

Virtual Power On Call (VPOC™) is a highly-efficient backup power solution that uses a fraction of the space of a conventional Uninterruptible Power System (UPS). The 10kW VPOC™ module, along with two Lithium Ion (Li-ion) battery modules, slides into the 1U VPOC™ Shelf. VPOC works in unison with embedded IT equipment power supplies to complete this revolutionary critical-power system. It automatically manages transitions between normal (AC) operation and battery mode (DC) to keep IT equipment safe during power interruptions. An external VRLA battery solution may be substituted for Li-ion batteries for even longer backup times.

Key Features

- 10kW Output Power with Battery Backup
- One VPOC™ Power Module slot and two Li-ion battery module slots
- Input AC disconnect switch
- Shelf level external maintenance bypass
- Compatible with optional VRLA EBM
- Flexible communication including USB, CAN, and RS232
- Remote Emergency Power Off (REPO)



Specifications

Electrical	
Maximum Output Power	10kW
3 Slot Capacity	1 VPOC™ 10kW Module Slot: VM-3103-111U
	2 VPOC™ Li-ion Battery Module Slots: BM-1502-010U
External Battery	Up to 4 Extended Battery Modules (EBMs): BK-1151-010U
Input	208VAC / 220VAC / 230VAC / 240VAC
Output	208VAC / 220VAC / 230VAC / 240VAC or 240VDC
Frequency	47Hz – 63Hz
DC Link Voltage	200VDC – 300VDC
Communication	USB, CAN, RS232
Remote Emergency Power Off	REPO can be configured to “Normally Closed” or “Normally Open”
Dry Contacts	Operating conditions communicated via simple open/closed indicator
Display	Battery level, Battery Mode, Load level, Fault indicator, AC Input Status, AC Output Status
EMI	CISPR Pub 22 Class A

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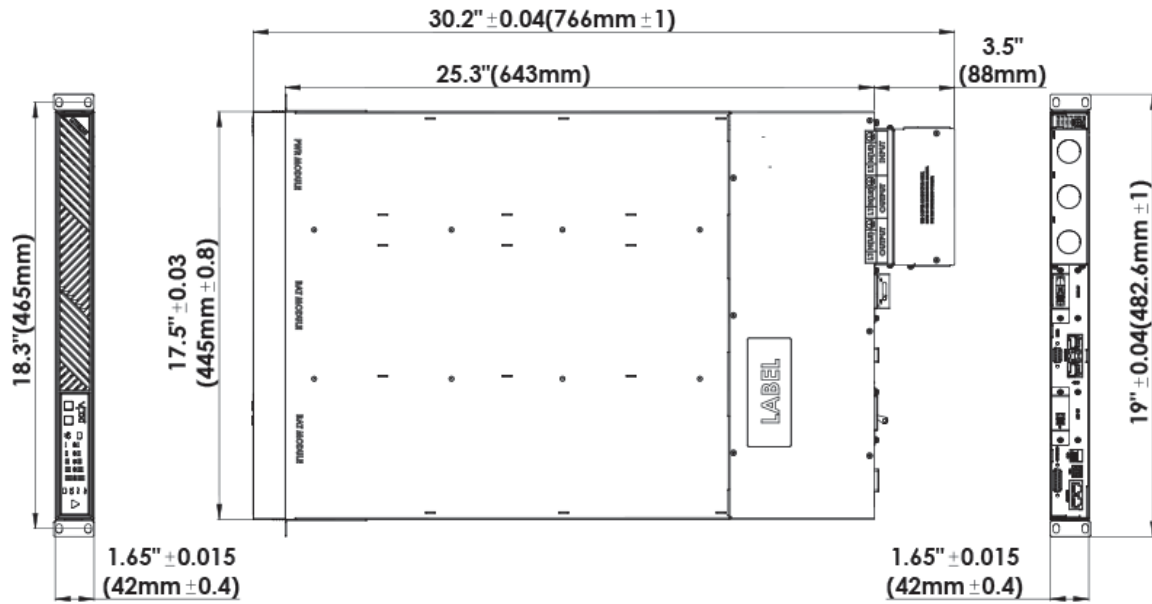
Specifications

