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# Slimline Power System

## 48V DC Outside Plant and Customer Premise Solution



The Slimline Power System provides advanced controller features in a compact, cost-efficient footprint. The SPS platform is based around a 1RU shelf configuration with an array of combinations of rectifier shelves and distribution options to address 500W to 19200W applications. The Pulsar Edge controller has Ethernet connectivity to facilitate remote network management to monitor and control rectifiers, batteries, and distribution. The SPS is a full featured and reliable DC power solution where system height and depth are restricted, but large system performance is critical to success.

### Shelf Options

The Slimline Power System product line provides several shelf options equipped with Ethernet, alarm inputs/outputs, and 1-Wire™ connection for battery voltage and temperature monitoring. The SPS system can be deployed using 1RU rectifier shelves that can be mated with 1RU distribution panels, offering flexibility to grow the system to meet power level and distribution requirements up to 19200 Watts. The SPS platform can also be deployed with 3RU DIN rail distribution panel which delivers universal flexibility for applications around the world.

### SPS TE Rectifier

This hardened rectifier is a single phase, hot pluggable, fan cooled rectifier that provides up to 1600 Watts of high availability DC power. The constant output power characteristics, extended temperature range, universal AC input, and compact size are key attributes that make this rectifier the right choice for your power needs.

### Pulsar Edge Controller

SPS features the Pulsar Edge controller delivering large system intelligence in a small system form factor. Ethernet connectivity with SNMP facilitates remote network management.

#### Features and Benefits

##### Reliability

- Simplified deployment
- Proven field performance
- Hardened for extreme environments

##### Intelligence

- Industry leading controller features
- Ethernet interface for remote access
- Centralized network management

##### Investment Protection

- Engineered to reduce installation time
- Versatile configurations
- Efficient operation

##### On Time Delivery

- Standard building blocks
- 4 - 6 week availability
- 24/7 technical support

- Customer premise power for converged networks
- Large plant features in a small plant package
- 4800 Watt/90 Amps single shelf capacity in 1RU
- Expandable to 19200 Watts / 360 Amps in 4800 Watt/90 Amp 1RU increments
- 10.3 inches (264mm) depth is ideal where space is restricted
- Over 95% Efficiency
- Flexible distribution options in 1RU increments



# SPS TE Rectifiers



The SPS TE rectifiers are single phase, hot-pluggable, fan cooled rectifiers that provide highly reliable DC power. As cost-effective rectifiers that occupy just 1RU, its shallow depth is an ideal power solution for space critical applications. The constant output power characteristics as well as the extended temperature range, universal AC input voltage range and compact size are key attributes that make this rectifier the right choice for your power needs.

These rectifiers are applicable for indoor and outdoor environments especially where equipment depth and height are restricted. The SPS TE rectifiers communicate digitally to the Pulsar Edge controller family over a RS485 bus to add extensive monitoring and alarm management facilities. Its flexible and sophisticated feature set makes this front-end supply an excellent choice for power in a variety of application spaces.

## Applications

- Telecommunications networks
- Digital subscriber line (DSL)
- Indoor/outdoor wireless
- Routers/switches
- Fiber in the loop
- Transmission
- Data networks
- PBX

## Key Features

- Extended temperature range
- Redundant fan cooling
- Front panel LED indicators
- 1U height, minimized depth
- Universal AC input
- Analog load sharing
- Hot pluggable
- RoHS compliant

| Input   | EP0500UTEZ                              | EP1000UTEZ                              | EP1600UTEZ                              |
|---|---|---|---|
| Voltage Range<br>- Low-Line<br>- High-Line        | 90-175Vac (500W)<br>176-264Vac (500W)   | 90-175Vac (1000W)<br>176-264Vac (1000W) | 90-175Vac (1200W)<br>176-264Vac (1600W) |
| Input Current                                     | 6.25-4.5A @ 90-120Vac<br>2.55A @ 230Vac | 12.5-9.3A @ 90-120Vac<br>5.1A @ 230Vac  | 15-12A @ 90-120Vac<br>7.5A @ 230Vac     |
| Input Frequency                                   | 45 – 65Hz                               | 45 – 65Hz                               | 45 – 65Hz                               |
| Inrush Transient                                  | 25 Apk                                  | 25 Apk                                  | 25 Apk                                  |
| Power Factor                                      | ~1.0                                    | ~1.0                                    | ~1.0                                    |
| Efficiency  | 95%                                     | 95%                                     | 95%                                     |
| Total Harmonic Distortion                         | <5%                                     | <5%                                     | <5%                                     |
| Holdup Time                                       | >10 ms full power                       | >10 ms full power                       | >10 ms full power                       |
| Output  |   |   |   |
| Voltage Adjust Range                              | 42-58Vdc                                | 42-58Vdc                                | 42-58Vdc                                |
| Rated Output Current<br>- Low Line<br>- High Line | 10Adc max<br>10Adc max                  | 20Adc max<br>20Adc max                  | 24Adc max<br>32Adc max                  |
| Psophometric Noise                                | <5 mV max                               | <5 mV max                               | <5 mV max                               |
| Ripple  | <200 mVpkpk                             | <200 mVpkpk                             | <200 mVpkpk                             |
| Overvoltage Protection                            | 59.5Vdc                                 | 59.5Vdc                                 | 59.5Vdc                                 |
| Control and Monitoring                            |   |   |   |
| Visual Status Indicators                          | Run, Alarm and Fault LEDs               |   |   |
| Serial Interface                                  | Half duplex RS485 (GP Protocol)         |   |   |

