

**K A C O**



new energy.

Data sheet

Powador

48.0 TL3 Park

72.0 TL3 Park



# The Park has the power.

The transformerless, three-phase inverters Powador 48.0 TL3 Park and 72.0 TL3.

The Powador 48.0 TL3 Park and 72.0 TL3 Park are transformerless three-phase inverters that, with their output voltage of 480 V, are particularly suitable for connection to external transformers of large decentralised systems.

These units give you flexibility in designing your PV system. They operate using three separate MPP trackers that can handle both symmetrical and asymmetrical loads to allow for optimum adjustment. Every tracker of the Powador 48.0 TL3 Park can process 20 kW; the Powador 72.0 TL3 Park can process 24 kW per unit. This enables them to meet all the typical demands of more complex designs involved with inhomogenous installation of the photovoltaic generator. Depending on the design of the units, one string (M version) or four strings (XL version) can be connected per MPP tracker. Each of

the three MPP trackers of the Powador 72.0 TL3 Park XL can even be connected to five strings.

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. The peak efficiency is 98.3 %. The European efficiency is also worth noting and is due to the fact that the unit has a very high partial load 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. 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 from the download area of [www.kaco-newenergy.com](http://www.kaco-newenergy.com). The yield data can be called up via USB or the

web server. The integrated data logger can also be connected directly to an internet portal for professional evaluation and visualisation of the operating 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 integrated string collector with string fuses and overvoltage protection for the XL version of the units opens up significant cost advantages.

Two additional XL versions now provide extraordinary flexibility:

- XL-F with fusing at the plus and minus inputs,
- XL-SPD 1+2 with type 1 & 2 surge protection devices in front of each MPP tracker.

# Technical data

Powador 48.0 TL3 Park | 72.0 TL3 Park

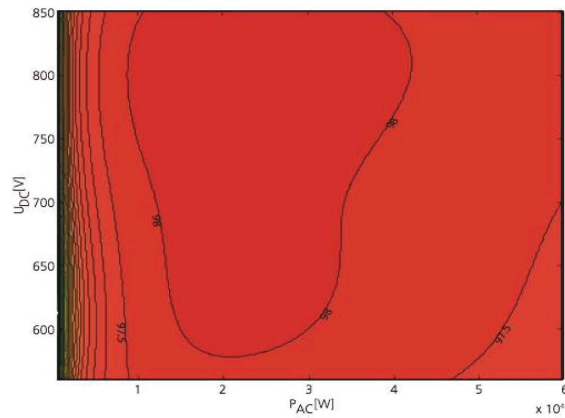
Electrical data	48.0 TL3 Park	72.0 TL3 Park
<b>DC input</b>		
MPP range@Pnom <sup>1)</sup>	410 V ... 800 V	580 V ... 850 V
Operating range	200 V - 950 V	200 V - 950 V
Min. DC voltage/start voltage	200 V / 250 V	200 V / 250 V
No-load voltage	1000 V	1000 V
Max. input current	3x34.0 A	3x36.0 A
Number of MPP trackers	3	3
Max. power/tracker	20 kW	24 kW
Number of strings	3x1 version M / 3x4 version XL	3x1 version M / 3x5 version XL 3x4 version XL-F
<b>AC output</b>		
Rated output (Ø 277 V)	40000 VA	60000 VA
Line voltage	480 V / 277 V (3 / N / PE)	480 V / 277 V (3 / N / PE)
Rated current	3x48.1 A	3x72.2 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>		
Efficiency max. / european	98.0 % / 97.9 %	98.3 % / 98.0 %
Night consumption	1.5 W	1.5 W
Topology	transformerless	transformerless
<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, 50 output, digital input "inverter off"	Ethernet, USB, RS485, 50 output, digital input "inverter off"
Connections	AC connection via screw terminals, bushing, 1 x M50, max cross section: 50 mm <sup>2</sup> (flexible); DC connection of M version: spring-type terminals 6-35 mm <sup>2</sup> ; DC connection of XL version: screw and spring-type terminals 10 mm <sup>2</sup>	
Ambient temperature	-20 °C ... +60 °C <sup>2)</sup>	-20 °C ... +60 °C <sup>2)</sup>
Cooling	fan, max. 600 m <sup>3</sup> / h	fan, max. 600 m <sup>3</sup> / h
Protection class	IP54	IP54
Noise emission	58 dB(A) (only fan noise)	58 dB(A) (only fan noise)
DC switch	integrated	integrated
H x W x D	1360 x 840 x 355 mm	1360 x 840 x 355 mm
Weight	151 kg	173 kg
<b>Product variants</b>		
Version M	DC switch	
Version XL	DC switch / fuse protection DC input plus / overvoltage protection type 2	
Version XL-SPD 1+2	DC switch / fuse protection DC input plus / overvoltage protection type 1 + 2	
Version XL-F	DC switch / fuse protection DC input plus and minus / overvoltage protection type 2	
Version XL-F-SPD1+2	DC switch / fuse protection DC input plus and minus / overvoltage protection type 1 + 2	
<b>Certifications</b>		
Safety	IEC 62109-1/-2, EN 61000-6-1/-2/-3/-4, EN 61000-3-12/-11	
Grid compliance	VDE 0126, BDEW, G59/3, CEI 016, ... for more see homepage/download area	

<sup>1)</sup> by symmetrical assignment of the MPP trackers. <sup>2)</sup> Only in conjunction with external Powador Mini-Airco. <sup>3)</sup> Power derating at high ambient temperatures.



## Graphical Display of efficiency

3D efficiency diagram for Powador 72.0 TL3 Park



### Powador 48.0 TL3 Park | 72.0 TL3 Park

98.3 % efficiency

3 MPP trackers, symmetrical  
and asymmetrical loading possible

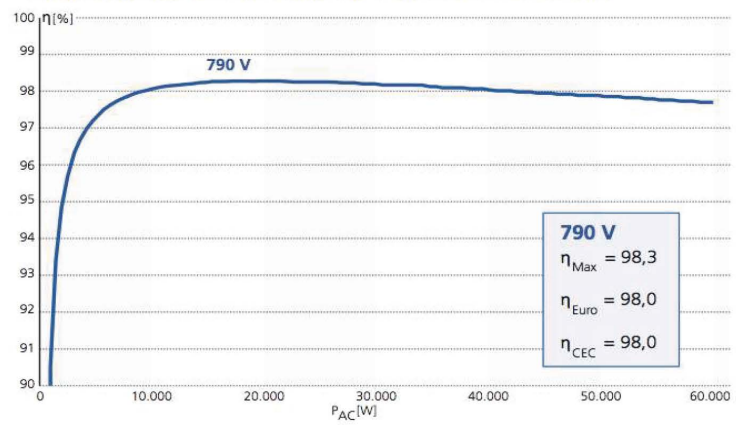
Multilingual menu

Cost-saving DC input configuration  
available

Integrated data logger and  
web server

USB connection for updates

Efficiency characteristic curve for Powador 72.0 TL3 Park



Your retailer