

RI-ENERGYSET-3P-ESS-50-107



All in one 3 Phase outdoor battery and inverter cabinet - 50kW/107kWh

Product Description

The RI-ENERGYSET-3P-ESS-50-107 is part of Rayleigh Instruments growing family of renewable energy products.

This all in one indoor or outdoor battery and inverter solution is the perfect option to bulky 'lorry container' BESS solutions. It not only offers the benefit of a more manageable size, it also offers future scalability and is ideal for commercial premises, factories, hotels, and farms with DC/AC coupled solar-storage.

No external switching device is required, with on/off grid switching-time of 10ms and support for direct output backup mode. The unit supports self-consumption, peak shifting, time-of-use, and battery backup.

This high performance solution benefits from a small footprint, long battery cycle life and cloud control with 24/7 monitoring. It is also safe and reliable with carbon monoxide detection, sound and light alarms, exhaust fan, explosion vent window, inlet valve and fire water injection port.

- Versatile option to bulky battery container units
- Safe and reliable operation CATL LFP battery cells
- Double fire suppression system design
- 1 + 1 redundancy design
- Integrated BMS/EMS suitable for various applications
- Simple, user friendly operation and cloud control
- Economical and efficient with 90% DOD improving ROI
- Expandable as required (maximum of 20 systems)
- Energy saving HVAC design
- No external switching device required

Technical Data - Battery Cabinet Parameters

RI-ENERGYPACK-3P-ESS-50-107	
General Specifications	
Battery type	LFP
Battery module capacity	17.92 kWh
Cell Type	280 Ah
Number of modules	6
Total battery capacity	107.52 kWh
Nominal voltage	384V
Operating voltage range	342V...432V
Charge/Discharge rate	Max. 0.5C
DoD	90%
Communication	
Communication port	Ethernet, CAN
Communication protocol	CAN, MODBUS TCP/IP
Mechanical	
Dimensions (W x D x H)	1050 x 1371 x 2085mm
Weight	<1.5T
Installation site	Outdoor (or indoor)
IP protection	IP54
Anti corrosion level	C4
Cooling method	Air conditioner
Environmental	
Operation humidity	5%...95% (No condensing)
Operation temperature	-30°C...+50°C
Max. operation altitude	≤3000m

Conformity

Standards	UN38.3, MSDS, IEC 62040, IEC 62477, IEC 62619, IEC 63056, IEC 61000-6-2/4
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Technical Data - Inverter Parameters

RI-ENERGYFLOW-3P-HYBRID-50B	
PV side	
MPPT Voltage Range	250...950Vdc (Max. 1000Vdc)
MPPT Rated Voltage	720Vdc
MPPT Rated Voltage (Full Load)	550...800V
Max. PV Power	100 kWp
Number of MPPT / Strings per MPPT	4 / 2
Max. Current per MPPT	45A
Battery side	
Battery Voltage Range	200...950Vdc
Battery Rated Voltage Range	250...800Vdc
Max. DC Current	80 Adc x 2
Max. DC Power	55kW
Number of DC Input	2
AC side (On grid)	
Nominal AC output power	50kW
Max. AC output power	55kVA
Max. AC Input Power (Single-phase)	37.5 kW
Rated AC Current	72.5A
Max. AC Current	163A
AC Rated Voltage/Voltage Range	230/400Vac; 220/380Vac; 3L+PE+N; -15% ±10%
Nominal Grid Frequency/Frequency Range	50 Hz/60 Hz (±5 Hz)
THDi	< 3% (100% Load)
Adjustable PF Range	-0.8 (Lagging) - 0.8 (Leading)
Backup Output	
Nominal AC Voltage	230/400V; 220/380Vac; 3L+PE+N
THDv	< 3% (Rated Power)
Nominal Grid Frequency/Frequency Range	50 Hz/60 Hz
Nominal AC Output Power	50kW
Max. AC Output Power (Single-phase)	25kW
Max. Output Current	110A
Genset Input	
Max. Input Current	110A
Efficiency	
Max. efficiency	97.5%

Protection	
Reverse DC Connection Protection	Yes
Anti-Islanding Protection	Yes
Over-Temperature Protection	Yes
Grid Monitoring/Earthing Fault Detection	Yes
Insulation Monitoring	Yes
DC I AC Surge Protection	DC Type II; AC Type II
AFCI	Optional
General Specifications	
Topology	Transformerless
Cooling method	Intelligent air cooling
Communication	
Communication port	RS485/CAN
Communication protocol	CAN, MODBUS
Mechanical	
Dimensions (W x D x H)	635 x 315 x 950mm
IP protection	IP65
Environmental	
Operation humidity	0%...100% (No condensing)
Operation temperature	-25°C...+60°C (>45°C derating)
Max. operation altitude	4000m (>3000m derating)

Model Selection Table

Description	Model
50kW/107kWh 3 Phase all in one ESS cabinet including:- RI-ENERGYPACK-3P-ESS-50-107 RI-ENERGYFLOW-3P-HYBRID-50B	RI-ENERGYSET-3P-ESS-50-107