# S6-EH1P(3.8-11.4)K-H-US

## Solis Residential Hybrid Storage Inverter

## >> Models:

S6-EH1P3.8K-H-US S6-EH1P5K-H-US S6-EH1P7.6K-H-S-US S6-EH1P7.6K-H-L-US S6-EH1P10K-H-US S6-EH1P11.4K-H-US





#### Ordering: S6-EH1P(3.8-11.4)K-H-US

- · APST (APS MLRSD Transmitter)
- RSS (Tigo MLRSD Transmitter)
- ENT (Enteligent MLRSD Transmitter)



## **Highly Flexible**

- Can be used for both whole-home and dedicated loads backup systems
- Four MPPTs allows for versatile PV array design
- · Provides split-phase backup power
- UL 9540 certified with multiple battery brands to provide up to 80 kWh of storage capacity per inverter
- Multiple working modes to meet different use case scenarios
- California Rule 21 and HECO listed with the UL 1741 SB and UL 1741 PCS certifications

#### **Efficient Performance**

- Maximum PV input current up to 16A per string
- High DC:AC ratio of 1.6 for more PV power capacity
- Generates up to 50A/11.4kW of continuous backup power with just one inverter
- Transfer time is < 10ms for all backed up loads
- DC to DC battery charging for optimal use of PVgenerated energy

## **Intelligent Design**

- SunSpec modbus certified with the latest SunSpec models
- Supports generate interconnection and allows the generator to function as the grid source if utility power is lost
- Capable of frequency-watt control for interoperability with other smart devices
- Offers all of the smart inverter functions detailed in IEEE 1547-2018
- Utilizes an energy management system that maximizes efficiency and offers multiple operating modes
- Solis app allows for remote system configuration and firmware upgrading

## Safe and Reliable

- Reverse DC polarity protection and software-based AFCI detection
- NEC 2017 compliant with multiple integrated PLC transmitter options available
- Fanless design using convection cooling for lower failure rate and complexity
- Third-party tested and validated for product reliability

