Three Phase Inverter with Synergy Technology

For Europe

SE50K / SE66.6K / SE90K / SE100K

INVERTERS



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 two-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
- Advanced, built-in safety features include:
  - Thermal sensors that detect faulty wiring
  - SafeDC™ - designed to automatically reduce high DC voltage to safe levels upon grid/inverter shutdown, with optional Rapid Shutdown
  - Arc fault protection
- Optional integrated DC safety switch eliminates the need for external DC isolators
- Built-in PID mitigation for maximized performance
- Monitored* and field-replaceable surge protection devices to better withstand power surges
- Built-in module-level monitoring with Ethernet or cellular communication for full system visibility
- Inverter power rating is set during commissioning, resulting in fewer part numbers for simplified inventory and operations

*Applicable only for DC and AC SPDs

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Applicable to inverter with part number	SE-DBL-RW00IBNM4		SE-TRI-RW00IBNM4 / SE-TRI-RW00IBNQ4		Units
	SE50K[1] For 400V Grid	SE66.6K For 400V Grid	SE90K For 400V Grid	SE100K For 400V Grid	
OUTPUT					
Rated AC Active Output Power	50,000[2]	66,600	90,000	100,000	W
Maximum AC Apparent Output Power	50,000[2]	66,600	90,000[3]	100,000	VA
AC Output Voltage – Line to Line / Line to Neutral (Nominal)	380 / 220; 400 / 230				Vac
AC Output Voltage – Line to Line Range / Line to Neutral Range	304 – 437 / 176 – 253; 320 – 460 / 184 – 264.5				Vac
AC Frequency	50/60 ± 5%				Hz
Maximum Continuous Output Current (per Phase)	72.5	96.5[4]	130.5[5]	145[6]	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	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	Adc
Reverse-Polarity Protection	Yes				
Ground-Fault Isolation Detection	167 kΩ sensitivity per Synergy Unit[8]				
Maximum Inverter Efficiency	98.3				%
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 SolarEdge Go 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)[10]				
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 Disconnect: SE-xxx- RW00IBNM4	No		No		
DC Disconnect: SE-xxx- RW00IBNQ4	Not Applicable		Yes		
Pre-Commissioning	Built-in[11]				
VAR at Night[12]	Yes				
Safety	IEC 63027; IEC62109-1; IEC62109-2; AS3100				
Grid Connection Standards[13]	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				
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				

(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) When using country settings that follow VDE-AR-N 4110, the Maximum AC Apparent Output Power is 100,000 VA.
(4) When using country settings that follow VDE-AR-N 4110, the Maximum Continuous Output Current per Phase is 107.4 A.
(5) When using country settings that follow VDE-AR-N 4110, the Maximum Continuous Output Current per Phase is 145 A.
(6) When using country settings that follow VDE-AR-N 4110, the Maximum Continuous Output Current per Phase is 161.1 A.
(7) If an external RCD is required, its trip value must be ≥ 200 mA for SE50K and SE66.6K; ≥ 300 mA for SE90K and SE100K.
(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) The RSD feature is supplied only in Synergy units with part numbers matching the structure SESUK-xxRxxxxxx
(11) Not available for P/Ns SExxK-xxxxxBPxx.
(12) For details, see the Application Note: Set Volt Ampere Reactive at Night.
(13) For all standards and certificates download, refer to the Certificates category in the Knowledge Center. Certificates apply according to the configured inverter model (e.g - SE100K/SE90K/...)

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	SE50K For 400V Grid	SE66.6K For 400V Grid	SE90K For 400V Grid	SE100K For 400V Grid	Units
INSTALLATION SPECIFICATIONS					
Number of Synergy Units per Inverter	2		3		
DC Input: Inverter / Synergy Unit(1)(2)	8 / 4 MC4 pairs		12 / 4 MC4 pairs		
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(3)				°C
Cooling	Fan (user replaceable)				
Noise	< 67				dBA
Protection Rating	IP65 – outdoor and indoor				
Mounting	Brackets provided				

(1) DC input is available with MC4 connection. For more information, contact SolarEdge.
(2) Only MC4 connectors manufactured by Staubli are approved for use.
(3) For power de-rating information refer to the Temperature Derating technical note.

Ordering Information		
Synergy Unit	**P/N**	**Comments**
With Rapid Shutdown	SESUK-xxRxIxxxx	2 units required for SE-DBL- xxxxxxxxx
Without Rapid Shutdown	SESUK-xxxxIxxxx	3 units required for SE-TRI-xxxxxxxxx
Accessory	**P/N**	**Comments**
AC SPD kit for Synergy Manager	SE-AC-SPD-SM	5 units per kit, 1 unit required per Synergy Manager

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

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