

KSE Series Hybrid Inverter



Easy I&M

- ◆ Wall mounted and rack installation (optional).
- ◆ Compact size, light weight, easy for installation on the site.
- ◆ For both new installation and renovation solar systems.



Safe and Reliable

- ◆ Protection rating at IP65 (dust-proof and water-proof).
- ◆ Full automatic control, easy and simple operation.



Friendly and Intelligent

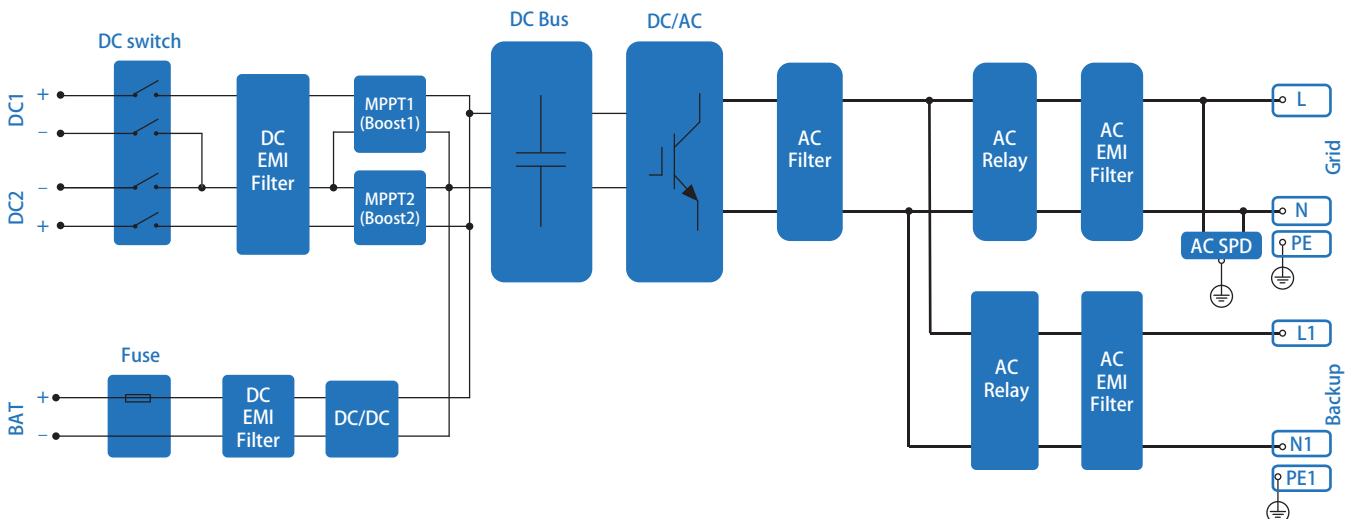
- ◆ Fast and easy commissioning via front panel LCD or App.
- ◆ Compatible with both lithium-ion and lead-acid batteries.
- ◆ Integrated advanced energy management system, battery usage strategies.



Efficient Conversion

- ◆ Maximum efficiency: 97.6%.
- ◆ Ultra wide MPPT range: 120Vdc - 500Vdc.

Circuit Diagram:



Model	KSE-2K-048S(D)	KSE-3K-084S(D)	KSE-3.6K-048S(D)	KSE-5K-048S(D)
PV Input Data				
Max. PV input power	2600W	3900W	4800W	6000W
Max. PV input voltage	550Vdc (*1)	550Vdc (*1)	550Vdc (*1)	550Vdc (*1)
MPPT voltage range	120~500Vdc	120~500Vdc	120~500Vdc	120~500Vdc
Rated input voltage	420Vdc	420Vdc	420Vdc	420Vdc
MPPT range for full load	236~500V	178~500V	219~500V	273~500V
No. of MPPTs	1	2	2	2
Max. PV input current	11A	11A*2	11A*2	11A*2
AC Output Data(On-grid)				
Rated output voltage	230Vac			
Output voltage range	150V~280V			
Output frequency range	50 / 60Hz (±5Hz)(adjustable)			
Max. current from utility grid	23A			
Max. apparent power from utility grid	5300VA			
Max. power output to utility grid	2000W	3000W	3680W	5000W(*2)
Max. current output to utility grid	9A	13.5A	16A	22A(*3)
AC output connection	L+N+PE, Transformerless			
Power factor (cos φ)	1(0.8 leading ~0.8 lagging) (adjustable)			
THDi	<3%			
AC Output Data(Backup)				
Rated output voltage	230Vac (Fluctuation range±2%)			
Rated output frequency	50/60Hz (Fluctuation range±0.2%)			
Rated output current	9A	13A		
Rated output power	2000W	3000W		
Max. output apparent power	2400VA	3300VA		
THDv	<2% (Linear load)			
Automatic switch time	<20ms			
Battery Input				
Battery type	Li-ion or lead-acid			
Rated battery voltage	48V			
Depth of discharging	Li-ion 90%DOD(10%~90% adjustable) / Lead-acid 50%DOD(10%~50% adjustable)			
Max. discharging current(*4)	65A			
Max. charging current(*5)	50A (5~50A adjustable)			
Max. discharging power	2200W	3200W		
Max. charging power	2000W	2500W		
Efficiency				
Max. conversion efficiency (from battery)	94.0%			
Max. conversion efficiency (from PV)	97.6%			
Euro efficiency	97.0%			
Protection function	Short Circuit Protection, AC Leakage Fault Protection, Grounding Fault Protection, Anti-islanding Protection, Overload Protection, Surge Protection, DC Polarity Protection			
General				
Cooling	Natural Convection			
DC switch	Optional			
Communication Interface	RS485/CAN2.0/WIFI			
Dimensions W x D x H (mm)	359x467x170			
Weight (Kg)	15	17		
Operating temperature range	-20 C ~+60 C (Rated Power@45 C)			
Humidity range	0~95% (No condensation)			
Altitude	≤2000m			
Protection	IP65			
Certification & Standard				
Grid regulation	AS/NZS 4777.2, VDE-AR-N4105, VDE0126-1-1			
Safety regulation	IEC/EN 62109-1&2, IEC62040-1			
EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4, EN61000-4-16, EN61000-4-18, EN61000-4-29			

*1. Max. operating voltage is 530V .

*2. It will be 4600W under the selection of VDE-AR-N4105 & VDE0126-1-1.

*3. It will be 21.7A under the selection of AS 4777.2.

*4. For Lead-acid batteries, the default discharging current limit is shown in the table, and Li-ion batteries discharging current is in accordance with BMS instructions, but not more than the value shown in the table.

*5. For Lead-acid batteries, the default charging current is 0.1C. The default charging current can be set by APP as shown in the table, and the Li-ion batteries charging current is in accordance with BMS instructions, but not more than the value shown in the table.

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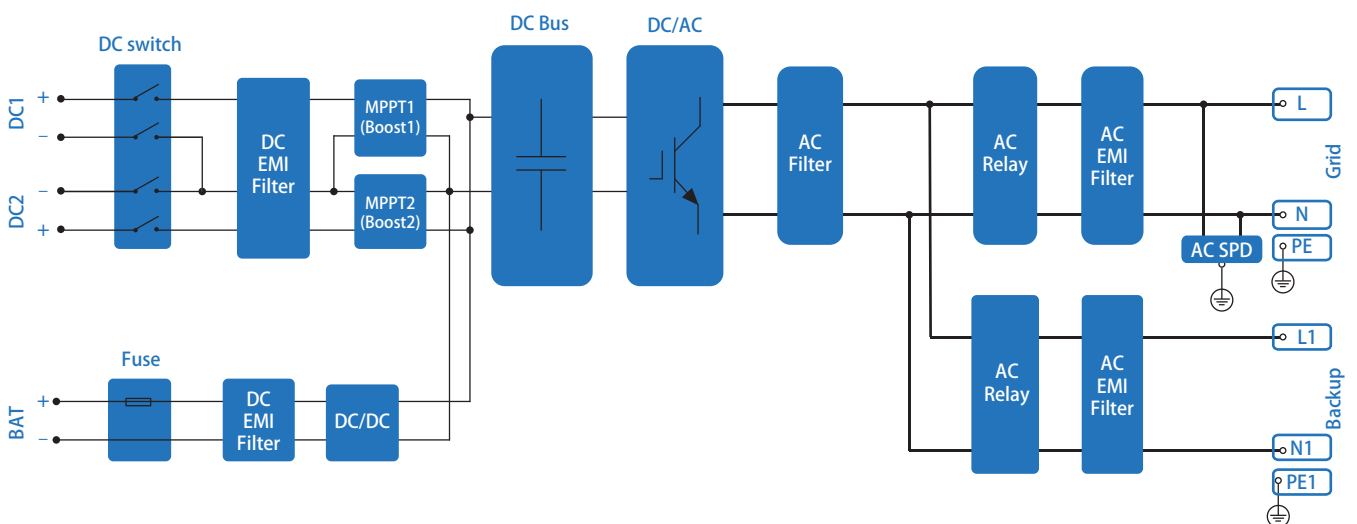
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Efficient Conversion

