



Powador
12.0 TL3 | 14.0 TL3
18.0 TL3 | 20.0 TL3 **NEW**

The power plants of the future.

The transformerless three-phase inverters Powador 12.0 TL3 to 20.0 TL3.

Photovoltaic systems of up to several hundred kilowatts can be designed extremely flexibly in small, highly efficient units with the transformerless three-phase inverters Powador 12.0 TL3 to 20.0 TL3.

They operate using two separate MPP trackers that can handle both symmetrical and asymmetrical loads to allow for optimum adjustment. Each tracker is able to process all of the AC output. This allows for all typical requirements of complex designs to be fulfilled; on the one hand, for example, full configuration of an east/west-facing roof (symmetrical load) or, on the other hand, the regular configuration of a south-facing roof without having to dispense with the solar yield of a dormer (asymmetrical load). The MPP trackers can also be connected in parallel: installation costs less (you do not need an additional external discon-

necter) when strings need to be combined before the inverter. Two strings can be connected per MPP controller, i.e. 4 strings for each unit.

The input voltage range is particularly broad: the inverters switch to the grid from 250 V, and, when in operation, they still feed in at 200 V. This means that solar yields are optimum for comparatively small areas such as dormers or carports but they also operate for more of the day. The peak efficiency is 98 % and the European efficiency is also above average. The compact design weighing only 40 kg combined with the DC connection via solar connectors makes installation very easy and economical.

It is easy to achieve perfect communication with these units. They are fitted with an integrated data logger with web server, a graphical display for show-

ing operating data and a USB port for installing firmware updates. The current software can be downloaded free of charge from the download area of www.kaconewenergy.com/en/service. The yield data can be called from the web server or via USB for evaluation. The integrated data logger can also be connected directly to the Powador web internet portal for professional evaluation and visualisation of the inverter data.

A number of country-specific default settings are programmed into the inverters. These are easy to select during on-site installation. The interface language can be selected separately. The inverters support the functions of the Powador-protect for grid and plant protection and also power management.

The Powador 20.0 TL3 is available as of August 2013.

Technical data

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

| Electrical data | 12.0 TL3 | 14.0 TL3 |
|-------------------------------------|--|--|
| Input variables | | |
| Max. recommended PV generator power | 12 000 W | 14 000 W |
| MPP range | 200 V ... 800 V ¹⁾ | 200 V ... 800 V ¹⁾ |
| Starting voltage | 250 V | 250 V |
| No-load voltage | 1 000 V | 1 000 V |
| Max. input current | 2 x 18.6 A | 2 x 18.6 A |
| Number of MPP trackers | 2 | 2 |
| Max. power/tracker | 10.2 kW | 12.8 kW |
| Number of strings | 2 x 2 | 2 x 2 |
| Output variables | | |
| Rated output | 10 000 VA | 12 500 VA |
| Supply voltage | acc. to local requirements | acc. to local requirements |
| Rated current | 3 x 14.5 A | 3 x 18.1 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 | 3 | 3 |
| General electrical data | | |
| Max. efficiency | 98.0 % | 98.0 % |
| Europ. efficiency | 97.5 % | 97.6 % |
| Night consumption | 1.5 W | 1.5 W |
| Switching plan | transformerless | transformerless |
| Grid monitoring | acc. to local requirements | acc. to local requirements |
| Mechanical data | | |
| Display | graphical display + LEDs | graphical display + LEDs |
| Control units | 4-way navigation + 2 buttons | 4-way navigation + 2 buttons |
| Interfaces | Ethernet, USB, RS485, S0 output | Ethernet, USB, RS485, S0 output |
| Fault signalling relay | potential-free NOC max. 230 V / 1 A | potential-free NOC max. 230 V / 1 A |
| Connections | DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm ² flexible, 10 mm ² rigid) | DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm ² flexible, 10 mm ² rigid) |
| Ambient temperature | -25 °C ... +60 °C ⁴⁾ | -25 °C ... +60 °C ⁴⁾ |
| Cooling | temperature-dependent fan | temperature-dependent fan |
| Protection class | IP65 | IP65 |
| Noise emission | < 52 dB (A) (noiseless when operated without fan) | < 52 dB (A) (noiseless when operated without fan) |
| DC switch | integrated | integrated |
| Casing | aluminium casting | aluminium casting |
| H x W x D | 690 x 420 x 200 mm | 690 x 420 x 200 mm |
| Weight | 40 kg | 40 kg |

¹⁾ The possible input power is reduced at voltages lower than 350 V. The input current is limited to 18.6 A per input.

²⁾ The possible input power is reduced at voltages lower than 420 V. The input current is limited to 18.6 A per input.

³⁾ The possible input power is reduced at voltages lower than 460 V. The input current is limited to 18.6 A per input.

⁴⁾ Power derating at high ambient temperatures.