#### **DATASHEET**

## S6-EH1P(3.8-11.4)K-H-US

Max. Injust violage   Max. Injus viol	Models	3.8K-H	5K-H	7.6K-H-S	7.6K-H-L	10K-H	11.4K-H	
State violage   State   Stat	DC Input (PV)							
Side State State   Sept   Se	Max. input voltage			60	00 V			
Side State State   Sept   Se	Rated voltage			38	80 V			
### 1987-1985   1987-1997   19	0							
16A								
Max. shart charact current per string, without of sharings par MPPT   2/1   3/1   4/1   4/1								
State   Stat								
Comparison   Com		2/1			.0 A	4/1		
Limiture   Comparison   Limiture   Comparison   Limiture   Comparison   Limiture   Comparison   Limiture   Comparison   Limiture		2/1		D/ I		4/ 1		
23.8tmy voltage range				Lithio	ım ion			
Maximum changedischange current   25 A   50 A								
### See Battery Compatibility Sheet  **C Output (Grid)**  **C In (Grid)**  **Durk Voltage range  **C In (Grid)**  **Durk Voltage range  **C In (Grid)**  **Durk Voltage range  **C Output (Grid)**  **Durk Voltage range  **Durk Voltage range  **C Output (Grid)**  **Durk Voltage range  **Dur	7 6 6							
See Battery Compatibility Sheet	~ ~ ~							
Content (Grid)								
SAMP   SAMP   TAN	·			See Battery Cor	npatibility Sheet			
Max. apparent output power   3.8 kWa								
Valed output/voltage         220V / 740V           Valed output current         173 A / 158 A         227 A / 208 A         345 A / 317 A         345 A / 317 A         45.5 A / 417 A         51.8 A / 47.5 A           HDI         436 A / 318 A         42.7 A / 208 A         345 A / 317 A         345 A / 317 A         45.5 A / 417 A         51.8 A / 47.5 A           HDI         436 A         437 A / 208 A         345 A / 317 A         345 A / 317 A         45.5 A / 417 A         51.8 A / 47.5 A           HDI         436 A         437 A / 208 A         345 A / 317 A         345 A / 317 A         45.5 A / 417 A         51.8 A / 47.5 A           HDI         436 A         437 A / 208 A         34.1 A / 512 A         51.8 A / 47.5 A         45.5 A / 417 A         51.8 A / 47.5 A           HDI         436 A         437 A / 208 A         34.1 A / 512 A         34.8 A / 31.7 A         45.5 A / 41.7 A         51.8 A / 47.5 A           Valid Country London         438 A         54.0 A / 208 A         34.1 A / 51.2 A         51.8 A / 47.5 A         68.2 A / 62.8 A         17.7 A / 71.3 A           Valid Country London         38.3 A / 30 A								
State of Incorporate		3.8 kVA	5 kVA			10 kVA	11.4 kVA	
17.3 A   15.8 A   22.7 A   20.8 A   34.5 A   31.7 A   34.5 A   31.7 A   45.5 A   41.7 A   51.8 A   47.5 A	Rated output voltage			220 V	/ 240 V			
Max. output current   17.3 \( \) 17.5 \( \) 17.5 \( \) 18.6 \( \) 27.7 \( \) 20.8 \( \) 34.5 \( \) 34.7 \( \) 34.5 \( \) 34.7 \( \) 34.5 \( \) 47.5 \( \) 47.5 \( \) 47.5 \( \) 48.6 \( \) 10.6 \( \) 18.6 \( \) 47.5 \( \) 47.5 \( \) 18.6 \( \) 47.5 \( \) 47.5 \( \) 18.6 \( \) 47.5 \( \) 47.5 \( \) 48.6 \( \) 18.6 \( \) 47.6 \( \) 47.6 \( \) 48.6 \( \) 18.6 \( \) 47.6 \( \) 47.6 \( \) 47.6 \( \) 48.6 \( \) 18.6 \( \) 47.6 \( \) 47.6 \( \) 48.6 \( \) 18.6 \( \) 47.6 \( \) 48.6 \( \) 47.6 \( \) 48.6 \( \	Rated frequency			60	) Hz			
Comput Grid	Rated output current	17.3 A / 15.8 A	22.7 A / 20.8 A	34.5 A / 31.7 A	34.5 A / 31.7 A	45.5 A / 41.7 A	51.8 A / 47.5 A	
Comput   Continue   Comput   Continue   Comput   Continue   Cont	Max. output current	17.3 A / 15.8 A	22.7 A / 20.8 A	34.5 A / 31.7 A	34.5 A / 31.7 A	45.5 A / 41.7 A	51.8 A / 47.5 A	
March   Marc	rhdi			<	3%			
1916-7421   71.13 As   1916   74.17   1916   71.14   71.13 As   1916   74.17   71.14   71.14 As   1916   74.16   71.14   71.14   71.14 As   1916   74.16   71.14   7	AC Input (Grid)							
Mak. input.current				193.6-242\	//211-264 V			
Testuancy range		25 9 Δ / 23 8 Δ	341Δ/312Δ			68 2 A / 62 6 A	77 7 Δ / 71 3 Δ	
No.		23.3717 23.07	J 1.1 N / J1.2 A			00.2 N J 02.0 A	11.11/11.3A	
