

## Data sheet

### Powador

10.0 TL3 | 12.0 TL3

14.0 TL3 | 18.0 TL3

20.0 TL3

# The power plants of the future.

The transformerless three-phase inverters Powador 10.0 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 10.0 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. 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 disconnecter) 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 compact design 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 showing operating data and a USB port for installing firmware updates. The current software can be downloaded free of charge from the download area of our homepage.

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.

And, if you want to use your self-generated solar power in your own home, the Powador 10.0 TL3 to 20.0 TL3 also come with our Privatt function for managing self-use.

When the blueplanet 9.0 TL3 becomes available in Q1/2015 the Powador 10.0 TL3 will be discontinued.

# Technical data

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

| Electrical data                | 10.0 TL3   | 12.0 TL3   |
|--------------------------------|--|--|
| <b>Input variables</b>         |  |  |
| MPP range                      | 200 V ... 800 V <sup>1)</sup>  | 200 V ... 800 V <sup>2)</sup>  |
| Starting voltage               | 250 V  | 250 V  |
| No-load voltage                | 1 000 V  | 1 000 V  |
| Max. input current             | 2 x 11.0 A   | 2 x 18.6 A   |
| Number of MPP trackers         | 2  | 2  |
| Max. power/tracker             | 8.8 kW   | 10.2 kW  |
| Number of strings              | 2 x 2  | 2 x 2  |
| <b>Output variables</b>        |  |  |
| Rated output (@ 230 V)         | 9 000 VA   | 10 000 VA  |
| Line voltage                   | acc. to local requirements   | acc. to local requirements   |
| Rated current                  | 3 x 13.0 A   | 3 x 14.5 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  |
| <b>General electrical data</b> |  |  |
| Max. efficiency                | 97.9%  | 98.0 %   |
| Europ. efficiency              | 97.1%  | 97.5 %   |
| Night consumption              | 1.5 W  | 1.5 W  |
| Switching plan                 | transformerless  | transformerless  |
| Grid monitoring                | acc. to local requirements   | acc. to local requirements   |
| <b>Mechanical data</b>         |  |  |
| 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, digital input „inverter off“  | Ethernet, USB, RS485, S0 output, digital input „inverter off“  |
| 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 <sup>2</sup> flexible, 10 mm <sup>2</sup> rigid) | DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm <sup>2</sup> flexible, 10 mm <sup>2</sup> rigid) |
| Ambient temperature            | -25 °C ... +60 °C <sup>5)</sup>  | -25 °C ... +60 °C <sup>5)</sup>  |
| 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  |

<sup>1)</sup> The possible input power is reduced at voltages lower than 420 V. The input current is limited to 11.0 A per input.  
<sup>2)</sup> The possible input power is reduced at voltages lower than 350 V. The input current is limited to 18.6 A per input.  
<sup>3)</sup> The possible input power is reduced at voltages lower than 420 V. The input current is limited to 18.6 A per input.  
<sup>4)</sup> The possible input power is reduced at voltages lower than 460 V. The input current is limited to 18.6 A per input.  
<sup>5)</sup> Power derating at high ambient temperatures.

