A) or Bullet Nose Type Circuit Breakers (1 to 100A)

  Caution: ***A circuit breaker or fuse with a rating greater than 75 amperes SHALL HAVE an empty mounting position between it and any other overcurrent protective device.***

  Caution: ***The maximum size circuit breaker or fuse used in ambient temperatures above +50°C ambient shall be 40 amperes.***
- Includes and (1) Load Shunt (total distribution load) and (1) Battery Shunt
- See Distribution Cabinet Electrical Connection Locations and Dimensions.

Restrictions

The maximum number of Distribution Cabinets in a system is three (3). Each Distribution Cabinet must be mounted immediately above a Power Shelf with zero (0) inches of rack space between units to accommodate the furnished busbar links. Adequate vertical mounting space must be provided above each Distribution Cabinet to accommodate distribution and battery cabling.

Fuses and/or circuit breakers are to be 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 fuseholder or circuit breaker position is 2 AWG.

Ordering Notes

1) Order circuit breakers, as required, per Table 1.
2) Order fuses, as required, per Tables 2.
3) Order one (1) Part No. 117201 fuseholder per fuse ordered in 2) above.
4) Order one (1) Part No. 524690 mounting kit per circuit breaker or fuseholder ordered in 1) or 3) above. Kit includes bullet socket busbar and hardware for mounting load and return lugs for one distribution position.
5) Order one (1) Load lug (one-hole, 1/4" bolt clearance hole) and one (1) Load Return lug (two-hole, 1/4" bolt clearance holes on 5/8" centers) as required for each distribution position per Table 4.

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ACCESSORY INFORMATION

Distribution Devices

Bullet Nose Type Circuit Breakers

Each circuit breaker plugs into a single mounting position.

Ordering Notes

1) Order circuit breakers per Table 1.

   Note: *Load should not exceed 80% of device rating.*

   Caution: ***A circuit breaker with a rating greater than 75 amperes SHALL HAVE an empty mounting position between it and any other overcurrent protective device.***

   Caution: ***The maximum size circuit breaker used in ambient temperatures above +50°C ambient shall be 40 amperes.***

2) Order one (1) Part No. 524690 mounting kit for each circuit breaker ordered.

3) For lug and wire size selection, refer to Table 4.

BULLET NOSE TYPE CIRCUIT BREAKERS		
AMPERE RATING	**PART NUMBER Electrical/ Mechanical Trip[1] (Black Handle)**	**PART NUMBER Electrical Trip[2] (White Handle)**
1	101596	102272
3	101597	102273
5	101598	102274
10	101599	102275
15	101600	102276
20	101601	102277
25	101602	102278
30	101603	102279
35	101604	102280
40	101605	102281
45	121997	121998
50	101606	102282
60	101607	102283
70	101608	102284
75	101609	102285
80	121995	121996
100	101610	102286

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.

Table 1

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TPS/TLS-Type Fuses

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

Ordering Notes

1) Order fuses per Table 2.

   Note: *Load should not exceed 80% of device rating.*

   Caution: ***A fuse with a rating greater than 75 amperes SHALL HAVE an empty mounting position between it and any other overcurrent protective device.***

   Caution: ***The maximum size fuse used in ambient temperatures above +50°C ambient shall be 40 amperes.***

2) Order one (1) Part No. 117201 TPS/TLS-type fuseholder for each fuse.

3) Order one (1) Part No. 524690 mounting kit for each fuseholder ordered.

4) For lug and wire size selection, refer to Table 4.

TPS/TLS-TYPE FUSES	
AMPERE RATING	**PART NUMBER**
3	248230900
5	248231000
6	248231200
10	248231500
15	248231800
20	248232100
25	248232400
30	248232700
40	248233300
50	248233900
60	248234200
70	248234500
80	118413
90	118414
100	118415
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; Emerson Network Power 248610301) and (1) alarm fuse safety cover (Emerson Network Power 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 2

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Plug-In GMT Fuse Distribution Assembly (Part No. 524679)
(10) GMT Alarm-Type Fuse Positions

Features

- Mounts in (5) distribution positions of any Distribution Cabinet.
- 30A Maximum Capacity
- Provides (10) Load Distribution Fuse Positions (0.25 to 15A GMT Alarm-Type Fuses)
- Screw clamp type terminals
- Includes 10 dummy fuses equipped with safety fuse covers.

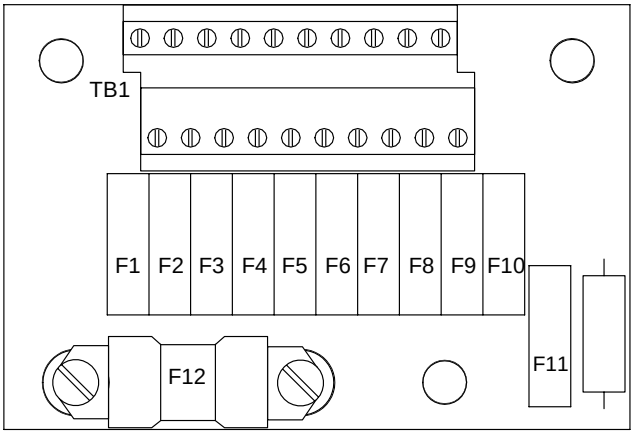
Restrictions

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

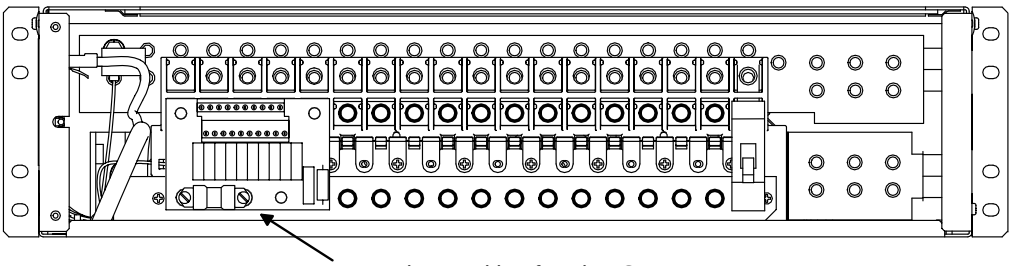
Maximum size of wire to be connected to a single fuse position is 14 AWG.

Ordering Notes

1) Order Part No. 524679 Kit. Provides one Part No. 509128 alarm fuse distribution assembly, ground return link, and hardware.
2) Order fuses, as required, per Table 3.



Part No. 509128



Mounting Position for First GMT
Assembly When Factory-Installed

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Plug-In GMT Fuse Distribution Assembly (Part No. 528920) (6) GMT Alarm-Type Fuse Positions

Features

- Mounts in (2) bullet nose distribution positions.
- 30A Maximum Capacity.
- Provides (6) Load Distribution Fuse Positions (0.25 to 15A GMT Alarm-Type Fuses).
- Screw clamp type terminals.
- Includes (6) dummy fuses equipped with safety fuse covers.

Restrictions

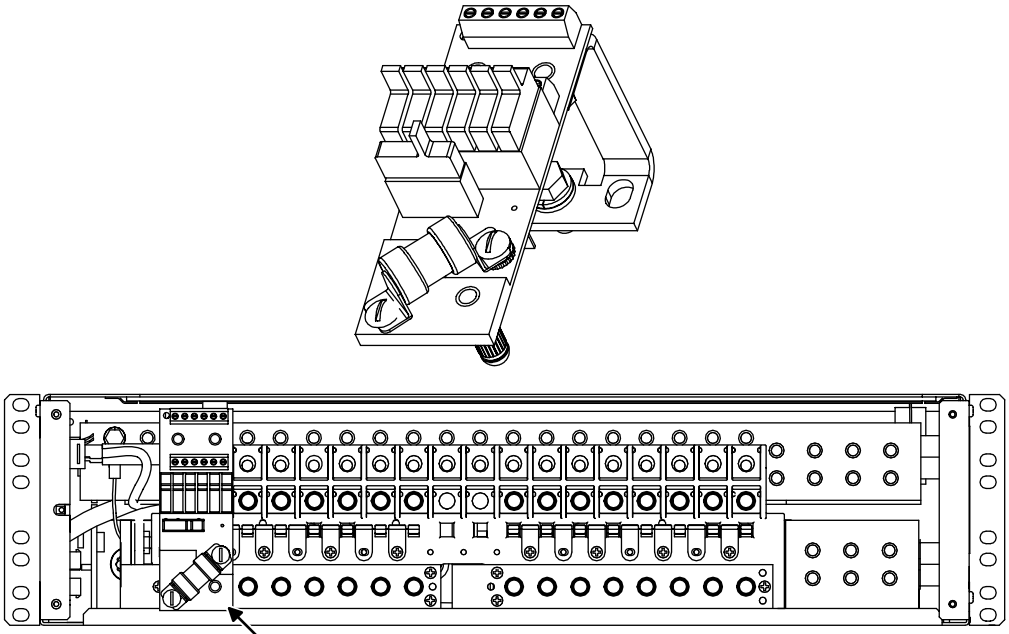
When factory-ordered, assembly will be installed in the two left-most bullet nose positions, unless otherwise specified.

