

S5K Modular Series On-Line Uninterruptible Power Systems (UPS)

The 5K Modular is scalable from 4 to 20 kVA, offering many flexible options by adding a few standard modules. Designed to be fully configured, tested and shipped in the configuration you need, the 5K Modular also has the ability to be easily upgraded in the field to either higher VA ratings (up to 20 kVA maximum), longer back-ups or to add N+x parallel redundancy. Configurations can be cost-effectively upgraded keeping your 5K Modular current without a large reinvestment in a new system.

The optional N+x redundancy provides a fault-tolerant group of power modules and controls. The modular design is easy to upgrade so the UPS can grow with the needs of the system that is being protected.

Each of the modular components, including 4 kVA power modules, battery modules and system control modules, can be hot-swapped making it easy to increase power, extend your back-up or add redundancy while still providing power protection to the load.

This fault-tolerant system uses intelligent power and battery modules which take themselves off-line if there is a problem without interrupting power to the load. Self-diagnostic capabilities simplify maintenance and troubleshooting. Each unit incorporates an internal automatic bypass.

Applications

- Network Servers
- Enterprise Telecommunications Systems
- LAN gateways, Bridges and Routers
- Mini-computers, Superservers and Server Clusters
- Clusters of PCs or Workstations and Peripherals
- RAID arrays and other large-scale Data Handling Systems


Features

- Scalable for capacity, redundancy, or battery back-up offering unbelievable flexibility.
- Built-in intelligence is provided for each individual module using microprocessor controls, increasing functionality, communications and reliability.
- N+x parallel redundancy is easily achieved by adding extra control, power and battery modules.
- Any failed module will automatically take itself off-line while the other modules continue to support the connected equipment.



- Multiple and simultaneous communication ports
- Variable input voltage range minimizes battery operation to increase battery life.
- An automatic internal bypass for maximum availability of output power.
- Continuous sinewave output
- Power factor corrected input reduces reflected distortion and optimizes utility power.
- Two year limited warranty (Includes factory start up)

Certifications and Compliances

-  Listed, UPS Equipment
 - UL 1778
 - CSA C22.2 No. 107.3
- ANSI C62.41, Class A & B

Chassis Options

The S5K Modular has three chassis available to build on:

- The “A” chassis can accommodate up to 8 modules.
- The “B” chassis can accommodate up to 12 modules and supplies 16 kVA of power, with N+1 redundancy.
- The “C” chassis can accommodate up to 12 modules and supplies a full 20 kVA of power, with N+1 redundancy.

System control modules are not included in module count. All chassis can accommodate up to two system control modules. Select the proper chassis based on your futures need for expansion or redundancy. In most standard (non-redundant) applications, the “A” chassis is the most popular.

Selection Steps

1. Determine the maximum kVA you will need for future expansion.
2. Determine the kVA and run time value for your immediate need.
3. Determine if you need redundancy. If the exact run time is the critical need, use the fully redundant option (see Selection Charts on the following pages).
4. Select the unit that meets both your immediate requirements, and is expandable to your future needs in the “Maximum Upgrade” column in the enclosure selection charts. The Maximum Upgrade column shows the highest kVA expansion that particular configuration is capable of without removing any of the battery modules from the original configuration.

