

## REFU**sol**/ 012K, 016K, 020K and 024K-UL Commercial Scale Inverters



### Highlights:

- Light & compact
  - Best in class efficiency (98.2%)
  - Easy installation
  - Integrated data logger
  - Maintenance free
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- Leicht & kompakt
  - Höchste Effizienz (98,2%)
  - Einfache Installation
  - Integrierter Datenlogger
  - Wartungsfrei

Based on the line of **innovative** and **efficient** REFU**sol**/ 008-020K inverters, we developed our REFU**sol**/ 012-024K-UL line especially for the U.S. and North American markets.

The REFU**sol** commercial inverter series achieves a maximum **efficiency** of **98.2%** in a maximum power point tracking (MPPT) range of 2 x 125-450 volts. The unit is **lightweight** and **easy to install** with a simple mounting plate and **integrated data logger**. REFU**sol** inverters are suitable for both indoor and outdoor use due to their compact and **durable design**. Our innovative MPPT system and excellent reliability combine to deliver remarkably high yields in all types of photovoltaic installations.

Speziell für den amerikanischen Markt wurden auf der Grundlage unserer **innovativen** und **effizienten** Wechselrichter REFU**sol**/ 008-020K, die REFU**sol**/ 012-024K-UL Reihe entwickelt.

Diese erreichen einen **Spitzenwirkungsgrad** von mehr als **98,2%**, bei einem MPPT-Bereich von 2 x 125-450 V. Der **leichte** Wechselrichter mit **integriertem Datenlogger** lässt sich einfach an einer Montageplatte montieren. Dank seines kompakten und **langlebigen Designs** ist er für Innen- und Außenaufstellung geeignet. Unser innovatives und zuverlässiges MPP-Tracking sorgt für deutlich erhöhte Erträge in jeder Photovoltaik-Anlage.

# Technical data

## Technische Daten

Power Classification	REFU <sup>sol</sup> /012K-UL	REFU <sup>sol</sup> /016K-UL	REFU <sup>sol</sup> /020K-UL	REFU <sup>sol</sup> /024K-UL
<b>DC data</b>				
Max. PV power	13.2 kW	17.6 kW	22 kW	25.5 kW
Max. DC voltage <sup>1)</sup>	2 x 500 V			
MPPT-range	2 x 125 ... 2 x 480 V	2 x 125 ... 2 x 480 V	2 x 125 ... 2 x 480 V	2 x 125 ... 2 x 480 V
Min. voltage for full rated output power	2 x 225 V	2 x 250 V	2 x 275 V	2 x 300 V
Startup voltage	350 V			
Max. DC current	27.5 A	33 A	37.5 A	40 A
MPP tracking	One fast, precise MPP tracker			
Number of DC-connections	12			
DC fuses	12 x type KLKD 15 A (field adjustable)			
Internal overvoltage protection	Surge protected device (SPD) type 2			
<b>AC data</b>				
Rated AC power	12.0 kW	16.0 kW	20.0 kW	23.2 kW
Max. AC power	12.0 kW	16.0 kW	20.0 kW	23.2 kW
AC grid connection	3 AC 480 V+N ± 10%, 60 Hz			
VAR control (cos phi)	Nominal value: 1 (field adjustable -0.95 ... +0.95)			
Max. AC current	14.5 A	19.3 A	24.1 A	27.9 A
Distortion factor THD	< 3 %			
Max. efficiency	98.2 %			
CEC efficiency (estimated)	97.5 %			
Power fed to grid starting at	20 W			
Power consumption	Standby < 0.5 W			
<b>Cooling, ambient conditions, EMC</b>				
Cooling	Natural convection			
Operating temperature <sup>2)</sup>	-4 ... + 131 °F (-20 ... +55°C)			
Storage temperature	-13 ... + 158 °F (-25 ... +70°C)			
Site elevation	Up to 6,600ft (2000 m) above sea level before derating			
Emitted interference	FCC Part 15 Subpart B, Class B			
Certificates	UL and CSA pending			
Interference immunity	IEEE C37.90.2			
Anti-islanding	In accordance with IEEE 1547 and UL 1741			
<b>Mechanical</b>				
Type of protection	Electronics: NEMA 4		Connection box: NEMA 3R	
Dimensions Width / Height / Depth	21 x 35 x 11 inches (535 mm x 895 mm x 280 mm)			
Weight	104.7 lbs (47.5 kg)			

<sup>1)</sup> Two 500V strings combined in series within the inverter unit to maximize efficiency; PV array utilizes standard string configuration in the field

<sup>2)</sup> Derating at temperatures >104°F (40°C)