

ST68KWH-50HV

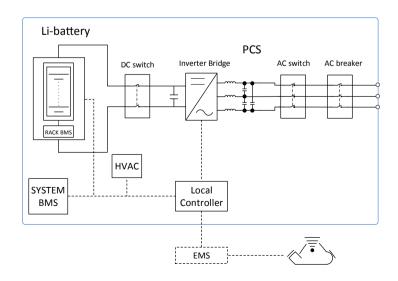
Storage System



SYSTEM FEATURES

- Highly integrated energy storage system for easy transportation and O&M
- High efficiency system integrated with reliable lithium battery
- Integrated local controller to enable unified system communication
- Advanced PCS technology for easy capacity expansion

CIRCUIT DIAGRAM





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BMS communication interfaces RS485, Ethernet BMS communication protocols Modbus RTU, Modbus TCP AC Date Nominal AC power 50 kVA Max. AC power 55 kVA Max.THD of current < 3% (at nominal power)	System Type	ST68KWH-50HV
Configuration of system Battery capacity (BOL) Battery voltage range BMS communication interfaces BMS communication interfaces BMS communication protocols Modbus RTU, Modbus TCP AC Data Nominal AC power SO kVA Max. AC power SS kVA Max.THD of current Crid voltage range Adjustable power factor Nominal grid voltage For did requency range Solation method STransformerless Nominal output voltage of off-grid Max.THD of off-grid output voltage Ceneral Data Dimensions (W* H* D) Selos Protection Degree of protection Poys (kinch method Poys (linear load)	Battery Data	
Battery capacity (BOL) Battery voltage range BMS communication interfaces BMS communication protocols Modbus RTU, Modbus TCP AC Data Nominal AC power Nominal AC power Nominal AC power So kVA Max.THD of current DC component Nominal grid voltage range So 4-440 V Power factor Adjustable power factor Adjustable power factor Nominal grid requency Grid frequency range So Hz Grid frequency range So Hz	Cell type	Samsung SDI M2F, 3.68V/94Ah
Battery voltage range 633 ~ 822 V BMS communication interfaces RS485, Ethernet BMS communication protocols Modbus RTU, Modbus TCP AC Data Nominal AC power 50 kVA Max. AC power 55 kVA Max. AC power 55 kVA Max.THD of current 4.3 % (at nominal power) DC component 4.0.5 % (at nominal power) Nominal grid voltage 400 V Grid voltage range 360 ~ 440 V Power factor 360 ~ 440 V Power factor 1.0 leading ~ 1.0 lagging Nominal grid frequency Grid frequency ange 45 ~ 55 Hz Isolation method Transformerless Nominal output voltage of off-grid 400 V Max.THD of off-grid output voltage 450 % (linear load) Ceneral Data Dimensions (W * H * D) 880 * 1,950 * 1,220 mm / 34.6* * 76.8* * 48.0* Weight (with / without battery) 1.0 T / 0.5 T 2,205 lbs / 1,102 lbs Degree of protection 1P54 / NEMA 3R Operating temperature range 30 to 50 ° C / -22 to 122 ° F Relative humidity 0.95 % (non-condensing) Max. working altitude Cooling concept of PCS chamber Temperature controlled forced air cooling Communication interfaces RS485, Ethernet Communication protocols Modbus RTU, Modbus RT	Configuration of system	198S1P
BMS communication interfaces RS485, Ethernet BMS communication protocols Modbus RTU, Modbus TCP AC Data Nominal AC power 50 kVA Max. AC power 55 kVA Max.THD of current < 3 % (at nominal power) Ordinal grid voltage 400 V Grid voltage range 360 ~ 440 V Power factor 30 years (at nominal power) Adjustable power factor 1.0 leading ~ 1.0 legging Nominal grid frequency 50 HZ Grid frequency range 45 ~ 55 HZ Isolation method Transformerless Nominal output voltage of off-grid 400 V Max.THD of off-grid output voltage (a % % (linear load)) General Data Dimensions (W * H * D) 880 * 1,950 * 1,220 mm / 34.6* * 76.8* * 48.0* Weight (with / without battery) 1.0 T / 0.5 T 2.205 lbs / 1,102 lbs Degree of protection 1.954 / NEMA 3R Operating temperature range 3,00 m / 9,842 ft Relative humidity 3,000 m / 9,842 ft Cooling concept of PCS chamber 4 Heating, Ventilation and Air Conditioning Communication interfaces RS485, Ethernet Communication protocols	Battery capacity (BOL)	68 kWh
