



Simple and Reliable Solar Power Generation

solaredge
architects of energy™



SolarEdge from Segen

SolarEdge are a leading manufacturer of solar PV inverters and power optimisers, with built-in monitoring. Segen is pleased to stock a variety of SolarEdge products that are ideal for both domestic and commercial installations.

Why Choose SolarEdge?

Both installers and system owners can enjoy the benefits of SolarEdge solutions, which allow maximum power production through module-level MPPT, optimal roof utilisation through constraint free design, enhanced maintenance and accurate trouble shooting via module-level monitoring. Another benefit is the guaranteed automatic DC shutdown for supreme safety of installers, maintenance personnel and fire fighters through the unique SafeDC™ mechanism.

The SolarEdge three-fold architecture consists of power optimisers which perform module-level MPPT, a highly reliable solar PV inverter, and an online portal for monitoring and yield assurance. The power optimiser is connected by installers to each PV module.

As well as great range of products, SolarEdge offer great reliability, comprehensive warranties and technical support as well as a series of training webinars and seminars. Full details at www.solaredge.com



SolarEdge Single-Phase Inverters

SolarEdge single phase inverters are an efficient and reliable choice for both commercial and domestic PV systems. Highlights include:



- Inverters specifically designed to work with power optimisers
- Superior efficiency (97.6%)
- Small, lightweight and easy to install
- Built-in module-level monitoring
- Communication to internet via Ethernet
- IP65 – Outdoor and indoor installation

Segen offer the SE2200, SE3000, SE3500, SE3680, SE4000, SE5000 and SE6000 single-phase inverters at great value prices.

The SE3680 is specially configured for the UK market with the AC current limited to 16A to comply with the G83 standard and is ideal for a 4kWp PV system.

SolarEdge Three-Phase Inverters

SolarEdge produce three-phase inverters from 5kW to 17kW which are a great option for commercial-scale solar PV systems. Highlights include:

- Inverters specifically designed to work with power optimisers
- Superior efficiency (>97%)
- Excellent reliability with standard 12 year warranty (extendable to 20 or 25 years)
- Small, lightweight and easy to install
- Built-in module-level monitoring receiver
- Communication to internet via broadband
- IP65 / NEMA 3R – outdoor and indoor installation
- 16kW and 17kW compatible with new 600W 'dual' power optimiser enabling more cost effective commercial systems.



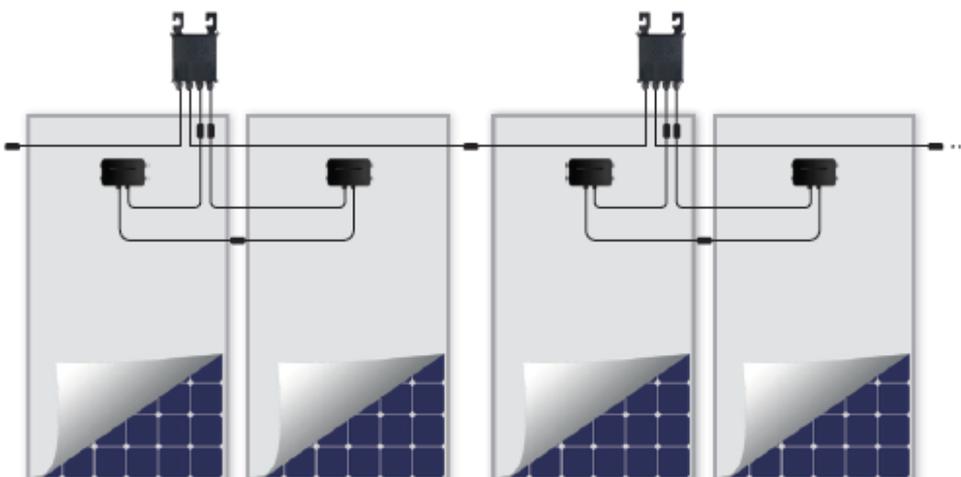
SolarEdge Power Optimisers

The SolarEdge power optimiser is a DC/DC converter which is connected by installers to each PV module. Features include:

- Per-module Maximum Power Point Tracking (MPPT)
- Superior efficiency (99.5% peak efficiency, 98.8% weighted efficiency)
- Designed for extreme environmental conditions
- 25 year reliability and warranty
- Advanced, real-time performance measurement
- Automatic module DC voltage shut-down for installer and firefighter safety
- New IndOP™ 300W 'universal' power optimiser suitable for use with non SolarEdge inverters, e.g. SMA, PowerOne etc.



