solar**edge**

IMPROVED BOTTOM LINE & PV ASSET MANAGEMENT

SolarEdge Commercial Offering
for Installers & EPCs

Content

1.63MW SolarEdge system, The Netherlands
Installed by AliusEnergy

SolarEdge Fact Sheet

About Us

In 2006, SolarEdge invented an intelligent inverter solution that has changed the way power is harvested and managed in PV systems. SolarEdge provides module-level electronics for solar power harvesting and monitoring for residential, commercial, and utility-scale solar PV installations. The SolarEdge DC optimized inverter system maximizes power generation at the PV module level while lowering the cost of energy produced by the solar PV system.

Vision

> As a leading provider of intelligent inverter solutions for the PV industry, our vision is to enable every solar module to be individually managed by DC-DC module-level electronics

> Our goal is to accelerate the pace toward grid parity and make clean, renewable solar energy affordable and widespread

Bankability

> SolarEdge has been audited and approved by major banks and financial institutions for projects and funds worldwide

> Publicly traded on the NASDAQ under the SEDG symbol

Global Outreach

> Systems installed in 120 countries

> Sales via leading integrators and distributors

> Follow the sun call centers

> Local teams of sales, service, marketing, and training experts

> Global manufacturing with tier 1 electronic manufacturing service companies

INNOVATION GUARANTEED

Business Figures

> 22,700,000 power optimizers and 950,000 inverters shipped worldwide

> Monitoring platform continuously tracks over 560,000 PV installations

inter solar award 2012 WINNER

inter solar award 2016 WINNER

> Received nearly 30 awards, from prestigious organizations ranging from Red Herring to Frost & Sullivan

Power Optimizers Shipped (Cumulative)

Units Shipped (M)

2013 2014 2015 2016 2017
(Calendar Years)
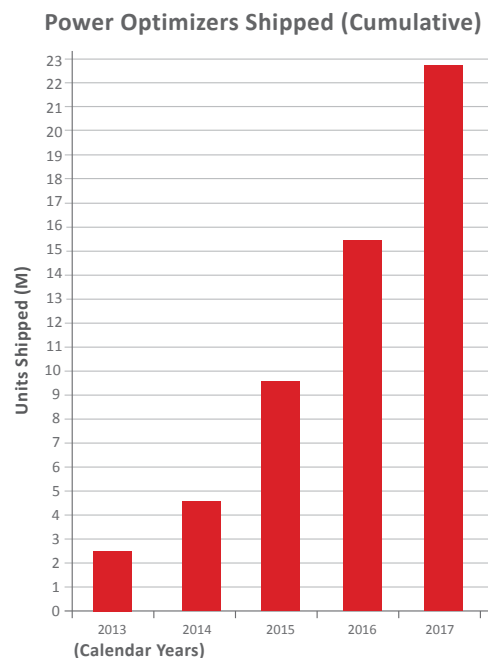
Corporate Social Responsibility

> As a global leader in renewable energy solutions, SolarEdge is deeply committed to promoting a greener world

> SolarEdge is in full compliance with international standards on quality and control, ethical conduct and environmental protection

COMPLIANT EU RoHS COMPLIANT

COMPLIANT REACH COMPLIANT

CERTIFIED ISO 14001 CERTIFIED

117 awarded patents and 150 additional patent applications

Product Reliability

> Long product warranties: 25-year power optimizer warranty and 12-year inverter warranty, extendable to 20 or 25 years

> SolarEdge products and components undergo rigorous testing, and have been evaluated in accelerated life chambers

> Reliability strategy includes proprietary application specific ICs (ASIC)

Moving Forward to DC Optimized Inverters
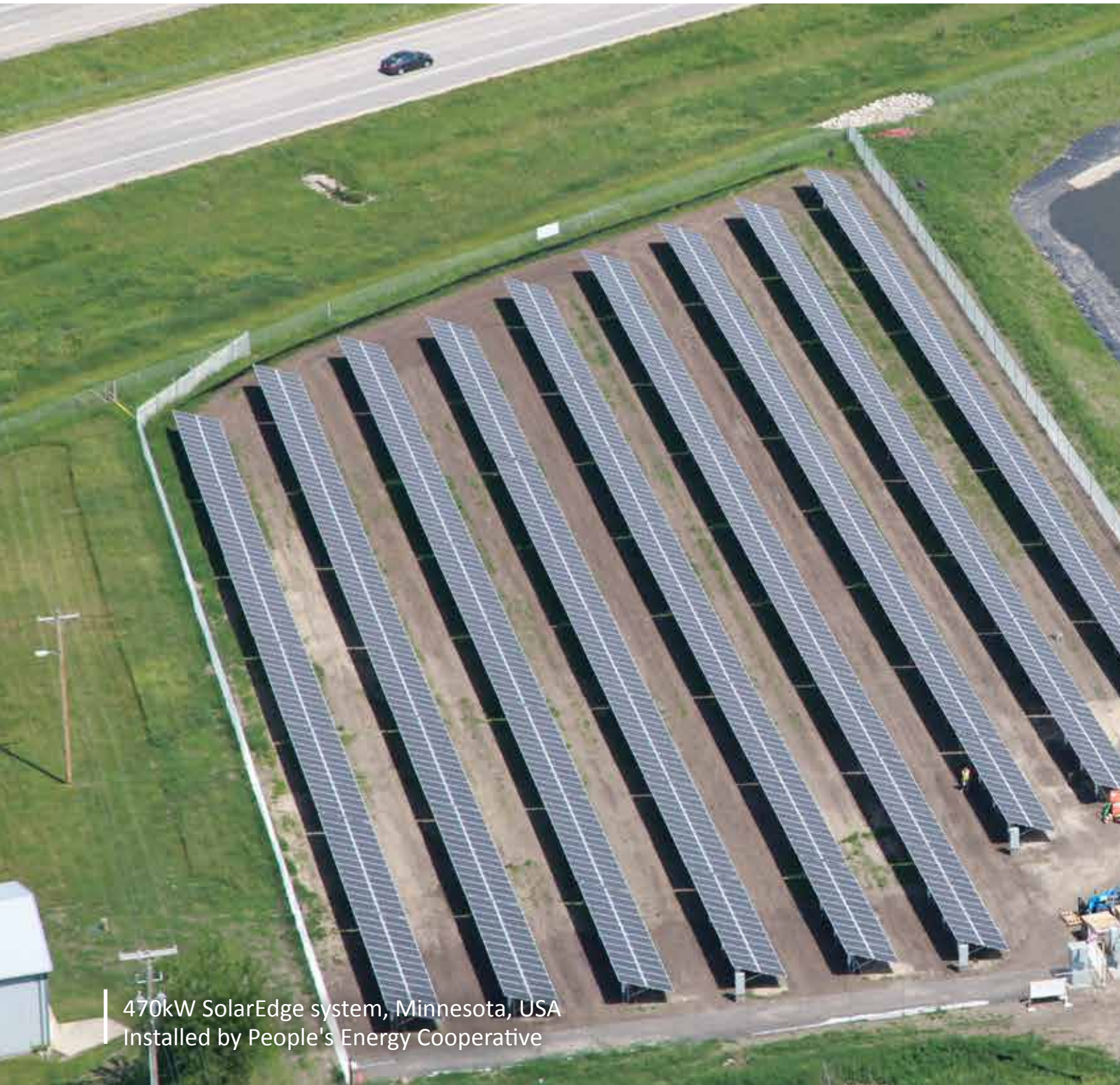
Significance of Inverter Selection

Inverter selection is key for the lifetime planning and performance of commercial PV systems.
While inverters may only account for ~10% of the system cost, they:

1. Influence ~30% of system cost (EBoS, inverter, labor)
2. Manage 100% of system production
3. Control O&M expenses by enabling PV asset management

Reduced BoS Costs

Up to 15kW per string allows for more modules per string. This leads to fewer strings per inverter and therefore less wiring, combiner boxes, and fuses. This reduces BoS costs by up to 50%.

Traditional Inverter

SolarEdge DC Optimized Inverter
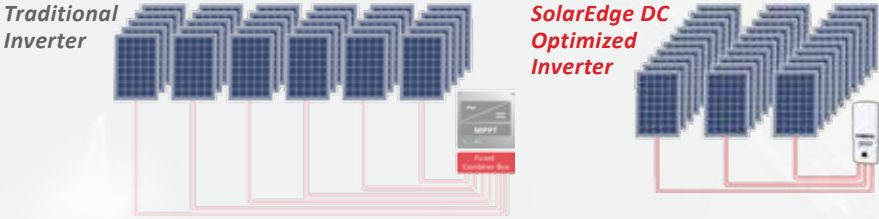
Lifetime Revenue

More Modules

With module-level power optimization and maximum design flexibility, more modules can be installed on the roof, enabling a shorter project payback period.

Standard inverter 149.5 kW DC

SolarEdge 200 kW DC 34% added power
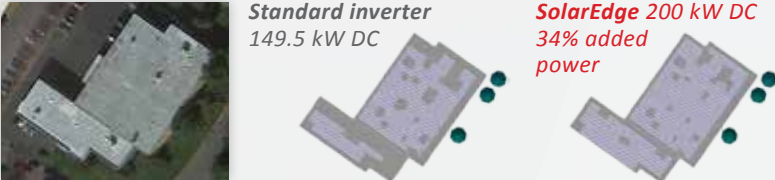
More Energy

The module-level MPPT eliminates losses to maximize power from each individual module, offering more energy production from the PV system. This technology future proofs the system against potential risks that could cause decreased lifetime energy production.

System Lifetime O&M Costs

Future Compatibility & Warranty

Low-cost inverter replacement (~40% less than traditional inverters), long inverter warranty, free lifetime monitoring, and the ability to install different module power classes/brands in the same string, decrease future costs.

Cost-Saving Maintenance & Higher System Uptime

Free module-level performance monitoring & remote maintenance for system lifetime lead to more effective and efficient O&M by decreasing trips to sites, reducing the amount of time spent on site, and increasing system uptime.

Enhanced Safety

The DC safety switch is designed to automatically drop DC voltage, as well as current, from all DC string cables, whenever inverter or grid power is shut down. The voltage of each optimizer is reduced to 1V, verified for the Rapid Shutdown requirements of NEC 2014 and 2017, per article 690.11 and 690.12. SolarEdge inverters comply with the UL1699B arc detection standard designed to mitigate the effects of some arc faults that may pose a risk of fire.

SafeDC

Enhanced Safety

The SolarEdge solution includes inverter-embedded rapid shutdown functionality without the need for additional roof-mounted devices. The function de-energizes PV source circuits from all sources to less than 30 Volts within 30 seconds.

