

Three Phase Inverter with Synergy Technology

For the 208V Grid for North America

SE50KUS



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 3 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
- / Built-in arc fault protection and 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
- / 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 Numbers	SExxK-US02Ixxxx	
	SE50KUS	
OUTPUT		
Rated AC Active Output Power	50000	W
Maximum AC Apparent Output Power	50000	VA
AC Output Line Connections	3W + PE, 4W + PE	
Supported Grids	WYE: TN-C, TN-S, TN-C-S, TT, IT; Delta: IT	
AC Output Voltage Minimum-Nominal-Maximum ⁽¹⁾ (L-N)	105-120-132.5	Vac
AC Output Voltage Minimum-Nominal-Maximum ⁽¹⁾ (L-L)	183-208-229	Vac
AC Frequency Min-Nom-Max ⁽¹⁾	59.5 - 60 - 60.5	Hz
Maximum Continuous Output Current (per Phase, PF=1)	139.5	Aac
GFDI Threshold	1	A
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	75000 / 25000	W
Transformer-less, Ungrounded	Yes	
Maximum Input Voltage DC+ to DC-	600	Vdc
Operating Voltage Range	370 - 600	Vdc
Maximum Input Current	3 x 46.5	Adc
Reverse-Polarity Protection	Yes	
Ground-Fault Isolation Detection	167kΩ sensitivity per Synergy Unit ⁽²⁾	
CEC Weighted Efficiency	97	%
Nighttime Power Consumption	< 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)	
Photovoltaic Rapid Shutdown System	NEC 2014, 2017 and 2020, Built-in	
PID Rectifier	Nighttime, built-in	
RS485 Surge Protection (ports 1+2)	Type II, field replaceable, integrated	
AC, DC Surge Protection	Type II, field replaceable, integrated	
DC Fuses (Single Pole)	25A, integrated	
DC SAFETY SWITCH		
DC Disconnect	Built-in	
STANDARD COMPLIANCE		
Safety	UL1699B, UL1741, UL1741 SA, UL1998, CSA C22.2#107.1, Canadian AFCI according to T.I.L. M-07	
Grid Connection Standards	IEEE 1547, Rule 21, Rule 14 (H1)	
Emissions	FCC part 15 class A	

(1) For other regional settings please contact SolarEdge support

(2) Where permitted by local regulations

(3) For specifications of the optional communication options, visit <https://www.solaredge.com/products/communication> or the Resource Library webpage: <https://www.solaredge.com/downloads#>, to download the relevant product datasheet

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Applicable to inverter with Part Numbers	SExxK-US02Ixxxx	
	SE50KUS	
INSTALLATION SPECIFICATIONS		
Number of Synergy Units per Inverter	3	
AC Max Conduit Size	2 ½"	in
Max AWG Line / PE	4/0 / 1/0	
DC Max Conduit Size	1 x 3"; 2 x 2"	in
DC Input Inverter / Synergy Unit	12 / 4 pairs; 6-12 AWG	
Dimensions (H x W x D)	Synergy Unit: 22 x 12.9 x 10.75 / 558 x 328 x 273 Synergy Manager: 14.17 x 22.4 x 11.6 / 360 x 560 x 295	in / mm
Weight	Synergy Unit: 70.4 / 32 Synergy Manager: 39.6 / 18	lb / kg
Operating Temperature Range	-40 to +140 / -40 to +60 ⁽⁴⁾	°F / °C
Cooling	Fan (user replaceable)	
Noise	< 67	dBA
Protection Rating	NEMA 3R	
Mounting	Brackets provided	

(4) For power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note.pdf>

Three Phase Inverters for the 120/208V Grid For North America

SE14.4KUS / SE17.3KUS



INVERTERS

The best choice for SolarEdge enabled systems

- Specifically designed to work with power optimizers
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for superior efficiency (97.5%) and longer strings
- Built-in type 2 DC and AC Surge Protection, to better withstand lightning events
- Small, lightest in its class, and easy to install outdoors or indoors on provided bracket
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- Built-in module-level monitoring with Ethernet, wireless or cellular communication for full system visibility
- Integrated Safety Switch
- UL1741 SA certified, for CPUC Rule 21 grid compliance

