

# RS SINGLE-PHASE



## HIGHLIGHTS

- **Cooling technology with natural ventilation**
- **Maximum efficiency 97.3%**
- **European efficiency 96.3%**
- **String current 15 A**
- **PV configuration 130%**
- **Integrated Bluetooth**
- **Smart self-test and self-learning via the App**
- **Night-time consultation**
- **Remote monitoring**

**The second generation RS single-phase inverter range by Riello Solartech offer the best combination of photovoltaic energy conversion, energy efficiency and overall performance with the additional guarantee of considerable savings in terms of installation and running costs.**

RS single-phase inverters, like the ones in the previous generation, use innovative technologies and high-quality components sized with a wide margin in relation to normal operating conditions so as to reduce periodic machine maintenance without sacrificing a high degree of operating flexibility.

The digital control of all power stages guarantees low susceptibility to power disruptions, avoiding undesired disconnection due to power variations or micro-interruptions. All models in the RS single-phase range integrate input and output surge protection and have control devices and redundancy protection—especially in the output stage—to guarantee operability and continuous operation.

## INNOVATION

Practical, lightweight and compact design. The aluminium case makes these inverters particularly lightweight and ensures an optimum real IP65 protection level, even for outdoor applications.

The materials chosen are high-quality, to ensure maximum reliability.

Thanks to the wide voltage range, the inverter can be perfectly integrated into the various operating conditions of the electricity grid and is particularly suited for the typical low voltage of rural areas.

- Cooling technology with natural ventilation to ensure a period of reliable use in high temperature situations.
- Smart self-test with self-learning via the app.
- Multiple remote monitoring for operation and maintenance.

## EFFICIENCY

- High efficiency and higher efficiency rate.
- Maximum efficiency 97.3%.
- MPPT self-learning technology to optimize the efficiency of each module.
- Wide MPPT range.
- Low threshold voltage for supply to the grid.

## MAXIMUM FLEXIBILITY

- Simple installation, smart operation and maintenance.
- User-friendly communication interface with integrated Bluetooth and Wi-Fi provided.
- AC/DC connectors that can be plugged in for immediate connection.
- Use of app and supervision web portal for controlling the inverter system and remote firmware updating, maintenance and smart operations.
- Lightweight and extremely compact for easier installation.

Eye-catching design, lightweight, compact, easy to install and set up; this new, second version of RS single-phase inverters has all the standout features of the first generation. Riello Solartech RS single-phase inverters are particularly suitable for residential and small commercial installations. Thanks to the wide range of input current and voltage, they are extremely well-adapted to plants with size limitations.

The digital control of all the power states – which ensures low sensitivity to mains interference, combined with the IP65 protection level – which means the inverter can be positioned outside near the generator, simplify the wiring on the DC side of the inverter, reducing leakage, helping to limit installation costs and greatly improve overall system reliability. The multi-string technology for 4.0-5.0-6.0 kW models also enables strings with different orientations and inclinations to be managed, to work better with any type of photovoltaic module, even if partially in the shade. The integrated DC switch disconnecter means the inverter can be rapidly and securely isolated in the event of an emergency or non-routine maintenance.

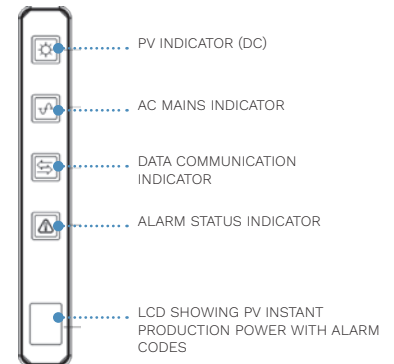
A series of LED icons on the front of the case immediately identify the operating status of the inverter while an LCD display shows the instantaneous power produced or an alarm code, if any.



