Voltfang | Industrial

Product information
Q1 2023

Voltfang Industrial

modular, flexible, scalable

The Voltfang Industrial is the all-rounder among our products. Depending on customer requirements, capacity and performance can be flexibly designed. This makes a wide range of applications possible: farms, car dealerships, industrial operations and many more.

Voltfang Industrial is a total system: it includes the battery rack, the inverter and an Energy Management System (EMS). The Voltfang Industrial offers a modular design of the battery racks. In addition, multiple racks can be freely cascaded so that capacity can be tailored to customer needs.

Capacity range: 30 - 1000 kWh

Power range: 30 - 920 kW

Technology

Use of 2nd Life batteries from the electromobility sector

Same lifetime as new batteries by using Voltfang's double-pack approach[1] and intelligent charging algorithms

Real-time monitoring via app or browser

High energy and cost efficiency thanks to 800-V technology

Advantages

Cost optimization by maximizing the self-consumption of photovoltaic systems

Limiting peak load to reduce energy costs in the commercial sector.

Support for charging stations

Increase self-sufficiency

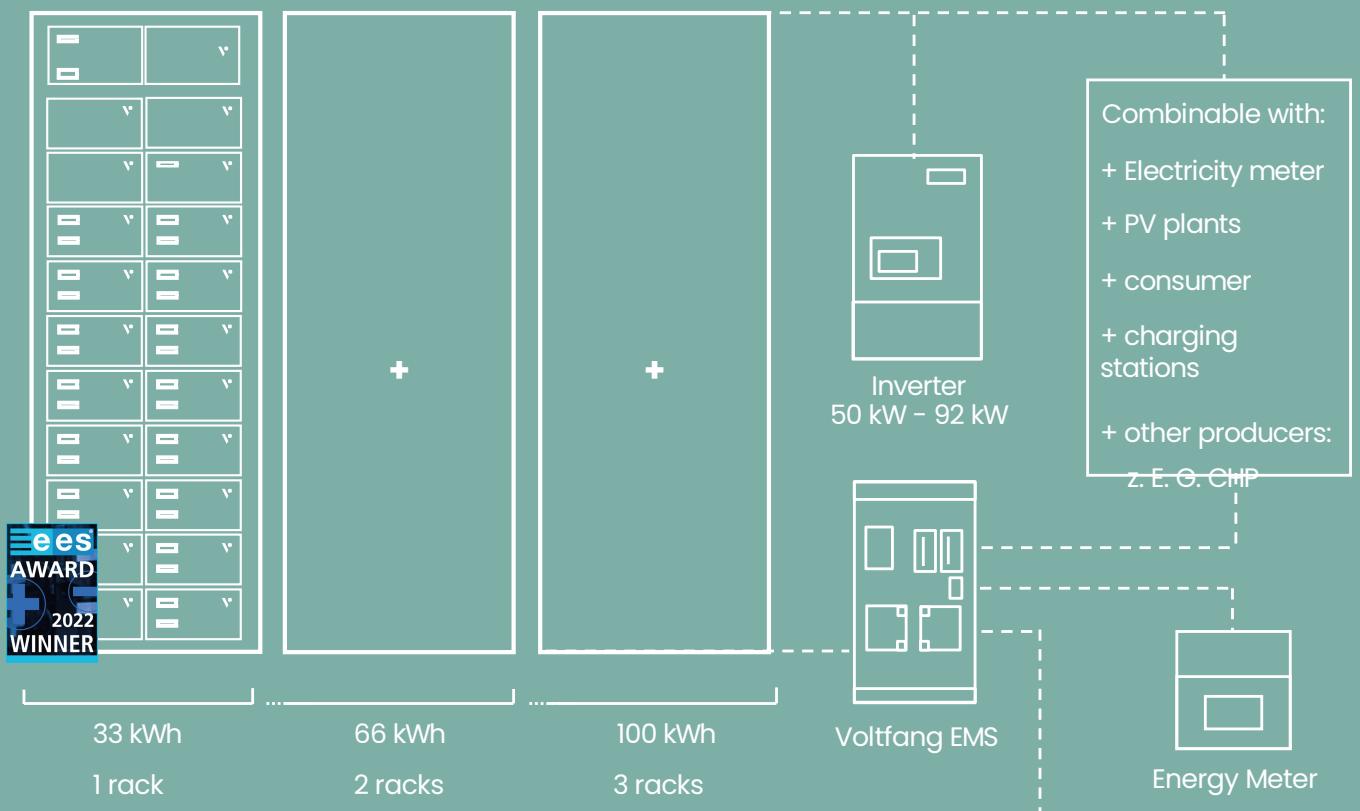
Economic alternative to grid expansion through decentralized storage

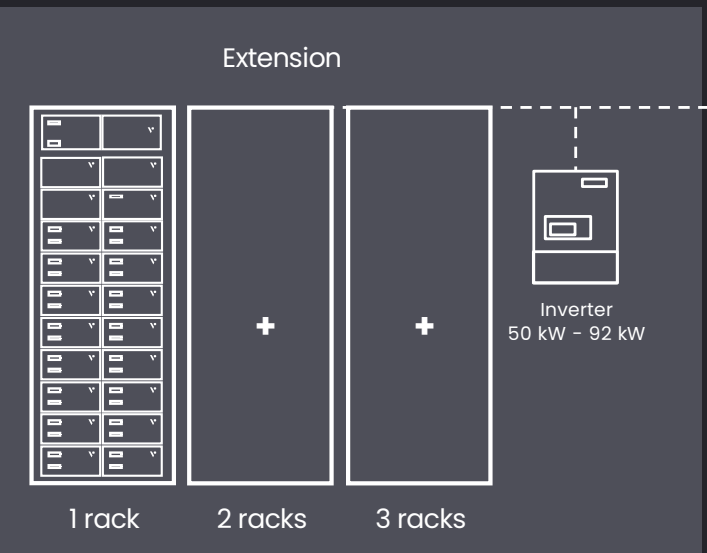
[1] Double Pack approach is explained on the website in the document "Life Maximization".

