

REFU**sol** 20K...33K-2T

New flexibility meets compatibility

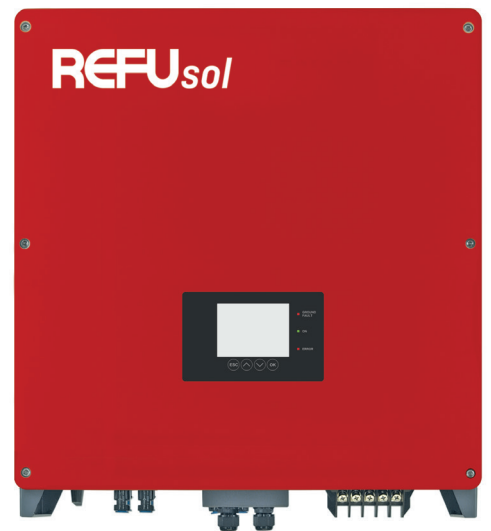
- Two MPP trackers
- Lightweight design
- Compatible with legacy REFU**sol** inverters

The completely new range of REFU**sol** 20K...33K-2T inverter is developed for a maximum of flexibility in commercial and industrial PV systems.

With two MPP trackers, each system design can be realized, including different orientations and tilts. Compact dimensions paired with a high power density per weight gives more installation location flexibility – on the rooftop or on ground mounted systems. With two power classes of 20 kVA and 33 kVA, it fits to any mid-size project.

The RS485 and the Ethernet interface can be connected on the same RS485 Bus or Ethernet network for Park Control applications without the need for reconfiguration. Therefore, the devices are also best suited for repowering of existing PV plants equipped with REFU**sol** inverters. Four digital inputs support the EEG feed-in management (i.e. 0%, 30%, 60%, 100%).

The REFUlog monitoring portal comes for free with each inverter during the warranty period of 5 years. The Ethernet connection for easy integration into the local network comes as standard, an optional Wifi-stick plug is available as accessory.



TECHNICAL DATA

Technical Data Art. No.

20K-2T
850P020.200

33K-2T *
850P033.200

DC DATA

Max. recommended PV power (kWp)	26.6	44,0
Max. input voltage (V)		1,000
Operating input voltage range (V)		230 ... 960
Start-up input voltage (V)		250
Rated input voltage (V)		620
Number of independent MPPT		2
Number of DC inputs per MPPT	2	3
Rated power MPPT voltage range (V)	480 ... 850	580 ... 850
Max. power per MPPT Input (kW)	13	20
Max. current per MPPT (A)	24	30
Max. short circuit current per MPPT (A)	30	37.5
DC connection		Stäubli MC4

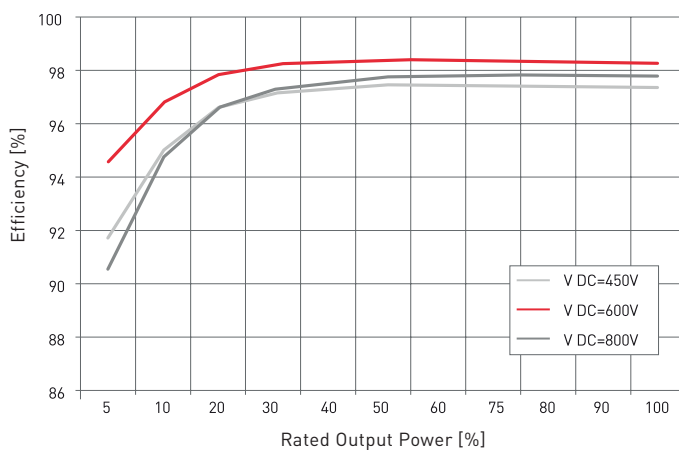
AC DATA

Rated power (kW)	20	33
Max. AC power (kVA)	22	36.3
Nominal grid voltage (V)		3/N/PE: 220/380, 230/400
Nominal grid frequency (Hz)		50, 60
Max. output current (A)	32	53
Total harmonic distortion (THD) (%)		<3
Adjustable power factor range		0,8 inductive ... 0,8 capacitive
AC connection		ring cable lugs (M6)

