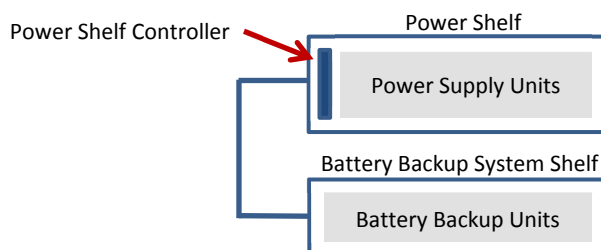


The Power Shelf Controller (PSC) is an integral part of the Lite-On DC UPS system. A fully-configured DC UPS system consists of a power shelf connected to a Backup Battery System (BBS) for uninterruptible power backup protection. On the front of the power shelf is a slot for the Power Shelf Controller along with multiple slots for Power Supply Units (PSUs). The BBS is a separate shelf with multiple slots for Li-ion Backup Battery Units (BBUs).



**Power Shelf
Controller location
within the DC UPS
System**

The Power Shelf Controller is a hot-swappable plug-in module that monitors all PSUs and BBUs in the DC UPS system. It provides communication to the Lite-On Site Monitoring Controller (SMC) or other monitoring software for information and/or event-based responses. Refer to the System Block Diagram at the end of this datasheet for more details.

Key Features

- Monitors up to 10 PSUs and 8 BBUs
- Hot-swappable for easy installation and maintenance
- Configurable alarm and reminder notifications
- Real-time monitoring capabilities for power shelves and battery backup system
- Real-time alarm logging and delivery
- SNMP (v2c, v3), Web server, RestAPI, and IPMI support for remote management
- Secure web interface
- Efficiency management system for optimizing power shelf efficiency
- 10/100/1000 Ethernet port support IPv6, SNMPv3
- CAN communication port



Specifications

Electrical	
Monitors up to 10 PSUs	Input (Voltage / Current / Frequency / VA / Watts), Output (Voltage / Current / Watts), Status, Alarm
Monitors up to 8 BBUs	Input (Voltage / Current / Watts), Output (Volts / Current / Watts), Status, Alarm
Communications	CAN, I ² C, RS232/485
EMI	EN61000, EN55022, IEC6100-4-6 class A
Physical	
Dimensions (H x W x D)	4.35" x 0.82" x 12.00" (110.7 mm x 21 mm x 305 mm)
Weight	1.596 lbs (0.724 kg)

