S4K4U-C 6 kVA and S4K6U-C 10 kVA Industrial On-Line UPS

The SolaHD S4K4U6000C and S4K6U10KC Industrial UPS Series are the first true On-Line industrial UPS that provides higher output power factor, higher efficiency, flexible output voltage, an integrated maintenance bypass switch and internal batteries all in slim 4U (7.0”) and 6U (10.5") enclosures respectively.

The S4K4UC and S4K6UC features true On-Line (double conversion) topology providing the ultimate in protection against a wide range of potential power problems. The S4K4UC design of two 3 kVA, 120 V inverters allow flexible output voltage to meet mixed load voltage requirements. The UPS automatically configures the output voltage to match the input configuration without requiring tap selections. Self diagnostics simplify maintenance and troubleshooting. The standard maintenance bypass switch provides an additional level of protection.

The S4K4UC and S4K6UC also feature a wide input voltage window to support the critical load without having to transfer to the battery. This extends system availability when back-up is truly needed.

Applications

- Industrial Computers
- Robotics and Process Controls
- Industrial Automation Systems
- Network Servers
- Enterprise Telecommunication Systems
- Printing and Publishing Machinery
- Pharmaceutical and Medical Diagnosis Equipment
- Industrial and Commercial Machinery
- Micro-processor Controlled Equipment
- Mission Critical Devices

Features

- True double conversion topology
- Higher power factor of 0.80 (6kVA) and 0.90 (10kVA)
- Both models offer 208/120 V or 240/120 V
- Configurable as a tower or rack mounting
- Highest density, 6 kVA in only 4U and 10 kVA in only 6U of rack space
- Easily installed in 18” to 32” deep rack using rack mount kit # SRS1832
- User replaceable, hot-swappable internal battery module
- Extended battery cabinets
- Includes both automatic and manual maintenance bypass switch

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- Automatic frequency detection (60 or 50 Hz)
- Power factor correction
- Self-diagnostics simplify maintenance and troubleshooting
- Remote emergency Power Off (REPO)
- Intellislot™ USB and terminal block communication ports
- Compatible with most standby generators
- Uses an average of 35% less energy than their standard counterparts
- Provides continuous uptime for the connected equipment, with capacity and battery back-up delivered in cabinets that use 4U to 6U of rack space
- Two year limited warranty

Certifications and Compliances

- Listed, UPS Equipment
  - UL 1778
  - CSA C22.2 No. 107.3
- IEEE/ANSI C62.41 Category A & B
- ISTA Procedure 1A
- ABS Type Approved
- RoHS Compliant
- ENERGY STAR® certified

Related Products

- Portable MCR Power Conditioners
- Surge Protective Devices
- Active Tracking® Filters

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S4K 6 and 10 kVA Specifications

Table 1: UPS Specifications

Parameters	Model Number	
	S4K4U6000C	**S4K6U10KC**
Rating	4800 W/6000 VA	9000 W/10000 VA
Dimensions – W x D x H, in. (mm)		
Unit	6.80 x 26.10 x 16.90 (173.0 x 662.0 x 430.0)	10.30 x 26.50 x 16.90 (261.0 x 672.0 x 430.0)
Shipping	13.20 x 33.10 x 26.10 (336.0 x 842.0 x 662.0)	16.70 x 32.80 x 24.10 (424.0 x 832.0 x 612.0)
Weight – lbs. (kg)		
Unit	56.2 (25.50)	78.3 (35.50)
Shipping	70.5 (32.00)	92.6 (42.00)
Input AC Parameters		
Nominal Operating Frequency	50 or 60 Hz (Factory default is 60 Hz)	
Factory Default Vac	120/208 Vac @ 120°	
L1–L2 Factory Default Input Phase Angle	120°C	
Allowable Input Phase Angle	120, 180, 240 degrees; auto-sensing on application of alternating current (Restrictions for L–N voltage other than 120 Vac)	
Factory Default L1–N, L2–N Vac	120 Vac nominal	
User Configurable L1–N, L2–N Vac	100/110/115/120/127 Vac (Can be modified with configuration program)	
Input Frequency w/o Battery Operation	40–70 Hz	
Input Power Connection	Hardwire terminal block 3W + G (L–L–N–G)	
L1–N, L2–N Maximum Allowable Vac	150 Vac	
Output AC Parameters		
Factory Default Vac	120/208 Vac @ 120°C	
L1–L2 Factory Default Output Phase Angle	120°C	
Allowable Output Phase Angle	120, 180, 240 degrees; auto-sensing on initial application of input alternating current	
Factory Default L1–N, L2–N Vac	120 Vac nominal	
User Configurable L1–N, L2–N Vac	100/110/115/120/127 Vac, ±2%	
L1–N, L2–N Overload Rating		
105% to 130%	1 minute	
131% to 150%	10 seconds	
151% to 200%	1 second	
>200% (impact load)	At least 5 cycles	

