

Bel Power Solutions for Datacenters



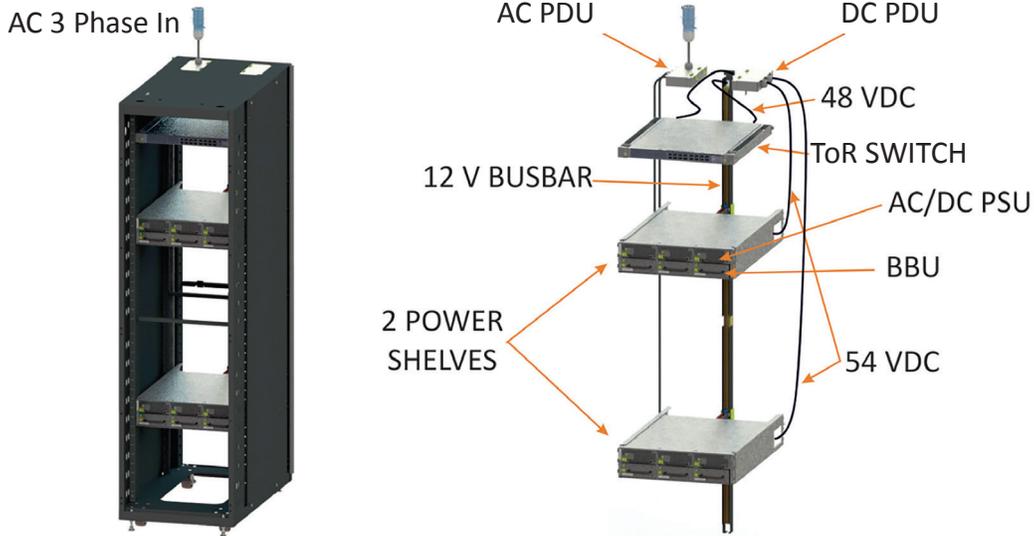
bel POWER
SOLUTIONS &
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a bel group

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Open Compute V2 Power Shelf & V2 Power Module

Bel Power Solutions 6600 W stand-alone V2 Power Shelf is powered from three-phase AC line, hosting three 3300 W (N + 1) hot-swappable single-phase V2 Power Modules.



Features & Benefits

- Titanium Efficiency > 95.9 % @ 277 Vac, 50% load
- High Power quality (Power Factor and THD)
- Redundant (2+1) output 6600 W / 12.6 Vdc with active current sharing
- Redundant (2+1) auxiliary output 600W / 54 Vdc
- Houses 3 x 3300W power supply units (PSU)
- Houses 3 x 3600W Lithium Ion Battery back-up units (BBU)
- 52.5 V input battery back-up / charger for lithium Ion battery pack
- 3-Phase 200 Vac - 277 Vac Input to shelf
- Hot-plug capable
- Digital control for improved performance
- RS485 communication interface for control, programming & monitoring
- Status LED with fault signaling



240 Vac Power Distribution Unit

AC Distribution YSD.00152 EU

277 Vac Power Distribution Unit

AC Distribution YSD.00162 US

DC-DC Distribution Unit

DC-DC Distribution YSD.00134



| | NA, 277/480 | EU, 240/415 | NA, 208 | NA, 277 CS | NA, 277 30A | DC PDU |
|-----------------|---------------|---------------|--------------|--------------|---------------|--------------|
| Bel P/N | YSD.00162 | YSD.00152 | YSD.00217 | YSD.00219 | YSD.00218 | YSD.00134 |
| Input Voltage | 277/480, 3P5W | 240/415, 3P5W | 208, 3P4W | 277, 1P3W | 277/480, 3P5W | 54Vdc |
| Surge Circuit | Yes | Yes | No | No | Yes | No |
| Input Plug Type | L22-20P | IEC-309 | L21-30P | L7-20P | L22-30P | N/A |
| Connector | HBL2521 | | HBL2811 | HBL2331 | HBL2821 | |
| Wire Gauge | 12 AWG | 10 AWG | 10 AWG | 12 AWG | 10 AWG | 14 AWG |
| Style | 2 in / 2 out | 1 in / 2 out | 2 in / 2 out | 1 in / 1 out | 1 in / 2 out | 0 in / 2 out |

3 kW Platinum & Titanium Efficiency Power Modules (AC-DC)

Converts 90-300 Vac main power into a main output of 12 Vdc for powering intermediate bus architectures (IBA) in high performance and reliability servers, routers & network switches.

