

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
Dimensions – D x W x H, in. (mm)	
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)
Weight – lbs. (kg)	
Unit	132.2 (60.00)
Shipping	156.5 (71.00)
Input AC Parameters	
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”)
Output AC Parameters	
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
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 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
Standards	
EMC	IEC/EN/AS 62040-2 2 nd 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
Agency	
Safety	IEC62040-1:2008 Version
EMI/EMC	IEC/EN/AS 62040-2 2 nd Edition (Cat 2—Table 6)
ESD	EN61000-4-2, Level 4, Criteria A
Radiated Susceptibility	EN61000-4-3, Level 3, Criteria A
Electrical Fast Transient	EN61000-4-4, Level 4, Criteria A
Surge Immunity	EN61000-4-5, Level 3, Criteria A
Transportation	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
Used with UPS Model	S4K5U6K5C
Power Distribution Box Includes:	Two (2) IEC320 C19 16 A/250 V Sockets Six (6) C13 10 A/250 V Sockets Manual bypass switch with indicator lamp
Ampere Rating	32 A
Input/Output Power Connections	3-wire hard wired, 6–10 mm ² (8–10 AWG)
User–supplied Input Branch Circuit Breaker	32 A

Table 12: Internal Battery Specifications

Parameters	Model Number: S4K240INTBATC
Used with UPS Model	S4K5U6K5C
Dimensions – D x W x H, in. (mm)	
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)
Weight – lbs. (kg)	
Unit	45.1 (20.46)
Shipping	50.7 (23.00)
Battery Parameters	
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
Environmental Requirements	
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
Dimensions – D x W x H, in. (mm)	
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)
Weight – lbs. (kg)	
Unit	111.0 (50.40)
Shipping	119.0 (54.00)
Battery Parameters	
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
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 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
- - 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
30HWBP2U	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)
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	
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 24 V @ 1 Amp AC or DC).
IS-UNITY-DP	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
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)
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.