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S4K 6 and 10 kVA Specifications - continued

Table 2: UPS Specifications

Parameters	Model Number	
	S4K4U6000C	S4K6U10KC
Bypass Protection Limits		
Disable Bypass Operation	If input voltage exceeds ±15% of the nominal voltage	
Re–enable Bypass Operation	If input voltage returns to within ±10% of nominal output voltage	
Disable Bypass Operation	When the input frequency prevents synchronous operation	
Environmental Requirements		
Operating Temperature	0°C to +40°C; see Table 11 for operating temperature parameters	
Storage Temperature	-15°C to +50°C	
Relative Humidity	0% to 95%, non-condensing	
Operating Elevation	Up to 10,000 ft. (3,000 m)	
Audible Noise	<55 dBA @ 3.2 ft. (1 m) rear; <50 dBA @ 3.2 ft. (1 m) front & sides	
Standards		
EMC	FCC Part 15, Subpart B, Class A, FCC Class A	

Table 3: Operating Temperature Parameters

Ambient Temperature	Model Number	
	S4K4U6000C	S4K6U10KC
pf @ 30°C ±3°C	0.8 pf	0.9 pf
pf @ 40°C ±3°C	0.8 pf	0.8 pf

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Table 4: Internal Battery Specifications

Parameters	Model Number	
	S4K144INTBATC	**S4K288INTBATC**
Used with UPS Models	S4K4U6000C	S4K6U10KC
Dimensions – W x D x H, in. (mm)		
Unit	2.80 x 19.30 x 8.10 (70.0 x 490.0 x 206.0)	5.30 x 19.70 x 8.10 (135.0 x 500.0 x 207.0)
Shipping	12.20 x 23.70 x 10.30 (310.0 x 602.0 x 262.0)	12.20 x 23.90 x 9.50 (310.0 x 607.0 x 242.0)
Weight – lbs. (kg)		
Unit	75.8 (34.40)	71.1 (32.30)
Shipping	81.1 (36.80)	76.4 (34.70)
Battery Parameters		
Type	Valve-regulated, non-spillable, flame retardant, lead acid	
Qty x V x Rating	2 x 6 x 12 V x 9.0 Ah	2 x 12 x 12 V x 9.0 Ah
Battery Mfr./Part Number	CSB type UPS12460F2	
Back–up Time	See Table 8	
Recharge Time	3 hours to 90% capacity after full discharge into 100% load	
Environmental Requirements		
Operating Temperature	0°C to +40°C	
Storage Temperature	-15°C to +50°C	
Relative Humidity	0% to 95%, non-condensing	
Operating Elevation	Up to 10,000 ft. (3,000 m) at +40°C without derating	

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Table 5: External Battery Cabinet Specifications

Parameters	Model Number	
	S4K144BATC	**S4K288BATC**
Used with UPS Models	S4K4U6000C	S4K6U10KC
Dimensions – W x D x H, in. (mm)		
Unit (with bezel)	3.30 x 26.10 x 16.90 (85.0 x 662.0 x 430.0)	6.80 x 26.50 x 16.90 (173.0 x 672.0 x 430.0)
Shipping	25.80 x 34.30 x 12.30 (655.0 x 872.0 x 312.0)	13.20 x 33.10 x 24.50 (336.0 x 842.0 x 622.0)
Weight – lbs. (kg)		
Unit	99.9 (45.30)	29.8 (13.50)
Shipping	110.2 (50.00)	44.1 (20.00)
Battery Parameters		
Type	Valve-regulated, non-spillable, flame retardant, lead acid	
Qty x V x Rating	2 x 6 x 12 V x 9.0 Ah	2 x 12 x 12 V x 9.0 Ah
Battery Mfr./Part Number	CSB type UPS12460F2	
Back–up Time	See Table 8	
Environmental Requirements		
Operating Temperature	0°C to +40°C	
Storage Temperature	-15°C to +50°C	
Relative Humidity	0% to 95%, non-condensing	
Operating Elevation	Up to 10,000 ft. (3,000 m) at +40°C without derating	