BMS communication protocols AC Data Nominal AC power S0 kVA Max. AC power S5 kVA Max. HD of current Crid voltage range Power factor Adjustable power factor Nominal grid frequency Grid frequency range Isolation method Transformerless Nominal output voltage of off-grid Max.THD of off-grid output voltage Ceneral Data Dimensions (W* H* D) R80*1-950*1,220 mm / 34.6**76.8**48.0* Weight (with / without battery) Degree of protection Operating temperature range Rax. working altitude Cooling concept of battery chamber Communication interfaces RS485, Ethernet Communication interfaces RS485, Ethernet Communication protocols S0 kVA S0 kV	Battery voltage range	633 ~ 822 V
Nominal AC power 50 kVA Max. AC power 55 kVA Max.THD of current 35 kVA Max.THD of current 50.5 k (at nominal power) DC component 50.5 k (at nominal power) Nominal grid voltage 400 V Grid voltage range 560 ~ 440 V Power factor 50.99 (at nominal power) Nominal grid frequency 50.99 (at nominal power) Nominal grid frequency 50.99 (at nominal power) Nominal grid frequency 50.942 Grid frequency range 45 ~ 55 Hz Isolation method Transformerless Nominal output voltage of off-grid 400 V Max.THD of off-grid output voltage 73 % (linear load) General Data Dimensions (W * H * D) 880 * 1,950 * 1,220 mm / 34.6" * 76.8" * 48.0" Weight (with / without battery) 10.7 / 0.5 T 2,205 lbs / 1,102 lbs Degree of protection 1954 / NEMA 3R Operating temperature range 30 to 50 ° C / -22 to 122 ° F Relative humidity 0 - 95 % (non-condensing) Max. working altitude 3,000 m / 9,842 ft Cooling concept of battery chamber Heating, Ventilation and Air Conditioning Communication interfaces RS485, Ethernet Communication protocols	BMS communication interfaces	RS485, Ethernet
Nominal AC power 55 kVA Max. AC power 55 kVA Max.THD of current 3% (at nominal power) DC component 6.0.5% (at nominal power) Nominal grid voltage 400 V Grid voltage range 360 ~ 440 V Power factor 9.0.99 (at nominal power) Adjustable power factor 1.0 leading ~ 1.0 leaging Nominal grid frequency 50 Hz Grid frequency range 4.5 ~ 55 Hz Isolation method Transformerless Nominal output voltage of off-grid 400 V Max.THD of off-grid output voltage 73% (linear load) General Data Dimensions (M*H*D) 880*1,950*1,220 mm/34.6**76.8** 48.0** Weight (with / without battery) 1.0 T / 0.5 T 2,205 lbs / 1,102 lbs Degree of protection IP54 / NEMA 3R Operating temperature range 300 to 50 °C / -22 to 122 °F Relative humidity 0.9 95% (non-condensing) Max. working altitude 3,000 m / 9,842 ft Cooling concept of battery chamber Heating, Ventilation and Air Conditioning Communication interfaces RS485, Ethernet Communication protocols Modbus RTU, Modbus TCP	BMS communication protocols	Modbus RTU, Modbus TCP
Max. AC power 55 kVA Max.THD of current < 3 % (at nominal power) DC component < 0.5 % (at nominal power) Nominal grid voltage	AC Data	
MaxTHD of current Component Com	Nominal AC power	50 kVA
