LFP BATTERY CELL &
ENERGY STORAGE SYSTEMS MANUFACTURER

ONUR
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SOLUTIONS

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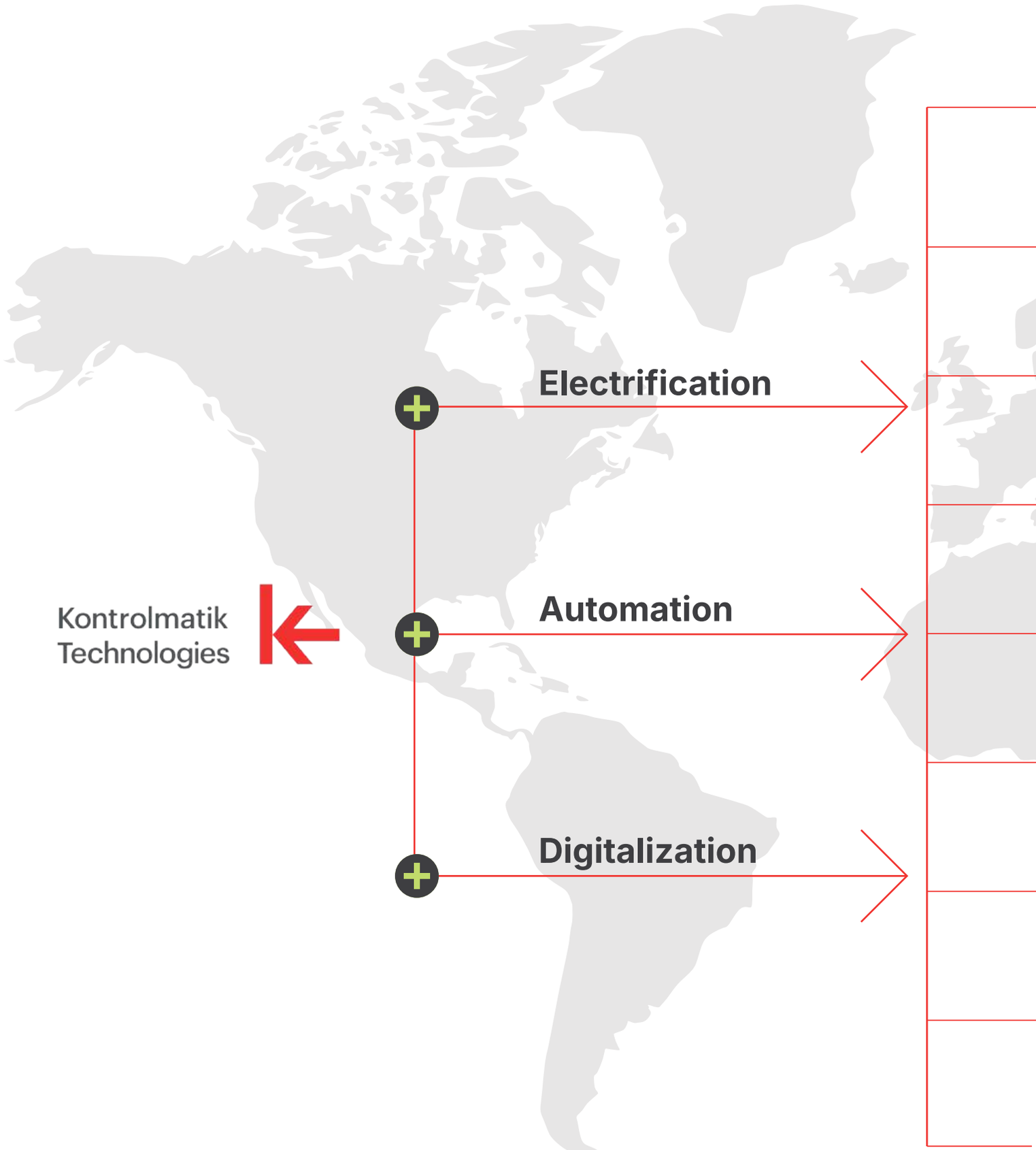
GROUP STRUCTURE

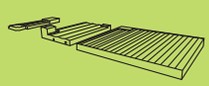


Pomega | Controlix | emek | enwair | signumtte

MCFLY | Progresiva | ÜÇ YILDIZ ANTİMUAN MADENCİLİK A.Ş. | PLANYS

- Renewable Power Plants
- High Voltage Facilities
- Energy Storage Systems
- Industry 4.0 Application
- IT & OT Infrastructure
- Control & Protection Systems
- Internet of Things (IoT)
- Advanced Transportation Systems
- Process Industry Applications
- Smart Grid Applications
- Water Treatment Plants
- Mobile Energy Solutions
- Automated Production Lines
- Robotic Solutions
- Global Connectivity

LITHIUM BATTERY CELL GIGAFACTORY



100.000m²
Integrated production facility on site

0WASTE
and low-emission gigafactory with carbon neutral production

500MWh/year
Initial capacity

Pomega Energy Storage Technologies Inc. promotes sustainable energy solutions through innovative and responsible manufacturing practices, contributing to a greener and more resilient future for all.

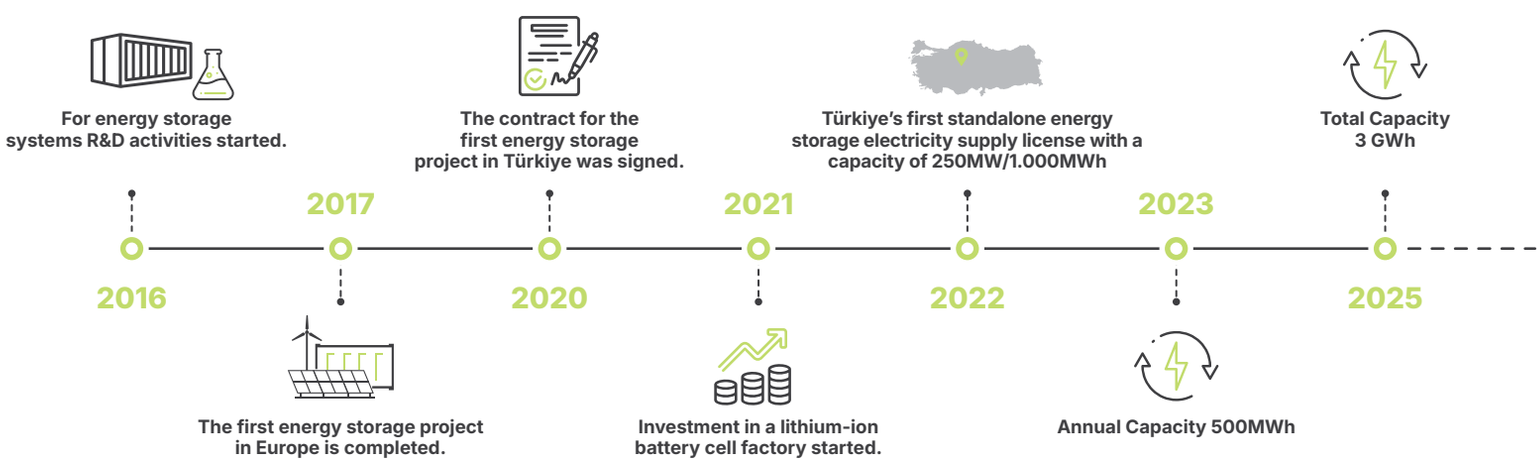
Pomega Energy Technologies Inc.: A Pioneer in Sustainable Energy Solutions

Pomega Energy Storage Technologies Inc., a subsidiary of Kontrolmatik, is shaping Turkey's sustainable energy future with its state-of-the-art Lithium Iron Phosphate (LFP) battery cell Gigafactory, located in Polatlı, Ankara. Spanning 100,000 square meters, this advanced production facility reflects our commitment to developing innovative solutions, driving technological progress, and prioritizing environmental responsibility.