Voltfang Industrial - A complete high-voltage system

With the modular design of the Voltfang Industrial, one inverter (WR) each can be combined with up to 3 racks. Such a unit thus has a maximum capacity of 100 kWh. It is controlled by a Voltfang EMS.
Up to 10 racks can be connected and controlled on one Voltfang EMS.

The Voltfang Industrial in the overall concept





The Voltfang Industrial is a high voltage system and can provide up to 1 C of power. It can be cascaded up to 1 MWh high.

Voltfang Industrial Racks - Technical Information

		1 rack	2 racks	3 racks	Max. 3 x 10 racks [1]
System	Usable battery capacity [kWh]	33	66	100	1000
	Charge rate [1/h]	1 C			
	Energy supply	3 - Phasic			
	Link	AC - coupled			
	Communication	CAN-bus, Modbus-TCP, Ethernet, Wi-Fi			
Battery	Rated voltage [V]	800			
	Operating voltage [V]	670 - 900			
	Battery manufacturer	2nd Life batteries from the electromobility sector			
	Cell technology	Lithium-ion (NMC)			
	Weight per battery rack [kg]	~ 600			
	Weight per battery module [kg]	30 - 40			
	Dimensions per battery pack (W/D/H) [mm]	2000 x 800 x 600 (Tipping height: 2155)			
	Mounting type	Surface mounting			
	Battery efficiency [%]	Up to 98			
	Battery life [years]	expected 15-20 (double-pack approach)			
	Communication	CAN-bus / Modbus-TCP			
Inverter	Model	KACO blueplanet gridsave			
	Rated power [kVA]	50 / 92			
	Weight [kg]	70 - 85			
	Dimensions (H / W / D) [mm]	≤ 760 x 700 x 460			
	Mounting type	Wall mounting			
	Efficiency [%]	98			
	Communication	Modbus TCP			
Product	Ambient temperature [°C]	-10 ~ 50			
	Humidity [%]	0 - 85 (non-condensing)			
	Height of the installation site [m]	< 2000 above sea level			
	Protection class	IP 55			
	Warranty[2] [years]	System & Capacity: 5 With Battery Flat: 10 [2,3]			
	Battery after the service life	Recycling / reuse is taken over free of charge			
	Guidelines and certificates	CE, UN 38.3, IEC 61000-6-1/2/3/4, IEC 62109-1/-2, BattG 2006/66/EC, 2014/35/EU (LVD) , 2014/30/EU (EMC), 2011/65/EU & 2015/863/EU (RoHSD)			

[1] Further capacity can be cascaded by AC coupling of an additional Voltfang Industrial
[2] With Battery Flat = 10 years / Without Battery Flat = 5 years
[3] Guaranteed residual capacity of 80% of the originally installed, usable capacity

Requirements for supply lines and fuse protection
Inverter with 50 kW power

KACO blueplanet gridsave 50.0 TL3-S B1 WM OD IIGX - Inverter	
Supply lines and fuses	
Max. Power cross-section [mm^2]	95
Min. power cross-section [mm^2 [4]]	35
Stripping length [mm]	25
Tightening torque [Nm]	10
Connection type	Screw terminal / PE bolt
Protective conductor connection	M8
Fuse protection on site in installation [A].	Min. 100 / max. 125
Gland for AC connection	M63
Cable diameter for cable gland [mm]	32 - 42
AC - output variables	
Rated power [kVA]	50.0 [@220V]; 50.0 [@230V]
Rated voltage [V]	230 / 400 [3 / N / PE]; 220 / 380 [3 / N / PE]
Voltage range: continuous operation [V]	165 - 288 [PH-N]
Rated current [A]	3x 72.2 [@400V]; 3x 76.0 [@390V]
max. continuous current [A]	3x 76,5
Rated frequency [Hz]	50 / 60
Frequency Range [Hz]	42-68
Reactive power [%]	0-100 Snom
cos phi	1 - 0.3 ind / cap
Number of feed phases	3

[4] The loop impedance at any point between the installation field and the battery must be Zs > Un / Ia (Un: Nominal AC voltage, Ia: current for tripping device protection within 200 ms).

Requirements for supply lines and fuse protection
Inverter with 92 kW power

KACO blueplanet gridsave 92.0 TL3-S B1 WM OD IIGX - Inverter	
Supply lines and fuses	
Max. Power cross-section [mm^2]	240
Min. power cross section	According to local installation standards
Cable diameter for cable gland [mm]	16 - 28
Stripping length	Depending on cable lug
Tightening torque [Nm]	10
Connection type	Cable lug (Use appropriate cable lug depending on cable material!)
Protective conductor connection	M10
Tightening torque for protective conductor connection [Nm]	10
Fuse protection on site in installation (Max. output overcurrent protection) [A].	max. 250
Gland for AC connection	M40
Torque for cable gland [Nm]	10
AC - output variables	
Rated power [KVA]	92
Rated voltage [V]	400 (3P+PE)
Voltage range: continuous operation [V]	300 - 580
Rated current [A]	3 x 132,3
max. continuous current [A]	3 x 132,3
Rated frequency [Hz]	50 / 60
Frequency Range [Hz]	45 - 65
Reactive power [%]	0-100 Snom
cos phi	0.3 - 1 ind / cap
Number of feed phases	3