

Life Is On



The intelligent, reliable cloud-connected inverter for utility-scale renewable power

Conext SmartGen™ Inverter



solar.schneider-electric.com

Conext SmartGen inverter



Conext SmartGen inverter

Versatile power conversion platform

- 2 MW 1500 Vdc inverter certified to UL and IEC standards
- Optimized for 4 MW inverter stations with flexible ratings and configurations
- Common platform for PV and Energy Storage applications

30-year service life

- Durable construction with a water and dust tight, Type 4X/IP65 sealed enclosure¹
- Aluminum enclosure for lifetime corrosion protection
- Conformal coating on all PCBAs
- Use of film capacitors and in-house designed power supplies
- Vertically integrated manufacturing and quality control of inverter and components by Schneider Electric

Maximum power generation

- 98.6% peak and 98.4% EU weighted efficiency
- Predictive trend MPPT with >99.9% efficiency tested and validated to EN 50530 standard
- Reduced downtime and mean time to repair (MTTR) with advanced predictive maintenance and remote diagnostics

Easy to install and commission

- Available as an integrated skid or kit with MV step up transformers, or as a stand-alone inverter
- Integrated recombiner with 10 to 14 inputs up to 400A each
- Spacious, segregated, and sealed DC cable compartment
- Above ground, side AC bus connection to MV transformer
- Grid Simulation Mode for faster commissioning without relying on the utility interconnection
- User interface with virtual representation of inverter running on your favorite device (smartphone, tablet, laptop) - WiFi or Ethernet connected
- Integrated auxiliary power and communications options

True Design for Service™

- Compartmentalized access to DC, AC, power conversion, auxiliary, and communications sections
- Integrated tooling for the heaviest parts
- Modular component sub-assemblies for easy replacement
- 1-hour component replacement time on average, including LOTO
- Cloud-connectivity for remote data analytics, and service support

¹ Except heat exchanger section and DC wiring compartment

Improving the LCOE of solar power

The Conext SmartGen is the result of a complete re-evaluation of inverter design, focused on delivering consistently better levelized cost of electricity (LCOE). By combining the best in power electronics design with the industrial Internet of things (IIoT) and data analytics technologies, the Conext SmartGen reduces power plant operating expenses and at the same time increases system availability and total power generation.

30-year service life

Using a completely sealed enclosure, stringent component selection and proven design margins, Conext SmartGen inverters provide a 30-year service life. With ten years more power generation from the same power plant infrastructure compared to industry norms, Conext SmartGen inverters help reduce the total cost per MWh. From the robust painted aluminum enclosure, the PCBA conformal coating, to the smallest details of the cooling system, all aspects of the inverter were designed for long-term durability.

Reduced maintenance expenses

Just as important as the service life is the cost of maintenance over the service life. Conext SmartGen inverters are designed to reduce these costs in every possible way.

- 3-year interval for basic preventative maintenance gives a 66% reduction in on-site maintenance as well as the associated labor, travel and expenses
- No major service is required for at least 15 years, even in harsh environmental conditions
- Predictive maintenance using the Conext™ PowerCloud remote data analytics allows owners to defer major service and even eliminate component replacements based on actual operating conditions

15 years

minimum before the first major service



Advanced remote analytics forecast the service life of individual components

Up to \$30,000

per MW present value savings combining the benefits of a 30-year service life, 3-year interval for basic preventative maintenance, and deferring major service based on predictive maintenance



Increasing system availability

Fewer shutdowns

In addition to optimizing the service schedule, the predictive maintenance alarms and reports from the Conext PowerCloud allows for the replacement of components just in time to reduce unplanned shutdowns. The Conext PowerCloud uses detailed sensor data and sophisticated algorithms to forecast the remaining service life of components, and can predict failures in advance.

Faster time to repair

Avoid costly diagnostics service visits and multiple service visits to perform a repair. With connectivity to the Conext PowerCloud, service engineers are able to access advanced diagnostics information in the event of a shutdown. In addition to viewing faults and event logs remotely as if in front of the inverter, the Conext™ Viewer HMI also provides diagnostics information and recommended parts replacements. To maximize the accuracy of remote diagnostics in case of an unplanned inverter shutdown, the inverters upload a "last breath" data package to the Conext PowerCloud which is analyzed by sophisticated algorithms and expert support to determine the potential reason for the event.

Local and remote interface – the Conext Viewer

The most advanced inverter interface yet, providing local Wi-Fi and Ethernet connectivity as well as remote data access to inverter operational data.