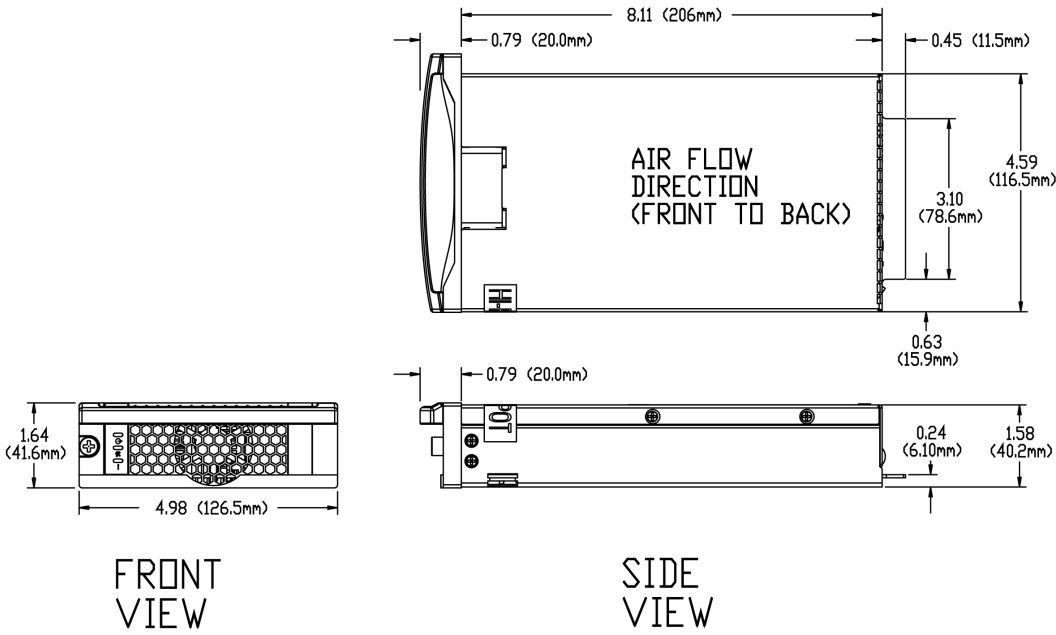
| Environmental         |                                 |
|-----------------------|---------------------------------|
| Operating Temperature | -40°C to +75°C (-40°F to 167°F) |
| Storage Temperature   | -40°C to +85°C (-40°F to 185°F) |
| Power Derating        | > +50°C 2% per degree Celcius   |
| Humidity              | < 95% non-condensing            |
| Altitude              | 4000M max                       |
| Audible Noise         | < 55dBA                         |

| Mechanical       |              |
|------------------|--------------|
| Length (inch/mm) | 8.11 / 206.0 |
| Width (inch/mm)  | 4.98 / 126.5 |
| Height (inch/mm) | 1.64 / 41.6  |
| Weight (lb/Kg)   | 3.08 / 1.4   |

| Safety and Standards Compliance |  |
|---------------------------------|--|
| NEBs                            | Evaluated by independent NRTL test lab to Telcordia GR63 & GR 1089, Issue 4  |
| Safety                          | CE mark to Low Voltage Directive 2006/95/EC and EMC Directive 2004/108/E<br>UL 60950-1, Recognized<br>CSA C22.2 No. 60950-1-03 Certified<br>VDE0805:2001 12 (EN 609501) Licensed |
| RoHS                            | Compliant to RoHS EU Directive 2002/95/EC  |
| EMC                             | CISPR22 (EN55022) Class B and FCC-CFR, Part 15, sub-part B Class B with shelf; GR1089 Class A  |
| ESD                             | EN61000-4-2, Level 4   |

Note: Special cooling may be needed.

### Outline Drawing



# Pulsar Edge Controller



The SPS Pulsar Edge controller delivers large system intelligence in a small system form factor. This family of controllers functions as network interface cards (NIC) and as a full-featured battery plant controller. Its thin modular plug-in form factor minimizes shelf space consumption allowing maximum power module and distribution capabilities.

The controller is utilized in bulk power applications in data centers and enterprise applications. Ethernet connectivity with SNMP facilitates remote network management. Access through its front-accessible RS232 or USB port and aided by the EasyView2 graphical enables full user interface locally. Optional 1U display version allows convenient access to all controller functions without requiring external cable connections. The display also features alarm context sensitive backlighting for at-a-glance system status.

As a battery plant controller, it provides a complete set of features to monitor and control rectifiers, batteries, and distribution. A flexible set of configurable inputs allow the Pulsar Edge controller

to monitor a wide variety of system equipment and incorporate appropriate state information enabling a centralized point of management.

The controller utilizes standard network management protocols allowing for advanced network supervision. GE Galaxy Manager\* software is the centralized visibility and control component of a comprehensive power management system designed to meet engineering, operations and maintenance needs. The Galaxy Manager client-server architecture enables remote access to system controllers across the power network.

## Applications

- Telecommunications networks
- Digital subscriber line (DSL)
- Indoor/outdoor wireless
- Routers/switches
- Fiber in the loop
- Transmission
- Data networks
- PBX

## Key Features

### Remote Access and Features

- Integrated 10/100Base-T Ethernet Network
  - TCP/IP
  - SNMP V2c for management
  - SMTP for email
  - Telnet for command line interface
  - DHCP for plug-n-play
  - FTP for rapid backup and upgrades
  - HTTP for standard web pages and browsers
  - Compatible with Galaxy Manager and other management packages
  - Shielded RJ-45 interface referenced to chassis ground
- Password protected security levels: User, Super-User, Administrator for all access
- Ground-referenced RS232 system port
- ANSI T1.317 command-line interface
- Modem access support
  - Remote via external modem
  - Callback security
- EasyView2, Windows-based GUI software for local terminal or Modem access
- Optional 1U display with alarm indicating backlight feature

