

## REFU*sol* 008K-020K

For medium-sized to megawatt installations



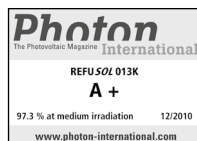
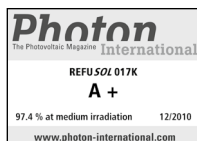
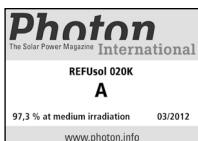
- Lightweight & compact
- Highest efficiency (98.2%)
- Easy installation
- Outdoor (IP65)
- Maintenance free

The three-phase string inverters in the 8.25 to 20kW power classes are perfect for rooftop systems from 8 kW upwards, right through to megawatt parks. They comply with all requirements for IP65 protection – their housing provides reliable protection from dust and water, including high pressure washing. These systems can therefore be installed out in the open without any problem. All five string inverters are **easy to handle and compact**. For example, they can be installed on an area smaller than three A4 pages laid side by side. Operation and monitoring are easy, further facilitated by the graphic display, the integrated RS485 interface and an Ethernet connection.

Fast MPP tracking and a wide input voltage range also ensure the high levels of efficiency that are typical in REFU*sol* systems. Even at low irradiation, the three-phase inverters

achieve an **efficiency of up to 98.2%**. As a result of these high efficiency levels convection cooling is all that's needed to dissipate the heat. Thanks to the low voltage fluctuations against earth, the transformerless devices can also be used for many thin-film modules.

The integrated data-logger can send all important operating data to the REFU*log* internet portal. For visualization and evaluation purposes, data can be transferred via the standard cable or an optional wireless connection using the new REFU*connect* radio module. Comprehensive information on operating conditions and the productivity of your plant is available at any time.



Also available as UL model

| TECHNICAL DATA | REFUsol<br>008K | REFUsol<br>010K | REFUsol<br>013K | REFUsol<br>017K | REFUsol<br>020K |
|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Item no.       | 803R008         | 803R010         | 808R013         | 802R017         | 802R020         |

#### DC DATA

|                                |             |             |             |             |             |
|--------------------------------|-------------|-------------|-------------|-------------|-------------|
| Recommended max. PV power, kWp | 9.9         | 12.0        | 15.6        | 18.1        | 21.6        |
| MPPT range, V                  | 370 ... 850 | 410 ... 850 | 430 ... 850 | 445 ... 850 | 480 ... 850 |
| DC start voltage, V            | 350         |             |             |             |             |
| Max. DC voltage, V             | 1000        |             | 1000*)      | 1000        |             |
| Max. DC current, A             | 23.0        | 25.0        | 31.0        | 38.5        | 41          |
| MPP tracker                    | 1           |             |             |             |             |
| Number of DC connections       | 3 x MC4     |             | 4 x MC4     | 6 x MC4     |             |
| DC isolator                    | Yes         |             |             |             |             |

#### AC DATA

|  |                    |        |        |        |      |
|--|--------------------|--------|--------|--------|------|
| Rated AC power, kW                         | 8.25               | 10.0   | 13.0   | 16.5   | 19.2 |
| Max. apparent power, kVA                   | 8.25               | 10.0   | 13.0   | 16.5   | 19.2 |
| AC power supply connection                 | L1, L2, L3, N, PE  |        |        |        |      |
| Rated power factor / range                 | 1 / 0.9i ... 0.9c  |        |        |        |      |
| Rated voltage AC, V                        | 400                |        |        |        |      |
| Voltage range AC, V                        | 320 ... 460        |        |        |        |      |
| Rated frequency / frequency range, Hz      | 50, 60 / 45 ... 65 |        |        |        |      |
| Max. AC current, A                         | 3 x 12             | 3 x 18 | 3 x 21 | 3 x 29 |      |
| Max. distortion factor THD, %              | 2.5                | 1.8    | 2.5    | 1.8    |      |
| Max. efficiency, %                         | 98.0               |        |        | 98.2   |      |
| European efficiency, %                     | 97.3               | 97.4   | 97.5   | 97.8   |      |
| Feed-in starting at, W                     | 50                 |        |        | 50     |      |
| Internal consumption in night operation, W | < 0.5              |        |        |        |      |

#### FEATURES

|   |   |       |      |  |  |
|---|---|-------|------|--|--|
| Cooling                                       | Natural convection  |       |      |  |  |
| Ambient temperature, °C                       | -25 ... +55   |       |      |  |  |
| Relative ambient humidity, %                  | 0 ... 100   |       |      |  |  |
| Site altitude                                 | 2000  | 4000* | 2000 |  |  |
| Noise level, dBA                              | < 45  |       |      |  |  |
| Internal overvoltage protection (EN 61643-11) | Type 3  |       |      |  |  |
| Protection class (IEC 62103)                  | SKL I   |       |      |  |  |
| Overvoltage category (EN 60664-1)             | DC: II, AC: III   |       |      |  |  |
| Environmental classifications IEC 721-3-4     | 4K4H  |       |      |  |  |
| Certificates                                  | Current certificates can be found at<br><a href="http://europe.refusol.com/certifications.pdf">http://europe.refusol.com/certifications.pdf</a> |       |      |  |  |
| Automatic disconnection                       | Acc. to VDE 0126-1-1  |       |      |  |  |

#### GENERAL DATA

|                              |   |  |                 |      |  |
|------------------------------|---|--|-----------------|------|--|
| Interfaces                   | Ethernet, RS485, isolation and temperature sensor |  |                 |      |  |
| Protection class (IEC 60529) | IP65  |  |                 |      |  |
| Dimensions w x h x d, mm     | 535 x 601 x 225                                   |  | 535 x 601 x 277 |      |  |
| Weight, kg                   | 28.5  |  | 32.2            | 41.5 |  |

\*Observe derating of the DC voltage.

Subject to modification. Technical specifications are subject to change without notice.

REFUsol GmbH | Uracher Straße 91 | 72555 Metzingen | Germany | Tel. +49 7123 969-0 | Fax +49 7123 969-165 | info@refusol.com