Sirio ES

HIGHLIGHTS

- **Compact**
- **IP65 protection level**
- **Maximum input voltage 1100 VDC**
- **Operating range 200-1000 Vdc**
- **PV-side disconnect switches**
- **Type II DC and AC surge arresters**
- **Controlled forced ventilation**
- **Bluetooth, RS485 standard, Wi-Fi and Ethernet optional**

Range of string three-phase inverters (TL) connected to the grid for industrial or commercial photovoltaic plants.
Riello Solartech's Sirio ES three-phase inverters are usually used in low voltage photovoltaic plants connected to the grid. They benefit from completely new technology and are built with top-quality components, guaranteeing maximum machine reliability and achieving high efficiency under all operating conditions. All models in the Sirio ES range have a unique, innovative design. The aluminium case makes them particularly lightweight for their category and ensures an IP65 protection level, suitable for outdoor applications.

TOP TECHNOLOGY
Sirio ES inverters are sized for a maximum input voltage of 1100 VDC and have innovative digital control of all power stages. They are fitted with PV-side disconnect switches and type II DC and AC surge arresters.
Sirio ES 50 and Sirio ES 60 are fitted with 10 and 12 inputs respectively for maximum optimisation of the strings that converge on the 4 independent MPPT trackers characterised by a wide voltage range 200-960 VDC.
Sirio ES 100 and 110 are fitted with 16 and 18 inputs respectively for strings that converge on 8 and 9 independent MPPT trackers with a voltage range of 200-1000 VDC. This advanced configuration has been designed to ensure maximum flexibility, efficiency optimisation (above 98% under all operating conditions) and prolonged energy production. To minimise leakage, all Sirio ES models have a forced ventilation system with controlled speed extraction fans in relation to operating conditions.
The innovative digital control of all power stages also guarantees low susceptibility to power disruptions, avoiding undesired disconnection due to variations or micro-interruptions on the grid.

COMMUNICATION INTERFACE

The user-friendly interface on the front of the inverters features LEDs signalling the status of the photovoltaic field (PV), grid (AC), communications, data transmission and alarms. The inverters also feature a large LCD* divided into sections, which displays:

- energy flow diagram (PV field/grid);
- network and energy meter parameters;
- communications and data transmission;
- alarm status and reference code;
- date and time.

The new Sirio ES inverters communicate in a whole new way. Parameters can be set and data monitored on a smartphone by connecting to the device through Bluetooth with the dedicated app.

Via Wi-Fi or Ethernet module (optional), the inverters can connect to the Internet for data management remotely and on the supervision portal, where it is possible to monitor the strings in detail and view the installation's performance. Finally, through the integrated RS485 interface it is possible to connect several inverters to a dedicated Datalogger to manage the connection to the portal of the whole plant via Ethernet, with the option of connecting energy meters and environmental sensors.

** Available depending on version.*

Sirio ES 100 and 110.

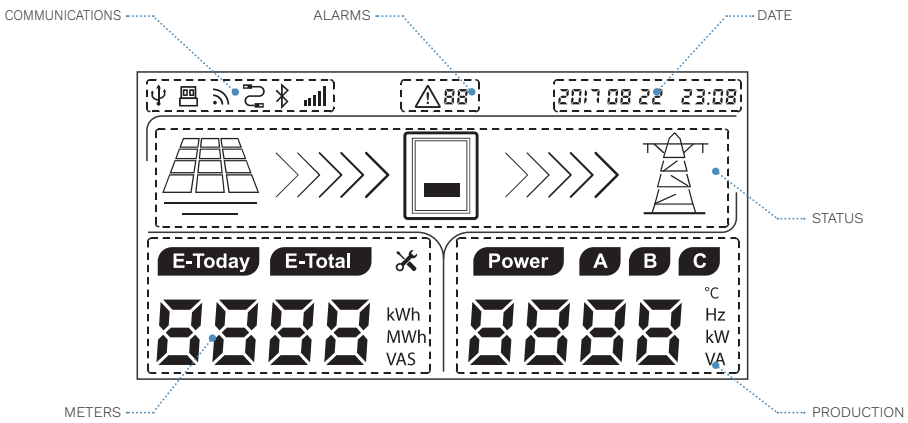
HIGHLIGHTS

OPTIONS

MONITORING
RS Connect/RS Monitoring
SunGuard (optional)