### Standard System Features

- Monitor and control of more than 40 connected devices
  - Maximum of 32 rectifiers
  - Maximum of 6 distribution control cards
  - Robust RS485 system bus
- Standard and user defined alarms
  - Alarm test
  - Assignable alarm severity: Critical, Major, Minor, Warning, and record-only
- Rectifier management features
  - Automatic rectifier restart
  - Adaptive Rectifier Management (energy efficiency)
  - Remote rectifier (on/off)
  - Reserve Operation
  - Automatic rectifier sequence control
  - N + X redundancy check
- Multiple Low Voltage Load and Low Voltage Battery Disconnect thresholds (4)
- Configuration, statistics, and history
  - All stored in non-volatile memory
  - Remote/local backup and restore of configuration data
- Industry standard defaults
  - Customer specific configurations available
- Remote/ local software upgrade
- Basic, busy hour, and trend statistics
- Detailed event history
- User defined events and derived channels

### Standard Battery Management Features

- Float/boost mode control
  - Manual boost
  - Manual timed boost locally, T1.317, and remotely initiated
  - Auto boost terminated by time or current
- Battery discharge testing
  - Manual (local/remote)
  - Periodic
  - Plant Battery Test (PBT) input driven
  - Configurable threshold or 20% algorithm
  - Graphical discharge data
  - Rectifiers on-line during test
- Slope thermal compensation
  - High temperature
  - Low temperature
  - Step temperature
  - STC Enable/Disable, low temperature Enable/Disable
  - Configurable mV/°C slopes
- State of charge indication
- High temperature disconnect setting
- Reserve-time prediction
- Recharge current limit
- Emergency Power-Off input

## Integrated Monitoring Inputs/Outputs

- System plant voltage (accuracy  $\pm 0.5\%$ , resolution 0.01V)
- One system shunt (accuracy  $\pm 1\%$  full scale, resolution 1A)
  - Battery or load
  - Mounted in the return side of DC bus
- Up to 15 binary inputs
  - Six inputs close/open to battery
  - 9 input close/open to return (number is dependent upon number of output alarms)
  - User assignable
- Up to 6 user assignable Form-C output alarms (50VDC @.3A)
- 1-Wire\* bus devices
  - Up to 16 temperature probes (QS873)
  - Up to 6 mid-string monitors (ES771)

| General                     |   |
|-----------------------------|---|
| Operating Voltage           | $\pm 24$ Vdc, $\pm 48$ Vdc<br>(Range: $\pm 18$ to $\pm 60$ Vdc) |
| Input Power                 | Less than 7W  |
| Operating Temperature Range | -40°C to +70°C (-40°F to 167°F)                                 |
| Operating Relative Humidity | 0 - 95% (non-condensing)  |
| Storage Temperature Range   | -40°C to +85°C (-40°F to 185°F)                                 |
| Physical Specifications     | 1.75 in. H, 0.75 in. W, 8.00 in. D; 0.5lb                       |
| Display                     | 8-line by 40-character backlit LCD                              |
| EMC                         | FCC/EN55022 Class A, CISPR22 Level A                            |

## Galaxy Manager Compatible

- Centralized web server and database with multiple user access to live or managed data with drill down to problem details
- Monitor and control of more than 40 connected devices
- Management information from polling or alarms received from alarm traps from multiple sites are available on one screen via the inter/intranet
- Trend user selected data over time
- Automatic or manual report generation
- Standard engineering tools like reserve time calculators and cable voltage drop analyzer

| Agency Certifications   |  |
|-------------------------|--|
| Electrostatic Discharge | EN 61000-4-2 level 4                                   |
| Radiated Emissions      | FCC, Class A; EN 55022, Class A                        |
| Safety                  | UL Listed Component as Part of CPL or SPS Power System |

# Ordering Information – Slimline Power System

## 48V DC Outside Plant and Customer Premise Solution

The Slimline Power System power shelf provides advanced controller features in a compact, cost-efficient footprint. The SPS shelf is 1.75" high, 10.3" deep and mounts in 19-inch or 23-inch wide frames, with three power slots for rectifiers and distribution. The Pulsar Edge controller has Ethernet connectivity to facilitate remote network management to monitor and control rectifiers, batteries, and distribution. SPS is a reliable DC power solution where system height and depth are restricted.

The SPS product line provides Ethernet, alarm input/outputs and 1-Wire connection for battery voltage and temperature monitoring.

A variety of system configurations are available including:

- 1RU single shelf solutions with two rectifier slots and integrated distribution
- Stackable Solutions
- Custom Solutions

Up to four rectifier shelves may be stacked with 1RU GMT/Breaker distribution panels or 3RU DIN rail distributions. Interconnection hardware is included to quickly configure and assemble systems in the field or factory.

## Features

- SPS rectifiers produce 42Vdc to 58Vdc output; up to 1600W high line, 1200W low line
- Universal AC input: 90-290VAC
- AC input options: IEC-320 C13 or C19 style cords and universal rear AC screw terminal strip
- Temperature hardened harsh environments. (-40°C to +75°C)
- Compact 1U (1.75") 19" mount solutions (23" adapters available)
- Adjustable mounting ears for either flush front or 5-inch set back position
- Up to 4 rectifier shelves may be connected together for larger power requirements
- Plug-N-Play SPS841A controller with Web based interface available with or without display. All controllers available with craft port and remote LAN access.
- Integrated distribution options include one or two 30A battery breakers, up to 10 GMT load fuses and Low Voltage Battery Disconnect (LVBD)
- 1RU distribution panels available with battery and load breakers as well as pluggable fuse capabilities, battery shunt and Low Voltage Battery Disconnect (LVBD)
- 3RU DIN rail distribution panels available with battery and load breaker positions, battery shunt and Low Voltage Battery Disconnect (LVBD) and Low Voltage Load Disconnect (LVLD)
- Stackable solutions shelves include bus and control straps to interconnect shelves



1RU Solutions



Stackable Solutions



Custom Solutions

# 1RU Solutions

- 30A battery breaker with terminal block input for 8 gauge wire, LVBD option
- GMT fuses with terminal block output for 12 gauge wire, 15A max fuse size
- IEC plug, AC input
- 1-Wire port for battery voltage and temperature monitoring, LAN port, alarm cable connections



