INVERTERS

Three Phase Inverter with Synergy Technology

For 220V/230V Line to Line Grids

SE50K / SE66.6K / SE90K / SE100K

Specifically designed to work with power optimizers

- Pre-commissioning feature for automated validation of system components and wiring during the site installation process and prior to grid connection
- Easy 2-person installation with lightweight, modular design (each inverter consists of 2 or 3 Synergy Units and 1 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
- Built-in arc fault protection and optional rapid shutdown
- 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: integrated RS485 and Type 2 DC SPDs, optional Type 2 AC SPD
- Designed to automatically reduce high DC voltage to touch-safe levels, upon grid/inverter shutdown, with SafeDC™
- 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

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Applicable to inverter with part number	SExxK-xxx0Ixxxx				
	SE50K	SE66.6K	SE90K	SE100K	Units
OUTPUT					
Rated AC Active Output Power	29,000	38,450	51,900	57,700	W
Maximum AC Apparent Output Power	29,000	38,450	51,900	57,700	VA
AC Output Voltage — Line to Line / Line to Neutral (Nominal)	220 / 127; 230 / 133				Vac
AC Output Voltage — Line to Line Range	176 – 253 / 184 – 264.5				Vac
AC Frequency	50/60 ± 5%				Hz
Maximum Continuous Output Current (per Phase)	72.5	96.5	130.5	145	Aac
AC Output Line Connections	3W + PE (corner grounded not supported), 4W + PE				
Supported Grids	WYE: TN-C, TN-S, TN-C-S, TT, IT; Delta: IT				
Maximum Residual Current Injection(1)	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	50,750 / 25,375	67,280 / 33,640	90,825 / 30,275	100,975 / 33,650	W
Transformer-less, Ungrounded	Yes				
Maximum Input Voltage DC+ to DC-	600				Vdc
Operating Voltage Range	370 – 600				Vdc
Maximum Input Current	2 x 36.25	2 x 48.25	3 x 43.5	3 x 48.25	Adc
Reverse-Polarity Protection	Yes				
Ground-Fault Isolation Detection	167kΩ Sensitivity per Synergy Unit(2)				
Maximum Inverter Efficiency	98.3				%
European Weighted Efficiency	98				%
Nighttime Power Consumption	< 8		< 12		W
ADDITIONAL FEATURES					
Supported Communication Interfaces(3)	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 UL1699B)				
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(4)				
STANDARD COMPLIANCE					
Safety	IEC 62109-1, IEC 62109-2, AS3100				
Grid Connection Standards(5)	EN50549-1, EN50549-2, 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) If an external RCD is required, its trip value must be ≥ 200 mA for SE50K/SE66.6K; ≥ 300 mA for SE90K, SE100K.
(2) Where permitted by local regulations.
(3) For specifications of the optional communication options, visit the Communication product page or the Knowledge Center to download the relevant product datasheet.
(4) Not available for P/Ns SExxK-xxxxxBPxx.
(5) For all standards and certificates download, see the Knowledge Center.

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For 220V/230V Line to Line Grids

SE50K / SE66.6K / SE90K / SE100K

Applicable to inverter with part number	SExxK-xxx0Ixxxx				
	SE50K	SE66.6K	SE90K	SE100K	Units
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(6)(7)	8 / 4 MC4 pairs		12 / 4 MC4 pairs		
	Gland, 2 pairs / 1 pair, cross section 25 – 70mm^2, aluminum or copper Cable outer diameter 12 – 20mm		Gland, 3 pairs / 1 pair, cross section 25 – 70mm^2, aluminum or copper Cable outer diameter 12 – 20mm		
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(8)				˚C
Cooling	Fan (user replaceable)				
Noise	< 67				dBA
Protection Rating	IP65 – outdoor and indoor				
Mounting	Brackets provided				

(6) DC input is available with MC4 or Gland connection under the inverter part number. For more information, contact SolarEdge.
(7) Only MC4 connectors manufactured by Staubli are approved for use.
(8) For power derating information, refer to the Temperature Derating technical note.

Accessories (purchased separately)	
Accessory	**PN**
AC SPD kit for Synergy Manager (5 units per box)	SE-AC-SPD-SM
Antenna for Wi-Fi and ZigBee Wireless Communications	SE-ANT-ZB-WIFI-03

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.

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CE RoHS