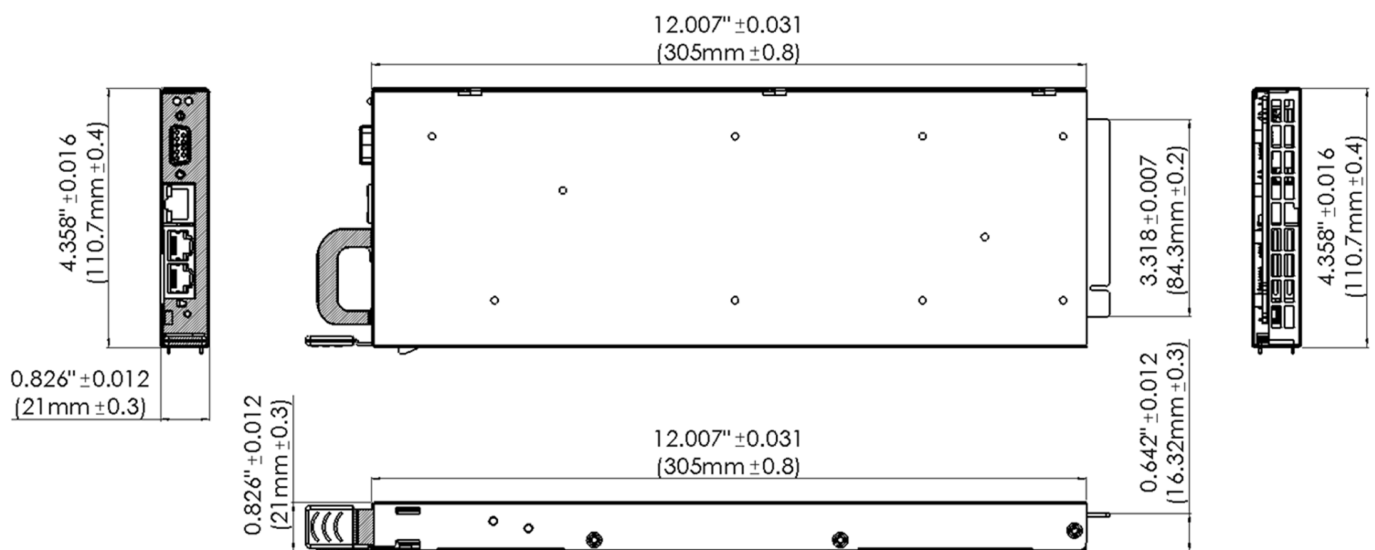
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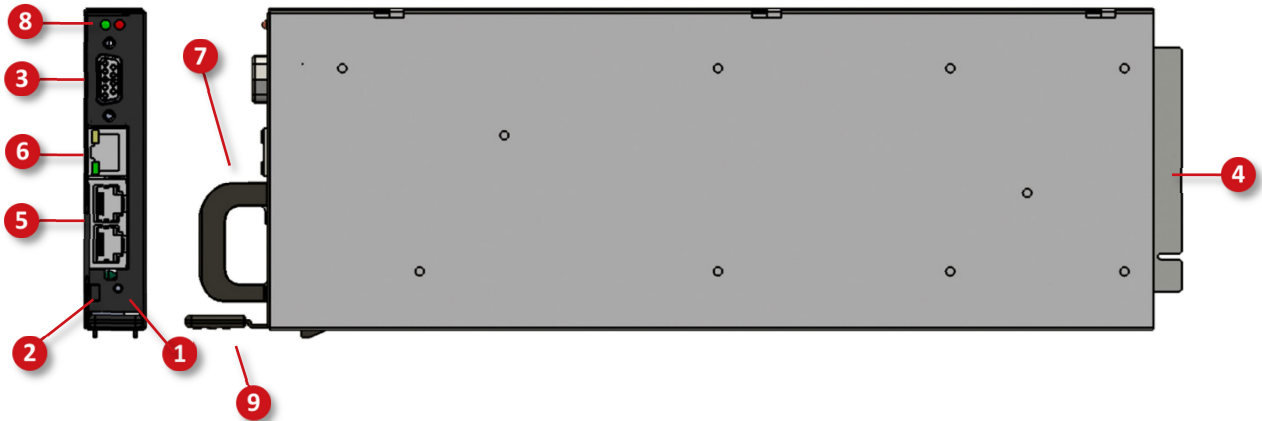
Specifications

Environment	
Temperature	Operating: -5°C – 50°C, Storage: -30°C – 70°C
Humidity	5% – 95% relative (non-condensing)
Altitude	No de-rating up to 3000 m. From altitude of 3000 m – 5000 m, reduce operating temperature to 30°C
General	
Approvals	EN61000, EN55022, IEC6100-4-6 class A
Warranty	3 Years

Mechanical



Front Panel and Rear Connector



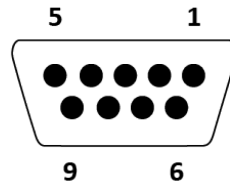
1	Reset	Reset button for controller shutdown
2	Temperature Sensor	Front panel temperature sensor
3	D-sub connector	RS232/RS485 communications for maintenance
4	Power and communication connectors	Power and PSU / BBS communication signal connectors
5	RJ45	CAN (communication with SMC)
6	RJ45	Ethernet Port
7	Handle	Shelf Controller maintenance and installation handle
8	LED Indicators	Power Shelf Controller Status Flashing: Initialization, Green: Normal, Red: Alarm
9	Spring latch	Lift the spring latch to slide it out from the power shelf

Connectors

Console Port: RS232 / RS485 (Half duplex)

The Power Shelf Controller supports RS232 or RS485 (half duplex) which can be selected by DIP switches (default is RS232). The D-sub connector is for setting controller parameters, reading debug information, and firmware installation (No isolation).

Note: If isolation is required, an RS232 to RS485 isolation cable must be used.



Connector type: D-sub connector (Female)

Parameter	Baud rate (bit/s)	Bit	Parity	Stop bit
Value	9600, 19200, 57600, 115200	8 bits	None	1 bit

Pin Assignment	1	2	3	4	5	6	7	8	9
Definition		RS485- (TX)	RS485+ (RX)	5V	GND		5V		

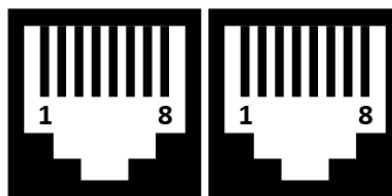
Ethernet port

The Power Shelf Controller supports one 10/100/1000 Mbps (with DHCP) self-adaptable Ethernet port. This port supports IPV6, SNMPv3, and TCP/IP.



