DC Power Distribution Unit

for V2 Open Rack

Bel Power Solutions DC Power Distribution Unit (PDU) is used to distribute DC auxiliary power and monitoring signals in Open Racks.

This device is installed in an IT chassis and works in conjunction with the OCP V2 Open Rack.

The DC supply voltage is distributed from the V2 Power Shelves and it is used to supply the switches and a rack-monitoring device.

The monitoring signals are distributed from the V2 Power Shelves to the rack-monitoring device.

RoHS Compliant

Key Features & Benefits

- Designed for V2 Power shelf
- Input voltage range: 40 – 72 VDC , max 15 A (x2)
- 2x Power DC inputs
- 4x Power DC outputs
- Different output power connector for higher flexibility
- Interconnections for monitoring and communication signals to rack monitor trough RJ45 connectors
- Full compatibility with Open Compute project specification
- Robust mechanical design
- UL approved Link to OCP specification:

  http://www.opencompute.org/wiki/Open_Rack/SpecsAndDesigns

1. ORDERING INFORMATION

MODEL	PART NUMBER
DC PDU	YSD.00134

2. INPUT SPECIFICATIONS

A maximum of 600 W total is allocated to power the switches and a rack-monitoring device. Each Power Shelf is capable of providing the 600 W by itself, or, if two shelves are present in the rack, each will supply 300 W. Each of the 2 DC inputs from the shelves is connected in the PDU to 2 separate outputs implemented with different connectors (Molex and Anderson Power). The picture below shows the power electrical connections in the PDU.

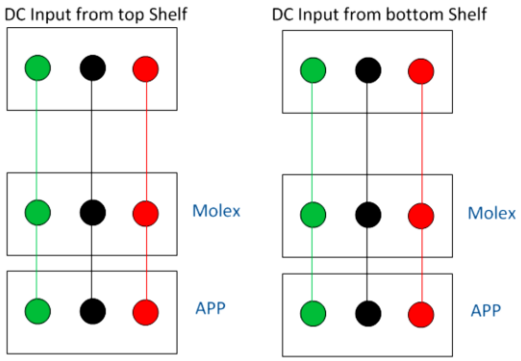
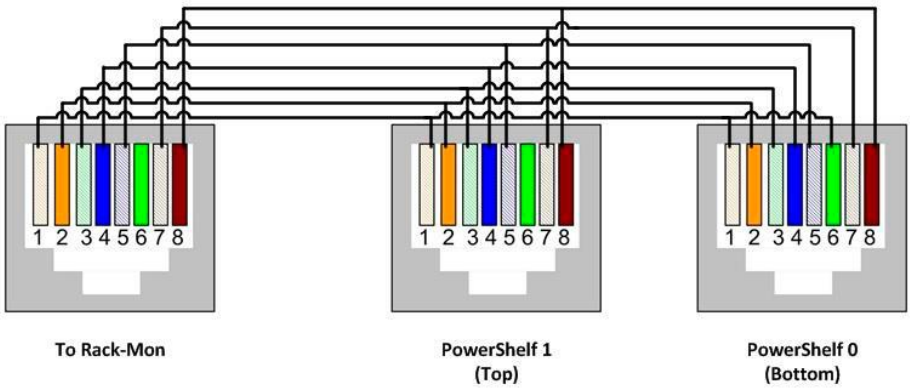


Figure 1: Electrical Schematic

The PDU collects the monitoring and communication signals from the Power Shelves and distributes them to the Rack-Monitoring device. The signal connectors are standard RJ45. The picture below shows the electrical connections of the monitoring and communication signals in the PDU.



NOTE: The colors in the following figure are not standard.

