

**S4K5U-5C 6 kVA International On-Line UPS**

The SolaHD S4K5U6K5C Industrial On-Line UPS Series is designed for international usage and provides flexible output voltage, an integrated maintenance bypass switch and internal batteries all in a slim 5U (8.7") enclosure. The S4K5U-5C features true On-Line (double conversion) topology providing the ultimate in protection against a wide range of potential power problems. Flexible output voltages (220/230/240 Volt) are available through the configuration program to allow for international use. One of the three Line-to-Neutral (L-N) output voltages is selected to match the local voltage. Self diagnostics simplify maintenance and troubleshooting, and the UPS can be serviced by the customer. The standard maintenance bypass switch provides an additional level of protection.



The S4K5U-5C also features 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
- Industrial and Commercial Machinery
- Pharmaceutical and Medical Diagnosis Equipment

**Features**

- True double conversion topology
- Higher power factor of 0.80
- Flexible L-N output voltage (220/230/240 V)
- Configurable as a tower or rack mount model
- High density, 6 kVA in only 5U of rack space
- Easily installed in 18" to 32" deep rack using rack mount kit # SRS1832
- User replaceable, hot-swappable internal battery module
- Matching 3U extended battery cabinets
- Includes both automatic and manual maintenance bypass switch
- Automatic frequency detection of either 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**

- **CE**  
- IEC62040-1
- EAC: TR CU 004/2011 - Technical Regulation of Custom Union "On the safety of low-voltage equipment"
- ISTA Procedure 1A
- ABS Type Approved

**Related Products**

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

**Table 8: UPS Specifications**

Parameters	Model Number: S4K5U6K5C
Rating	6000 VA/4800 W
<b>Dimensions – D x W x H, in. (mm)</b>	
Unit	22.40 x 16.90 x 8.70 (570.0 x 430.0 x 220.0)
Shipping	29.30 x 20.90 x 20.30 (745.0 x 530.0 x 516.0)
<b>Weight – lbs. (kg)</b>	
Unit	132.2 (60.00)
Shipping	156.5 (71.00)
<b>Input AC Parameters</b>	
Nominal Operating Frequency	50 or 60 Hz (Factory default is 50 Hz)
Factory Default Vac	230 Vac
User-configurable Vac	208/220/230/240 Vac (Can be modified using included configuration program)
Operating Voltage Range without Battery Operation	176–280 Vac
Maximum Allowable Vac	280 Vac
Input Frequency without Battery Operation	40–70 Hz
Input Power Connection	S4KPAD2-CEHWMBSC Standard (See “3.3 Removable Power Distribution Box”)
<b>Output AC Parameters</b>	
Factory Default Vac	230 Vac
Output Connections	S4KPAD2-CEHWMBSC Standard (See “3.3 Removable Power Distribution Box”)
Frequency	50 or 60 Hz, nominal
Wave form	Sine wave
Main Mode Overload	>200% for 5 cycles; 151–200% for 1 second; 131–150% for 10 seconds; 105–130% for 1 minute
<b>Bypass Protection Limits</b>	
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
<b>Environmental Requirements</b>	
Operating Temperature	0°C to +40°C; See Table 12 for Derating Parameters
Storage Temperature	-15°C to +50°C
Relative Humidity	0% to 95%, non-condensing
Operating Elevation	Up to 1,000 m (3,281 ft.) at +30°C without derating
Audible Noise	<55 dBA @ 1 m (3.2 ft.) rear; <50 dBA @ 1 m (3.2 ft.) front & sides
<b>Standards</b>	
EMC	IEC/EN/AS 62040-2 2 <sup>nd</sup> Edition (Cat 2 – Table 6); EN61000-4-2, Level 4, Criteria A, EN61000-4-3, Level 3, Criteria A, EN61000-4-4, Level 4, Criteria A, EN61000-4-5, Level 3, Criteria A

**Table 9: UPS Specifications**

Parameters	Model Number: S4K5U6K5C
<b>Agency</b>	
<b>Safety</b>	IEC62040-1:2008 Version
<b>EMI/EMC</b>	IEC/EN/AS 62040-2 2 <sup>nd</sup> Edition (Cat 2—Table 6)
<b>ESD</b>	EN61000-4-2, Level 4, Criteria A
<b>Radiated Susceptibility</b>	EN61000-4-3, Level 3, Criteria A
<b>Electrical Fast Transient</b>	EN61000-4-4, Level 4, Criteria A
<b>Surge Immunity</b>	EN61000-4-5, Level 3, Criteria A
<b>Transportation</b>	ISTA Procedure 1A

**Table 10: Operating Temperature Parameters**

Ambient Temperature	Model Number: S4K5U6K5C
pf @ 30°C ±3°C	0.8 pf
pf @ 40°C ±3°C	0.8 pf

**Table 11: Power Distribution Specifications**

Parameters	Model Number: S4KPAD2–CEHWMBSC
<b>Used with UPS Model</b>	S4K5U6K5C
<b>Power Distribution Box Includes:</b>	Two (2) IEC320 C19 16 A/250 V Sockets Six (6) C13 10 A/250 V Sockets Manual bypass switch with indicator lamp
<b>Ampere Rating</b>	32 A
<b>Input/Output Power Connections</b>	3-wire hard wired, 6–10 mm <sup>2</sup> (8–10 AWG)
<b>User–supplied Input Branch Circuit Breaker</b>	32 A

