

Data sheet blueplanet 15.0 TL3 20.0 TL3



## Versatile on the roof, powerful in the park.

The transformerless, three-phase inverters blueplanet 15.0 TL3 and 20.0 TL3.

The blueplanet 15.0 TL3 and 20.0 TL3 offer you plenty of scope for your photovoltaic projects in the medium power range – from small, commercial solar roofs to large-scale, open space solar parks.

Both inverters operate using two separate MPP trackers that can handle both symmetrical and asymmetrical loads. You will be able to deal with east/west facing roofs (symmetrical load), factory roofs which are shaded or inconsistently designed and open spaces (asymmetrical load). Two strings can be connected per MPP tracker.

The wide input voltage range underscores the high performance of the units: The inverters start at 250 V, and, when in operation, continue to feed in at 200 V. They work right up to 950 V. First, these features give you a high degree of flexibility in system planning, and later, their long working hours will result in extremely high profitability. The inverters comply with the BDEW medium voltage directive and a broad range of international grid regulations. Moreover, the combination of inverter and Powador-protect allows you to meet the requirements of grid and system protection as well as power management simply and inexpensively.

An extension module with 4 digital inputs allows performance targets sent by the grid operator via ripple control receiver to be put into action by the inverters themselves; this does away with an intermediate data logger. Please find more information about the extension module on our website.

The inverters are equipped with preinstalled sockets for each MPP-Tracker into which the DC surge protection device of type SPD 1+2 can be fitted. They also include two Ethernet ports that allow for bus cabling ("daisy chain"). In the OD+ model variant, KACO new energy inverters are built to be resilient against salt air corrosion. Whereas you have normally to keep a minimum distance to the sea of 2000 metres, you can install OD+ inverters as near as 500 meters from the shoreline.

The testing of the devices is based on the norm IEC 60068-2-52:1996, Environmental testing -Part 2: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution).

The following inverters are tested without any abnormalities and are available in an OD+ version: blueplanet 15.0 TL3 and 20.0 TL3, blueplanet 50.0 TL3, blueplanet 125 TL3.

