



Transformerless Inverter Technology

KACO blueplanet 50.0 TL3 M1 grid-tied inverter (1 MPPT)

KACO new energy is a leader in power electronics specializing in PV inverters, performance monitoring systems, and power supply systems for industrial rail applications. Continued growth will see KACO new energy enter the emerging markets of energy storage systems and rural electrification.

Energy Yield

- 97.5% CEC efficiency
- 200 - 1000 VDC operating range
- Broad thermal operating range -13 to 158 °F / -25 to 60 °C

Safety

- Compliant with NEC 690 section III for PV system AC and DC disconnection
- Visible and lockable PV system disconnection means

Operations

- Integrated AC and DC balance of system components
- High power density with a compact form factor for easy PV system integration
- Up to 75% lighter than comparably sized inverters
- Integrated web server and graphical user interface with data logging performance history

Reliability

- AC and DC surge protection
- NEMA 3R construction with sealed electronics



Monitoring

easyLINK data interface:

Ethernet, Modbus (TCP IP), USB, RS485, S0, N/O contact

Graphical User Interface (GUI):

User friendly display and 6 button keypad streamlines inverter commissioning and provides access to inverter data with clear graphical images

Free real-time monitoring:

Built-in webserver in each individual bp 50.0 TL3 provides easy access to performance statistics and PV system data

Warranty

Warranties are only as valuable as the strength and longevity of the manufacturer. KACO is one of the few established inverter companies older than the warranties they offer. Standard warranty: 5 years / **Extended warranty options:** 10, 15 and 20 years

Model number	blueplanet 50.0 TL3 M1
DC Electrical Specifications	
DC maximum input voltage (VDC)	1000
DC maximum peak power operating range (MPP) (VDC)	480-850
DC operating range (VDC)	200-850
DC minimum start voltage (VDC)	250
DC maximum operating current per (ADC)	108
DC maximum short circuit current per channel (ADC)	165
Maximum input source backfeed current (ADC)	0
DC input overload protection	Yes / Voltage / Current
AC Electrical Specifications	
AC maximum continuous output power (W)	50,000
CEC weighted efficiency (%)	97.5
AC nominal voltage / operating range L to Neutral (VAC)	480 / 243 to 304
AC continuous output current (A) 480 / 600	60
Frequency nominal / range (Hz)	60 / 60.5 to 59.3
Power factor	> .99
Total harmonic distortion (%)	< 5
Standby losses (W)	< 1.5
Utility connection	H4 - Wye 4 wire (A,B,C,N)
PV System Disconnect	
Integrated AC and DC disconnect	Yes
AC disconnection means	Rotary switch visible and accessible from outside of enclosure
AC disconnection ratings	100 A VAC Break L1-L2-L3
AC over current protection devices (OCPD)	Current limiting inverter, OCPD provided by system integrator
AC LOTO provision	LOTO in OPEN
AC input terminals / conductor size	L1-L2-L3 N PE / 14 Awg - 1/0 Cu
DC disconnection means	Rotary switch accessible from outside of enclosure
DC disconnection ratings	200 A, 2 Pole, Load break, Pos and Neg
DC LOTO provision	LOTO in OPEN
DC input terminals / conductor size per channel	1 Pos and 1 Neg / 4 AWG - 300 kcmil (MCM)
Mechanical & Environmental Specifications	
Mechanical integration	Ground mount, Roof mount
Unit weight (lbs / kg)	381 / 173
Unit dimensions H x W x D (in / mm)	33 x 14 x 53.5 / 840 x 355 x 1360
Operating temperature range (°F / °C)	(-13 to 140 / -25 to 60)*
Storage temperature range (°F / °C)	(-22 to 158 / -30 to 70)
Noise emissions	< 58 db
Humidity (%)	0 to 95 non condensing
Enclosure rating (Inverter / PV system disconnect)	NEMA 3R
Cooling	Forced convection with variable speed fan
Altitude (ft / m)	8000 / 2400
Communications & User interface	
User interface	Graphical user interface with 3 LED status indicators
Connectivity	Ethernet, Modbus (TCP IP), USB, RS485, S0 output
Safety Features & Regulatory Compliance	
UL / IEEE / CSA / FCC	UL 1741 2nd Ed 2010 / CSA C22.2No 107.1 IEEE 1547 / FCC Class B
Fault signal relay	Potential free normally open contact
Polarity safeguard	Short circuit diode
GFDI compliant with NEC 690.35 for use with ungrounded PV system arrays	UL 1741 listed for residual ground fault current isolation monitor and interrupter function

*reduced power is possible from 45-60 °C