Conforms to the country-specific standards and regulations according to the country version that has been set.

| Electrical data | 18.0 TL3 | 20.0 TL3 NEW |
|-------------------------------------|--|--|
| Input variables | | |
| Max. recommended PV generator power | 18 000 W | 20 000 W |
| MPP range | 200 V ... 800 V ²⁾ | 200 V ... 800 V ³⁾ |
| Starting voltage | 250 V | 250 V |
| No-load voltage | 1 000 V | 1 000 V |
| Max. input current | 2 x 18.6 A | 2 x 18.6 A |
| Number of MPP trackers | 2 | 2 |
| Max. power/tracker | 15.3 kW | 15.3 kW |
| Number of strings | 2 x 2 | 2 x 2 |
| Output variables | | |
| Rated output | 15 000 VA | 17 000 VA |
| Supply voltage | acc. to local requirements | acc. to local requirements |
| Rated current | 3 x 21.8 A | 3 x 24.6 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 | 3 | 3 |
| General electrical data | | |
| Max. efficiency | 98.0 % | 98.0 % |
| Europ. efficiency | 97.7 % | 97.7 % |
| Night consumption | 1.5 W | 1.5 W |
| Switching plan | transformerless | transformerless |
| Grid monitoring | acc. to local requirements | acc. to local requirements |
| Mechanical data | | |
| Display | graphical display + LEDs | graphical display + LEDs |
| Control units | 4-way navigation + 2 buttons | 4-way navigation + 2 buttons |
| Interfaces | Ethernet, USB, RS485, S0 output | Ethernet, USB, RS485, S0 output |
| Fault signalling relay | potential-free NOC max. 230 V / 1 A | potential-free NOC max. 230 V / 1 A |
| Connections | DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm ² flexible, 10 mm ² rigid) | DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm ² flexible, 10 mm ² rigid) |
| Ambient temperature | -25 °C ... +60 °C ⁴⁾ | -25 °C ... +40 °C ⁴⁾ |
| Cooling | temperature-dependent fan | temperature-dependent fan |
| Protection class | IP65 | IP65 |
| Noise emission | < 52 dB (A) (noiseless when operated without fan) | < 52 dB (A) (noiseless when operated without fan) |
| DC switch | integrated | integrated |
| Casing | aluminium casting | aluminium casting |
| H x W x D | 690 x 420 x 200 mm | 690 x 420 x 200 mm |
| Weight | 40 kg | 40 kg |

¹⁾ The possible input power is reduced at voltages lower than 350 V. The input current is limited to 18.6 A per input.

²⁾ The possible input power is reduced at voltages lower than 420 V. The input current is limited to 18.6 A per input.

³⁾ The possible input power is reduced at voltages lower than 460 V. The input current is limited to 18.6 A per input.

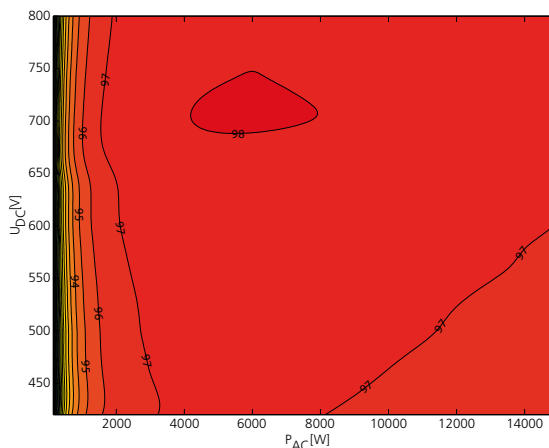
⁴⁾ Power derating at high ambient temperatures.

Conforms to the country-specific standards and regulations according to the country version that has been set.



Graphical Display of efficiency

3D efficiency diagram for Powador 18.0 TL3



Powador
 12.0 TL3 | 14.0 TL3
 18.0 TL3 | 20.0 TL3

98.0 % efficiency

Two MPP trackers, symmetrical and asymmetrical loading possible

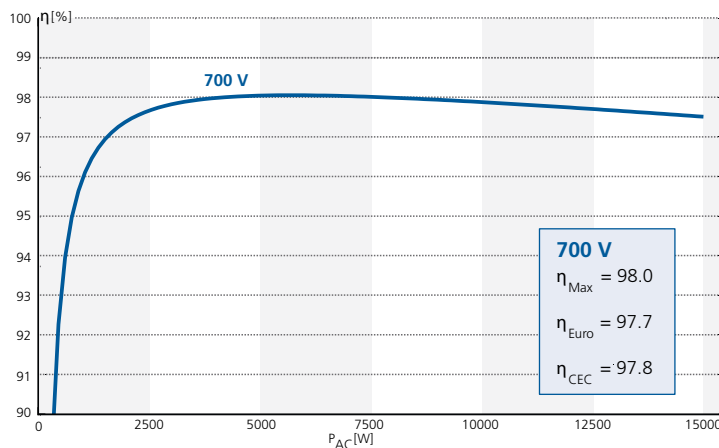
Multilingual menu

Graphical display

Integrated web server

USB connection for updates

Efficiency characteristic curve for Powador 18.0 TL3



Your retailer