## Graphical display of efficiency



## Technical data blueplanet 15.0 TL3 | 20.0 TL3

Input variablesMaximu PV generator power1800 W2400 WMPP range@Pnom200 V - 950 V515 V 800 VOperating range200 V - 950 V200 V - 950 VNo. Ioda voltage200 V / 250 V200 V / 250 VNo. Ioda voltage1000 V1000 VMax. input current [Lic_ma]2x20 A2x20 AMax. short circuit current [Lic_ma]2x22 A2x21 ANumber of MPP trackers22Vonter of MPP trackers22x2 ANumber of MPP trackers22x2 ANumber of Strings22x2 ANumber of strings22x2 ANumber of strings22x2 ASteed output (@ 230 V)1500 VA@230 V2x00 V(320 V (3 / N / PE)Rated output (@ 230 V)1500 VA@230 V2x00 V (3 / N / PE)Rated requency501 / 2x0 V (3 / N / PE)3x21 ASteed output (@ 230 V)3x01 dictive 0.30 capacitive3x20 ASteed output (@ 230 V)1500 VA@230 V3x01 dictive 0.30 capacitiveSteed output (@ 230 V)3x01 dictive 0.30 capacitive3x20 ASteed output (@ 230 V)3x01 dictive 0.30 capacitive3x20 ASteed output (@ 230 V)1500 VA@230 V3x01 dictive 0.30 capacitiveSteed output (@ 230 V)3x01 dictive 0.30 capacitive3x20 ASteed output (@ 230 V)3x01 dictive 0.30 capacitive3x20 ASteed output (@ 230 V)1500 V3x01 dictive 0.30 capacitiveSteed output (@ 30 V)3x01 dictive 0.30 capa	Electrical data	15.0 TL3	20.0 TL3
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MPP range@Pnom     420 V 800 V     515 V 800 V       Operating range     2007 - 950 V     2007 - 950 V       Min. Dc voltage / starting voltage     2007 / 250 V     2007 / 250 V       Mon-boda voltage     1000 V     2000 V       Max. input current     2x20.0 A     2x22.4 A       Number of MPP trackers     2     2       Max. short circuit current [I <sub>V, ma</sub> ]     2x22.4 A     2x22.4 A       Number of MPP trackers     2     2       Max. powertracker     14.9 kW     15.0 kW       Number of strings     2x2     2x2       Output variables     2x2.2     2       Rated output (@ 230 V)     15000 VA@230 V     20000 VA@230 V       Line voltage     400 V / 230 V (3 / N / PE)     3x29 0 A       Rated current     3x21 8 A     3x29 0 A       Rated current     3x21 8 A     3x29 0 A       Rated current     3x21 8 A     3x29 0 A       Rated frequency     50 Hz / 60 Hz     50 Hz / 60 Hz       cos phi     0.30 inductive0.30 capacitive     30 douctive0.30 capacitive       Number of grid phases <t< td=""><td>Maximum PV generator power</td><td>18000 W</td><td>24000 W</td></t<>	Maximum PV generator power	18000 W	24000 W
Operating range200V - 950V200V / 950VMin. Dc voltage / starting voltage200V / 250V200V / 250VNo-load voltage1000 V1000 VMax. input current2x20.0 A2x20.0 AMax. short circuit current [le_cnal]2x22.4 A2x22.4 ANumber of MPP trackers22Max. power/tracker14.9 kW15.0 kWNumber of Strings2x2.22x2Output variables22x2Rated output (@ 230 V)1500 VA@230 V20000 VA@230 VLine voltage400 V / 230 V (3 / N / PE)400 V / 230 V (3 / N / PE)Rated current3x21 8 A3x29.0 ARated current3x21 8 A3x29.0 ARated frequency50 Hz / 60 Hz50 Hz / 60 Hzcos phi0.30 inductive 0.30 capacitive30 inductive 0.30 capacitiveNumber of grid phases33General electrical datatransformerlesstransformerlessKarcficency98,0 %98.4 %Europ. efficiency97.7 %98.1 %Night consumption1.5 W1.5 WSwitching plancarc. to local requirementsAcc. to local requirementsacc. to local requirementsSwitching plangraphical display + LEDSgraphical display + LEDSControl units4-way navigation + 2 buttons4-way navigation + 2 buttonsInterfacesgraphical display + LEDSprotential-free NOC max. 30 V / 1 ADisplayOperatial-free NOC max. 30 V / 1 ADC: solar connection, AC: cable connection, AG: a	MPP range@Pnom	420 V 800 V	515V 800V
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Number of MPP trackers22Max, power/tracker14.9 kW15.0 kWNumber of strings2 k22 k2Output variables2 k22 k2Rated output (@ 230 V)15000 VA@230 V400 V / 230 V (3 / N / PE)Ine voltage400 V / 230 V (3 / N / PE)400 V / 230 V (3 / N / PE)Rated durgent (@ 230 V)3 k21.8 A3 k29.0 ARated durgent50 Hz / 60 Hz50 Hz / 60 Hzcos phi30 inductive0.30 capacitive3 log inductive0.30 capacitiveNumber of grid phases33General electrical data98.0 %98.4 %Europ. efficiency97.7 %98.1 %Night consumption1.5 W1.5 WSwitching plantransformerlesstransformerlessGrid monitoringc.t.o local requirementsc.t.o local requirementsMechanical data4-way navigation + 2 buttons4-way navigation + 2 buttonsInterfacesgraphical display + LEDsgraphical display + LEDsControl units-vay navigation + 2 buttonsstandard: 2 k£thernet, USB, R5485, fault signalling relay optional: 4-D1Fult signalling relaypotential-free NOC max. 30 V/1 Apotential-free NOC max. 30 V/1 AConnectionsC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)Ambient temperature-25°C +60°C °-25°C +60°C °CoolingFroed ConvectionFroed ConvectionProtection classIP65IP65	Max. short circuit current [I <sub>SC max</sub> ]	2x22.4 A	2x22.4 A
