



GC-1000 1kW Grid-Connected Photovoltaic Inverter

The GC-1000 is a 1kW DC-to-AC grid-tied inverter designed for residential and commercial grid-tied, battery-less photovoltaic systems. Certified for both indoor and outdoor use, the complete inverter package meets all code requirements and provides maximum efficiency, reliability, and ease of installation. The package, which includes a string combiner, DC and AC disconnects, and GFI protection, can be purchased in standard and low-voltage configuration. An optional interactive data monitor is also available.



Standard Features

- ~ 1000 Watt, single-phase AC output at 25°C
- ~ 93% peak efficiency with DC input range of 47.5 to 92 Volts*
- ~ Maximum Power Point Tracking over 47.5 to 68 VDC input range
- ~ No-load power consumption of only 2.4 Watts
- ~ Nighttime losses eliminated by using control power from PV array
- ~ Meets UL 1741 and IEEE 929 requirements including anti-islanding and over/under frequency and voltage shift detection
- ~ UL and C-UL Listed, NEC Article 690- and IEEE C62.41- (static inverter surge test) compliant
- ~ Automatically limits array current at high temperatures
- ~ Innovative thermal design requires no fans and maximizes efficiency
- ~ Fused 10 Amp, six input combiner accepts up to #8 AWG wire from each string
- ~ Six string combiner inputs allow for a wide range of PV module configurations
- ~ Tandem DC/GFI Disconnect disables the array with system ground fault (meets requirements of NEC Article 690-5 for residential rooftop installations)
- ~ Optional AC Disconnect provides means for local inverter output disconnect
- ~ Weatherproof disconnect boot allows easy access for fault isolation and servicing
- ~ AC silicon oxide lightning surge arrestor included
- ~ Removable casing allows for easy installation
- ~ Rugged, industrial-rated components with low inverter-parts count
- ~ Standard outdoor-rated enclosure
- ~ Certified by the California Energy Commission for Buydown Program
- ~ Certified by New York State Public Service Commission for utility interconnection
- ~ Standard five-year warranty

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Advanced Energy is the recognized leader in the innovative design and manufacture of utility-interactive inverters.

Specifications

DC Input	
Input Range* 48 V/60 V MPP nominal; 100 V max.; 1200W DC max.	
Operating Input Range 47.5 to 92 VDC standard; 35.5 to 92 VDC low-voltage	
MPPT Range..... 47.5 to 68 VDC standard; 35.5 to 52 VDC low-voltage	
Utility Feedback Current..... 15 A max.	
Array Short-Circuit Current.... 25 A max. total	
AC Output	
Output Voltage 120 V nominal; 106 to 130 VAC operating	
Output Frequency..... 60 Hz nominal; 59.3 to 60.5 Hz operating	
Output Current..... 8.0 A max.; <5% THD	
Performance	Mechanical
Temp. Range -40 to +60°C	Weight 43 lbs. net, 45 lbs. ship
Efficiency 93% max.	Dimensions ..19"x8"x6.5" inverter alone
Tare Losses..... 2.4 Watts28.5"x8"x6.5" with string combiner
	EnclosureOutdoor rated

*Low input voltage (36 V nominal) version available

AM-100

Inverter Monitor

Description

The AM100 Inverter Monitor provides performance information, user control, and diagnostics for up to six GC-1000 grid-connected photovoltaic inverters. The monitor can be externally mounted in a remote location. Multiple inverters are monitored by sequential polling by serial number. The information gathered by the monitor is displayed in real time on the built-in 4-line by 20-character LCD display, or can be downloaded to Advanced Energy's PVMON multi-purpose data collection and display program running under DOS 6.0, Windows 3.1 or 95/98. The monitor interfaces to a PC via a standard RS-232 serial port.



Standard Features

Inverter Monitor

- ~Monitors up to six (6) GC-1000 inverters
- ~Opto-isolated four-wire connection to inverter using standard RJ11 connectors
- ~RS-232 serial interface to external PC
- ~Real-time display of inverter operating parameters
- ~500 event and 1,500 data log storage
- ~Historical data storage for each inverter in the array
- ~Non-volatile storage for 14 days with 15 minute data averaging
- ~Event logs show daily startup, shutdown, and fault conditions for each inverter
- ~Four-button keypad; user-friendly menu system
- ~Free-standing or wall-mounted to a standard three-inch electrical wall box
- ~Wall-mounting plate allows hidden cable installation
- ~Full support for PC and modem connections
- ~Rugged aluminum package

PVMon Software

- ~Instantaneous data display for up to six (6) inverters
- ~Graphical display of current and past data logs
- ~Event log browsing
- ~PC storage of event and data logs in spreadsheet-compatible .CSV format

Measured Parameters

Inverter Performance

- V_{pv}PV voltage into the inverter
- I_{pv}PV current into the inverter
- P_{pv}.....PV power into the inverter
- V_{ac}.....Grid voltage/inverter output
- I_{ac}Output current: instantaneous
- P_{out}Output power: instantaneous
- FrequencyLine frequency measured by inverter
- TemperatureInternal inverter temperature
- KWh.....Output power measured by inverter since morning startup: cumulative
- Run timeRuntime of inverter since morning startup: cumulative

Data logs and events are time-stamped using the monitor's internal, battery-backed, real-time clock.

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