> With SolarEdge whenever AC power is off, DC string cables are automatically de-energized

> Power optimizers automatically shut down the DC voltage in the string cables to protect installers, maintenance personnel and firefighters

> The SolarEdge inverter solution meets the most advanced safety standards

> NEC 2011 AFCI Compliant | NEC 2014 & 2017 Rapid Shutdown Compliant

700kW SolarEdge system, Santa Clara, UT
Installed by Creative Energies

PV Asset Management with Module-Level Monitoring

As a strategic O&M tool for optimum plant operation and PV asset management, the SolarEdge Monitoring Platform increases system uptime.
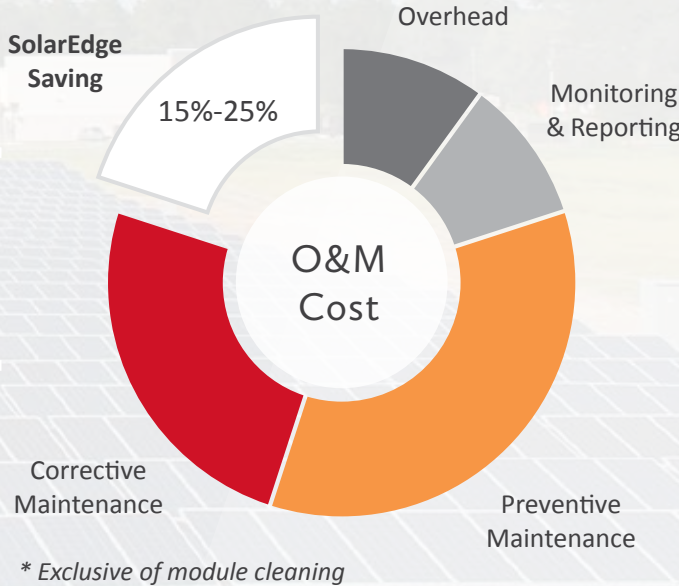

As equipment prices drop and system sizes trend upward, PV projects are increasingly seen as secure long-term investment opportunities. Like any financial asset, PV systems must be monitored and managed to realize their full potential.

Traditional inverters offer limited information, such as string-level or system-level monitoring that can indicate underperformance of the array, but little else. It then becomes costly and time consuming to send skilled technicians to perform on site troubleshooting on inverters operating under load and on DC lines at nearly 1000V. They must connect expensive equipment to the arrays in an effort to 'sift through the tea leaves' of complex IV trace curves to detect issues.

The SolarEdge DC optimized inverter solution offers advanced PV monitoring and asset management through its Monitoring Platform.
Power optimizers constantly track MPP and report high-resolution data on module performance.

The SolarEdge Monitoring Platform transforms O&M from a manual, resource-intensive process to an automated, at-a-glance service. The solution delivers module-level insights and ensures that a plant is performing to the best of its ability at all times.

SolarEdge Saving 15%-25%

Overhead

Monitoring & Reporting

O&M Cost

Corrective Maintenance

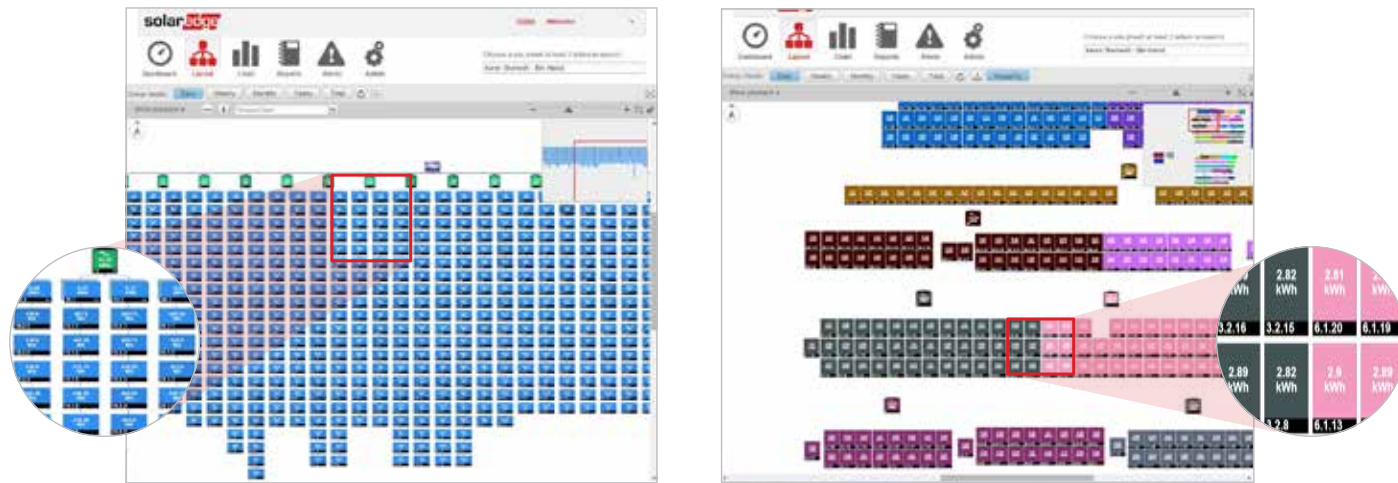Preventive Maintenance

Exclusive of module cleaning

1MW SolarEdge system, Florida, United States
Developed and installed by Region Solar & Sol Integrators

PV Asset Management
with Module-Level Monitoring (cont.)

## SolarEdge's Monitoring Platform Features:

1. Real-time remote monitoring at the module, string, and system levels

The logical layout displays the electrical connectivity between modules, strings and inverter

The hierarchy layout displays grouping of components per inverter

2. Comprehensive analytics tracking and reports of energy yield, system uptime, performance ratio, and financial performance
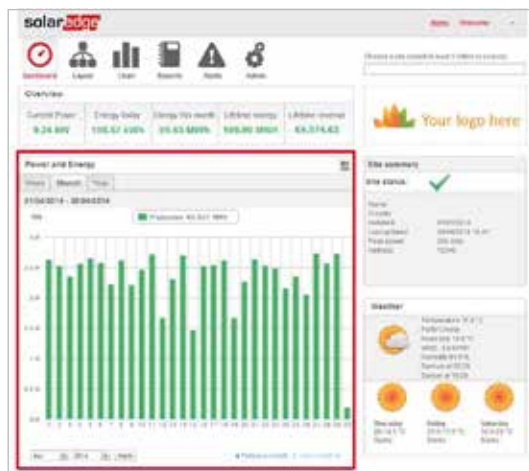
Dashboard - Energy production is displayed with weekly, monthly and yearly resolution

Performance Ratio - Analyze and track the system's performance ratio

3. Pinpointed and automatic alerts for immediate fault detection, accurate maintenance, and rapid response. The alerts show the specific fault location, fault description, and fault status. Energy thresholds alerts can be set to detect underperforming modules. Custom settings available for time of day and offset from sunrise and sunset.

4. Accurate and remote troubleshooting for fast and efficient resolution with minimal and shortened onsite visits. Examples of identifying underperforming modules:

Soiling
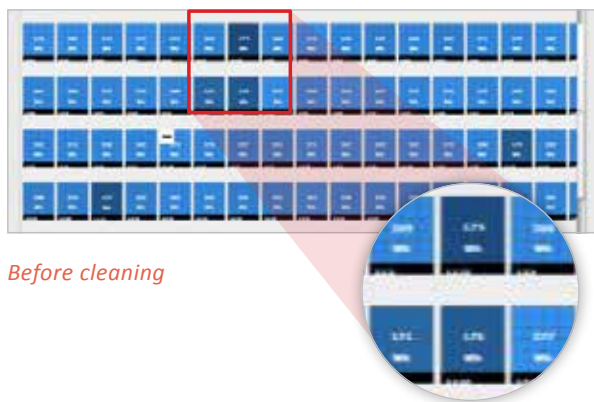
Before cleaning

After cleaning

Potential Induced Degradation (PID)
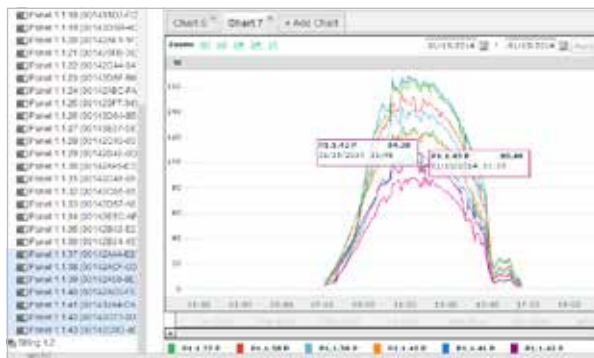
Looking at the modules within one string, it is possible to see the power degradation increasing towards the negative pole.
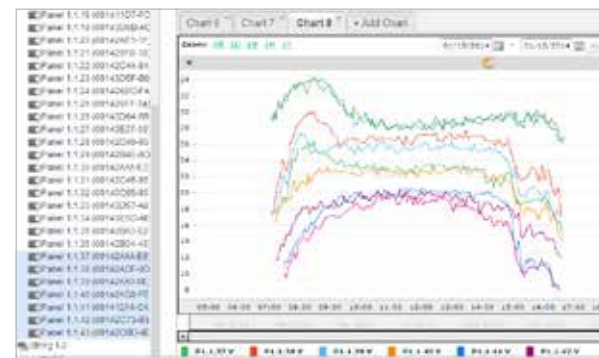
No need to send technicians to the roof – module voltage is measured remotely

Bypass Diode Failure

It is easy to identify the bypass diode failure with the module-level voltage graphs. The faulty module outputs at only 2/3 of the voltage (5/6 in this case of power optimizer connected to two modules).

Maximum Energy Yield
in Commercial Installations

Unavoidable in commercial installations, module-level mismatch occurs when modules in a string have different Maximum Power Points (MPPs). Arising from a variety of sources, the mismatch decreases the energy yield of the entire string.

Traditional String Inverter

247W 250W 242W 248W

SolarEdge DC Optimized Inverter Solution

247W 250W 242W 248W

> MPPT per string - all modules operate at same current, regardless of their individual MPP
> Weak modules reduce the performance of all modules in the string or are bypassed
> Power losses due to module mismatch

> Module-level MPPT - current & voltage adjusted at the module level
> Maximum power produced and tracked from each module individually
> 2%-10% more energy from the PV system

The SolarEdge DC optimized inverter solution mitigates power losses caused by module mismatch for maximum power generation from each module. With SolarEdge, strong modules are not affected by the weaker ones.

Examples of power mismatch in commercial installations:

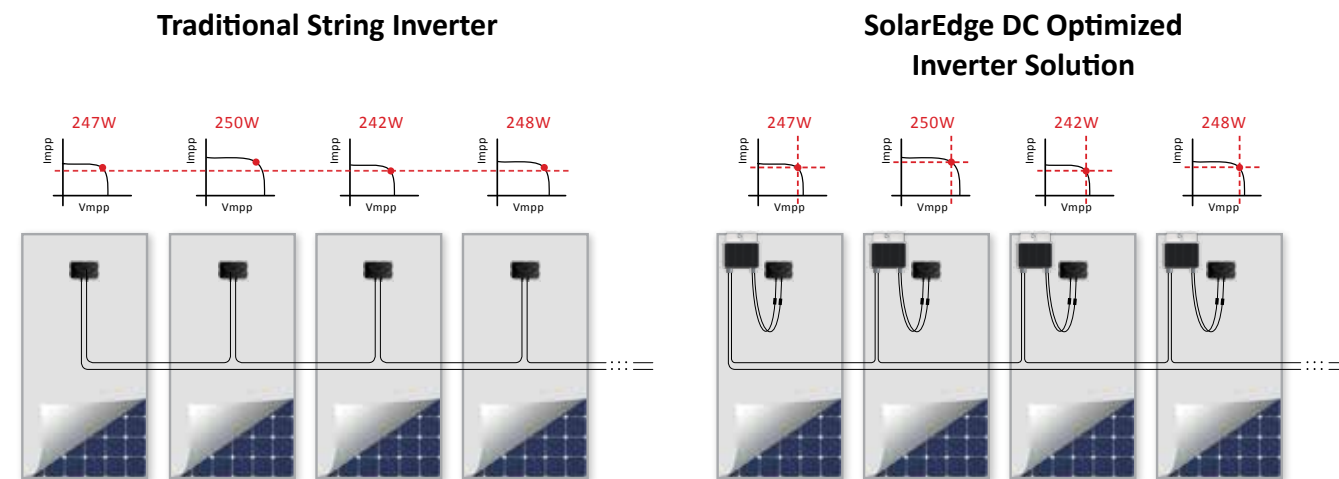### Manufacturing Tolerance Mismatch

The module manufacturer-warranted output power range may vary greatly. A standard deviation of 3% is sufficient to result in ~2% energy loss.

