

# KACO



new energy.



## Data sheet

### Powador

2002 | 3002 | 4202

5002 | 6002

## High flexibility. Easy installation.

The galvanically isolated string inverters Powador 2002 to 6002.

The inverters from the Powador 2002 to Powador 6002, with galvanic isolation, feature effortless installation, the highest degrees of efficiency, and make designing a PV system a piece of cake. A new current sensor allows for a more exact control and an improved MPP tracking.

Installation is problem-free: All required connections for communication – RS485, S0 and fault signalling relay – are located on a single circuit board in the housing and can be connected easily. Due to the new MC4 connectors, the DC wiring can be handled by a safe and simple plug connection from the outside of the unit.

Thus the inverters can be installed even more quickly. The DC switch is integrated into the units as a matter of course.

These units achieve an outstanding efficiency of up to 96%. This makes them top of the class. The Powador 02 series skillfully makes use of the advantages of galvanically isolated inverters. The wide input voltage range allows you to be extremely flexible in planning your PV installation. Where transformerless units are out of the question, the Powador 02 series can handle even complex PV system designs.

We provide a 10 year warranty on these units. In each case please observe the most current version of our Warranty and Service Conditions which you can download at [www.kaco-newenergy.com](http://www.kaco-newenergy.com).

# Technical data

Powador 2002 | 3002 | 4202 | 5002 | 6002

Electrical data	2002	3002
<b>Input variables</b>		
MPP range	125 V ... 510 V	200 V ... 510 V
No-load voltage	600 V*	600 V*
Max. input current	14.3 A	13.5 A
Number of strings	3	3
Number of MPP trackers	1	1
Inverse polarity protection	short-circuit diode	short-circuit diode
<b>Output variables</b>		
Rated output	1 650 VA	2 500 VA
Max. output	1 650 VA	2 500 VA
Supply voltage	acc. to local requirements	acc. to local requirements
Rated current	7.2 A	10.9 A
Rated frequency	50 Hz / 60 Hz	50 Hz / 60 Hz
cos phi	0.80 inductive ... 0.80 capacitive	0.80 inductive ... 0.80 capacitive
Number of grid phases	1	1
<b>General electrical data</b>		
Max. efficiency	95.9 %	96.0 %
European efficiency	95.3%	95.4 %
Night consumption	0.4 W	0.4 W
Switching plan	galvanically isolated, HF transformer	galvanically isolated, HF transformer
Certifications	overview: see homepage/download area	overview: see homepage/download area
<b>Mechanical data</b>		
Display	LCD 2 x 16 characters, LED	LCD 2 x 16 characters, LED
Control units	2 buttons for display control	2 buttons for display control
Interfaces	RS485, S0	RS485, S0
Fault signalling relay	potential-free NOC max. DC 30 V/3 A max. AC 250 V/1.5A	potential-free NOC max. DC 30 V/3 A max. AC 250 V/1.5A
Connections	PCB terminals inside the unit (max. cross section. 6 mm <sup>2</sup> flexible, 10 mm <sup>2</sup> rigid), Cable connection via cable fittings (DC: solar connector, AC fitting M32 and terminal)	PCB terminals inside the unit (max. cross section. 6 mm <sup>2</sup> flexible, 10 mm <sup>2</sup> rigid), Cable connection via cable fittings (DC: solar connector, AC fitting M32 and terminal)
Ambient temperature	-20 °C ... +60 °C**	-20 °C ... +60 °C**
Cooling	free convection/no fan	free convection/no fan
Protection class	IP54	IP54
Noise emission	< 35 dB (A)	< 35 dB (A)
DC switch	integrated	integrated
Casing	aluminium	aluminium
H x W x D	450 x 340 x 200 mm	500 x 340 x 200 mm
Weight	14.5 kg	20 kg

Applicable standards and regulations are taken into account for each country version that is set.  
 \* To protect the hardware, the inverter starts up only at voltages < 550 V  
 \*\* Grid standards VDE AR-N 4105: 4600 VA \*\*\* Power derating at high ambient temperatures.