**Table 12: Internal Battery Specifications**

Parameters	Model Number: S4K240INTBATC
Used with UPS Model	S4K5U6K5C
<b>Dimensions – D x W x H, in. (mm)</b>	
Unit	15.40 x 4.40 x 7.20 (390.0 x 113.0 x 184.0)
Shipping	18.40 x 7.00 x 10.30 (467.0 x 178.0 x 262.0)
<b>Weight – lbs. (kg)</b>	
Unit	45.1 (20.46)
Shipping	50.7 (23.00)
<b>Battery Parameters</b>	
Type	Valve-regulated, non-spillable, lead acid
Qty x V x Rating	20 x 12 V x 9.0 Ah
Battery Mfr./Part Number	CSB/HR1221WF2 / Yuasa NPH5-12
Back-up Time	See Table 15
Recharge Time	3 hours to 90% capacity after full discharge into 100% load
<b>Environmental Requirements</b>	
Operating Temperature	0°C to +40°C; see Table 9
Storage Temperature	-15°C to +50°C
Relative Humidity	0% to 95%, non-condensing
Operating Elevation	Up to 3,000 m (10,000 ft.) at +40°C without derating

Table 13: External Battery Cabinet Specifications

Parameters	Model Number: S4K240BATC
Used with UPS Model	S4K5U6K5C
<b>Dimensions – D x W x H, in. (mm)</b>	
Unit (with bezel)	22.40 x 16.90 x 5.80 (570.0 x 430.0 x 148.0)
Shipping	29.30 x 20.80 x 16.00 (745.0 x 530.0 x 407.0)
<b>Weight – lbs. (kg)</b>	
Unit	111.0 (50.40)
Shipping	119.0 (54.00)
<b>Battery Parameters</b>	
Type	Valve-regulated, non-spillable, lead acid
Qty x V	1 x 20 x 12 V
Battery Mfr./Part Number	CSB/HR1221WF2 / Yuasa NPH5-12
Back-up Time	See Table 15
<b>Environmental Requirements</b>	
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 1,000 m (3,281 ft.) at +40°C

Table 14: Battery Back-up Times

Number of Batteries/Cabinets	Load % of Capacity	Model Rating
		6 kVA
		Back-up Time in Minutes
Internal battery	10%	97
	20%	47
	30%	33
	40%	22
	50%	17
	60%	14
	70%	11
	80%	9
	90%	8
	100%	6
Internal battery + 1 external battery cabinets	10%	158
	20%	97
	30%	65
	40%	48
	50%	40
	60%	33
	70%	26
	80%	22
	90%	19
	100%	17
Internal battery + 2 external battery cabinets	10%	205
	20%	123
	30%	97
	40%	74
	50%	53
	60%	48
	70%	43
	80%	38
	90%	33
	100%	28
Internal battery + 3 external battery cabinets	10%	223
	20%	158
	30%	110
	40%	97
	50%	78
	60%	66
	70%	52
	80%	48
	90%	44
	100%	41

The factory default is programmed for internal batteries only. Table 14 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.

Table 14: Battery Back-up Times continued

Number of Batteries/Cabinets	Load % of Capacity	Model Rating
		6 kVA
		Back-up Time in Minutes
Internal battery + 4 external battery cabinets	10%	360
	20%	191
	30%	138
	40%	108
	50%	97
	60%	81
	70%	71
	80%	61
	90%	51
	100%	48
Internal battery + 5 external battery cabinets	10%	400
	20%	205
	30%	159
	40%	124
	50%	106
	60%	98
	70%	83
	80%	74
	90%	66
	100%	53
Internal battery + 6 external battery cabinets	10%	420
	20%	215
	30%	186
	40%	144
	50%	112
	60%	105
	70%	98
	80%	90
	90%	77
	100%	70

The factory default is programmed for internal batteries only. Table 14 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.

## S4KC Accessories

### 30HWBP2U Power A/C Distribution (PAD)

The SolaHD 30HWBP2U provides an isolated path of power for the UPS system for preventive maintenance or service.



### Certifications and Compliances

- Listed
  - UL 1778
  - CSA C22.2 No. 107.3
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- IEC 62040-1
- ISTA Procedure 1A
- ABS Type Approved
- EAC: TR CU 004/2011 - Technical Regulation of Custom Union "On the safety of low-voltage equipment"



Catalog Number	Description	Series
<b>30HWBP2U</b>	120/208/230 Volt, 2U sized, Hardwired for use up to 30 Amp Input	S4K2U-C (120 Vac) and S4K2U-5C (230 Vac) (700-3000 VA Models were applicable) & S4K5U6K5C 6000 VA / 230 Vac

### Hardware for Rack Mount (order part number separately)

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

### Optional Equipment

Catalog Number	Description
<b>Communications Options</b>	
<b>IS-RELAY</b>	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 24 V @ 1 Amp AC or DC).
<b>IS-UNITY-DP</b>	UNITY card Web, SNMP, Modbus, BACnet (S4KC and S5KC compatible). Protocols: HTTP, HTTPS, Emerson, Remote service Delivery, Email, SMS, SNMP (v1,v2c, v3), BACnet IP / BACnet MSTP and Modbus TCP / Modbus RTU

Note: Additional PADs available on the following page. PADs can only be used with units having matching receptacles for the line cords provided.



## S4KC Accessories

### Power A/C Distribution (PAD)

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