Commissioned in 2023, the first phase of our Gigafactory has reached a production capacity of 500 MWh, marking a significant milestone in the industry. With the second phase set to launch in the first quarter of 2025, we aim to increase our capacity to 3 GWh per year, targeting 6 GWh by 2027. Being the first and only privately developed lithium-ion battery cell factory spanning from Europe to China, we further solidify our leadership in the sector.

Pomega offers innovative and customizable energy storage solutions catering to a diverse range of applications, including industrial facilities, renewable energy projects, residential use, marine vessels, and recreational vehicles. From tailored industrial energy storage systems and grid-scale containerized solutions to high-performance residential storage units and portable battery solutions for caravans and boats, we provide seamless energy solutions for every need.

With our expertise in delivering end-to-end turnkey projects, we go beyond supplying products—we offer comprehensive, integrated solutions that support our customers at every stage. Through efficient, reliable, and environmentally friendly energy storage technologies, we are not only building the energy ecosystem of the future but also leading the industry with our commitment to innovation and customer-centric approach.



How LFP Technology Differs from Other Technologies

	Technologies	Power Range (MW)	Storage Duration	Number of Cycles or Lifetime	Self-Discharge (%)	Specific Energy (Wh/kg)	Efficiency (%)	Response Time
ELECTRICITY	Super Capacitors	0,01-1	msec - min	10,000 – 100,000	20-40	10-20	80-98	10-20 msec
	SMES	0,1-1	msec - min	100	10-15	6	80-95	<100 msec
MECHANICAL	PHS	100-1,000	4-12 hour	30-60 year	≈0	0,2-2	70-85	sec-min
	CAES	10-1,000	2-30 hour	20-40 year	≈0	2-6	40-75	sec-min
	Flywheels	0,001-1	sec- hour	20,000-100,000	1,3-100	20-80	70-95	10-20 msec
ELECTROCHEMICAL	NaS	10-100	1 min - 8 hour	2,500-4,400	0,05-20	150-300	70-90	10-20 msec
	LFP	0,1-1000	min - week	4000-6000	0,1-0,3	150-200	90-98	10-20 msec
	NMC	0,1-100	min - week	1500-2500	0,1-0,3	200-260	90-98	10-20 msec
	Fluid Type	0,1-100	hour	12,000-14,000	0,2	20-70	60-65	10-20 msec
CHEMICAL	Hydrogen	0,01-1,000	min - week	5-30 year	0-4	600	25-45	sec-min
	SNG	50-1,000	hour - week	30 year	0.2	1,8	25-50	sec-min

Highlights of LFP

- Longer cycle life
- Stable chemistry
- Contains harmless ingredients like lithium, iron, and phosphate
- Does not contain nickel, cobalt, etc.
- Safer than other battery technologies; no explosive properties
- Easy to transport
- Most commonly used in stationary energy storage systems
- Provides high-capacity storage
- High efficiency
- Responds in milliseconds

LFP Cells

Basic Properties	PLFP-100	PLFP-302	PLFP-304
Cell Type		$LiFePO_4$ - Prismatic	
Nominal Capacity	100Ah	302Ah	304 Ah
Nominal Voltage		3.2V	
Charge Cut-off Voltage		3.65V	
Discharge Cut-off Voltage (> 0°C)		2.50V	
Charge Cut-off Current		0.05C	
Discharge Temperature (***)	-15~50°C	-30~55°C	-30~65°C
Charge Temperature	0~50°C	0~55°C	0~60°C
Storage Temperature	-10~60°C	-40~60°C	-30~60°C
Standard Charge/Discharge Rate (25°C)	0.5C/0.5C		1C / 1C
Max. Continuous Charge/Discharge Rate	1C / 1C	0.5C / 1C	1C / 1C
Max. Pulse (30s) Charge/Discharge Rate		2C / 2C	
ACR (25°C, 15%SOC,1KHz)	≤0.6mΩ	≤0.25mΩ	≤0.25mΩ
DCR (25°C, 50%SOC,100A/10s)	≤1.5mΩ	≤0.6mΩ	≤0.5mΩ
Self Discharge		≤4%/month (50%SOC, 25°C ± 2C)	
Cycle Life (*) (**)	≥4000(*)	≥6000 (*)	≥6000(**)
Physical Properties			
Humidity Range		0-85%RH (non-condensing)	
Altitude		<3000 m	
Case		Prismatic - Aluminium	
Width	173.6 ± 0.5 mm	174.7 ± 0.5 mm	174.92 ± 1.0 mm
Depth	48.6 ± 0.5 mm	71.65 ± 0.5 mm	71.72 ± 1.0 mm
Height (No Pole)	115.6 ± 0.5 mm	204.5 ± 1.0 mm	204.22 ± 1.0 mm
Height (Including Pole)	121.5 ± 0.5 mm	207.0 ± 0.5 mm	207.01 ± 1.0 mm
Weight	2.0 ± 0.1 kg	5.49 ± 0.3 kg	5.58 ± 0.2 kg

(*)Test Conditions: 25°C, at 80% DOD, 80%SOC
(**)Test Conditions: 25°C, at 70% DOD, 70%SOC
(***) Performance may vary in different conditions

LFP Modules




Basic Properties	PMS-1P4S100	PMS-1P8S100	PMS-1P12S100	PMS-2P4S100
Cell Type	$LiFePO_4$ - Prismatic			
Nominal Capacity	100Ah	100Ah	100Ah	200Ah
Nominal Voltage	12.8V	25.6V	38.4V	12.8V
Limited Voltage in Charge	14.6V	29.2V	43.8V	14.6V
Final Voltage Discharge (>0°C)	10.0V	20.0V	30.0V	10.0V
Discharge Temperature (**)	-15~50°C			
Charge Temperature	0~50°C			
Storage Temperature	-10~60°C			
Standard Charge/Discharge Rate (25°C)	0.5C / 0.5C			
Max. Continuous Charge/Discharge Rate	1C / 1C			
Max. Pulse (30s) Charge/Discharge Rate	2C / 2C			
Cell ACR (25°C, 15%SOC,1KHz)	≤0.6mΩ			
Cell DCR (25°C, 50%SOC,100A/10s)	≤2.0mΩ			
Cell Capacity Retention (25°C, 100%SOC, 30days)	≥95%			
Cell Capacity Retention (60°C, 100%SOC, 7days)	≥95%			
Self Discharge	≤4%/month (25°C ± 2C)			
Cell Cycle Life (*)	≥4000 cycle			
Physical Properties				
Humidity Range	0-85%RH (non-condensing)			
Altitude	<3000m			
Case	Prismatic - Aluminium			
Width	175 ± 0.5 mm	175 ± 0.5 mm	175 ± 0.5 mm	175 ± 0.5 mm
Depth	233 ± 0.5 mm	430 ± 0.5 mm	627 ± 0.5 mm	430 ± 0.5 mm
Height (Including Porthead)	139 ± 0.5 mm	139 ± 0.5 mm	139 ± 0.5 mm	139 ± 0.5 mm
Weight	10 ± 0.1 kg	18 ± 0.1 kg	26 ± 0.1 kg	18 ± 0.1 kg

(*)Test Conditions: 25°C
(**) Performance may vary in different conditions

Residential Energy Storage

Residential Energy Storage Systems. Empowering Homes with Renewable Energy.