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

Fuses are not included.

Ordering Notes

1) Order Part No. 528920. Provides one Part No. 528958 alarm fuse distribution assembly, ground return link, and hardware.
2) Order fuses, as required, per Table 3.



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Alarm-Type Fuses

Note: *When used for power distribution, load should not exceed 80% of device rating.*

BUSSMANN ALARM-TYPE FUSES		
AMPERE RATING	**PART NUMBER**	**FUSE COLOR**
18/100 GMT-A	248610301	---
1/4	248610200	VIOLET
1/2	248610300	RED
3/4	248610500	BROWN
1-1/3	248610700	WHITE
2	248610800	ORANGE
3	248610900	BLUE
5	248611000	GREEN
7-1/2	248611300	BLACK-WHITE
10	248611200	RED-WHITE
15	248611500	RED-BLUE
Fuse Safety Cover (Replacement)	248898700	---
Dummy Fuse (Replacement)	248872600	---

Table 3

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Recommended Wired Size and Lugs

Distribution (Load) Wire Sizes and Lugs—List BD, BL, BS, LB, LD, LS, LX

Features

- In each Distribution Cabinet, lug-terminated load conductors are connected to the distribution fuseholder or circuit breaker mounting positions and the ground busbar. The distribution fuseholder or circuit breaker mounting positions provide 1/4-20 threaded holes for installation of customer-provided one-hole lugs that have 1/4 in. bolt clearance holes. The ground busbar provides 1/4-20 threaded holes for installation of customer-provided two-hole lugs that have 1/4 in. bolt clearance holes on 5/8" centers. Factory provides lug-mounting hardware for the distribution fuseholder or circuit breaker positions and distribution ground busbar.
- For lug mounting hole size and spacing dimensions, refer to Electrical Connection Locations and Dimensions under Physical Size Information in this document. Maximum size of wire to be connected to a single fuseholder or circuit breaker position is 2 AWG.

Restrictions

All lugs for customer connections must be ordered separately.

Ordering Notes

1) The rating of the distribution device determines the wire size requirements. For wire size and lug selection, refer to Table 4.
2) For other available lugs and hardware, refer to drawings 031110100 through 031110300.

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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]
90A	--	--	--	--	--	--	66 [3, 4]
100A	--	--	--	--	--	--	59 [3, 4]
Recommended Crimp Lug [6]							
Load Lug (1-hole)	245312200	245312400	245312400	245350400	245350600	245350700	245350800
Return Lug (2-hole)	245342300	245342300	245342300	245390200	245346700	245346800	245346900

Table 4
Recommended Distribution (Load) Wire Size and Lug Selection for TLS/TPS Fuse and Bullet Nose-Type Circuit Breaker (Load and Load Return)

Notes to Tables 4:

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.

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[5] Wire Size / Loop Length Combination Calculated using 65°C Ambient Operating Temperature.

[6] Load lugs are one-hole for 1/4" bolt clearance. Load Return lugs are two-hole for 1/4" bolt clearance on 5/8" centers. Refer to drawing 031110100 for lug crimping information.

Distribution (Load) Wire Sizes and Lugs—List GA

Features

- In each List GA Distribution Cabinet, Screw compression terminals are provided for connecting Load and Load Return wiring. Maximum size of wire to be connected to a single position is 14 AWG.

Battery Wire Sizes and Lugs—All Lists

Features

- **List BD, BL, BS, LB, LD, LS, LX:** In each Distribution Cabinet, lug-terminated battery conductors are connected to the battery terminals. Captive nuts, (1/4-20 on 5/8" centers) are provided for installation of customer provided two-hole lugs.

  List GA: In each Distribution Cabinet, lug-terminated battery conductors are connected to the battery terminals. Captive nuts, (1/4-20 on 5/8" centers) are provided for installation of customer provided two-hole lugs.

- For lug mounting hole size and spacing dimensions, refer to the illustration provided in the Physical Size Information section.

Restrictions

All lugs for customer connections must be ordered separately.

Customer must supply lug-mounting hardware.

Ordering Notes

1) Battery wire size varies depending on load, therefore no specific information is provided for wire size. Refer to Table 5 for recommended wire sizes and lugs at rated maximum Distribution Cabinet load. When making connections, observe correct polarity.
2) For other available lugs and hardware, refer to drawings 031110100 through 031110300.

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Maximum Current (Amps)	Ambient Operating Temperature (1)	Loop Length (Ft) 1.0 Volt Drop (2)	Loop Length (Ft) 0.25 Volt Drop (2)	Recm 90°C Wire Size (1)	Recommended Crimp Lug (3)
List BB, BD, BL, BS, LB, LD, LS, LX					
500	40°C	37	9	(3) 4 AWG	(3) 245346800
		59	14	(3) 2 AWG	(3) 245350800
500	50°C	37	9	(3) 4 AWG	(3) 245346800
		59	14	(3) 2 AWG	(3) 245350800
400	65°C	59	14	(3) 2 AWG	(3) 245350800
List GA					
163	40°C	36	9	(1) 2 AWG	(1) 245350800
155	50°C	38	9	(1) 2 AWG	(1) 245350800
110	65°C	54	13	(1) 2 AWG	(1) 245350800

Table 5
Recommended Battery Wire Size and Lug Selection

Notes to Tables 5:

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 310-17** (Single-Insulated Copper Conductors in Free Air) 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 the voltage shown in the column heading, or less, 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, 1/4" bolt clearance hole, 5/8" centers. Refer to drawing 031110100 for lug crimping information.

DC Input Wire Sizes and Lugs—List GA

Features

- In the List GA Distribution Cabinet, lug-terminated battery conductors are connected to the battery terminals. Captive nuts, (1/4-20 on 5/8" centers) are provided for installation of customer provided two-hole lugs.
- For lug mounting hole size and spacing dimensions, refer to the illustration provided in the Physical Size Information section.

Restrictions

All lugs for customer connections must be ordered separately.

Customer must supply lug-mounting hardware.

Ordering Notes

1) Refer to Table 5 for recommended wire sizes and lugs at rated maximum Distribution Cabinet load. When making connections, observe correct polarity.

2) For other available lugs and hardware, refer to drawings 031110100 through 031110300.

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Maximum Current (Amps)	Ambient Operating Temperature [1]	Loop Length (Ft) 1.0 Volt Drop [2]	Loop Length (Ft) 0.25 Volt Drop [2]	Recm 90°C Wire Size [1]	Recommended Crimp Lug [3]
163	40°C	36	9	(1) 2 AWG	(1) 245350800
155	50°C	38	9	(1) 2 AWG	(1) 245350800
110	65°C	54	13	(1) 2 AWG	(1) 245350800

Table 5
Recommended Battery Wire Size and Lug Selection

Notes to Tables 5:

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 310-17** (Single-Insulated Copper Conductors in Free Air) 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 the voltage shown in the column heading, or less, 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, 1/4" bolt clearance hole, 5/8" centers. Refer to drawing 031110100 for lug crimping information.