Guaranteed power output from module manufacturers **0~+3%**

Soiling & Shading

Module soiling from dirt, bird droppings or snow, contributes to mismatch between modules and strings. (Figure 1)

While there may be no obstructions during site installation, throughout a system's lifetime, a tree may grow or a structure may be erected that creates uneven shading. (Figure 2)

Figure 1 - Soiling mismatch

Figure 2 - Partial shading

Uneven Module Aging

Module performance can degrade up to 20% over 20 years, however, each module ages at a different rate, which causes aging mismatch.

Worst module
Average
Best module
Batch

Source: A. Skoczek et. al., "The results of performance measurements of field-aged c-Si photovoltaic modules", Prog. Photovolt: Res. Appl. 2009; 17:227–240

Future Compatibility & Warranty

As part of PV asset management planning, it is important to account for future costs that can impact the return on investment of a PV system. The SolarEdge DC optimized inverter solution effectively minimizes these potential costs.

Forward compatibility eliminates expensive stock of spare module inventory.

> **Replacement:** SolarEdge allows modules of different power classes and brands in the same string.

> **Expansion:** New power optimizers can be utilized in the same string with older models.

SolarEdge offers 25-year power optimizer warranty, 12-year inverter warranty, and free monitoring for 25 years. SolarEdge offers extended warranties at attractive prices.

Power Optimizers
600W-800W

Three Phase Inverters
9kW-100kW

Monitoring Platform

SolarEdge provides low-cost inverter replacement out of warranty

> ~40% less than traditional inverters

Products are certified for ammonia resistance - suitable for agricultural areas

All inverter models are UL1741 SA certified, for CPUC Rule 21 grid compliance

756 kWp SolarEdge System, Farmington, IL
Installed by Clean Energy Design Group, Inc

A Higher Lifetime Value

The SolarEdge DC optimized inverter solution offers a better LCOE for a system's lifetime by maximizing yield and reducing costs.

The SolarEdge DC optimized inverter solution maximizes power generation at the individual module level, which leads to a higher lifetime revenue from PV systems. While the initial cost of the SolarEdge solution is generally slightly higher than the equivalent traditional inverter system, the total installation cost as well as the lifetime maintenance cost is lower. This makes the SolarEdge solution more economically attractive.

Lifetime PV System Cost and Revenue

Chart axis label: $

Categories:
+ Lifetime revenue
− BoS cost
− Inverter replacement cost
− Lifetime O&M cost
= System lifetime Value

Legend:
■ Traditional inverter   ■ SolarEdge solution
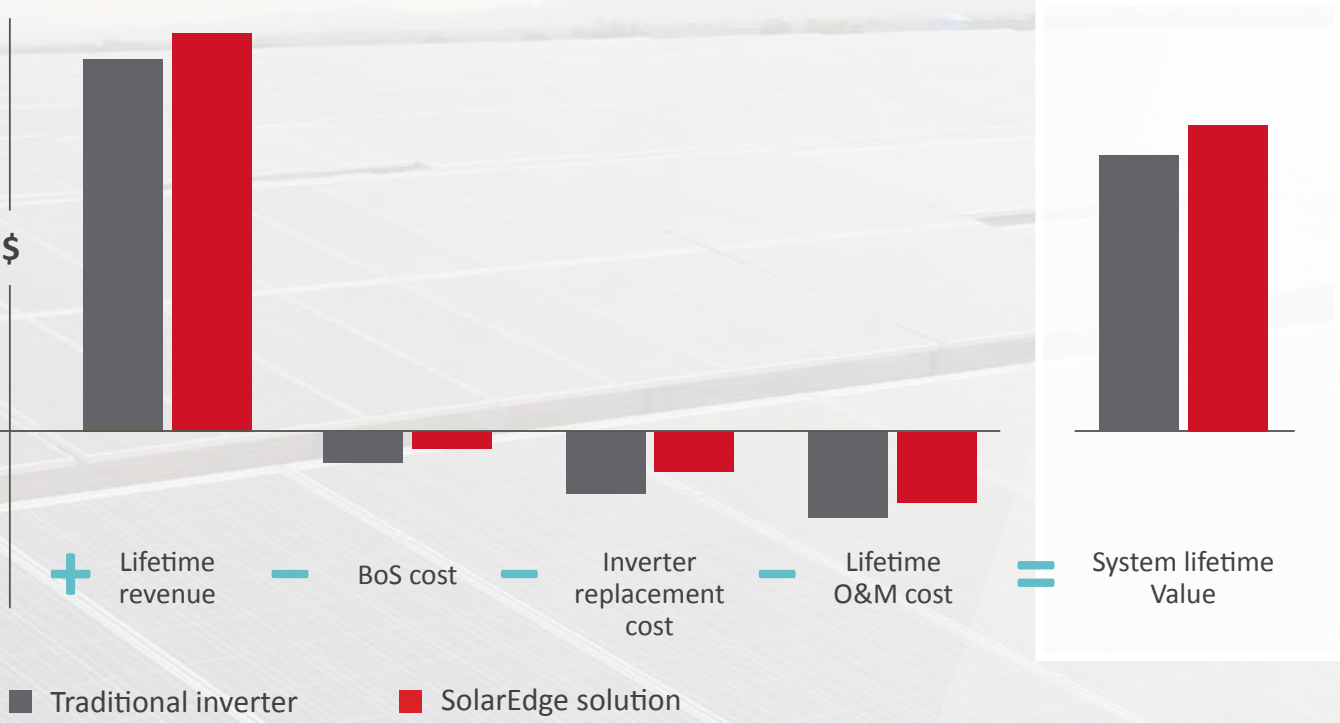
1.3MW SolarEdge system, Arizona, USA
Developed by AES Distributed Energy, Inc. (formerly Main Street Power)
Installed by Rosendin Electric

Commercial System Diagram

The SolarEdge solution consists of inverters, power optimizers, and a monitoring platform. The technology provides superior power harvesting and module management by connecting power optimizers at the module level. The ability to connect two modules to one optimizer, combined with DC to AC conversion and grid interaction being centralized at a simplified PV inverter maintains a competitive cost structure.

Monitoring Platform
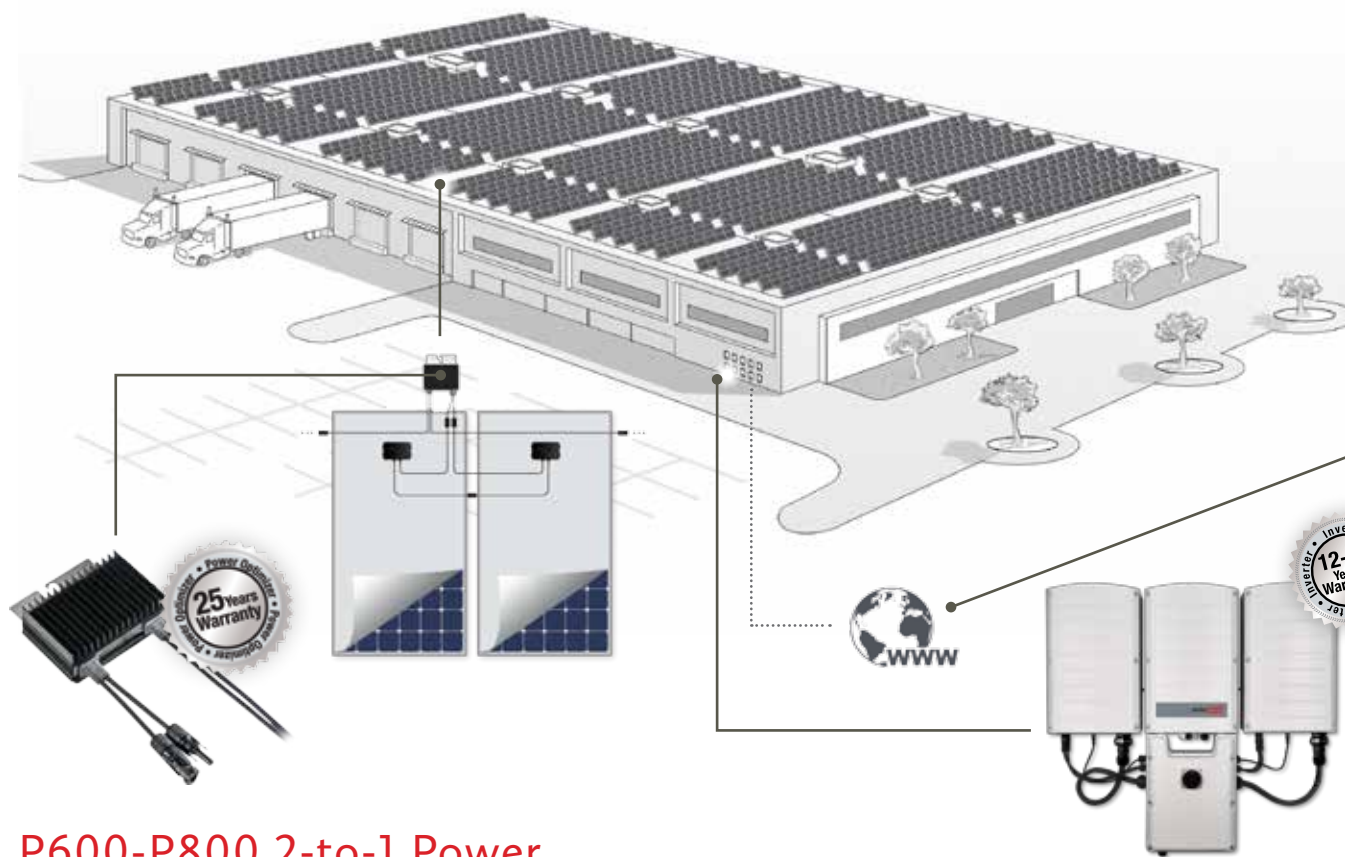
Full visibility of system performance

Remote troubleshooting

Access via browser or any Android, iOS smart phone or tablet

Communication with the power optimizers over existing DC power lines (PLC)

SolarEdge Data Logger

Connection of environmental sensors with several wireless communication options, providing monitoring and control

Environmental Sensors

Used to calculate site performance ratio and measure environmental conditions

P600-P800 2-to-1 Power Optimizer Configuration

Module-level MPPT - no mismatch power losses

Strings of uneven lengths, modules on multiple azimuths & tilts

Compatible with all three phase SolarEdge inverters

SafeDC™ - automatic module-level safety shutdown

9kVA-100kVA Inverter

Specifically designed to work with power optimizers

Superior efficiency

Easy installation, including 2-person install for large capacity models

Simple configuration, commissioning and troubleshooting with a mobile app

Built-in communication hardware, with optional GSM cellular modem

Integrated DC Safety Switch

Embedded export limitation

Grid Interaction

Supports power control, e.g. zero export limitation, local and remote active/reactive power control, inverter AC relay control for secondary grid protection; low voltage and frequency ride through.