- View and change operating parameters
- View details on faults, alerts, and warnings with contextualized help and advanced diagnostics
- View predictive maintenance data fed from the Conext PowerCloud
- Supports tablet and laptop devices (iOS, Android, Windows) with Wi-Fi or Ethernet connection to inverters
- Electronic record keeping for commissioning reports, maintenance logs, and field service bulletins

Reduce downtime by

25%-50%

with advanced predictive maintenance and remote diagnostics

1-hour

component replacement time on average, including LOTO



Locally, or remotely, service personnel can view the inverter's status, logs, alarms and analytics

Deploy everywhere

Any environment

From the coldest winter to the hottest, dustiest summer, or the humid, salty air of an equatorial island. The Conext SmartGen is dual-loop liquid cooled, with components that have been tested well beyond their operating range, in extreme humidity, in pressurized water tests, dust chamber testing, and salt-fog and seismic conditions.



Worldwide compliance

Any standard

The Conext SmartGen inverter meets North American (UL) and International (IEC) safety and EMC standards.

- Compliant to all major electrical codes, and grid interconnection standards
- Proven capabilities in a broad range of voltage, frequency and ride-through events
- Configurable firmware for compliance with new standards that may arise in the future, ensuring compatibility over its 30-year service lifetime

Any application

The Conext SmartGen product line is a DC agnostic technology platform for economies of scale and O&M savings as the global expansion of renewables drives new applications. Available models and applications include PV, Energy Storage, and microgrid.



Desert



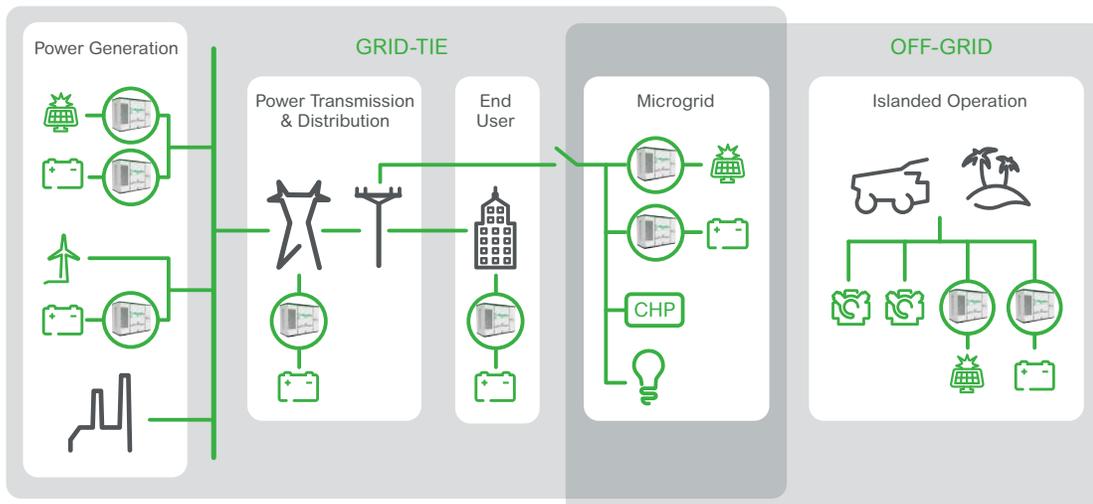
Coastal



Continental



Tropical



Part of the Power EcoSystem™

The Conext SmartGen inverter is the center of Schneider Electric's Power EcoSystem, a family of components and systems that communicate with each other, and with operations staff, service staff, owners and Schneider Electric, to ensure that your power system is performing optimally, and returning the most value for your solar investment.

Power Plant Controller

Ensures that requests and compliance requirements from the utility are met. In hybrid power networks, the Power Plant Controller administers the generating resources to maximize the profitability of power generation while ensuring load stability.

