

RI-ENERGYFLOW-3P-SERIES-50-R3



Product Description

The RI-ENERGYFLOW-3P-SERIES-50 range forms part of an expanding **RENAC by RAYLEIGH** family of inverters from Rayleigh Instruments.

These inverters are designed for small industrial and commercial projects. With fuse free design, optional AFCI function and other multiple protections, ensures a higher safety level of operation.

A maximum efficiency of 99% with a maximum DC input voltage of 1100V, a wider MPPT range and a lower start-up voltage of 160V, guarantees an earlier generation of power and a longer working time. An advanced ventilation system also ensures the inverter dissipates heat efficiently.

50% DC input oversizing capability allows users to increase significantly the power output by adding extra solar panels.

10% AC output overloading enables this inverter to be operated on its full capacity by adding extra reflections from the backside of bifacial panels, thus maximizing solar powered energy generation, giving you a higher yield.

3 Phase On-Grid Inverters

- Available as 30kW, 40kW and 50kW
- Three Phase, 3/4 MPPT versions
- 40A Input current per MPPT
- Compatible with high-wattage panels
- Remote monitoring
- Compact Size and weight
- Wide MPPT range (180...1000V)
- 150% DC input oversizing and 110% AC overloading
- Low Start-up voltage (200V)
- Remote Firmware update
- Type II SPD for both DC and AC
- IP65 Rated
- Easy installation
- G99 compliant
- Optional AFCI & Smart PID recovery function



DC Input (PV)

Model - RI-ENERGYFLOW-3P-SERIES-50-R3	30K	40K	50K
Recommended Max. PV Power [Wp]	45000	60000	75000
Max. PV power for single MPPT [Wp]	20000		
Max. PV Input Voltage [V]	1100		
MPPT Voltage Range [V]	180...1000		
Rated Input Voltage [V]	600		
Start-up Voltage [V]	200		
No. of MPP Trackers	3	4	4
No. of Input Strings per Tracker	2 / 2 / 2	2 / 2 / 2 / 2	2 / 2 / 2 / 2
Max. Input Current Per MPPT [A]	40 / 40 / 40	40 / 40 / 40 / 40	40 / 40 / 40 / 40
Max. Short-circuit Current per MPPT [A]	50 / 50 / 50	50 / 50 / 50 / 50	50 / 50 / 50 / 50

AC Output

Model - RI-ENERGYFLOW-3P-SERIES-50-R3	30K	40K	50K
Rated AC Power [W]	30000	40000	50000
Max. Output Power [VA]	33000	44000	55000
Max. AC Current [A]	50	66.6	83.3
Rated AC Voltage / Range [V]	3 / N / PE, 220 / 380, 230 / 400		
Grid frequency / range [Hz]	50 / 60		
Adjustable Power Factor [cos Φ]	0.8 leading ~ 0.8 lagging		
Output THDi (@Rated Output)	<3%		

Efficiency

Model - RI-ENERGYFLOW-3P-SERIES-50-R3	30K	40K	50K
Max. Efficiency	98.6%	98.8%	98.8%
Euro Efficiency	97.8%	98.0%	98.0%

Protection

Model - RI-ENERGYFLOW-3P-SERIES-50-R3	30K	40K	50K
DC Switch	Integrated		
DC Insulation Monitoring	Integrated		
Input Reverse Polarity Protection	Integrated		
Anti-island Protection	Integrated		
Residual Current Monitoring	Integrated		
AC Overcurrent Protection	Integrated		
AC Short-circuit Protection	Integrated		
String Current Monitoring	Integrated		
AFCI Protection	Optional		
Anti-PID function	Optional		
DC Surge Protection	Integrated (Type II)		
AC Surge Protection	Integrated (Type II)		
DC Switch	Integrated		

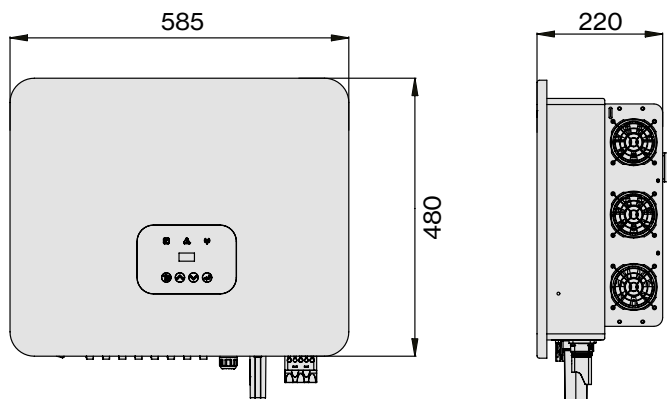
General Specifications

Model - RI-ENERGYFLOW-3P-SERIES-50-R3	30K	40K	50K
Size (Width x Height x Depth) [mm]	585 x 480 x 220		
Weight [kg]	37		
User Interface	LED + OLED		
Communication	RS485, USB Update, Optional WiFi, 4G, Ethernet		
Ambient Temperature Range [°C]	-25...+60		
Relative Humidity	0...100%		
Operating Altitude [m]	≤2000		
Standby Self Consumption [W]	<1		
Topology	Transformerless		
Cooling	Fan		
Enclosure	IP65		
Warranty (conditions apply)	10 years		

Certification & Standards

Grid Regulation	NB/T 32004, ORDINANCE No.140, EN50549-1, EN50549-PL, IEC61727/IEC62116, G99
Safety Regulation	EN 62919-1, EN 62619-2
EMC	EN IEC 61000-6-1, EN IEC 61000-6-3, EN 62920, EN IEC61000-3-11, EN IEC61000-3-12

Dimensions (mm)



Model Selection Table

Description	Model
30kW AC Output Inverter	RI-ENERGYFLOW-3P-SERIES-50-R3-30K
40kW AC Output Inverter	RI-ENERGYFLOW-3P-SERIES-50-R3-40K
50kW AC Output Inverter	RI-ENERGYFLOW-3P-SERIES-50-R3-50K