## 1RU Shelves

| Ordering Code | Description (Image Key) | Rectifier Slots | DC Output             | Battery Breakers | LVD     | AC Input           |
|---------------|-------------------------|-----------------|-----------------------|------------------|---------|--------------------|
| CC109148136   | J2007003L001 (A)        | 3               | Bulk (cabled)         | Rear             | 0       | Single IEC C19     |
| CC109146503   | J2007003L001A (A)       | 3               | Bulk (cabled)         | Rear             | 0       | Individual IEC C13 |
| CC109156114   | J2007003011 (A)         | 3               | 12 GMT's              | Rear             | 0       | Single IEC C19     |
| CC109148144   | J2007003002 (B)         | 2               | 6 GMT's               | Front            | 1 - 30A | Single IEC C13     |
| CC109151536   | J2007003002A (B)        | 2               | 6 GMT's               | Front            | 1 - 30A | Individual IEC C13 |
| CC109156907   | J2007003002X (B)        | 2               | 6 GMT's               | Front            | 1 - 30A | Single IEC C13     |
| CC109156915   | J2007003'002AX (B)      | 2               | 6 GMT's               | Front            | 1 - 30A | Individual IEC C13 |
| CC109158696   | J2007003002AXB (B)      | 2               | 6 GMT's               | Front            | 0       | Individual IEC C13 |
| CC109165890   | J2007003002D (C)        | 2               | 6 GMT's / Door        | Front            | 1 - 30A | Single IEC C13     |
| CC109165916   | J2007003002AD (C)       | 2               | 6 GMT's / Door        | Front            | 1 - 30A | Individual IEC C13 |
| CC109165908   | J2007003002XD (C)       | 2               | 6 GMT's / Door        | Front            | 1 - 30A | Single IEC C13     |
| CC109165924   | J2007003002AXD (C)      | 2               | 6 GMT's / Door        | Front            | 1 - 30A | Individual IEC C13 |
| CC109165932   | J2007003002AXB (C)      | 2               | 6 GMT's / Door        | Front            | 0       | Individual IEC C13 |
| CC109146511   | J2007003004 (D)         | 2               | 10 GMT's              | Rear             | 1 - 30A | Single IEC C13     |
| CC109156923   | J2007003004X (D)        | 2               | 10 GMT's              | Rear             | 1 - 30A | Single IEC C13     |
| 150026024     | J2007003004XB (D)       | 2               | 10 GMT's              | Rear             | 0       | Single IEC C13     |
| CC109151544   | J2007003004A (D)        | 2               | 10 GMT's              | Rear             | 1 - 30A | Individual IEC C13 |
| CC109156931   | J2007003004AX (D)       | 2               | 10 GMT's              | Rear             | 1 - 30A | Individual IEC C13 |
| 150024564     | J2007003004AXB (D)      | 2               | 10 GMT's              | Rear             | 0       | Individual IEC C13 |
| CC109159372   | J2007003014 (D)         | 2               | 1-30A Brkr / 10 GMT's | Rear             | 1 - 30A | Rear Terminal      |
| 150033629     | J2007003014LA (D)       | 2               | 1-30A Brkr / 10 GMT's | Rear             | 1 - 30A | Single IEC C13     |
| 150030787     | J2007003014XA (D)       | 2               | 1-30A Brkr / 10 GMT's | Rear             | 1 - 30A | Single IEC C13     |

| Ordering Code | AC Input , DC Output Cables (105° C Wire)    |
|---------------|--|
| CC848776105   | C13 plug with 5-15P plug, 14AWG, 10'         |
| CC848820317   | C13 plug with L6-20P plug, 14AWG, 10'        |
| 847861192     | C13 plug, unterminated, 14AWG, 10'           |
| CC848885698   | C13 AC Cord Retaining Clamp                  |
| CC848850792   | C19 plug, with 5-15P plug, 12AWG, 8'         |
| CC848850842   | C19 plug, with L6-20P plug, 12AWG, 8'        |
| CC848847368   | C19 plug, unterminated, 12AWG, 8'            |
| CC848887158   | C19 AC Cord Retaining Clamp                  |
| 848748987     | DC output cable 2 AWG, 10' (List 1, 1A only) |

| Ordering Code | Alarm and Communication Cables                            |
|---------------|---|
| CC848890153   | 5' Alarm output cable (J1)                                |
| CC848865980   | 15' Alarm output cable (J1)                               |
| CC848817651   | 50' Alarm output cable (J1)                               |
| CC848890203   | 5' Alarm input cable (J2)                                 |
| CC848853614   | 15' Alarm input cable (J2)                                |
| CC848890211   | 50' Alarm input cable (J2)                                |
| CC848847780   | Shelf to shelf communication cable (J4) (List 1, 1A only) |



Image Key (A)



Image Key (B)



Image Key (C)



Image Key (D)



