



# PowerRack

Modular Lithium-Ion Energy Storage System




## PowerRack system is a powerful and scalable solution for a wide variety of applications.

Applications : stationnary, residential, commercial, industry, UPS, telecommunications, weak grid, off-grid and self-sufficiency systems.

PowerTech Systems has rigorously selected and tested best-in-class Lithium Iron Phosphate cells that are assembled in this product, in order to provide high lifespan and performance.

Lithium Iron Phosphate (LFP) is currently the best solution for storing energy, because of its durability, high safety and technical superiority compared to other technologies on the market.

### The key points of PowerRack system :

- Embeds **BMS Matrix®** smart BMS technology
- **Very high energy density**
- **Very safe and reliable** Lithium-Ion technology
- **Easy configuration** of high scale power systems
- High lifespan, robustness and durability
- **Real Time monitoring** available in the cloud
- **Ease of deployment and scalability** (19 inches standard)
- **Centralized monitoring** for system control
- **Proudly designed and assembled in France** 

### PowerRack system composition :



**BATTERY MODULE**  
2.56 kWh (51.2V – 50Ah)



**BMS\* MODULE**  
\*Battery Management System

### BMS Matrix® Technology : Embeds core intelligence of PowerRack system

The main role of our Battery Management System (BMS) is to control each vital element of battery: voltage and cell temperature, power supplied by the system, load control, etc.

BMS Matrix® embeds some smart balancing algorithm that controls that all cells in the system are constantly at the same voltage level. State of Charge (SoC) and State of Health (SoH) are precisely measured by powerful algorithms.

BMS is also equipped with a built-in multi-protocol communication module (CAN, CAN open, RS232) to back up all operating information for external monitoring, or for integration with other systems.

BMS Matrix® is designed for modularity and scalability for easy management and a wide range of configurations :

- PowerRack supports from one single module, up to 400 modules.
- Stored energy can vary from 2.5kWh to 1MWh.
- Nominal voltage range from 51.2V to 1024V.



Further information at : [www.powertechsystems.eu](http://www.powertechsystems.eu)  
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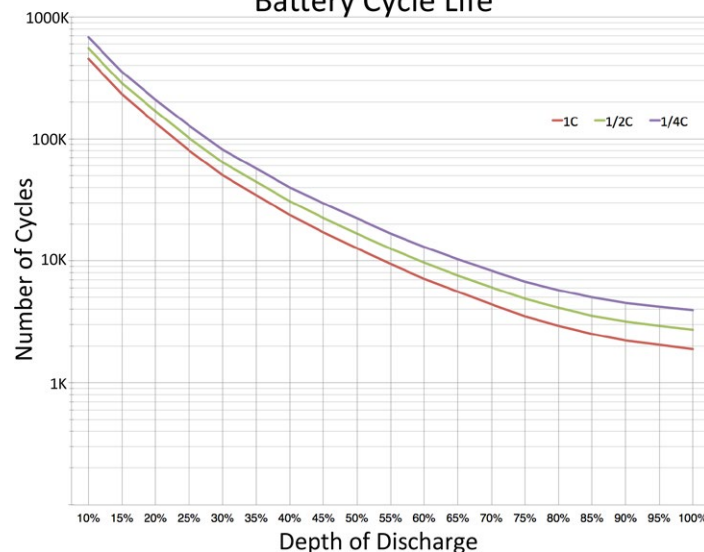


## TECHNICAL SPECIFICATIONS

ALLOWED CONFIGURATIONS :			Minimal Set-up	Maximal Set-up
Nominal voltage	Min. voltage	Max. voltage	Stored Energy (kWh) (+ Number of 19" U)	
51,2 V	44 V	58,4 V	2.56 kWh (3U)	1 024 kWh (1200U)
102,4 V	88 V	116,8 V	5.12 kWh (6U)	102,4 kWh (120U)
153,6 V	132 V	175,2 V	7.68 kWh (9U)	153,6 kWh (180U)
204,8 V	176 V	233,6 V	10.24 kWh (12U)	204,8 kWh (240U)
256 V	220 V	292 V	12.8 kWh (15U)	256 kWh (300U)
307,2 V	264 V	350,4 V	15.36 kWh (18U)	307,2 kWh (360U)
358,4 V	308 V	408,8 V	17.92 kWh (21U)	358,4 kWh (420U)
409,6 V	352 V	467,2 V	20.48 kWh (24U)	409,6 kWh (480U)
460,8 V	396 V	525,6 V	23.04 kWh (27U)	460,8 kWh (540U)
512 V	440 V	584 V	25.6 kWh (30U)	512 kWh (600U)
563,2 V	484 V	642,4 V	28.16 kWh (33U)	563,2 kWh (660U)
614,4 V	528 V	700,8 V	30.72 kWh (36U)	614,4 kWh (720U)
665,6 V	572 V	759,2 V	33.28 kWh (39U)	665,6 kWh (780U)
716,8 V	616 V	817,6 V	35.84 kWh (42U)	716,8 kWh (840U)
768 V	660 V	876 V	38.4 kWh (45U)	768 kWh (900U)
819,2 V	704 V	934,4 V	40.96 kWh (48U)	819,2 kWh (960U)
870,4 V	748 V	992,8 V	43.52 kWh (51U)	870,4 kWh (1020U)
921,6 V	792 V	1051,2 V	46.08 kWh (54U)	921,6 kWh (1080U)
972,8 V	836 V	1109,6 V	48.64 kWh (57U)	972,8 kWh (1140U)
1024 V	880 V	1168 V	51.2 kWh (60U)	1024 kWh (1200U)

TECHNICAL SPECIFICATIONS	PowerRack 2.56 kWh
<b>GENERAL</b>	
Voltage min. / nom. / max.	44.0 V / 51.2 V / 58.4 V
Stored Energy	2.56 kWh / 50 Ah
Maximum continuous power at 25°C	2.56 kW
Maximum charge power at 25°C	1.28 kW
Number of cells in series	16
Lithium-ion technology	Lithium Ferro Phosphate (LiFePo4 – LFP)
Serial set-up	Up to 20 modules in series
Parallel set-up	Up to 20 racks in parallel
Operational discharge temperature	-20 °C à +50 °C (nominal : 25 °C)
Self discharge	<3% per month in stand by
<b>MECHANICAL</b>	
Width	48.2 cm (19 inches standard)
Depth	43 cm (excluding front handles)
Height	13.5 cm (3U)
Connector	M8
Weight	28 kg

Battery Cycle Life



PowerTech  
systems

V1.4

PowerTech Systems SAS  
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SAS au capital de 1 000 000 Euros  
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