

KACO



Transformerless
Inverter Technology
Meets
Module Level
Power Optimization

KACO blueplanet 50.0 TL3 SM grid-tied inverter with Ampt Mode (TM)

KACO new energy is a leader in power electronics specializing in PV inverters, performance monitoring systems, and power supply systems for industrial rail applications. KACO's global technology platform allows the blueplanet series to work at full rated power at both 600 VDC and 1000 VDC by integrating with module level electronics. This technology partnership increases the allowable amount of modules per string, reduces BOS material costs and increases energy yield from every module.

Energy Yield

- 97.5% CEC efficiency
- Optimized module level production
- 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

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
- Improved system stability with longer strings and fewer home runs

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 SM | |
|---|---|---------|
| DC electrical specifications | | |
| Ampt Mode™ | | |
| DC maximum input voltage (VDC) | 600 | 1000 |
| DC maximum peak power operating range (MPP) (VDC) | 500-550 | 775-850 |
| DC operating range (VDC) | 200-600 | 200-850 |
| DC minimum start voltage (VDC) | 250 | |
| DC maximum operating current (ADC) | 108 | |
| DC maximum short circuit current (ADC) | 165 | |
| DC input overload protection | Yes / Voltage / Current | |
| AC electrical specifications | | |
| AC maximum continuous output power (W) | 50,000 | |
| CEC weighted efficiency (%) ¹ | 97.5 | 98 |
| AC nominal voltage / operating range L to Neutral (VAC) | 480 / 243 to 304 | |
| AC continuous output current (A) | 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 | Wye 4 wire (A,B,C,N) | |
| PV system disconnect - PSD | | |
| 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 circuit breaker | |
| AC LOTO provision | LOTO in OPEN | |
| AC input terminals / conductor size | L1-L2-L3 N PE / 14 AWG - 1/0 AWG Cu | |
| DC disconnection means | Rotary switch accessible from outside of enclosure | |
| DC disconnection ratings | 200 A breaking positive and negative | |
| DC LOTO provision | LOTO in OPEN | |
| DC input terminals / conductor size per channel | 1 Pos and 1 Neg / 4 AWG - 300 kcmil Cu | |
| Mechanical & Environmental specifications | | |
| Mechanical integration | Ground mount | |
| Unit weight (lbs / kg) | 381 / 173 | |
| Unit dimensions H x W x D (in / mm) | 53.5 x 33 x 14 / 1360 x 840 x 355 | |
| 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 C22.2 No 107.1 IEEE 1547 / FCC Class B / UL 1998 | |
| 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 | |

¹pending ²reduced power is possible from 45-60 °C