Specifications

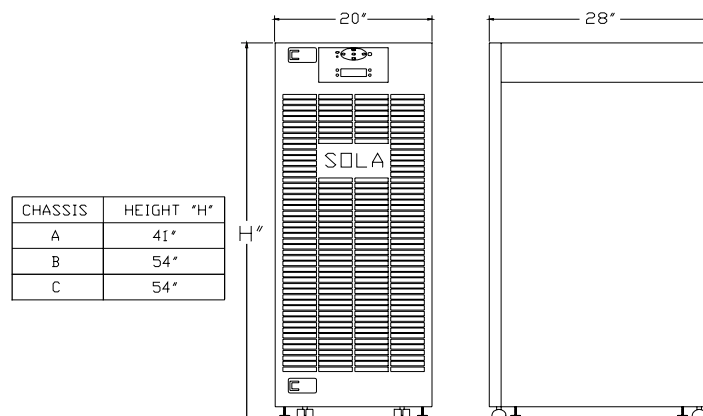
| | |
|---|---|
| Capacity (VA/Watts) | 4 kVA / 2.8 kW to 20 kVA / 14 kW in 4 kVA / 2.8 kW increments |
| Dimensions – inches | |
| Unit (H x W x D) | 8 module capacity “A” Chassis 41” x 20” x 28” 12 module capacity “B” or “C” Chassis 54” x 20” x 28” |
| Shipping (H x W x D) | 56 in x 32 in x 42 in |
| Input AC Parameters | |
| Voltage Range (typical) | 170-276 Vac Low line limit variable with load 170 Vac from 80 to 100% load 144 Vac from 20 to 90% load 127 Vac from 20 to 70% load 100 Vac at less than 30% load |
| Voltage Configuration and Connection | Single phase, 2-wire plus ground (L1-L2-G) |
| Frequency | 60 Hz nominal 40 - 70 Hz range without operating from battery |
| Input Connector | Hardwired only |
| Power Factor | .98 typical |
| Output AC Parameters | |
| Voltage | 240, 208, 240/120 (120-0-120) or 208/120 (120-0-88) |
| Receptacles | Optional with use of external Maintenance Bypass |
| Voltage Regulation | ±3 % |
| Voltage Distortion | Maximum 3% THD for linear loads, maximum 7% THD for full non-linear loads. |
| Transient Response | < 7% for 100% step load; recovery within 96 ms. |
| Frequency | 60 Hz |
| Frequency Slew Rate | Selectable up to 5 Hz/sec |
| Frequency Sync Range | Selectable up to ±5 Hz |
| Overload | 100 to 110% for 10 minutes minimum 111 to 150% 10 seconds 151 to 200% for 2 Cycles |
| Battery Parameters | |
| Battery Type | Sealed, lead acid |
| Recharge Rate | 3 to 5 Hrs to 90% capacity |
| Battery Back-up | See Battery Selection Tables for specific configurations Autonomy time is 6 minutes with an equal number of battery & power modules in a non-redundant configuration at full load |
| Battery Voltage | 120 Vdc Nominal |
| Maximum charge current (full load) | 3A |
| Environmental | |
| 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. (3000m) at 40°C without derating |
| Storage Elevation | 15,000m (50,000 ft.) maximum |
| Heat Dissipation | 1062 BTU / Hour per fully loaded power module (4kVA / 2.8kW) |
| Audible Noise | < 62 dBA @ 1 meter |
| Routine Maintenance | Keep the UPS clean and cool to enhance system reliability. Occasionally clean or replace the fan intake filters and ensure proper airflow. Do not use liquid or aerosol cleaning fluids. Periodically review the UPS alarm logs |

Recommended Part Numbers

(See enclosure selection charts for other options)

| kVA / kW | Catalog Number | | Back-up (Min@FL/HL) |
|----------|----------------|------------|------------------------|
| | Standard | Redundant | |
| 4/2.8 | S5KA4N1A6 | S5KA4R1A6 | 7/18 |
| 8/5.6 | S5KA8N2A6 | S5KA8R2A6 | 7/18 |
| 12/8.4 | S5KA12N3A6 | S5KA12R3A6 | 7/18 |
| 16/11.2 | S5KA16N4A6 | S5KB16R4A6 | 7/18 |
| 20/14 | S5KC20N5A6 | S5KC20R5A6 | 7/18 |

Mechanical Diagram



Part Number Configuration

The S5K modular is available in many combination. Use the part number template below to identify the description of any given part number.

| Series Designation | Chassis Size | kVA Rating | Unit Type | Number of Battery Modules | Output Voltage | Frequency |
|--|--------------------------------|---|--|--|----------------|-----------|
| | A = 8 Module, 16 kVA Capacity | 4, 8, 12, 16 or 20 kVA 00 = External Battery | N = Standard (Not Redundant) | * Must be at least one per 4 kVA of capacity | A = 208/120 | 6 = 60 Hz |
| | B = 12 Module, 16 kVA Capacity | | R = Redundant Power & Control | | | |
| | C = 12 Module, 20 kVA Capacity | | X = Redundant Power, Battery & Control | | | |
| | D = External Battery Cabinet | | B = Battery Cabinet | | | |
| Example: 4 kVA Load, Future Expandable to 16 kVA with 7 minutes of Back-up. What is the part number? | | | | | | |
| S5K | A | 4 | N | 1 | A | 6 |