Our residential energy storage solutions revolutionize access to renewable energy. By integrating with solar or wind power setups, homeowners gain autonomy over energy usage and reduce dependency on conventional grid power. Capturing surplus renewable energy during peak production, our systems ensure a consistent electricity supply even when renewable sources are inactive.

This stored energy can also be sold back to the grid, offering additional income. With intelligent recharging during off-peak hours, homeowners save on energy costs while supporting grid efficiency. Embracing our solutions enables energy independence, decreases grid reliance, and fosters a sustainable energy future.

Applications		
One Package with Inverter and Battery	Long Lifetime	Easy Installation and Operation
Advanced Energy Management	Reliable and Safe Technology	Expandable Capacity
On-Grid and Off-Grid Applications	Elegant Design	Connectivity
Compatible with Third-Party Systems	Online Monitoring	

Residential 1-Phase Energy Storage Systems

Inverter Properties	PRESS-505	PRESS-510	PRESS-515	PRESS-520
Max. Efficiency	97.3% (PV-AC), 94.0% (BAT-AC)			
[PV] Max. Power	9000W			
[PV] Max. Voltage	550V			
[PV] MPPT Voltage Range	200V-480V			
[PV] Max. Input Curent	15A			
[PV] # of MPPT Trackers	2			
[BATT] Voltage Range	40V-60V			
[BATT] Max. Charge/Discharge Power	5000W			
[BATT] Max. Charge/Discharge Current	120A			
[AC] Nominal Output Power	5000W			
[AC] Nominal Voltage	220V/230V (Single Phase)			
[AC] Voltage Range	150V-300V (Adjustable)			
[AC] Max. Output Current	25A			
[AC] Frequency Range	45Hz-65Hz			
THDI	<3%			
Interface / Communication	Screen, CAN			
Warranty	10 years			
Parallel Connection	No			
Battery Properties				
Battery Type	$LiFePO_4$ - Prismatic			
Nominal Voltage	51.2V			
Operating Voltage Range	44V - 56.8V			
Nominal Capacity	100Ah	200Ah	300Ah	400Ah
Nominal Energy Capacity	5.12kWh	10.24kWh	15.36kWh	20.48kWh
Standard Charge/Discharge Current	50A / 50A	100A / 100A	150A / 150A	200A / 200A
Max. Continuous Output Current	100A	200A	300A	400A
Cycle Life (*)	≥4000 cycles			
Charging Temperature	0~50°C			
Discharging Temperature (**)	-15~50°C			
Storage Temperature	-10~60°C			
Mechanical Properties				
Protection Level	IP20			
Dimension (WxDxH) (with antenna)	648x284x1282 mm	648x284x1732 mm	648x284x2182 mm	1296x284x1732 mm
Weight	90 ±5 kg	140 ±5kg	190 ±5 kg	240 ±5 kg

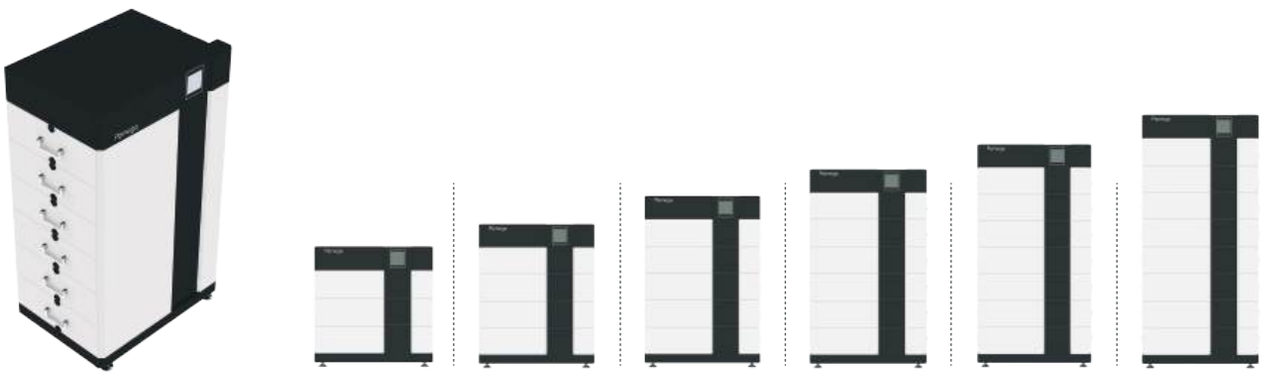
(*)Test Conditions: 25°C
(**) Performance may vary in different conditions

Residential 3-Phase G Series Energy Storage Systems

Inverter Properties	PRESS-G1015	PRESS-G1020	PRESS-G1025	PRESS-G1030	PRESS-G1035	PRESS-G1040
Max. Efficiency	97.9% (PV-AC), 98.0% (BAT-AC)					
[PV] Max. Power	15000W					
[PV] Max. Voltage	1000V					
[PV] MPPT Voltage Range	160V-950V					
[PV] Max. Input Curent	20A/30A					
[PV] # of MPPT Trackers	2 (1+2 strings)					
[BATT] Voltage Range	120V-600V					
[BATT] Max. Charge/Discharge Power	15000W / 11300W					
[BATT] Max. Charge/Discharge Current	50A / 50A					
[AC] Nominal Output Power	10000W					
[AC] Nominal Voltage	380V/400V/415, 3L+N+PE					
[AC] Voltage Range	260V-520V (Adjustable)					
[AC] Max. Output Current	3 * 16.7A					
[AC] Frequency Range	45Hz-55Hz / 55Hz-65Hz (Adjustable)					
[AC] THDI	<5% (Rated Power)					
Interface / Communication	Screen, CAN					
Warranty	10 years					
Parallel Connection	No					
Battery Properties						
Battery Type	$LiFePO_4$ - Prismatic					
Nominal Voltage	153.6V	204.8V	256V	307.2V	358.4V	409.6V
Operating Voltage Range	132V - 170V	176V - 227V	220V - 284V	264V - 340V	308V-397V	352V-454V
Nominal Capacity	100Ah					
Nominal Energy Capacity	15.36kWh	20.48kWh	25.60kWh	30.72kWh	35.84kWh	40.96kWh
Standard Charge/Discharge Current	50A					
Max. Continuous Output Current	50A					
Cycle Life (*)	≥4000 cycles					
Charging Temperature	0~50°C					
Discharging Temperature (**)	-15~50°C					
Storage Temperature	-10~60°C					
Parallel Connection	No					
Mechanical Properties						
Protection Level	IP65					
Dimension (WxDxH) (with antenna)	683x455x1330 mm	683x455x1480 mm	683x455x1630 mm	683x455x1780 mm	683x455x1930 mm	683x455x2080 mm
Weight	244 ± 5 kg	296 ± 5.5 kg	348 ± 6 kg	400 ± 6.5 kg	452 ± 7 kg	504 ± 7.5 kg

(*)Test Conditions: 25°C
(**) Performance may vary in different conditions

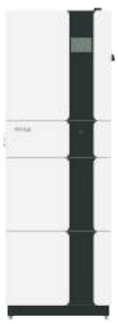
Stackable G Series High Voltage LFP Batteries