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Relay Rack Options

The Power System is factory mounted to the relay rack specified when ordered. The following relay racks are available:

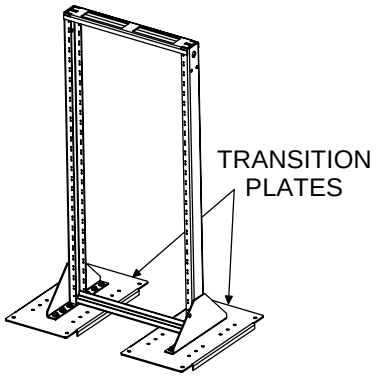
Part Number	Size	Available Mounting Positions (1U = 1-3/4")	Notes
525004	51-3/8"H x 23"W	28U	Welded
524915	6'0"H x 23"W	38U	Welded
524913	7'0"H x 23"W	45U	Welded
525111	7'0"H x 23"W	45U	Seismic (complies with Bellcore Seismic Zone 4 requirements)
524914	7'6"H x 23"W	48U	Welded
534821	8'0"H x 23"W	51U	Welded

Table 6

Transition Plates

Order Part No. 509819 for a Transition Plate Kit to mount relay racks above battery modules with outside dimensions of 26.75" x 26.38", 35.75" x 26.38", or 42.50" x 26.38".

The kit consists of two plates with three hole patterns and hardware (3/8") to mount the plates to the following relay racks: 525004. Hardware to mount the plates to the battery module is customer provided.



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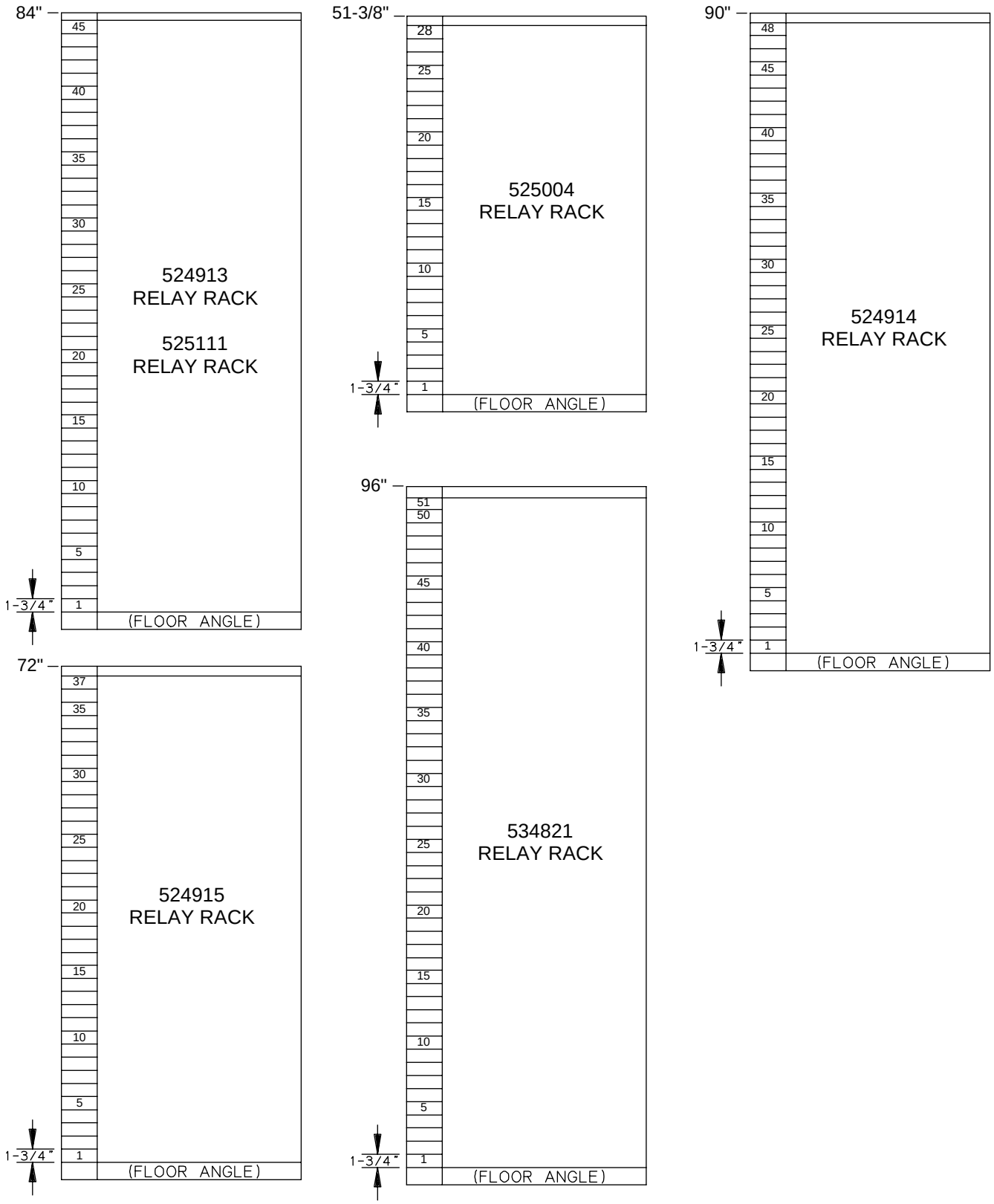
Relay Rack Profiles



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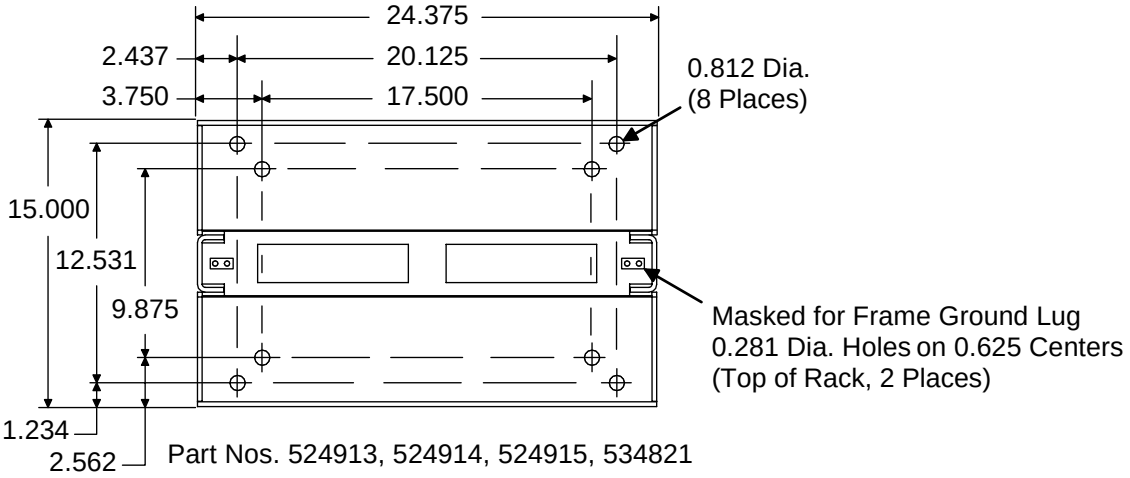
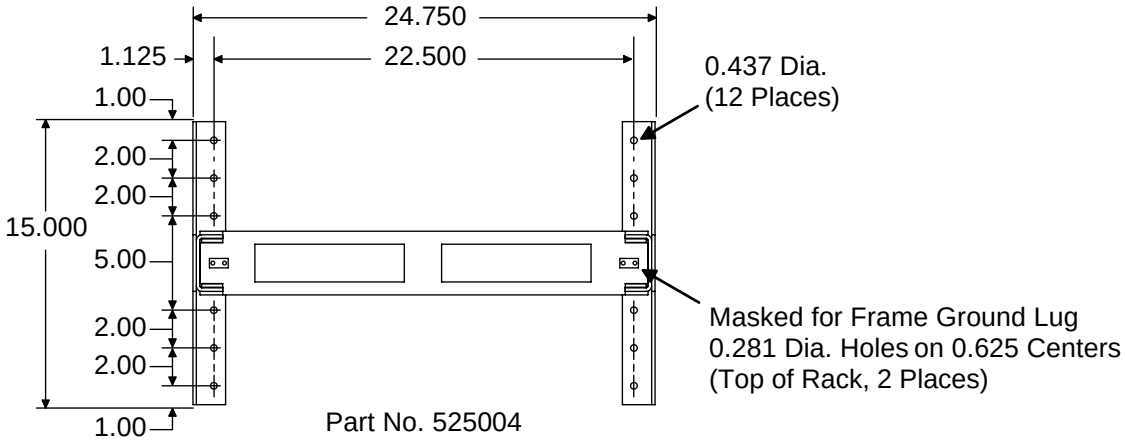
Relay Rack Floor Mounting Dimensions