PERFORMANCE

Max. efficiency (%)	98.2	98.6
Weighted european efficiency (EU/CEC) (%)	98.0	98.2
MPPT efficiency (%)		>99.9
Self-consumption at night (W)		<1
Feed-in start power (W)		45

EFFICIENCY DIAGRAM



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PROTECTION

DC switch	integrated	
Safety protection	Anti-islanding, DC reverse polarity, Overtemperature, Overvoltage, Overcurrent, RCMU, ground fault protection	
String monitoring	each MPPT	
String fuses	-	
Protection class / overvoltage category	Class I / DC and AC: Type III standard	
External environment pollution degree	3	
Max. inverter back-feed current to the array [A]	0	
Output short circuit current [A]	85	105
Output inrush current [A]	48	77

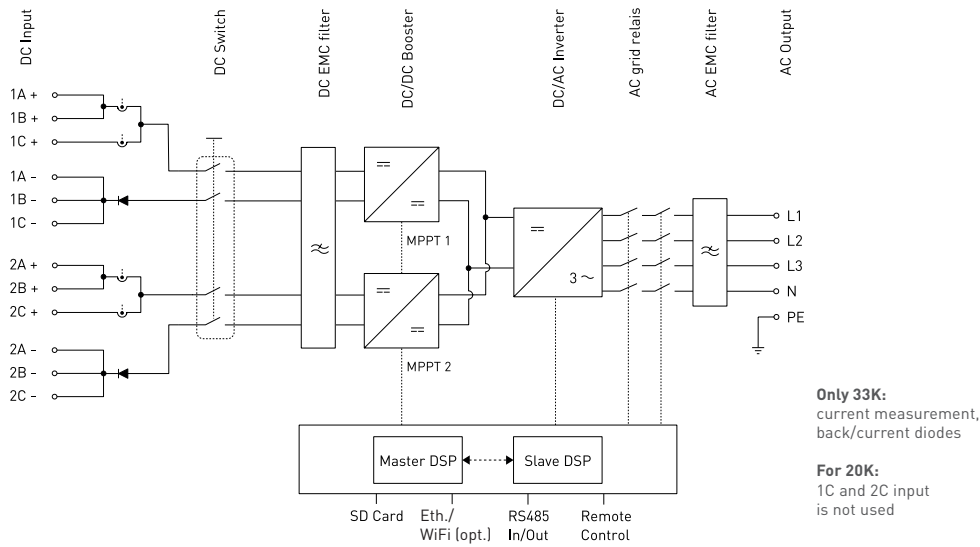
COMMUNICATION

Digital inputs	4 (0%, 30%, 60%, 100%)	
RS485	yes	
SD Card slot	yes	
Ethernet	optional (Art. No. 924023)	
WiFi	optional (Art. No. 924022)	

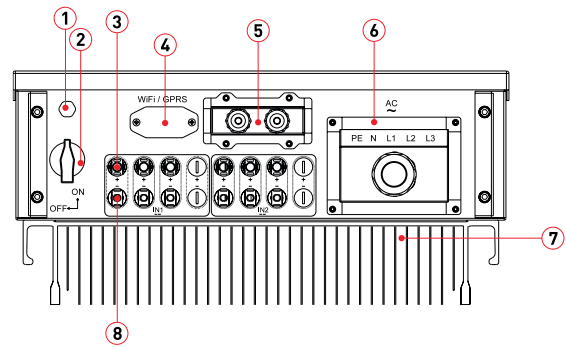
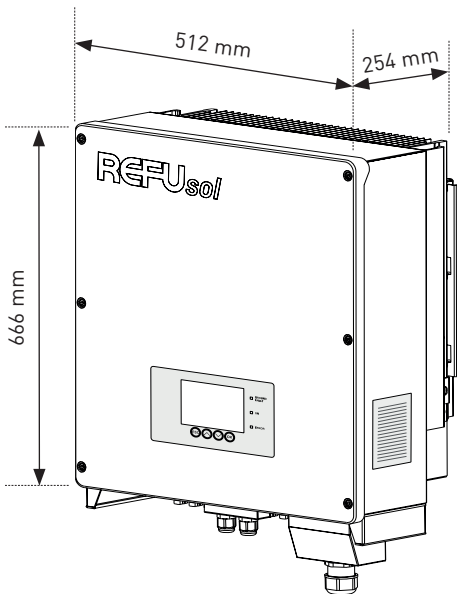
GENERAL DATA