Basic Properties	PBG-153100	PBG-204100	PBG-256100	PBG-307100	PBG-358100	PBG-409100
Cell Type	$LiFePO_4$ - Prismatic					
Nominal Voltage	153.6V	204.8V	256V	307.2V	358.4V	409.6V
Operating Voltage Range	134V-170V	179V - 227V	224V - 284V	268V - 340V	313V-397V	358V-454V
Nominal Capacity	100Ah					
Nominal Energy Capacity	15.3 kWh	20.4 kWh	25.6 kWh	30.7 kWh	35.8 kWh	40.9 kWh
Max. Charge Voltage	172V	230V	288V	345V	403V	460V
Max. Cont. Charge/Discharge Current	0.5C / 0.5C					
Cycle Life (*)	≥4000 cycles					
Normal Operating Temperature	25°C					
Charging Temperature	0~50°C					
Discharging Temperature (**)	-15~50°C					
Storage Temperature	-10~60°C					
Residual Capacity Loss	≤4%/month (25°C ± 2C)					
Warranty	10 years					
Parallel Connection	No					
Functional Properties						
Communication	CAN, RS485					
Scalibility	Serial Pack Addition					
Cooling	Natural					
BMS Protections	UV, OV, OC, UT, OT, SC					
LED Indicators	Alarm, Run, SOC					
Circuit Breaker	Yes (in the Master BMS unit)					
Compatible Inverter (***)	Pomega, Deye, Victron, Senergy, Growatt, Solplanet, Hopewind					
Mechanical Properties						
Protection Level	IP65					
Humidity	0-85%RH(non-condensing)					
Altitude	<3000 m					
Dimension (WxDxH) (without connector and handle)	683x455x655 mm	683x455x805 mm	683x455x955 mm	683x455x1105 mm	683x455x1255 mm	683x455x1405 mm
Weight	181± 5 kg	233 ± 5.5 kg	285 ± 6 kg	337 ± 6.5 kg	389 ± 7 kg	441± 7.5 kg

(*)Test Conditions: 25°C
(**) Performance may vary in different conditions
(***) Contact us for other inverter brands

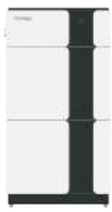
Residential 3-Phase A and D Series Energy Storage Systems

Inverter Properties	PRESS-A1012	PRESS-D1210
Max. Efficiency	97.9% (PV-AC), 98.0% (BAT-AC)	97% (PV-AC)
[PV] Max. Power	15000W	15600W
[PV] Max. Voltage	1000V	800V
[PV] MPPT Voltage Range	160V-950V	200V-650V
[PV] Max. Input Curent	20A/30A	26A/13A
[PV] # of MPPT Trackers	2 (1+2 strings)	2 (2+1 strings)
[BATT] Voltage Range	120V-600V	40V-60V
[BATT] Max. Charge/Discharge Power	15000W / 11300W	12000W / 12000W
[BATT] Max. Charge/Discharge Current	50A / 50A	240A / 240A
[AC] Nominal Output Power	10000W	12000W
[AC] Nominal Voltage	380V/400V/415, 3L+N+PE	380V/400V, 3W+N+PE
[AC] Voltage Range	260V-520V (Adjustable)	–
[AC] Max. Output Current	3 * 16.7A	3 * 26.1A
[AC] Frequency Range	45Hz-55Hz / 55Hz-65Hz (Adjustable)	50/60Hz
[AC] THDI	<5% (Rated Power)	<3% (Rated Power)
Interface / Communication	Screen, WIFI,LAN	Screen, CAN
Warranty	10 years	
Parallel/ Serrial Connection	No	
Battery Properties		
Battery Type	$LiFePO_4$ - Prismatic	
Nominal Voltage	128V	51.2V
Operating Voltage Range	112V-140V	44V - 56.8V
Nominal Capacity	100Ah	
Nominal Energy Capacity	12.8kWh	10.24kWh
Standard Charge/Discharge Current	50A	100A
Max. Continuous Output Current	50A	200A
Cycle Life (*)	≥4000 cycles	
Charging Temperature	0~50°C	
Discharging Temperature (**)	-15~50°C	
Storage Temperature	-10~60°C	
Parallel Connection	No	
Serial Connection	Yes (up to 2 battery pack)	
Mechanical Properties		
Protection Level	IP65 (Battery / Internal Inverter)	IP65 Inv + IP20 Battery
Cooling	Natural Convection	Smart(Forced Convection)
Dimension (WxDxH) (with antenna)	648x275x1925 mm	648x200x990 mm (only battery)
Weight	182 ± 2 kg	135 ± 5 kg

(*)Test Conditions: 25°C
(**) Performance may vary in different conditions

Stackable A Series High Voltage LFP Batteries



Basic Properties	PBA-128100	PBA-192100	PBA-256100
Cell Type		$LiFePO_4$ - Prismatic	
Nominal Voltage	128V	192V	256V
Operating Voltage Range	112V-140V	168V - 211V	224V - 282V
Nominal Capacity		100Ah	
Nominal Energy Capacity	12.8kWh	19.2kWh	25.6kWh
Max. Charge Voltage	144V	216V	288V
Standard Charge/Discharge Current		50A / 50A	
Max. Cont. Charge/Discharge Current		50A / 50A	
Cycle Life (*)		≥4000 cycles	
Normal Operating Temperature		25°C	
Charging Temperature		0~50°C	
Discharging Temperature (**)		-15~50°C	
Storage Temperature		-10~60°C	
Residual Capacity Loss		≤4%/month (25°C ± 2C)	
Warranty		10 years	
Parallel Connection		No	
Functional Properties			
Communication		CAN, RS485	
Scalibility		Serial Pack Addition	
Cooling		Natural	
BMS Protections		UV, OV, OC, UT, OT, SC	
LED Indicators		Alarm, Run, SOC	
Circuit Breaker		Yes (in the Master BMS unit)	
Compatible Inverter (***)		Pomega, Deye, Victron, Senergy, Growatt, Solplanet, Hopewind	
Mechanical Properties			
Protection Level		IP65	
Humidity		0-85%RH (non-condensing)	
Altitude		<3000 m	
Dimension (WxDxH) (without connector and handle)	648x200x1215 mm	648x200x1665 mm	648x200x2115 mm
Weight	137 ± 5 kg	197 ± 5.5 kg	257 ± 6 kg

(*)Test Conditions: 25°C
(**) Performance may vary in different conditions
(***) Contact us for other inverter brands

Low Voltage Batteries

Basic Properties	PBL-51100	PBW-51100
Cell Type	$LiFePO_4$ - Prismatic	
Nominal Voltage	51.2V	
Nominal Capacity	100Ah	
Nominal Energy Capacity	5.12kWh	
Operating Voltage Range	44V - 56.8V	
Maximum Charge Voltage	56.8V	
Standard Charge/Discharge Current	50A / 50A	
Max. Cont. Charge/Discharge Current	100A / 100A	
Limited Charge Current	10A	
Cycle Life (*)	≥4000 cycles	
Normal Operating Temperature	25°C	
Charging Temperature	0~50°C	
Discharging Temperature (**)	-15~50°C	
Storage Temperature	-10~60°C	
Residual Capacity Loss	≤4%/month (25°C ± 2C)	
Warranty	10 years	
Functional Properties		
Communication	CAN, RS485	
Scalibility	Max. 8 units in parallel	
Cooling	Natural	
Integrated Heater	No	
BMS Protections	UV, OV, OC, UT, OT, SC	
LED Indicators	Alarm, Run, SOC	
High Current Protection	Externally Replaceable Fuse	Internal
Compatible Inverter (***)	Deye, Victron, Growatt, Solis, Schneider, Senergy	
Mechanical Properties		
Protection Level	IP20	IP65
Humidity	5% - 85% RH (non-condensing)	
Altitude	<3000 m	
Dimension (WxDxH) (without connector and handle)	446x532x160 mm (19 Inches - 3.5U)	445x610x185 mm
Weight	48±1 kg	51±1 kg
Power Terminals	Click Connectors	