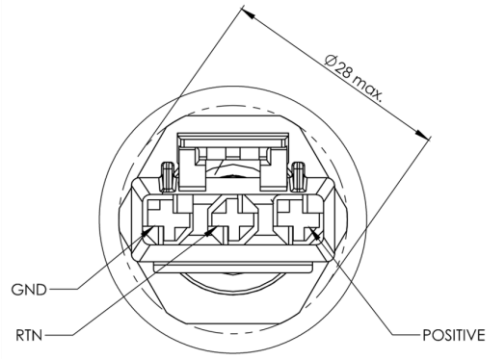
Figure 2. Communication Wiring

The table below shows a summary of the PDU input electrical characteristics and interfaces:

PARAMETER	CONDITIONS / DESCRIPTION	MIN	NOM	MAX	UNITS
Nominal DC Input Voltage			54		VDC
Input Voltage Range		40		72	VDC
Input Current			15		A
Input Power Connectors	2x Molex Sabre				
Rack Monitor Input	2x RJ45 input connectors connected from each power shelf				

2.1 INPUT POWER CONNECTIONS

2x Input connectors - female Molex Saber 7.50 mm receptacle housing with a latch (44441-2003) with the Molex Sabre crimp female terminal (43375-0001).



PIN	DESCRIPTION
1	+54 VDC (red)
2	RTN (black)
3	GND (green)

Figure 3. Molex 44441-2003

3. OUTPUT SPECIFICATIONS

The table below shows a summary of the PDU output electrical characteristics and interfaces:

PARAMETER	CONDITIONS / DESCRIPTION	MIN	NOM	MAX	UNITS
Output Connectors	2 pcs 2 pcs connected via right angle connectors on the PCB				
Output Voltage Range		40		72	VDC
Output Current			15		A
Communication Connector	RJ45				
LED Indicator	2 pcs to indicate that a valid 54 VDC nominal voltage is present (40 to 72 VDC).				

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3.1 OUTPUT POWER CONNECTIONS

The PDU implements 2 +2 output Power connectors implemented with 2 different connectors types.

Below the implemented PNs from Molex and APP are shown.

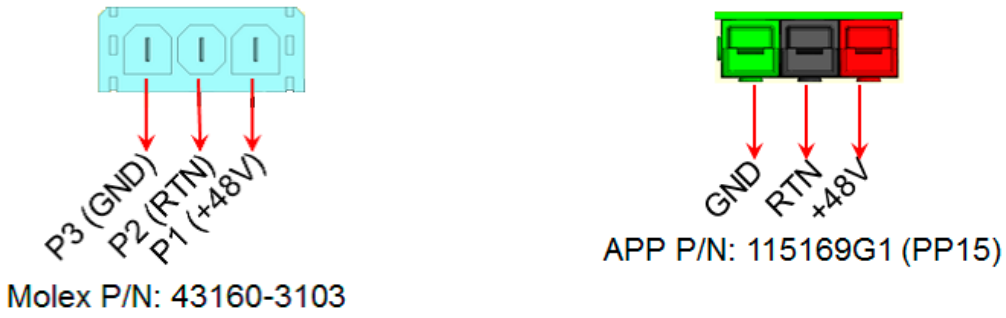

Figure 4. DC Output Connectors

4. SAFETY, REGULATORY AND EMC SPECIFICATIONS

PARAMETER	CONDITIONS / DESCRIPTION	MIN	NOM	MAX	UNITS
Agency Approvals	UL 60950-1 CE Mark RoHS Compliant				
High-Pot Test	DC input side (+54 VDC and return) to the earth ground chassis (GND)	750			VDC

5. ENVIRONMENTAL SPECIFICATIONS

PARAMETER	CONDITIONS / DESCRIPTION	MIN	NOM	MAX	UNITS
Altitude	Operating Non-Operating (without derating)			3000 10000 15000 49000	m ft m ft
Operating Ambient Temperature		-5		+45	°C
Storage Temperature		-40		+70	°C
Transportation Temperature	short term storage, 72 hours	-55		+85	°C
Relative Humidity	Operating: Non-condescending Non-operating: 38.7°C maximum wet bulb temperature with no cosmetic damage	10 5		90 95	%
Shock	Operating : 11 ms, 3 half-sine wave shocks, 3 axes Non-Operating: 2 ms, 6 half-sine wave shocks, 3 axes			5 140	g
Sinusoidal Vibration	Operating: zero to peak, 10 to 500 Hz, 0.25 oct/min Non-Operating : zero-to-peak, 10 to 500 Hz, 0.5 oct/min			0.25 0.75	g

6. MECHANICAL SPECIFICATIONS

PARAMETER	CONDITIONS / DESCRIPTION	MIN	NOM	MAX	UNITS
Dimensions (W x H x D)	248 x 45 x 121 mm				