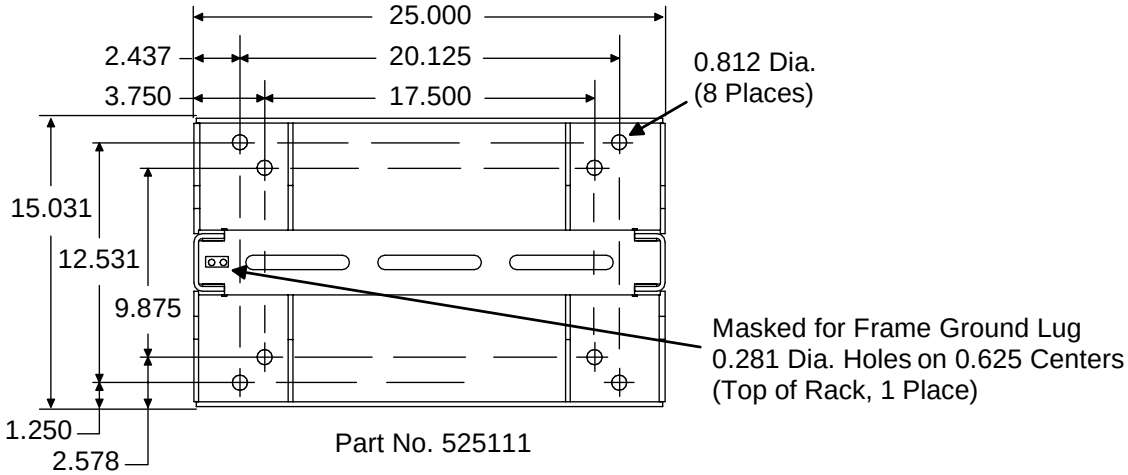
Note: *All dimensions are in inches.*



Part Nos. 524913, 524914, 524915, 534821



Part No. 525004



Part No. 525111

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Cables

RJ-45 MCA Control Bus Cable

Features

- Category 5 Straight Through cable terminated at each end with an RJ-45 plug.
- Required for MCA control bus interconnections between Distribution Cabinets, from a Distribution Cabinet to a Load Shed Card, or between Load Shed Cards.
- Cable identification color is **blue**.

Restrictions

Maximum combined MCA control bus cable length must not exceed 125 feet.

Ordering Notes

1) Order the required length from the following table.

Length	Part Number
5 inches	524409
6 inches	509070
10 inches	528520
15 inches	509071

Length	Part Number
2 feet	524410
3 feet	514639
4 feet	509900
25 feet	514640

MCA Control Bus Interconnect Cable

Features

- MCA control bus, Power Shelf-to-Power Shelf interconnect cable. Six-inch cable terminated at each end with a “flat” plug. Connects to ports located on the each shelf’s right side panel.
- Cable identification color is **blue**.
- Cables are furnished with Power Shelves as required.

Ordering Notes

1) For a **replacement** cable, order P/N 521121

MCA Control Bus Termination Plug

Features

- “Flat” termination plug must be installed in any unused MCA control bus port in a Main or Expansion Power Shelf.
- Two plugs are furnished with each List 1 Main Power Shelf ordered.

Ordering Notes

1) For a **replacement** plug, order P/N 524651.

RJ-45 MCA Control Bus Termination Plug

Features

- Plug must be installed in any unused RJ-45 MCA control bus port in a Distribution Cabinet DSM card or Load Shed Card.
- One plug is furnished with each Distribution Cabinet and with each accessory Load Shed Card ordered.

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Ordering Notes

1) For a **replacement** plug, order P/N 524653.

Battery Temperature Probe

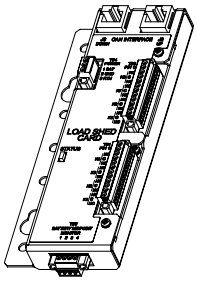
This system can be used with one or more Battery Temperature Probes. Probe must be mounted near or on the battery to sense battery temperature. Probes connect the MCA and allows it to:

- Automatically increase or decrease system output voltage to maintain battery float current as battery ambient temperature decreases or increases, respectively. Battery life can be extended when an optimum charge voltage with respect to temperature is maintained.
- Issue alarms if battery temperature increases above or decreases below preset adjustable limits.

Each Distribution Cabinet provides connections up to four (4) Battery Temperature Probes. Refer to SAG589200100 for probe specifications and ordering information.

Load Shed Card (Part No. 528927)

Features



- Provides eight (8) relays that can be individually configured as additional alarm relays or as Low Voltage Disconnect control relays for reducing the system load (load shed). If configured for load disconnect, control of the relays can be based upon either system voltage or battery discharge elapsed time.
- Provides four (4) battery midpoint monitoring inputs.
- All functions are configured and controlled by the system MCA.
- External mounting.
- Includes one (1) 2 ft. MCA control bus cable (P/N 524410) and one (1) control bus termination plug (P/N 524653).
- See Physical Size Information for Load Shed Card dimensions.
- See Load Shed Card Installation and Operating Instructions (Section 5985) for complete specifications.

Restrictions

Load shed contactors are not included.

A system battery shunt is required for timed Load Shed.

MCA version 3.0 or newer is required.

Maximum number of Load Shed Cards supported by MCA is four (4).

Maximum combined MCA control bus cable length must not exceed 125 feet.

Ordering Notes

1) Where MCA control bus cable lengths other than the furnished 2 ft. cable are required, order per RJ-45 MCA Control Bus Cable under Cables.

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LIST OF PARTS

(This Stocklist may not list every component contained in each List.)

LIST NUMBER	QTY.	PART NUMBER	DESCRIPTION
1	1	589200100	Integrated Power System without Distribution
61	1	528278	Wireway, 1U x 23" relay rack mounting
	1	528279	Cover, wireway, 1U x 23"
	1	244822500	Bushing, snap, 0.625
62	1	528364	Wireway, 2U x 23" relay rack mounting
	1	528365	Cover, wireway, 2U x 23"
	1	244822500	Bushing, snap, 0.625
93	1	525017	Battery Tray
	1	367236700	Bracket, cable
BD	1	521030	Busbar, gnd
	1	521031	Busbar, batt
	1	524711	Assembly, distr, -48V, 23"
BL	1	521030	Busbar, gnd
	1	521031	Busbar, batt
	1	524712	Assembly, distr, -48V, 23"
BS	1	521030	Busbar, gnd
	1	521031	Busbar, batt
	1	524713	Assembly, distr, -48V, 23"
GA	2	528226	Adapter plate 19" –23"
	1	524920	Assembly, distr, -48V, 19"
	2	110982	Fuse, input curlim, CSB, 35A, 100KAIR@170VDC, part of P/N 524920
LB	1	521030	Busbar, gnd
	1	521031	Busbar, batt
	1	524714	Assembly, distr, -48V, 23"
LD	1	521030	Busbar, gnd
	1	521031	Busbar, batt
	1	524715	Assembly, distr, -48V, 23"
LS	1	521030	Busbar, gnd
	1	521031	Busbar, batt
	1	524716	Assembly, distr, -48V, 23"
LX	1	521030	Busbar, gnd
	1	521031	Busbar, batt
	1	524717	Assembly, distr, -48V, 23"

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SPECIFICATIONS

Note: *For all List 1 specifications, including Power Shelves, PCUs and MCA, refer to System Application Guide SAG589200100. The SAG can be accessed via the CD (Electronic Documentation Package) furnished with your system.*

For all Part No. 528927 Load Shed Card specifications, refer to Section 5985. Section 5985 can be accessed via the CD (Electronic Documentation Package) furnished with your system.

1.1 System Environmental Ratings

1.1.1 Operating Ambient Temperature Range: -40°C to +65°C (-40°F to +149°F).

1.1.2 Storage Ambient Temperature Range: -40°C to +85°C (-40°F to +185°F).

1.1.3 Humidity: This Power System is capable of operating in an ambient relative humidity range of 0% to 95%, non-condensing.

1.1.4 Altitude: The maximum operating ambient temperature should be derated by 10°C at an elevation of 10,000 feet above sea level. For elevations between 3,000 feet and 10,000 feet, derate the maximum operating ambient temperature linearly.