State of upty prover   State   State   State   To 6 kW   To 6 kW   To 6 kW   To 6 kW   10 kW   11.4 kW				JJ.J-00.5 F	IL / JJ UITIL			
Max. apparent output power   Sackup switch time   Sackup switch   Sackup switch time   Sack		2.0.144	E 1.147	7.01.14	7.6 1.44	10 1.00	11 4 1.\\/	
Sack-up which time								
Phase power   220 V / 240 V Split Phase   220 V / 240 V   240		6.1 kVA, 10 sec	8 kVA, 10 sec			16 kVA, 10 sec	18.2 kVA, 10 sec	
Stated upput voltage (L1-L2/(L1/L2-N)   193.6-242 V / 211-26 V   193.6-242 V / 211-26 V / 211-26 V   193.6-242 V / 211-26								
193.6.247 V / 211-264 V   21								
Sand frequency   Find	Rated output voltage (L1-L2)/(L1/L2-N)	220 V / 240 V						
Frequency range	AC output voltage range	193.6-242 V / 211-264 V						
Name of Acoust current   173 A / 15.8 A   22.7 A / 20.8 A   34.5 A / 3.1.7 A   34.5 A / 3.1.7 A   34.5 A / 4.1.7 A   51.8 A / 47.5 A	Rated grid frequency	60 Hz						
Max. output overcurrent protection, 10 sec  77.74/25.4	Frequency range							
Max. output overcurrent protection, 10 sec  77.74/25.4	Rated AC output current	17.3 A / 15.8 A	22.7 A / 20.8 A	34.5 A / 31.7 A	34.5 A / 31.7 A	45.5 A / 41.7 A	51.8 A / 47.5 A	
Max. allowable phase imbalance 3								
Backup support configurations Power factor P		,	· · · · · · · · · · · · · · · · · · ·			,	,	
Power factor >0.99 (0.8 leading - 0.8 lagging) HTHDV (Gilnear lodd) < 396  (Fifticiency	•							
Ifficiency  Yex Asc. efficiency  Yex Asc. efficiency  Yes Cefficiency  97.2%  Ast. Charged by PV Max. efficiency  97.2%  Ast. Charged by PV Max. efficiency  97.0%  Protection  Yes  Residual (leakage) current detection  Yes  Teverse-polarity protection  Yes (Ponly)  Agold Shutdow NEC 2017  Integrated Sunspec-certified Transmitter  Compatible RSD Receivers  See MLRSD Compatibility Sheet  Protection class/Over voltage category  Forection also (NeW H*D)  Protection 19.2*25.5*9 in (488*647*228.5 mm)  Propology  Fransformerless  Jimensions (W*H*D)  19.2*25.5*9 in (488*647*228.5 mm)  Propology  Fransformerless  Jimensions (W*H*D)  Propology  Transformerless  Departure range  13.1*F to 140*F (-25*C to 66*C)  REMA 4X (IP66)  Cooling method  Max. operation altitude  13,120 ft (4000 m)  Lompliance  UL1741SB, UL1741SA, IEEE 1547-2018, UL1699B, PCC Part15 ClassB, California Rule 21, Heco Rule 14H, NEC 690,12-2020, CAN/CSA C22.2107.1-1  Senerator support  Features  Oc connection  1 in. knockouts for conduit (x2) on the side and bottom; Spring clamp terminals  AC connection  Solis Cloud (modbus map and AP) sharing available upon request)								
### Compatible RSD Receivers    Proceedings   Proceedings   Proceedings   Proceedings   Procedings   Procedin								
PV Max. efficiency 97.6%  PV CEC efficiency 97.2%  Alt Charged by PV Max. efficiency 97.0%  Alt Charged dy Ev Max. efficiency 97.0%  Protection  Residual (leakage) current detection Yes  Residual (leakage) current detection Residual Yes  Residual (leakage) current detection Residual Yes  Residual (leakage) current detection Yes  Residual (leakage) current detection Residual Yes  Residual (leakage) current detection Yes  Residual (leakage) current detection Residual Yes  Residual Yes  Residual (leakage) residual Yes  Residual (le					570			
PVECE efficiency 97.2% SAT charged by PV Max. efficiency 98.5% SAT charged by EV Max. efficiency Protection Fround fault detection Fround F				0.7	C0/-			
BAT charged by PV Max. efficiency 97.0% Portection Protection Press Residual (leakage) current detection Press Residual (leakage) current detection Press Protection Press Press Protection Press Protection Protection Protection Protection class/Over voltage category Protection class/Over voltage category Protection class/Over voltage category Protection class/Over voltage category Protection class Protection Protect	*							
AT charged/discharged to AC Max. efficiency  Protection  Residual (leakage) current detection  Residual (lea								
