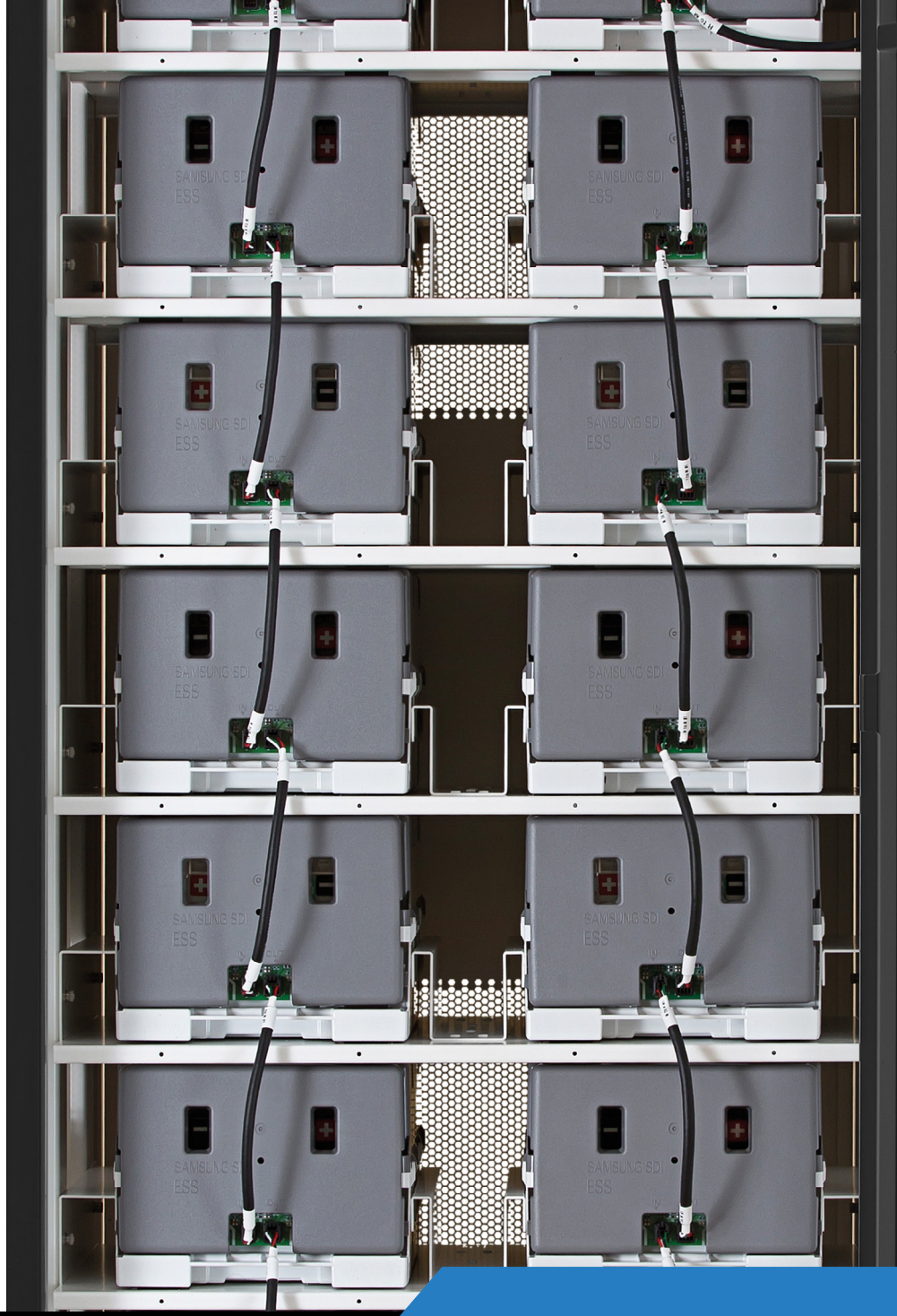
KOHLER®

UNINTERRUPTIBLE POWER



KOHLER Lithium-ion Batteries

Reliable, lightweight and compact.

Reliable, lightweight and compact UPS energy storage for critical applications such as data centres, healthcare, building infrastructures, transportation, and manufacturing.

Capable of high density energy storage with much lower weight and space requirements than VRLA batteries, lithium-ion battery systems now offer a proven alternative.

Approved for use with KUP UPS systems and selected for their reliability, performance, safety and cost-effectiveness, KUP offers lithium-ion UPS battery solutions from leading manufacturers Samsung SDI and Vision Group.

3 x Samsung SDI cabinets in parallel

Introducing lithium-ion batteries

Though Valve-Regulated Lead Acid (VRLA) batteries have for a long time been the mainstay in UPS systems, recent developments in lithium-ion battery technology now make it an attractive option to consider, especially where high energy density and low weight are important. Using lithium-ion designs specifically for UPS applications, advantages such as longer lifespan, smaller size and weight, shorter recharging times and falling prices only add to their appeal.