Ambient temperature (°C)	-25 ... +60 (> 45 derating)	
Topology	Transformerless	
Type of protection (IEC 60529)	IP65	
Allowable rel. air humidity range (%)	0 ... 100	
Max. operating latitude (m above sea level)	2,000	
Noise level (dBA)	< 30	< 45
Cooling	Natural convection	Fan
Dimension H×W×D (mm)	666 × 512 × 254	
Weight (kg)	37	39,5
Display	LCD Display	
Certification	EN 61000-6-2, EN 61000-6-4, EN 61000-3-11, EN 61000-3-12, IEC 62109-1/2, IEC 62116, IEC 61727, IEC 61683, IEC 60068(1,2,14,30) VDE 0126, EN50549-1, VDE AR-N 4105:2018-11, VDE 4110:2018-11	
Warranty	5 years	

SINGLE LINE DIAGRAM



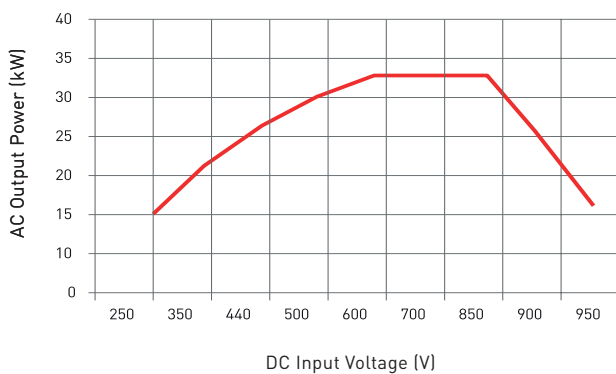
PRODUCT VIEW



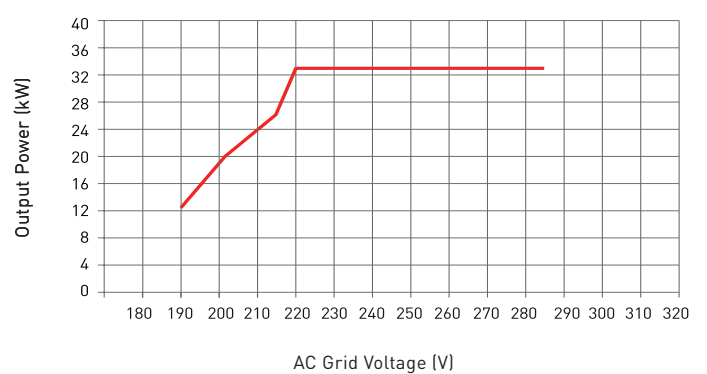
- 1 Anti-condensation valve
- 2 DC switch
- 3 DC positive poles connectors
- 4 Ethernet / WiFi / GPRS interface
- 5 RS 485 input cable gland / dry contact
- 6 AC cable gland
- 7 Heatsink / fans (only for 33K)
- 8 DC negative poles connectors

PERFORMANCE DIAGRAMS

Output Power vs. Input Voltage



Output Power vs. Grid Voltage



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