Physical	
Dimensions (H x W x D)	1.65" x 17.5" x 30.2" (42 mm x 445 mm x 766 mm)
Weight (empty)	18.48 lbs (8.4 kg)
Weight with VPOC Power Module	23.43 lbs (10.65kg)
Weight fully-loaded with VPOC Power Module and 2 VPOC Li-ion batteries	47.63 lbs (21.65 kg)
Form Factor	1U, 19" EIA Rack Mount (hardware included)
Environment	
Temperature	Operating: 0°C – 45°C, Storage: -20°C – 70°C
Humidity	0% – 95% relative (non-condensing)
Altitude	Operating: 0 m – 3000 m, Storage: 0 m – 15000 m
Acoustic	60dB at 1 m
General	
Approvals	UL60950-1, IEC60950-1 International, GB4943, RoHS
MTBF	1570015 Hours
Mounting Hardware	2 mounting brackets and 6 screws are included
Warranty	2 years

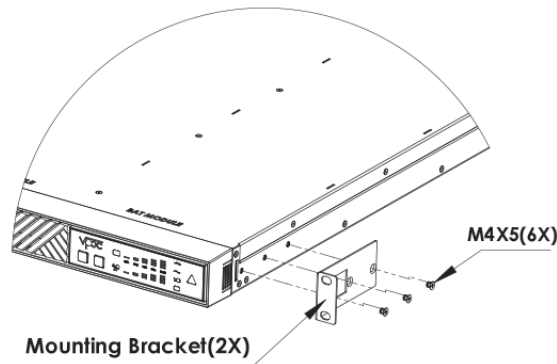
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Mechanical



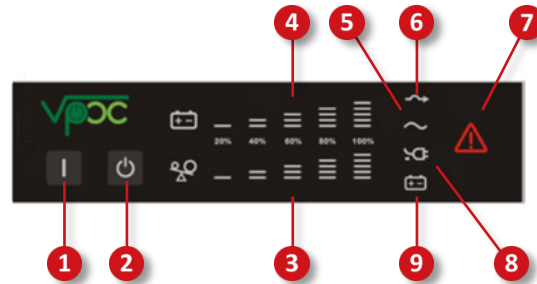
VPOC Shelf 1U Accessory Mounting Bracket Installation








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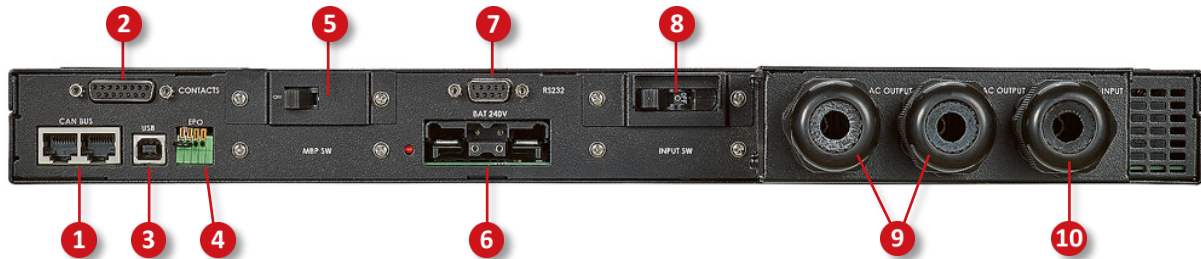
VPOC Front Panel