OP600 - CONNECTING TWO MODULES PER POWER OPTIMIZER



60 cell modules

The new OP600 is a very cost effective option for commercial systems with a single power optimiser connecting to two 60 cell modules, significantly reducing the cost of the system.

The OP600 is compatible with the SE16K and SE17K inverters and are ideal for a 50kW system using 200 X 250W modules and 3 X SE16K at a cost of approximately 25% less than using individual optimisers.

Segen stocks the 250W, 300W and 400W MC4 power optimisers as well as the new OP600 'dual'.

SolarEdge PV System Monitoring

A primary advantage of the SolarEdge system is the web-based monitoring portal that requires no additional hardware. Highlights include:

- Tracks performance of one or more SolarEdge PV systems
- Real-time performance data for individual module and whole system
- Historical and aggregated data, comparative analysis diagnostics and a guided root-cause fault analysis
- Reports on site's energy production, revenues and technical status
- Immediate fault detection and troubleshooting and site profitability analysis
- Configurable rule engine detects problems, issues status reports and sends alerts via e-mail
- Interactive charts and site layout make it easy for installers to ensure a system is functioning properly after installation
- The Playback feature visualizes the harvested power of a site during a selected time fragment



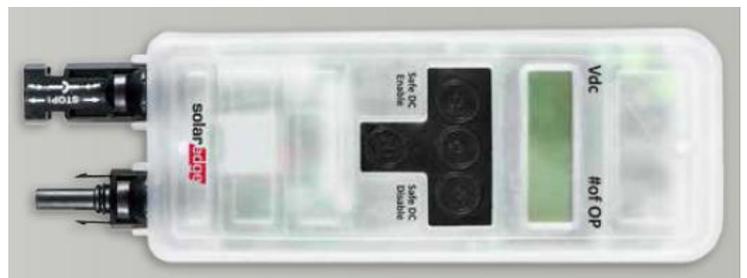
Optimising Non-SolarEdge Inverters

The new IndOP™ 300W enables you to add SolarEdge module level optimisation to any inverter system, e.g. SMA, PowerOne etc. For the first time this allows an existing Solar PV system to have optimisation retrofitted which can significantly enhance the performance of systems which are suffering from selective shading or differing inclinations or orientations. New systems may also be designed using non-SolarEdge inverters, e.g. using smaller inverters than supplied by SolarEdge for smaller sized systems.



The IndOP™ power optimisers can be installed with a Non-SolarEdge inverter without the need for additional interface hardware, however in order to support module-level monitoring and safety capabilities, the SolarEdge Safety & Monitoring Interface (SMI) is required. This device sits between the optimised string of modules and the non-SolarEdge inverter to enable the web based monitoring of individual modules and to support the SafeDC mode of the power optimisers.

If module level monitoring is not required then an installation without the SMI is possible, in which case the power optimisers need to have their SafeDC mode disabled using a special installation tool.



SolarEdge Q&A

To help Segen customers understand the benefits of SolarEdge products, SolarEdge have produced a handy Q&A to assist you.



Benefits

"Why should I use SolarEdge products?"

In order to:

- Increase energy yield by up to 25% through module-level MPPT
- Maximum design flexibility – allowing installation on any type of roof
 - Modules on different orientation and tilts in the same string
 - Strings of different lengths connected to same inverter
 - Longer strings - up to 50 modules per string
 - No compromise on system size
 - Access new markets
- Reduce operation and maintenance costs
 - Monitor system performance at the module-level
 - Pinpoint-troubleshooting
- Enable safe voltage during installation, maintenance and emergency

Energy Yield

"How does SolarEdge increase the energy yield of a system?"

- SolarEdge power optimisers provide MPP tracking at the module-level.
- Separate trackers per module, as opposed to a central tracker, mitigate any type of energy loss resulting from mismatch

"Do I need SolarEdge if I have no shading?"