Protection  Ground fault detection  Ground fault detection  Residual (leakage) current detection  Nessidual (leakage) current detection								
Ground fault detection  Residual (leakage) current detection  Residual (leakage) current detection  Yes  Oc reverse-polarity protection  Rapid Shutdown NEC 2017  Rapid Shutdown NEC 2017  Integrated SunSpec-certified Transmitter  Compatible RSD Receivers  See MLRSD Compatibility Sheet  Protection class/Over voltage category  Foreign Data  Dimensions (W*H*D)  Poperation temperature range  Poperation temperature range  Poperation temperature range  Poperation altitude  Cooling method  Max. operation altitude  UL1741SB, UL1741SA, IEEE 1547-2018, UL1699B, UL1998, FCC Part15 ClassB, California Rule 21, Heco Rule 14H, NEC 690.12-2020, CAN/CSA C22.2107.1-1  Generator support  Pes; up to 25 kW (with a Solis Power Hub)  Teatures  Oc connection  1 in. knockouts for conduit (x3) on the side and bottom; Spring clamp terminals AC connection  2 in. knockouts for conduit (x3) on the side and bottom; Spring clamp terminals AC connection  SolisCloud (modbus map and API sharing available upon request)				97	.0%			
Residual (leakage) current detection ntegrated AFCI (DC arc-fault circuit protection) CC reverse-polarity protection CC reve								
Integrated AFCI (DC arc-fault circuit protection)  OC reverse-polarity protection  Yes (PV only)  Rapid Shutdown NEC 2017  Integrated SunSpe-certified Transmitter  Compatible RSD Receivers  See MLRSD Compatibility Sheet  Protection class/Over voltage category  Foneral Data  Dimensions (W*H*D)  19.2*25.5*9 in (488*647*228.5 mm)  Weight  44.1 lbs (20 kgs)  Transformerless  Operation temperature range  -31 °F to 140 °F (-25°C to 60°C)  Ingress protection  NEMA 4X (IP66)  Cooling method  Max. operation altitude  Topid altitude  UL1741SB, UL1741SA, IEEE 1547-2018, UL1699B, UL1998, FCC Part15 ClassB, California Rule 21, Heco Rule 14H, NEC 690.12-2020, CAN/CSA C22.2107.1-1  Generator support  Yes; up to 25 kW (with a Solis Power Hub)  Teatures  OC connection  1 in. knockouts for conduit (x2) on the side and bottom; Spring clamp terminals  AC connection  1 in. knockouts for conduit (x3) on the side and bottom; Spring clamp terminals  LED indicator lights, Bluetooth/Phone app  Monitoring platform  SolisCloud (modbus map and API sharing available upon request)								
Por reverse-polarity protection Rapid Shutdown NEC 2017 Integrated SunSpec-certified Transmitter Compatible RSD Receivers Protection class/Over voltage category General Data Dimensions (W"H"D) Polarity (P5, 9 in (488*647*228.5 mm) 121.9*26.6*9.4 in (555*676*238.5 mm) Polarity (P6)	Residual (leakage) current detection							
Rapid Shutdown NEC 2017 Compatible RSD Receivers See MLRSD Compatibility Sheet Protection class/Over voltage category General Data General Data Gimensions (W*H*D) 19.2*25.5*9 in (488*647*228.5 mm) Neight 44.1 lbs (20 kgs) Transformerless Operation temperature range Operation temperature range Operation temperature range Operation altitude Configuration altitude  Compliance UL1741SB, UL1741SA, IEEE 1547-2018, UL1699B, UL1998, FCC Part15 ClassB, California Rule 21, Heco Rule 14H, NEC 690.12-2020, CAN/CSA C22.2107.1-1 Generator support Features OC connection 1 in. knockouts for conduit (x2) on the side and bottom; Spring clamp terminals AC connection 1 in. knockouts for conduit (x3) on the side and bottom; Spring clamp terminals LED indicator lights, Bluetooth/Phone app Monitoring platform SolisCloud (modbus map and API sharing available upon request)	ntegrated AFCI (DC arc-fault circuit protection)							