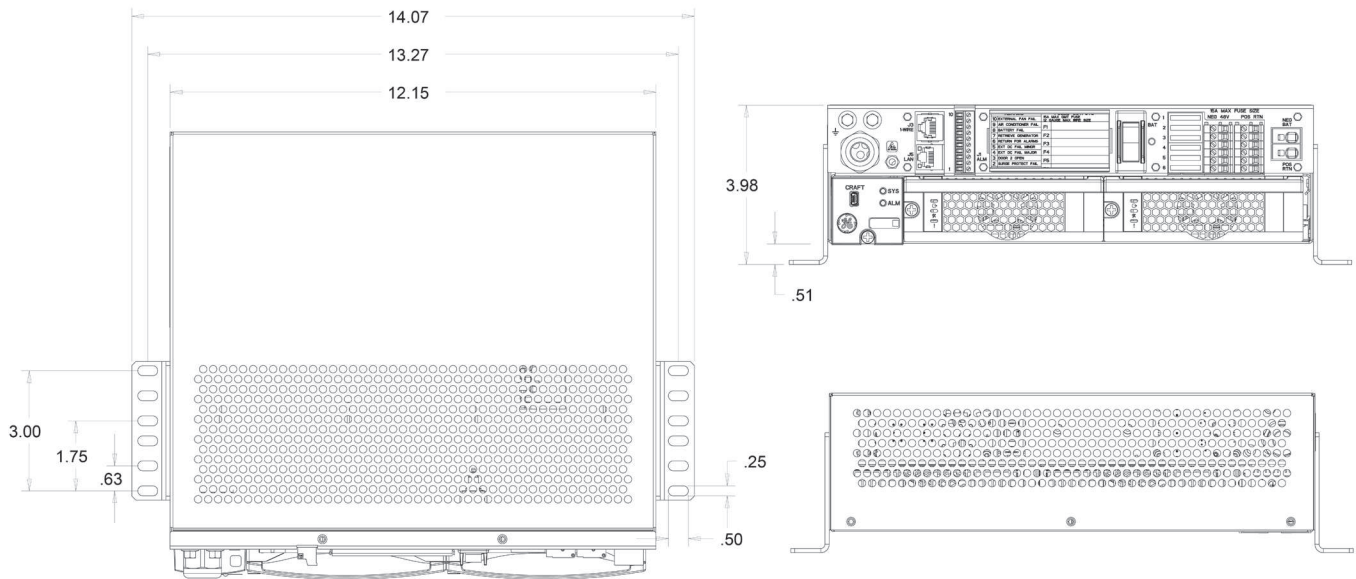
# Custom Solutions

## 12 inch Wide - 2U Power Shelf

- Full front access for all connections
- 30A battery breaker with terminal block input for 8 gauge wire, LVBD option
- 6 GMT fuses with terminal block output for 12 gauge wire, 15A max fuse size
- 14 AWG AC cord with 5-15P plug
- 1-Wire port for battery voltage and temperature monitoring, LAN port, screw terminal alarm connections



| 12 inch Wide- 2U Power Shelf |               |                 |                     |                |                           |      |
|------------------------------|---------------|-----------------|---------------------|----------------|---------------------------|------|
| Ordering Code                | Description   | Rectifier Slots | Height (Rack Units) | Load Positions | Battery Breaker Positions | LVD  |
| 150027893                    | J2007003L202  | 2               | 2 RU                | 6 GMT          | 1 (30A)                   | LVBD |
| 150033772                    | J2007003L202X | 2               | 2 RU                | 6 GMT          | 1 (30A)                   | No   |



# Stackable Solutions

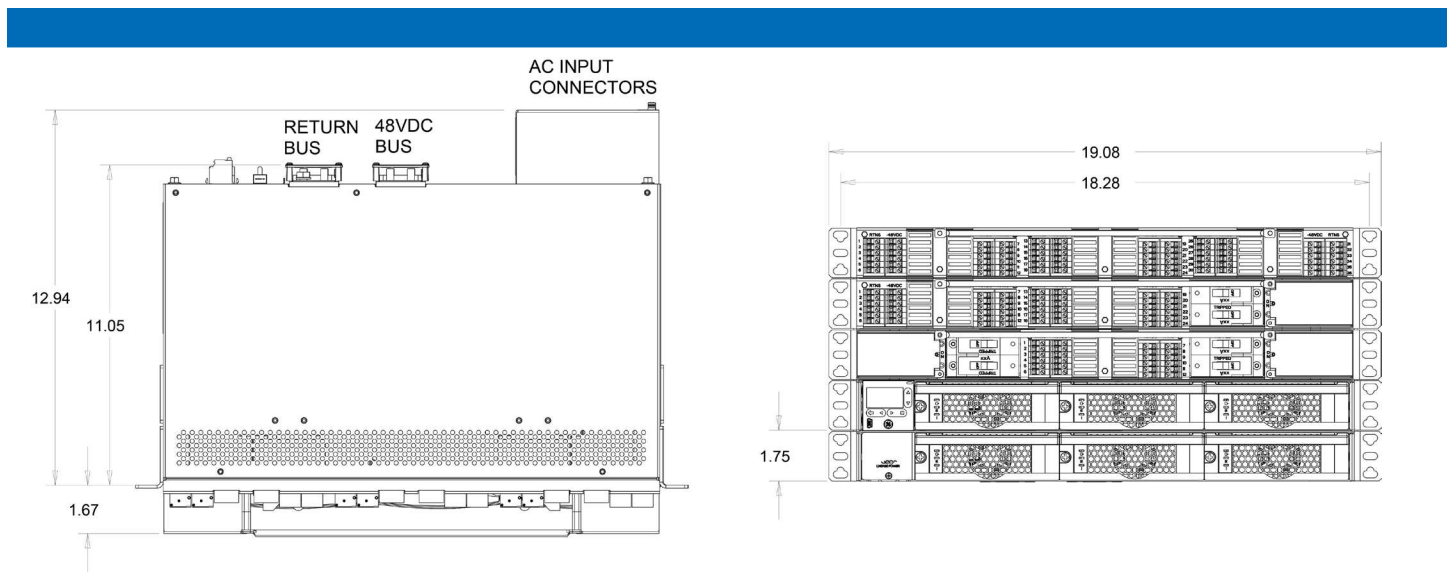


- Order configured systems from the factory or assemble shelves in the field
- Bullet-style battery and load breakers, up to 100A with 1/4-20 x 5/8 lug landings
- GMT fuses with terminal block output for 12 gauge wire, 15A max fuse size
- 12 AWG AC screw terminal block
- 1-Wire port for battery voltage and temperature monitoring, LAN port, screw terminal alarm connections
- Distribution rated for 200A (150A with LVD)