Conext™ Advisor 2

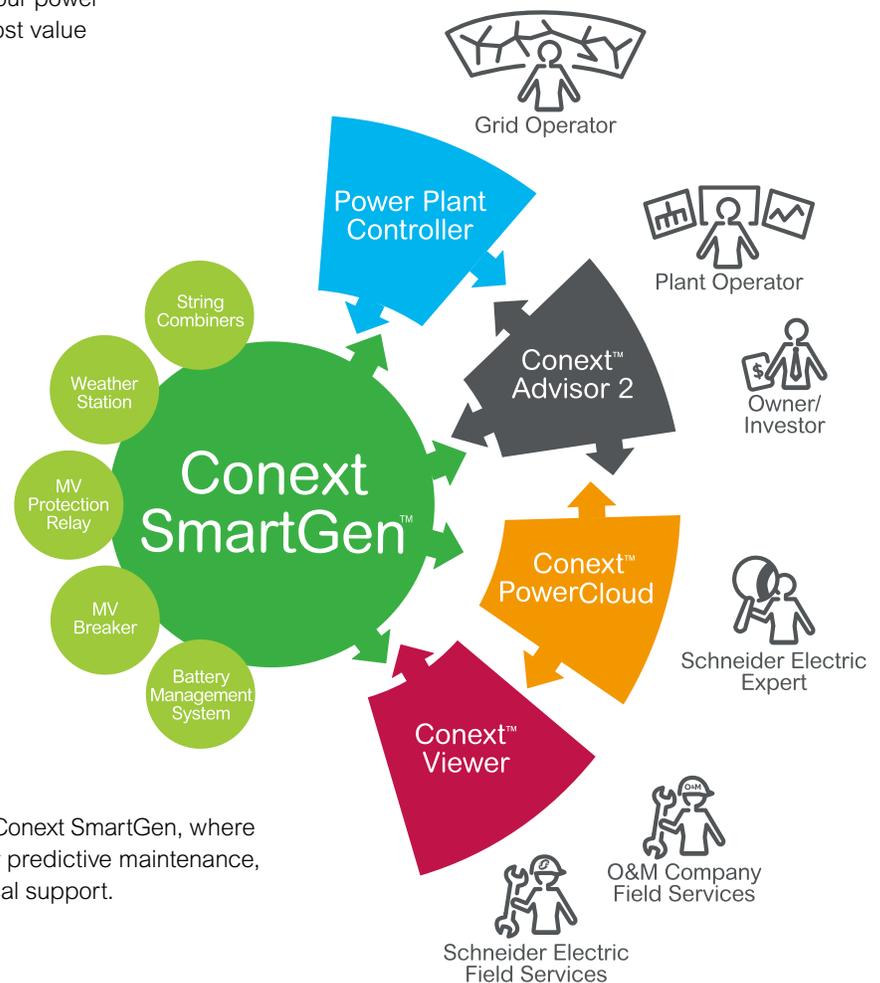
Web-based software with SCADA functionality for control-room operations and performance management of PV power plants. Conext Advisor 2 provides secure, cloud-connected monitoring and control accessible from computers, tablets and smartphones. Its efficient, task-oriented interface enables decision-making and optimization of one or many PV plants.

Conext PowerCloud

Cloud-based remote data analytics collection for the Conext SmartGen, where data from globally-deployed systems is analyzed for predictive maintenance, and to provide enhanced remote service and technical support.

Conext Viewer

Configuration and service software for the Conext SmartGen, including diagnostics, troubleshooting tools, and contextualized help. It allows local and remote connections, from computers and mobile devices.





Peace of Mind

Products, service and support from a bankable partner

With a 180-year history, two decades of expertise in solar power conversion and more than 7 GW of utility-scale solar installations, Schneider Electric brings you peace of mind for long-term reliability, service and support.

Solar inverters are complex machines, often installed in harsh environments with a long-term service life. Access to fast and efficient field service is critical for owners and operators to meet profitability targets.

As a global business with operations in over 100 countries, Schneider Electric has the scale to support installations anywhere. Our goal is to be your partner in achieving the best system performance and our philosophy is to think local. We believe in the importance of strong relationships between our dedicated service teams and our customers in each region and our local service manager is only a phone call away whenever we have the opportunity to help.

Proven expertise

Schneider Electric offers a full range of solutions from the inverter to the grid connection, with the expertise and resources to help you achieve your system performance goals.

- Power conversion
- Monitoring and control
- Low voltage and medium voltage power systems
- Grid code compliance and interconnect solutions
- PV and Energy Storage applications including smoothing and dispatchable solar power generation

#1

solar O&M service provider amongst inverter manufacturers

#18

in Gartner Supply Chain Excellence 2016 global ranking

Global specialist in energy management	180 years of history	€27 billion in consolidated revenue
160,000+ total workforce in 100+ countries	5% of Group revenues devoted to annual R&D spend	Make the most of your energy
43% sales in new economies	€2.1 billion adjusted net income	#1 or #2 player in 90% world group sales

Life Is On

Schneider
Electric

Schneider Electric

Head Office
35 rue Joseph Monier
92500 Rueil Malmaison Cedex, France
Phone: + 33 (0) 1 4129 70 00

solar.schneider-electric.com