1	Alarm Silence / Manual Battery Test Button	Press for 1 second to silence a connected alarm. After the alarm is silenced, the alarm system is reactivated.	
		<i>For VRLA batteries only:</i> Press for 1 second during normal operation to initiate VRLA battery test. Press for 1 second to end battery test.	
		<i>For Li-ion batteries only:</i> Press for 1 second during normal operation to electrically disconnect Li-ion battery from the VPOC™ Power System. Press for 1 second to reconnect to Li-ion battery.	
2	On / Standby / Manual Bypass Button	<i>For VRLA batteries only without AC input:</i> Press and hold for 4 seconds to cold start VPOC™ operation.	
		Press and hold for 4 seconds when operating in AC mode activates internal automatic bypass mode.	
		When in internal automatic bypass mode, press twice within 4 seconds to turn off all VPOC™ output capability. Ensure that the shelf maintenance bypass switch is engaged to maintain power to the load.	
3	Load Level Indicators	Displays approximate load in 20% increments of full load. The 100% column flashes when operating in an overload condition.	
4	Battery Level Indicators	Displays remaining capacity in 20% increments. The 100% column flashes when batteries are charging.	
5	AC Output Indicator (Green)		On: normal mode — AC out
			Off: output determined by operating conditions
6	Bypass Indicator (Amber)		On: operating with internal bypass — AC out
			Off: output determined by operating conditions
7	Fault Indicator (Red)		On: a fault condition exists
			Off: no faults detected

8	AC Input Indicator (Green)		On: AC input is within allowed range
			Off: no AC input
			Flashing: AC input is outside allowed range
9	Battery Indicator (Amber)		On: operating in Battery mode – DC out
			Off: output determined by operating conditions
			Flashing: Battery source not available

VPOC Rear Panel



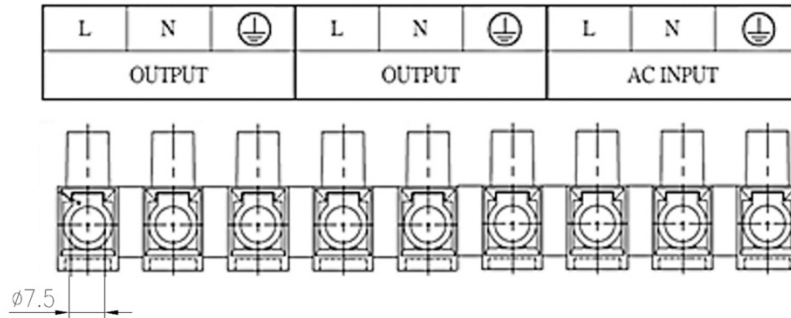
1	CAN Port	Communication to a site monitor for the operating status of the VPOC power module and battery
2	Dry Contact	DA-15 connector used to provide operating conditions communicated via simple open/closed switches
3	USB Port	Communication to a network server or other computer for the operating status of the VPOC power module and battery
4	Remote Emergency Power Off (REPO)	4-pin connector can be configured “Normally Closed” or “Normally Open”
5	Maintenance Bypass Switch	Manual switch that provides an external AC bypass to allow swapping of power or battery modules for maintenance and repair
6	Battery Connector	DC input from Extended Battery Module
7	RS232 Port	Communication to a network server or other computer for the operating status of the VPOC power module and battery
8	AC Input Switch	Switch to connect the AC input to the shelf
9	Hardwired Power Output	Two (2) parallel outputs managed by the VPOC Power Module. These outputs provide AC output during normal operation and DC output during battery operation.
10	Hardwired Power Input	Hardwire capability for 1 AC input

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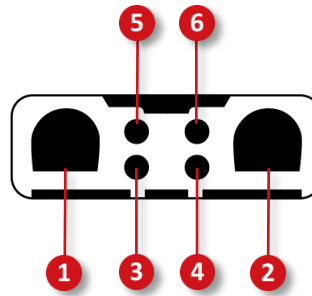
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Power Input/Output Connector 600V, 75A

The minimum input and output wire size for the VPOC™ is 6 AWG 90°C, 8AWG 105°C. The tightening torque for the connectors is 2.03 Nm.

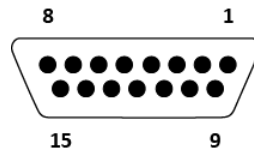


Battery Connector



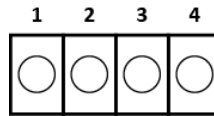
1	Battery input +	Battery Power Connections
2	Battery input -	
3	Ground	Safety ground
4	Ground	
5	Battery Temperature	Battery temperature signal from external battery module used by VPOC for charging
6	Battery Temperature	