Compatible RSD Receivers  See MLRSD Compatibility Sheet  Protection class/Over voltage category  Formation (W*H*D)  19.2*25.5*9 in (488*647*228.5 mm)  Veight  19.2*25.5*9 in (488*647*228.5 mm)  Veight  19.2*25.5*9 in (488*647*228.5 mm)  21.9*26.6*9.4 in (555*676*238.5 mm)  21.0*29*Conocition  22.0*20 Conocition  23.12.0 ft (4000 m)  24.1 lbs (20 kgs)  25.20*Conocition  25.20*Conocition  25.20*Conocition  26.20*Conocition  26.20*Conocition  27.20*Conocition  28.20*Conocition  29.20*Conocition  20.20*Conocition  20.20*Conocitio	DC reverse-polarity protection							
Compatible RSD Receivers  See MLRSD Compatibility Sheet  Protection class/Over voltage category  Formation (W*H*D)  19.2*25.5*9 in (488*647*228.5 mm)  Veight  19.2*25.5*9 in (488*647*228.5 mm)  Veight  19.2*25.5*9 in (488*647*228.5 mm)  21.9*26.6*9.4 in (555*676*238.5 mm)  21.0*29*Conocition  22.0*20 Conocition  23.12.0 ft (4000 m)  24.1 lbs (20 kgs)  25.20*Conocition  25.20*Conocition  25.20*Conocition  26.20*Conocition  26.20*Conocition  27.20*Conocition  28.20*Conocition  29.20*Conocition  20.20*Conocition  20.20*Conocitio	Rapid Shutdown NEC 2017	Integrated SunSpec-certified Transmitter						
Protection class/Over voltage category General Data Dimensions (W*H*D) 19.2*25.5*9 in (488*647*228.5 mm) 21.9*26.6*9.4 in (555*676*238.5 mm) Weight 44.1 lbs (20 kgs) 81.1 lbs (36.8 kgs) Transformerless Operation temperature range Operation temperature range Orgens protection NEMA 4X (IP66) Cooling method Max. operation altitude Outpliance	Compatible RSD Receivers	· · · · · · · · · · · · · · · · · · ·						
General Data Dimensions (W*H*D) 19.2*25.5*9 in (488*647*228.5 mm) 21.9*26.6*9.4 in (555*676*238.5 mm) Neight 44.1 lbs (20 kgs) 81.1 lbs (36.8 kgs) Transformerless Deparation temperature range 1-31 °F to 140 °F (-25°C to 60°C) Regress protection NEMA 4X (IP66) Cooling method Natural convection Max. operation altitude 13,120 ft (4000 m) Compliance UL1741SB, UL1741SA, IEEE 1547-2018, UL1699B, UL1998, FCC Part15 ClassB, California Rule 21, Heco Rule 14H, NEC 690.12-2020, CAN/CSA C22.2107.1-1 Generator support Features CC connection 1 in. knockouts for conduit (x2) on the side and bottom; Spring clamp terminals AC connection 2 in. knockouts for conduit (x3) on the side and bottom; Spring clamp terminals Neterface ULD indicator lights, Bluetooth/Phone app Monitoring platform SolisCloud (modbus map and API sharing available upon request)	Protection class/Over voltage category							
Dimensions (W*H*D)  19.2*25.5*9 in (488*647*228.5 mm)  21.9*26.6*9.4 in (555*676*238.5 mm)  Weight  44.1 lbs (20 kgs)  Transformerless  Deparation temperature range  231 °F to 140 °F (-25°C to 60°C)  NEMA 4X (IP66)  Cooling method  Max. operation altitude  Compliance  UL1741SB, UL1741SA, IEEE 1547-2018, UL1699B, UL1998, FCC Part15 ClassB, California Rule 21, Heco Rule 14H, NEC 690.12-2020, CAN/CSA C22.2107.1-1  Generator support  Features  Connection  1 in. knockouts for conduit (x2) on the side and bottom; Spring clamp terminals  AC connection  2 in. knockouts for conduit (x3) on the side and bottom; Spring clamp terminals  AC connection  SolisCloud (modbus map and API sharing available upon request)	General Data							
Weight 44.1 lbs (20 kgs) 81.1 lbs (36.8 kgs)  Topology Transformerless  Operation temperature range -31 °F to 140 °F (-25°C to 60°C)  Ingress protection NEMA 4X (IP66)  Cooling method Natural convection  Max. operation altitude 13,120 ft (4000 m)  Compliance UL1741SB, UL1741SA, IEEE 1547-2018, UL1699B, UL1998, FCC Part15 ClassB, California Rule 21, Heco Rule 14H, NEC 690.12-2020, CAN/CSA C22.2107.1-1  Generator support Yes; up to 25 kW (with a Solis Power Hub)  Features  OC connection 1 in. knockouts for conduit (x2) on the side and bottom; Spring clamp terminals  AC connection 2 in. knockouts for conduit (x3) on the side and bottom; Spring clamp terminals  AC connection Solis Cloud (modbus map and API sharing available upon request)		19.2*1	5.5*9 in (488*647*22	8.5 mm)	21 9*26	i.6*9.4 in (555*676*23	(8.5 mm)	