(*)Test Conditions: 25°C
(**) Performance may vary in different conditions
(***) Contact us for other inverter brands

Hybrid Inverters

PV	PHYB-5K	PHYB-10K-3P
Max. PV Power	9000W	15000W
Max. PV Voltage	550V	1000V
MPPT Max. Input Current	15A/15A	20A/30A
MPPT Short Circuit	20A/20A	30A/40A
MPPT Voltage Range	70V-500V	160V-950V
# of MPPT Trackers	2	2
String per MPP Tracker	1	1+2
Grid Interface		
Nominal AC Output Power	5000W	10000W
Max. AC Output Apparent Power	5500VA	1100VA
Max. AC Output Power (PF=1)	5500W	11000W
Nominal AC Voltage	220V	380V/400V/415V
AC Voltage Range	150V-300V (Adjustable)	277V-520V (Adjustable)
Max. AC Output Current	25A	3*16.7A
Nominal Grid Frequency	50Hz/60Hz	50Hz/60Hz
Grid Connection	Single phase	Three phase
Power Factor	>0.99 @rated power (0.8 Lead-0.8 Lag)	>0.99 @rated power (0.8 Lead-0.8 Lag)
Battery Interface		
Compatible Battery Type	Lithium-ion/Lead-acid	Lithium-ion/Lead-acid
Battery Voltage Range	40V-60V	120V-600V
Max. Charge/Discharge Power	5000W/5000W	15000W/10500W
Max. Charge/Discharge Current	120A/120A	50A/50A
Backup Interface		
Nominal Output Voltage	230V	380V/400V/415V
Nominal Output Frequency	50Hz/60Hz	50Hz/60Hz
Nominal Output Power	5000W	10000W
Nominal Output Current	21.7A	3*15.2A
General		
Protection Level	IP65	IP65
Operating Temperature Range	-25°C~60°C	-25°C~45°C
Cooling	Natural Cooling	Natural Cooling
Dimensions (W*H*D)	515x485x175 mm	530x550x212 mm
Weight	25Kg	32Kg
Cominication Interface	RS485/CAN (for BMS) RS485, USB, RS485(Meter) Wifi opt.	RS485/CAN (for BMS) RS485, USB, RS485(Meter) Wifi opt.

Energy Storage for Industrial Plants

Energy Storage: Driving Carbon-Neutral and Self-Sufficient Economies

In the quest for sustainable energy solutions, energy storage emerges as a pivotal player, facilitating the transition to carbon-neutral and self-sufficient economies. Its versatility empowers industries to optimize energy source selection, mitigate price volatility, balance energy grids, promote renewable integration, and enhance economic competitiveness.

By storing excess energy and deploying it strategically, energy storage systems offer cost savings, stability, and efficiency, making them essential for sustainable energy management and industrial success in the face of environmental challenges.

Applications			
⊕ Peak Shaving	⊕ UPS / Bridging Power	⊕ Backup Power	⊕ Black Start
⊕ Load Shifting	⊕ Maximization of Usable Energy	⊕ Grid Flexibility Services	

High Voltage 19-Inch Batteries

Basic Properties	PBH-51100	PBH-512100	PBH-768100	PBH-768200
Cell Type	$LiFePO_4$ - Prismatic			
Nominal Voltage	51.2V	512V	768V	
Nominal Capacity	100Ah			200Ah
Nominal Energy Capacity	5.12kWh	51.2kWh	76.8kWh	153.6kWh
Operating Voltage Range	44V-56.8V	440V - 568V	660V - 852V	
Max. Charge Voltage	56.8V	568V	852V	
Standard Charge/Discharge Current	50A / 50A			100A / 100A
Max. Cont. Charge/Discharge Current	100A / 100A			200A / 200A
Cycle Life (*)	≥4000 cycles			
Normal Operating Temperature	25°C			
Charging Temperature	0~50°C			
Discharging Temperature (**)	-15~50°C			
Storage Temperature	-10~60°C			
Residual Capacity Loss	≤4%/month (25°C ± 2C)			
Warranty	10 years			
Functional Properties				
Communication	CAN, RS485	CAN		
Scalibility	Max. 15 units in series	Max. 15 units in parallel		Max. 7 units in parallel
Cooling	Fan			
BMS Protections	UV, OV, OC, UT, OT, SC (with PDU)			
LED Indicators	Alarm, Run, SOC			
Circuit Breaker	No	Integrated to Master BMS Unit		
Mechanical Properties				
Protection Level	IP20			
Humidity	5% - 85% RH (non-condensing)			
Altitude	<3000 m			
Dimension (WxDxH)	446x532x160 mm	629x610x2251 mm	1258x610x2258 mm	1887x610x2258 mm
(without connector and handle)	(19 Inches - 3.5U)	(19 Inches - 50U)	(19 Inches - 50U)	(19 Inches - 50U)
Weight	48±10 kg	540±10 kg	870±15 kg	1600±30 kg

(*)Test Conditions: 25°C
(**) Performance may vary in different conditions

Energy Storage for Power Plants

Smart, Secure, and Efficient Energy Management

Pomega integrates security, performance, and efficiency in energy management through EMS and BMS software developed by local engineers. Our systems continuously monitor the voltage, current, and temperature of battery cells, optimizing charge and discharge processes, reducing consumption costs by learning energy usage patterns, and ensuring maximum safety through real-time component monitoring. Cell balancing extends battery life and enhances operational efficiency while keeping system security a top priority at all times.

Energy Storage Systems: A Key Enabler of Renewable Integration

The intermittent nature of renewable energy sources, such as solar and wind, poses a challenge in maintaining grid stability and meeting baseload demand. Traditional power grids rely on consistent baseload power from fossil fuel-fired plants, but renewable energy sources can contribute significantly to grid stability if effectively integrated.

Energy storage systems offer a transformative solution by enabling the storage of excess renewable energy when production is abundant and its distribution when demand peaks. This ability to store and dispatch energy on demand mitigates the intermittency of renewable sources, making them more predictable and reliable.

As the world transitions towards a sustainable energy future, energy storage systems assume a pivotal role in reducing reliance on fossil fuels and accelerating the integration of renewable energy sources. By enabling a more stable and reliable power grid, energy storage systems are paving the way for a cleaner and more sustainable future.

Easy Integration | Modular | Mobile Plug | Remote Control | High Efficiency | Multitasking

Services	
Operation and Maintenance	Adaptable for Different Energy Markets
Quick Malfunction Response	Capacity and warranty Augmentation

Uygulamalar

- Peak Shaving
- Load / Peak Shifting
- Spinning Reserve Displacement
- Ramp Rate Control
- Frequency Regulation
- Energy Arbitrage
- Black-Start
- UPS / Bridging Power
- Transitional Power
- Power Factor Correction

Stand-Alone Energy Storage

Embrace the Future of Energy Storage

Standalone energy storage facilities are essential for meeting the increasing demand for reliable energy storage as renewable energy sources gain prominence. These facilities capture excess renewable energy, contributing to grid stability and sustainability.

