

Uninterruptible Power Supplies

S4K2U-D and S4K2U-5D Industrial On-Line UPS

Series
S4K2U

The SolaHD™ S4KD Series is a single phase, on-line (double conversion) UPS system available in 1000-3000 VA, 120 V and 230 V. On-Line design means zero transfer time from external to internal power. When utility power fails, your critical load remains supported by a seamless flow of power. Rack or tower configurable, the S4KD Series UPS offers customers a higher power factor, longer battery life, higher reliability and reduced cost of ownership. Housed in a slim 2U package, the SolaHD S4KD protects equipment from virtually all power disturbances due to blackouts, brownouts, sags, surges or noise interference. The UPS includes internal batteries. Optional, matching external battery cabinets, also in a slim 2U (3.5") size, offer extended battery runtime. Scalable runtime options with matching external battery cabinets offer additional flexibility when extended uninterrupted power is required. The UPS provides battery health status and replacement date prediction for intelligent battery health management.

The colored graphic LCD display with gravity sensitive orientation provides insight to UPS status for easy installation, configuration, and operation. The user friendly interface provides detailed status and diagnostics of the UPS including but not limited to battery capacity, percentage of UPS load, battery operation, bypass operation, and UPS fault conditions.

The rack-tower models are also supplied with securing flanges and rack slide mounting hardware is available separately, if required. Units can be easily hardwired by removing the attached line cord and receptacle plate. All units include a conduit knockout cover in the box.

Applications

- Industrial Automation Systems
- Critical Microprocessors and PC Based Systems
- Robotics and Process Control
- Programmable Logic Controllers (PLC)
- Mission Critical and High Speed Networks
- Enterprise Telecommunication Systems
- Pharmaceutical and Medical Diagnosis Equipment
- Printing and Publishing Machinery

Features

- Hardwire terminal block with conduit connections for permanent installation
- Small 2U height maximizes available space
- Full-Color Graphic LCD Display
- Higher output power factor up to 1.0
- PWM (pulse-width modulation) inverter reduces output voltage distortion
- External Battery Cabinets with Auto detection
- Rack-mount or stand-alone tower mounting

Note: The securing flanges do not support the weight of the UPS. Rack slides or shelves are required (sold separately).



- Units are field configurable
- Full metal enclosure including hinged front bezel for increased durability
- Energy Star 2.0 certified
- Optimized Thermal Management and variable speed fan
- Battery Health Status with Replacement Date Prediction
- Automatic internal bypass and external maintenance bypass options
- Communication Cards available for Network connectivity (RDU101, ISRELAY)

Certifications and Compliances

All Models

- ABS Type Approved
- RoHS Compliant
- ISTA Procedure 2A
- Energy Star 2.0 Certified

S4K2U-D, S4K2U3000-5D:

- Listed, UPS Equipment
 - UL 1778
 - CSA C22.2 No. 107.3

S4K2U-5D:

- EC/EN/AS 62040-1-1:2008

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Selection Table - S4K2U-D & S4K2U-5D Tower/Rack-Mount Models

Capacity (VA/W)	Catalog Number	Typical Back-up Times * (minutes)	Input Plug/Output Receptacle	Approx. Ship Weight - lbs (kg)
120 Vac, 50/60 Hz Models				
1000/1000	S4K2U1000D	7/18	5-15P / (6) 5-15R	38 (17.2)
1500/1350	S4K2U1500D	7/19	5-15P / (6) 5-15R	47.2 (21.4)
2000/1800	S4K2U2000D	4/12	5-20P / (6) 5-20R (15/20 amp type); (1) L5-30R	48.5 (22)
3000/2700	S4K2U3000D	4/12	L5-30P / (6) 5-20R (15/20 amp type); (1) L5-30R	67 (30.4)
230 Vac, 50/60 Hz International Models				
3000/2700	S4K2U30005D	3/9	IEC 320-C20 / (4) IEC 320-C13 (1) IEC 320-C19	67 (30.4)

* Full/Half Load (in minutes) at rated wattage.

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S4K2U-D, 120 Vac, 50/60 Hz Tower/Rack-Mount Models Specifications

