KACO new energy.

Data sheet

Powador
30.0 TL3 | 33.0 TL3
36.0 TL3 | 39.0 TL3

Efficient. Flexible. Future-oriented.

Transformerless three-phase inverters Powador 30.0 TL3 to 39.0 TL3.

Since they are true three-phase units, the Powador 30.0 TL3 to 39.0 TL3 provide high-quality, sinusoidal alternating current with a 120-degree phase shift – a dream come true for all grid operators. It goes without saying that they meet all of the requirements of Germany's Medium Voltage and Low Voltage Directives ("Mittelspannungsrichtlinie" and "Niederspannungsrichtlinie").

These transformerless inverters give you extreme flexibility in designing your PV system. They operate with three separate MPP trackers that can handle symmetric as well as asymmetric loads to allow for optimum adjustment. Each tracker is able to process 20 kW. 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).

1 or 4 strings can be connected for each MPP controller depending on the version, therefore 3 or 12 strings for each device. The nominal input voltage range is extremely wide: 350 to 800 V. The inverters connect to the grid from 250 V upwards. Once in operation they can feed in with as little as 200 V thus ensuring that even solar yields of comparatively small areas like dormers or carports are reaped.

The peak efficiency is an impressive 98 %. Thanks to the innovative solution for the design and control of the inverter bridge, the devices also realise a very high partial load peak efficiency in the lower power ranges: Even at just 5 % rated power they operate at 95 % efficiency.

It is easy to achieve perfect communication with these units. In addition to the normal RS485 interface, which enables you to query yield data using the Powador-proLOG, they offer highly convenient innovations: an integrated web server for uninterrupted monitoring via Ethernet, a USB connection for installing software updates and a graphic display to view operating data. The latest software updates are available for free in the download area at www.kaco-newenergy.de/service.

A number of country-specific default settings are programmed into the inverters. These are easy to select during on-site installation. Your choice of operating language is independent of these settings. You save money because the separate connection box makes installation extremely easy.

Our three-phase units can of course be combined with each other and are therefore also suitable for significantly higher power ratings. You can operate the units with an integrated generator junction box (GJB) that accommodates string fuses and overvoltage protection as well as the external combiner box Powador Mini-Argus.

The market received the series very well. This prompted us to enhance and rearrange it so that it is now available in even finer power increments. The Powador 36.0 TL3 replaces the Powador 37.5 TL3 and the Powador 33.0 TL3, available from Q2 2012, complements the series.

Technical data

Powador 30.0 TL3 | 33.0 TL3 | 36.0 TL3 | 39.0 TL3

Electrical data	30.0 TL3	33.0 TL3 NEW
Input variables		
Max. recommended PV generator power	30 000 W	33 000 W
MPP range	200 V ... 800 V*	200 V ... 800 V*
Starting voltage	250 V	250 V
No-load voltage	1 000 V	1 000 V
Max. input current	3 x 34.0 A	3 x 34.0 A
Number of MPP trackers	3	3
Max. power/tracker	20 kW	20 kW
Number of strings per MPP trackers	3 x 1 based on design M / 3 x 4 based on design XL	3 x 1 based on design M / 3 x 4 based on design XL
Output variables		
Rated output	25 000 VA	27 500 VA
Line voltage	acc. to local requirements	acc. to local requirements
Rated current	3 x 36.2 A	3 x 39.9 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	3	3
General electrical data		
Max. efficiency	98.0 %	98.0 %
European efficiency	97.8 %	97.8 %
Night consumption	≈ 1,5 W	≈ 1,5 W
Switching plan	self-inverted, transformerless	self-inverted, 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	AC connection via screw terminals, bushing 1 x M50, max cross section: 50 mm² (flexible); DC connection of M version: spring-type terminals 6-35 mm² **; DC connection of XL version: screw and spring-type terminals 10 mm², bushing 6 x M32	AC connection via screw terminals, bushing 1 x M50, max cross section: 50 mm² (flexible); DC connection of M version: spring-type terminals 6-35 mm² **; DC connection of XL version: screw and spring-type terminals 10 mm², bushing 6 x M32
Ambient temperature	-20 °C … +60 °C***	-20 °C … +60 °C***
Temperature monitoring	> 75 °C temperature-dependent impedance matching, > 85 °C cut-out	> 75 °C temperature-dependent impedance matching, > 85 °C cut-out
Cooling	forced cooling/RPM-regulated fan. max. 600 m³ / h	forced cooling/RPM-regulated fan. max. 600 m³ / h
Protection class	IP54	IP54
Noise emission	58 dB (A) (only fan noise)	58 dB (A) (only fan noise)
DC switch	integrated	integrated
Casing	sheet steel	sheet steel
H x W x D	1 360 x 840 x 355 mm	1 360 x 840 x 355 mm
Weight	151 kg	151 kg