They offer comprehensive solutions that optimize energy utilization and reduce costs, providing a reliable energy source for both the national grid and new power plant investments. Equipped with advanced technology, these facilities ensure 24/7 monitoring and control for optimal performance. Key benefits include enhanced grid stability, scalability to meet evolving energy storage needs, cost-effectiveness, and reliability. These facilities are crucial for enabling a resilient and sustainable grid as the world transitions to cleaner energy sources.

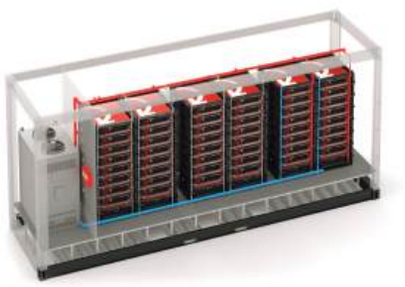
Applications		
Advanced Energy Management	Long Lifetime	Expandable Capacity
Off-Grid & On-Grid Applications	Reliable and Safe Technology	

High Voltage Liquid-Cooled Batteries

Basic Properties	PBQ-166300	PBQ-166300 Plus	PBQ-1331300
Cell Type	LiFePO₄ - Prismatic		
Series/Parallel Configuration	1P52S		1P416S
Nominal Voltage	166.4V		1331.2V
Nominal Capacity	302Ah	304Ah	302Ah
Nominal Energy Capacity	50.252kWh	50.58kWh	402.022kWh
Operating Voltage Range	145.6V - 187.2V	140.4-187.2V	1164.8V - 1497.6V
Max. Charge Voltage	187.2V		1497.6V
Standard Charge/Discharge Current	150A / 150A	304A /304A	150A / 150A
Cycle Life (*)	≥6000 cycles		
Normal Operating Temperature	25°C		
Charge Temperature	0~55°C	0~50°C	0~55°C
Discharge Temperature (**)	-20~55°C	-30~60°C	-20~55°C
Storage Temperature	-10~60°C	-30~60°C	-10~60°C
Operational Temperature	-20~55°C		
Residual Capacity Loss (Capacity Retention)	P≤4%/month (25°C)		
Warranty	10 years		
Functional Properties			
Communication	CAN, RS485		CAN
Scalibility	Max. 8 units in series		Max. 16 units in parallel
Cooling	Liquid Cooling		
BMS Protections	UV, OV, OC, UT, OT, SC (with PDU)		UV, OV, OC, UT, OT, SC
LED Indicators	No		Alarm, Run, SOC
Circuit Breaker	No		Integrated to Master BMS Unit
Fuse	Yes		No
Mechanical Properties			
Protection Level	IP67		
Humidity	5% - 85% RH (non-condensing)		
Altitude	<3000m		
Dimension (WxDxH)	848x1157x244.5 mm	1160x790x250mm	988x1200x2390 mm
Weight	370±10 kg	345±5kg	3400±50 kg

(*)Test Conditions: 25°C
(**) Performance may vary in different conditions

High Voltage Liquid Cooled Battery Containers



Basic Properties	PBQ20-416-1C
Cell Type	$LiFePO_4$ - Prismatic
Series/Parallel Configuration	10P416S
Nominal Voltage	1331.2V
Nominal Capacity	304Ah
Nominal Energy Capacity	4046kWh
Operating Voltage Range	1123.2V - 1497.6V
Max. Charge Voltage	1497.6V
Cycle Life (*)	≥6000 cycles
Operational Temperature	-30~50°C
Functional Properties	
Communication	CAN
Cooling	Liquid Cooling (Integrated Closed Loop)
Fire Protection	Aerosol automatic fire protection, water mist
BMS Protections	UV, OV, OC, UT, OT, SC
LED Indicators	Alarm, Run, SOC
Circuit Breaker	Integrated to Master BMS of Each Cluster 1500 V
EMS	Optional
Physical Properties	
Protection Level	IP54
Humidity	0% - 85% RH (non-condensing)
Altitude	≤2000m
Dimension (WxDxH)	6800x2550x2896 mm
Weight	40 Tons

(*)Test Conditions: 25°C

Outdoor Energy Storage

Energy Storage Systems: Driving Electric Vehicle Charging Infrastructure Deployment

Energy storage systems (ESS) play a pivotal role in accelerating the deployment of electric vehicle (EV) charging infrastructure, particularly in regions with limited grid capacity. By optimizing the utilization of renewable energy sources like solar power, ESS ensure a reliable and sustainable electricity supply for charging stations. Integrating ESS with solar power plants fosters decentralized and flexible charging infrastructure development.

Additionally, ESS significantly reduce initial investment costs by mitigating the need for costly grid upgrades, enabling charging station installation in previously inaccessible areas. Overall, ESS are essential for promoting sustainable and efficient EV charging ecosystems.

Applications		
⊕ Demand Control	⊕ Load Shifting	⊕ Backup Power
⊕ Peak Shaving	⊕ UPS / Bridging Power	⊕ Grid Flexibility Services

Outdoor Energy Storage Systems

Battery Properties	POD-A100	POD-A230	POD-L400	POD-L400 PRO
Battery Type	$LiFePO_4$ - Prismatic			
Cell Capacity	100Ah		302Ah	304Ah
Series/Parallel Configuration	2P160S	3P240S	1P416S	1P416S
Nominal Voltage	512V	768V	1331.2V	1331.2V
Operating Voltage Range	440V - 568V	660V - 852V	1144V - 1476.8V	1123.2V - 1497.6 V
Nominal Energy Capacity	102.4kWh	230.4kWh	402.02kWh	404.68kWh
Cycle Life (*)	≥4000 cycles		≥6000 cycles	
Operational Temperature	-20~55°C			
Charge/Discharge Rate	1C / 1C		0.5C/0.5C	1C / 1C
Maximum Power Rating	102.4kW	230.4kW	201.01kW	404.68kW
Warranty	10 years			
Functional Properties				
Communication	CAN/RS485			
Scalibility	Max. 7 units in parallel	Max. 5 units in parallel	Max. 10 units in parallel	Max. 10 units in parallel
Cooling	Air Cooling		Liquid Cooling	
Fire Protection	Aerosol automatic fire protection			
Balancing	Passive			Active
EMS	Optional			
SBMS Unit	Optional			
Grid Connection Box	Optional			
Physical Properties				
Protection Level	IP54			
Humidity	0% - 85% RH (non-condensing)			
Altitude	<3000m			
Dimension(WxDxH)	1100x1200x2400mm	1700x1800x2327mm	1400x1350x2250mm	1500x1450x2800mm
Weight	1700kg	3500kg	4500kg	4000kg

(*)Test Conditions: 25°C

Hybrid Energy Storage

Mobile Hybrid Energy Storage Systems: Portable Power with Renewable Energy.

In situations where energy resources are limited or environmental conditions hinder energy production and access, the ability to generate, store, and transport energy has become a vital necessity. Sustainable solutions are gaining significant importance for ensuring energy supply security.

Our mobile hybrid energy storage containers generate, store, and provide energy to users through solar panels and wind turbines. These systems can deliver uninterrupted power under various climate conditions, either connected to the grid or off-grid.

