

Three Phase Inverter with Synergy Technology For Europe

SE50K / SE66.6K / SE90K / SE100K / SE120K



Powered by unique pre-commissioning process for rapid system installation

- Pre-commissioning feature for automated system validation and wiring during site installation and prior to grid connection
- Easy 2-person installation with lightweight, modular design (each inverter consists of two or three Synergy Units and one Synergy Manager)
- Independent operation of each Synergy Unit enables higher uptime and easy serviceability
- Built-in thermal sensors detect faulty wiring, ensuring enhanced protection and safety
- Designed to automatically reduce high DC voltage to touch-safe levels upon grid/inverter shutdown, with SafeDC™ and optional rapid shutdown
- Built-in arc fault protection
- Built-in PID mitigation for maximized system performance
- Monitored* and field-replaceable surge protection devices to better withstand surges caused by lightning or other events
- Streamlined cabling and lower BoS costs with single DC connection option
- Optional integrated DC safety switch eliminates the need for external DC isolators
- Built-in module-level monitoring with Ethernet or cellular communication for full system visibility

*Applicable only for DC and AC SPDs

/ Three Phase Inverter with Synergy Technology

For Europe

SE50K / SE66.6K / SE90K / SE100K / SE120K

| Applicable to inverter with part number | SExxK-xxx0lxxxx | | | | SExxK- xxx8lxxxx | Units |
|--|---|--------------------------|------------------------|-------------------------|-------------------------|-------|
| | SE50K ⁽¹⁾ For 400V Grid | SE66.6K For 400V Grid | SE90K For 400V Grid | SE100K For 400V Grid | SE120K For 480V Grid | |
| OUTPUT | | | | | | |
| Rated AC Active Output Power | 50,000 ⁽²⁾ | 66,600 ⁽³⁾ | 90,000 | 100,000 ⁽⁴⁾ | 120,000 ⁽⁵⁾ | W |
| Maximum AC Apparent Output Power | 50,000 ⁽²⁾ | 66,600 | 90,000 | 100,000 | 120,000 | VA |
| AC Output Voltage – Line to Line / Line to Neutral (Nominal) | 380 / 220; 400 / 230 | | | | 480 / 277 | Vac |
| AC Output Voltage – Line to Line Range / Line to Neutral Range | 304 – 437 / 176 – 253; 320 – 460 / 184 – 264.5 | | | | 432 – 529 / 249 – 305 | Vac |
| AC Frequency | 50/60 ± 5% | | | | | Hz |
| Maximum Continuous Output Current (per Phase) | 72.5 | 96.5 | 130.5 ⁽⁶⁾ | 145 | | Aac |
| AC Output Line Connections | 3W + PE, 4W + PE | | | | | |
| Supported Grids | WYE: TN-C, TN-S, TN-C-S, TT, IT; Delta: IT | | | | | |
| Maximum Residual Current Injection ⁽⁷⁾ | 200 | | | 300 | | mA |
| Utility Monitoring, Islanding Protection, Configurable Power Factor, Country Configurable Thresholds | Yes | | | | | |
| Total Harmonic Distortion | ≤ 3 | | | | | % |
| Power Factor Range | ± 0.2 to 1 | | | | | |
| INPUT | | | | | | |
| Maximum DC Power (Module STC) Inverter / Synergy Unit | 87,500 / 43,750 | 116,550 / 58,275 | 157,500 / 52,500 | 175,000 / 58,300 | 210,000 / 70,000 | W |
| Transformer-less, Ungrounded | Yes | | | | | |
| Maximum Input Voltage DC+ to DC- | 1000 | | | | | Vdc |
| Operating Voltage Range | 680 – 1000 | | | | | Vdc |
| Maximum Input Current | 2 x 36.25 | 2 x 48.25 | 3 x 43.5 | 3 x 48.25 | 3 x 48.25 | Adc |
| Reverse-Polarity Protection | Yes | | | | | |
| Ground-Fault Isolation Detection | 167 kΩ sensitivity per Synergy Unit ⁽⁸⁾ | | | | | |
| Maximum Inverter Efficiency | 98.3 | | | | 98.1 | % |
| European Weighted Efficiency | 98 | | | | | % |
| Nighttime Power Consumption | < 8 | | | < 12 | | W |
| ADDITIONAL FEATURES | | | | | | |
| Supported Communication Interfaces ⁽⁹⁾ | 2 x RS485, Ethernet, Wi-Fi (optional), Cellular (optional) | | | | | |
| Smart Energy Management | Export limitation | | | | | |
| Inverter Commissioning | With the SetApp mobile application using built-in Wi-Fi access point for local connection | | | | | |
| Arc Fault Protection | Built-in, user configurable (according to UL 1699B) | | | | | |
| Rapid Shutdown | Optional (automatic upon AC Grid Disconnect) | | | | | |
| PID Rectifier | Nighttime, built-in | | | | | |
| RS485 Surge Protection (ports 1 + 2) | Type II, field replaceable, integrated | | | | | |
| DC Surge Protection | Type II, field replaceable, integrated | | | | | |
| AC Surge Protection | Type II, field replaceable, optional | | | | | |
| DC Fuses (Single Pole) | Optional, 25 A / 30 A | | | | | |
| DC Disconnect Switch | Optional | | | | | |
| Pre-Commissioning | Built-in ⁽¹⁰⁾ | | | | | |
| STANDARD COMPLIANCE | | | | | | |
| Safety | IEC-62109-1, IEC-62109-2, AS3100 | | | | | |
| Grid Connection Standards ⁽¹¹⁾ | EN 50549-1, EN 50549-2, VDE-AR-N 4105, VDE-AR-N 4110, VDE V 0126-1-1, CEI 0-21, CEI 0-16, TOR Erzeuger Typ A+B, G99 Type A+B, G99 (NI) Type A+B, VFR 2019 | | | | | |
| Emissions | IEC-61000-6-2, IEC-61000-6-3 Class A, IEC-61000-3-11, IEC-61000-3-12 | | | | | |
| RoHS | Yes | | | | | |

(1) Not available in all countries. For details about the supported inverters in your country, see [Countries Supported by the SolarEdge Inverters](#).