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Number of strings     2x2     2x2       Output variables     5000 VA@230 V     20000 VA@230 V       Rated output (@ 230 V)     15000 VA@230 V     20000 VA@230 V       Line voltage     400 V / 230 V (3 / N / PE)     400 V / 230 V (3 / N / PE)       Rated output (@ 230 V)     3x21.8 A     3x29.0 A       Rated frequency     50 Hz / 60 Hz     50 Hz / 60 Hz       cos phi     0.30 inductive0.30 capacitive     0.30 inductive0.30 capacitive       Number of grid phases     3     3       General electrical data     98,0 %     98.4 %       Europ. efficiency     98,0 %     98.1 %       Night consumption     1.5 W     15 W       Switching plan     c. to local requirements     c. to local requirements       Grid monitoring     ca. to local requirements     c. to local requirements       Display     graphical display + LEDs     graphical display + LEDs       Control units     4-way navigation + 2 buttons     fault signalling relay optionai: 4-D1       Interfaces     Standard: 2 xEthermet, USR, RS485, fault signalling relay optionai: 4-D1     potential-free NOC max. 30 V / 1 A       Connections     Displa	Max. power/tracker	14.9 kW	15.0 kW
Output variables       Rated output (@ 230 V)     15000 VA@230 V     20000 VA@230 V       Line voltage     400 V / 230 V (3 / N / PE)     400 V / 230 V (3 / N / PE)       Rated forument     3x21.8 A     3x29.0 A       Rated frequency     50 Hz / 60 Hz     50 Hz / 60 Hz       cos phi     0.30 inductive 0.30 capacitive     0.30 inductive 0.30 capacitive       Number of grid phases     3     3       General electrical data     98.0 %     98.4 %       Europ. efficiency     98.0 %     98.1 %       Night consumption     1.5 W     1.5 W       Switching plan     cc. to local requirements     acc. to local requirements       Grid monitoring     acc. to local requirements     acc. to local requirements       Control units     4-way navigation + 2 buttons     4-way navigation + 2 buttons       Interfaces     standard: 2 xEthermet, USR, RS485, fault signalling relay optional: 4-DI     potional: 4-DI       Fault signalling relay     potential-free NOC max. 30 V / 1 A     potential-free NOC max. 30 V / 1 A       Control units     4-sign connectro, AC: cable connection M40 and terminal (max. cross-section: 16 mm <sup>2</sup> fiexible, 10 mm <sup>2</sup> fiexible, 10 mm <sup>2</sup> fiexible, 10 mm <sup>2</sup> fiexible, 10	Number of strings	2x2	2x2
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Number of grid phases33General electrical dataMax. efficiency98,0 %98.4 %Europ. efficiency97.7 %98.1 %Night consumption1.5 W1.5 WSwitching plantransformerlesstransformerlessGrid monitoringacc. to local requirementsacc. to local requirementsMechanical dataYuman and the standard standa	cos phi	0.30 inductive 0.30 capacitive	0.30 inductive 0.30 capacitive
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Night consumption1.5 W1.5 WSwitching plantransformerlesstransformerlessGrid monitoringacc. to local requirementsacc. to local requirementsMechanical datagraphical display + LEDsgraphical display + LEDsDisplaygraphical display + LEDsgraphical display + LEDsControl units4-way navigation + 2 buttons4-way navigation + 2 buttonsInterfacesstandard: 2xEthernet, USB, RS485, fault signalling relay optional: 4-DIstandard: 2xEthernet, USB, RS485, fault signalling relay optional: 4-DIFault signalling relaypotential-free NOC max. 30 V / 1 Apotential-free NOC max. 30 V / 1 AConnectionsDC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)Ambient temperature-25°C + 60°C <sup>1</sup> -25°C + 60°C <sup>1</sup> Coolingforced convectionforced convectionProtection classIP65IP65	Europ. efficiency	97.7 %	98.1 %
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Grid monitoringacc. to local requirementsacc. to local requirementsMechanical dataDisplaygraphical display + LEDsgraphical display + LEDsControl units4-way navigation + 2 buttons4-way navigation + 2 buttonsInterfacesstandard: 2xEthernet, USB, RS485, fault signalling relay optional: 4-DIstandard: 2xEthernet, USB, RS485, fault signalling relay optional: 4-DIFault signalling relay connectionspotential-free NOC max. 30 V / 1 Apotential-free NOC max. 30 V / 1 AConnectionsDC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)Ambient temperature-25°C +60°C ¹) forced convection-25°C +60°C ¹) forced convectionProtection classIP65IP65	Switching plan	transformerless	transformerless