1.1.5 Mounting: Recommended minimum aisle space clearance is 2'6" for the front of the relay rack and 2' for the rear of the relay rack.

1.2 System Compliance Information

1.2.1 Safety Compliance:

(A) This power board is UL Listed ("c UL") as a DC Power Distribution Center for Communications Equipment.

(B) This unit meets the requirements of CSA 22.2, No. 225 and is tested and Certified by UL ("c UL") as a Custom Built Power Distribution Center for Communications Equipment.

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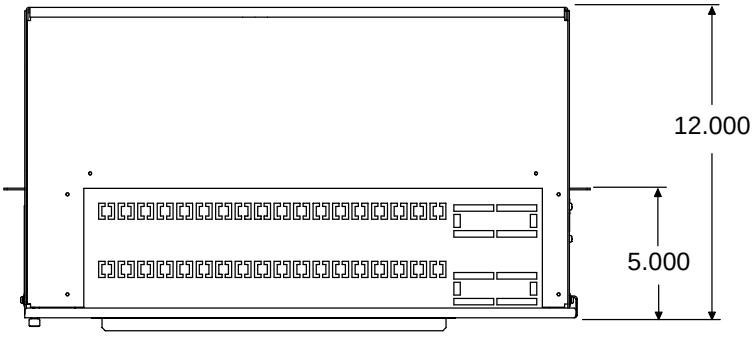
PHYSICAL SIZE INFORMATION

Distribution Cabinet Dimensions—Lists BD, BL, BS, LB, LD, LS, LX

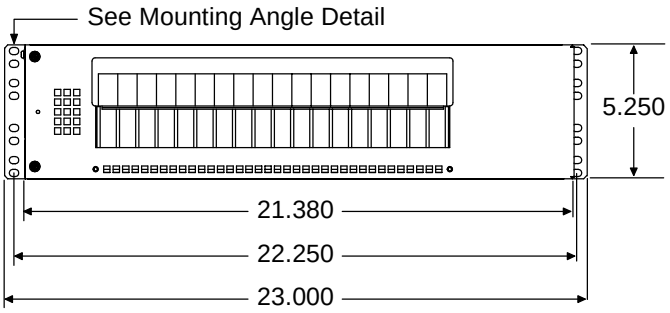
Note: *For overall dimensions of List 1 Power Shelves, refer to SAG589200100.*



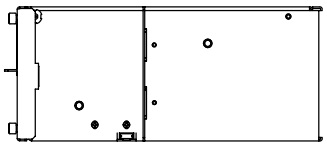
TOP VIEW

NOTES :

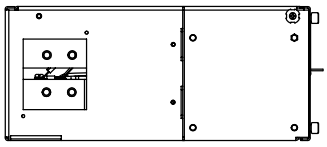
1. All dimensions are in inches.
2. Weight of Distribution Cabinet with Circuit Breakers (In Pounds):
   Net: 33
   Shipping:
3. Finish :
   Shelf Body: Bright Zinc
   Front Panel: Textured Warm Gray (M500-146)



FRONT VIEW

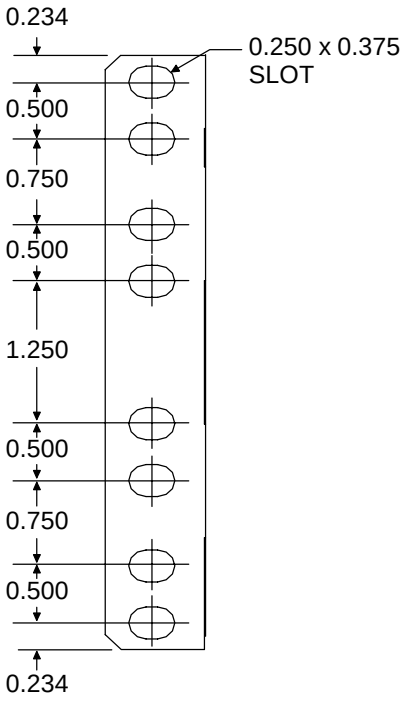


RIGHT SIDE VIEW



LEFT SIDE VIEW

MOUNTING ANGLE DETAIL



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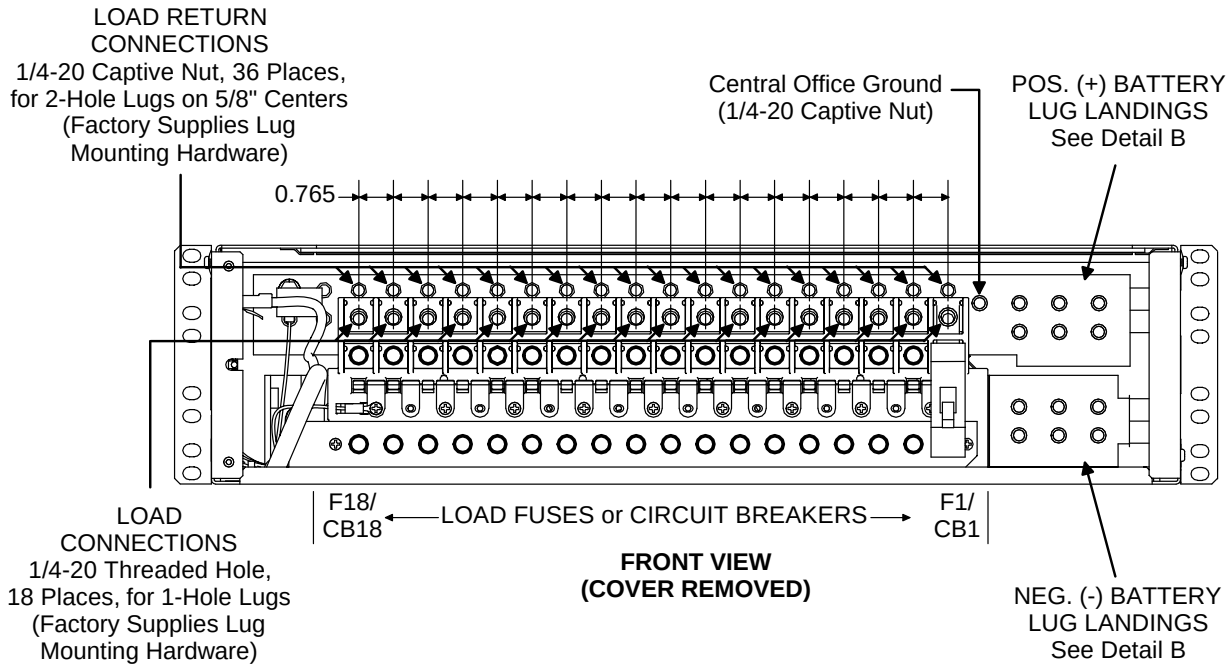
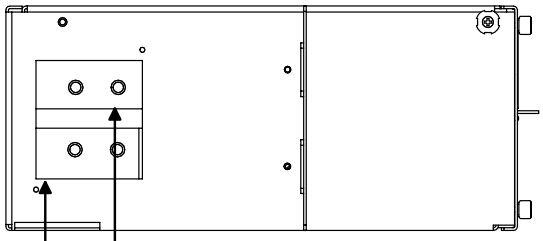
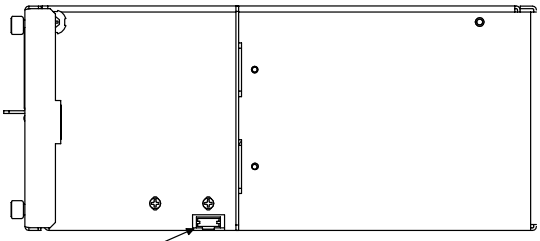
Distribution Cabinet Electrical Connection Locations and Dimensions—Lists BD, BL, BS, LB, LD, LS, LX

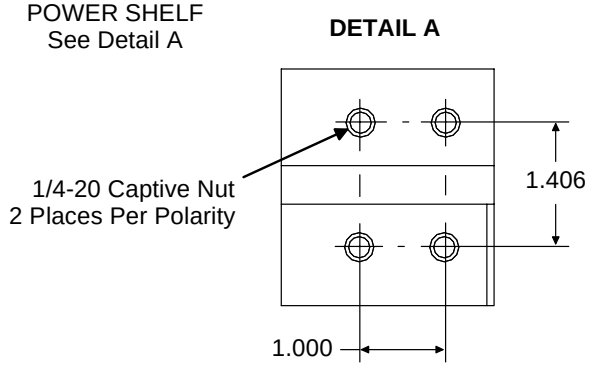
Notes:

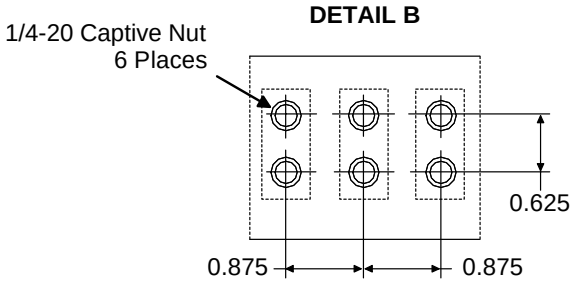
1. *For electrical connection locations and dimensions of List 1 Power Shelves, refer to SAG589200100.*
2. *All dimensions are in inches.*
3. *Distribution and battery cabling to exit cabinet through top panel.*











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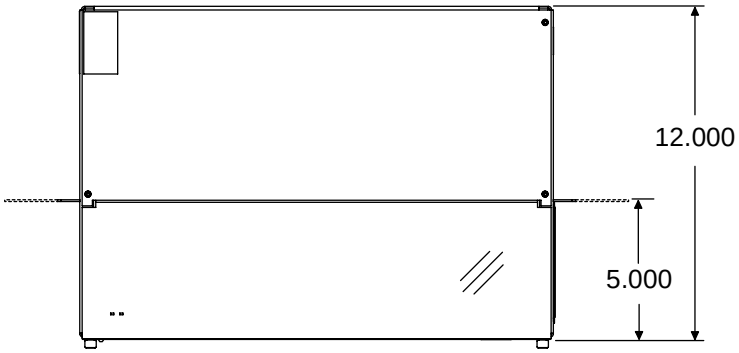
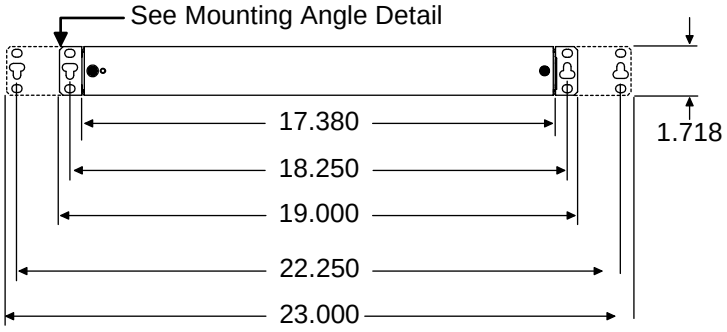
Distribution Cabinet Dimensions—List GA



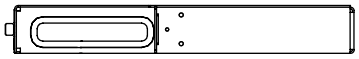
TOP VIEW

NOTES :

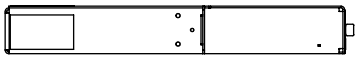
1. All dimensions are in inches.
2. Weight (In Pounds).
   Net: 15
   Shipping: 19
3. Finish :
   Body: Bright Zinc
   Front Panel: Textured Cool Gray (M500-146)



FRONT VIEW

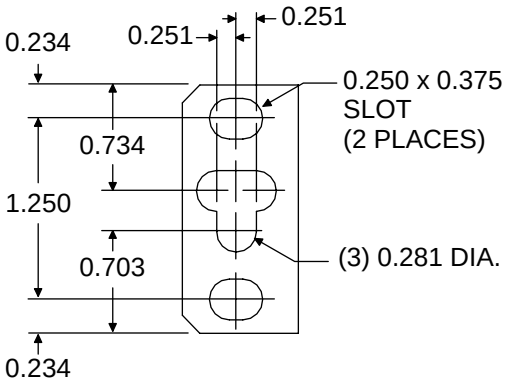


RIGHT SIDE VIEW



LEFT SIDE VIEW

MOUNTING ANGLE DETAIL



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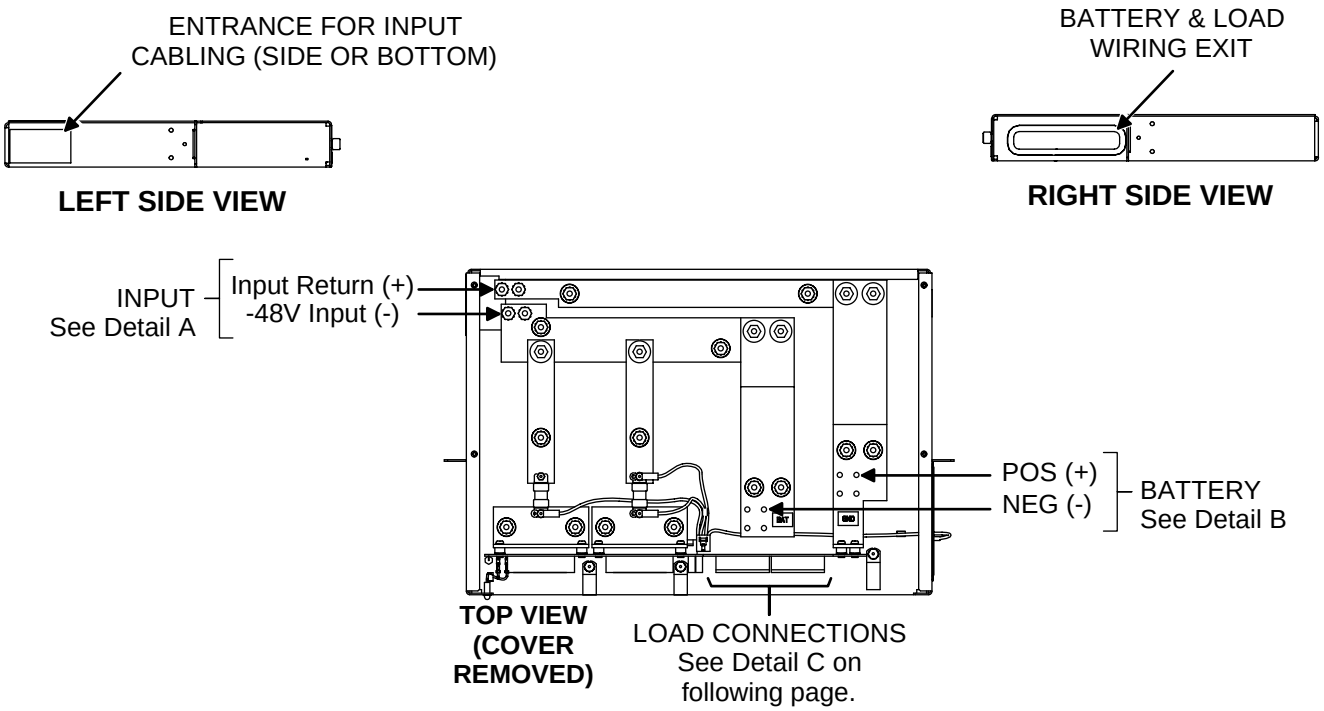
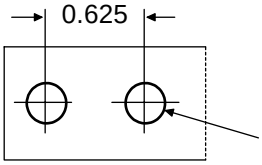
Distribution Cabinet Electrical Connection Locations and Dimensions—List GA