200kWp Rooftop System Comparison

Comparison of a 204.6kWp SolarEdge system to a system with a leading traditional string inverter

The system, in Watertown MA, comprises 660×310Wp modules. One system was designed with 1 x SE100KUS and 1 x SE66.6KUS SolarEdge inverters, and 330xP700 power optimizers in a 2:1 configuration. The second system was designed with 7x24kW traditional string inverters.
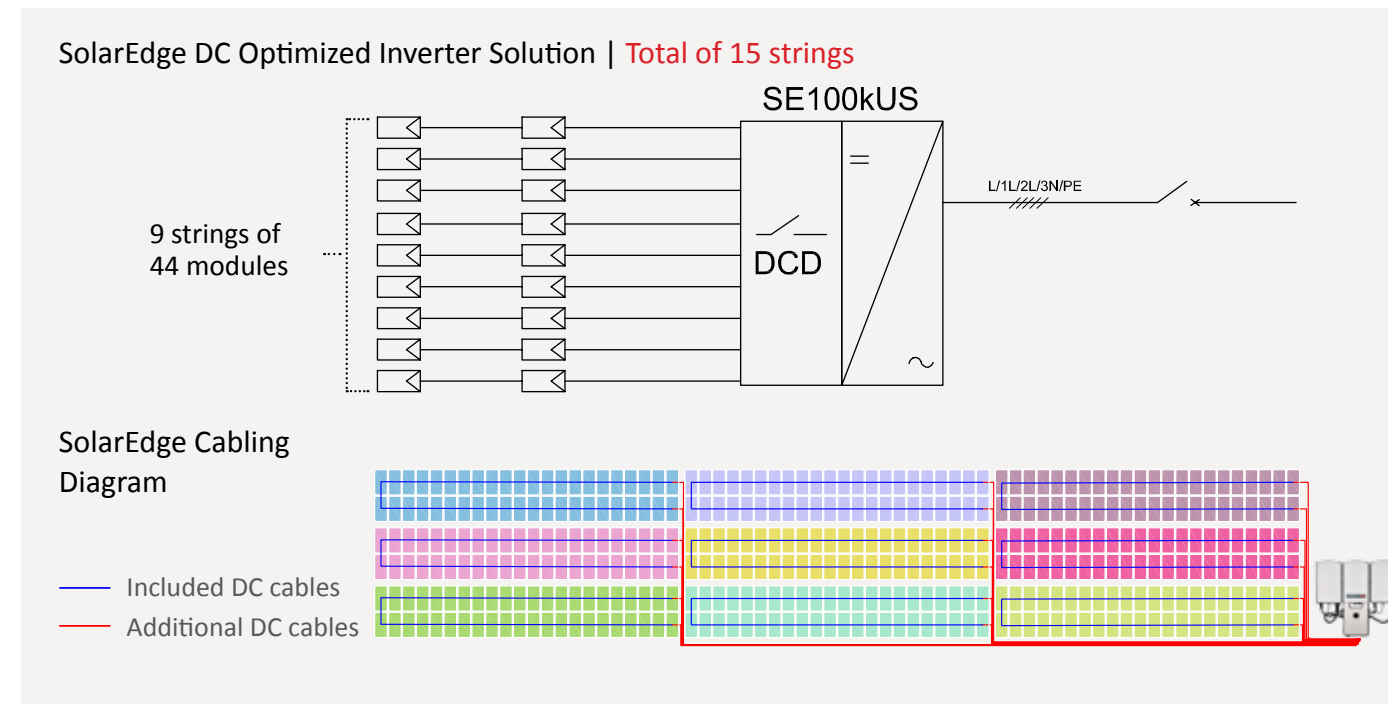
The SE66.6KUS & SE100KUS models are three phase inverters with synergy technology, combining large capacity with reduced installation time and cost.

Energy Comparison

Helioscope was used to simulate the first year yield of both systems. 25 years yield was calculated assuming 1% annual degradation and 0.12% annual mismatch growth due to uneven aging.

	Traditional String Inverter	SolarEdge System	SolarEdge Advantage
Year 1 yield (MWh)	269.5	275.2	2.1%
Year 25 yield (MWh)	198.9	209.1	5.1%
25 years cumulative yield (MWh)	5,848	6,054	3.5%

Electrical Diagram Comparison

SolarEdge DC Optimized Inverter Solution | Total of 15 strings

SE100kUS

9 strings of 44 modules

L/1L/2L/3N/PE

DCD

SolarEdge Cabling Diagram

— Included DC cables
— Additional DC cables

BoS comparison

	Traditional String Inverter	SolarEdge System
DC power (kWp)	204.6	204.6
AC power (kVA)	168.0	166.5
DC/AC sizing	1.22	1.23
Modules	660	660
Inverters	7	2
No. of strings	33	15
Modules per string	20	44
DC Cable length (ft)	9,837	5,692
AC Cable length (ft)	370	180
Cable Cost (%)	100%	56%
DC box (pcs)	7	-
AC combiner (pcs)	1	1
Communication module (pcs)	7	-
Data logger (pcs)	1	-
BoS cost saving*	-	2.8c/w

* Estimated saving on labor and materials for DC and AC BoS

Traditional String Inverter System | Total of 33 strings

24kW String Inverter

4/5 strings of 20 modules

L1/L2/L3/N/PE

DCD

Standard Inverter Cabling Diagram
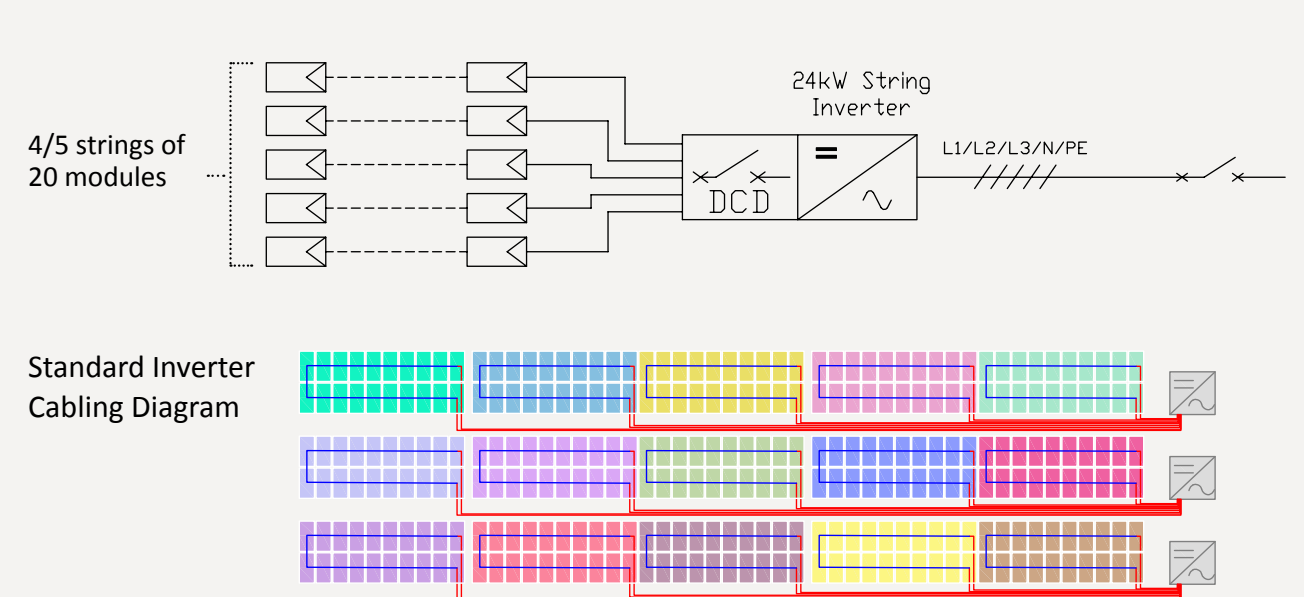
200kWp Electrical Diagram Comparison

SolarEdge DC Optimized Inverter Solution

SE100kUS

9 strings of
44 modules

DCD

L1/L2/L3/N/PE

L1/L2/L3/N/PE

SE66.6kUS

6 strings of
44 modules

DCD

L1/L2/L3/N/PE

Traditional String Inverter System

24kW String
Inverter

5 strings of
20 modules

DCD

L1/L2/L3/N/PE

24kW String
Inverter

5 strings of
20 modules

DCD

L1/L2/L3/N/PE

24kW String
Inverter

5 strings of
20 modules

DCD

L1/L2/L3/N/PE

L1/L2/L3/N/PE

24kW String
Inverter

5 strings of
20 modules

DCD

L1/L2/L3/N/PE

24kW String
Inverter

5 strings of
20 modules

DCD

L1/L2/L3/N/PE

24kW String
Inverter

4 strings of
20 modules

DCD

L1/L2/L3/N/PE

24kW String
Inverter

4 strings of
20 modules

DCD

L1/L2/L3/N/PE

1MWp Ground Mount System Comparison

Comparison of a 1MWp SolarEdge solution to an identical system with a traditional string inverter

The system, in Southbridge MA, comprises of 3,180×315Wp modules. One system was designed with 7 x SE100KUS and 1 x SE66.6KUS SolarEdge inverters and 1,610×P700 power optimizers in a 2:1 configuration. The second system was designed with 13×60kW traditional string inverters.

The SE66.6KUS & SE100KUS models are three phase inverters with synergy technology, combining large capacity with reduced installation time and cost.

Energy Comparison

Helioscope was used to simulate the first year yield of both systems. 25 years yield was calculated assuming 1% annual degradation and 0.12% annual mismatch growth due to uneven aging.

	Traditional String Inverter	SolarEdge System	SolarEdge Advantage
Year 1 yield (MWh)	1,395	1,419	1.7%
Year 25 yield (MWh)	1,030	1,079	4.8%
25 years cumulative yield (MWh)	30,267	31,224	3.2%
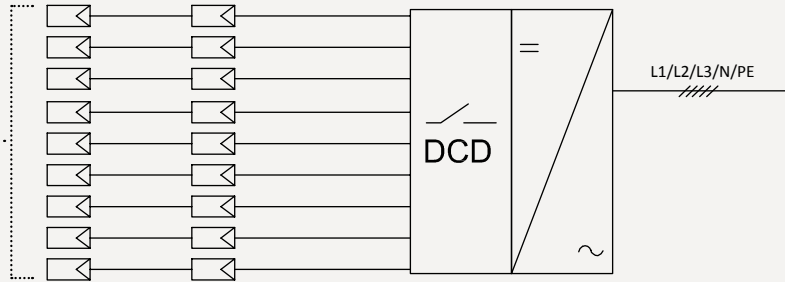
BoS comparison

	Traditional String Inverter	SolarEdge System
DC power (kWp)	1,001.4	1,001.7
AC power (kVA)	780	766
DC/AC sizing	1.28	1.31
Modules	3,179	3,180
Inverters	13	8
No. of strings	187	69
Modules per string	17	46/48
DC Cable length (ft)	31,042	11,915
AC Cable length (ft)	10,250	5,020
Cable length (%)	100%	36%
AC combiner box (pcs)	2	2
Data logger (pcs)	1	-
BoS cost saving*	-	2.2 c/w

