

REFU**sol** 100K

The next generation of 1,000 V solar string inverters

- Highly flexible design
- Best serviceability
- Maximum power density
- Minimized BOS costs
- Easy repowering

With maximum power density, REFU's next generation inverter family combines compatibility, flexible installation, serviceability and connectivity in a revolutionary design.

Compatibility: This inverter can be connected to any grid voltage between 380 and 480 VAC, offering maximum power between 83 and 100 kVA.

Flexible Installation: The inverter can be mounted in a vertical or horizontal position as required by the site conditions. The power unit can be installed shortly before commissioning to optimize your investment. The roomy ConnectionBox is available with either fused direct string connections for distributed designs, or for centralized designs, with a single DC input.

Serviceability: The inverter is commissioned with the REFU App (available for iOS and Android) which connects seamlessly with Bluetooth® to the inverter. The power unit can be quickly detached from the ConnectionBox for trouble shooting and measurements – without disconnecting the power cables on the DC and AC side.

Connectivity: The integrated, fail-safe Ethernet daisy chain (alternatively RS485) allows cost efficient high-speed monitoring without special accessories. Each inverter is individually connected to REFUlog for professional monitoring, configuration and remote firmware updates.



	REFU sol 83K (380 VAC)	REFU sol 88K (400 VAC)	REFU sol 98K (440 VAC)	REFU sol 100K (480 VAC)
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DC DATA

Max. voltage DC (V)	1,100			
MPPT range at nominal power (V)	555... 900	585... 900	640... 900	695... 900
MPPT range (V)	555... 1,000	585... 1,000	640... 1,000	695... 1,000
Max. operational current DC (A)	155	155	157	148
MPP trackers	1			
DC inputs	Central: 1 (Bolt Terminal Al/Cu 70... 300 mm ²) Distributed: 20 (MC4 or Terminal connection)			

AC DATA

AC Nominal power (kW)	83.3	88	97.5	100
Nominal voltage AC (V)	380	400	440	480
Voltage range AC (V)	304... 456	320... 480	352... 528	384... 576
AC grid connection / Feed-in phases	3 Phases, neutral optional			
Nominal power factor / Range	1 / 0.3i... 0.3c			
Nominal frequency / Frequency range (Hz)	50, 60 / 45... 65			
Max. AC current (A)	128			
AC connection	Bolt Terminal Al/Cu (70 mm ² ... 240 mm ²)			

AMBIENT CONDITIONS

Cooling	smart active cooling			
Max. temp. for nominal power (°C)	45			
Ambient temperature (°C)	- 25...+ 60			
Rel. Air humidity (%)	0... 100			
Max. elevation (m above sea level)	3,000			
Environment classification (IEC 60721-3-4)	4K4H			
Type of protection inverter (IEC 60529)	IP65/NEMA 4			

SAFETY AND PROTECTION FUNCTIONS

DC circuit breaker	yes			
Isolation monitoring	yes			
String fuses	Central: no, Distributed: yes			
Grid monitoring	Voltage, frequency, passive and active anti-islanding, DC injection			
Grid separation	Gate block/Redundant grid relay			
Residual current monitoring (RCD)	yes			
AFCI	optional			
Rapid shutdown (RSD)	optional			

GENERAL DATA

Status display	LED's			
Interfaces	2x Ethernet or 2x RS485, Bluetooth®, multifunctional DI's/DO's			
Communication protocols	Sunspec (Modbus TCP, Modbus RTU), USS (Ethernet, RS485)			
Dimensions inverter WxHxD (mm)	670 x 600 x 330			
Dimensions ConnectionBox WxHxD (mm)	670 x 900 x 160			
Weight inverter (kg)	~ 65			

FLEXIBLE INSTALLATION POSSIBILITIES

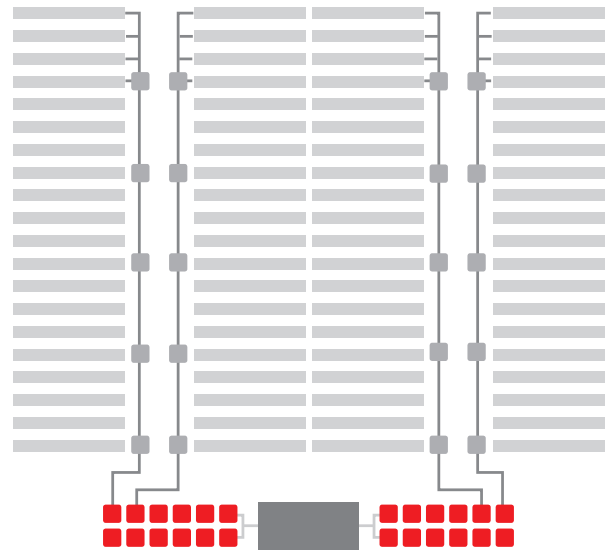
REFU's next generation platform support different plant designs from large commercial rooftops to multi-MW ground mount systems. You can choose the location of the inverter being near the solar panels (decentralized) or near the transformer station (centralized).