| Configured Systems |                           |                        |                         |                           |      |
|--------------------|---------------------------|------------------------|-------------------------|---------------------------|------|
| Ordering Code      | Description               | Load Breaker Positions | Load GMT Fuse Positions | Battery Breaker Positions | LVD  |
| 150032348          | SPS-2U-AC5-PS3-PS3-DC12B  | 2                      | 12                      | 2                         | No   |
| 150030465          | SPS-2U-AC5-PS3-DC12B-LVBD | 2                      | 12                      | 2                         | LVBD |
| 150032349          | SPS-2U-AC5-PS3-DC24B      | 0                      | 24                      | 2                         | No   |
| 150032350          | SPS-2U-AC5-PS3-DC24B-LVBD | 0                      | 24                      | 2                         | LVBD |

| 1RU Rectifier Shelves |               |                  |                 |                    |           |
|-----------------------|---------------|------------------|-----------------|--------------------|-----------|
| Ordering Code         | Description   | AC Input         | Rectifier Slots | Controller Support | DC Output |
| 150028853             | J2007003L051C | Rear AC Terminal | 3               | Yes                | Rear Bulk |
| 150028854             | J2007003L052C | Rear AC Terminal | 3               | No                 | Rear Bulk |

| 1RU Distribution Shelves |               |                        |                         |                           |      |
|--------------------------|---------------|------------------------|-------------------------|---------------------------|------|
| Ordering Code            | Description   | Load Breaker Positions | Load GMT Fuse Positions | Battery Breaker Positions | LVD  |
| 150032396                | J2013001L101  | 2                      | 0                       | 2                         | No   |
| 150032397                | J2013001L101B | 2                      | 0                       | 2                         | LVBD |
| 150032343                | J2013001L102  | 2                      | 12                      | 2                         | No   |
| 150032344                | J2013001L102B | 2                      | 12                      | 2                         | LVBD |
| 150032345                | J2013001L103  | 0                      | 24                      | 2                         | No   |
| 150032346                | J2013001L103B | 0                      | 24                      | 2                         | LVBD |
| 150032398                | J2013001L104  | 2                      | 24                      | 0                         | No   |
| 150032399                | J2013001L105  | 4                      | 12                      | 0                         | No   |
| 150032400                | J2013001L106  | 4                      | 0                       | 0                         | No   |
| 150032401                | J2013001L107  | 0                      | 36                      | 0                         | No   |



# Stackable Solutions - DIN Rail Circuit Breaker

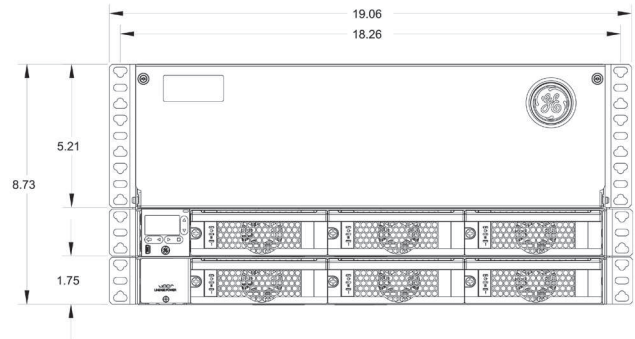
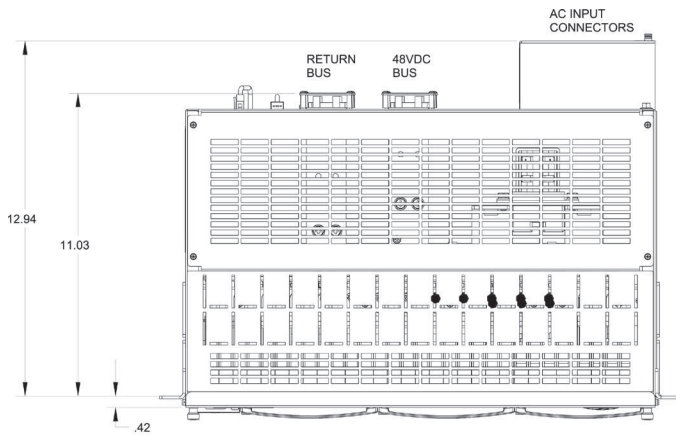
- Order configured systems from the factory or assemble shelves in the field
- DIN battery and load breakers up to 200A with M6 and M8 single hole returns
- Distribution rate for 200A (150A with LVD)



| Configured Systems (systems with preinstalled breakers available upon request) |                                 |                 |                        |                           |            |
|--|---------------------------------|-----------------|------------------------|---------------------------|------------|
| Ordering Code  | Description                     | Rectifier Slots | Load Breaker Positions | Battery Breaker Positions | LVD        |
| 150040505  | SPS-5U-AC5-PS6-DIN20B           | 6               | 20                     | 4                         | No         |
| 150040506  | SPS-5U-AC5-PS6-DIN20B-LVBD      | 6               | 20                     | 4                         | LVBD       |
| 150040507  | SPS-5U-AC5-PS6-DIN20B-LVLD      | 6               | 20                     | 4                         | LVLD       |
| 150040508  | SPS-5U-AC5-PS6-DIN20B-LVBD-LVLD | 6               | 20                     | 4                         | LVBD, LVLD |

| 1RU Rectifier Shelves |               |                  |                 |                    |           |
|-----------------------|---------------|------------------|-----------------|--------------------|-----------|
| Ordering Code         | Description   | AC Input         | Rectifier Slots | Controller Support | DC Output |
| 150028853             | J2007003L051C | Rear AC Terminal | 3               | Yes                | Rear Bulk |
| 150028854             | J2007003L052C | Rear AC Terminal | 3               | No                 | Rear Bulk |

| 3RU DIN Rail Distribution Shelves |                |                                  |                           |                    |  |
|-----------------------------------|----------------|----------------------------------|---------------------------|--------------------|--|
| Ordering Code                     | Model          | Breaker                          | Battery Breaker Positions | LVD                |  |
| 150030916                         | J2012001L011   | 20                               | 4 (8 poles)               | None               |  |
| 150030918                         | J2012001L011B  | 20                               | 4 (8 poles)               | LVBD (150A)        |  |
| 150038051                         | J2012001L011L  | 20 (8 Priority, 12 Non-Priority) | 4 (8 poles)               | LVLD (150A)        |  |
| 150038052                         | J2012001L011BL | 20 (8 Priority, 12 Non-Priority) | 4 (8 poles)               | LVBD & LVLD (150A) |  |