Mechanical dataDisplaygraphical display + LEDsgraphical display + LEDsControl units4-way navigation + 2 buttons4-way navigation + 2 buttonsInterfacesstandard: 2xEthernet, USB, RS485, fault signalling relay optional: 4-DIstandard: 2xEthernet, USB, RS485, fault signalling relay optional: 4-DIFault signalling relaypotential-free NOC max. 30 V / 1 Apotential-free NOC max. 30 V / 1 AConnectionsDC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)Ambient temperature-25°C +60°C ¹) forced convection-25°C +60°C ¹) forced convectionProtection classIP65IP65	Grid monitoring	acc. to local requirements	acc. to local requirements
Displaygraphical display + LEDsgraphical display + LEDsControl units4-way navigation + 2 buttons4-way navigation + 2 buttonsInterfacesstandard: 2 x Ethernet, USB, RS485, fault signalling relay optional: 4-DIstandard: 2 x Ethernet, USB, RS485, fault signalling relay optional: 4-DIFault signalling relay optional: 4-DIpotential-free NOC max. 30 V / 1 Apotential-free NOC max. 30 V / 1 AConnectionsDC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)Ambient temperature-25°C + 60°C ¹)-25°C + 60°C ¹)Protection classIP65IP65	Mechanical data		
Control units4-way navigation + 2 buttons4-way navigation + 2 buttonsInterfacesstandard: 2xEthernet, USB, RS485, fault signalling relay optional: 4-DIstandard: 2xEthernet, USB, RS485, fault signalling relay optional: 4-DIFault signalling relay optional: 4-DIpotential-free NOC max. 30 V / 1 Apotential-free NOC max. 30 V / 1 AConnectionsDC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)Ambient temperature-25°C +60°C ¹)-25°C +60°C ¹)Protection classIP65IP65	Display	graphical display + LEDs	graphical display + LEDs
Interfacesstandard: 2 x Ethernet, USB, RS485, fault signalling relay optional: 4-DIstandard: 2 x Ethernet, USB, RS485, fault signalling relay optional: 4-DIFault signalling relaypotential-free NOC max. 30 V / 1 Apotential-free NOC max. 30 V / 1 AConnectionsDC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)Ambient temperature-25°C +60°C ¹)-25°C +60°C ¹)Coolingforced convectionforced convectionProtection classIP65IP65	Control units	4-way navigation + 2 buttons	4-way navigation + 2 buttons
Fault signalling relaypotential-free NOC max. 30 V / 1 Apotential-free NOC max. 30 V / 1 AConnectionsDC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)Ambient temperature-25°C +60°C ¹) forced convection-25°C +60°C ¹) forced convectionProtection classIP65IP65	Interfaces	standard: 2xEthernet, USB, RS485, fault signalling relay optional: 4-DI	standard: 2xEthernet, USB, RS485, fault signalling relay optional: 4-DI
ConnectionsDC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm² flexible, 10 mm² rigid)Ambient temperature-25°C +60°C ¹) forced convection-25°C +60°C ¹) forced convection-25°C +60°C ¹) forced convectionProtection classIP65IP65	Fault signalling relay	potential-free NOC max. 30 V / 1 A	potential-free NOC max. 30 V / 1 A
Ambient temperature -25°C +60°C <sup>1</sup> ) -25°C +60°C <sup>1</sup> )   Cooling forced convection forced convection   Protection class IP65 IP65	Connections	DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm <sup>2</sup> flexible, 10 mm <sup>2</sup> rigid)	DC: solar connector, AC: cable connection M40 and terminal (max. cross-section: 16 mm <sup>2</sup> flexible, 10 mm <sup>2</sup> rigid)
Cooling forced convection forced convection   Protection class IP65 IP65	Ambient temperature	-25°C +60°C <sup>1)</sup>	-25°C +60°C <sup>1)</sup>
Protection class IP65 IP65	Cooling	forced convection	forced convection
	Protection class	IP65	IP65
Noise emission < 52 dB (A)	Noise emission	< 52 dB (A)	< 53 dB (A)
DC switch integrated integrated	DC switch	integrated	integrated
Casing aluminium casting aluminium casting	Casing	aluminium casting	aluminium casting
HxWxD 690x420x200 mm 690x420x200 mm	HxWxD	690x420x200 mm	690x420x200 mm
Weight     46.6 kg     46.6 kg	Weight	46.6 kg	46.6 kg

<sup>1)</sup> Power derating at high ambient temperatures.



## blueplanet 15.0 TL3 20.0 TL3

Up to 98.4 % efficiency

2 MPP trackers, symmetrical and asymmetrical loading possible

Wide input voltage range 200 V – 950 V

Protection class IP65 for outdoor use

Graphical display, multilingual menu, pre-configured country settings

Data logger with web server

Prepared for DC surge protection SPD 1+2

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