



CHAKRATEC KINETIC POWER BOOSTER ARRAY (KPB)

OVERVIEW

- Modular array of Kinetic Power Boosters (KPB) and High Power Chargers (HPC)
- One KPB130 module boosts grid power by a nominal factor of 4 up to 210 kWp
- KPB130 Capacity up to 50 kWh per module
- Capable of boosting multiple EV High Power Chargers in parallel
- Scalable system architecture
- Embedded EMS (Energy Managing System) controls multiple KPBs and HPCs in one boosting array
- Interfaces leading industry charging vendors (e.g. ABB, SIEMENS, ALPITRONIC etc.)
- Same system can have multiple uses e.g. Grid Stabilization, Frequency Regulation, Virtual Inertia etc.

MAIN FEATURES

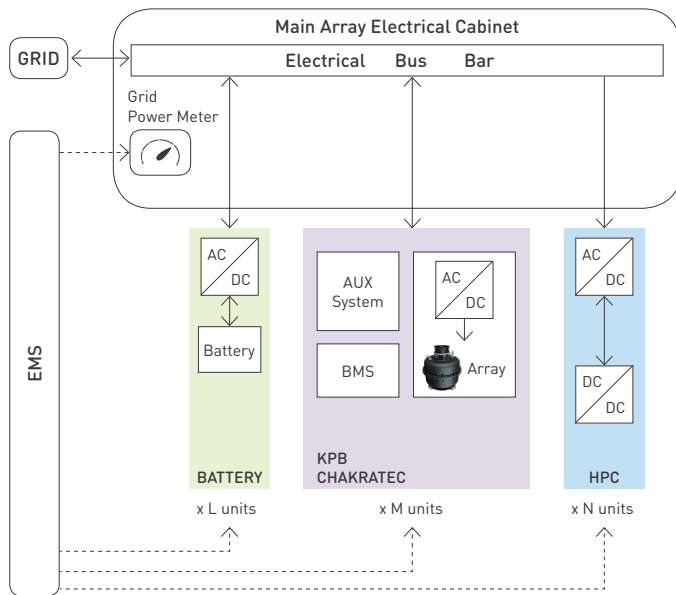
- Highly available and reliable
- Typical grid power of 50 kW with one KPB module, Charging time: 50 kWh in 15 minutes
- Ready to charge current and future electric vehicles with higher voltages
- Optional direct DC output voltage connection to HPC
- Built-in communication (Cellular 3G/4G, LAN)

PRODUCT DESCRIPTION

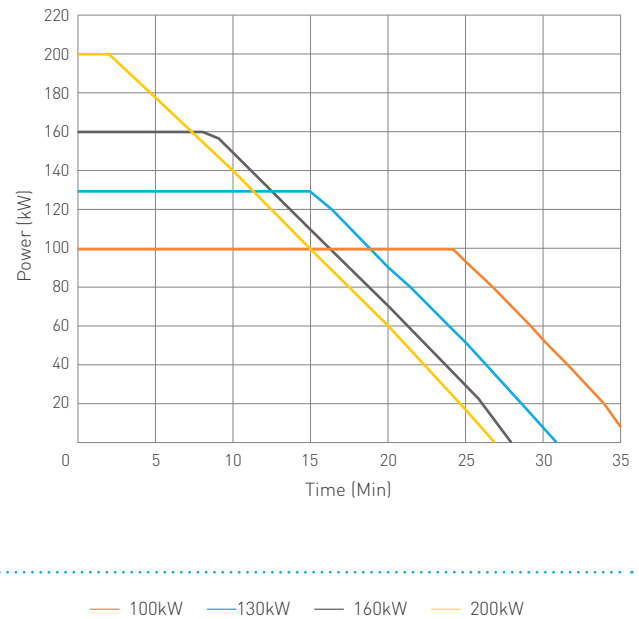
The KPB array is an energy storage system which can be fully integrated with one or multiple standard high-power chargers.

The KPB has the ability to use low power grid and boost it by up to 210 kWp for each module in order to charge multiple cars in parallel. The kinetic power booster is based on Chakratec's patented kinetic storage technology.

SYSTEM BLOCK DIAGRAM



DISCHARGE CURVES



Typical Application and System Architecture of KPBC Array is comprised of

“N” units of High power chargers (HPC), “M” units of Chakratec’s kinetic power booster (KPBC), “L” units of additional storage battery systems (Hybrid system) and an energy management system (EMS) which manages and allocates the power during the EV charging session.

Technical data	KPBC 130 / 050	KPBC 130 / 090	KPBC 130 / 130
General Specification	One Module	One Module	One Module
Operating temperature	-15°C to 46°C	-15°C to 46°C	-15°C to 46°C
Storage temperature	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C
Protection degree	Outdoor, IP54	Outdoor, IP54	Outdoor, IP54
Noise Level (@ full load)	<65dBA	<65dBA	<65dBA
Dimensions (W x D x H) KPBC	4,200x 2,350 x 2,650 mm 1,929 x 822 x 618 mm	4,200x 2,350 x 2,650 mm 1929 x 822 x 618 mm	4,200x 2,350 x 2,650 mm 1929 x 822 x 618 mm
Weight	Approx. 7,000kg	Approx. 8,500kg	Approx. 10,000kg
Architecture			
AC input			
Grid connection	3 phases + N + PE	3 phases + N + PE	3 phases + N + PE
Input voltage	400VAC ±10%	400VAC ±10%	400VAC ±10%
Input / Output Power Peak	90 kWp	150 kWp	210 kWp
Input / Output current max.	3 x 160 Aac	3 x 230 Aac	3 x 320 Aac
Capacity (KPBC power)@ 15min continuous operation	13kWh (50kW)	23kWh (90kW)	33kWh (130kW)
Frequency	47 – 63 Hz	47 – 63 Hz	47 – 63 Hz
EV charging			
Parallel Charging AC + DC possible			
KPBC can interface to customer specific charger			
Storage / Energy Booster			
Nominal Capacity	27 kWh	40 kWh	50 kWh
Miscellaneous			
Site Preparation	Concrete Levelized Floor, Power Electrical Cabinet, Cabinet and lightning protection grounding posts		
Maintenance : Yearly	Minor maintenance cycle (local service technician) filter cleaning, vacuum check, lubrication top up		
Maintenance : Every 5 Years	Large maintenance cycle (Expert service qualified technician) expert inspection		