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

| 14.0 TL3   | 18.0 TL3   | 20.0 TL3   |
|--|--|--|
| <b>Input variables</b>   |  |  |
| 200 V ... 800 V <sup>2)</sup>  | 200 V ... 800 V <sup>3)</sup>  | 200 V ... 800 V <sup>4)</sup>  |
| 250 V  | 250 V  | 250 V  |
| 1 000 V  | 1 000 V  | 1 000 V  |
| 2 x 18.6 A   | 2 x 18.6 A   | 2 x 18.6 A   |
| 2  | 2  | 2  |
| 12.8 kW  | 12.8 kW  | 12.8 kW  |
| 2 x 2  | 2 x 2  | 2 x 2  |
| <b>Output variables</b>  |  |  |
| 12 500 VA  | 15 000 VA  | 17 000 VA  |
| acc. to local requirements   | acc. to local requirements   | acc. to local requirements   |
| 3 x 18.1 A   | 3 x 21.8 A   | 3 x 24.6 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   |
| 3  | 3  | 3  |
| <b>General electrical data</b>   |  |  |
| 98.0 %   | 98.0 %   | 97.9 %   |
| 97.6 %   | 97.7 %   | 97.6 %   |
| 1.5 W  | 1.5 W  | 1.5 W  |
| transformerless  | transformerless  | transformerless  |
| acc. to local requirements   | acc. to local requirements   | acc. to local requirements   |
| <b>Mechanical data</b>   |  |  |
| graphical display + LEDs   | graphical display + LEDs   | graphical display + LEDs   |
| 4-way navigation + 2 buttons   | 4-way navigation + 2 buttons   | 4-way navigation + 2 buttons   |
| Ethernet, USB, RS485, S0 output, digital input „inverter-off“  | Ethernet, USB, RS485, S0 output, digital input „inverter off“  | Ethernet, USB, RS485, S0 output, digital input „inverter off“  |
| potential-free NOC max. 230 V / 1 A  | potential-free NOC max. 230 V / 1 A  | potential-free NOC max. 230 V / 1 A  |
| DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm <sup>2</sup> flexible, 10 mm <sup>2</sup> rigid) | DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm <sup>2</sup> flexible, 10 mm <sup>2</sup> rigid) | DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm <sup>2</sup> flexible, 10 mm <sup>2</sup> rigid) |
| -25 °C ... +60 °C <sup>5)</sup>  | -25 °C ... +60 °C <sup>5)</sup>  | -25 °C ... +60 °C <sup>5)</sup>  |
| temperature-dependent fan  | temperature-dependent fan  | temperature-dependent fan  |
| IP65   | IP65   | IP65   |
| < 52 dB (A) (noiseless when operated without fan)  | < 52 dB (A) (noiseless when operated without fan)  | < 52 dB (A) (noiseless when operated without fan)  |
| integrated   | integrated   | integrated   |
| aluminium casting  | aluminium casting  | aluminium casting  |
| 690 x 420 x 200 mm   | 690 x 420 x 200 mm   | 690 x 420 x 200 mm   |
| 40 kg  | 44 kg  | 44 kg  |

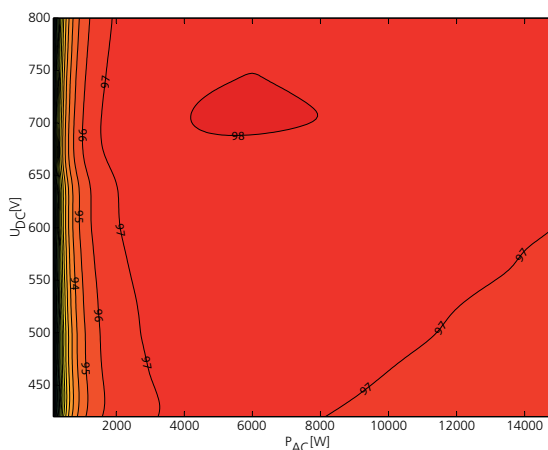
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## Graphical Display of efficiency

3D efficiency diagram for Powador 18.0 TL3



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Up to 98.0 % efficiency

Two MPP trackers, symmetrical and asymmetrical loading possible

Multilingual menu

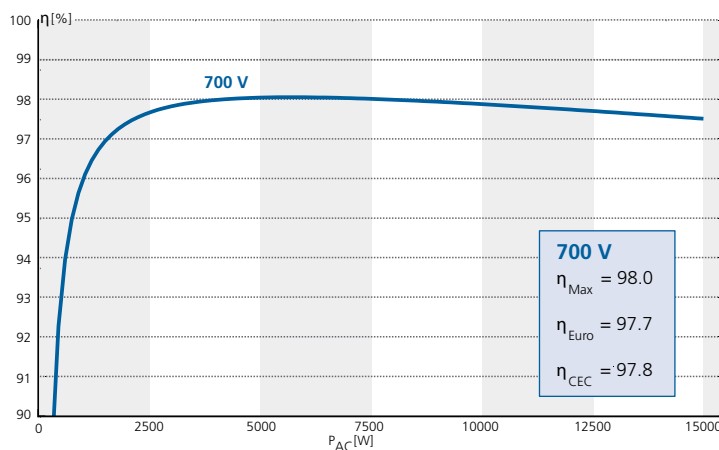
Graphical display

Data logger with web server

USB connection for updates

Priwatt function for the self-use of solar power

Efficiency characteristic curve for Powador 18.0 TL3



Your retailer