



GRID EXPORT CONDITIONER

Model: GEC-10K(3 phase)

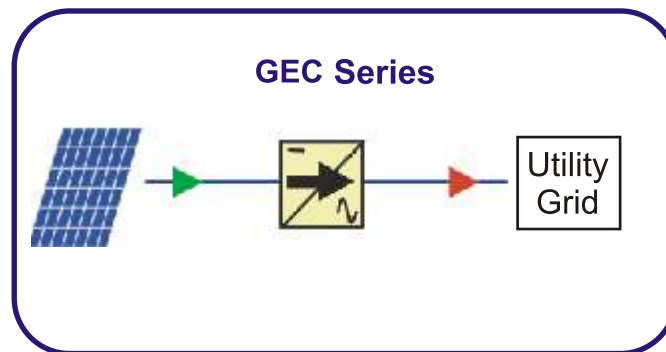
THEORY OF OPERATION

The three phase *DSP* based, Grid Export Conditioner (GEC) is designed to operate as a power conditioning unit capable of exporting all available solar power to an utility grid supply. A fast and efficient MPPT extracts the maximum available power from the solar array and exports it to the grid.

BASIC SYSTEM OPERATION

'FULL AUTO' MODE

- The system automatically “wakes up” in the morning and exports power provided there is sufficient solar energy and the grid voltage and frequency are in range.
- If the grid voltage and / or frequency goes out of a preset range the inverter is immediately disconnected from the grid. The inverter will reconnect after a pre determined time when the grid is back in range.
- When the exported power is below a low, preset value or the solar insolation is below a set value for a pre determined amount of time, the inverter is disconnected from the grid and is operated in a “sleep mode”. In this mode the inverter power stage components are switched off thereby keeping the stand by losses to a bare minimum.



SYSTEM BLOCK DIAGRAM

- 3 Phase DSP based design.
- Exporting all available power to Utility Grid
- Fast and efficient MPPT extracts maximum available power from Solar Array and export.
- Full auto mode :- “Wakes Up” in the morning and exports power on availability of sufficient Solar Energy, Grid Voltage and frequency are in permissible Range.
- Automatically disconnects from Grid and reconnects when the Grid is back in range.
- Automatic “Sleep Mode” at night reduces standby loss.
- Local LCD and keypad for system control for monitoring instantaneous system data. Remote Control and monitoring option using either a standard or GSM modem available.
- Communication based on LAN / WAN protocol is an optional feature.

SYSTEM FEATURES AND OPTIONS

- Unique MPPT algorithm adjusts the DC Link operating voltage to ensure that maximum power is extracted from the solar array in an efficient manner.
- Automatic “sleep” mode at night reduces standby losses.
- Local LCD (liquid crystal display) and keypad for system control and monitoring instantaneous system data.
- Time and date stamped system data logs and fault logs available for importation into a spreadsheet for analysis via a local RS232 connection.
- Remote control and monitoring option using either a standard or GSM modem available. Communication based on LAN / WAN protocol is also available. (Optional feature).