DC component \[\begin{array}{c} < 0.5 \text{ (at nominal power)} \\ \text{Nominal grid voltage} \\ \text{Grid voltage range} \\ \text{360} \times 440 \times V \\ \text{Power factor} \\ \text{Adjustable power factor} \\ \text{Nominal grid frequency} \\ \text{Grid frequency} \\ \text{Grid frequency range} \\ \text{Isolation method} \\ \text{Transformerless} \\ \text{Nominal output voltage of off-grid} \\ \text{400 V} \\ \text{Max.THD of off-grid output voltage} \\ \text{Grid frequency and off-grid output voltage} \\ \text{Grid frequency of a second off-grid output voltage} \\ \text{Grid frequency of a second off-grid output voltage} \\ \text{Grid frequency of a second off-grid output voltage} \\ \text{Grid frequency of a second off-grid output voltage} \\ \text{Grid frequency of a second output voltage} \\ \text{Grid frequency output voltage} \\ \text{B80 * 1,950 * 1,220 mm / 34.6" * 76.8" * 48.0"} \\ \text{Weight (with / without battery)} \\ \text{Di T / 0.5 T 2,205 lbs / 1,102 lbs} \\ \text{Degree of protection} \\ \text{IP54 / NEMA 3R} \\ \text{Operating temperature range} \\ \text{30 to 50 * C / -22 to 122 * F} \\ \text{Relative humidity} \\ \text{0 coling concept of battery chamber} \\ \text{Cooling concept of battery chamber} \\ \text{Temperature controlled forced air cooling} \\ \text{Cooling concept of PCS chamber} \\ \text{Temperature controlled forced air cooling} \\ Communication inter	Max. AC power	55 kVA
Nominal grid voltage Grid voltage range 360 ~ 440 V Power factor > 0.99 (at nominal power) Adjustable power factor 1.0 leading ~ 1.0 lagging Nominal grid frequency 50 Hz Grid frequency range 45 ~ 55 Hz Isolation method Transformerless Nominal output voltage of off-grid 400 V Max.THD of off-grid output voltage General Data Dimensions (W * H * D) 880 * 1,950 * 1,220 mm / 34.6" * 76.8" * 48.0" Weight (with / without battery) 1.0 T / 0.5 T 2,205 lbs / 1,102 lbs Degree of protection 1P54 / NEMA 3R Operating temperature range 30 to 50 °C / -22 to 122 °F Relative humidity 0 ~ 95 % (non-condensing) Max. working altitude Cooling concept of battery chamber Heating, Ventilation and Air Conditioning Communication interfaces RS485, Ethernet Communication protocols Modbus RTU, Modbus TCP	Max.THD of current	< 3 % (at nominal power)
Grid voltage range 360 ~ 440 V Power factor > 0.99 (at nominal power) Adjustable power factor 1.0 leading ~ 1.0 lagging Nominal grid frequency 50 Hz Grid frequency range 45 ~ 55 Hz Isolation method Transformerless Nominal output voltage of off-grid 400 V Max.THD of off-grid output voltage 43 % (linear load) General Data Dimensions (W*H*D) 880*1,950*1,220 mm / 34.6"*76.8"*48.0" Weight (with / without battery) 1.0 T / 0.5 T 2,205 lbs / 1,102 lbs Degree of protection IP54 / NEMA 3R Operating temperature range -30 to 50 °C / -22 to 122 °F Relative humidity 0 ~ 95 % (non-condensing) Max. working altitude 3,000 m / 9,842 ft Cooling concept of battery chamber Heating, Ventilation and Air Conditioning Communication interfaces RS485, Ethernet Communication protocols Modbus RTU, Modbus TCP	DC component	< 0.5 % (at nominal power)
Power factor Adjustable power factor Adjustable power factor Nominal grid frequency For Hz Grid frequency range For Hz Solation method Fransformerless Nominal output voltage of off-grid For Hz General Data Dimensions (W*H*D) Weight (with / without battery) Degree of protection Operating temperature range Relative humidity Max. working altitude Cooling concept of PCS chamber Communication interfaces RS485, Ethernet Communication protocols P50 Hz 1.0 I leading ~ 1.0 lagging 1.0 V 1.0 V 1.0 V 1.0 V 1.0 T / 0.5 T 2,205 lbs / 1,102 lbs 1.0 T / 0.5 T 2,205 lbs / 1,102	Nominal grid voltage	400 V