Enclosure Selection Chart: Chassis A: 8 Module, 4 kVA

| System Model Number | Qty of Power Modules Included | Qty of Battery Modules Included | Qty of System Control Modules Included | Unit Weight lbs (kg) | Back-up Full/Half Load (minutes) | Maximum Upgrade ² |
|---|-------------------------------|---------------------------------|--|----------------------|----------------------------------|------------------------------|
| 4 kVA / 2.8kW | | | | | | |
| S5KA4N1A6 | 1 | 1 | 1 | 441.0 (200.00) | 7/18 | 16kVA |
| S5KA4N2A6 | 1 | 2 | 1 | 506.0 (229.52) | 19/42 | 16kVA |
| S5KA4N3A6 | 1 | 3 | 1 | 571.0 (259.00) | 30/61 | 16kVA |
| S5KA4N4A6 | 1 | 4 | 1 | 636.0 (288.48) | 42/82 | 16kVA |
| S5KA4N5A6 | 1 | 5 | 1 | 701.0 (317.97) | 52/98 | 12kVA |
| S5KA4N6A6 | 1 | 6 | 1 | 766.0 (347.45) | 62/110 | 8kVA |
| S5KA4N7A6 | 1 | 7 | 1 | 831.0 (376.94) | 75/140 | N/A |
| Redundant (power & control only) | | | | | | |
| S5KA4R1A6 | 2 | 1 | 2 | 472.0 (214.10) | 7/18 | 12kVA |
| S5KA4R2A6 | 2 | 2 | 2 | 537.0 (243.58) | 19/42 | 12kVA |
| S5KA4R3A6 | 2 | 3 | 2 | 602.0 (273.06) | 30/61 | 12kVA |
| S5KA4R4A6 | 2 | 4 | 2 | 667.0 (302.55) | 42/82 | 12kVA |
| S5KA4R5A6 | 2 | 5 | 2 | 732.0 (332.03) | 52/98 | 8kVA |
| S5KA4R6A6 | 2 | 6 | 2 | 797.0 (361.51) | 62/110 | N/A |
| Full Redundant (battery, power & control) ¹ | | | | | | |
| S5KA4X2A6 | 2 | 2 | 2 | 537.0 (243.58) | 7/18 | 12kVA |
| S5KA4X3A6 | 2 | 3 | 2 | 602.0 (273.06) | 19/42 | 12kVA |
| S5KA4X4A6 | 2 | 4 | 2 | 667.0 (302.55) | 30/61 | 8kVA |
| S5KA4X5A6 | 2 | 5 | 2 | 732.0 (332.03) | 42/82 | N/A |
| S5KA4X6A6 | 2 | 6 | 2 | 797.0 (361.51) | 52/98 | N/A |

Notes:

1. Full redundant units include one redundant battery module. Back-up given does not include this extra module, so actual achieved Back-up will be longer than published.
2. The S5K modulars are easily upgraded by adding extra battery and/or power modules as long as the number of modules (battery plus power) does not exceed the number of modules the enclosure is designed to contain.
 - Control modules do not count toward the 8 module max. (2 max control modules per system).
 - There must be at least one battery module per power module installed.

Enclosure Selection Chart: Chassis A: 8 Module

| System Model Number | Qty of Power Modules Included | Qty of Battery Modules Included | Qty of System Control Modules Included | Unit Weight lbs (kg) | Back-up Full/Half Load (minutes) | Maximum Upgrade ² |
|---|-------------------------------|---------------------------------|--|----------------------|----------------------------------|------------------------------|
| 8 kVA / 5.6kW | | | | | | |
| S5KA8N2A6 | 2 | 2 | 1 | 532.0 (241.31) | 7 / 19 | 16kVA |
| S5KA8N3A6 | 2 | 3 | 1 | 597.0 (270.79) | 13 / 30 | 16kVA |
| S5KA8N4A6 | 2 | 4 | 1 | 662.0 (300.28) | 19 / 42 | 16kVA |
| S5KA8N5A6 | 2 | 5 | 1 | 727.0 (329.76) | 25 / 52 | 12kVA |
| S5KA8N6A6 | 2 | 6 | 1 | 792.0 (359.25) | 30 / 62 | N/A |
| Redundant (power & control only) | | | | | | |
| S5KA8R2A6 | 3 | 2 | 2 | 563.0 (255.37) | 7 / 19 | 12kVA |
| S5KA8R3A6 | 3 | 3 | 2 | 628.0 (284.86) | 13 / 30 | 12kVA |
| S5KA8R4A6 | 3 | 4 | 2 | 693.0 (314.34) | 19 / 42 | 12kVA |
| S5KA8R5A6 | 3 | 5 | 2 | 758.0 (343.82) | 25 / 52 | N/A |
| Full Redundant (battery, power & control) ¹ | | | | | | |
| S5KA8X3A6 | 3 | 3 | 2 | 628.0 (284.86) | 7 / 19 | 12kVA |
| S5KA8X4A6 | 3 | 4 | 2 | 693.0 (314.34) | 13 / 30 | N/A |
| S5KA8X5A6 | 3 | 5 | 2 | 758.0 (343.82) | 19 / 42 | N/A |
| 12 kVA / 8.4kW | | | | | | |
| S5KA12N3A6 | 3 | 3 | 1 | 623.0 (282.59) | 7 / 19 | 16kVA |
| S5KA12N4A6 | 3 | 4 | 1 | 688.0 (312.07) | 11 / 27 | 16kVA |
| S5KA12N5A6 | 3 | 5 | 1 | 753.0 (341.56) | 15 / 34 | N/A |
| Redundant (power & control only) | | | | | | |
| S5KA12R3A6 | 4 | 3 | 2 | 654.0 (296.65) | 7 / 19 | N/A |
| S5KA12R4A6 | 4 | 4 | 2 | 719.0 (326.13) | 11 / 27 | N/A |
| Full Redundant (battery, power & control) ¹ | | | | | | |
| S5KA12X4A6 | 4 | 4 | 2 | 719.0 (326.13) | 7 / 19 | N/A |
| 16 kVA / 11.2kW | | | | | | |
| S5KA16N4A6 | 4 | 4 | 1 | 714.0 (323.87) | 7 / 19 | N/A |

