



**OPTIMAL**  
POWER SOLUTIONS

# Optimal Power Solutions

*Product Brochure 2010*

*DSP Technology Inverters for Renewable Applications*



# Optimal Power Solutions Product Range

Optimal Power Solutions Group (OPS) is a leading supplier of renewable energy power conditioning technology, offering a comprehensive line of power conversion and system integration products.

Our DSP-based products specialize in the integration and optimization of renewable energy sources such as photovoltaic arrays, wind turbines, micro turbines, mini-hydro, fuel cells, generators, advanced storage technologies as well as battery banks into efficient, clean and cost-effective power stations. Power systems using OPS power conditioners can supply and enhance power grids, or power off-grid loads. Optimal Power Solutions offers power conversion products ranging from 5 to 500 kilowatts. Our inverters employ innovative and field-proven proprietary technologies to ensure the optimal performance of energy systems.

A digital signal processor (DSP) is a specialized microprocessor unit providing fast instruction sequences such as are commonly needed in real-time mathematically intensive applications. DSP-based platforms are highly suited to power conversion and energy flow applications such as hybrid systems and inverters.

OPS utilizes DSP technology in conjunction with inbuilt space vector control for the HPC, GSC & GEC products. This ensures that all system parameters are accurately monitored to a very high resolution. Sine wave power generation is of high quality and enables both efficient system control and management responses. Our products can be configured to provide comprehensive power control and interface solutions for most distributed generation technologies and can operate in grid-interactive, stand-alone, hybrid power, and power quality/UPS configurations.

## Hybrid Power Conditioners HPC SERIES

The OPS Hybrid Power Conditioner offers an integrated power conversion and management solution for off-grid applications where continuous power supply is required.

It can operate as a standalone renewable energy system or integrate power sources such as wind turbines, photovoltaic arrays, battery banks and diesel gensets.

Available power sources are managed to achieve maximum efficiency and cost effectiveness through a number of control features including MPPT control, genset phase balancing and sophisticated battery management.

Alternative capacities, 60Hz operation and dual genset control are available upon request.

\*PV charger and genset switching housed externally.

MODEL & INVERTER RATING (kW)	PRODUCT TYPE PHASE, AC VOLTS, FREQ, DC VOLTS, PV CHARGER kW	GENSET MAX CAPACITY (kVA)	TYPICAL PEAK LOAD CAPACITY (kVA)
<b>SINGLE PHASE</b>			
<b>HPC-7.5</b>	1Ø-230-50-120-7.5	12	15
<b>HPC-10</b>	1Ø-230-50-120-10	15	20
<b>HPC-12.5</b>	1Ø-230-50-120-12.5	18	25
<b>HPC-15</b>	1Ø-230-50-120-15	23	35
<b>HPC-17.5</b>	1Ø-230-50-120-17.5	27	40
<b>THREE PHASE</b>			
<b>HPC-10</b>	3Ø-415-50-120-10	15	20
<b>HPC-15</b>	3Ø-415-50-120-15	23	30
<b>HPC-20</b>	3Ø-415-50-120-20	30	35
<b>HPC-25</b>	3Ø-415-50-240-30	37	50
<b>HPC-50</b>	3Ø-415-50-240-50	75	100
<b>HPC-75</b>	3Ø-415-50-240-50	112	150
<b>HPC-100</b>	3Ø-415-50-240-50	150	200
<b>HPC-150 *</b>	3Ø-415-50-360-120	225	300
<b>HPC-200 *</b>	3Ø-415-50-360-120	300	400
<b>HPC-250 *</b>	3Ø-415-50-360-120	375	500

# Optimal Power Solutions Product Range

## Grid Support Conditioners GSC SERIES

The GSC series is designed as a distributed generation system for grid connect applications with unreliable utility supply.

Integrating renewable sources and batteries, it can be thought of as an industrial grade uninterruptible power supply (UPS) featuring voltage conditioning on the load supply.

The GSC synchronizes with external AC sources to enhance system robustness, and can include an additional diesel generator if supply cannot be maintained by utility or renewable components. Higher capacity units including backup genset control and 60Hz operation are available on request.

\*PV charger and grid/genset switching housed externally.