* Estimated saving on labor and materials for DC and AC BoS

Electrical Diagram Comparison

SolarEdge DC Optimized Inverter Solution | Total of 69 strings

9 strings of 46 modules
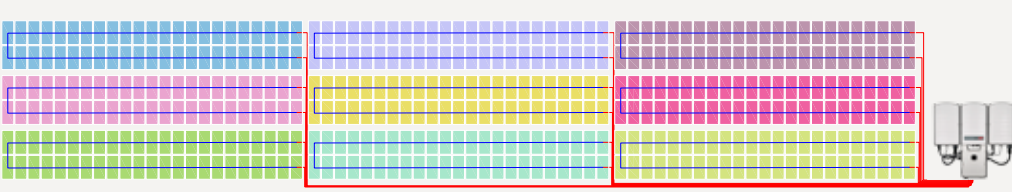
DCD

L1/L2/L3/N/PE
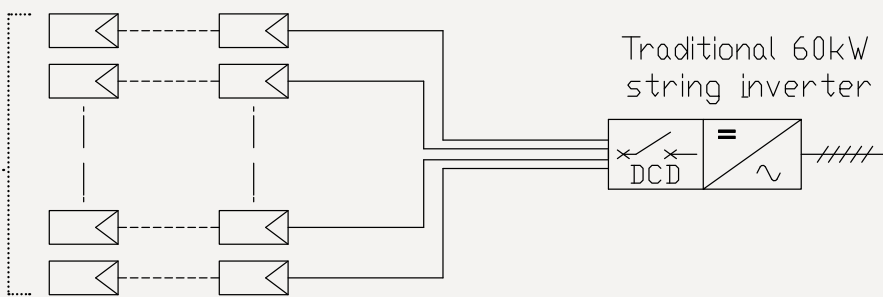
SolarEdge Cabling Diagram

— Included DC cables
— Additional DC cables

Traditional String Inverter System | Total of 187 strings
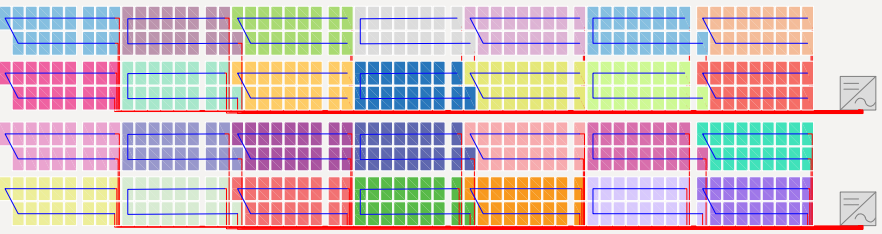
Traditional 60kW string inverter

14/15 strings of 17 modules

DCD

Standard Inverter Cabling Diagram

1MWp System Comparison - Electrical Diagram

SolarEdge DC Optimized Inverter Solution

7x100+66.6

SolarEdge
SE100kUS

SolarEdge
SE100kUS

SolarEdge
SE66.6kUS

36 strings of
46 modules

30 strings of
46 modules

3 strings of
48 modules

AC Combiner

Medium Voltage

Traditional String Inverter System

Traditional 60kW
string inverter

98 strings of
17 modules

89 strings of
17 modules

AC Combiner

Medium Voltage
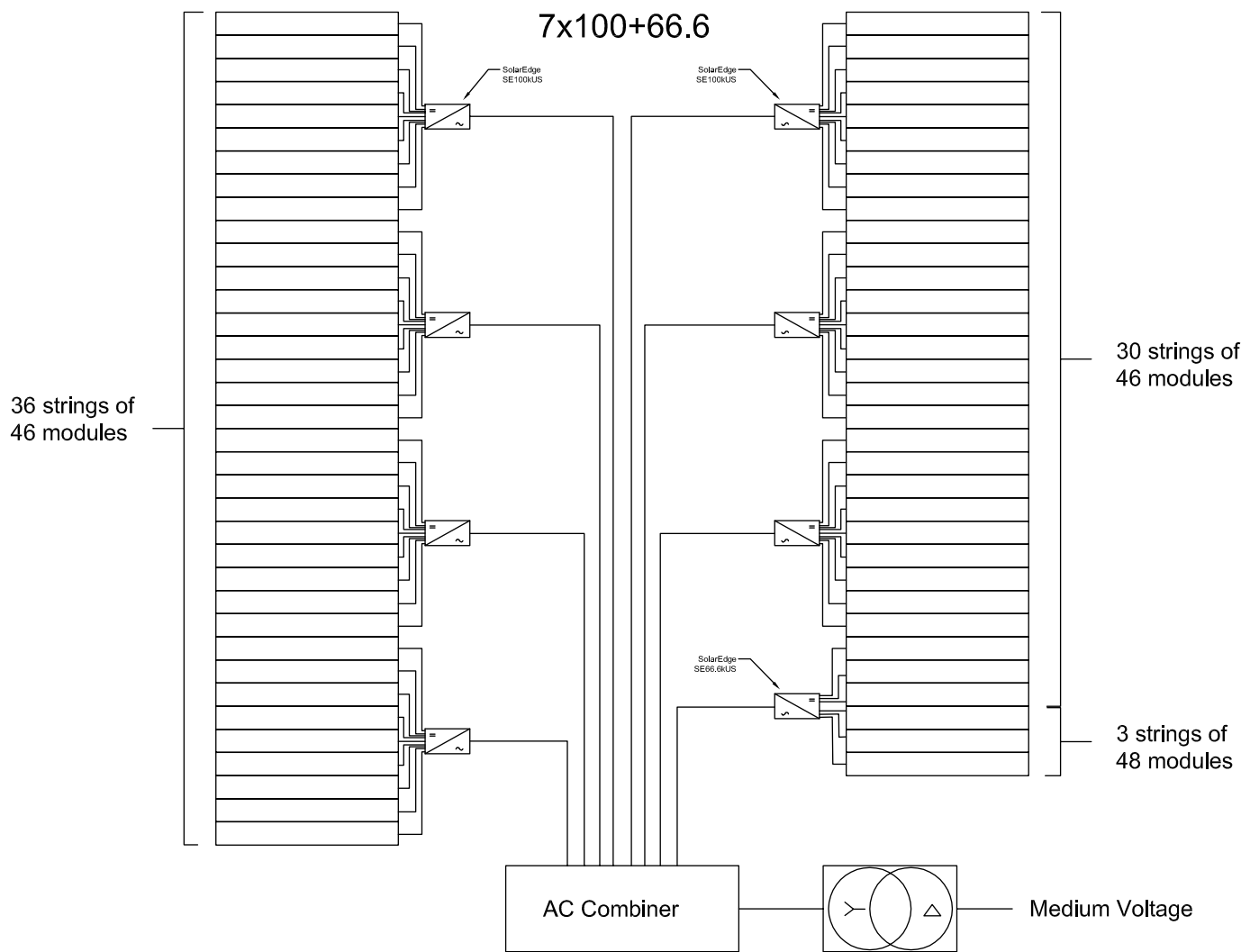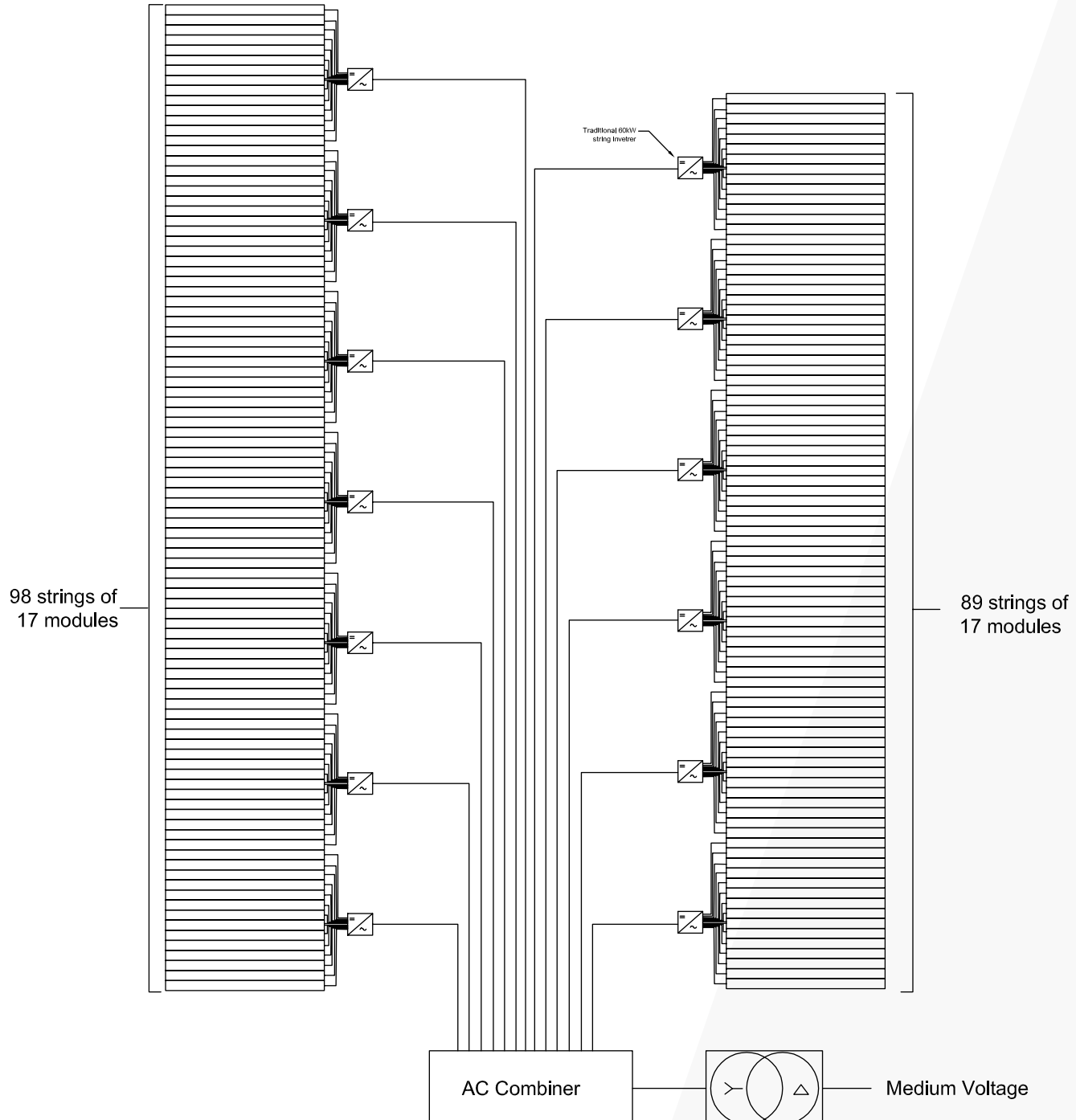
Product Datasheets

2.02 MW installation with SolarEdge system, Denmark

SE9KUS-SE33.3KUS Three Phase Inverter Datasheet

RoHS ⊛

Specifically designed to work with power optimizers

Integrated arc fault protection for NEC 2011 & 2017, 690.11

UL1741 SA certified, for CPUC Rule 21 grid compliance

Rapid shutdown for NEC 2014 & 2017, 690.12

Superior efficiency (98.5%)

Outdoor and indoor installation

Ethernet or wireless internet connection

Small, lightest in its class, and easy to install

Integrated safety switch and DC fuses (plus & minus)

Supplied with RS485 Surge Protection Device to better withstand electrical surges, such as lightning

Mobile configuration of up to 3.2MW in one go for easy and fast commissioning. Expected availability in Q2 2018.

