

Data sheet

Powador

30.0 TL3 | 33.0 TL3

36.0 TL3 | 39.0 TL3

40.0 TL3 | 60.0 TL3

Efficient. Flexible. Proven.

The transformerless, three-phase inverters Powador 30.0 TL3 to 60.0 TL3.

The transformerless, 3-phase Powador 30.0 TL3 to 60.0 TL3 inverters are designed specifically for decentralised installation of photovoltaic systems for commercial and industrial applications, such as hangars and factory roofs.

These units give you extreme 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. Each tracker is able to process 20 kW. This enables them to meet all the typical demands of more complex designs involved with inhomogenous installation of the photovoltaic generator. Three MPP trackers can also compensate for mismatches between modules, such as those resulting from temperature differences and uneven solar radiation. Depending on the design of the units, one string (M version) or four strings (XL ver-

sion) can be connected per MPP tracker. 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 200V to ensure the solar yield from comparatively small areas. Maximum efficiency amounts to approx. 98 %, and up to 97.8 % European efficiency is furthermore quite remarkable. 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 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 log-

ger can also be connected directly to an 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 integrated string collector with string fuses and overvoltage protection for the XL version of the units opens up significant cost advantages. Extraordinary flexibility is provided by the following variants:

- 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

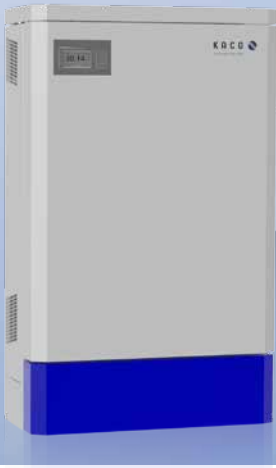
Powador 30.0 TL3 | 33.0 TL3 | 36.0 TL3 | 39.0 TL3 | 40.0 TL3 | 60.0 TL3

| Electrical data | 30.0 TL3 | 33.0 TL3 | 36.0 TL3 |
|--------------------------------|--|------------------------------------|------------------------------------|
| DC input | | | |
| MPP range@Pnom ¹⁾ | 260 V ... 800 V | 280 V ... 800 V | 310 V ... 800 V |
| Operating range | 200 V ... 950 V | 200 V ... 950 V | 200 V ... 950 V |
| Min. DC voltage/start voltage | 200 V / 250 V | 200 V / 250 V | 200 V / 250 V |
| No-load voltage | 1 000 V | 1 000 V | 1 000 V |
| Max. input current | 3 x 34.0 A | 3 x 34.0 A | 3 x 34.0 A |
| Number of MPP trackers | 3 | 3 | 3 |
| Max. power/tracker | 20 kW | 20 kW | 20 kW |
| Number of strings | 3 x 1 (version M) / 3 x 4 (version XL) | | |
| AC output | | | |
| Rated output (@230 V) | 25 000 VA | 27 500 VA | 30 000 VA |
| Line voltage | acc. to local requirements | acc. to local requirements | acc. to local requirements |
| Rated current | 3 x 36.2 A | 3 x 39.9 A | 3 x 43.5 A |
| Rated frequency | 50 Hz / 60 Hz | 50 Hz / 60 Hz | 50 Hz / 60 Hz |
| cos phi | 0.80 inductive ... 0.80 capacitive | 0.80 inductive ... 0.80 capacitive | 0.80 inductive ... 0.80 capacitive |
| Number of grid phases | 3 | 3 | 3 |
| General electrical data | | | |
| Efficiency max. / european | 98.0 % / 97.8 % | 98.0 % / 97.8 % | 98.0 % / 97.8 % |
| Night consumption | 1.5 W | 1.5 W | 1.5 W |
| Circuitry topology | transformerless | transformerless | transformerless |
| Mechanical data | | | |
| Display | graphical display + LEDs | graphical display + LEDs | graphical display + LEDs |
| Control units | 4-way navigation + 2 buttons | 4-way navigation + 2 buttons | 4-way navigation + 2 buttons |
| Interfaces | Ethernet, USB, RS485, S0 output, digital input "inverter off" | | |
| Fault signalling relay | Potential-free NO contact, max. 30 V DC / 1A or 230 V AC / 1 A | | |
| Connections | AC connection via screw terminals, bushing 1xM50, max cross section: 50 mm ² (flexible); DC connection of M version: spring-type terminals 6-35 mm ² ³⁾ ; DC connection of XL version: screw and spring-type terminals 10 mm ² | | |
| Ambient temperature | -20 °C ... +60 °C ²⁾ | -20 °C ... +60 °C ²⁾ | -20 °C ... +60 °C ²⁾ |
| Cooling | fan, max. 600 m ³ / h | fan, max. 600 m ³ / h | fan, max. 600 m ³ / h |
| Protection class | IP54 | IP54 | IP54 |
| Noise emission | 58 dB(A) (only fan noise) | 58 dB(A) (only fan noise) | 58 dB(A) (only fan noise) |
| DC switch | integrated | integrated | integrated |
| H x W x D | 1 360 x 840 x 355 mm | 1 360 x 840 x 355 mm | 1 360 x 840 x 355 mm |
| Weight | 151 kg | 151 kg | 151 kg |
| Product variants | | | |
| 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-SPD 1+2 | DC switch / fuse protection DC input plus and minus / overvoltage protection type 1+2 | | |
| Certifications | | | |
| Safety | IEC 62109-1/-2, EN 61000-6-1/-2/-3, EN 61000-3-12/-11 | | |
| Grid compliance | VDE 0126, VDE-AR-N 4105, BDEW, G59/3, IEC 61727, IEC 62116, EN 50438, ... for more see homepage/download area | | |