Adjustable power factor Nominal grid frequency 50 Hz Grid frequency range 45 ~ 55 Hz Isolation method Transformerless Nominal output voltage of off-grid 400 V Max.THD of off-grid output voltage Ceneral Data Dimensions (W * H * D) 880 * 1,950 * 1,220 mm / 34.6" * 76.8" * 48.0" Weight (with / without battery) Degree of protection Operating temperature range Ago to 50 °C / -22 to 122 °F Relative humidity Nax. working altitude Cooling concept of battery chamber Cooling concept of PCS chamber Communication interfaces Communication protocols Modbus RTU, Modbus TCP	Grid voltage range	360 ~ 440 V
Nominal grid frequency Grid frequency range 45 ~ 55 Hz Isolation method Transformerless Nominal output voltage of off-grid 400 V Max.THD of off-grid output voltage Ceneral Data Dimensions (W*H*D) 880*1,950*1,220 mm/34.6"*76.8"*48.0" Weight (with / without battery) 1.0 T / 0.5 T 2,205 lbs / 1,102 lbs Degree of protection IP54 / NEMA 3R Operating temperature range -30 to 50 °C / -22 to 122 °F Relative humidity 0 ~ 95 % (non-condensing) Max. working altitude 3,000 m / 9,842 ft Cooling concept of battery chamber Heating, Ventilation and Air Conditioning Conmunication interfaces RS485, Ethernet Communication protocols Modbus RTU, Modbus TCP	Power factor	> 0.99 (at nominal power)
Grid frequency range 45 ~ 55 Hz Isolation method Transformerless Nominal output voltage of off-grid 400 V Max.THD of off-grid output voltage Ceneral Data Dimensions (W * H * D) 880 * 1,950 * 1,220 mm / 34.6" * 76.8" * 48.0" Weight (with / without battery) Degree of protection 10 T / 0.5 T 2,205 lbs / 1,102 lbs Degree of protection 10 F54 / NEMA 3R Operating temperature range 730 to 50 °C / -22 to 122 °F Relative humidity 0 ~ 95 % (non-condensing) Max. working altitude 3,000 m / 9,842 ft Cooling concept of battery chamber Heating, Ventilation and Air Conditioning Cooling concept of PCS chamber Temperature controlled forced air cooling Communication interfaces RS485, Ethernet Modbus RTU, Modbus TCP	Adjustable power factor	1.0 leading ~ 1.0 lagging
Isolation method Transformerless Nominal output voltage of off-grid Max.THD of off-grid output voltage Ceneral Data Dimensions (W*H*D) Weight (with / without battery) Degree of protection Operating temperature range Relative humidity Max. working altitude Cooling concept of battery chamber Cooling concept of PCS chamber Communication interfaces Communication protocols Transformerless 400 V 400 V	Nominal grid frequency	50 Hz
Nominal output voltage of off-grid Max.THD of off-grid output voltage General Data Dimensions (W*H*D) Weight (with / without battery) Degree of protection Operating temperature range Relative humidity Max. working altitude Cooling concept of battery chamber Cooling concept of PCS chamber Communication interfaces Communication protocols Max. Working altitude Communication protocols A00 V 400 V 40	Grid frequency range	45 ~ 55 Hz
Max.THD of off-grid output voltage Ceneral Data Dimensions (W*H*D) 880*1,950*1,220 mm/34.6"*76.8"*48.0" Weight (with / without battery) 1.0 T/0.5 T 2,205 lbs / 1,102 lbs Degree of protection IP54 / NEMA 3R Operating temperature range -30 to 50 °C/-22 to 122 °F Relative humidity 0 ~ 95 % (non-condensing) Max. working altitude Cooling concept of battery chamber Cooling concept of PCS chamber Communication interfaces Communication protocols Modbus RTU, Modbus TCP	Isolation method	Transformerless
