

RS hybrid



HIGHLIGHTS

- **Plug & play installation**
- **Max DC power up to 150% overload**
- **LV lithium-iron-phosphate-ion batteries**
- **Connect up to 6 battery modules for a total capacity of approximately 30 kWh**
- **Discharge capacity 100%**
- **Suitable for AC side retrofit**
- **Integrated backup module**

Riello Solartech: Hybrid inverters integrated in an Energy Storage system for residential applications.

Energy storage enables you to save electricity so you can use it later: when and where it is most needed. By introducing greater flexibility into the network, energy storage enables the integration of more solar energy resources.

Riello Solartech Energy Storage is a system capable of both extending the functionality of an On Grid photovoltaic system with the hybrid RS 3.6 and 6.0 HYBRID inverters combined with 4.8 kWh lithium-ion battery modules, respectively, and creating a backup with the ability to dedicate a preferential line of loads in the event of a grid outage.

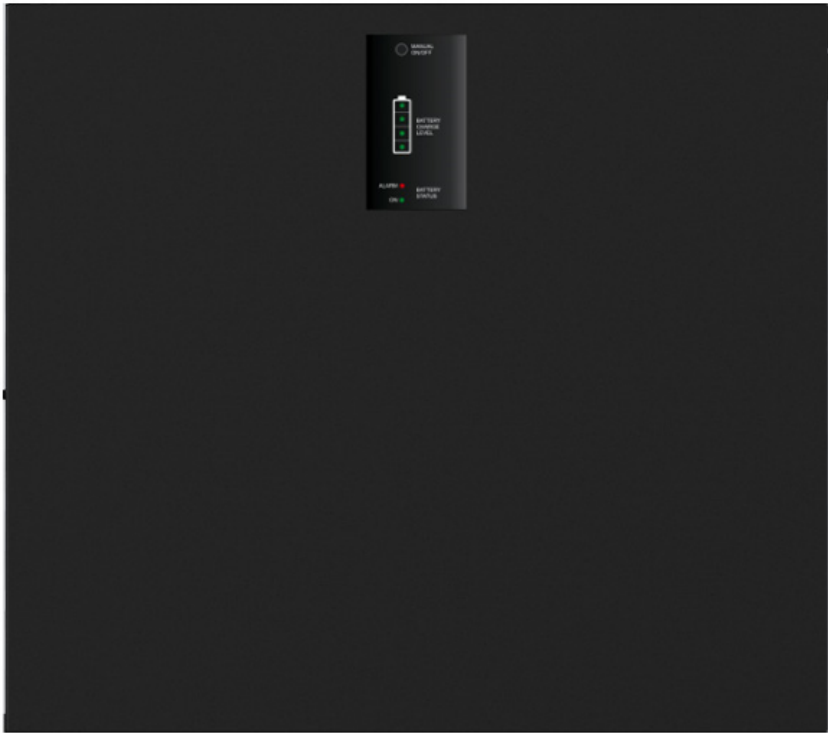
With an attractive design and simple plug & play installation, thanks to its scalable energy storage of up to 6 modules of

4.8 kWh in a parallel configuration the system allows energy produced by the photovoltaic system to be stored so it can be used during the evenings or at times of low solar radiation, making the system independent of the electricity grid.

This solution provides for the best possible management of the energy produced by the photovoltaic system. The battery is charged by the hybrid inverter.

RS HYBRID inverters are available with a power of 3.6 and 6 kW, equipped with DC, AC side disconnect switches and batteries and with cat. 2 surge arresters for immediate plug & play installation with no need for any additional field switchboards. Featuring two PV inputs that converge on two independent MPPT trackers with self-learning technology with a wide range and a very low threshold voltage for supplying the mains.

All of this ensures maximum configuration flexibility, efficiency optimization and prolonged energy production. Ventilation is forced with fans and a dust filter to ensure maximum heat exchange while keeping the system clean. The inverters are equipped with an integrated backup module that supports an intervention time of less than 15ms in the event of a mains outage. To optimize the backup, provision has been made for a preferential line or alternatively the possibility of managing a total load power of 4800 W max. As regards management there are status LEDs and a touch-activated display that simultaneously shows all the main information and 4 touch buttons with illumination that activate on contact for scrolling through the information and settings. Finally, there are many possibilities for communications with the inverters: USB port, RS232, Modbus, Ethernet and Wi-Fi. All of this can be interfaced with the monitoring software for real-time system status viewing and control (supervision WEB portal and APP).