¹⁾ Symmetrical assignment of the MPP trackers. ²⁾ Power derating at high ambient temperatures.

| 39.0 TL3 | 40.0 TL3 | 60.0 TL3 |
|--|------------------------------------|------------------------------------|
| DC input | | |
| 340 V ... 800 V | 370 V ... 800 V | 480 V ... 850 V |
| 200 V ... 950 V | 200 V ... 950 V | 200 V ... 950 V |
| 200 V / 250 V | 200 V / 250 V | 200 V / 250 V |
| 1 000 V | 1 000 V | 1 000 V |
| 3 x 34.0 A | 3 x 34.0 A | 3 x 36.0 A |
| 3 | 3 | 3 |
| 20 kW | 20 kW | 20 kW |
| 3 x 1 (version M) / 3 x 4 (version XL) | | |
| AC output | | |
| 33 300 VA | 36 000 VA | 49 900 VA |
| acc. to local requirements | acc. to local requirements | acc. to local requirements |
| 3 x 48.3 A | 3 x 52.2 A | 3 x 72.2 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 % / 97.8 % | 97.5 % / 97.2 % | 97.8 % / 97.6 % |
| 1.5 W | 1.5 W | 1.5 W |
| transformerless | transformerless | transformerless |
| 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, digital input "inverter off" | | |
| Potential-free NO contact, max. 30 V DC / 1A or 230 V AC / 1 A | | |
| AC connection via screw terminals, bushing 1xM50, max cross section: 50 mm ² (flexible); DC connection of M version: spring-type terminals 6-35 mm ² ³⁾ ; DC connection of XL version: screw and spring-type terminals 10 mm ² | | |
| -20 °C ... +60 °C ²⁾ | -20 °C ... +60 °C ²⁾ | -20 °C ... +60 °C ³⁾ |
| fan, max. 600 m ³ / h | fan, max. 600 m ³ / h | fan, max. 600 m ³ / h |
| IP54 | IP54 | IP54 |
| 58 dB(A) (only fan noise) | 58 dB(A) (only fan noise) | 58 dB(A) (only fan noise) |
| integrated | integrated | integrated |
| 1 360 x 840 x 355 mm | 1 360 x 840 x 355 mm | 1 360 x 840 x 355 mm |
| 151 kg | 151 kg | 173 kg |
| Product variants | | |
| DC switch | | |
| DC switch / fuse protection DC input plus / overvoltage protection type 2 | | |
| DC switch / fuse protection DC input plus / overvoltage protection type 1 + 2 | | |
| DC switch / fuse protection DC input plus and minus / overvoltage protection type 2 | | |
| DC switch / fuse protection DC input plus and minus / overvoltage protection type 1+2 | | |
| Certifications | | |
| IEC 62109-1/-2, EN 61000-6-1/-2/-3, EN 61000-3-12/-11 | | |
| VDE 0126, VDE-AR-N 4105, BDEW, G59/3, IEC 61727, IEC 62116, EN 50438, ... for more see homepage/download area | | |

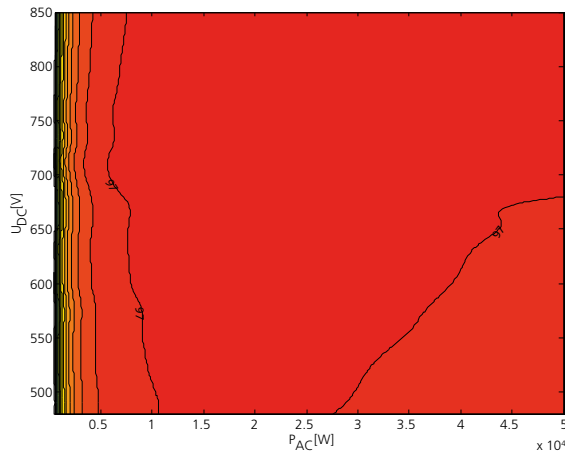
³⁾ Possible power derating at temperatures above 40 °C. Conforms to the country-specific standards and regulations according to the country version that has been set.



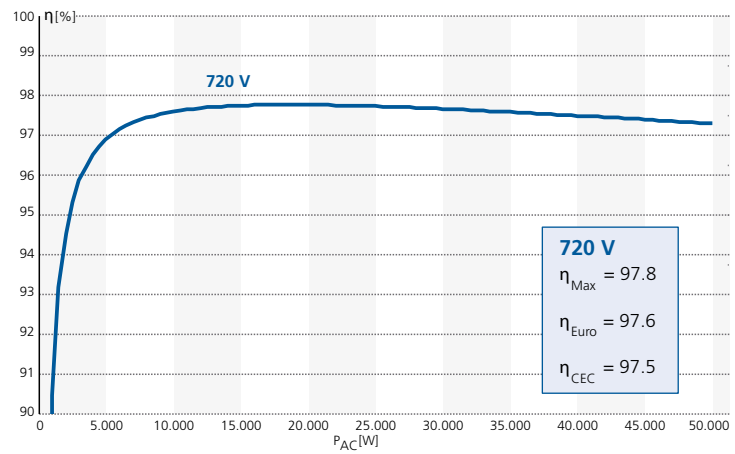
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Graphical Display of efficiency

3D efficiency diagram for Powador 60.0 TL3



Efficiency characteristic curve for Powador 60.0 TL3



Up to 98.0 % efficiency

3 MPP trackers, symmetrical
and asymmetrical loading possible

Multilingual menu

Cost-saving DC input configurations
available

Integrated data logger with
web server

Your retailer