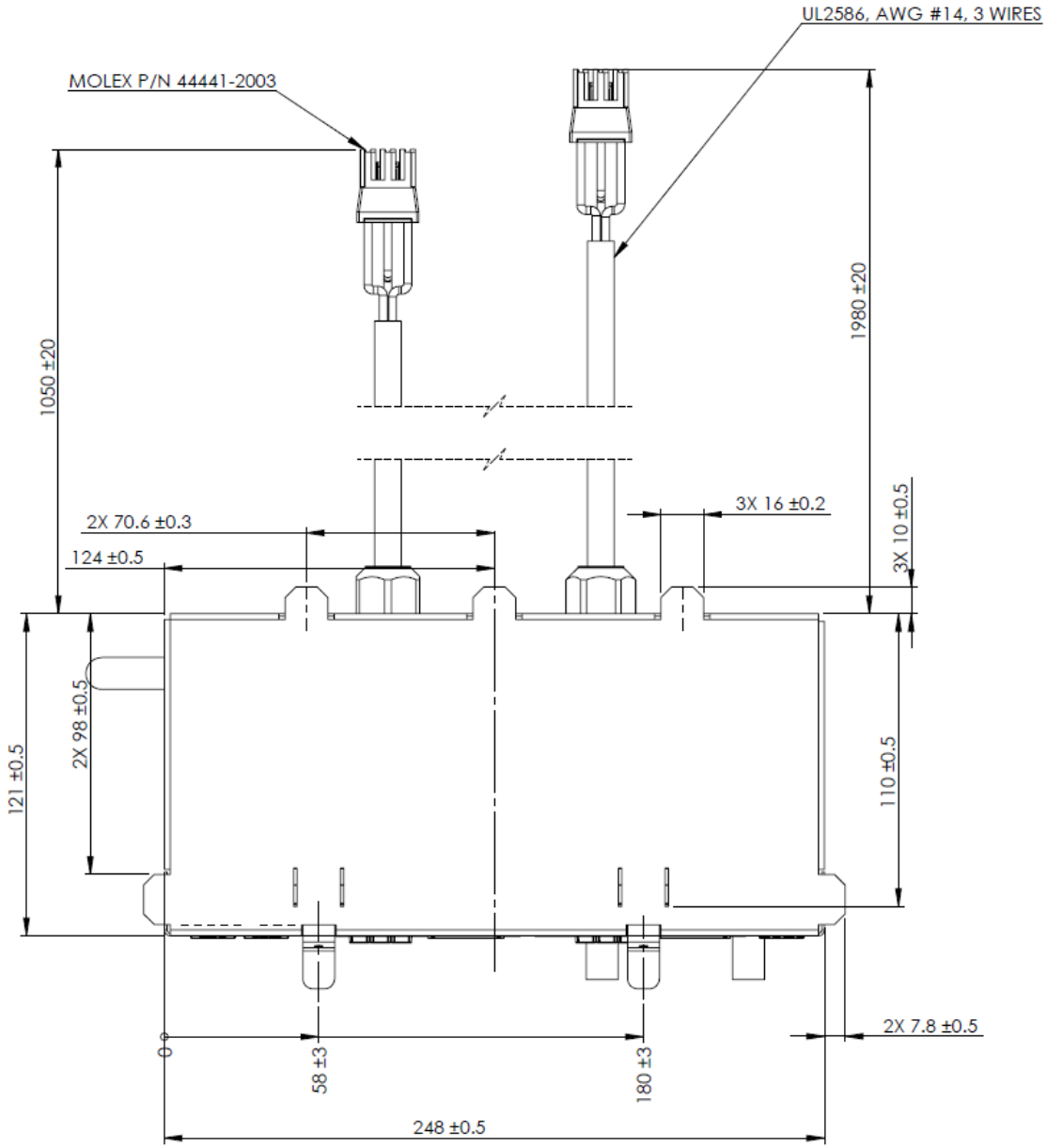

Figure 5. Dimension Drawing DC PDU (Top View)