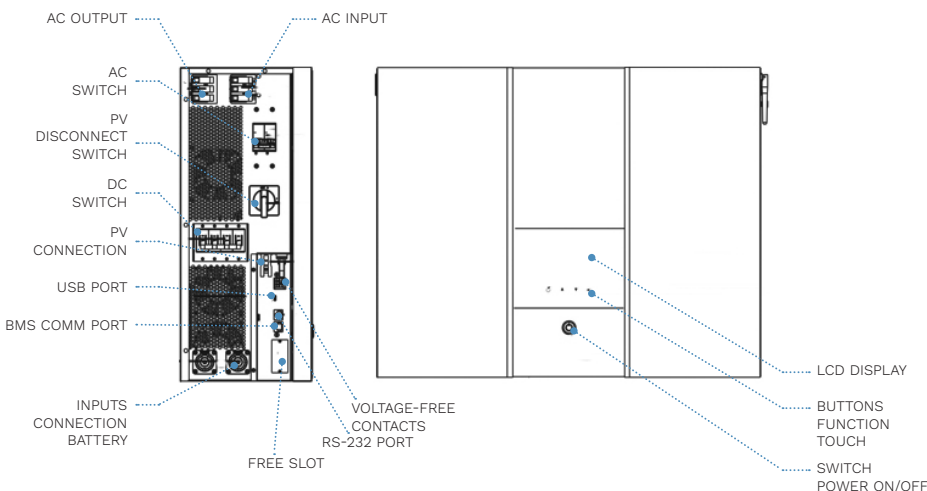


LITHIUM-IRON-PHOSPHATE-ION BATTERIES FOR THE STORAGE SYSTEMS

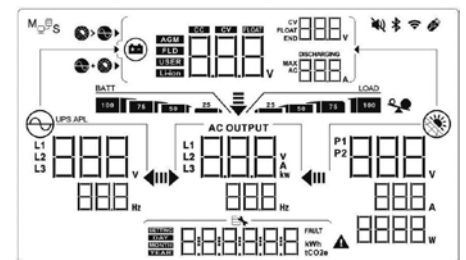
The lithium-iron-phosphate-ion batteries for the storage systems are available in isolated low-voltage modules (48 V DC) for increased safety in the residential field with a capacity of 100 Ah (4800 Wh). The system scales up to six battery modules connected in parallel, while the BMS (battery management system) is integrated into each individual battery module, which avoids any risk of a total lack of storage utilization in the event of issues on a single module. The BMS includes

overload, overcurrent and over temperature protection. The batteries have a full discharge capacity, DOD 100% and an operating temperature range of -20°C to 55°C. The entire system is very safe, with failure detection of the cells and other components to guarantee 100% protection for the end-user.