- ◆ Maximum efficiency: 97.6%.
- ◆ Ultra wide MPPT range: 120Vdc - 500Vdc.

Circuit Diagram:



Model	KSE-3.6K-048(D)	KSE-4.6K-048(D)	KSE-5K-048(D)
PV Input Data			
PV Max. power	4400W	6000W	6000W
Max. input voltage	550Vdc	550Vdc	550Vdc
MPPT voltage range	120~500Vdc	120~500Vdc	120~500Vdc
Nominal input voltage	420V	420V	420V
MPPT voltage range(for full-load)	184 ~ 500 V	230 ~ 500 V	230 ~ 500 V
No. of MPPTs	2	2	2
Max. PV input current	13A×2	13A×2	13A×2
AC Output Data(On-grid)			
Nominal AC output power	3680W	4600W	5000W
Max. AC output power	3680W	4600W	5000W
Nominal AC voltage	230Vac		
AC voltage range	180V~280V		
AC output type	L+N+PE, Transformerless (for solar)		
Grid frequency range	50 / 60Hz (±5Hz), Adjustable		
Max. output current	16A	20A	22A
Power factor	(cosΦ) 0.8 Leading ~ 0.8 Lagging		
THDi	<3 % (of nominal power)		
AC Output Data(Backup)			
Nominal output power	3680W	4600W	4600W
Nominal output voltage	230 (±2%)		
Nominal output frequency	50/60Hz (±0.2%)		
THDv	<2% (Linear Load)		
Transfer time	<10ms		
Over-load capacity	5520VA (150% 10s)	6900VA (150% 10s)	6900VA (150% 10s)
Battery Data			
Battery type	Li-ion battery / Lead-acid battery		
Battery voltage range	40~58V		
Battery AH	100~2000Ah		
Depth Of Discharge	Li-ion 90%DOD(10%~90% adjustable) / Lead-acid 50%DOD(10%~50% adjustable)		
Max. discharging current	100A		
Max. charging current	80A(0~80A)		
Efficiency			
Max. efficiency/Euro. efficiency	>97.6% / >97%		
General Data			
Protection	Short circuit protection;AC leakage fault protection;Grounding fault protection;Anti-islanding protection;Overload protection;Surge protection;DC polarity protection;		
Cooling method	Natural convection		
DC switch (solar)	Optional		
Communication	RS485, Wi-Fi , CAN, Ethernet (Optional)		
Physical			
Dimensions (W * D * H)mm	527x472x180		
Weight(kg)	25	25	26
Display	Graphic LCD		
Mounting method	Wall-mounting bracket		
Environment			
Operating temperature range	-20℃~+60℃ (45℃ in nominal power)		
Relative humidity range	0~95% (non-condensing)		
Operating altitude	≤2000m		
Noise emission	<35dB		
Ingress protection rating	IP65		
Certification	Safety I EC/EN62109-1,IEC/EN62109-2,VDE0126-1-1, VD E ARN4105,G83/59/EEG2012,AS3100/4777, CEI 0-21,etc, EMC EN61000-6-2,EN61000-6-3,EN61000-3-11,EN61000-3-1 2,etc		