The 1.5, 2.0 and 3.0 kW RS single-phase inverters, with single MPPT input, receive signals from a single string of PV panels. The 4.0, 5.0 and 6.0 kW RS single-phase inverters, with dual MPPT input, receive signals from two strings of PV panels. For the latter models, the inputs are grouped into one or two MPPT independent channels in order to track the maximum power point of the PV panels. The MPPT power is converted in the DC bus and the DC voltage is in turn converted to AC voltage via an inverter circuit. Finally, the AC voltage is fed into the power grid to power the loads. An EMI filter is used on the DC and AC sides to reduce electromagnetic interference; Power surge protection is present on the AC side.

## FRONT PANEL

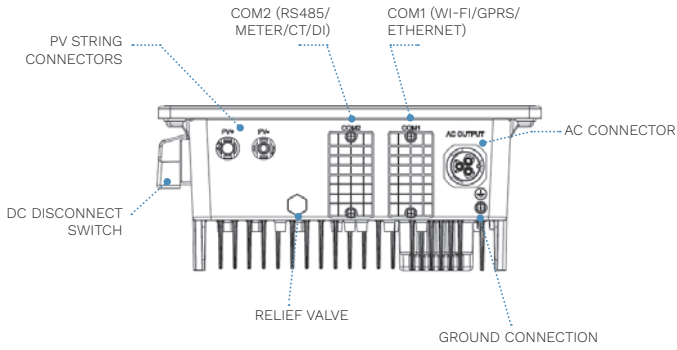
Panel with LED status indicators and LCD display showing instant production power.



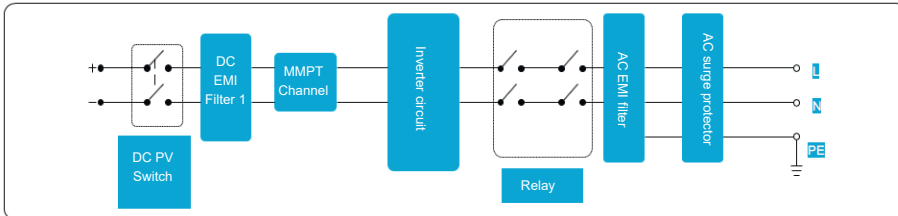
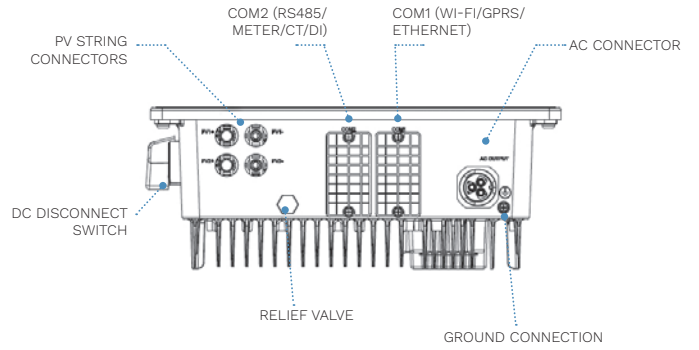
DB9 expansion slot used for optional communication cards, such as Ethernet.

# INVERTER

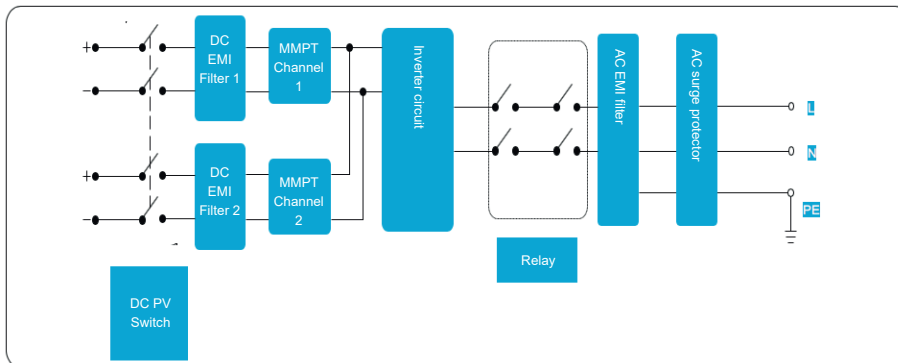
## 1.5, 2.0 and 3.0 kW RS single-phase inverters (from below)



## 4.0, 5.0 and 6.0 kW RS single-phase inverters (from below)



RS 1.5-2.0-3.0 inverter circuit with single MPPT input.