Dimensions (W*H*D) 880*1,950*1,220 mm/34.6"*76.8"*48.0" Weight (with / without battery) 1.0 T / 0.5 T 2,205 lbs / 1,102 lbs Degree of protection IP54 / NEMA 3R Operating temperature range -30 to 50 °C / -22 to 122 °F Relative humidity 0 ~ 95 % (non-condensing) Max. working altitude Cooling concept of battery chamber Heating, Ventilation and Air Conditioning Cooling concept of PCS chamber Temperature controlled forced air cooling Communication interfaces RS485, Ethernet Communication protocols Modbus RTU, Modbus TCP	Nominal output voltage of off-grid	400 V
Dimensions (W*H*D) 880*1,950*1,220 mm / 34.6"*76.8"*48.0" Weight (with / without battery) 1.0 T / 0.5 T 2,205 lbs / 1,102 lbs Degree of protection IP54 / NEMA 3R Operating temperature range -30 to 50 °C / -22 to 122 °F Relative humidity 0 ~ 95 % (non-condensing) Max. working altitude 3,000 m / 9,842 ft Cooling concept of battery chamber Cooling concept of PCS chamber Temperature controlled forced air cooling Communication interfaces RS485, Ethernet Communication protocols Modbus RTU, Modbus TCP	Max.THD of off-grid output voltage	< 3 % (linear load)
Weight (with / without battery) 1.0 T / 0.5 T 2,205 lbs / 1,102 lbs Degree of protection IP54 / NEMA 3R Operating temperature range Relative humidity 0 ~ 95 % (non-condensing) Max. working altitude Cooling concept of battery chamber Cooling concept of PCS chamber Communication interfaces RS485, Ethernet Modbus RTU, Modbus TCP	General Data	
Degree of protection IP54 / NEMA 3R Operating temperature range -30 to 50 °C / -22 to 122 °F Relative humidity 0 ~ 95 % (non-condensing) Max. working altitude Cooling concept of battery chamber Cooling concept of PCS chamber Communication interfaces RS485, Ethernet Communication protocols IP54 / NEMA 3R	Dimensions (W * H * D)	880 * 1,950 * 1,220 mm / 34.6" * 76.8" * 48.0"
Operating temperature range -30 to 50 °C / -22 to 122 °F Relative humidity 0 ~ 95 % (non-condensing) Max. working altitude 3,000 m / 9,842 ft Cooling concept of battery chamber Heating, Ventilation and Air Conditioning Conmunication interfaces RS485, Ethernet Communication protocols Modbus RTU, Modbus TCP	Weight (with / without battery)	1.0 T / 0.5 T 2,205 lbs / 1,102 lbs
Relative humidity 0 ~ 95 % (non-condensing) Max. working altitude 3,000 m / 9,842 ft Cooling concept of battery chamber Cooling concept of PCS chamber Temperature controlled forced air cooling Communication interfaces RS485, Ethernet Communication protocols Modbus RTU, Modbus TCP	Degree of protection	IP54 / NEMA 3R
Max. working altitude 3,000 m / 9,842 ft Cooling concept of battery chamber Heating, Ventilation and Air Conditioning Cooling concept of PCS chamber Temperature controlled forced air cooling Communication interfaces RS485, Ethernet Communication protocols Modbus RTU, Modbus TCP	Operating temperature range	-30 to 50 °C / -22 to 122 °F
Cooling concept of battery chamber Cooling concept of PCS chamber Communication interfaces Communication protocols Heating, Ventilation and Air Conditioning Temperature controlled forced air cooling RS485, Ethernet Modbus RTU, Modbus TCP	Relative humidity	0 ~ 95 % (non-condensing)
Cooling concept of PCS chamber Communication interfaces Communication protocols Temperature controlled forced air cooling RS485, Ethernet Modbus RTU, Modbus TCP	Max. working altitude	3,000 m / 9,842 ft
Communication interfaces RS485, Ethernet Communication protocols Modbus RTU, Modbus TCP	Cooling concept of battery chamber	Heating, Ventilation and Air Conditioning
Communication protocols Modbus RTU, Modbus TCP	Cooling concept of PCS chamber	Temperature controlled forced air cooling
	Communication interfaces	RS485, Ethernet
Certificates TÜV	Communication protocols	Modbus RTU, Modbus TCP
	Certificates	TÜV