	SE9KUS	SE14.4KUS	SE10KUS	SE20KUS	SE30KUS	SE33.3KUS	
INPUT							
Maximum DC Power (Module STC)	12150	19400	13500	27000	40500	45000	W
Transformer-less, Ungrounded			Yes				
Maximum Input Voltage DC to Gnd	250	300		490			Vdc
Maximum Input Voltage DC+ to DC-	500	600		980			Vdc
Nominal Input Voltage DC to Gnd		200		420			Vdc
Nominal Input Voltage DC+ to DC-		400		840			Vdc
Maximum Input Current	26.5	38	13.5	26.5	39	40	Adc
Maximum Input Short Circuit Current			45				Adc
Reverse-Polarity Protection			Yes				
Ground-Fault Isolation Detection	1MΩ Sensitivity	350kΩ Sensitivity	1MΩ Sensitivity		350kΩ Sensitivity[3]		
CEC Weighted Efficiency			98		98.5		%
Night-time Power Consumption	< 3	< 4	< 3		< 4		W
ADDITIONAL FEATURES							
Supported Communication Interfaces		RS485, Ethernet, ZigBee (optional)					
Rapid Shutdown — NEC 2014 and 2017 690.12		Automatic Rapid Shutdown upon AC Grid Disconnect[4]					
RS485 Surge Protection		Supplied with the inverter					
STANDARD COMPLIANCE							
Safety		UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07					
Grid Connection Standards		IEEE1547, Rule 21, Rule 14 (HI)					
Emissions		FCC part15 class B					
INSTALLATION SPECIFICATIONS							
AC output conduit size / AWG range	3/4" minimum / 12-6 AWG	3/4" minimum / 8-4 AWG	3/4" minimum / 12-6 AWG		3/4" minimum / 8-4 AWG		
DC input conduit size / AWG range		3/4" minimum / 12-6 AWG					
Number of DC inputs	2 pairs	3 pairs	2 pairs		3 pairs[5]		
Dimensions (H x W x D)		21 x 12.5 x 10.5 / 540 x 315 x 260					in / mm
Dimensions with Safety Switch (H x W x D)		30.5 x 12.5 x 10.5 / 775 x 315 x 260					in / mm
Weight	73.2 / 33.2	99.5 / 45	73.2 / 33.2		99.5 / 45		lb / kg
Weight with Safety Switch	79.7 / 36.2	106 / 48	79.7 / 36.2		106 / 48		lb / kg
Cooling		Fans (user replaceable)					
Noise	< 50	< 55	< 50		< 55		dBA
Operating Temperature Range		-40 to +140 / -40 to +60[6]					°F / °C
Protection Rating		NEMA 3R					

[1] For 208V inverters refer to: http://www.solaredge.com/files/pdfs/products/inverters/se-three-phase-us-inverter-208V-datasheet.pdf
[2] For other regional settings please contact SolarEdge support
[3] Where permitted by local regulations
[4] P/Ns SE10K/SE20K-US0xxxxxx have Manual Rapid Shutdown for NEC 2014 compliance (NEC 2017 compliance with outdoor installation)
[5] Field replacement kit for 1 pair of inputs P/N: DCD-3PH-1TBK; Field replacement kit for 3 pairs of fuses and holders P/N: DCD-3PH-6FHK-S1
[6] For power de-rating information refer to: https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf

	SE9KUS	SE14.4KUS	SE10KUS	SE20KUS	SE30KUS	SE33.3KUS	
OUTPUT							
Rated AC Power Output	9000	14400	10000	20000	30000	33300	VA
Maximum AC Power Output	9000	14400	10000	20000	30000	33300	VA
AC Output Line Connections		4-wire WYE (L1-L2-L3-N) plus PE					
AC Output Voltage Minimum-Nominal-Maximum[2] (L-N)		105-120-132.5	244-277-305				Vac
AC Output Voltage Minimum-Nominal-Maximum[2] (L-L)		183-208-229	422.5-480-529				Vac
AC Frequency Min-Nom-Max[2]		59.3 - 60 - 60.5					Hz
Max. Continuous Output Current (per Phase)	25	40	12	24	36.5	40	A
GFDI Threshold			1				A
Utility Monitoring, Islanding Protection, Country Configurable Set Points			Yes				

SE43.2K-SE100K Three Phase Inverter with Synergy Technology Datasheet

CE

Specifically designed to work with power optimizers

Easy two-person installation

Superior efficiency (98.5%)

Lower BoS and labor costs compared to using multiple smaller string inverters

Higher uptime and easy serviceability

Built-in module-level monitoring with Ethernet or cellular GSM

Wall/rail mounted, or horizontally mounted under the modules (10˚ inclination)

Fixed voltage inverter for longer strings

Integrated DC Safety Unit with DC Safety Switch
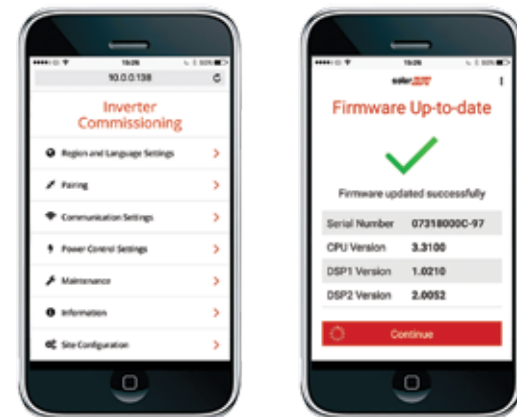• Optional DC surge protection (Type II)
• Optional DC fuses

Built-in RS485 Surge Protection Device to better withstand electrical surges, such as lightning

Fast configuration & commissioning with a mobile app

Configure all relevant inverter settings including pairing and firmware updates

Save valuable time with easy and fast commissioning

Simple, simultaneous configuration of an additional 31 inverters (3.2MW) from a single master inverter. Expected availability in Q2 2018

Mobile inverter activation & configuration

	SE43.2K	SE66.6K	SE100K	
OUTPUT				
Rated AC Power Output	43200	66600	100000	VA
Maximum AC Power Output	43200	66600	100000	VA
AC Output Line Connections	4-wire WYE (L1-L2-L3-N) plus PE			
AC Output Voltage Minimum-Nominal-Maximum[1] (L-N)	105-120-132.5	244 - 277 - 305		Vac
AC Output Voltage Minimum-Nominal-Maximum[1] (L-L)	183-208-229	422.5 - 480 - 529		Vac
AC Frequency Min-Nom-Max[1]	59.3 - 60 - 60.5			Hz
Maximum Continuous Output Current (per Phase) @277V	120	80	120	A
GFDI Threshold	1			A
Utility Monitoring, Islanding Protection, Configurable Power Factor, Country Configurable Thresholds	Yes			
INPUT				
Maximum DC Power (Module STC)	58200 / 19400	90000 / 45000	135000 / 45000	W
Transformer-less, Ungrounded	Yes			
Maximum Input Voltage DC to Gnd	300	500		Vdc
Maximum Input Voltage DC+ to DC-	600	1000		Vdc
Nominal Input Voltage DC to Gnd	200	425		Vdc
Nominal Input Voltage DC+ to DC-	400	850		Vdc
Maximum Input Current	114	80	120	Adc
Maximum Input Short Circuit Current	135	120		Adc
Reverse-Polarity Protection	Yes			
Ground-Fault Isolation Detection	350kΩ Sensitivity per Unit			
CEC Weighted Efficiency	97	98.5		%
Nighttime Power Consumption	< 12			W
ADDITIONAL FEATURES				
Supported Communication Interfaces	RS485, Ethernet, Cellular GSM (optional)			
Rapid Shutdown	NEC2014 and NEC2017 compliant/certified, upon AC Grid Disconnect			
RS485 Surge Protection	Built-in			
DC SAFETY SWITCH				
DC Disconnect	1000V / 3 x 40A	1000V / 2 x 40A	1000V / 3 x 40A	
DC Surge Protection	Optional, Type II, field replaceable			
DC Fuses on Plus & Minus	Optional, 30A			
STANDARD COMPLIANCE[2]				
Safety	UL1741, UL1741 SA, UL1699B, UL1998, CSA 2.22			
Grid Connection Standards	IEEE 1547, Rule 21, Rule 14 (HI)			
Emissions	FCC part15 class A			
INSTALLATION SPECIFICATIONS				
Number of units	3	2	3	
AC Output Conduit Size / Max AWG / Max PE AWG	2" / 4/0 / 4	1.5" / 2/0 / 6	2" / 4/0 / 4	
DC Output Conduit Size / Terminal Block AWG Range / Number of Strings[3]	2 x 1.25" / 6-14 / 9 strings	2 x 1.25" / 6-14 / 6 strings	2 x 1.25" / 6-14 / 9 strings	
Dimensions (H x W x D)	Primary Unit: 37 x 12.5 x 10.5 / 940 x 315 x 260; Secondary Unit: 21 x 12.5 x 10.5 / 540 x 315 x 260			in / mm
Weight	Primary Unit: 105.8 / 48; Secondary Unit 99.2 / 45			lb / kg
Operating Temperature Range	-40 to +140 / -40 to +60[4]	-13 to +140 / -25 to +60[5] (-40°F / -40°C option)		°F / °C
Cooling	Fan (user replaceable)			
Noise	< 60			dBA
Protection Rating	NEMA 3R			
Bracket Mounted (Brackets Provided)				

[1] For other regional settings please contact SolarEdge support
[2] Pending
[3] Single input option per unit (up to 3AWG) available
[4] For power de-rating information refer to: https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf
[5] De-rating from 50°C

SolarEdge Power Optimizer – P600-P800

The most cost-effective solution for module-level optimization in commercial installations

More energy

Superior efficiency (99.5%)

Balance of System costs reduction; 50% less cables, fuses and combiner boxes

Fast installation with a single bolt

Advanced maintenance with module-level monitoring

Module-level voltage shutdown for installer and firefighter safety

Use with two PV modules connected in series or in parallel

Optimizer model (typical module compatibility)	P600 (for 2 x 60-cell PV modules)	P700 (for 2 x 72-cell PV modules)	P730 (for 2 x high power 72-cell PV modules)	P800p (for parallel connection of 2x 96-cell 5" PV modules)	P800s (for series connection of 2x high power or bi-facial modules)	
INPUT						
Rated Input DC Power[1]	600	700	730	800		W
Absolute Maximum Input Voltage (Voc at lowest temperature)	96	125		83	120	Vdc
MPPT Operating Range	12.5 - 80	12.5 - 105		12.5 - 83	12.5 - 105	Vdc
Maximum Short Circuit Current (Isc)	10.1		11	14	12.5	Adc
Maximum DC Input Current	12.65		13.75	17.5	15.63	Adc
Maximum Efficiency	99.5					%
Weighted Efficiency	98.6					%
Overvoltage Category	II					
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)						
Maximum Output Current	15			18		Adc
Maximum Output Voltage	85					Vdc

Optimizer model (typical module compatibility)	P600 (for 2 x 60-cell PV modules)	P700 (for 2 x 72-cell PV modules)	P730 (for 2 x high power 72-cell PV modules)	P800p (for parallel connection of 2x 96-cell 5" PV modules)	P800s (for series connection of 2x high power or bi-facial modules)	
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OFF)						
Safety Output Voltage per Power Optimizer	1 ± 0.1					Vdc
STANDARD COMPLIANCE						
EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3					
Safety	IEC62109-1 (class II safety), UL1741					
Material	UL-94 (5-VA), UV Resistant					
RoHS	Yes					
INSTALLATION SPECIFICATIONS						
Compatible SolarEdge Inverters	Three phase inverters					
Maximum Allowed System Voltage	1000					Vdc
Dimensions (W x L x H)	128 x 152 x 43 / 5 x 5.97 x 1.69	128 x 152 x 50 / 5 x 5.97 x 1.96		128 x 158 x 59 / 5 x 6.22 x 2.32	128 x 152 x 59 / 5 x 5.97 x 2.32	mm / in
Weight (including cables)	994 / 2.2	1064 / 2.34		1090 / 2.4	1064 / 2.34	gr / lb
Input Connector	MC4 Compatible					
Output Wire Type / Connector	Double Insulated; MC4 Compatible					
Output Wire Length	1.8 / 5.9	2.1 / 6.9		1.8 / 5.9	2.1 / 6.9	m / ft
Operating Temperature Range[2]	-40 - +85 / -40 - +185					°C / °F
Protection Rating	IP68 / NEMA6P					
Relative Humidity	0 - 100					%

[1] Rated STC power of the module. Module of up to +5% power tolerance allowed.
[2] For ambient temperature above +70°C / +158°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Application Note for more details.