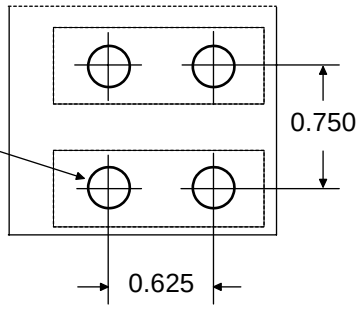
DETAIL A



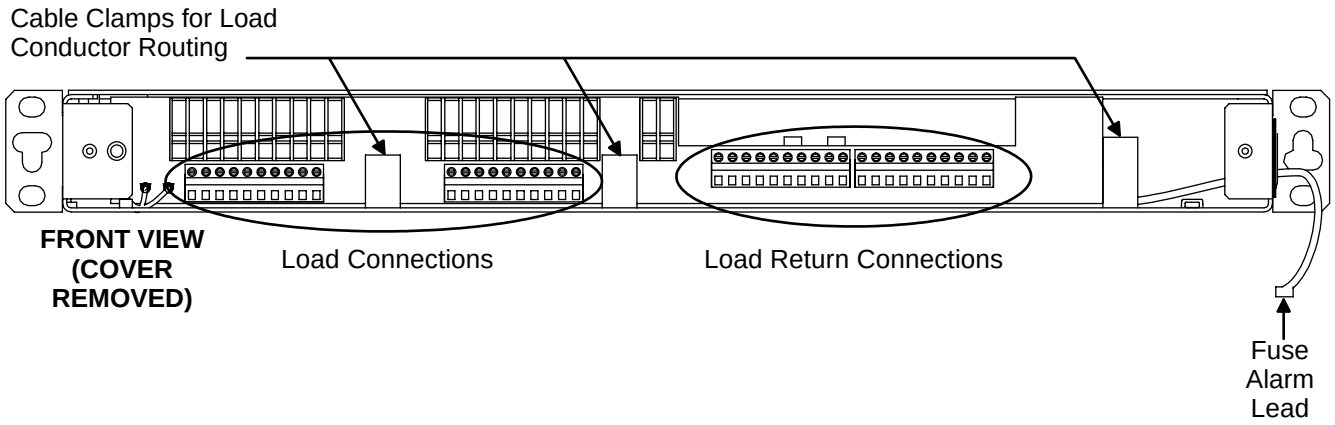
1/4-20 X 0.625 Threaded Stud, 2 Places per Polarity (Factory supplies lug mounting hardware. For standard flat & lock washers torque to 84 In. Lbs.)

DETAIL B

1/4-20 X 0.625 Threaded Stud, 4 Places per Polarity (Customer supplies lug mounting hardware. For standard flat & lock washers torque to 84 In. Lbs.)



Note: All dimensions are in inches.



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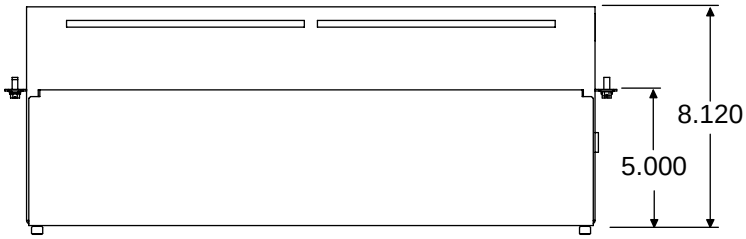
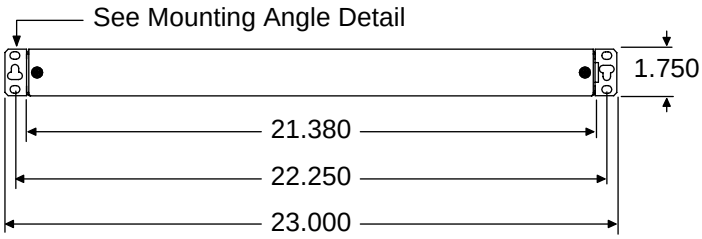
Wireway Dimensions—List 61 and 62

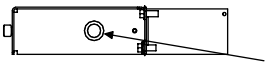


TOP VIEW
LIST 61 & 62

NOTES :
1. All dimensions are in inches.
2. Weight (In Pounds):
   List 61:
   Net: 4
   Shipping:
   List 62:
   Net:
   Shipping:
3. Finish :
   Body: Bright Zinc
   Front Panel: Textured Warm Gray (M500-146)

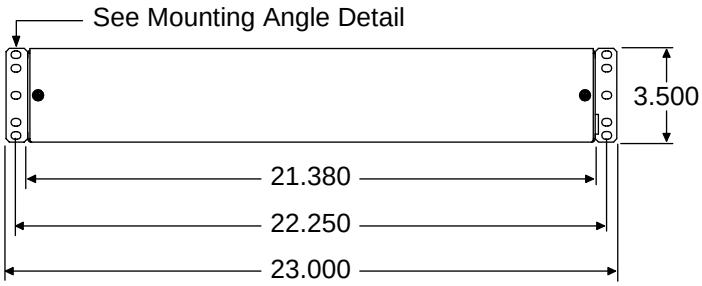


FRONT VIEW
LIST 61

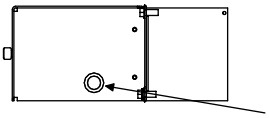


RIGHT SIDE VIEW
LIST 61

Alarm & Control Wiring Entrance. Bushing I. D. = 0.375



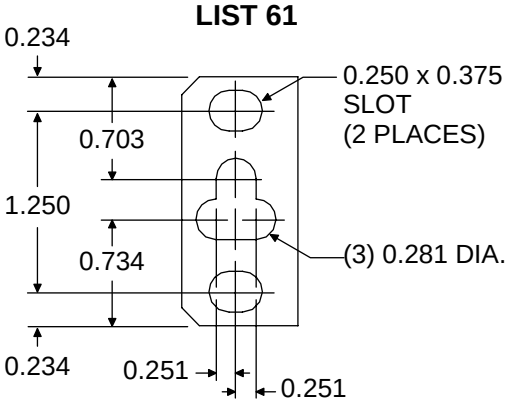
FRONT VIEW
LIST 62



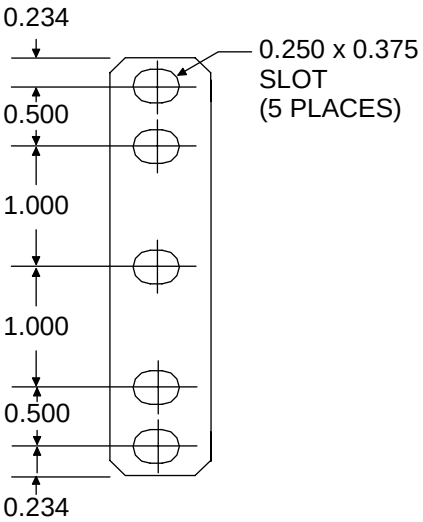
RIGHT SIDE VIEW
LIST 62

Alarm & Control Wiring Entrance. Bushing I. D. = 0.375

MOUNTING ANGLE DETAIL
LIST 61



MOUNTING ANGLE DETAIL
LIST 62



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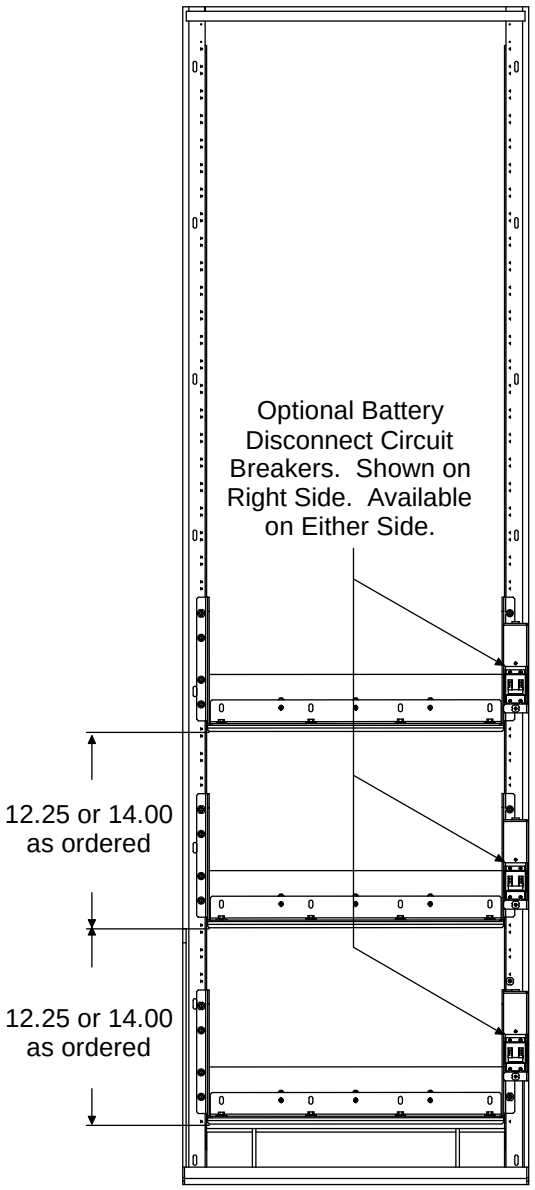
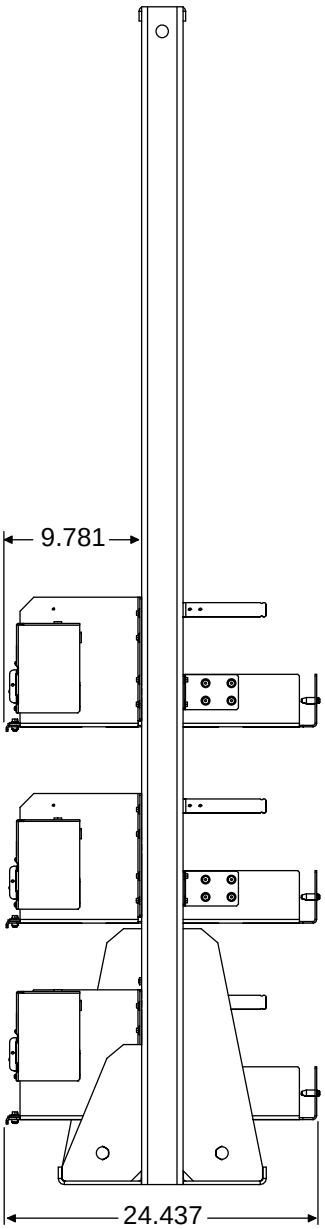
Dimensions of System Configured with List 93 Battery Trays

