

# Three Phase Inverter with Synergy Technology

For Australia and New Zealand

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

INVERTERS



## 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 2 or 3 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	
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 <sup>(1)</sup>	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	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 - 830				Vdc
Minimum Input Voltage DC to Gnd	340				Vdc
Maximum Input Voltage DC to Gnd	415				Vdc
Maximum Input Voltage DC+ to DC-	830				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 <sup>(2)</sup>				
Protective Class	Class I				
Overvoltage Category	II				
Maximum Inverter Efficiency	98.3				%
European Weighted Efficiency	98				%
Nighttime Power Consumption	< 8		< 12		W
ADDITIONAL FEATURES					
Supported Communication Interfaces <sup>(3)</sup>	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)				
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				
Maximum Altitude	2000				m
Inverter Topology	Non-Isolated Photovoltaic Inverter				
STANDARD COMPLIANCE					
Safety	IEC-62109-1, IEC-62109-2, AS3100				
Grid Connection Standards <sup>(4)</sup>	AS/NZS4777:2020				
Emissions	IEC61000-6-2, IEC61000-6-3 Class A, IEC61000-3-11, IEC61000-3-12				
RoHS	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 <https://www.solaredge.com/products/communication> or the Resource Library webpage: <https://www.solaredge.com/resource-library>, to download the relevant product datasheet

(4) For all standards and certificates download, refer to the Certifications category on the Resource library webpage: <https://www.solaredge.com/resource-library>

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INSTALLATION SPECIFICATIONS				
Number of Synergy Units per Inverter	2		3	
AC Max Conduit Size	63			mm
AC Wire Cross Section Line/PE	95 / 50		120 / 70	
DC Max Conduit Size	2 x 40 mm		3 x 40 mm	
DC Max Wire Cross Section (Fine stranded copper, class 5/6) / Number of PV Arrays	50 mm <sup>2</sup> / 2 x PV arrays		50 mm <sup>2</sup> / 3 x PV arrays	
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 <sup>(5)</sup>			°C
Cooling	Fan (user replaceable)			
Noise	< 67			dBA
Protection Rating	IP65 — outdoor and indoor			
Mounting	Brackets provided			
ADDITIONAL INFORMATION				
Manufacturing Countries	China, Vietnam, Hungary			

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