Transformerless Operation temperature range Operation NEMA 4X (IP66) Ocoling method Ocoling method Omax. operation altitude Outline Ocompliance Ocomplianc								
Operation temperature range Operation NEMA 4X (IP66) Ocoling method Ocoling Meth	~		(20 (20 (g3)	Transfo	rmerless	31.1 .00 (30.0 Ng3)		
Ingress protection  NEMA 4X (IP66)  Natural convection  Max. operation altitude  Outpliance  Outplianc	· · · · · · · · · · · · · · · · · · ·							
Acconnection  Connection  1								
Max. operation altitude  13,120 ft (4000 m)  UL1741SB, UL1741SA, IEEE 1547-2018, UL1699B, UL1998, FCC Part15 ClassB, California Rule 21, Heco Rule 14H, NEC 690.12-2020, CAN/CSA C22.2107.1-1  Generator support  Yes; up to 25 kW (with a Solis Power Hub)  Features  OC connection  1 in. knockouts for conduit (x2) on the side and bottom; Spring clamp terminals  AC connection  2 in. knockouts for conduit (x3) on the side and bottom; Spring clamp terminals nterface  LED indicator lights, Bluetooth/Phone app  Monitoring platform  SolisCloud (modbus map and API sharing available upon request)	~							
Compliance  UL1741SB, UL1741SA, IEEE 1547-2018, UL1699B, UL1998, FCC Part15 ClassB, California Rule 21, Heco Rule 14H, NEC 690.12-2020, CAN/CSA C22.2107.1-1  Generator support Yes; up to 25 kW (with a Solis Power Hub)  Connection 1 in. knockouts for conduit (x2) on the side and bottom; Spring clamp terminals  AC connection 2 in. knockouts for conduit (x3) on the side and bottom; Spring clamp terminals nterface LED indicator lights, Bluetooth/Phone app  Monitoring platform SolisCloud (modbus map and API sharing available upon request)	© .							
Heco Rule 14H, NEC 690.12-2020, CAN/CSA C22.2107.1-1  Generator support Yes; up to 25 kW (with a Solis Power Hub)  Features  OC connection 1 in. knockouts for conduit (x2) on the side and bottom; Spring clamp terminals  AC connection 2 in. knockouts for conduit (x3) on the side and bottom; Spring clamp terminals nterface LED indicator lights, Bluetooth/Phone app  Monitoring platform SolisCloud (modbus map and API sharing available upon request)	wax. operation altitude							
Features  DC connection  1 in. knockouts for conduit (x2) on the side and bottom; Spring clamp terminals  AC connection  2 in. knockouts for conduit (x3) on the side and bottom; Spring clamp terminals  nterface  LED indicator lights, Bluetooth/Phone app  Monitoring platform  SolisCloud (modbus map and API sharing available upon request)	Compliance							
Features  DC connection  1 in. knockouts for conduit (x2) on the side and bottom; Spring clamp terminals  AC connection  2 in. knockouts for conduit (x3) on the side and bottom; Spring clamp terminals  nterface  LED indicator lights, Bluetooth/Phone app  Monitoring platform  SolisCloud (modbus map and API sharing available upon request)	Generator support							
DC connection 1 in. knockouts for conduit (x2) on the side and bottom; Spring clamp terminals  AC connection 2 in. knockouts for conduit (x3) on the side and bottom; Spring clamp terminals  nterface LED indicator lights, Bluetooth/Phone app  Monitoring platform SolisCloud (modbus map and API sharing available upon request)				., . ,				
AC connection 2 in. knockouts for conduit (x3) on the side and bottom; Spring clamp terminals nterface LED indicator lights, Bluetooth/Phone app Monitoring platform SolisCloud (modbus map and API sharing available upon request)			1 in knockouts fo	r conduit (x2) on the s	ide and hottom: Spri	ng clamp terminals		
nterface LED indicator lights, Bluetooth/Phone app Monitoring platform SolisCloud (modbus map and API sharing available upon request)								
Monitoring platform SolisCloud (modbus map and API sharing available upon request)								
DC40E O. 2	Monitoring platform  Communication	Soliscioud (modbus map and API snaring available upon request)  RS485, Optional: Cellular, Wi-Fi						