Catalog Number	S4K2U1000D	S4K2U1500D	S4K2U2000D	S4K2U3000D
Capacity (VA/Watts)	1000 VA / 1000 W	1500 VA / 1350 W	2000 VA / 1800 W	3000 VA / 2700 W
Dimensions - D x W x H, in. (mm)				
Unit	15.7 x 16.9 x 3.4 (400 x 430 x 85)	18.5 x 16.9 x 3.4 (470 x 430 x 85)	18.5 x 16.9 x 3.4 (470 x 430 x 85)	21.3 x 16.9 x 3.4 (540 x 430 x 85)
Shipping	24.3 x 22.4 x 10.3 (617 x 570 x 262)	24.3 x 22.4 x 10.3 (617 x 570 x 262)	24.3 x 22.4 x 10.3 (617 x 570 x 262)	28.2 x 22.4 x 10.3 (717 x 570 x 262)
Weight - lbs. (kg)				
Unit	38 (17.2)	47.2 (21.4)	48.5 (22)	67 (30.4)
Shipping	49.9 (22.68)	57.4 (26.1)	58.7 (26.7)	77.2 (35.1)
Input AC Parameters				
Voltage Range (typical)	120 Vac nominal; variable based on output load			
Frequency	40 Hz to 70 Hz; auto sensing			
Input Power Cord *	10 ft. attached with NEMA 5-15P plug	NEMA L5-20P or 5-20P Plug (5-20P adapter included)		10 ft. attached with NEMA L5-30P plug
Output AC Parameters				
Output Receptacles *	5-15R x 6		L5-30R x 1 + 5-20R x 6	
Voltage	110/115/120/127 Vac (user-configurable) ±3%			
Waveform	Sine wave			
Utility (Vac) Mode Overload	S4K2U1000D: >200% for 250ms; 150-200% for 50 seconds, 125%-150% for 60 seconds, 105-125% for 60 seconds. S4K2U1500D: >200% for 250ms; 150-200% for 2 seconds, 125%-150% for 50 seconds, 105-125% for 60 seconds. S4K2U2000D: >200% for 250ms; 150-200% for 2 seconds, 125%-150% for 50 seconds, 105-125% for 60 seconds. S4K2U3000D: >200% for 250ms; 150-200% for 2 seconds, 125%-150% for 10 seconds, 105-125% for 15 seconds.			
Battery				
Type	Valve-regulated, non-spillable, lead acid			
Qty x V x Rating	3 x 12 V x 9.0Ah	4 x 12 V x 9.0 Ah	4 x 12 V x 9.0 Ah	6 x 12 V x 9.0Ah
Battery Mfr./Part Number	LEOCH DJW12-9.0	LEOCH DJW12-9.0	LEOCH DJW12-9.0	
Recharge Time	4 hours to 90% capacity after full discharge with 100% load until UPS auto shutdown (internal batteries only)			
Environmental Requirements				
Operating Temperature	0 °C thru +40 °C (+32 °F thru +104 °F)			
Storage Temperature	-20 °C thru 60 °C (-4 °F thru +140 °F), contain batteries will be from -15 thru 40 °C			
Relative Humidity	0% to 95%, non-condensing			
Operating Elevation	Up to 10,000 ft. (3,000 m)			
Storage Elevation	50,000 ft. (15,000 m) max.			
Audible Noise	S4K2U1000D: <46 dBA max at 3ft. (1m) front and sides, <43 dBA max at 3 ft (1 m) rear. S4K2U1500D- 2000D: <46 dBA max at 3ft. (1m) front and sides, <45dBA max at 3 ft (1 m) rear. S4K2U3000D: <46 dBA max at 3ft. (1m) front and sides, <48dBA max at 3 ft (1 m) rear.			
Agency				
Surge Immunity	ANSI C62.41 Category B			
Transportation	ITSA Procedure 2A			
Safety	UL 1778 4th Edition and CSA 22.2 No 107.3			
Emissions	FCC Part 15 (Class A) - CISPR22 Class A (RFI)			
Environmental	WEEE and ROHS2 REACH			

Notes:

* Input power cord and output receptacles can be removed for hardwired applications.

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S4K2U-5D, 230 Vac, 50/60 Hz Tower/Rack-Mount Models Specifications

Catalog Number	S4K2U30005D	
Capacity (VA/Watts)	3000 VA / 2700 W	
	Dimensions - D x W x H, in. (mm)	
Unit	21.3 x 16.9 x 3.4 (540 x 430 x 85)	
Shipping	28.2 x 22.4 x 10.3 (717 x 570 x 262)	
	Weight - lbs. (kg)	
Unit	63 (28.6)	
Shipping	80.2 (36.4)	
	Input AC Parameters	
Voltage Range (typical)	230 VAC Nominal	Variable Based on Output Load
Frequency	40 Hz to 70 Hz; auto sensing	
Input Power Cord *	C20	
	Output AC Parameters	
Output Receptacles *	C13 (x4), C19 (x1)	
Voltage	208 Vac nominal (ADJUSTABLE TO 200/220/230/240 vac)	
Waveform	Sine wave	
Utility (Vac) Mode Overload	>200% for 250 ms; 150-200% for 2 seconds; 125-150% for 10 seconds; 105-125% for 15 seconds	
	Battery	
Type	Valve-regulated, non-spillable, lead acid	
Backup Time (100% Load)	4 minutes	
Backup Time (50% Load)	13 minutes	
Backup Time + 1 External Battery Cabinet (100% Load)	22 minutes	
Backup Time + 1 External Battery Cabinet (50% Load)	55 minutes	
	Environmental Requirements	
Operating Temperature	0 °C thru +40 °C (+32 °F thru +104 °F) NO DERATING	
Storage Temperature	-20 °C thru 60 °C (-4 °F thru +140 °F), contain batteries will be from -15 thru 40 °C	
Relative Humidity	0% to 95%, non-condensing	
Operating Elevation	Up to 10,000 ft. (3,000 m) at 77 F (25C) without derating	
Audible Noise	<48dBA max @ 3.2ft. (1m) front and sides <48dBA, at 3ft (1m) rear	
	Agency	
Surge Immunity	ANSI C62.41 Category B	
Transportation	ITSA Procedure 2A	
Safety	UL 1778 5th Edition and CSA 22.2 No 107.3	
Emissions	FCC Part 15 (Class A) - CISPR22 Class A (RFI)	