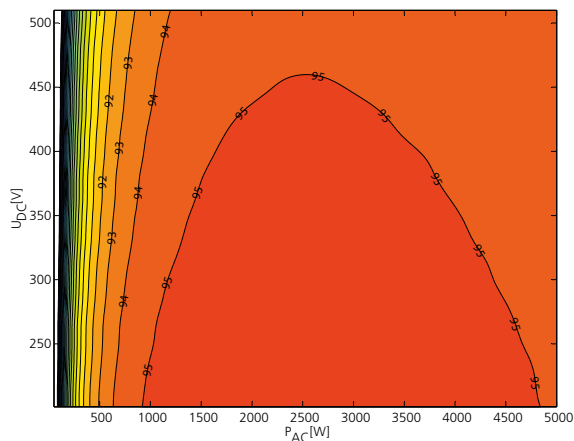
4202	5002	6002
<b>Input variables</b>		
200 V ... 510 V	200 V ... 510 V	200 V ... 510 V
600 V*	600 V*	600 V*
18.5 A	22.4 A	26.5 A
3	3	3
1	1	1
short-circuit diode	short-circuit diode	short-circuit diode
<b>Output variables</b>		
3 500 VA	4 200 VA	5 000 VA **
3 500 VA	4 200 VA	5 000 VA
acc. to local requirements	acc. to local requirements	acc. to local requirements
15.2 A	18.3 A	21.7 A (Germany: 20.0 A)
50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz
0.80 inductive ... 0.80 capacitive	0.80 inductive ... 0.80 capacitive	0.80 inductive ... 0.80 capacitive
1	1	1
<b>General electrical data</b>		
95.9 %	95.9 %	95.9 %
95.1 %	95.3 %	95.3 %
0.4 W	0.4 W	0.4 W
galvanically isolated, HF transformer	galvanically isolated, HF transformer	galvanically isolated, HF transformer
overview: see homepage/download area	overview: see homepage/download area	overview: see homepage/download area
<b>Mechanical data</b>		
LCD 2 x 16 characters, LED	LCD 2 x 16 characters, LED	LCD 2 x 16 characters, LED
2 buttons for display control	2 buttons for display control	2 buttons for display control
RS485, S0	RS485, S0	RS485, S0
potential-free NOC max. DC 30 V/3 A max. AC 250 V/1.5A	potential-free NOC max. DC 30 V/3 A max. AC 250 V/1.5A	potential-free NOC max. DC 30 V/3 A max. AC 250 V/1.5A
PCB terminals inside the unit (max. cross section. 6 mm <sup>2</sup> flexible, 10 mm <sup>2</sup> rigid), Cable connection via cable fittings (DC: solar connector, AC fitting M32 and terminal)	PCB terminals inside the unit (max. cross section. 6 mm <sup>2</sup> flexible, 10 mm <sup>2</sup> rigid), Cable connection via cable fittings (DC: solar connector, AC fitting M32 and terminal)	PCB terminals inside the unit (max. cross section. 6 mm <sup>2</sup> flexible, 10 mm <sup>2</sup> rigid), Cable connection via cable fittings (DC: solar connector, AC fitting M32 and terminal)
-25 °C ... +60 °C**	-25 °C ... +60 °C**	-25 °C ... +60 °C***
free convection/no fan	fan	fan
IP54	IP54	IP54
< 35 dB (A)	< 45 dB (A) (fan)	< 45 dB (A) (fan)
integrated	integrated	integrated
aluminium	aluminium	aluminium
600 x 340 x 240 mm	600 x 340 x 240 mm	600 x 340 x 240 mm
26 kg	28 kg	28 kg

Applicable standards and regulations are taken into account for each country version that is set.  
 \* To protect the hardware, the inverter starts up only at voltages < 550 V  
 \*\* Grid standards VDE AR-N 4105: 4600 VA \*\*\* Power derating at high ambient temperatures.



## Graphical Display of efficiency

3D efficiency diagram for Powador 6002



Powador  
 10.0 TL3 | 12.0 TL3 | 14.0 TL3  
 18.0 TL3 | 20.0 TL3

Capable of reactive power

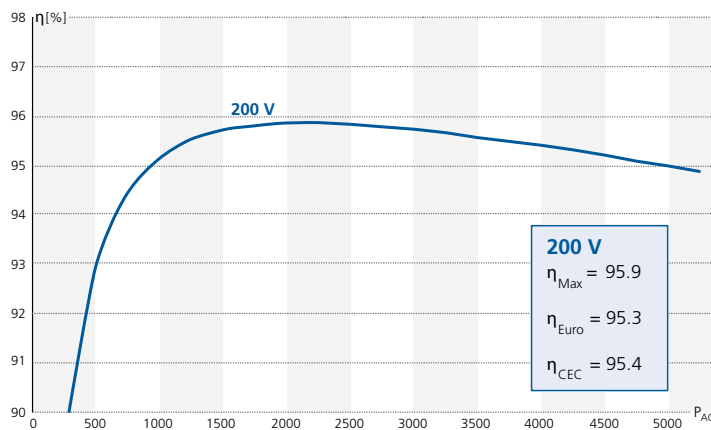
Up to 96.0 % efficiency

Optimized MPP tracking for higher yield

Quick and easy installation due to MC4 DC connections

Priwatt function for the self-use of solar power

Efficiency characteristic curve for Powador 6002



Your retailer