/ Three Phase Inverters for the 120/208V Grid⁽¹⁾

For North America

SE14.4KUS / SE17.3KUS

MODEL NUMBER	SE14.4KUS	SE17.3KUS	UNITS
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXXX-USX2IXXXX		
OUTPUT			
Rated AC Power Output	14400	17300	W
Maximum apparent AC output power	14400	17300	VA
AC Output Line Connections	3W + PE, 4W + PE		
AC Output Voltage Minimum-Nominal-Maximum ⁽²⁾ (L-N)	105-120-132.5		Vac
AC Output Voltage Minimum-Nominal-Maximum ⁽²⁾ (L-L)	183-208-229		Vac
AC Frequency Min-Nom-Max ⁽²⁾	59.3 - 60 - 60.5		Hz
Continuous Output Current (per Phase)	40	48.25	Aac
GFDI Threshold	1		A
Utility Monitoring, Islanding Protection, Country Configurable Set Points	Yes		
THD	≤ 3		%
Power Factor Range	+/- 0.85 to 1		
INPUT			
Maximum DC Power (Module STC)	21600	26000	W
Transformer-less, Ungrounded	Yes		
Maximum Input Voltage DC+ to DC-	600		Vdc
Operating Voltage Range	370 - 600		Vdc
Maximum Input Current	40	48.25	Adc
Maximum Input Short Circuit Current	55		Adc
Reverse-Polarity Protection	Yes		
Ground-Fault Isolation Detection	167kΩ Sensitivity ⁽³⁾		
CEC Weighted Efficiency	97.5		%
Night-time Power Consumption	< 4		W
ADDITIONAL FEATURES			
Supported Communication Interfaces	2 x RS485, Ethernet, Cellular (optional)		
Inverter Commissioning	With the SetApp mobile application using built-in Wi-Fi access point for local connection		
Rapid Shutdown	NEC2014, NEC2017 and NEC2020 compliant/certified		
RS485 Surge Protection Plug-in	Supplied with the inverter, Built-in		
AC, DC Surge Protection	Type II, field replaceable, Built-in		
DC Fuses (Single Pole)	25A, Built-in		
Smart Energy Management	Export Limitation		
DC SAFETY SWITCH			
DC Disconnect	Integrated		
STANDARD COMPLIANCE			
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07		
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)		
Emissions	FCC part15 class A		
INSTALLATION SPECIFICATIONS			
AC output conduit size /AWG range	¾" or 1" / 6 - 10 AWG		
DC input conduit size / AWG range	¾" or 1" / 6 - 12 AWG		
Number of DC inputs pairs	4		
Dimensions with Safety Switch (H x W x D)	31.8 x 12.5 x 11.8 / 808 x 317 x 300		in / mm
Weight with Safety Switch	78.2 / 35.5		lb / kg
Cooling	Fans (user replaceable)		
Noise	< 62		dBA
Operating Temperature Range	-40 to +140 / -40 to +60 ⁽⁴⁾		°F / °C
Protection Rating	NEMA 3R		
Mounting	Bracket provided		

(1) For 277/480V inverters refer to: <https://www.solaredge.com/sites/default/files/se-three-phase-us-inverter-277-480v-setapp-datasheet.pdf>

(2) For other regional settings please contact SolarEdge support

(3) Where permitted by local regulations

(4) For power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>

Three Phase Inverters for the 120/208V Grid for North America

SE9KUS



INVERTERS

The best choice for SolarEdge enabled systems

- Specifically designed to work with power optimizers
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Internet connection through Ethernet or Wireless
- Fixed voltage inverter for longer strings
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Built-in module-level monitoring
- Integrated arc fault protection and rapid shutdown for NEC 2014, 2017 and 2020, per article 690.11 and 690.12
- Integrated Safety Switch
- Supplied with RS485 Surge Protection, to better withstand lightning events
- Small, lightweight, and easy to install outdoors or indoors on provided bracket

/ Three Phase Inverters for the 120/208V Grid⁽¹⁾ for North America

SE9KUS

APPLICABLE TO INVERTERS WITH PART NUMBER		SEXXK-XXXXXBXX4	
MODEL NUMBER		SE9KUS	
OUTPUT			
Rated AC Power Output	9000	VA	
Maximum AC Power Output	9000	VA	
Output Line Connections	3 phase, 3-wire / PE (L1-L2-L3), TN, TT 3 phase, 4-wire / PE (L1-L2-L3-N), TN, TT		
AC Output Voltage Minimum-Nominal-Maximum ⁽²⁾ (L-N)	105-120-132.5	Vac	
AC Output Voltage Minimum-Nominal-Maximum ⁽²⁾ (L-L)	183-208-229	Vac	
AC Frequency Min-Nom-Max ⁽²⁾	59.3 - 60 - 60.5	Hz	
Maximum Continuous Output Current (per Phase)	25	A	
GFDI Threshold	1	A	
Utility Monitoring, Islanding Protection, Country Configurable Set Points	Yes		
THD	≤ 3	%	
INPUT			
Maximum DC Power (Module STC)	12150	W	
Transformer-less, Ungrounded	Yes		
Maximum Input Voltage DC to Gnd	250	Vdc	
Maximum Input Voltage DC+ to DC-	500	Vdc	
Nominal Input Voltage DC to Gnd	200	Vdc	
Nominal Input Voltage DC+ to DC-	400	Vdc	
Maximum Input Current	26.5	Adc	
Maximum Input Short Circuit Current	45	Adc	
Reverse-Polarity Protection	Yes		
Ground-Fault Isolation Detection	1MΩ Sensitivity ⁽³⁾		
CEC Weighted Efficiency	96.5	%	
Night-time Power Consumption	< 3	W	
ADDITIONAL FEATURES			
Supported Communication Interfaces	RS485, Ethernet, Built-in Cellular (optional)		
Inverter Commissioning	With the SetApp mobile application using built-in access point for local connection		
Rapid Shutdown – NEC 2014, 2017 and 2020 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect		
RS485 Surge Protection Plug-in	Supplied with the inverter		
Smart Energy Management	Export Limitation		
STANDARD COMPLIANCE			
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07		
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)		
Emissions	FCC part15 class B		
INSTALLATION SPECIFICATIONS			
AC output conduit size / AWG range	3/4" minimum / 8-4 AWG		
DC input conduit size / AWG range	3/4" minimum / 12-6 AWG		
Number of DC inputs ⁽⁴⁾	2 pairs		
Dimensions (H x W x D)	21 x 12.5 x 10.5 / 540 x 315 x 260		
Dimensions with Safety Switch (H x W x D)	30.5 x 12.5 x 10.5 / 775 x 315 x 260		
Weight	93.6 / 42.5		
Weight with Safety Switch	100.3 / 45.5		
Cooling	Fans (user replaceable)		
Noise	< 55		
Operating Temperature Range	-40 to +140 / -40 to +60 ⁽⁵⁾		
Protection Rating	NEMA 3R		

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(2) For other regional settings please contact SolarEdge support

(3) Where permitted by local regulations

(4) Field replacement kit for 1 pair of inputs P/N: DCD-3PH-1TBK; Field replacement kit for 3 pairs of fuses and holders P/N: DCD-3PH-6FHK-S1

(5) For power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>