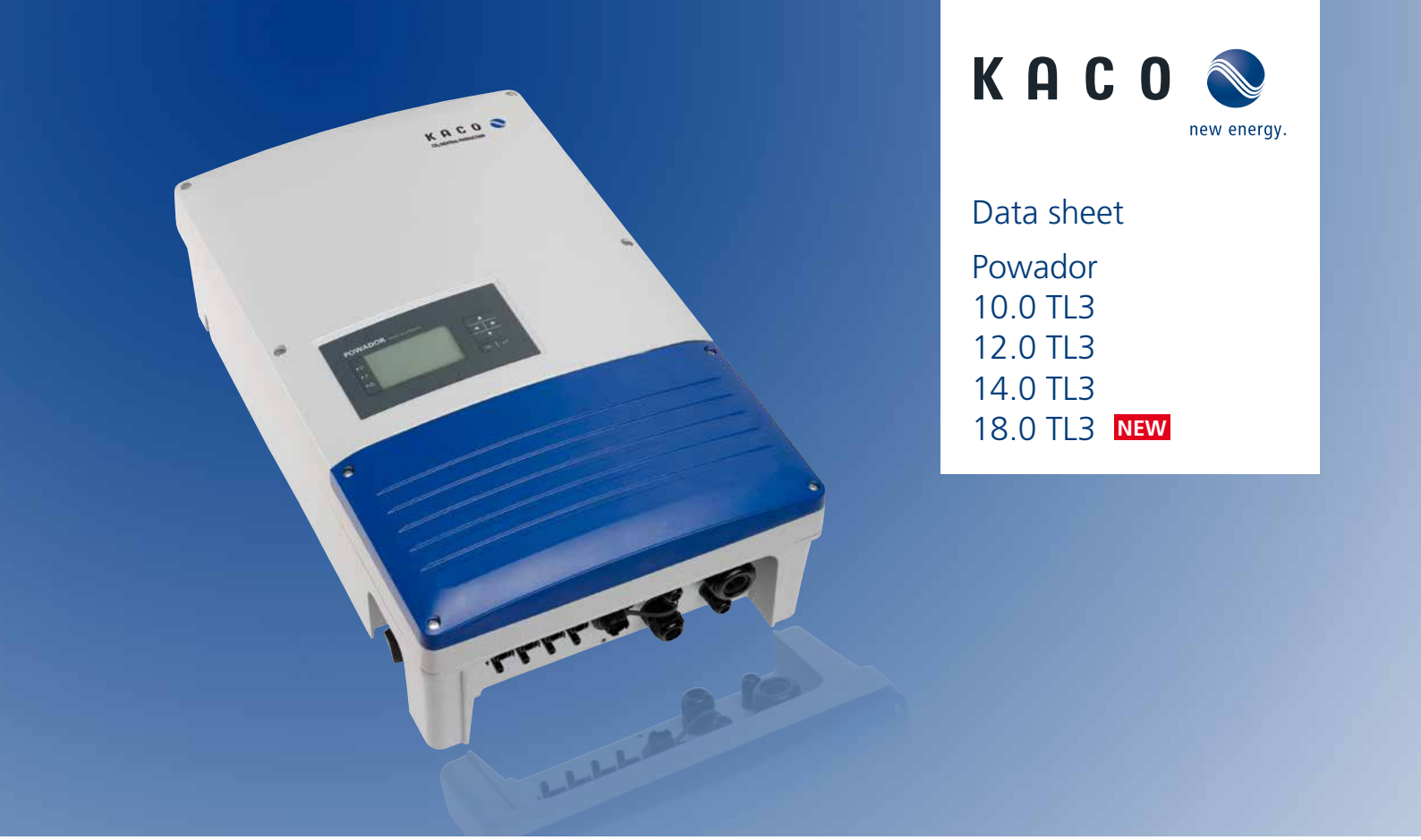


KACO new energy.

Data sheet

Powador
10.0 TL3
12.0 TL3
14.0 TL3
18.0 TL3 NEW

The power plants of the future.

The transformerless three-phase inverters Powador 10.0 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 10.0 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 disconnector) 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 rated input voltage range of 350 to 800 V is particularly broad (420 to 800 V for the Powador 18.0 TL3). 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 installing 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.

