

# Pwr.Vault - Indoor Solution

**Bidirectional electricity conversion system which includes management and storage from diversified sources**

## Solution:

Pwr.Vault is a power management and conversion system designed for storage of large quantities of energy. Thanks to its modularity, it is able to easily scale from a few kW to several MW of active power managed, based on customer needs. The modules are housed inside a 19" rack which is supplied assembled, wired and factory tested for easy installation.

- From one to four PCS modules for active power management;
- Modular power from 30 kW to 120 kW for each rack;
- EMS for intelligent energy management;  
Possibility of retrofit installation for large systems;
- Three-phase AC input compatible with any type of renewable or non-renewable source system;
- Self-use, peak-shaving and energy trading working methods; AC side disconnect switches included;
- DC side disconnect switches included;



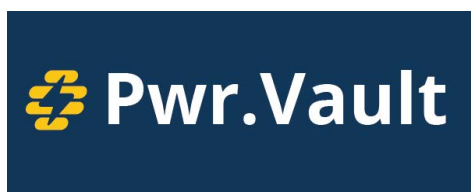
zeroCO<sub>2</sub> - XL EU System

## Rack dimensions:

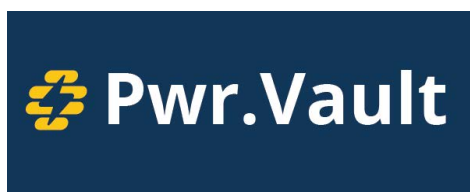
Length: 776 mm

Height: 2013 mm

Depth: 776 mm



Pwr.Vault	30K	60K	90K	120K
Order Code	90110110	90110111	90110112	90110113
Dimensions [WxHxD, mm]	776 x 2013 x 776			
Weight [kg]	195	237	279	321
Sound power [dB]	<70	<71	<73	<74
PCS technology	Trasformerless			
zeroCO <sub>2</sub> - BESS 125K minimum number	1	2	3	4
ENERGY MANAGEMENT SYSTEM PARAMETERS				
Power supply [V - Hz]	230 - 50			
Self-consumption power [W]	150			
Standby power [W]	<5			
AC PARAMETERS				
Rated power / Maximum power [kW]	30/33	60/66	90/99	120/132
Maximum apparent power [kVA]	33	66	99	132
AC input type	5 wire (3Ph + N + PE)			
Number and maximum section of connection cables per phase [mm²]	1 x 120		2 x 120	
Voltage range [V]	400 (±10%)			
Rated electric current [A]	±43	±86	±129	±172
Maximum electric current [A]	±56	±112	±168	±224
Rated voltage and frequency [V-Hz]	400 - 50/60			
Power factor	0.8 ~ 1 (leading / lagging)			
DC component current [%]	≤ 0.5			
Harmonic content THDi [%]	≤ 3			
AC and DC start function	Yes			
Current switching time [ms]	≤ 10			
Conversion efficiency [%]	≥ 97.3			
Standby power consumption [W]	<25	<50	<75	<100
Permissible short-circuit current of short duration [kA]	6 (1")			
DC PARAMETERS				
Rated power / Maximum power [kW]	30/33	60/66	90/99	120/132
Voltage range [V]	150 - 750			
Rated electric current [A]	±72	±144	±216	±288
Maximum electric current [A]	±90	±180	±270	±360
COMMUNICATION				
Communication interfaces	RS485, LAN, WAN, CAN			
SAFETY				
IP protection rating	IP20			
Voltage resistance: input and output - PE [V DC]	3535			
Voltage resistance: input and output - CAN [V DC]	2828			
Surge: Input & Output - PE [kV]	6			
EMC Standards	BT 2014/35/CE - 2014/30/CE - FCC			
MTBF (Average Time Expected Between Failures) [h]	100000			
Compliance with connection standards	VDE 4105, EN 50549, G99, OVE R25:2020, EN 62109, EN 62477			
Warranty [years]	2			



# RACK M1-22

## Solution:

Pwr.Vault - RACK M1-22 is an energy storage system based on high voltage Li-ion (LFP) lithium batteries, to be combined with the Pwr.Vault System.

Each rack can hold up to 21 Pylontech H32148-C battery modules, for a nominal storage capacity of 100 kWh. The battery modules are connected in series inside the rack and managed by a BMS controller which monitors their state of charge and safety.