(2) 49,990 in the UK.

(3) For sites under VDE-AR-N 4110, consider this as a 60 kW (at 90% Unom) inverter for site capacity calculations.

(4) For sites under VDE-AR-N 4110, consider this as a 90 kW (at 90% Unom) inverter for site capacity calculations.

(5) For sites under VDE-AR-N 4110, consider this as a 108 kW (at 90% Unom) inverter for site capacity calculations.

(6) For sites under VDE-AR-N 4110, the Maximum Continuous Output Current per Phase is 145 A.

(7) If an external RCD is required, its trip value must be ≥ 200 mA for SE50K/SE66.6K; ≥ 300 mA for SE90K, SE100K, SE120K.

(8) Where permitted by local regulations.

(9) For specifications of the optional communication options, visit the [Communication page](#) on the SolarEdge website or download the relevant product datasheet from the [Knowledge Center](#).

(10) Not available for P/Ns SExxK-xxxxBPxx.

(11) For all standards and certificates download, refer to the [Certificates category](#) in the Knowledge Center.

/ Three Phase Inverter with Synergy Technology For Europe

SE50K / SE66.6K / SE90K / SE100K / SE120K

| Applicable to inverter with part number | SExxK-xxx0lxxxx | | | | SExxK- xxx8lxxxx | Units |
|---|--|--------------------------|--|-------------------------|-------------------------|-------|
| | SE50K For 400V Grid | SE66.6K For 400V Grid | SE90K For 400V Grid | SE100K For 400V Grid | SE120K For 480V Grid | |
| INSTALLATION SPECIFICATIONS | | | | | | |
| Number of Synergy Units per Inverter | 2 | | 3 | | | |
| AC Wire Cross Section and Outer Diameter: Line/PE (Aluminum or Copper) | Cross section up to 120 / 70 mm ² ; outer diameter 30-50 / 12-20 mm | | | | | |
| DC Input: Inverter / Synergy Unit ⁽¹²⁾⁽¹³⁾ | 8 / 4 MC4 pairs | | 12 / 4 MC4 pairs | | | |
| | Gland, 2 pairs / 1 pair, cross section 25 – 70 mm ² , aluminum or copper Cable outer diameter 12 – 20 mm | | Gland, 3 pairs / 1 pair, cross section 25 – 70 mm ² , aluminum or copper Cable outer diameter 12 – 20 mm | | | |
| Dimensions (H x W x D) | Synergy Unit: 558 x 328 x 273 Synergy Manager: 360 x 560 x 295 | | | | | mm |
| Weight | Synergy Unit: 32 Synergy Manager: 18 | | | | | kg |
| Operating Temperature Range | -40 to +60 ⁽¹⁴⁾ | | | | | °C |
| Cooling | Fan (user replaceable) | | | | | |
| Noise | < 67 | | | | | dBA |
| Protection Rating | IP65 – outdoor and indoor | | | | | |
| Mounting | Brackets provided | | | | | |

(12) DC input is available with MC4 or Gland connection under the inverter part number. For more information, contact SolarEdge.

(13) Only MC4 connectors manufactured by Staubli are approved for use.

(14) For power de-rating information refer to the [Temperature Derating](#) technical note.

| Accessories - SPDs (purchased separately) | |
|--|--------------|
| Accessory | P/N |
| AC SPD kit for Synergy Manager (5 units per box) | SE-AC-SPD-SM |

SolarEdge is a global leader in smart energy technology. By leveraging world-class engineering capabilities and with a relentless focus on innovation, SolarEdge creates smart energy solutions that power our lives and drive future progress.

SolarEdge developed an intelligent inverter solution that changed the way power is harvested and managed in photovoltaic (PV) systems. The SolarEdge DC optimized inverter maximizes power generation while lowering the cost of energy produced by the PV system.

Continuing to advance smart energy, SolarEdge addresses a broad range of energy market segments through its PV, storage, EV charging, UPS, and grid services solutions.

-  SolarEdge
-  @SolarEdgePV
-  @SolarEdgePV
-  SolarEdgePV
-  SolarEdge
-  www.solaredge.com/corporate/contact

solaredge.com

© SolarEdge Technologies, Ltd. All rights reserved. SOLAREEDGE, the SolarEdge logo, OPTIMIZED BY SOLAREEDGE are trademarks or registered trademarks of SolarEdge Technologies, Inc. All other trademarks mentioned herein are trademarks of their respective owners. Date: January 30, 2024 DS-000008-EU Subject to change without notice.

Cautionary Note Regarding Market Data and Industry Forecasts: This brochure may contain market data and industry forecasts from certain third-party sources. This information is based on industry surveys and the preparer's expertise in the industry and there can be no assurance that any such market data is accurate or that any such industry forecasts will be achieved. Although we have not independently verified the accuracy of such market data and industry forecasts, we believe that the market data is reliable and that the industry forecasts are reasonable.

CE RoHS

solaredge