Notes:

- Full redundant units include one redundant battery module. Back-up given does not include this extra module, so actual achieved Back-up will be longer than published.
- The S5K modulars are easily upgraded by adding extra battery and/or power modules as long as the number of modules (battery plus power) does not exceed the number of modules the enclosure is designed to contain.
 - Control modules do not count toward the 8 module max. (2 max control modules per system).
 - There must be at least one battery module per power module installed.

Enclosure Selection Chart: Chassis B: 12 Module, 4 kVA

| System Model Number | Qty of Power Modules Included | Qty of Battery Modules Included | Qty of System Control Modules Included | Unit Weight lbs (kg) | Back-up Full/Half Load (minutes) | Maximum Upgrade ² |
|---|-------------------------------|---------------------------------|--|----------------------|----------------------------------|------------------------------|
| 4 kVA / 2.8 kW | | | | | | |
| S5KB4N1A6 | 1 | 1 | 1 | 496.0 (224.98) | 7 / 18 | 16 kVA |
| S5KB4N2A6 | 1 | 2 | 1 | 561.0 (254.47) | 19 / 42 | 16 kVA |
| S5KB4N3A6 | 1 | 3 | 1 | 626.0 (283.95) | 30 / 61 | 16 kVA |
| S5KB4N4A6 | 1 | 4 | 1 | 691.0 (313.43) | 42 / 82 | 16 kVA |
| S5KB4N5A6 | 1 | 5 | 1 | 756.0 (342.92) | 52 / 98 | 16 kVA |
| S5KB4N6A6 | 1 | 6 | 1 | 821.0 (372.40) | 62 / 110 | 16 kVA |
| S5KB4N7A6 | 1 | 7 | 1 | 886.0 (401.88) | 75 / 140 | 16 kVA |
| S5KB4N8A6 | 1 | 8 | 1 | 951.0 (431.37) | 92 / 170 | 16 kVA |
| S5KB4N9A6 | 1 | 9 | 1 | 1016.0 (460.85) | 100 / 190 | 12 kVA |
| S5KB4N10A6 | 1 | 10 | 1 | 1081.0 (490.33) | 110 / 220 | 8 kVA |
| S5KB4N11A6 | 1 | 11 | 1 | 1146.0 (519.82) | 120 / 250 | N/A |
| Redundant (power & control only) | | | | | | |
| S5KB4R1A6 | 2 | 1 | 2 | 527.0 (239.04) | 7 / 18 | 16 kVA |
| S5KB4R2A6 | 2 | 2 | 2 | 592.0 (268.53) | 19 / 42 | 16 kVA |
| S5KB4R3A6 | 2 | 3 | 2 | 657.0 (298.01) | 30 / 61 | 16 kVA |
| S5KB4R4A6 | 2 | 4 | 2 | 722.0 (327.49) | 42 / 82 | 16 kVA |
| S5KB4R5A6 | 2 | 5 | 2 | 787.0 (356.98) | 52 / 98 | 16 kVA |
| S5KB4R6A6 | 2 | 6 | 2 | 852.0 (386.46) | 62 / 110 | 16 kVA |
| S5KB4R7A6 | 2 | 7 | 1 | 917.0 (415.94) | 75 / 140 | 16 kVA |
| S5KB4R8A6 | 2 | 8 | 1 | 982.0 (445.43) | 92 / 170 | 12 kVA |
| S5KB4R9A6 | 2 | 9 | 1 | 1047.0 (474.91) | 100 / 190 | 8 kVA |
| S5KB4R10A6 | 2 | 10 | 1 | 1112.0 (504.39) | 110 / 220 | N/A |
| Full Redundant (battery, power & control) ¹ | | | | | | |
| S5KB4X2A6 | 2 | 2 | 2 | 592.0 (268.53) | 7 / 18 | 16 kVA |
| S5KB4X3A6 | 2 | 3 | 2 | 657.0 (298.01) | 19 / 42 | 16 kVA |
| S5KB4X4A6 | 2 | 4 | 2 | 722.0 (327.49) | 30 / 61 | 16 kVA |
| S5KB4X5A6 | 2 | 5 | 2 | 787.0 (356.98) | 42 / 82 | 16 kVA |
| S5KB4X6A6 | 2 | 6 | 2 | 852.0 (386.46) | 52 / 98 | 16 kVA |
| S5KB4X7A6 | 2 | 7 | 2 | 917.0 (415.94) | 62 / 110 | 16 kVA |
| S5KB4X8A6 | 2 | 8 | 2 | 982.0 (445.43) | 75 / 140 | 12 kVA |
| S5KB4X9A6 | 2 | 9 | 2 | 1047.0 (474.91) | 92 / 170 | 8 kVA |
| S5KB4X10A6 | 2 | 10 | 2 | 1112.0 (504.39) | 100 / 190 | N/A |