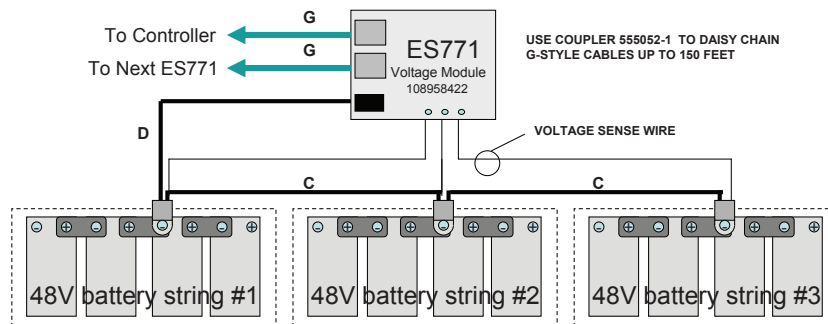
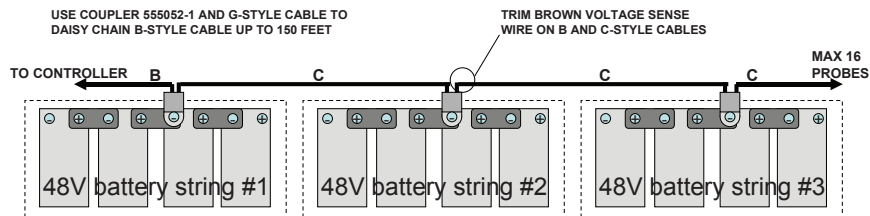


# Common System Components

| Rectifier     |                   |
|---------------|-------------------|
| Ordering Code | Description       |
| 150027894     | EP0500-UTEZ 500W  |
| CC109165602   | EP1000-UTEZ 1000W |
| CC109165610   | EP1600-UTEZ 1600W |
| CC848883297   | Slot Filler       |

| Controller    |                               |
|---------------|-------------------------------|
| Ordering Code | Description                   |
| CC109142238   | SPS841A_3C3R                  |
| CC109156898   | SPS841A_0I5R_D (with Display) |
| CC848868554   | Slot Filler (List 1, 1A only) |
| 150027896     | SPS841A_960R_USB (no Display) |

| Battery Management Accessories |   |
|--------------------------------|---|
| Ordering Code                  | Description   |
| CC109142980                    | A: QS873A Thermal Probe   |
| CC109166402                    | A: QS873A Thermal Probe with ES 12-12 battery quick connect kit |
| CC848817024                    | B: 10' probe to controller wireset                              |
| CC109157434                    | B: 20' probe to controller wireset                              |
| CC848822560                    | C: 1' probe to probe wireset                                    |
| 848719803                      | C: 5' probe to probe wireset                                    |
| CC848822321                    | C: 10' probe to probe wireset                                   |
| 108958422                      | ES771A Voltage Monitor Card                                     |
| CC848791517                    | D: 2 1/2' ES771A to probe wireset                               |
| CC848797290                    | D: 6' ES771A to probe wireset                                   |
| 848719829                      | D: 10' ES771A to probe wireset                                  |
| CC848791500                    | G: 4' ES771A to ES771A or controller wireset                    |
| 848652947                      | G: 10' ES771A to ES771A or controller wireset                   |





# Common System Components, Cont.



| Battery Box and Accessories |   |
|-----------------------------|---|
| Ordering Code               | Description   |
| CC848903187                 | SBB12 Wall or Rack Mounted Battery Box (17.4"W x 12.5"D x 5.2"H)                                    |
| 850036438                   | SBB12w Wall or Rack Mounted Battery Box (17.4"W x 6.7"D x 5.2"H)                                    |
| CC848870832                 | SBB40 Wall or Rack Mounted Battery Box (17.4"W x 12.25"D x 10.5"H)                                  |
| 850039612                   | SBB40w Wall or Rack Mounted Battery Box (17.2"W x 6.7"D x 19.25"H)                                  |
| 850029940                   | SBB60 Wall or Rack Mounted Battery Box (17.4"W x 15"D x 12.25"H)                                    |
| 408538854                   | IR-40 Battery, 12V/34AH, #10 bolt, 8.31"L x 5.13"W x 7.00"H, 26 lbs (4 required for 48V string)     |
| CC408638183                 | ES12-12 Battery, 12V/12AG, 1/4" Fastons, 5.94"L x 3.86"W x 3.7"H, 9 lbs (4 required for 48V string) |
| CC848885715                 | Wireset, connects one IR-40 string to SPS shelf (10ga, 3-1/2 ft)                                    |
| 850027205                   | Wireset, connects one battery string with 1/4" M6 connections to SPS shelf (8ga, 3-1/2 ft)          |
| CC848873546                 | Wireset, connects one or two ES12-12 strings to SPS shelf (12ga, 3-1/2ft)                           |
| CC109164471                 | 30A Battery Breaker Disconnect (includes 30A breaker and 10ga wiring for one ES12-12 string)        |
| 150022385                   | 30A Battery Breaker Disconnect (includes 30A breaker and 10ga wiring for two ES12-12 strings)       |
| CC109153202                 | 50A Battery Breaker Disconnect (includes 50A breaker and 8ga wiring for one IR-40 string)           |
| 850041482                   | Wall mount bracket 1U, 19"  |
| CC848844803                 | 19" to 23" frame mount bracket kit (1RU)  |
| 848683009                   | 19" to 23" frame mount bracket kit (2RU)  |