DECENTRALIZED VARIANT

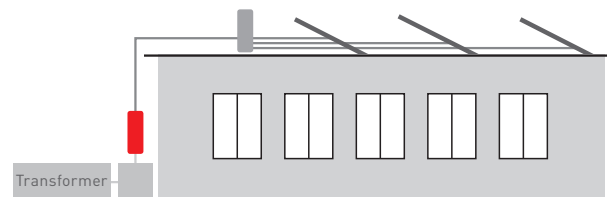
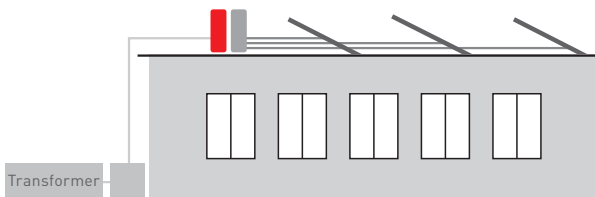
GROUND MOUNTED SYSTEMS



CENTRALIZED VARIANT



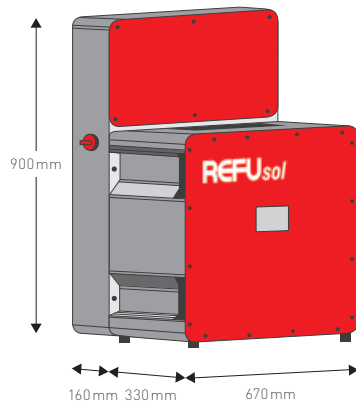
ROOFTOP SYSTEMS



■ REFU_{sol} inverter
 ■ DC combiner box
 ■ AC combiner
 — DC cable
 — AC cable

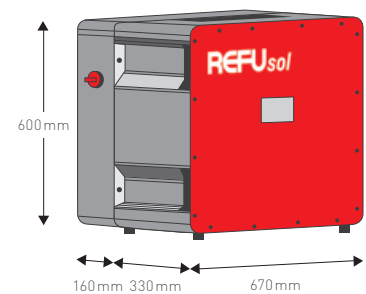
FEATURES

- DC input: 20 Strings
- DC connection: MC4 or terminal connection
- DC Fuses: Plus and Minus (Optional: only Plus)
- DC switch
- Optional:
 - DC SPD type II/Type I+II
 - AC SPD type II
 - AC switch
- AC Terminal: Bolt Al/Cu (70 mm² - 240 mm²)



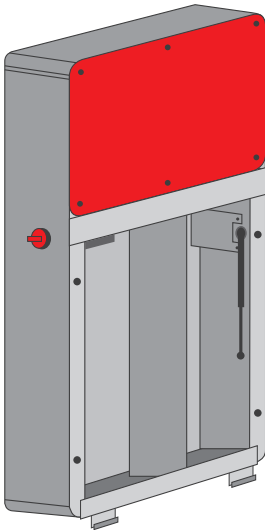
FEATURES

- DC input: 1 (String Combiner Box required)
- DC connection: Bolt Al/Cu (70 mm² - 300 mm²)
- DC switch
- Optional:
 - DC SPD type II/Type I+II
 - AC switch
- AC Terminal: Bolt Al/Cu (70 mm² - 240 mm²)

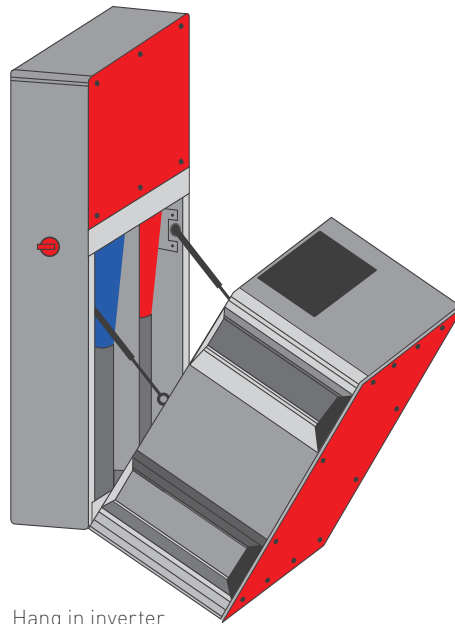


INSTALLATION MADE EASY

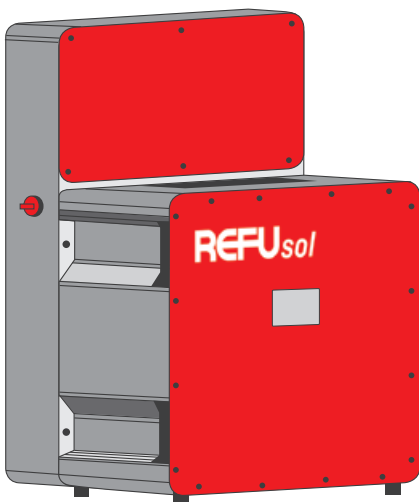
Either vertical, horizontal or pole mounting possible for maximum flexibility of design. The ConnectionBox and Inverter can be delivered independently in separate shipments: in effect, the ConnectionBox is installed during cable work, the power conversion unit (inverter) just before commissioning.



Install and wire the ConnectionBox.



Hang in inverter just before commissioning.



Start feed-in.