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External Battery Cabinets Specifications

Catalog Number	S4K2U36BATD	S4K2U48BATD	S4K2U72BATD
Used with UPS models	S4K2U1000D	S4K2U1500D, S4K2U2000D	S4K2U3000D (-5)
Dimensions - D x W x H, in. (mm)			
Unit	14.6 x 16.9 x 3.3 (370 x 430 x 85)	17.3 x 16.9 x 3.4 (440 x 430 x 85)	20.1 x 16.9 x 3.4 (510 x 430 x 85)
Shipping	24.30 x 22.40 x 10.30 (617.2 x 570.0 x 262.0)	24.3 x 22.4 x 10.3 (617 x 570 x 262)	28.2 x 22.4 x 10.3 (717 x 570 x 262)
Weight - lbs. (kg)			
Unit	50.72 (23)	64.36 (29.2)	97.8 (44.4)
Shipping	64.14 (29.1)	78 (35.4)	105.72 (47.95)
Battery			
Type	Valve-regulated, non-spillable, lead acid		
Qty x V x Rating	2 x 3 x 12V x 9.0 Ah	2 x 4 x 12V x 9.0 Ah	2 x 6 x 12V x 9.0 Ah
Battery Mfr./Part Number	LEOCH DJW12-9.0		
Back-up Time	Battery Back-up Times Chart		
Environmental Requirements			
Operating Temperature	0°C to +40°C		
Storage Temperatures	-15°C to +50°C; High ambient temperatures will reduce battery life		
Relative Humidity	0% to 95%, non-condensing		
Operating Elevation	Up to 10,000 ft. (3,000 m)		
Storage Elevation	50,000 ft. (15,000 m) max.		

Optional Equipment	
Catalog Number	Description
Communication Cards	
IS-RELAY	Relay contact board, relay contact signals for 'On Battery', 'Low Battery', 'On Bypass', 'On UPS', 'Summary Alarm', and 'UPS Fault'
RDU101	Communications Card for multiple protocols; SNMP, Modbus TCP
Bypass Switch	
30HWBP2U	Hardwire Bypass Switch (24A), 2U Height
Rack Solutions	
SRS1832	Slide Rails 18-32" Deep

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S4K2U-D (5D) Battery Back-up Times

Number of Batteries/Cabinets	Load % of Capacity	Model Rating			
		1000 VA	1500 VA	2000 VA	3000 (-5D) VA
		Back-up Time in Minutes			
Internal battery	10%	103	119	80	86
	20%	51	58	39	41
	30%	33	37	24	25
	40%	24	25	17	17
	50%	18	19	12	13
	60%	14	15	9	10
	70%	11	12	8	8
	80%	9	10	6	6
	90%	8	8	5	5
Internal battery + 1 external battery cabinet	10%	337	392	264	283
	20%	182	203	143	149
	30%	126	137	96	100
	40%	95	102	71	73
	50%	77	80	54	55
	60%	60	62	43	43
	70%	50	51	36	37
	80%	43	43	30	30
	90%	38	38	25	26
Internal battery + 2 external battery cabinets	10%	592	682	465	497
	20%	316	355	245	259
	30%	217	235	169	174
	40%	168	177	127	130
	50%	136	141	101	103
	60%	113	115	82	84
	70%	95	96	69	70
	80%	82	83	57	58
	90%	72	72	49	50
Internal battery + 3 external battery cabinets	10%	852	993	665	713
	20%	458	514	355	374
	30%	314	341	240	248
	40%	238	252	182	186
	50%	194	200	145	147
	60%	162	167	119	121
	70%	139	140	102	103
	80%	119	119	87	88
	90%	106	106	77	77
	100%	93	92	66	67

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. The S4KD UPS Series can utilize up to 10 External Battery Cabinets. The full runtime charts are available in the users manual.

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