

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

The new Solahd S4K4U6000C and the S4K6U10KC Industrial UPS Series are the first true On-Line industrial UPS that provide 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, 120V 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 208/120V or 240/120V
- 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
- 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
- Two year limited warranty

Certifications and Compliances

- cULus Listed, UPS Equipment
 - UL 1778
 - CSA C22.2 No. 107.3
- IEEE/ANSI C62.41 Category A & B
- ISTA Procedure 1A

Related Products

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

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°C	
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	

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 $\pm 15\%$ of the nominal voltage	
Re-enable Bypass Operation	If input voltage returns to within $\pm 10\%$ 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 $\pm 3^\circ\text{C}$	0.8 pf	0.9 pf
pf @ 40°C $\pm 3^\circ\text{C}$	0.8 pf	0.8 pf

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 8.5 Ah	2 x 12 x 12 V x 8.5 Ah
Battery Mfr./Part Number	CSB type HR1234WF2	
Backup 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	

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 8.5 Ah	2 x 12 x 12 V x 8.5 Ah
Battery Mfr./Part Number	CSB type 1234WF2	
Backup 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	

Table 6: Power Distribution Specifications for S4K4U6000C

Parameters	Model Number								
	S4KPAD2– HDWRC	S4KPAD2– HDWR–MBSC *	S4KPAD2– 001C	S4KPAD2– 002C	S4KPAD2– 003C	S4KPAD2– 004C	S4KPAD2– 005C	S4KPAD2– 006C	S4KPAD2– L630C
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)								4.70 x 13.20 x 4.10 (119.0 x 335.0 x 105.0)
Shipping	9.50 x 20.70 x 9.10 (242.0 x 527.0 x 230.0)								10.20 x 18.40 x 8.70 (119.0 x 335.0 x 105.0)
Weight, lbs. (kg)									
Unit	5.1 (2.30)	6.0 (2.70)	8.8 (4.00)	8.6 (3.90)	8.6 (3.90)	9.9 (4.50)	10.6 (4.80)	9.5 (4.30)	8.8 (4.00)
Shipping	7.3 (3.30)	8.2 (3.70)	11.0 (5.00)	10.8 (4.90)	10.8 (4.90)	12.1 (5.50)	12.8 (5.80)	11.7 (5.30)	11.0 (5.00)
Electrical Specifications									
Amp Rating	30 A 2-pole input breaker								
Input Power Connections	Hardwire terminal block 3W + G (L–L–N–G)		(1) L14-30R on a 300 mm cord						(1) L6-30P
Output Power Connections	Hardwire terminal block 3W + G (L–L–N–G)		(4) 5-20R (1) L14-30 (1) L6-30R	(2) 5-20R (2) L6-20R	(4) 5-20R (2) L6-30	(4) L5-20R (2) L5-30R	(4) L5-20R (2) L6-30R	(4) L6-20R	(2) L6-20R (2) L6-30R

* Standard on S4K4U6000C units

Table 7: Power Distribution Specifications for S4K6U10KC

Parameters	Model Number					
	S4KPAD2-101C	S4KPAD2-102C	S4KPAD2-103C	S4KPAD2-104C	S4KPAD2-105C	S4KPAD2-106C
Dimensions, W x D x H, in. (mm)						
Unit	7.40 x 5.70 (188.0 x 145.0)					
Shipping	11.90 x 20.60 x 8.70 (302.0 x 522.0 x 220.0)					
Weight, lbs. (kg)						
Unit	4.4 (2.00)	6.6 (3.00)			4.4 (2.00)	6.6 (3.00)
Shipping	6.6 (3.00)	8.8 (4.00)			6.6 (3.00)	8.8 (4.00)
Electrical Specifications						
Amp Rating	60 A 2-pole input breaker					
Input Power Connections	Hardwire terminal block 3W + G (L-L-N-G) to chassis					
Output Power Connections	(2) L6-30 (8) 5-20R	(4) L6-20R (4) 5-20R	(4) 5-20R (4) L6-30R	(4) 5-20R (2) L6-30R (2) L6-20R	(4) 5-20R (2) L5-30R (2) L5-20R	(4) L6-20R (4) L5-20R

S4KC Accessories

Hardware for Rack Mount (order part number separately)

Catalog Number	Description	Approx. Ship Weight lbs (kg)
Rack Slide Kits		
SRS1832	Rack slide kit for racks with 18-32" deep support rails.	8 (3.6)

Optional Equipment

Catalog Number	Description
Communications Options	
SNMPWEB CARD	Ethernet communications kit, (Supports SNMP, HTTP and OCP) includes SNMP hardware, MIB, configuration cable and installation manual.
IS-RELAY	Relay contact board, 2 relay contact signals each independently configured for "On Battery", "Low Battery", "On Bypass", "On UPS", "Summary Alarm" and "UPS Fault" (rated at 24V @ 1 Amp AC or DC).