CC848870832



CC848903187



850036438



850029940






850041482



850039612

# Distribution Components

| Bullet Style Load Circuit Breakers |          |                      |   |
|------------------------------------|----------|----------------------|---|
| Ordering Code                      | Amperage | CB Positions (Poles) | Photo   |
| 407998137                          | 3        | 1                    |  |
| 407998145                          | 5        | 1                    |   |
| 407998152                          | 10       | 1                    |   |
| 407998160                          | 15       | 1                    |   |
| 407998178                          | 16       | 1                    |   |
| 407998186                          | 20       | 1                    |   |
| 407998194                          | 25       | 1                    |   |
| 407998202                          | 30       | 1                    |   |
| 408213486                          | 40       | 1                    |   |
| 407998210                          | 45       | 1                    |   |
| 407998228                          | 50       | 1                    |   |
| 407998236                          | 60       | 1                    |   |
| 407998244                          | 70       | 1                    |   |
| 407998251                          | 80       | 1                    |   |
| 407998269                          | 90       | 1                    |   |
| 407998277                          | 100      | 1                    |   |


| Bullet Style Battery Circuit Breakers (Yellow Handle) (Alarms on Mid-trip and in Off position) |  |  |   |
|--|--|--|---|
| Ordering Code  | Amperage   |  | Photo   |
| CC408612758  | 30   |  |   |
| CC408612766  | 40   |  |   |
| CC408612774  | 45   |  |   |
| CC408574370  | 50   |  |   |
| 408560123  | 60   |  |   |
| CC408574387  | 70   |  |   |
| CC408574395  | 100  |  |   |
| CC109106548  | 100A battery bullet bus strap (substitute for battery breaker) |  |  |

# Distribution Components, Cont.


## DIN Rail Mounted Breakers


| DIN Load Breakers |                |       |               |                |       |
|-------------------|----------------|-------|---------------|----------------|-------|
| Ordering Code     | Current rating | Poles | Ordering Code | Current rating | Poles |
| 450031081         | 100A           | 2     | 450029217     | 30A            | 1     |
| 450031083         | 150A           | 3     | 450029218     | 25A            | 1     |
| 450031084         | 200A           | 4     | 450029219     | 20A            | 1     |
| 450028218         | 63A            | 1     |               |                |       |
|                   |                |       | 450029220     | 15A            | 1     |
| 450029213         | 50A            | 1     | 450029222     | 10A            | 1     |
| CC408654288       | 40A            | 1     | 450029223     | 5A             | 1     |
| 450029214         | 35A            | 1     | 450037914     | 2A             | 1     |

| DIN Battery Breakers |                |       |
|----------------------|----------------|-------|
| Ordering Code        | Current rating | Poles |
| 150040992            | 63A            | 1     |
| 150040991            | 100A           | 2     |
| 150040993            | 150A           | 3     |
| 150040994            | 200A           | 4     |

| GMT Fuses     |             |   |
|---------------|-------------|---|
| Ordering Code | Amperage    | Photo   |
| 405006222     | 0.25A       |  |
| 3150439       | 0.5A        |   |
| 405673146     | 1.33A       |   |
| 405181983     | 2A          |   |
| 406976985     | 3A          |   |
| 406159061     | 5A          |   |
| 405725433     | 7.5A        |   |
| 406159236     | 10A         |   |
| 407845197     | 12A         |   |
| 406473959     | 15A         |   |
| 408515823     | Fuse Puller |   |
| 402099436     | Dummy Fuse  |   |

## Select Distribution Components, Cont.

| Terminal Lugs for Bullet Style Breakers and TPS Fuses (1/4" bolt on 5/8" centers) |                       |                        |               |   |
|---|-----------------------|------------------------|---------------|---|
| Ordering Code   | STR Wire GA (Class B) | Flex Wire GA (Class I) | WP-91412 List | Photo   |
| 406021626   | 8                     | 8                      | 75            |  |
| 405347519   | 6                     | 6                      | 3             |   |
| 405347576   | 4                     | 4                      | 5             |   |
| 405348202   | 2                     | -                      | 54            |   |
| 405347683   | -                     | 2                      | 8             |   |

| Straight Lug (#10 bolt on 5/8" centers) for DC2, DC3, DC4, DC6 Load Connections |                       |                        |               |   |
|---|-----------------------|------------------------|---------------|---|
| Ordering Code   | STR Wire GA (Class B) | Flex Wire GA (Class I) | WP-91412 List | Photo   |
| 405356171*  | 14-10                 | 14-10                  | 73            |  |
| 405348178*  | 8                     | 8                      | 52            |   |
| 406338400*  | 6                     | 6                      | 108           |   |



## Management Visibility

Galaxy Manager\* software is the centralized visibility and control component of a comprehensive power management system designed to meet engineering, operations and maintenance needs. The Galaxy Manager client-server architecture enables remote access to system controllers across the power network.

- Dashboard display with one-click access to management information database
- Trend analysis
- Scheduled or on demand reports
- Fault, configuration, asset, and performance management

## Training

GE offers on-site and classroom training options based on certification curriculum. Technical training can be tailored to individual customer needs. Training enables customers and partners to more effectively manage and support the power infrastructure. We have built our training program on practical learning objectives that are relevant to specific technologies or infrastructure design objectives.

## Service & Support

GE field service and support personnel are trusted advisors to our customers – always available to answer questions and help with any project, large or small. Our certified professional services team consists of experts in every aspect of power conversion with the resources and experience to handle large turnkey projects along with custom approaches to complex challenges. Proven systems engineering and installation best practices are designed to safely deliver results that exceed our customers' expectations.

## Warranty

GE is committed to providing quality products and solutions. We have developed a comprehensive warranty that protects you and provides a simple way to get your products repaired or replaced as soon as possible.

For full warranty terms and conditions please go to [www.gecriticalpower.com](http://www.gecriticalpower.com).

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