

Three Phase Inverter with Synergy Technology For Australia and New Zealand

SE50K / SE66.6K / SE82.8K / SE100K



Powered by unique pre-commissioning process for rapid system installation

- / 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 two or three Synergy Units and one Synergy Manager)
- / Independent operation of each inverter unit enables higher uptime and easy serviceability
- / Built-in thermal sensors detect faulty wiring, ensuring enhanced protection and safety
- / Built-in arc fault protection
- / Built-in PID mitigation for maximised system performance
- / Monitored* and field-replaceable surge protection devices, to better withstand surges caused by lightning or other events: integrated RS485 and optional Type 2 DC and AC SPDs
- / Built-in 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-AUxxLxxxx				
	SE50K	SE66.6K	SE82.8K	SE100K	Units
OUTPUT					
Rated AC Active Output Power	50000	66600	82800	100000	W
Maximum AC Apparent Output Power	50000	66600	82800	100000	VA
AC Output Voltage – Line to Line / Line to Neutral (Nominal)	380 / 220; 400 / 230				Vac
AC Output Voltage – Line to Neutral Range	176 – 253; 184 – 264				Vac
AC Output Line Connections	3W + PE, 4W + PE				
Supported Grids	WYE: TN-C, TN-S, TN-C-S, TT, IT; Delta: IT				
AC Frequency	50 ± 5%				Hz
Maximum Continuous Output Current (per Phase)	72.5	96.5	120	145	Aac
Maximum Continuous Overcurrent Protection	72.5	96.5	120	145	Aac
Residual Current Detector / Residual Current Step Detector	100 / 30				mA
Inrush current AC (Peak / Duration)	7.2 / 20		10.8 / 20		Aac rms/ms
Maximum Residual Current Injection ⁽¹⁾	200		300		mA
Maximum Output Fault Current	109	142	176	213	Aac
Utility Monitoring, Islanding Protection, Configurable Power Factor, Country Configurable Thresholds	Yes				
Total Harmonic Distortion	≤ 3				%
Protective Class	Class I				
Overvoltage Category AC Port	III				
Active Anti-Islanding Method	Slip Mode Frequency Shift				
Power Factor Range	+/-0.8 to 1				
INPUT					
Maximum DC Power (Module STC) Inverter / Synergy Unit	75000 / 37500	100000 / 50000	124200 / 41400	150000 / 50000	W
Transformer-less, Ungrounded	Yes				
Operating Voltage Range DC+ to DC-	680 – 1000				Vdc
Minimum Input Voltage DC to Gnd	340				Vdc
Maximum Input Voltage DC to Gnd	500				Vdc
Maximum Input Voltage DC+ to DC-	1000				Vdc
Maximum Input Current	2 x 36.25	2 x 48.25	3 x 40	3 x 48.25	Adc
Short Circuit Current from the PV Array per Synergy Unit	48.25				
Maximum Back-Feed Current	0				Adc
Overvoltage Category	II				
Reverse-Polarity Protection	Yes				
Ground-Fault Isolation Detection	167kΩ sensitivity per Synergy Unit ⁽²⁾				
Protective Class	Class I				
Overvoltage Category DC Port	II				
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 / IEC 63027)				
Rapid Shutdown (RSD)	Optional (automatic upon AC Grid Disconnect) ⁽⁴⁾				
PID Rectifier	Nighttime, built-in				
RS485 Surge Protection (ports 1 + 2)	Type II, field replaceable, integrated				
DC Surge Protection	Type II, field replaceable, optional				
AC Surge Protection	Type II, field replaceable, optional				
DC Disconnect Switch	Provided				
Operating Humidity (RH)	Up to 95%, condensing				
Maximum Altitude	2000				m
Inverter Topology	Non-Isolated Photovoltaic Inverter				
Pre-Commissioning ⁽⁵⁾	Built-in				
VAR at Night ⁽⁶⁾	Yes				

(1) If an external RCD is required, its trip value must be ≥ 200mA for SE50K/SE66.6K; ≥ 300mA for SE82.8K/SE100K.

(2) Where permitted by local regulations.

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

(4) The RSD feature is supplied only in Synergy units with part numbers matching the structure SESUK-xxRxxxx.

(5) Not available for P/Ns SExxK-xxxxBpx.

(6) For details, see [Set Volt Ampere at Night – Application Note](#).

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STANDARD COMPLIANCE					
Safety	IEC 63027; IEC 62109-1; IEC 62109-2, AS 3100				
Grid Connection Standards ⁽⁷⁾	AS/NZS 4777:2020				
Emissions	IEC 61000-6-2, IEC 61000-6-3 Class A, IEC 61000-3-11, IEC 61000-3-12				
Advanced Grid Support Capabilities	L/HFRT; L/HVRT; VOLT-VAR; VOLT-Watt; Frequency-Watt; Ramp Rate Control; Fixed Power Factor; Fixed Q; Cos (Phi) / Watt				
RoHS	Yes				
INSTALLATION SPECIFICATIONS					
Number of Synergy Units per Inverter	2		3		
AC Max Conduit Size	63				mm
AC Wire Cross Section Line/PE (Aluminum or Copper)	95 / 50		120 / 70		mm ²
DC Max Conduit Size	2 x 40 mm		3 x 40 mm		
DC Max Wire Cross Section (Copper) / Number of PV Arrays	50 mm ² / 2 x PV arrays		50 mm ² / 3 x PV arrays		mm ²
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				mm
ADDITIONAL INFORMATION					
Manufacturing Countries	China, Vietnam, Hungary				

⁽⁷⁾ For all standards and certificates download, refer to the Certificates category in the [Knowledge Center](#).

⁽⁸⁾ For power derating information, see the [Temperature Derating](#) technical note.

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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