PV SYSTEM DESIGN USING A SOLAREDGE INVERTER[3][4]		THREE PHASE 208V		THREE PHASE 480V		
Compatible Power Optimizers		P600, P700 & P730[5]	P800[5]	P600, P700 & P730	P800	
Minimum String Length	Power Optimizers	8		13		
	PV Modules	16		26		
Maximum String Length	Power Optimizers	30		30		
	PV Modules	60		60		
Maximum Power per String		6000[6]	7200	12750[7]	15300	W
Parallel Strings of Different Lengths or Orientations		Yes				

[3] P600, P700 and P730 can be mixed in one string. It is not allowed to mix P600/P700/P730/P800 with P300/P320/P400/P405 in one string.
[4] In a case of odd number of PV modules in one string it is allowed to install one P600/P700/P730/P800 power optimizer connected to one PV module. When connecting a single module to the P800p seal the unused input connectors with the supplied pair of seals.
[5] P700/P730/ P800 design with three phase 208V inverters is limited. Use the SolarEdge Site Designer for verification.
[6] For SE14.4KUS/SE43.2KUS: It is allowed to install up to 6,500W per string when 3 strings are connected to the inverter (3 strings per unit for SE43.2KUS) and when the maximum power difference between the strings is up to 1,000W.
[7] For SE33.3KUS/SE66.6KUS/SE100KUS: It is allowed to install up to 15,000W per string when 3 strings are connected to the inverter (3 strings per unit for SE66.6KUS/SE100KUS) and when the maximum power difference between the strings is up to 2,000W.

SolarEdge Three Phase Revenue Grade Energy Meters for Commercial Installations

High accuracy revenue grade meter readings for production monitoring

Small and easy to install - fits in standard electrical panel

Supports commercial and utility-size installations

Supports RS485 120Ω line termination

Communicates over RS485 to provide monitoring data

Revenue-grade ANSI C12.20 accuracy; UL 2808 listed
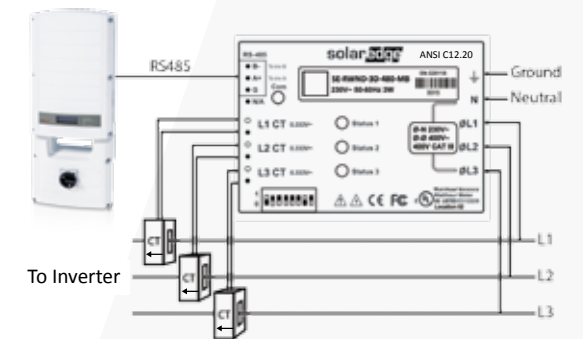
Current transformers: Option Class 0.3 accuracy standard

	SE-RWND-3D-208-MB	SE-RWND-3D-480-MB	UNITS
ELECTRICAL SERVICE			
Operating Voltage Range - Line to Line	208-240	480	Vac
AC Frequency	60		Hz
Grids Supported: Three Phase*	4-wire WYE (L1-L2-L3-N) or 3 wire Delta	4-wire WYE (L1-L2-L3-N)	
Power Consumption (typ.)	1.8		W
COMMUNICATION			
Supported Communication Interfaces	RS485		
Default Device ID (Modbus)	1		
RS485 Line Termination	120		Ω
ACCURACY (@25°C, PF: 1)**			
1% - 100% of Rated CT Current	±0.5		%
STANDARD COMPLIANCE			
Safety	IEC 61010-1, CAN/CSA-C22.2 No. 61010-1-04, IEC 61010-1:2010 (3rd Edition)		
Immunity	EN 61326 -1:2013, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11		
Emissions	FCC Part 15: Class B, CISPR11: 2009: Class B		
Revenue metering	ANSI C12.20-2010 class 0.5**		

	SE-RWND-3D-208-MB	SE-RWND-3D-480-MB	UNITS
INSTALLATION SPECIFICATIONS			
Dimensions (HxWxD)	6.02 × 3.35 × 1.50		in.
Weight	11		Lb.
Enclosure type	High impact, ABS and/or ABS/PC plastic UL 94V-0, IEC FV-0		
Operating Temperature Range	-40 to 167		°F
Relative Humidity (noncondensing)	5 - 90		%
Protection Rating	Indoor (Outdoor when installed in an outdoor enclosure)		
Mounting Type	DIN Rail / Wall mount		

* PE (Protective Earth) connection is not required for meter operation
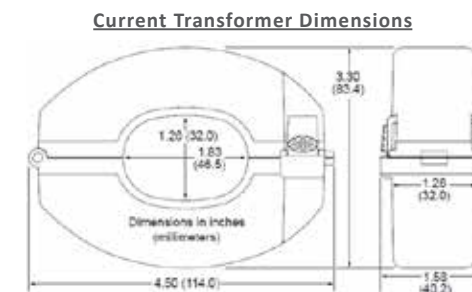** Using Opt C0.3 CT models available from SolarEdge

When ordering a meter, order current transformers as well:

CURRENT TRANSFORMER MODELS(*)	CLASS	RATED RMS CURRENT	DIMENSIONS (INTERNAL/ EXTERNAL)
SEACTL-1250-150-C3	0.3	150 A	1.83 x 1.26 in. / 4.50 x 3.30 in.
SEACTL-1250-300-C3	0.3	300 A	
SEACTL-1250-600-C3	0.3	600 A	

* One current transformer per phase; Sold in kits of 3 CTs. For other ratings contact SolarEdge

Current Transformer Dimensions

Meter Dimensions

To Inverter

SolarEdge Data Logger

All-in-one Data Logger

Supports connection to third-party data loggers for monitoring and control

Environmental sensors support

Electricity meter reader

Wireless connections including ZigBee and GSM plug-ins

Type NEMA 3R enclosure for outdoor protection

POWER SUPPLY				
AC Input Voltage (Nominal)	208 or 277			Vac
AC Input Voltage Range	184 to 305			Vac
AC Frequency (Nominal)	50 / 60 ± 5			Hz
Max AC Input Current	100			mA
ANALOG SENSOR INPUT				
Number of Inputs	3			
	Range	Accuracy	Resolution	
Input 1	0-30mV or 0-2V			
Input 2	0-2V or 0-10V	+/- 1% f.s	10-bit	
Input 3	-20mA to 20mA			
COMMUNICATION INTERFACES				
Ethernet Interface	10/100-BaseT			
Wireless Connections	ZigBee plug-ins (*)			
GSM Module Interface	2G/3G GSM*			
Power Reduction Interface	4 control pins, 5V, GND			
RS485 Interface	2 ports; May be used for local connection			
SUPPORTED RS485 DEVICES (a)				
SolarEdge Devices	Yes			
Meters	Yes			
Export Data to Non-SolarEdge Logger	Yes, SunSpec			
MODBUS RTU for Inverter Level Control				

ENVIRONMENTAL		
Operating Temperatures	-25 to 60 / -4 to 140	°C / °F
Protection Rating	IP65/Type 3R NEMA rating	
INSTALLATION SPECIFICATIONS		
Dimensions (HxWxD)	8.1 x 12.4 x 4.6 / 206.6 x 316 x 117.5	in / mm
Weight	3.9 / 1.8	lb / kg
Conduit Entry Diameters	0.75 / 1	in / mm
Mounting Type	Wall/Pole mount	
STANDARD COMPLIANCE		
Safety	UL60950-1, IEC-60950-1	
EMC	FCC Part 15 class B, IEC61000-6-2, IEC61000-6-3	

(a) for supported protocols and devices, see link https://www.solaredge.com/se-supported-devices
(*) sold separately - see individual product specs for supported locations

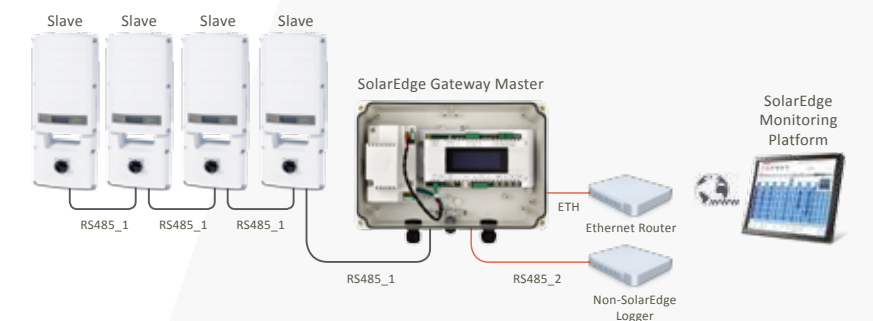## CONNECTION SCENARIOS

Example 1

Analog Sensors Connection with meter and cellular connectivity
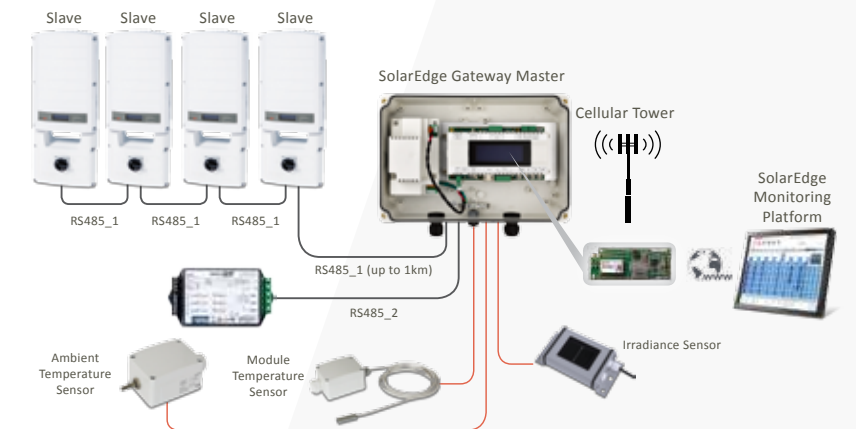
Example 2

Non-SolarEdge Data Logger & SolarEdge Monitoring Parallel Connection

SolarEdge Commercial Gateway

FC (ETL)