- SolarEdge yields more energy than a traditional inverter in any given scenario, whether shaded or unshaded.
 - Added energy yield in installations without shading is still significant with SolarEdge due to soiling, temperature changes and aging that create significant levels of mismatch-related energy loss
- Photon Labs test shows added yield between 2% - 25% for unshaded and shaded scenarios
 - PHOTON Labs tested and compared the energy output of the SolarEdge system to a traditional inverter (published October 2011 issue of PHOTON magazine)

Warranty & Compensation

"What if power optimisers fail?"

- Power optimisers are covered by a 25 year warranty
- The string will continue to function, even when single optimisers are not

Competition

"In what way are power optimisers better than micro-inverters?"

- Power optimisers and micro-inverters overcome the same shortcomings of traditional inverters.
 - Power optimisers do so by moving only the minimal control functionality needed to the module
 - Micro-inverters duplicate the entire inverter on each module. That inevitably leads to:
 - higher price
 - higher complexity
 - lower efficiency
 - lower reliability
 - No "economies of scale" for micro-inverters due to entire duplication of full inverter functions to each module. (SolarEdge inverters and the inverter remains a scalable component of the system).
 - Micro-inverters have lower efficiencies and therefore dissipate 4%-7% of the module's energy as heat next to the module (power optimisers dissipate 1.2%)
 - Many micro-inverters cannot support inversion of low module DC voltage which makes them ineffective in many partial shading scenarios (SolarEdge operated with a low DC voltage, as low as 5VDC).

- Micro-inverters use electrolytic capacitors, a component with relatively limited lifetime (SolarEdge power optimisers have no electrolytic capacitors)

“SolarEdge is more expensive”

- The upfront cost of the SolarEdge system price includes:
 - Extended warranty of 12 years for the inverter as opposed to 5-10 years for many traditional inverters
 - Monitoring hardware is also included in the price while for many traditional inverters these often need to be purchased separately
 - SolarEdge reduces balance of system cost: strings are much longer (up to 50 modules per string) than with traditional inverters
 - fewer homerun cables
 - fewer fuses
 - fewer disconnects
 - fewer combiner boxes
 - Module-level monitoring allows for pinpointed troubleshooting which reduces operation and maintenance costs over the system’s lifetime
- Over the course of 20 years SolarEdge yields more energy therefore the revenue and profits are higher, regardless of any differences in upfront cost
- In most cases the question isn’t even one of price, but one of offering the right system to the client. The design flexibility and optimal roof utilization of the SolarEdge system allows installers to tailor best offers and increase business opportunities

Third-party Systems

“Does SolarEdge work with other inverters?”

- It is possible to retrofit installations with IndOP™ power optimisers to existing installations since SolarEdge power optimisers can work with any other inverter with the use of an additional “Safety and Monitoring” interface.
- The SolarEdge inverter is the most cost effective of all possible combinations. It is a specialized inverter which does solely DC to AC inversion and does not track MPP. Any other inverter still includes an MPP tracker, which is paid for despite its redundancy

Commercial Applications

“Which commercial solutions does SolarEdge offer?”

- SolarEdge has a line of three phase inverters suitable for commercial installations (5kW – 17kW).
- All inverters of 16kW and up also work with the OP600 power optimiser
 - The OP600 allows connecting two modules (60 cells) to one optimiser and thus save costs
 - The OP600 is useful for installations without any shading or soiling
- See guide to the OP600: http://portal.segen.co.uk/reseller/docs/se_op600_brochure.pdf

SolarEdge in the UK

Alliance program

- The SolarEdge alliance program allows installers to collect points on every new installation connected to the SolarEdge Monitoring Portal. Installers receive 15 points for every kW of SolarEdge system connected and can exchange them for presents. No registration is required.

Technical support

- SolarEdge has a technical support team in place in the UK for direct assistance.
- Call centre support available by phone: 0800 2061058 (free calls between 8:00 and 2:00 am)

Training

- SolarEdge provides training for installers on a regular basis. Find updates on the SolarEdge website: www.solaredge.com/groups/training#uk