Notes:

1. Full redundant units include one redundant battery module. Back-up given does not include this extra module, so actual achieved Back-up will be longer than published.
2. The S5K modulars are easily upgraded by adding extra battery and/or power modules as long as the number of modules (battery plus power) does not exceed the number of modules the enclosure is designed to contain.
 - Control modules do not count toward the 8 module max. (2 max control modules per system).
 - There must be at least one battery module per power module installed.

Enclosure Selection Chart: Chassis B: 12 Module, 8 kVA

| System Model Number | Qty of Power Modules Included | Qty of Battery Modules Included | Qty of System Control Modules Included | Unit Weight lbs (kg) | Back-up Full/Half Load (minutes) | Maximum Upgrade ² |
|---|-------------------------------|---------------------------------|--|----------------------|----------------------------------|------------------------------|
| 8 kVA / 5.6kW | | | | | | |
| S5KB8N2A6 | 2 | 2 | 1 | 587.0 (266.26) | 7 / 19 | 16kVA |
| S5KB8N3A6 | 2 | 3 | 1 | 652.0 (295.74) | 13 / 30 | 16kVA |
| S5KB8N4A6 | 2 | 4 | 1 | 717.0 (325.23) | 19 / 42 | 16kVA |
| S5KB8N5A6 | 2 | 5 | 1 | 782.0 (354.71) | 25 / 52 | 16kVA |
| S5KB8N6A6 | 2 | 6 | 1 | 847.0 (384.19) | 30 / 62 | 16kVA |
| S5KB8N7A6 | 2 | 7 | 1 | 912.0 (413.68) | 38 / 75 | 16kVA |
| S5KB8N8A6 | 2 | 8 | 1 | 977.0 (443.16) | 43 / 92 | 16kVA |
| S5KB8N9A6 | 2 | 9 | 1 | 1042.0 (472.64) | 47 / 100 | 12kVA |
| S5KB8N10A6 | 2 | 10 | 1 | 1107.0 (502.13) | 54 / 110 | N/A |
| Redundant (power & control only) | | | | | | |
| S5KB8R2A6 | 3 | 2 | 2 | 618.0 (280.32) | 7 / 19 | 16kVA |
| S5KB8R3A6 | 3 | 3 | 2 | 683.0 (309.80) | 13 / 30 | 16kVA |
| S5KB8R4A6 | 3 | 4 | 2 | 748.0 (339.29) | 19 / 42 | 16kVA |
| S5KB8R5A6 | 3 | 5 | 2 | 813.0 (368.77) | 25 / 52 | 16kVA |
| S5KB8R6A6 | 3 | 6 | 2 | 878.0 (398.25) | 30 / 62 | 16kVA |
| S5KB8R7A6 | 3 | 7 | 2 | 943.0 (427.74) | 38 / 75 | 16kVA |
| S5KB8R8A6 | 3 | 8 | 2 | 1008.0 (457.22) | 43 / 92 | 12kVA |
| S5KB8R9A6 | 3 | 9 | 2 | 1073.0 (486.70) | 47 / 100 | N/A |
| Full Redundant (battery, power & control) ¹ | | | | | | |
| S5KB8X3A6 | 3 | 3 | 2 | 628.0 (284.86) | 7 / 19 | 16kVA |
| S5KB8X4A6 | 3 | 4 | 2 | 693.0 (314.34) | 13 / 30 | 16kVA |
| S5KB8X5A6 | 3 | 5 | 2 | 758.0 (343.82) | 19 / 42 | 16kVA |
| S5KB8X6A6 | 3 | 6 | 2 | 878.0 (398.25) | 25 / 52 | 16kVA |
| S5KB8X7A6 | 3 | 7 | 2 | 943.0 (427.74) | 30 / 62 | 16kVA |
| S5KB8X8A6 | 3 | 8 | 2 | 1008.0 (457.22) | 38 / 75 | 12kVA |
| S5KB8X9A6 | 3 | 9 | 2 | 1073.0 (486.70) | 43 / 92 | N/A |