The Powador 18.0 TL3 is available from July 2012.

Technical data

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

Electrical data	10.0 TL3	12.0 TL3
Input variables		
Max. recommended PV generator power	10000 W	12000 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 18.6 A	2 x 18.6 A
Number of MPP trackers	2	2
Max. power/tracker	9,2 kW	10,2 kW
Number of strings	2 x 2	2 x 2
Output variables		
Rated output	9000 VA	10000 VA
Supply 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
General electrical data		
Max. efficiency	98.0 %	98.0 %
Europ. efficiency	97.4 %	97.5 %
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	DC: solar connector, AC: cable connection M40 and terminal
Ambient temperature	-25 °C … +60 °C***	-25 °C … +60 °C***
Cooling	temperature-dependent fan	temperature-dependent fan
Protection class	IP65	IP65
Noise emission	< 45 dB (A) (noiseless when operated without fan)	< 45 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

Electrical data	14.0 TL3	18.0 TL3 NEW
Input variables		
Max. recommended PV generator power	14000 W	18000 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 18.6 A	2 x 18.6 A
Number of MPP trackers	2	2
Max. power/tracker	12,8 kW	12,8 kW
Number of strings	2 x 2	2 x 2
Output variables		
Rated output	12500 VA	15000 VA
Supply voltage	acc. to local requirements	acc. to local requirements
Rated current	3 x 18.1 A	3 x 21.8 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	97.6 %	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	DC: solar connector, AC: cable connection M40 and terminal
Ambient temperature	-25 °C … +60 °C***	-25 °C … +60 °C***
Cooling	temperature-dependent fan	temperature-dependent fan
Protection class	IP65	IP65
Noise emission	< 45 dB (A) (noiseless when operated without fan)	< 45 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 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.

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

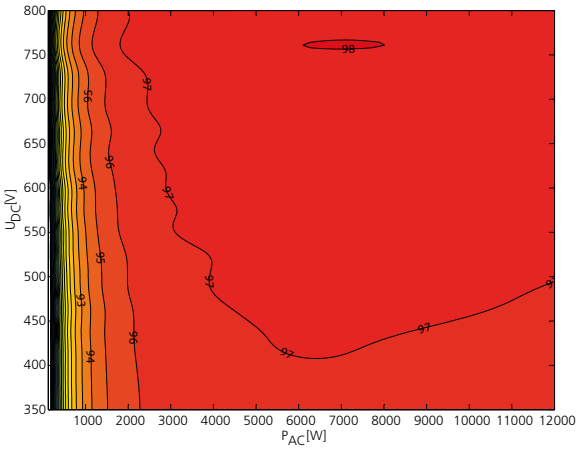
Powador
10.0 TL3 | 12.0 TL3
14.0 TL3 | 18.0 TL3

- 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

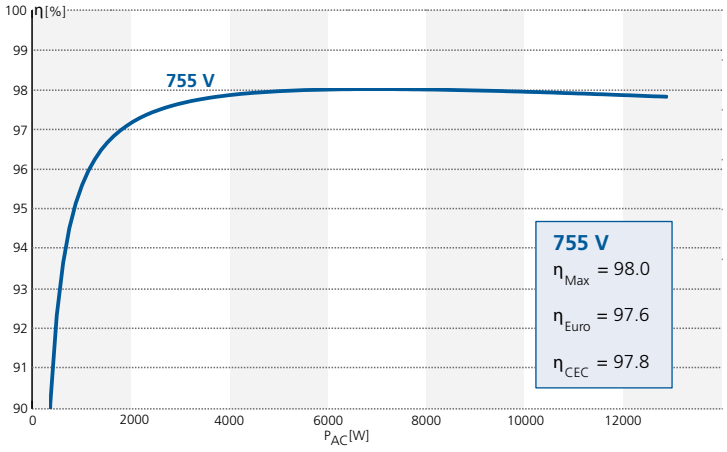
www.kaco-newenergy.de

Graphical Display of efficiency

3D efficiency diagram for Powador 14.0 TL3



Efficiency characteristic curve for Powador 14.0 TL3



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