Additionally, lithium-ion UPS batteries typically have a wider operating temperature range than VRLA equivalents. This means significant reductions in cooling can be achieved, saving energy and costs.

- Longer service life than VRLA
- Reduced footprint and volume (approx. 50% vs VRLA)
- Lightweight (approx. 50% less than VRLA)
- Fast charge and discharge rate
- Reduced need for cooling
- Increased power density
- Battery monitoring as standard
- UPS specific, high safety designs

Samsung Battery Features

Lithium-ion batteries can be charged much more quickly than conventional batteries, so after use they can be charged back up to full strength in a shorter time. This means full availability in less time.

Lithium-ion batteries also provide higher power density and efficiency, especially under heavy discharge rates. This means that no battery oversizing is needed.

Low weight (60–80 percent less than VRLA) means reduced civil engineering overheads and easier physical installation.

Technical specification

Vision Revo 2.5 Lithium-ion Battery Systems

System specific data	TP100	TP110	TP120	TP200	TP220	TP240
General Specifications						
Nominal energy (kWh)	25.6	28.2	30.7	51.2	56.3	61.4
Rated capacity (Ah)	50			100		
Number of modules	10	11	12	10	11	12
Cell type	3.2V 50Ah					
Rated voltage (Vdc)	512	563.2	614.4	512	563.2	614.4
Charging current (A)	10-25			20-50		
Discharge cut off voltage (V)	448.0	492.8	537.6	448.0	492.8	537.6
Charge voltage (V)	544.0 552.0	598.4 607.2	652.8 662.4	544.0 552.0	598.4 607.2	652.8 662.4
Cabinet dimensions WxDxH (mm)	600 x 1000 x 2000				600 x 1000 x 2300	
Cabinet weight with batteries (kg)	550	580	620	900	970	1040
General data						
Battery type	LFP (lithium iron phosphate) lithium ion					
Cycle life	>2500 cycles (at 25°C, 1C/1C, 100% depth of discharge)					
Operating temperature	Charging 0°C to + 50°C Discharging 20°C to +65°C					
Operating humidity	<95% RH, non condensing					
Ingress Protection (IP) rating	IP 21					
Storage temperature (recommended)	20°C to + 35°C at 35-85% RH, non-condensing					
Thermal management	Air cooling					
Status indication	Standard: LED status indicators Optional: Additional LCD screen					
External communication	RS 485					
Dry contact	Yes					
Fire supression	Standard: LED status indicators Optional: Additional LCD screen					
Product compatibility						
PW 9250DPA	Yes					
PW 9500DPA	Yes					
MF Series	Yes					
PW6000 (60-120 kVA and 400-500 kVA)	Yes					

Revo version 2.5 system enhanced features:

- Enhanced performance eg +2X higher discharge rate
- Laser welded (vs manually crimped) cell connections improve reliability and reduce resistance
- Module level fire protection as standard – perfluorohexanone fire extinguishing agent activated within 10 seconds of fire starting, plus optional second-generation cabinet level fire extinguisher
- Battery module structure includes improved insulation and corrosion resistant polycarbonate material tray
- Module level fuse protection - can be activated by the battery management system, protecting against serious faults such as short circuit or insulation failures / damage
- Improved, better protected and more robust routing of fan and sampling cables
- Integrated bus-bar for simpler, more reliable screw and cable-free cell connections
- Improved user interface

Technical specification

Samsung SDI Lithium-ion Battery System

General data	
Nominal energy (kWh)	34.6
Capacity (Ah)	67
Open circuit voltage (V)	516.8
Number of modules	17
Operating temperature (recommended)	+18°C to +28°C (+25°C)
Maximum cell temperature	67°C
Minimum discharge	470A (60 sec) 600A (1 sec)
Communication	RS485-TCP/IP – dry contact
Connection type	2 wires/top cable entry
Maximum parallel cabinets	To be confirmed
Product compatibility	
PW 9250DPA	Yes
PW 9500DPA	Yes
PW 6000 (60–120 kVA and 400-500kVA)	Yes
MF Series	Yes
Batteries	
Type	LMO-NMC (Lithium manganese oxide – nickel manganese cobalt) lithium ion
Weight	
Weight with batteries (kg)	510
Module weight (kg)	17
Dimensions	
Dimensions W×D×H (mm)	650 x 530 x 2055

Samsung SDI Lithium-ion battery system enhanced features:

- Cell construction provides a safety function layer to prevent the possibility of an electrical short between the anode and cathode
- Multilayer separator prevents overcharging by blocking the passage of lithium ions
- Safety vent allows gas venting in case of internal overpressure

Exceptional 24/7/365 Service Support

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