

RI-ENERGYSET-3P-ESS-50-100



Product Description

The RI-ENERGYSET-3P-ESS-50-100 is part of Rayleigh Instruments growing family of renewable energy products.

This all in one indoor or outdoor battery and inverter solution is an ideal option to bulky 'lorry container' BESS solutions. It not only offers the benefit of a more manageable size, it also offers future scalability.

All in one 3 Phase outdoor battery and inverter cabinet - 50kW/100kWh

- 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
- 150% Oversize PV input

Technical Data - Battery Cabinet Parameters

RI-ENERGYPACK-3P-ESS-50-100	
General Specifications	
Battery type	LFP
Battery module capacity	5.12kWh
Number of modules	10 x 2
Total battery capacity	102.4kWh
Nominal voltage	512V
Operating voltage range	448V...576V
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)	1100 x 1080 x 2380mm
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	4000m (>3000m derating)

Conformity

Standards	IEC62619-2017, UN38.3, IEC61000-6-2/4
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Technical Data - Inverter Parameters

RI-ENERGYFLOW-3P-HYBRID-50	
PV side	
Max. input voltage	1000V
Max. PV input	75000W
MPPT voltage range	350V...800V
Max. current per MPPT	36A
Number of MPPT	3
Number of inputs per MPPT	2
Battery side	
Max. input voltage	750V
Min. input voltage	350V
DC voltage at nominal operation	500V...750V
Max. DC Current	50A x 2
Max. DC input power	55kW
Number of DC inputs	2
AC side (On grid)	
Nominal AC output power	50kW
Max. AC output power	55kVA
Max. AC current	80A
Nominal AC voltage	400V
AC voltage range	360V-440V
Nominal grid frequency/frequency range	50/60Hz $\pm$ 5Hz
THDv	<3% (100% load)
Adjustable PF range	-1 (lagging)...1 (leading)
AC side(Off grid)	
Nominal AC voltage	400V $\pm$ 3%
THDv	<3%(linear load)
Nominal grid frequency/frequency range	50/60Hz
Nominal AC output power	50kW
Max. AC output power	55kVA
Efficiency	
Max. efficiency	97.5%
Protection	
Reverse connection protection	Yes
DC switch	Yes
AC switch	Yes
Over-temperature protection	Yes
Grid monitoring/ Earthing fault detection	Yes
Insulation monitoring	Yes
Surge protection	DC Type II;AC Type II

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)	650 x 715 x 325mm
Weight	62Kg
IP protection	IP65
Noise [dB]	≤68
Environmental	
Operation humidity	0%...100% (No condensing)
Operation temperature	−25°C...+60°C (>45°C derating)
Max. operation altitude	4000m (>3000m derating)

Conformity

Standards	IEC 62477, IEC 61000, CE;GB/T, IEC 62109, IEC 61683, IEC 60068, IEC 61727, IEC 62116, EN 50549, VDE 4105, G99, G100
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Model Selection Table

Description	Model
50kW/100kWh 3 Phase all in one ESS cabinet including:- RI-ENERGYPACK-3P-ESS-50-100 RI-ENERGYFLOW-3P-HYBRID-50	RI-ENERGYSET-3P-ESS-50-100