Notes: (Apply to all 12 Module Tables)

- Full redundant units include one redundant battery module. Back-up given does not include this extra module, so actual achieved Back-up will be longer than published.
- The S5K modulars are easily upgraded by adding extra battery and/or power modules as long as the number of modules (battery plus power) does not exceed the number of modules the enclosure is designed to contain.
 - Control modules do not count toward the 8 module max. (2 max control modules per system).
 - There must be at least one battery module per power module installed.

Enclosure Selection Chart: Chassis B: 12 Module, 12 and 16 kVA

| System Model Number | Qty of Power Modules Included | Qty of Battery Modules Included | Qty of System Control Modules Included | Unit Weight lbs (kg) | Back-up Full/Half Load (minutes) | Maximum Upgrade ² |
|--|-------------------------------|---------------------------------|--|----------------------|----------------------------------|------------------------------|
| 12 kVA / 8.4kW | | | | | | |
| S5KB12N3A6 | 3 | 3 | 1 | 678.0 (307.54) | 7 / 19 | 16kVA |
| S5KB12N4A6 | 3 | 4 | 1 | 743.0 (337.02) | 11 / 27 | 16kVA |
| S5KB12N5A6 | 3 | 5 | 1 | 808.0 (366.50) | 15 / 34 | 16kVA |
| S5KB12N6A6 | 3 | 6 | 1 | 873.0 (396.00) | 18 / 41 | 16kVA |
| S5KB12N7A6 | 3 | 7 | 1 | 938.0 (425.47) | 24 / 50 | 16kVA |
| S5KB12N8A6 | 3 | 8 | 1 | 1003.0 (454.95) | 27 / 58 | 16kVA |
| S5KB12N9A6 | 3 | 9 | 1 | 1068.0 (484.44) | 29 / 63 | N/A |
| Redundant (power & control only) | | | | | | |
| S5KB12R3A6 | 4 | 3 | 2 | 709.0 (321.60) | 7 / 19 | 16kVA |
| S5KB12R4A6 | 4 | 4 | 2 | 774.0 (351.08) | 11 / 27 | 16kVA |
| S5KB12R5A6 | 4 | 5 | 2 | 839.0 (380.56) | 15 / 34 | 16kVA |
| S5KB12R6A6 | 4 | 6 | 2 | 904.0 (410.05) | 18 / 41 | 16kVA |
| S5KB12R7A6 | 4 | 7 | 2 | 969.0 (439.53) | 24 / 50 | 16kVA |
| S5KB12R8A6 | 4 | 8 | 2 | 1034.0 (469.01) | 27 / 58 | N/A |
| Full Redundant (battery, power & control)¹ | | | | | | |
| S5KB12X4A6 | 4 | 4 | 2 | 719.0 (326.13) | 7 / 19 | 16kVA |
| S5KB12X5A6 | 4 | 5 | 2 | 839.0 (380.56) | 11 / 27 | 16kVA |
| S5KB12X6A6 | 4 | 6 | 2 | 904.0 (410.05) | 15 / 34 | 16kVA |
| S5KB12X7A6 | 4 | 7 | 2 | 969.0 (439.53) | 18 / 41 | 16kVA |
| S5KB12X8A6 | 4 | 8 | 2 | 1034.0 (469.01) | 24 / 50 | N/A |
| 16 kVA / 11.2kW | | | | | | |
| S5KB16N4A6 | 4 | 4 | 1 | 769.0 (348.81) | 7 / 19 | N/A |
| S5KB16N5A6 | 4 | 5 | 1 | 834.0 (378.30) | 11 / 27 | N/A |
| S5KB16N6A6 | 4 | 6 | 1 | 899.0 (407.78) | 15 / 34 | N/A |
| S5KB16N7A6 | 4 | 7 | 1 | 964.0 (437.26) | 16 / 38 | N/A |
| S5KB16N8A6 | 4 | 8 | 1 | 1029.0 (466.75) | 19 / 43 | N/A |
| Redundant (power & control only) | | | | | | |
| S5KB16R4A6 | 5 | 4 | 2 | 800.0 (362.87) | 7 / 19 | N/A |
| S5KB16R5A6 | 5 | 5 | 2 | 865.0 (392.36) | 10 / 25 | N/A |
| S5KB16R6A6 | 5 | 6 | 2 | 930.0 (421.84) | 12 / 30 | N/A |
| S5KB16R7A6 | 5 | 7 | 2 | 995.0 (451.32) | 16 / 38 | N/A |
| Full Redundant (battery, power & control)¹ | | | | | | |
| S5KB16X5A6 | 5 | 5 | 2 | 865.0 (392.36) | 7 / 19 | N/A |
| S5KB16X6A6 | 5 | 6 | 2 | 930.0 (421.84) | 10 / 25 | N/A |
| S5KB16X7A6 | 5 | 7 | 2 | 995.0 (451.32) | 12 / 30 | N/A |