* The possible input power is reduced at voltages lower than 350 V. The input current is limited to 34.0 A per input.
** Only in conjunction with external Powador Mini-Argus
*** 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	36.0 TL3	39.0 TL3
Input variables		
Max. recommended PV generator power	36 000 W	39 000 W
MPP range	200 V ... 800 V*	200 V ... 800 V*
Starting voltage	250 V	250 V
No-load voltage	1 000 V	1 000 V
Max. input current	3 x 34.0 A	3 x 34.0 A
Number of MPP trackers	3	3
Max. power/tracker	20 kW	20 kW
Number of strings per MPP trackers	3 x 1 based on design M / 3 x 4 based on design XL	3 x 1 based on design M / 3 x 4 based on design XL
Output variables		
Rated output	30 000 VA	33 300 VA
Line voltage	acc. to local requirements	acc. to local requirements
Rated current	3 x 43.5 A	3 x 48.3 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 %
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Ambient temperature	-20 °C … +60 °C***	-20 °C … +60 °C***
Temperature monitoring	> 75 °C temperature-dependent impedance matching, > 85 °C cut-out	> 75 °C temperature-dependent impedance matching, > 85 °C cut-out
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Protection class	IP54	IP54
Noise emission	58 dB (A) (only fan noise)	58 dB (A) (only fan noise)
DC switch	integrated	integrated
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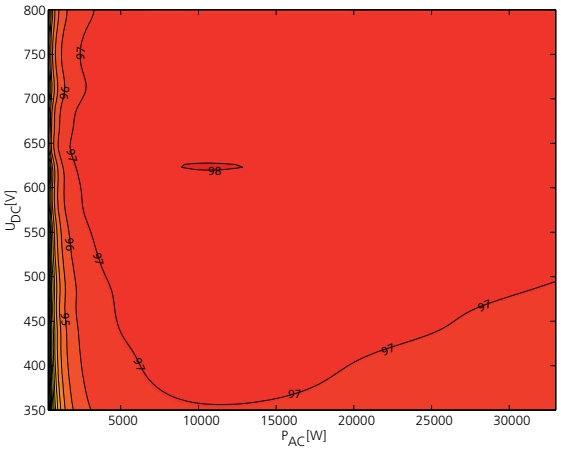
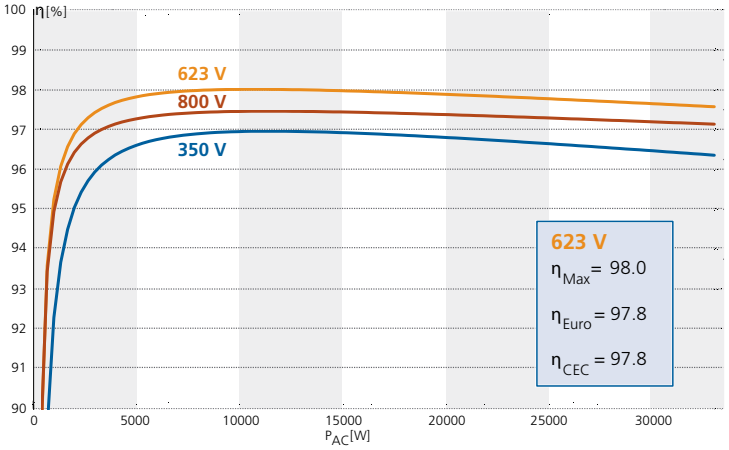
- 98.0 % efficiency
- 3 MPP trackers, symmetrical and asymmetrical loading possible
- Multilingual menu
- Cost-saving XL version with integrated combiner box
- Graphical display
- Integrated web server
- Conforms to the German Medium and Low Voltage Directives
- USB connection for updates

Graphical Display of efficiency

3D efficiency diagram for Powador 39.0 TL3



Efficiency characteristic curves for Powador 39.0 TL3



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