Hybrid containers provide reliable energy, especially for hospitals, temporary shelters, and communication infrastructures that require rapid intervention in disaster areas. Additionally, they stand out for their quick setup and portability in sectors that need constant access to energy, such as agricultural irrigation projects, construction sites, remote settlements, and military facilities.

These flexible and independent solutions enable critical operations to continue seamlessly under all conditions due to their rapid installation and deployment. Our hybrid containers offer secure energy across a wide range of applications, contributing to building a sustainable energy future.

Applications		
⊕ Emergency Management	⊕ Reliable and Safe Technology	⊕ Long Lifespan
⊕ Sustainable Energy	⊕ Off-Grid and On-Grid Applications	⊕ Easy Installation
⊕ Advanced Energy Management	⊕ Scalable Production and Storage Capacity	⊕ Online Monitoring

Mobile Hybrid Energy Storage

Basic Properties	PHBRT-100	PHBRT- W-100	PHBRT- W-200	PHBRT- W-300
Battery Type	$LiFePO_4$ - Prismatic			
Used Battery Rack	PBH-512100			
# of Battery Racks	2		4	6
Nominal Voltage	512V			768V
Nominal Output Voltage	400 Vac			
Nominal Energy Capacity	102.4kWh		204.8 kWh	307.2 kWh
Operating Voltage Range	440V-568V			660V-852V
Max. Charge Voltage	568V			852V
Cycle Life (*)	≥4000 cycles			
Normal Operating Temperature	25°C			
Operational Temperature	-15~40°C			
Storage Temperature (**)	-10~60°C			
Residual Capacity Loss	≤4%/month (25°C)			
Functional Properties				
Communication	RS485, Ethernet, Can Bus			
Cooling	Air Cooling			
BMS Protections	UV,OV,OC,UT,OT,SC			
LED Indicators	Alarm, Run, SOC			
Circuit Breaker	Integrated to Master BMS of Each Cluster			
Diesel Generator (Optional)	16 kVA			
PV Module Power	545			
PV Module Quantity	16			
Total PV Module Power	8.72 kWp			
Wind Power	–	2 kW- 5kW		
Hybrid Inverter Power	50 kW		100 kW	
Physical Properties				
Protection Level	IP54			
Open & Close Dimensions (WxDxH)	6058 x 2438 x 2896 mm / 6058 x 15000 x 2896 mm			

(*)Test Conditions: 25°C
(**) Performance may vary in different conditions

Portable Energy Storage Systems

Reliable, Durable, and Advanced Energy Solutions for Modern Needs

Pomega portable batteries are engineered to ensure seamless operation, maximizing productivity and minimizing downtime. Designed for durability and reliability, Pomega's portable batteries are equipped with advanced technology and intelligent management systems, delivering consistent energy even in strenuous conditions. Expect unwavering reliability, enhanced productivity, and sustainable energy solutions with Pomega. Pomega portable batteries are the perfect energy storage solutions for L7 class vehicles, electric golf carts, and small area transportation.

Mobility Applications			
⊕ Easy installation and operation	⊕ Off-Grid Application	⊕ Long Lifetime	⊕ Modular structure
⊕ Increasable capacity	⊕ Elegant Design	⊕ High Level Protection	

Portable Standard Type Batteries

Basic Properties	PBK-12100	PBK-12200	PBK-24100
Cell Type	$LiFePO_4$ - Prismatic		
Nominal Voltage	12.8V		25.6V
Operating Voltage Range	11.2V - 14.2V		22.4V - 28.4V
Nominal Capacity	100Ah	200Ah	100Ah
Nominal Energy Capacity	1280Wh	2560Wh	
Max. Charge Voltage	14.2V		28.4V
Recommended Charge/Discharge Current	30A/30A	50A/50A	30A/30A
Max. Cont. Charge/Discharge Current (*)	60A/60A	100A/100A	60A/60A
Max. Charge/Discharge Current (<15s)	–		
Capacity By Temperature	100 % (25°C), 94 % (0°C)		
Cycle Life (**)	≥4000 cycles		
Normal Operating Temperature	25°C		
Charging Temperature	0~55°C		
Discharging Temperature (***)	-20~55°C		
Storage Temperature	-20~55°C		
Warranty	10 Years		
Functional Properties			
BMS Protections	UV, OV, OC, UT, OT, SC		
Screen	Yes (2.2 Inches)		
Communication Interfaces	Bluetooth		
Parallel Connection	Max. 4 batteries (with initial manual balancing)		
Serial Connection	No		
Safety Relay Control	No		
Dry Contacts	No		
Protective Vent	Yes		
Internal Self Heating	No		
Mechanical Properties			
Battery Case Material	PC-ABS		
Power Terminals	M8 Screw In		
Protection Level	IP65		
Humidity	5% - 85% RH (non-condensing)		
Altitude	<3000 m		
Dimension (WxDxH)	279x205x215 mm	475x205x215 mm	475x205x215 mm
Weight	13±1 kg	22±1 kg	22±1 kg

(*) Operates for a complete cycle (full charge/discharge) under 20°C without interruption
(**)Test Conditions: 25°C
(***) Performance may vary in different conditions

Marine Energy Storage Systems

Effortless Efficiency

Pomega's Marine Energy Storage Systems revolutionize marine exploration by offering exceptional cycle life, high energy density, and superior safety. With LifePO4 technology, vessels are no longer tethered to shore power, ushering in a new era of sustainable and independent exploration.

These systems provide extended range, exceptional power delivery, and rapid recharge capabilities, empowering vessels to venture further into uncharted territories and power demanding onboard systems effortlessly. Additionally, Pomega prioritizes sustainability by minimizing environmental impact through the use of non-toxic materials, seamless integration with solar panels for self-sufficient energy, and extended battery lifespans to reduce waste.

With compact designs and minimal maintenance requirements, Pomega's Marine Energy Storage Systems optimize onboard space and streamline operations, while advanced battery management systems ensure safety and maximize lifespan. Choose innovation, sustainability, and unparalleled performance with Pomega for an exhilarating nautical experience.