Notes: (Apply to all 12 Module Tables)

1. Full redundant units include one redundant battery module. Back-up given does not include this extra module, so actual achieved Back-up will be longer than published.
2. The S5K modulars are easily upgraded by adding extra battery and/or power modules as long as the number of modules (battery plus power) does not exceed the number of modules the enclosure is designed to contain.
 - Control modules do not count toward the 8 module max. (2 max control modules per system).
 - There must be at least one battery module per power module installed.

Enclosure Selection Chart: Chassis C: 12 Module, 12, 16 and 20 kVA

| System Model Number | Qty of Power Modules Included | Qty of Battery Modules Included | Qty of System Control Modules Included | Unit Weight lbs (kg) | Back-up Full/Half Load (minutes) | Maximum Upgrade ² |
|--|-------------------------------|---------------------------------|--|----------------------|----------------------------------|------------------------------|
| 12 kVA / 8.4 kW | | | | | | |
| S5KC12N3A6 | 3 | 3 | 1 | 744.0 (337.47) | 7 / 19 | 20 kVA |
| S5KC12N4A6 | 3 | 4 | 1 | 809.0 (366.96) | 12 / 24 | 20 kVA |
| S5KC12N5A6 | 3 | 5 | 1 | 874.0 (396.44) | 16 / 36 | 20 kVA |
| S5KC12N6A6 | 3 | 6 | 1 | 939.0 (425.92) | 20 / 43 | 20 kVA |
| S5KC12N7A6 | 3 | 7 | 1 | 1004.0 (455.41) | 24 / 51 | 20 kVA |
| S5KC12N8A6 | 3 | 8 | 1 | 1069.0 (484.89) | 28 / 60 | 16 kVA |
| S5KC12N9A6 | 3 | 9 | 1 | 1134.0 (514.37) | 32 / 68 | N/A |
| Redundant (power & control only) | | | | | | |
| S5KC12R3A6 | 4 | 3 | 2 | 775.0 (351.53) | 7 / 19 | 20 kVA |
| S5KC12R4A6 | 4 | 4 | 2 | 846.0 (383.74) | 12 / 24 | 20 kVA |
| S5KC12R5A6 | 4 | 5 | 2 | 905.0 (410.50) | 16 / 36 | 20 kVA |
| S5KC12R6A6 | 4 | 6 | 2 | 970.0 (439.98) | 20 / 43 | 20 kVA |
| S5KC12R7A6 | 4 | 7 | 2 | 1035.0 (469.47) | 24 / 51 | 16 kVA |
| S5KC12R8A6 | 4 | 8 | 2 | 1100.0 (498.95) | 28 / 60 | N/A |
| Full Redundant (battery, power & control)¹ | | | | | | |
| S5KC12X4A6 | 4 | 4 | 2 | 840.0 (381.02) | 7 / 19 | 20 kVA |
| S5KC12X5A6 | 4 | 5 | 2 | 905.0 (410.50) | 12 / 24 | 20 kVA |
| S5KC12X6A6 | 4 | 6 | 2 | 970.0 (439.98) | 16 / 36 | 20 kVA |
| S5KC12X7A6 | 4 | 7 | 2 | 1035.0 (469.47) | 20 / 43 | 16 kVA |
| S5KC12X8A6 | 4 | 8 | 2 | 1100.0 (498.95) | 24 / 51 | N/A |