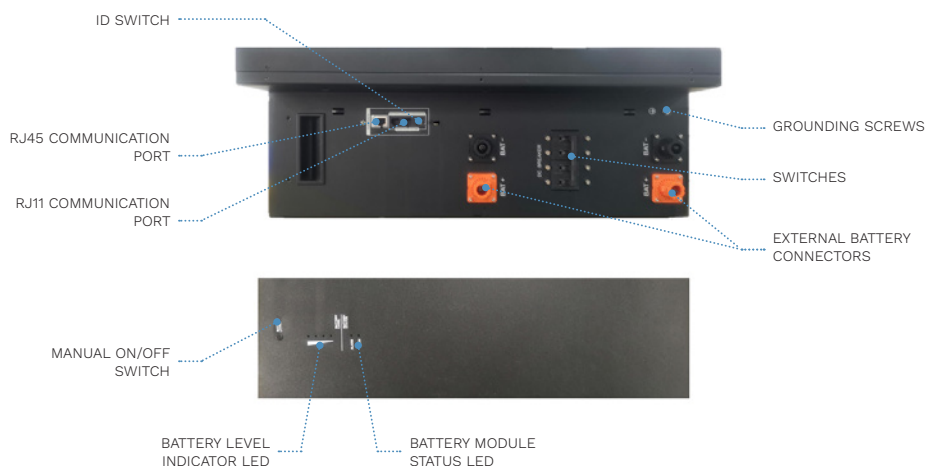
INVERTER MODULE



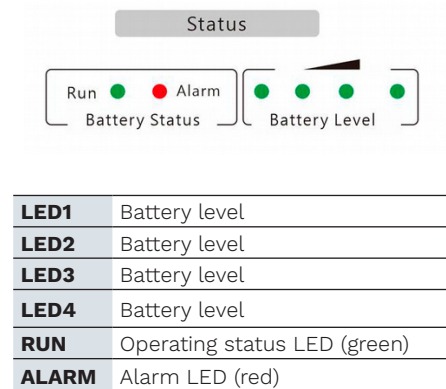
LCD DISPLAY



BATTERY MODULE



STATUS LED



MODEL	RS-3.6 HYBRID	RS-6.0 HYBRID
PRODUCT CODE	6ES13K6A	6ES16K0A
EFFICIENCY		
Max. efficiency	96%	
European weighted efficiency	95%	
Maximum charging/discharging efficiency of the batteries	93%	
DC INPUT		
Max PV power [W]	5400 (150% observing the DC input parameters)	9000 (150% observing the DC input parameters)
Maximum input voltage [V]	550	
Nominal input voltage [V]	360	
Starting voltage [V]	116	
MPPT operating voltage range [V]	120 – 550	
Maximum input current for MPPT [A]	2 x 13	
Maximum short circuit current [A]	2 x 15	
MPPT number	2	
Maximum number of inputs	2	
AC OUTPUT		
Mains connection	Single-phase	
Nominal output power [W]	3600	6000
Maximum apparent power [VA]	3960	6600
Nominal output voltage [V]	220 / 230 L + N + P	
Nominal AC mains frequency [Hz]	50 / 60	
Maximum output current	17	24
Selectable power factor	0.8 capacitive ... 0.8 inductive	
Harmonic Distortion (THDi)	<3% (nominal power)	
Backup power [W]	3600 (including module)	6000 (including module)
PROTECTIONS		
PV field side DC disconnect switch	Yes	
Battery side DC disconnect switch	Yes	
Anti-islanding protection	Yes	
DC reverse polarity protection	Yes	
Ground fault detection	Yes	
DC overvoltage protection	Type II (VDR)	
AC overvoltage protection	Type II (VDR)	
Residual current monitoring	Yes	
AC overcurrent protection	Yes	
AC short circuit protection	Yes	
Overheat protection	Yes	

MODEL	RS-3.6 HYBRID	RS-6.0 HYBRID
PRODUCT CODE	6ES13K6A	6ES16K0A
OVERALL SPECIFICATION		
Operating temperature range	-25 °C – 60 °C	
Relative operating humidity	0 – 100%	
Operating altitude	2000 m (max. 4000 m with derating)	
Cooling	by internal fan	
Display	LED + LCD	
Communications	Integrated Wi-Fi, integrated RS485, Ethernet (optional)	
Dimensions (WxDxH) [mm]	620 x 210 x 500	
Weight [kg]	24	
Protection level	IP 21	
Night power consumption	< 1 W	
Contacts on the machine	1	

BATTERY MODULE MODEL	BATLIO 4800	
PRODUCT CODE	6WL1048100A	
BATTERIA COMPATIBILE		
Type	Li-Ion	
Total energy [Wh]	4800	
Nominal voltage [V DC]	48	
FC full charge voltage [V DC]	52.5	
FD full discharge voltage [V DC]	34.5	
Capacity [Ah]	100	
Max. charging current [A]	100	
Max discharge current [A]	150	
Recommended end-of-discharge voltage [V]	37.5	
Recommended charging voltage [V]	52.5	
Maximum battery connector voltage [V]	1000	
Maximum battery connector current [A]	125	
Maximum charging power [W]	1500 (with one battery module) / 2600 (with more than 1 battery module)	
Maximum discharge power [W]	3600 (RS 3.6)	4800 (RS 6.0)
DOD	100%	
OVERALL SPECIFICATIONS		
Standard charging method	0.2C DC (constant current) charges to FC, then CV (FC constant voltage) charges until the charging current decreases to 0.05C.	
Operating temperature range	Charging phase: 0°C~50°C Discharging phase: 0°C~+50°C	
Protections	BMS, Switch	
Maximum charging current	50 A (0.5C) to battery module	
Standard recharging method	0.2C DC (constant current) charges from FC, CV (FC constant voltage) charges until the descending current <0.05C	
Weight [kg]	60	
Dimensions (WxDxH) [mm]	620 x 210 x 550	
Protection level	IP 20	
Recommended storage temperature	20 ± 5°C	
Storage time	-20°C ~ 25°C <18 months 25°C ~ 45°C <3 months 45°C ~ 60°C <1 month	
Ambient humidity range	20%RH-80%RH	

The product photos are merely an indication. Due to technical and/or regulatory updates, the product features may change at any time without notice.