REFUsol 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.

TECHNICAL DATA PRELIMINARY

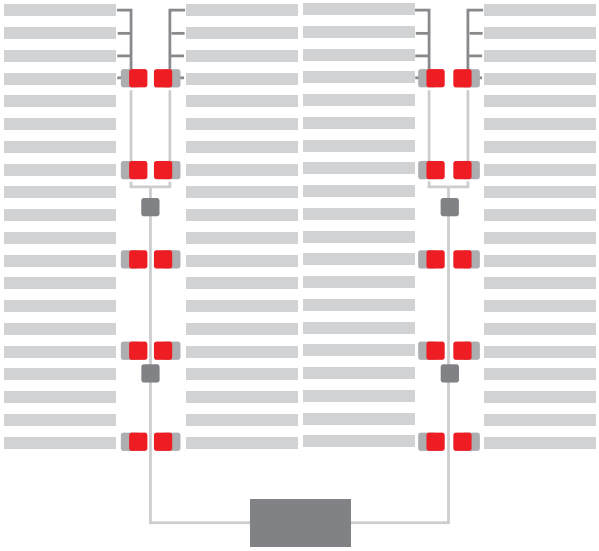
	REFUsol 83K (380 VAC)	REFUsol 88K (400 VAC)	REFUsol 98K (440 VAC)	REFUsol 100K (480 VAC)
DC DATA				
Max. voltage DC (V)		1,100		
MPPT range at nominal power (V)	555 ... 900	585 ... 900	640 ... 900	695 ... 900
MPPT range (V)	555 ... 1,000	585 ... 1,000	640 ... 1,000	695 ... 1,000
Max. operational current DC (A)	155	155	157	148
MPP trackers		1		
DC inputs		Central: 1 (Bolt Terminal Al/Cu 70 ... 300 mm²) 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 mm² ... 240 mm²)		
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		2 x Ethernet or 2 x RS485, Bluetooth®, multifunctional DI's / DO's		
Communication protocols		Sunspec (Modbus TCP, Modbus RTU), USS (Ethernet, RS485)		
Dimensions inverter W x H x D (mm)		670 x 600 x 330		
Dimensions ConnectionBox W x H x D (mm)		670 x 900 x 160		
Weight inverter (kg)		~ 65		

FLEXIBLE INSTALLATION POSSIBILITIES

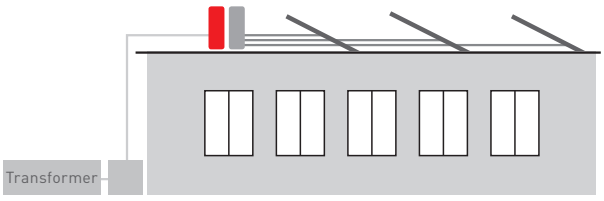
REFU's next generation platform support different plant designs from large commercial rooftops to multi-MW ground mount systems. You can choose the location of the inverter being near the solar panels (decentralized) or near the transformer station (centralized).