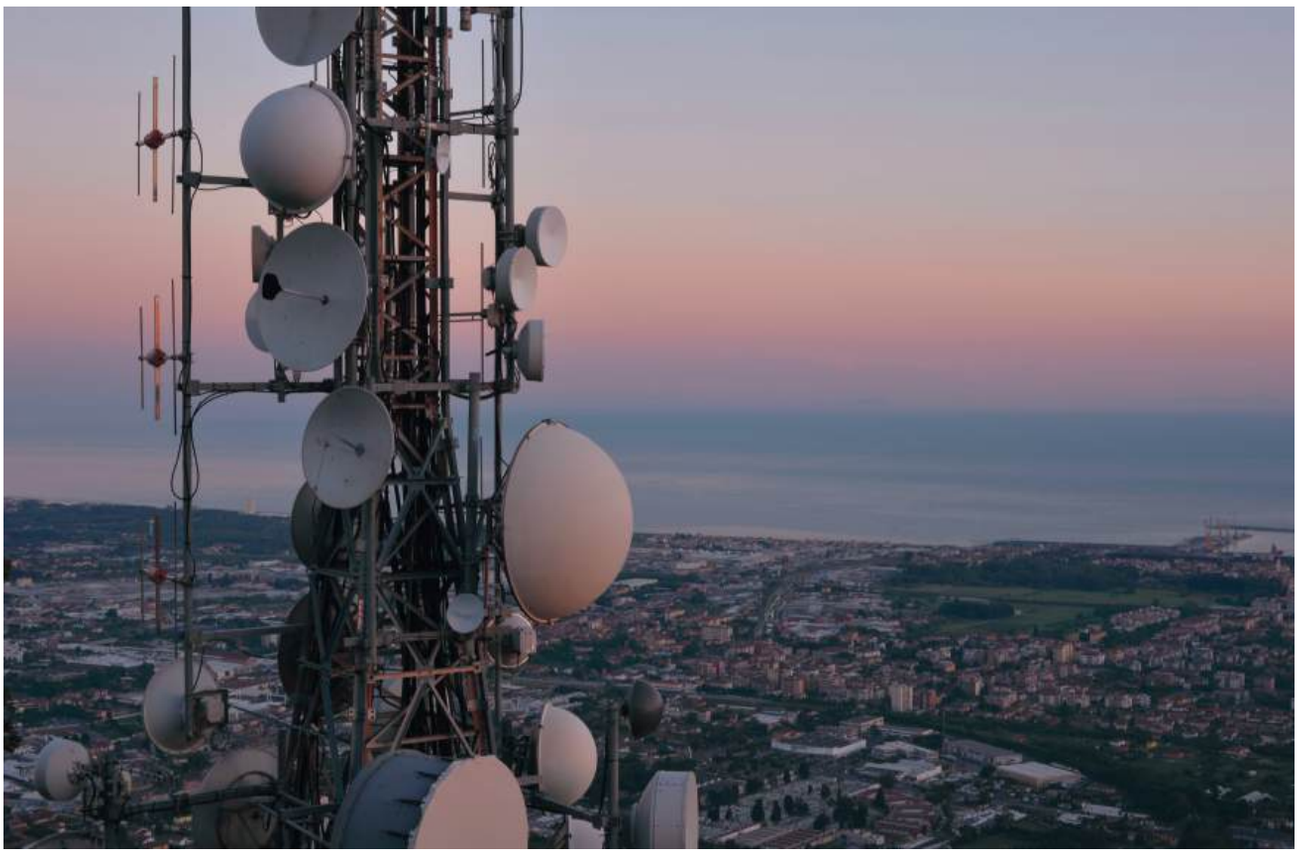
Applications		
Easy Installation and Operation	Off-Grid Application	Communication interface bluetooth and CANBus
Increasable Capacity	Elegant Design	Serial Connection
Modular Structure	Long Lifetime	High Level Protection

Portable High Performance Batteries

Basic Properties	PBM-12100	PBM-12200	PBM-24100
Cell Type	$LiFePO_4$ - Prismatic		
Nominal Voltage	12.8V		25.6V
Operating Voltage Range	11.2V - 14.2V		22.4V - 28.4V
Nominal Capacity	100Ah	200Ah	100Ah
Nominal Energy Capacity	1280Wh	2560Wh	
Max. Charge Voltage	14.2V		28.4V
Recommended Charge/Discharge Current	50A/50A	100A/100A	50A/50A
Max. Cont. Charge/Discharge Current (*)	100A/100A	150A/150A	100A/100A
Max. Charge/Discharge Current (<15s)	200A/200A	400A/400A	200A/200A
Capacity By Temperature	100 % (25°C), 94 % (0°C)		
Cycle Life (**)	≥4000 cycles		
Normal Operating Temperature	25°C		
Charging Temperature	-20~55°C (with Internal Self Heating)		
Discharging Temperature (***)	-20~55°C		
Storage Temperature	-20~55°C		
Warranty	10 years		
Functional Properties			
BMS Protections	UV, OV, OC, UT, OT, SC		
Screen	No		
Communication Interfaces	Bluetooth, CAN, RS485		
Parallel Connection	Yes (up to 4 batteries)		
Serial Connection	Yes (up to 48V)		
Safety Relay Control	Yes (over relay connector)		
Dry Contacts	No		
Protective Vent	Yes		
Internal Self Heating	Yes (integrated thermal heat-pad with control)		
Compitable Inverter (****)	Victron Energy, Pylontech, Deye, Senergy (Communication :CANBUS)		
	Epever (Communication : RS485)		
Mechanical Properties			
Battery Case Material	PC-ABS		
Power Terminals	M8 Screw In		
Protection Level	IP65		
Humidity	5% - 85% RH (non-condensing)		
Altitude	<3000 m		
Dimension (WxDxH)	279x205x215 mm	475x205x215 mm	475x205x215 mm
Weight	13±1 kg	22±1 kg	22±1 kg

(*) Operates for a complete cycle (full charge/discharge) under 20°C without interruption.
(**)Test Conditions: 25°C
(***) Performance may vary in different conditions
(****) Contact us for other inverter brands

Energy Storage for Telecom



Telecom Battery Systems: Advancing Energy Solutions for the Telecommunications Industry

With the advent of 4G technology, the demand for energy in the telecommunications sector has become increasingly critical, and this demand is poised to rise even further with the rollout of 5G networks. To meet this energy gap, the transition from traditional lead-acid batteries to lithium-ion (Li-Ion) technology is not just beneficial; it is essential.

Lithium-ion batteries offer several advantages over Valve Regulated Lead Acid (VRLA) batteries, including higher power densities, reduced weight, longer lifecycle, and lower total cost of ownership (TCO). They also enable faster charging, integrated monitoring capabilities, and eliminate gas emissions from the batteries. This technological shift represents a revolutionary advancement in the telecommunications industry.

Our lithium-ion battery systems, designed specifically for telecommunications applications, are compatible with UPS and energy storage systems. Manufactured using Lithium Iron Phosphate (LiFePO4) chemistry, these 100Ah batteries provide an extended cycle life and support discharge currents of up to 1C. They are equipped with internal heaters that facilitate charging in temperatures below 0°C.

Applications		
⊕ Load/Peak Shifting	⊕ Frequency Regulation	⊕ UPS / Bridging Power

Low Voltage Telecom Batteries

Basic Properties	PBT-48100	PBT-48150
Cell Type	$LiFePO_4$ - Prismatic	
Nominal Voltage	48V	
Nominal Capacity	100Ah	150Ah
Nominal Energy Capacity	4.8kWh	7.2kWh
Operating Voltage Range	40V - 54,75V	
Maximum Charge Voltage	54.7V	
Standard Charge/Discharge Current	50A / 50A	75A / 75A
Max. Cont. Charge/Discharge Current	100A / 100A	150A / 150A
Cycle Life (*)	≥4000 cycles	
Normal Operating Temperature	25°C	
Charging Temperature	-20~50°C(with Internal Self Heating)	-20~55°C
Discharging Temperature (**)	-10~55°C	-20~60°C
Storage Temperature	-20~55°C	-20~60°C
Residual Capacity Loss	≤4%/month (25°C ± 2C)	
Warranty	10 years	
Functional Properties		
Communication	RS485	
Scalibility	Max. 16 units in parallel	
Cooling	Natural	
Reverse Polarity	Yes	
Integrated Heater	Yes	
BMS Protections	UV, OV, OC, UT, OT, SC	
LED Indicators	Alarm, Run, SOC	
High Current Protection	Externally Replaceable Fuse (Current Rating: 150A)	
Mechanical Properties		
Protection Level	IP20	
Humidity	5% - 85% RH (non-condensing)	
Altitude	<3000m	
Dimension (WxDxH)	398x472x178 mm (4U)	398x472x223 mm (5U)
Weight	42,6±1 kg	60±1 kg
Power Terminals	M8 Screw Terminals	

(*)Test Conditions: 25°C
(**) Performance may vary in different conditions

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