CAN (for SMC communication)

The Power Shelf Controller module supports two 500kbit/s ports for CAN.



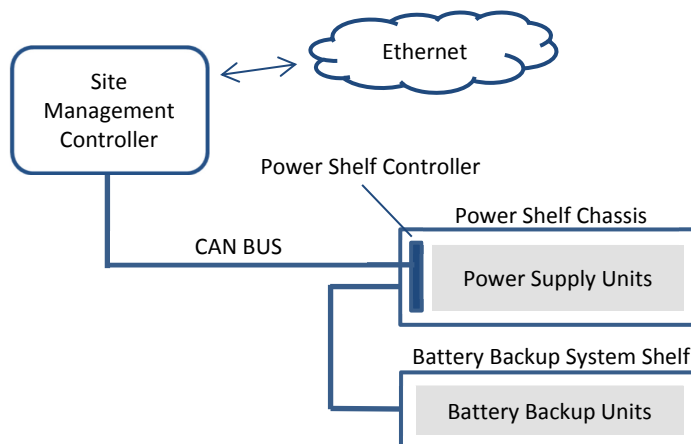
Pin Assignment	1	2	3	4	5	6	7	8
Definition	CAN-H	CAN-L		+12V	+12V		GND	GND

LED Indicators

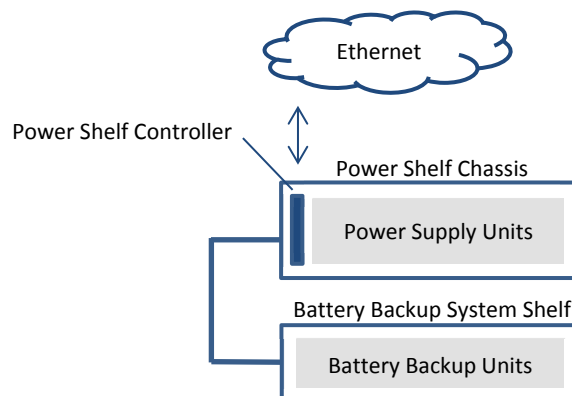
Alarm LED	Alarm indicator LED (red)	On: Critical Major Alarm
		Blinking: Minor Alarm
Power LED	Power indicator LED (green)	On: PSC power on
		Off: PSC power off

Power Shelf System Components

Component	Model Number	Description	
18kW Power Shelf and matching Power Supply Unit	PF-2183-1L1M	Power Shelf	3-Phase includes 1 Shelf Controller slot and 5 PSU Module slots
	PS-2452-1L1M	Power Supply Unit (PSU)	3-phase, 380VAC/480VAC Input, 12.5V / 360A Output
22.5kW Power Shelf and matching Power Supply Unit	PF-2223-1L1M	Power Shelf	3-Phase includes 1 Shelf Controller slot and 10 PSU Module slots
	PS-2252-6Q-LF	Power Supply Unit (PSU)	Single phase, 200 – 240VAC Input, 12.5V / 200A Output
12.5kW Power Shelf and matching Dual-input Power Supply Unit	PF-2123-1LDM	Power Shelf	12.5KW (5+1), 3 Phase, 5-wire connection, 2.5U Power Shelf with 6 pcs power module slots
	PF-2123-1LDN	Power Shelf	12.5KW (5+1), 3 Phase, 4-wire connection, 2.5U Power Shelf with 6 pcs power module slots
	PS-2252-1QDU	Power Supply Unit (PSU)	Single phase, 200 – 240VAC Dual-Input, 12.5V / 200A Output
Battery Backup System and matching Battery Backup Unit	BP-1442-01X	21-inch, 4-slot Battery Backup System (BBS)	
	BM-1112-01X	Li-ion Battery Backup Unit (BBU)	
Power Shelf Controller	CM-12CP-010U	Manages the Power Shelf and Li-ion Battery Backup System	
Site Management Controller	CP-13EC-010U	Rack management and control	
21" OCP Rack	KT-2141-121	21-inch Open Compute Project (OCP) -compliant rack	



**DC UPS System
Block Diagram**



**DC UPS System
Block Diagram**



Innovative Power Management Solutions for Critical Infrastructure

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