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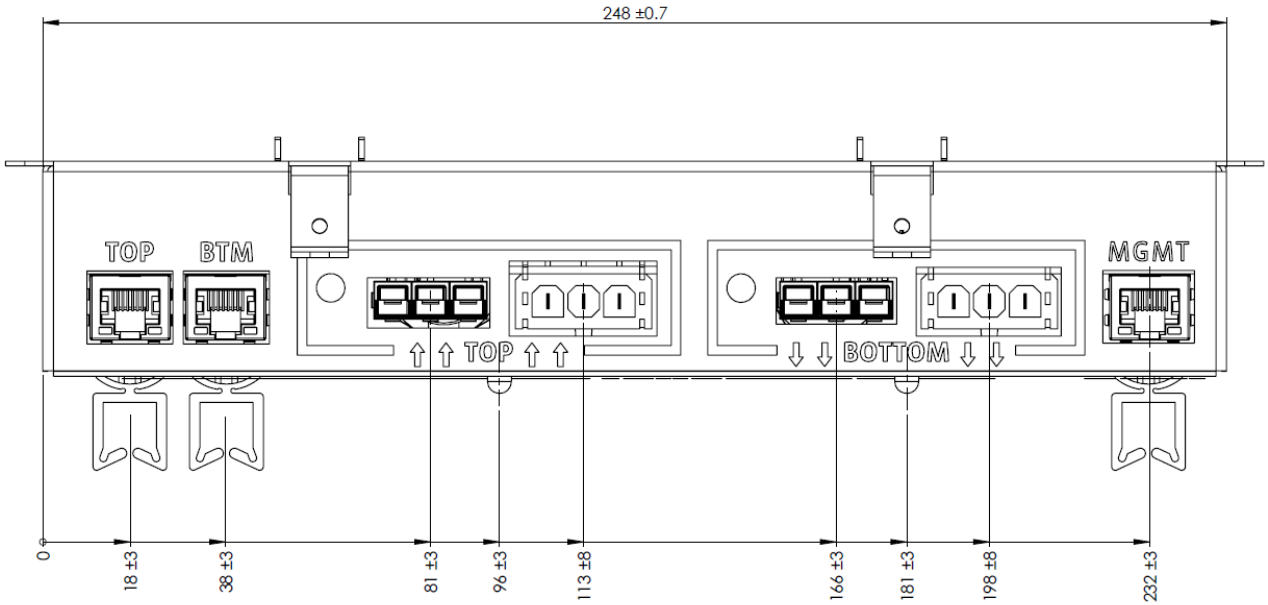

Figure 6. Dimension Drawing DC PDU (Side View)

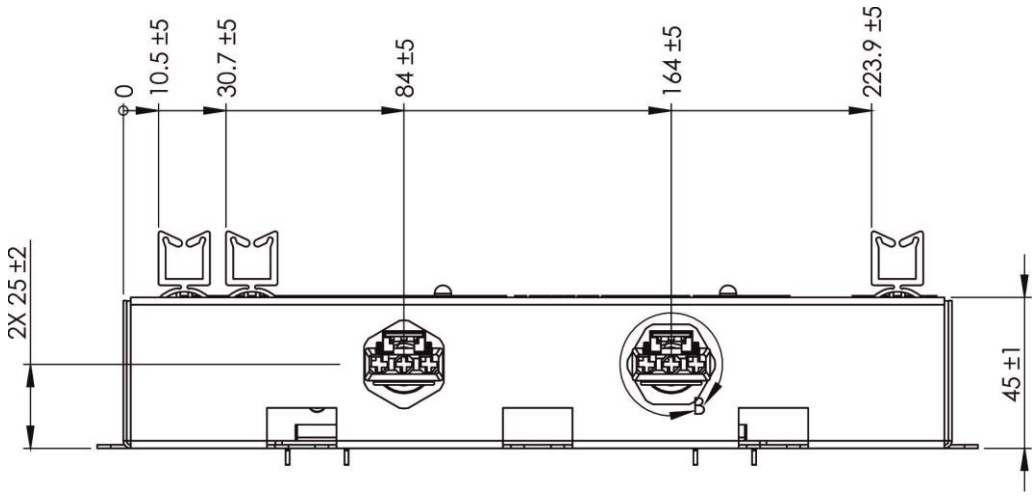

Figure 7. Dimension Drawing DC PDU (Side View)

For more information on these products consult: tech.support@psbel.com

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