

REFU*sol* 012K-024K-UL

Light, compact and extremely powerful



*Integrated
DC Disconnect*

- CEC rated efficiency 98%
- 480 V grid voltage
- Integrated data-logger
- Maintenance free
- Transformerless

The transformerless, three-phase REFU*sol* 012K-024K-UL string inverters are specially oriented to the requirements of the North American market. The transformerless devices fulfill the guidelines of Underwriters Laboratories (UL). For our customers in North America this means the highest quality and **CEC-rated efficiency of 98%**.

These string inverters can be used in the power spectrum from 12 to 23.2 kW. They are well suited for **rooftop systems**, **solar parking shade structures** and for powerful strings in **solar plants**. The degree of efficiency lies at up to 98.2 percent, the maximum input voltage is 500 V. Integrated into the system are the highly precise MPP tracking from REFU*sol* and a data logger for coupling with the REFU*log* online monitoring system or REFU*sol* Modbus Solution. A graphics display, Ethernet connection and the interface RS 485 simplify commissioning and system monitoring.

Assembled
in USA



TECHNICAL DATA	REFUso/ 012K-UL	REFUso/ 016K-UL	REFUso/ 020K-UL	REFUso/ 024K-UL
DC DATA				
Recommended max. PV power, kWp	14.4	19.2	24.0	27.8
Max. DC voltage for each string, V	500			
MPPT range, V	125 ... 450			
Min. voltage for full rated output power, V	225	250	275	300
Startup voltage, V	200			
Max. DC current, A	2 x 27.5	2 x 33	2 x 37.5	2 x 40
MPP tracker	One fast, precise MPP tracker			
Number of PV strings	12			
DC fuses	24 x type KLKD 15 A (factory adjustable up to 20 A)			
Internal overvoltage protection, type	Surge protected device (SPD) type 3			
AC DATA				
Rated AC power, kW	12.0	16.0	20.0	23.2
AC grid connection	3 AC 480 V+N +10% -12% 60 Hz			
Power factor	Nominal value: 1 (factory adjustable 0.95i ... 1 ... 0.95c)			
Max. AC current, A	3 x 14.5	3 x 19.3	3 x 24.1	3 x 27.9
Distortion factor THD, %	< 3			
Max. efficiency, %	98.2			
CEC efficiency, %	97.5	97.5	97.5	98
Feed-in starting power, W	20			
Night time power consumption, W	< 0.5			
COOLING, AMBIENT CONDITIONS, EMC				
Cooling	Natural convection			
Operating temperature ¹⁾ , °F (°C)	-13 ... +131 (-25 ... +55)			
Storage temperature, °F (°C)	-13 ... +158 (-25 ... +70)			
Elevation	Up to 6562 ft above sea level before derating			
Noise, dBA	< 45			
Emitted interference	FCC Part 15 Subpart B, Class B			
Interference immunity	IEEE C37.90.2			
Certification	Certified to UL 1741 and UL 1998 Standard (for US and Canada) by Underwriters Laboratories			
Anti-islanding	In accordance with IEEE 1547 and UL 1741			
Interfaces	Ethernet & RS485			
GENERAL DATA				
Type of protection	Electronics: NEMA 4, Connection box: NEMA 3R			
Dimensions Width/Height/Depth, in (mm)	21/35/11 (535/895/280)			
Weight, lbs (kg)	108 (49)			
Warranty	Standard 5 year (can be extended)			

¹⁾ Derating at temperatures >122°F (55°C) for REFUso/012K-UL and REFUso/016K-UL; >113°F (50°C) for REFUso/020K-UL; >104°F (45°C) for REFUso/024K-UL