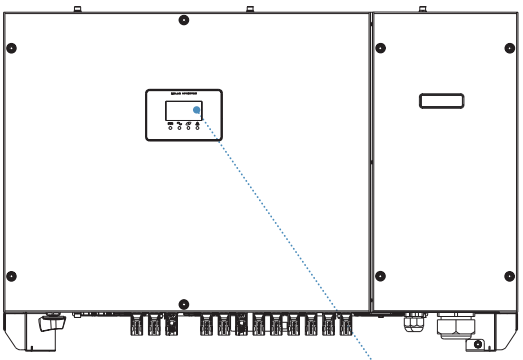
ACCESSORIES
Ethernet card
Wi-Fi card
RS Datalogger
Datalogger Z series

LCD*

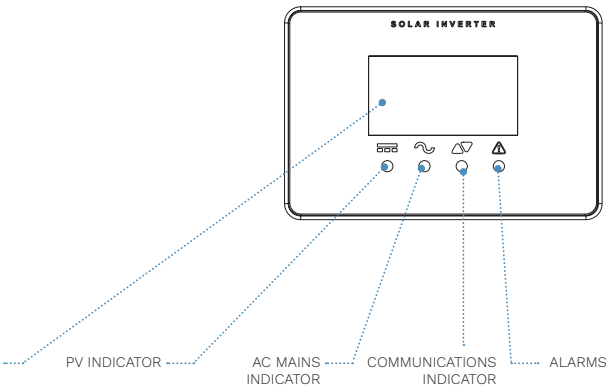


DETAILS

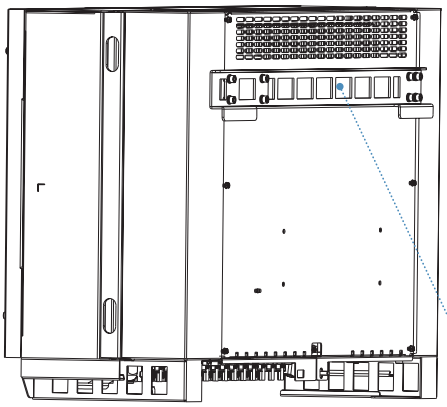
Sirio 50 and 60 kW inverters (front)



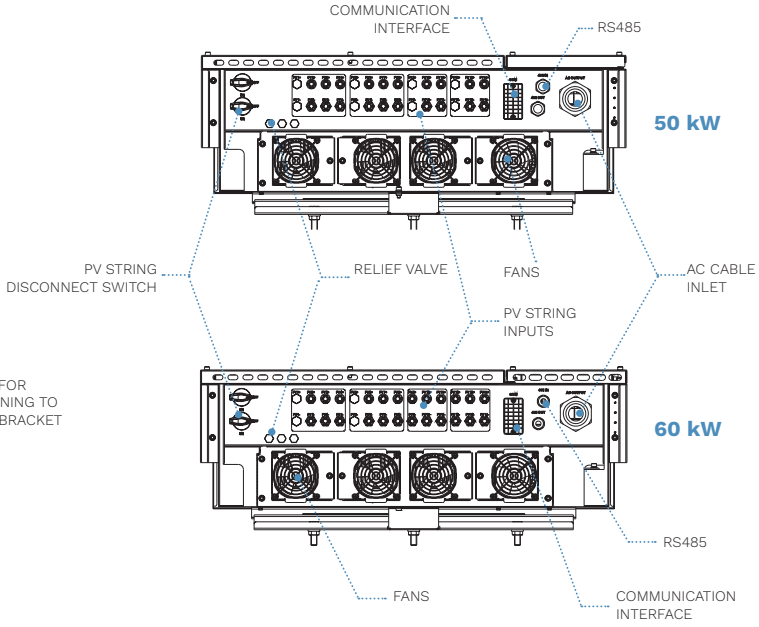
Sirio 50 and 60 kW inverters (display)



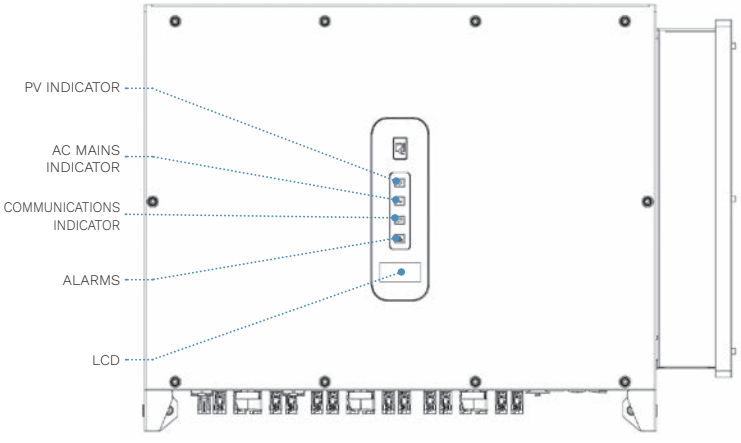
Sirio 50 and 60 kW inverters (back)