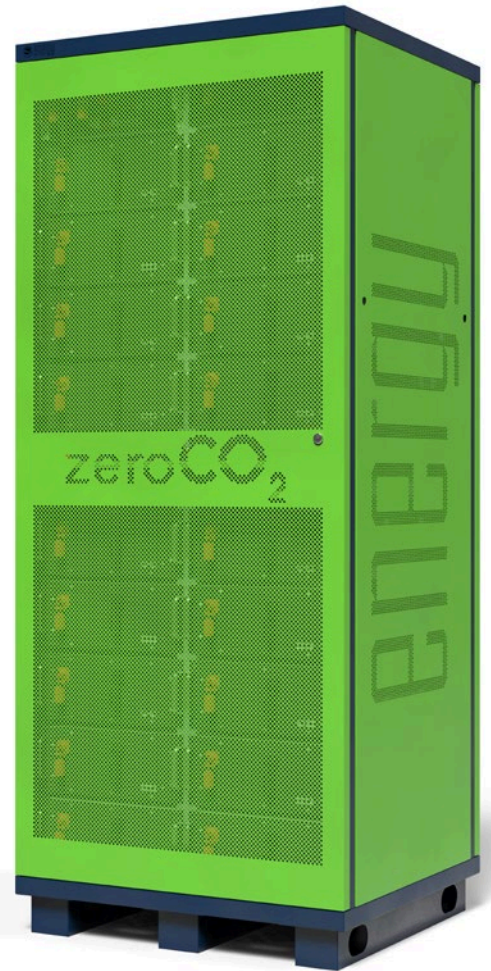
- Battery technology: high voltage Li-ion (LFP);
- Nominal storage capacity of 100 kWh;
- Integrated BMS controller for battery string management;
- Integrated DC protection;
- DC circuit breaker switch included;
- UN 38.3 certification for the transport of lithium batteries;
- Possibility of parallelization of several racks to increase the storage capacity;



SC1000-200J-C



H32148-C



RACK M1-22

## Rack dimensions:

Length: 818 mm

Height: 2013 mm

Depth: 776 mm

 **Pwr.Vault**



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MODEL	RACK M1-22
Order Code (battery number to configure)	90110035
Order Code (supplied with 21 batteries)	90110040
Dimensions [WxHxD, mm]	818 x 2013 x 776
Weight [kg]	222 + (48 x n)
Cell technology	Li-ion (LFP)
Battery module model	H32148-C
BMS Controller Name	SC1000-200J-C
Charge / discharge test current [A] (*)	29.6
Rated charging / discharging current [A]	74
Max charge / discharge current [A]	148
Nominal module voltage [V]	32
Nominal module capacity [kWh/Ah]	4.74 / 148
Module efficiency [%]	95
<b>DC PARAMETERS</b>	
System rated voltage [V]	32 x n
Max System charge voltage [V]	36 x n
Min System discharge voltage [V]	28.8 x n
Nominal capacity [kWh/Ah]	4.74 x n / 148
DOD discharge depth [%]	90% (8 - 98% SOC)
Usable capacity [kWh/Ah]	4.27 x n / 133
Battery modules quantity [n]	13 ~ 21
<b>COMMUNICATION</b>	
Communication interfaces	CAN, LAN, Modbus RTU, TCP/IP
<b>AMBIENT CONDITIONS</b>	
Working temperature range [°C]	0 ~ 50
Working humidity range [RH%]	0 ~ 95 (without condensation)
Storage temperature range [°C]	-20 ~ 60
Storage humidity range [RH%]	0 ~ 95 (without condensation)
Cooling	Natural cooling
Altitude [m]	<3000
<b>SAFETY</b>	
IP protection rating	IP20
Operational life [years]	15+
Dangerous goods transport certificate	UN38.3

(\*) current value used to determine the capacity of the battery during test.

ACCESSORY	Order Code
BMS SC1000-200J-C (**)	90040281
H32148-C (**)	90040280
Cable kit (**)	90900245
UPS 3 kVA 2U -19" module	90100080
Eastron three-phase meter kit with external CT 200A/5A	90900315
Eastron three-phase meter kit without CT (***)	90900305
Medium voltage meter	90900323

(\*\*) Only for order code 90110035.

(\*\*\*) If the system requires higher current values, it is possible to purchase the meter alone.  
In this case the choice of CT is left to the customer.