RS 4.0-5.0-6.0 inverter circuit with dual MPPT input.

## OPTIONS

### MONITORING

- RS Connect/RS Monitoring
- SunGuard (optional)

### ACCESSORIES

- Ethernet card
- RS Datalogger
- Datalogger Z series

MODEL	RS 1.5	RS 2.0	RS 3.0	RS 4.0	RS 5.0	RS 6.0
<b>EFFICIENCY</b>						
Maximum efficiency [%]	97.3			97.2		
European efficiency [%]	95.6	95.8	96.3	96.0	96.2	96.3
<b>INPUT</b>						
Maximum input voltage [V]	500			550		
Nominal input voltage [V]				360		
PV maximum input power (STC) [%]				130		
Maximum input current [A]	15			30 + (2 x 15)		
Maximum short circuit current [A]	20			40 + (2 x 20)		
Start-up voltage [Vdc]	70			90		
MPPT operating voltage range [V]	50 to 490			70 to 540		
Maximum number of PV strings	1			2 (1/1)		
MPPT number	1			2		
<b>OUTPUT</b>						
AC active power (nominal) [W]	1500	2000	3000	4000	5000	6000
Maximum apparent AC power [VA]	1650	2200	3300	4400	5500	6000
Active power max. AC (PF = 1) [W]	1650	2200	3300	4400	5500	6000
Max current AC output [A]	7.5	10	15	20	25	27.3
Max short circuit current [A]	38					
Nominal voltage AC [V]	220 / 230, L+N+PE					
Nominal mains frequency [Hz]	50 / 60					
Grid frequency range [Hz]	45-55 / 55-65 (configurable)					
Harmonic Distortion (THDI) [%]	<3 (nominal power)					
Direct current injection [%]	<0.5 In					
Power factor	> 0.99 nominal power (selectable 0.8 inductive – 0.8 capacitive)					
<b>PROTECTIONS</b>						
DC disconnect switch	Supported					
Anti-islanding protection	Supported					
AC overcurrent protection	Supported					
Short circuit protection	Supported					
DC pole inversion control	Supported					
Surge arresters (VDR)	DC type II (optional) / AC type III					
Ground fault detection	Supported					
Current leakage protection	Supported					
<b>OVERALL SPECIFICATION</b>						
Type	Transformer-free					
Protection level	IP65					
Night self-consumption [W]	<8					
Cooling	Natural ventilation					
Operating temperature range [°C]	-25 to 60					
Relative humidity range [%]	0 to 100					
Maximum operating altitude [m]	4000					
Noise level [dB]	<30					
Dimensions (WxDxH) [mm]	320x137x344			350x137x347		
Weight [kg]	6.7			8.9		
<b>COMMUNICATIONS</b>						
Display	LCD + APP					
Communications	Bluetooth / Wi-Fi (provided) / RS485 / Ethernet (optional)					
Monitoring	APP, Supervisory Portal					
<b>CERTIFICATION</b>						
Safety	IEC / EN 62109-1, IEC / EN 62109-2					
EMC	EN IEC 61000-6-1, EN IEC 61000-6-2, EN IEC 61000-6-3, EN IEC 61000-6-4, IEC 61000-3-2, IEC 61000-3-12, IEC 61000-3-3, IEC 61000-3-11					
Regulations	CEI 0-21, UNE 217001, UNE 217002, NTS Type A version 2.1, RD 647, RD 244, RD 1699, RD 661, RD 413, UNE 206006, UNE 206007-1					
Warranty	5 years (with possibility of extension)					