MODEL & INVERTER RATING (kW)	PRODUCT TYPE PHASE, AC VOLTS, FREQ, DC VOLTS, PV CHARGER kW	GRID / GENSET MIN CAPACITY (kVA)	MAX LOCAL LOAD CAPACITY (kVA / PHASE)
<b>SINGLE PHASE</b>			
<b>GSC-7.5</b>	1Ø-230-50-120-7.5	7.5	5
<b>GSC-10</b>	1Ø-230-50-120-10	10	8
<b>GSC-12.5</b>	1Ø-230-50-120-12.5	12.5	10
<b>GSC-15</b>	1Ø-230-50-120-15	15	12
<b>GSC-17.5</b>	1Ø-230-50-120-17.5	17.5	15
<b>THREE PHASE</b>			
<b>GSC-10</b>	3Ø-415-50-120-10	10	2.8
<b>GSC-15</b>	3Ø-415-50-120-15	15	4
<b>GSC-20</b>	3Ø-415-50-120-20	20	5.5
<b>GSC-25</b>	3Ø-415-50-240-30	25	7
<b>GSC-50</b>	3Ø-415-50-240-50	50	14
<b>GSC-75</b>	3Ø-415-50-240-50	75	20
<b>GSC-100</b>	3Ø-415-50-240-50	100	27
<b>GSC-150 *</b>	3Ø-415-50-360-120	150	40
<b>GSC-200 *</b>	3Ø-415-50-360-120	200	54
<b>GSC-250 *</b>	3Ø-415-50-360-120	250	67

## Grid Export Conditioners GEC SERIES

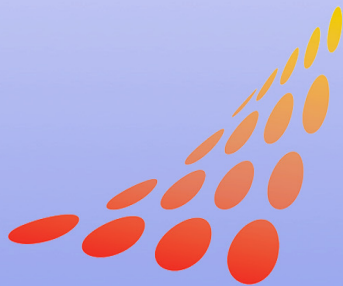
The GEC series is a unique grid connect power conditioner by world standards. A fast and efficient MPPT extracts the maximum available power from the solar array and exports it to the grid.

The GEC can operate as a routine exporter of power into grid networks in areas where grid supply suffers blackouts, voltage surges, sags and notches.

In some cases the utility operator will choose to "load shed" on an individual phase basis, in this case the GEC can act on a phase by phase basis and export power on one, two or three phases. This ensures maximum export of energy to the grid, enhancing the financial viability of the project.

Alternative capacities, 60Hz operation and dual genset control are available upon request.

MODEL & INVERTER RATING (kW)	PRODUCT TYPE PHASE, AC VOLTS, FREQ, NOMINAL DC MPPT VOLTS	GRID EXPORT CAPACITY (kW)	MAXIMUM PV INPUT (kWp)
<b>SINGLE PHASE</b>			
<b>GEC-5</b>	1Ø-230-50-135	5	5.8
<b>GEC-7.5</b>	1Ø-230-50-135	7.5	8.6
<b>GEC-10</b>	1Ø-230-50-135	10	11.5
<b>GEC-12.5</b>	1Ø-230-50-135	12.5	14.3
<b>GEC-17.5</b>	1Ø-230-50-135	17.5	20.1
<b>THREE PHASE</b>			
<b>GEC-10</b>	3Ø-415-50-135	10	11.5
<b>GEC-15</b>	3Ø-415-50-135	15	17.2
<b>GEC-20</b>	3Ø-415-50-135	20	23
<b>GEC-25</b>	3Ø-415-50-270	25	28.7
<b>GEC-50</b>	3Ø-415-50-270	50	57.5
<b>GEC-75</b>	3Ø-415-50-270	75	86.2
<b>GEC-100</b>	3Ø-415-50-450	100	115
<b>GEC-150</b>	3Ø-415-50-450	150	172.5
<b>GEC-200</b>	3Ø-415-50-450	200	230
<b>GEC-250</b>	3Ø-415-50-450	250	287.5
<b>GEC-500</b>	3Ø-415-50-450	500	575



**OPTIMAL**  
POWER SOLUTIONS

*Global Leaders in Renewable Energy Technology*

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