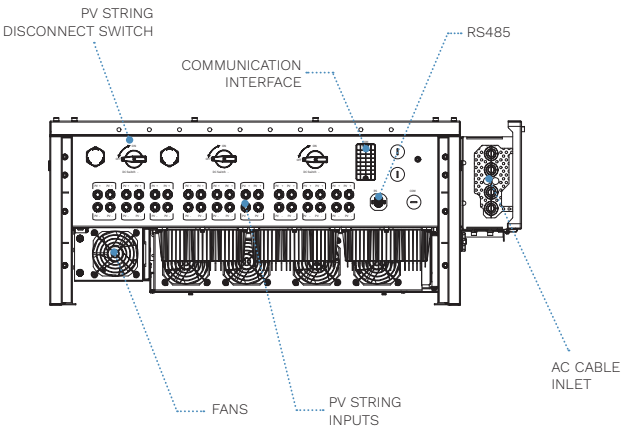
Sirio 50 and 60 kW inverters (from below)



Sirio 100 and 110 kW inverters (front)



Sirio 100 and 110 kW inverters (from below)



Available depending on version.

MODEL	SIRIO ES 50	SIRIO ES 60	SIRIO ES 100	SIRIO ES 110
EFFICIENCY				
Maximum efficiency [%]	98.3		98.4	
European efficiency [%]	98			
INPUT				
Maximum input voltage [V]	1100			
Nominal input voltage [V]	620		600	
Maximum DC power [W]	75000	90000	150000	165000
Maximum input current [A]	2x39 + 2x26	4x39	3x40 + 5x32	3x40 + 6x32
Maximum short circuit current [A]	2x42 + 2x28	4x42	3x50 + 5x45	3x50 + 6x45
Start-up voltage/min op. voltage [V]	250 / 200			
MPPT operating voltage range [V]	200 to 1000			
Op. voltage range (full load) MPPT [V]	200 to 1000		540 to 800	
Maximum number of PV strings	10 (3/3/2/2)	12 (3/3/3/3)	16 (8x2)	18 (9x2)
MPPT number	4		8	9
OUTPUT				
AC active power (nominal) [W]	50000	60000	100000	110000
Maximum apparent AC power [VA]	55000	66000	111000	123000
Active power max. AC (PF = 1) [W]	55000	66000	110000	121000
Max current AC output [A]	3x83	3x92	3x168.8	3x187
Nominal voltage AC [V]	380 / 400, 3W+N+PE		380 / 400 / 415, 3W+N+PE	
AC voltage range [V]	277 - 520 (configurable)			
Nominal mains frequency [Hz]	50 / 60			
Grid frequency range [Hz]	45-55 / 55-65		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)			
PROTECTIONS				
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 / AC type II			
Ground fault detection	Supported			
Current leakage protection	Supported			
AFCI	Optional			
PID Recovery	Optional			
Monitoring of photovoltaic strings	Supported			
Nighttime cons. monitoring	Supported			
OVERALL SPECIFICATION				
Type	Transformer-free			
Protection level	IP65		IP66	
Night self-consumption [W]	<1		<10	
Cooling	Cooling with fans at controlled speed			
Operating temperature range [°C]	-25 to 60			
Relative humidity range [%]	0 to 100			
Maximum operating altitude [m]	4000			
Noise level [dB] (@ 1 m)	<62		≤65	
Dimensions (WxDxH) [mm]	855x275x500		936x365x678	
Weight [kg]	73	74	92	
COMMUNICATIONS				
Display	LED / LCD[1]			
Communications	Bluetooth, RS485, Wi-Fi (optional), Ethernet (optional)		Bluetooth, 2xRS485, Wi-Fi (optional), Ethernet (optional)	
Monitoring	APP, Supervisory Portal			
CERTIFICATION				
Safety	IEC62109-I, IEC62109-2			
EMC	EN 61000-6-2/4			
Regulations	CEI 0-21, CEI 0-16, RD 1699, RD 661, UNE 206006 IN, UNE 206007-1 IN, UNE 217001 IN, RD 244		CEI 0-21, CEI 0-16, RD 1699, RD 661, RD 413, UNE 206006 IN, UNE 206007-1 IN, UNE 217002, UNE 217001, RD 244, RD 647	
Warranty	5 years (with possibility of extension)			

[1] *Available depending on version.*

DATSIRR3Y24BSEN

RPS S.p.A. - Viale Europa, 7 - 37045 Legnago (VR) ITALY
RIELLO SOLARTECH DIVISION - Via Somalia, 20 - 20032 Cormano (MI) ITALY
info@riello-solartech.com - www.riello-solartech.com