Features & Benefits

- Platinum+ Grade Efficiency
- Input Voltage Range: 90 to 300 Vac, 240 to 400 Vdc
- Rated Power: 3000W ($V_{in} > 180$ Vac, $V_{in} > 192$ Vdc), 1400 W ($V_{in} > 90$ Vac)
- Standby Output (always present): 12 V / 5.0A
- Hold-up Time: ≥ 12 msec
- Communication: Physical Layer I²C, Protocol Layer PMBus™
- Redundant Operation: Analog Current Share (244 A Ishare voltage = 8 V)
- Form Factor: 1U x 69 x 555 mm



SPSPFE3 Power Shelves

SPSPFE3 power shelves provide rectification, system management, power distribution while maintaining high reliability & offering flexibility for future expansion.

Features & Benefits

- Three versions of power shelf available:
 - EU: SPSPFE3-02G: 3-phase 400/480 Vac line to line input with Neutral line
 - US: SPSPFE3-03G: 3-phase 208 Vac line to line input, without Neutral line
 - EU: SPSPFE3-04G: 3-phase, 400 Vac line to line input with Neutral line
- Holds six 3 kW power modules in either 5+1 or 3+3 configurations
- AC input at the rear
- I²C communication with I²C Multiplexer
- +12 VSB output at the rear with:
 - three sets of busbar blades for SPSPFE3-02G / SPSPFE3-03G
 - one set of busbar blades for SPSPFE3-04G
- Form Factor: 46.5 x 436 x 650 mm
- Adaptor mousing brackets available: 19" or 21"
- Compatible with the Open Compute rack design



3 kW DC/DC Front End

I²C communication interface for control, programming and monitoring with PMBus™ protocol front to back airflow

Features & Benefits

- High efficiency >95%
- Wide input range: 39-72 Vdc
- 12.3 Vdc Output (244 A) / 12 Vdc Standby (2 A)
- Parallel operation with active analog current sharing
- Full digital controls for improved performance
- Small/Slim form factor: 79 x 42 x 555 mm



1 OU / 15 kW N+1 DC/DC Shelf + Controller

The 6-position single busbar shelf

Features & Benefits

- 6 x 3000 W DC/DC power-modules
- Shelf compatible to OCP standard (534 mm wide)
- Height = 46 mm < 1 OpenU
- Single-Busbar as in OCP V2
- 400 A Input DC connector: TBD
- Hot Swap controller with Ethernet communication (RJ45)
- CAN bus I/O on the back of the shelf in order to communicate with BBU (2xRJ45)



BBU Shelf

Shelf provides 12 V backup power during AC outage

Features & Benefits

- 15 kW (+ 5 kW) full load for 60 s (battery EOL)
- Includes 4 BBU and 4 Charger/Dischargers
- Battery is fully isolated from 12 V busbar for maximum reliability
- All modules are hot-swappable-Senses optionally AC lines for faster AC outage detection
- The shelf includes automatic life battery test diagnostic with EOL signal
- A controller with Ethernet communication (on front panel) is included in the shelf (optional)
- Isolated CAN bus / PMBus available on the back of the shelf
- This BBU shelf independently works in conjunction with any power solution installed in the open rack