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Table 6: Power Distribution Specifications for S4K4U6000C

Parameters	Model Number					
	S4KPAD2–001C	S4KPAD2–002C	S4KPAD2–003C	S4KPAD2–004C	S4KPAD2–005C	S4KPAD2–006C
Dimensions – W x D x H, in. (mm)						
Unit	5.20 x 15.50 x 3.50 (132.0 x 393.0 x 88.0)					
Shipping	9.50 x 20.70 x 9.10 (242.0 x 527.0 x 230.0)					
Weight – lbs. (kg)						
Unit	8.8 (4.00)	8.6 (3.90)	8.6 (3.90)	9.9 (4.50)	10.6 (4.80)	9.5 (4.30)
Shipping	11.0 (5.00)	10.8 (4.90)	10.8 (4.90)	12.1 (5.50)	12.8 (5.80)	11.7 (5.30)
Electrical Specifications						
Amp Rating	30 A 2-pole input breaker					
Input Power Connections	(1) L14-30R on a 300 mm cord					
Output Power Connections	(4) 5-20R (1) L14-30R (1) L6-30R	(2) 5-20R (2) L6-20R	(4) 5-20R (2) L6-30R	(4) L5-20R (2) L5-30R	(4) L5-20R (2) L6-30R	(4) L6-20R

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Table 7: Battery Back–up Times

Number of Batteries/Cabinets	Load % of Capacity	Model Rating	
		6000 VA	10000 VA
		Back–up Time in Minutes	
Internal battery	10%	106	112
	20%	46	48
	30%	27	30
	40%	19	21
	50%	14	16
	60%	11	12
	70%	9	10
	80%	7	8
	90%	5	6
	100%	5	5
Internal battery + 1 external battery cabinet	10%	188	201
	20%	108	120
	30%	67	73
	40%	46	49
	50%	37	40
	60%	28	31
	70%	23	26
	80%	19	21
	90%	16	18
	100%	14	16
Internal battery + 2 external battery cabinets	10%	321	330
	20%	152	157
	30%	109	121
	40%	77	82
	50%	53	64
	60%	47	49
	70%	40	43
	80%	33	37
	90%	27	31
	100%	25	27
Internal battery + 3 external battery cabinets	10%	424	430
	20%	192	204
	30%	143	149
	40%	109	122
	50%	82	95
	60%	68	73
	70%	51	60
	80%	46	49
	90%	41	44
	100%	36	40

The factory default is programmed for internal batteries only. Table 7 shows the estimated battery back-up times at different loads. The user may specify the number of external battery cabinets attached to the UPS.

Note: Run times in this table are approximate. They are based upon new, fully charged standard battery modules at a temperature of 25°C (77°F) with 100% resistive UPS loading. Run times listed above can vary by +/-5% due to manufacturing variances of the individual batteries

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Table 7: Battery Back–up Times continued

Number of Batteries/Cabinets	Load % of Capacity	Model Rating	
		6000 VA	10000 VA
		Back–up Time in Minutes	
Internal battery + 4 external battery cabinets	10%	442	447
	20%	300	310
	30%	161	165
	40%	138	144
	50%	110	122
	60%	92	99
	70%	74	79
	80%	62	68
	90%	50	53
	100%	46	49
Internal Battery + 5 external battery cabinets	10%	454	459
	20%	324	332
	30%	194	206
	40%	153	158
	50%	134	140
	60%	110	122
	70%	95	102
	80%	77	82
	90%	67	73
	100%	53	64
Internal Battery + 6 external battery cabinets	10%	463	467
	20%	341	420
	30%	219	301
	40%	164	183
	50%	148	153
	60%	131	138
	70%	110	122
	80%	97	104
	90%	80	92
	100%	71	77

The factory default is programmed for internal batteries only. Table 7 shows the estimated battery back-up times at different loads. The user may specify the number of external battery cabinets attached to the UPS.

Note: Run times in this table are approximate. They are based upon new, fully charged standard battery modules at a temperature of 25°C (77°F) with 100% resistive UPS loading. Run times listed above can vary by +/-5% due to manufacturing variances of the individual batteries

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