Dry Contact Configuration



DA-15 Position	Name	Description
Pins 1 – 2	Battery Mode	Closed when operating on battery
Pins 3 – 4	Bypass Mode	Closed when operating on internal Automatic Bypass
Pins 5 – 6	Low Battery	Closed when operating on battery AND the battery voltage is less than the low voltage alarm setting
Pins 7 – 8	Overload	Closed when operating in overload condition
Pins 9 – 10	Alarm	Closed when operating with audible alarm
Pin 11	GND	
Pins 12 – 13	Any Mode Shutdown	Shorting pins 12 to pin 13 will cause a shutdown when operating in any mode
Pins 14 – 15	Battery shutdown	Shorting pins 14 to pin 15 will cause a shutdown if operating in Battery Mode

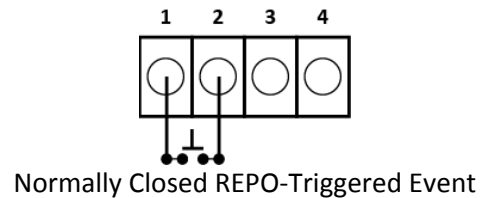
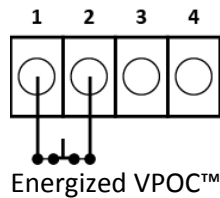
Remote Emergency Power Off (REPO) Configuration



Position	Description
Pins 1 and 2	A REPO will trigger when pins 1 and 2 along with pins 3 and 4 are in the same condition, either both sets open or both sets closed. This provides the flexibility to choose an EPO condition with a normally-closed or open configuration.
Pins 3 and 4	

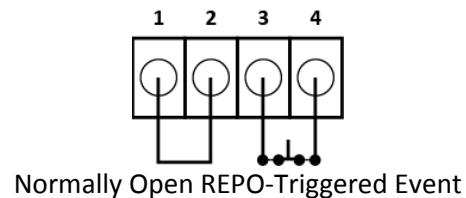
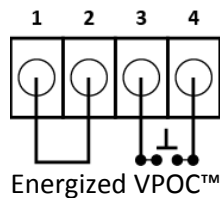
NC (normally closed) Configuration – REPO triggered by opening a switch

The left graphic below shows an “energized” VPOC™ in the normally closed (NC) configuration. Pins 1 and 2 are closed, and pins 3 and 4 are open. If pins 1 and 2 open, as shown in the right graphic below, a Remote Emergency Power Off (REPO) event is triggered.



NO (normally open) Configuration – REPO triggered by closing a switch

The left graphic below shows an “energized” VPOC™ in the normally open (NO) configuration. Pins 1 and 2 are closed, and pins 3 and 4 are open. If pins 3 and 4 close, as shown in the right graphic below, a Remote Emergency Power Off (REPO) event is triggered.



VPOC™ System Components

The VPOC™ system provides a comprehensive power management and battery backup capability based on multiple building blocks with configuration flexibility to suit specific power, size, and run-time requirements. The table below provides additional information on the different building blocks available to create a customized power solution. Please visit our website for more in-depth information or contact your local Lite-On PSS representative for support.

Component	Model Number	Description
VPOC™ Shelf	VP-3103-111U	1U VPOC™ Power Shelf with 3 slots: <ul style="list-style-type: none"> • VPOC™ Power Module slot (1) • VPOC™ Li-ion Battery Module slots (2)
VPOC™ Power Module	VM-3103-111U	10kW Power Module
VPOC™ PDU	RU-2020-082N	1U or 0U Cabinet PDU with 20A fuse and IEC320-C13 receptacles (6) plus IEC320-C19 receptacles (2)
	RU-2020-081N	1U or 0U expansion PDU with 20A fuse and IEC320-C13 receptacles (6) plus IEC320-C19 receptacles (2)
VPOC™ Li-ion Battery Module	BM-1502-010U	2.5 minute run-time at 5kW (2 battery units provide 2.5 minutes at 10kW)
VRLA Extended Battery Module	BK-1151-010U	3U EBM equipped with VRLA batteries for 3.5 minutes run-time at 10kW
Site Management Controller	CP-13EC-010U	Rack management and control
19" Rack	KT-1942-10-1	19-inch EIA rack