DECENTRALIZED VARIANT

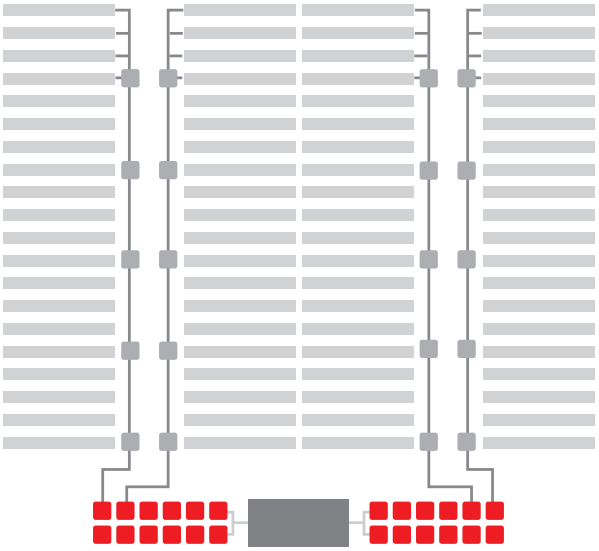
GROUND MOUNTED SYSTEMS

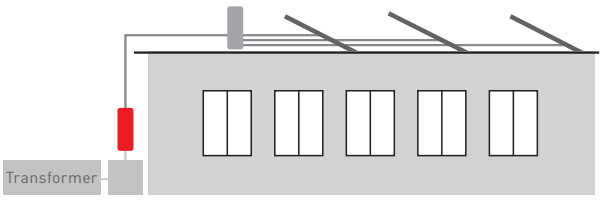


ROOFTOP SYSTEMS



CENTRALIZED VARIANT

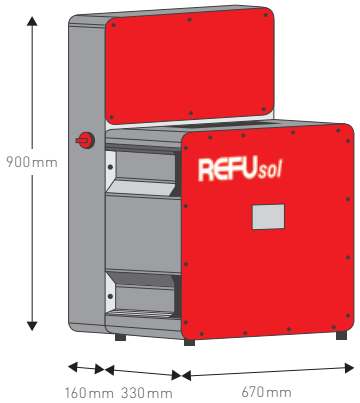




REFUsol inverter | DC combiner box | AC combiner | DC cable | AC cable

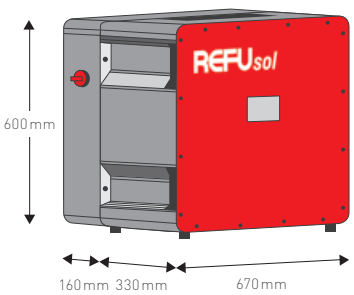
FEATURES

- 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)



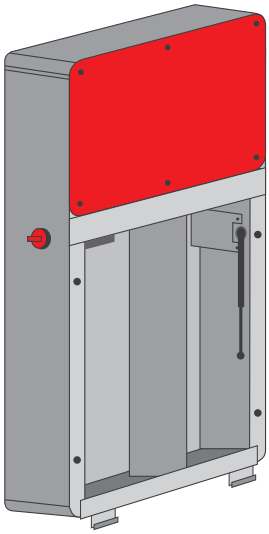
FEATURES

- 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)

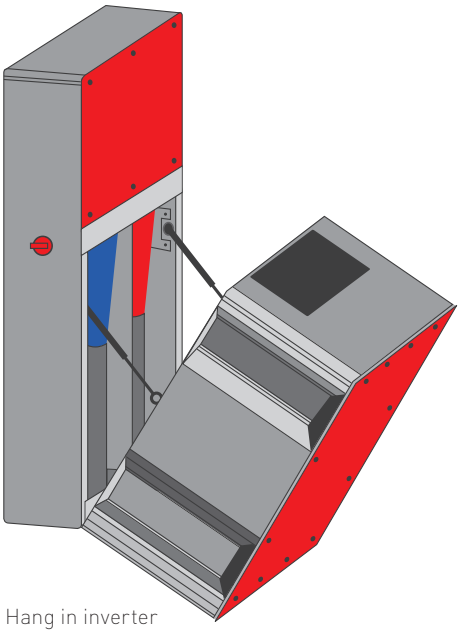


INSTALLATION MADE EASY

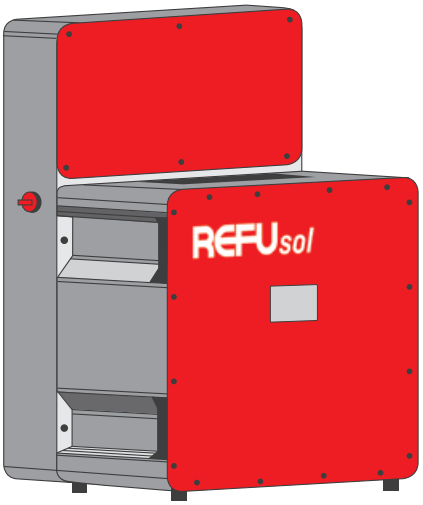
Either vertical, horizontal or pole mounting possible for maximum flexibility of design. The ConnectionBox and Inverter can be delivered independently in separate shipments: in effect, the ConnectionBox is installed during cable work, the power conversion unit (inverter) just before commissioning.



Install and wire
the ConnectionBox.



Hang in inverter
just before commissioning.



Start feed-in.

No responsibility is taken for the correctness of this information. Subject to modification.
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