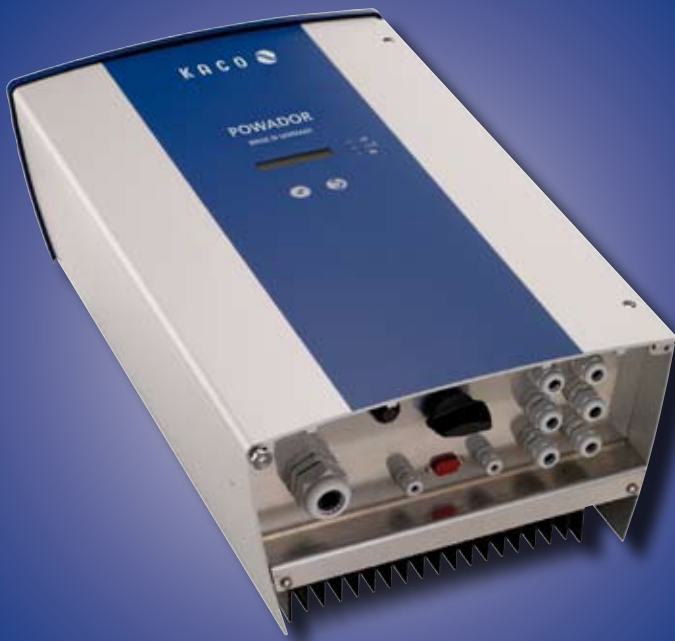


Powador
4000 supreme



Peak output made simple.

Maximum yields for those in the know.

The Powador 4000 supreme was designed with one goal in mind: The highest degree of efficiency and the highest yields. As a transformerless inverter, it already brings to the table the best possible prerequisites for reaching this goal. Its MPP range is from 350V to 510V and the no-load voltage is 600V: That makes it an inverter for users who know exactly what they want. With the standard setting, the Powador 4000 supreme works with a clock frequency of 18 kHz. For those who want to get even more from the unit, it operates in Power Boost Mode at a clock frequency of 9 kHz via a jumper on the control circuit board. That reduces even further the already low switching losses of the power semiconductor and makes the degree of efficiency even higher. This operating mode is recommended for locations where the result-

ing operating noise will not matter. The Powador 4000 supreme shares its basic characteristic with the other members of the transformerless KACO inverter series. These one-phase units operate with a full bridge without a step-up converter. Four IGBT power switches emulate the sinusoidal voltage curve of the public power grid according to the principle of pulse-width modulation. Screw terminals make connecting to the grid easy.

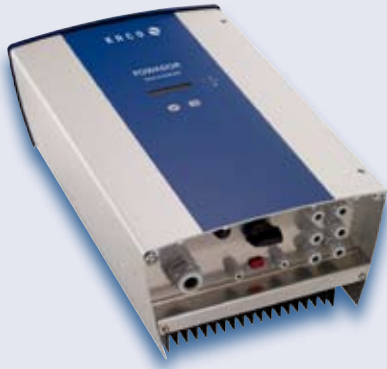
The Powador 4000 supreme runs – like all KACO inverters up to and including those with an output of 8 kW – with purely passive, silent convection cooling. The heat that is lost is, to a great degree, dissipated via the heat sink on the rear of the unit. The rest of the heat is radiated from the surface of the aluminium housing. No fans – long life.

Photon
The Solar Power Magazine International
Powador 4000 supreme
A
Normal operation (18 kHz)
96.1 % at high irradiation
1/2010
www.photon-international.com

Photon
The Solar Power Magazine International
Powador 4000 supreme
A
Normal operation (18 kHz)
95.7 % at high irradiation
1/2010
www.photon-international.com

Photon
The Solar Power Magazine International
Powador 4000 supreme
A+
Power Boost Mode (9 kHz)
96.7 % at high irradiation
1/2010
www.photon-international.com

Photon
The Solar Power Magazine International
Powador 4000 supreme
A
Power Boost Mode (9 kHz)
96.2 % at medium irradiation
1/2010
www.photon-international.com



Powador 4000 supreme

Highlights

- Power Boost on / off: 9 kHz / 18 kHz (selectable clock frequency)
- Highest degree of efficiency due to purely transformerless technology
- Integrated DC disconnect
- Integrated AC/DC-sensitive residual current protection
- RS232 / RS485 interface mode adjustable via controls
- Integrated potential-free fault signal
- S0 interface for control of large displays
- Protection class IP54
- Silent and maintenance-free convection cooling
- Easy installation due to mounting plate and housing doors
- LCD as standard
- Robust, reliable KACO quality
- 7 year guarantee as standard

| Electrical data | 4000 supreme |
|---|---|
| Input levels | |
| Max. PV generator power | 5 250 W |
| MPP range | 350 V to 510 V |
| No-load voltage | 600 V * |
| Max. input current | 14.5 A |
| Number of strings | 3 |
| Number of MPP regulators | 1 |
| Polarity safeguard | short-circuit diode |
| Output levels | |
| Rated power | 4 400 W |
| Max. power | 4 800 W |
| Line voltage | acc. to local requirements |
| Safety shutdown | acc. to local requirements |
| Rated current | 19.1 A |
| Max. current | 20.9 A |
| Rated frequency | 50 Hz |
| cos phi | ≈ 1 |
| Number of grid-feed phases | 1 |
| Distortion factor at rated power | < 3 % |
| General electrical data | |
| Max. efficiency | 97.0 % (97.2 % @ 9 kHz) |
| European efficiency | 96.6 % (96.8 % @ 9 kHz) |
| Internal consumption: Standby | 11 W |
| Internal consumption: Night shutdown mode | 0 W |
| Min. grid-feed power | approx. 20 W |
| Circuit design | self-commutated, transformerless |
| Grid monitoring | acc. to local requirements |
| Mechanical data | |
| Displays | LCD 2 x 16 characters |
| Controls | 2 keys for operating display |
| Interfaces | RS232 / RS485, S0 |
| Fault signal relay | potential-free NO contact, max. 30 V / 1 A |
| Connections | PCB terminals inside the unit (max. cross section: 10 mm ²). Cable connection via cable fittings (DC fitting M16, AC fitting M32) |
| Ambient temperature | -20 °C ... +60 °C ** |
| Temperature monitoring | > 75 °C temperature-dependent impedance matching > 85 °C shutdown |
| Cooling | free convection (no fan) |
| Protection class | IP54 |
| Noise emission | < 35 dB (A) (noiseless) @ 18 kHz |
| DC disconnect | integrated |
| Housing | Aluminium |
| H x W x D | 550 x 340 x 220 mm |
| Weight | 26 kg |

EN 31000813-04-100323

The text and figures reflect the current technical state at the time of printing. Subject to technical changes. Errors and omissions excepted.
* To protect the hardware, the unit starts up at < 550 V. / ** Power derating at high ambient temperatures.