Notes:

1. Three trays shown as example.
   Max. available per rack: five.
2. Dimensions are in inches.
3. Net Weight Per Tray, Less Batteries:
   With Circuit Breaker Option: 33 lbs.
   Without Circuit Breaker Option: 29 lbs.



FRONT VIEW



RIGHT SIDE VIEW

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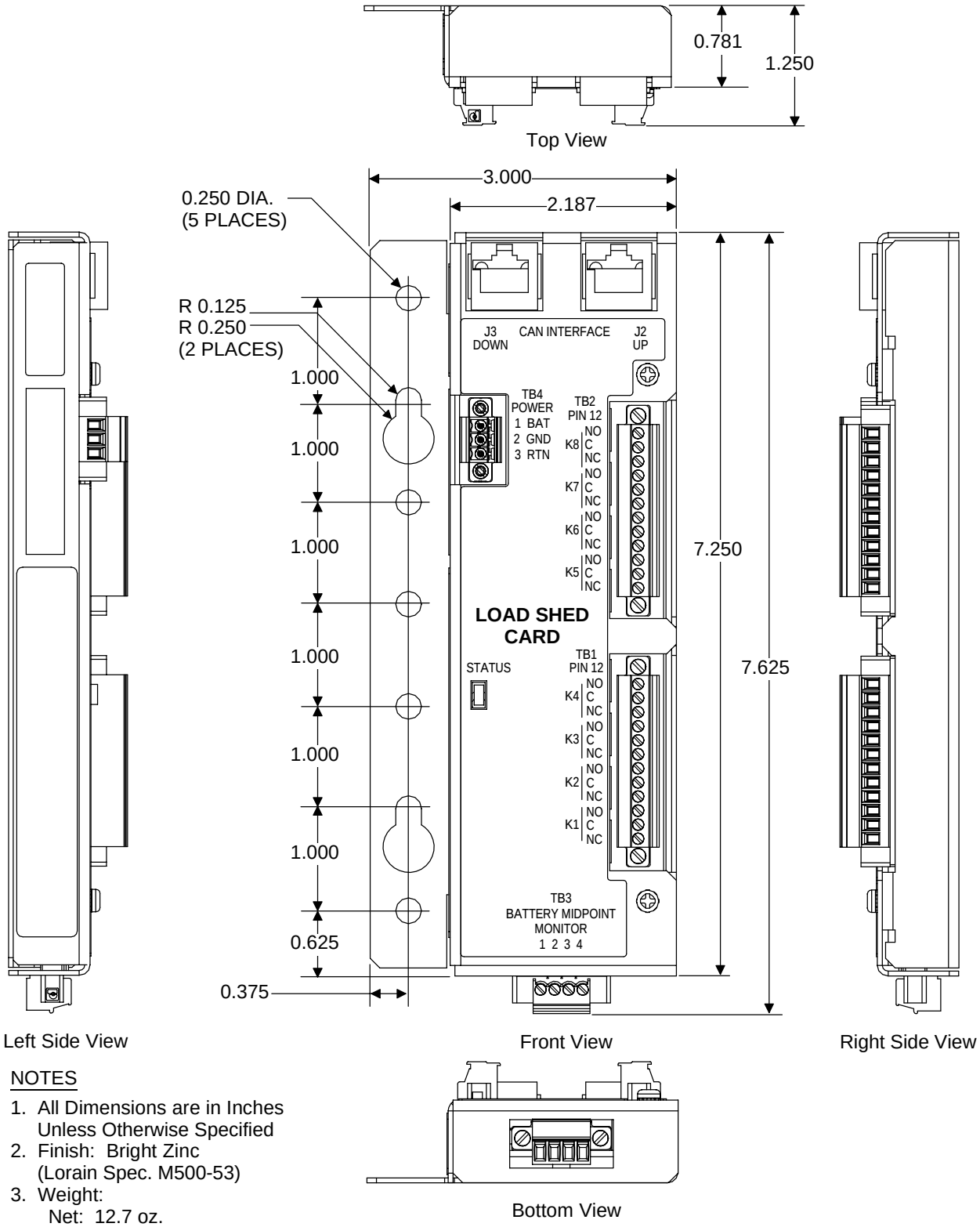
Overall Dimensions –
Part No. 528927 Load Shed Card



NOTES

1. All Dimensions are in Inches Unless Otherwise Specified
2. Finish: Bright Zinc (Lorain Spec. M500-53)
3. Weight:
   Net: 12.7 oz.
   Shipping: 24 oz.

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RELATED DOCUMENTATION

System Application Guide: SAG589200100 (Model LXP9000SHF Integrated Power System, includes all PCU & MCA specifications.)

Schematic Diagrams: SD582135000 (LXP Power System, Spec. No. 582135000)
SD589200100 (Model LXP9000SHF LXP Integrated Power System)
SD521036 (Distribution Cabinets)

Wiring Diagrams: T582135000 (LXP Power System, Spec. No. 582135000)
T589200100 (Model LXP9000SHF LXP Integrated Power System)
T521036 (Distribution Cabinets)

Color MCA Menu Tree: Section 5956

Instructions: Section 5960, Installation Instructions (LXP Power System, Spec. No. 582135000)
Section 5961, User Instructions (LXP Power System, Spec. No. 582135000
Section 5940 (Battery Temperature Concentrator Module, Part No. 521211)
Section 5985 (Load Shed Card, Part No. 528927)

Load and Battery Lug Detail Drawings: 031110100
031110200
031110300

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

Marathon™: GNB Industrial Power, a Division of Exide Technologies, Princeton, NJ 08543.

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

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Home

REVISION RECORD

Issue	Change Number (ECO)	Description of Change	Date	Approved
AA	LLP202685	New.	3/10/06 3/11/06	J. Kirkpatrick R. Trifiletti
AB	LLP205194	Added List 61, 62, GA. Revised max. number of List 93. Added restriction to List 1.	1/27/06 1/27/06	J. Kirkpatrick J. Jasko
AC	LLP205652	Added Load Shed Card and RJ-45 MCA control bus cables to Accessories. Added SD582135100, T582135100 and Section 5985 to Related Documentation. Revised lug kit ordering information in each distribution List description.	5/1/06 5/1/06	J. Kirkpatrick J. Jasko
AD	LLP206694	Added Part No. 528920 to Accessories. Added MCA version requirement to P/N 528927 Load Shed Card description.	10/19/07 10/19/07	J. Kirkpatrick J. Jasko
AE	LLP207759	Added Part No. 534821 relay rack.		1/31/2007 1/31/2007

Emerson Network Power / 1122 F Street / Lorain, Ohio 44052-2293 / (440) 288-1122

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In Mexico:
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Apartado Postal 77001 / Mexico 10 D.F., MX 11200 / (525) 576-8277

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