



Powador
9.0 TL3 **NEW**
10.0 TL3 | 12.0 TL3
14.0 TL3 | 18.0 TL3

The power plants of the future.

The transformerless three-phase inverters Powador 9.0 TL3 to 18.0 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 9.0 TL3 to 18.0 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 virtually 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 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 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 showing operating data and a USB port for instal-

ling firmware updates. The current software can be downloaded free of charge from the download area of www.kaco-newenergy.de/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 conform to the German Medium and Low Voltage Directives and support the functions of the Powador-protect for grid and plant protection and also power management in accordance with the German EEG 2012.

Technical data

Powador 9.0 TL3 | 10.0 TL3 | 12.0 TL3 | 14.0 TL3 | 18.0 TL3

Electrical data	9.0 TL3 NEW	10.0 TL3
Input variables		
Max. recommended PV generator power	9000 W	10000 W
MPP range	200 V ... 800 V*	200 V ... 800 V*
Starting voltage	250 V	250 V
No-load voltage	1000 V	1000 V
Max. input current	2 x 11.0 A	2 x 18.6 A
Number of MPP trackers	2	2
Max. power/tracker	7.7 kW	9.2 kW
Number of strings	2 x 2	2 x 2
Output variables		
Rated output	7500 VA	9000 VA
Supply voltage	acc. to local requirements	acc. to local requirements
Rated current	3 x 10.9 A	3 x 13.0 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	97.2 %	97.4 %
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***	-25 °C ... +60 °C***
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

* The possible input power is reduced at voltages lower than 350 V. The input current is limited to 18.6/11.0 A per input.

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

*** Power derating at high ambient temperatures. / Conforms to the country-specific standards and regulations according to the country version that has been set.

12.0 TL3	14.0 TL3	18.0 TL3
Input variables		
12000 W	14000 W	18000 W
200 V ... 800 V*	200 V ... 800 V*	200 V ... 800 V**
250 V	250 V	250 V
1000 V	1000 V	1000 V
2 x 18.6 A	2 x 18.6 A	2 x 18.6 A
2	2	2
10.2 kW	12.8 kW	15.3 kW
2 x 2	2 x 2	2 x 2
Output variables		
10000 VA	12500 VA	15000 VA
acc. to local requirements	acc. to local requirements	acc. to local requirements
3 x 14.5 A	3 x 18.1 A	3 x 21.8 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
General electrical data		
98.0 %	98.0 %	98.0 %
97.5 %	97.6 %	97.7 %
1.5 W	1.5 W	1.5 W
transformerless	transformerless	transformerless
acc. to local requirements	acc. to local requirements	acc. to local requirements
Mechanical data		
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	Ethernet, USB, RS485, S0 output	Ethernet, USB, RS485, S0 output
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 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)	DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm ² flexible, 10 mm ² rigid)
-25 °C ... +60 °C***	-25 °C ... +60 °C***	-25 °C ... +60 °C***
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	40 kg	40 kg

* The possible input power is reduced at voltages lower than 350 V. The input current is limited to 18.6/11.0 A per input.

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

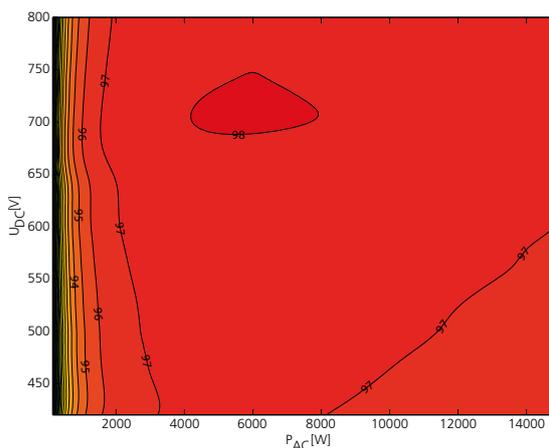
*** Power derating at high ambient temperatures. / Conforms to the country-specific standards and regulations according to the country version that has been set.



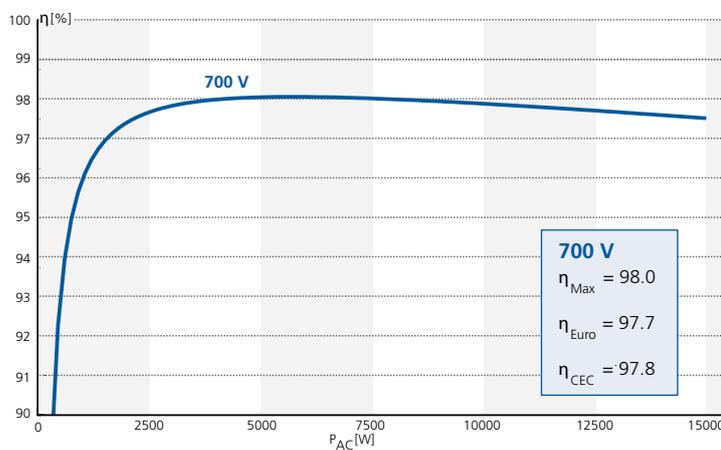
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Graphical Display of efficiency

3D efficiency diagram for Powador 18.0 TL3



Efficiency characteristic curve for Powador 18.0 TL3



98.0 % efficiency

Two MPP trackers, symmetrical and asymmetrical loading possible

Multilingual menu

Graphical display

Integrated web server

USB connection for updates

Conforms to the German Medium and Low Voltage Directives

Your retailer