All-in-one communication gateway

Environmental sensors support

Power reduction interface & MV grid control

Energy meter reader

Easy installation - DIN rail and wall mount

COMMUNICATION INTERFACES		
Ethernet Interface	10/100-BaseT	
Wireless Connections	ZigBee plug-in [*]	
Power Reduction Interface	4 control pins, 5V, GND	
RS232 Interface	For local connection	
SUPPORTED RS485 DEVICES[a]		
SolarEdge Devices	Yes	
Export Inverter Data	Yes	
Electricity Meters	Yes (also supports integration with third-party meters, such as for accurate export limitation readings)	
Revenue meters	Yes	
Export Data to Non-SolarEdge Data Logger	Yes	
ENVIRONMENTAL		
Operating Temperatures	-20 to 60 / -4 to 140	°C / °F
Protection Rating	IP20 Indoor	
MECHANICAL		
Mounting Type	DIN Rail / Wall mount	
Dimensions (LxWxH)	161.6 X 90 X 62 / 6.36 x 3.54 x 2.44	mm / Inch
Weight	0.5 / 1.1	kg / lbs
STANDARD COMPLIANCE		
Safety	UL60950-1, IEC-60950-1	
EMC	FCC Part 15 class B, IEC61000-6-2, IEC61000-6-3	

[a] for supported protocols and devices, see link https://www.solaredge.com/se-supported-devices
[*] sold separately - see individual product specs for supported locations

POWER		
Power Supply - Wall Mount	Included, 100-240VAC, EU/UK/US/AU interchangeable, 2-pin plug	
Supply Voltage	9-14	Vdc
Connector Type	terminal block	
Power Consumption	<2	W

ANALOG SENSOR INPUT			
Number of Inputs	3		
	Range	Accuracy	Resolution
Input 1	0-30mV or 0-2V		
Input 2	0-2V or 0-10V	+/- 1% f.s	10 bit
Input 3	-20mA – 20mA		

SolarEdge Commercial GSM Plug-in & Data Plans

Wireless cellular connection of SolarEdge inverters to the Internet

Eliminates need for Internet infrastructure on site

GSM Plug-in installed in inverter

Enables remote analysis and troubleshooting

Supports high bandwidth monitoring of connected devices

Connects up to 32 devices, or 500kW DC, to a single GSM Plug-in

Continuous connection, with 5-minute telemetry reporting to the SolarEdge Monitoring Platform for all connected inverters

Future-proof solution

FUNCTIONAL	SE-GSM-R05-XX-S4[1]	UNIT
RF PERFORMANCE		
Operating Frequency Min.-Max. 850	GSM Plug-in transmit: 824-849	MHz
	GSM Plug-in receive: 869-894	
Operating Frequency Min.-Max. 1900	GSM Plug-in transmit: 1850 -1910	MHz
	GSM Plug-in receive: 1930 -1990	
Antenna	Included, 2dBi outdoor; Dual band antenna: 824-960MHz / 1710-2170MHz	
Maximum output power: 850MHz band	33	dBm
Maximum output power: 1900MHz band	30	dBm
Receiver Input Sensitivity (Downlink RF level @ BER Class II < 2.4 %)	Typical -109	dBm
STANDARD COMPLIANCE		
Emissions and Radio	FCC CFR Title 47 Part 15 Class B, Part 15.247	
INSTALLATION SPECIFICATIONS		
Dimensions (L x W)	3.55 x 1.35 / 90.5 x 34.5	in/mm
Operating Temperature	-40 to +185 / -40 to +85	°F/°C

[1] XX = NA for data plans in Canada, XX = US for data plans in the US
Customer is responsible for verifying that the region of installation is covered by the 3G GSM network prior to any installation by accessing:
http://aeris.cellmaps.com/?instance=global
SolarEdge shall not be responsible or liable for unavailability or discontinuance of network coverage in a specific area or region or any network downtime.
[2] For larger systems, use multiple GSM Plug-ins
[3] For accurate pricing, please contact your local Customer Support Representative (CSR)

FUNCTIONAL	SE-GSM-R05-XX-S4[1]	UNIT
Supported Systems	Commercial systems up to 500kW DC[2]	
Monitoring	Continuous connection with 5 minute telemetry from all connected devices	
Number of Monitored Inverters with a Single GSM Modem Kit	Up to 32, limited by the system DC size[2]	
Plan Duration	5 years	
Per-inverter cellular connection charges[3]	SE-GSM-ICC-US-S1 - Inverter Cellular Connection, 0 - 500kW SE-GSM-ICC-US-S2 - Inverter Cellular Connection, 500kW - 1,000kW SE-GSM-ICC-US-S3 - Inverter Cellular Connection, 1,000kW - 1,500kW SE-GSM-ICC-US-S4 - Inverter Cellular Connection, 1,500kW - 2,000kW SE-GSM-ICC-US-S5 - Inverter Cellular Connection, 2,000kW - Up	

Single or Multiple Inverters

RS485-1   RS485-1   RS485-1   RS485-E

L1
L2
L3
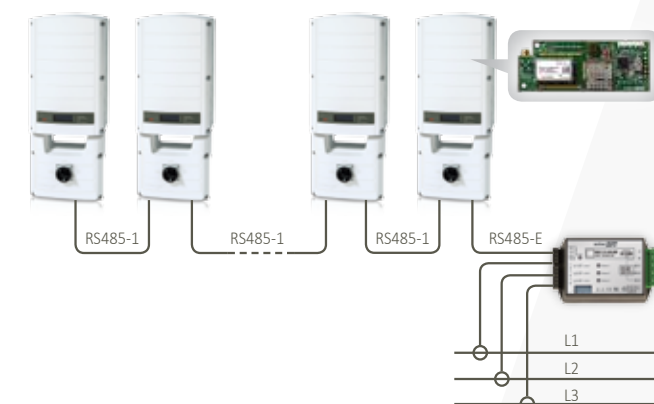
Comprehensive Service Suite

SolarEdge supports you throughout your PV project life cycle. We provide the tools and services to help you grow your business with us.
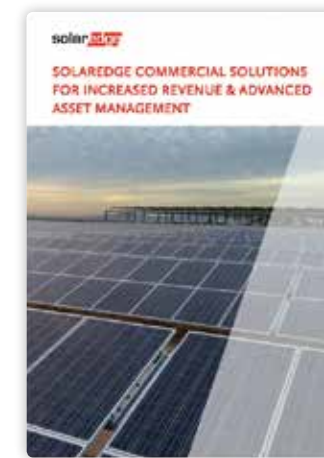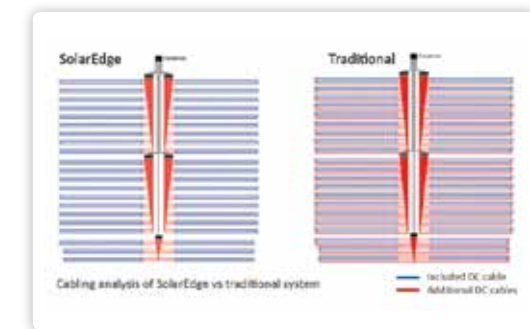

Project Design & Pre-Sale

Project Execution

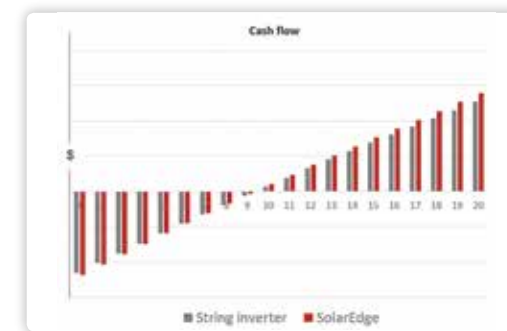
Operation & Maintenance

Project Design and Pre-Sale

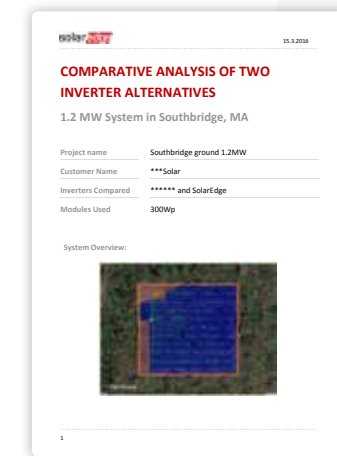Our dedicated tools and engineering services help you close deals.

Tailor-made design optimization by SolarEdge pre-sale engineers

Training and tools help your sales team convey the added value of the SolarEdge solution

LCOE and ROI analysis

PV simulation and comparative system analysis

Comprehensive Service Suite (Cont.)

Project Execution

Our advanced tools and features will assist you to easily and smoothly execute projects.

Project design validation
prior to installation

Hands-on installation training
by local field engineers

Installation validation checklist

DC safety protecting installers
from high DC voltage

**Easy and flexible
string layout**

**Remote and on-site installation
support** by local service teams

Remote operations to commission
and activate the installation

**Automatic
commissioning report**

Operation & Maintenance

Our advanced monitoring platform allows you to guarantee system availability and high performance ratio for system lifetime.

Performance monitoring

Fleet management

Pre-scheduled
performance
and status reports of
multiple sites

Pinpointed automatic
alerts

Inter-site and multi-site
comparisons

Satellite-based
performance ratio

Fault detection

Inverter and module-level
fault identification

Remote troubleshooting
tools

Service

Rapid RMA process

Follow the sun **call center**
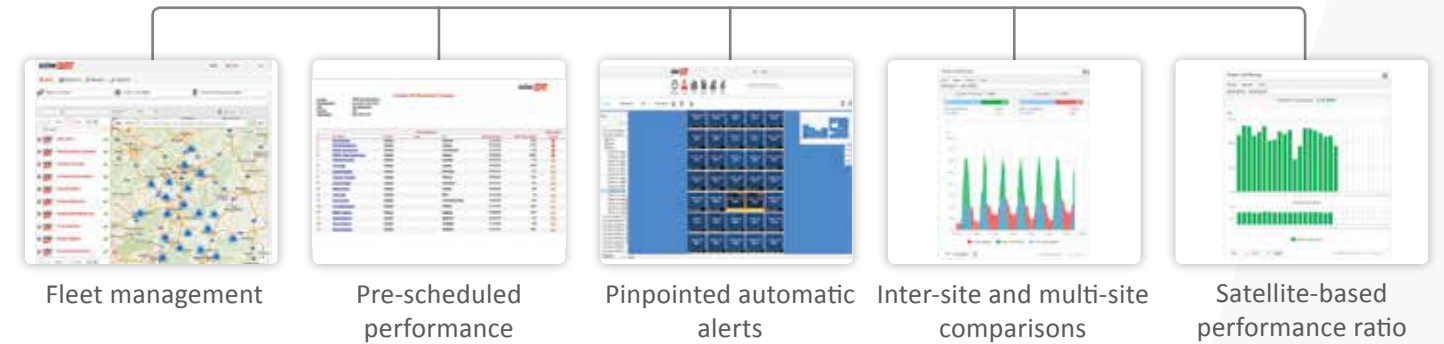
Executive reporting

Site specific automated
production reports

solaredge

SolarEdge invented an intelligent inverter that has changed the way power is harvested and managed in PV systems. The SolarEdge DC optimized inverter maximizes power generation at the individual PV module-level while lowering the cost of energy produced by the PV system.

Addressing a broad range of solar market segments, from residential to commercial and large-scale solar, the SolarEdge DC optimized inverter solution includes PV inverters, power optimizers, and monitoring. By connecting power optimizers to each module, the system enables superior power harvesting and module management. System costs remain competitive by centralizing the DC-AC inversion and grid interaction at a simplified PV inverter. Enhanced PV asset management including reduced O&M costs are enabled through module-level monitoring and remote troubleshooting. Another benefit is the automatic DC shutdown, for installer, maintenance personnel, and firefighter safety, through the SafeDC™ mechanism.

Website	www.solaredge.us
Email	infoNA@solaredge.com
Twitter	www.twitter.com/SolarEdgePV
Facebook	www.facebook.com/SolarEdge