Power A/C Distribution (PAD)

PADs provide output distribution, input connection and a rotary maintenance bypass switch.

The PAD is field installed by the customer and allows the UPS to be removed without interrupting power to the load.

Catalog Number	Description	Series
A2D115HW	120 Volt, Hardwired for use with 15 Amp Input	S4K2U-C (700 - 1500 VA Models)
A2D120HW	120 Volt, Hardwired for use with 20 Amp Input	S4K2U-C (2000 VA Model)
A2D130HW	120 Volt, Hardwired for use with 30 Amp input	S4K2U-C (3000 VA Model)
A2D220HW5	230 Volt, Hardwired for use with 10 Amp input	S4K2U-C (1000-2000 VA Model)
A2D230HW5	230 Volt, Hardwired for use with 15 Amp input	S4K2U-C (3000 VA Model)
S4KPAD2-001C	208/120 V or 240/120 V, Plug-n-Play L14-30P, (4)5-20 (1) L14-30 (1) L6-30R	S4K4U6000C
S4KPAD2-002C	208/120 V or 240/120 V, Plug-n-Play L14-30P, (2) 5-20R, (2) L6-20R	S4K4U6000C
S4KPAD2-003C	208/120 V or 240/120 V, Plug-n-Play L14-30P, (4) 5-20R, (2) L6-30	S4K4U6000C
S4KPAD2-004C	208/120 V or 240/120 V, Plug-n-Play L14-30P, (4) L5-20R, (2) L5-30R	S4K4U6000C
S4KPAD2-005C	208/120 V or 240/120 V, Plug-n-Play L14-30P, (4) L5-20R, (2) L6-30R	S4K4U6000C
S4KPAD2-006C	208/120 V or 240/120 V, Plug-n-Play L14-30P, (4) L6-20R	S4K4U6000C
S4KPAD2-101C	208/120 V or 240/120 V, Output Distribution, (2) L6-30 (8) 5-20R	S4K6U10KC
S4KPAD2-102C	208/120 V or 240/120 V, Output Distribution, (4) L6-20R, (4) 5-20R	S4K6U10KC
S4KPAD2-103C	208/120 V or 240/120 V, Output Distribution, (4) 5-20R, (4) L6-30R	S4K6U10KC
S4KPAD2-104C	208/120 V or 240/120 V, Output Distribution, (4) 5-20R, (2) L6-30R, (2) L6-20R	S4K6U10KC
S4KPAD2-105C	208/120 V or 240/120 V, Output Distribution, (4) 5-20R, (2) L5-30R, (2) L5-20R	S4K6U10KC
S4KPAD2-106C	208/120 V or 240/120 V, Output Distribution, (4) L6-20R, (4) L5-20R	S4K6U10KC

Note: PADs can only be used with units having matching receptacles for the line cords provided.

Table 8: Battery Backup Times

Number of Batteries/Cabinets	Load % of Capacity	Model Rating	
		6000 VA	10000 VA
		Backup Time in Minutes	
Internal battery	10%	94	100
	20%	43	46
	30%	26	28
	40%	17	18
	50%	13	14
	60%	10	11
	70%	8	9
	80%	6	7
	90%	5	6
	100%	4	5
Internal battery + 1 external battery cabinet	10%	154	159
	20%	96	102
	30%	53	65
	40%	44	46
	50%	34	37
	60%	26	28
	70%	21	23
	80%	17	18
	90%	15	16
	100%	13	14
Internal battery + 2 external battery cabinets	10%	201	210
	20%	136	141
	30%	97	103
	40%	69	74
	50%	50	52
	60%	44	46
	70%	37	40
	80%	31	34
	90%	26	28
	100%	22	25
Internal battery + 3 external battery cabinets	10%	304	310
	20%	156	160
	30%	127	133
	40%	97	103
	50%	74	79
	60%	60	65
	70%	49	51
	80%	44	46
	90%	39	42
	100%	34	37

Table 8: Battery Backup Times cont.

Number of Batteries/Cabinets	Load % of Capacity	Model Rating	
		6000 VA	10000 VA
		Backup Time in Minutes	
Internal battery + 4 external battery cabinets	10%	322	327
	20%	180	190
	30%	145	149
	40%	122	128
	50%	98	103
	60%	77	82
	70%	66	71
	80%	52	60
	90%	48	50
	100%	44	46

The factory default is programmed for internal batteries only. Table 8 shows the estimated battery backup times at different loads. The user may specify the number of external battery cabinets attached to the UPS.