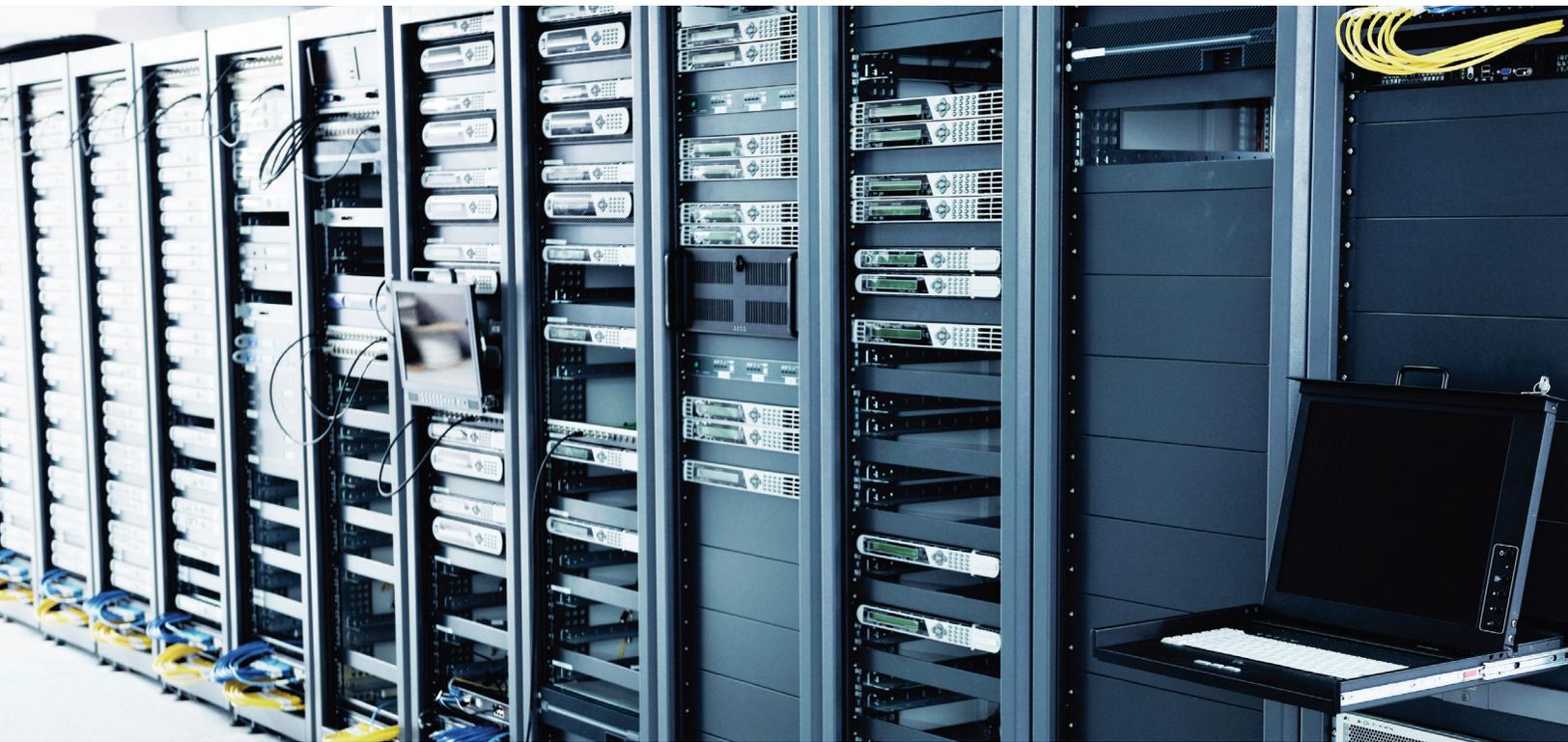




About Bel High Power Solutions

Bel Power Solutions provides leading OCP power conversion modules and shelves. The Bel Power Shelves provide rectification, system management and power distribution, while maintaining high reliability and offering flexibility for future expansion. We continue to push for leading edge power solutions for OCP IT-Racks to Datacenters.

Bel Power Solutions is certified to both ISO9001 as well as ISO14001.



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