Notes: (Apply to all 12 Module Tables)

- Full redundant units include one redundant battery module. Back-up given does not include this extra module, so actual achieved Back-up will be longer than published.
- The S5K modulars are easily upgraded by adding extra battery and/or power modules as long as the number of modules (battery plus power) does not exceed the number of modules the enclosure is designed to contain.
 - Control modules do not count toward the 8 module max. (2 max control modules per system).
 - There must be at least one battery module per power module installed.

Enclosure Selection Chart: Chassis C: 12 Module, 12, 16 and 20 kVA

| System Model Number | Qty of Power Modules Included | Qty of Battery Modules Included | Qty of System Control Modules Included | Unit Weight lbs (kg) | Back-up Full/Half Load (minutes) | Maximum Upgrade ² |
|---|-------------------------------|---------------------------------|--|----------------------|----------------------------------|------------------------------|
| 16 kVA / 11.2 kW | | | | | | |
| S5KC16N4A6 | 4 | 4 | 1 | 835.0 (378.75) | 7 / 19 | 20 kVA |
| S5KC16N5A6 | 4 | 5 | 1 | 900.0 (408.23) | 9 / 25 | 20 kVA |
| S5KC16N6A6 | 4 | 6 | 1 | 965.0 (437.72) | 13 / 31 | 20 kVA |
| S5KC16N7A6 | 4 | 7 | 1 | 1030.0 (467.20) | 17 / 37 | 20 kVA |
| S5KC16N8A6 | 4 | 8 | 1 | 1095.0 (496.68) | 19 / 43 | N/A |
| Redundant (power & control only) | | | | | | |
| S5KC16R4A6 | 5 | 4 | 2 | 866.0 (392.81) | 7 / 19 | 20 kVA |
| S5KC16R5A6 | 5 | 5 | 2 | 931.0 (422.29) | 9 / 25 | 20 kVA |
| S5KC16R6A6 | 5 | 6 | 2 | 996.0 (451.78) | 13 / 31 | 20 kVA |
| S5KC16R7A6 | 5 | 7 | 2 | 1061.0 (481.26) | 17 / 37 | N/A |
| Full Redundant (battery, power & control) ¹ | | | | | | |
| S5KC16X5A6 | 5 | 5 | 2 | 931.0 (422.29) | 7 / 19 | 20 kVA |
| S5KC16X6A6 | 5 | 6 | 2 | 996.0 (451.78) | 9 / 25 | 20 kVA |
| S5KC16X7A6 | 5 | 7 | 2 | 1061.0 (481.26) | 13 / 31 | N/A |
| 20 kVA / 13 kW | | | | | | |
| S5KC20N5A6 | 5 | 5 | 1 | 926.0 (420.03) | 7 / 19 | N/A |
| S5KC20N6A6 | 5 | 6 | 1 | 991.0 (449.51) | 9 / 24 | N/A |
| S5KC20N7A6 | 5 | 7 | 1 | 1056.0 (479.00) | 12 / 29 | N/A |
| Redundant (power & control only) | | | | | | |
| S5KC20R5A6 | 6 | 5 | 2 | 957.0 (434.09) | 7 / 19 | N/A |
| S5KC20R6A6 | 6 | 6 | 2 | 1033.0 (468.56) | 9 / 24 | N/A |
| Full Redundant (battery, power & control) ¹ | | | | | | |
| S5KC20X6A6 | 6 | 6 | 2 | 1022 (463.57) | 7 / 19 | N/A |

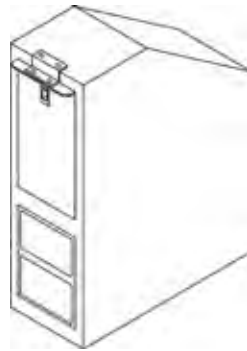
Notes: (Apply to all 12 Module Tables)

1. Full redundant units include one redundant battery module. Back-up given does not include this extra module, so actual achieved Back-up will be longer than published.
2. The S5K modulars are easily upgraded by adding extra battery and/or power modules as long as the number of modules (battery plus power) does not exceed the number of modules the enclosure is designed to contain.
 - Control modules do not count toward the 8 module max. (2 max control modules per system).
 - There must be at least one battery module per power module installed.

Maintenance Bypass Options

The S5K Modular Series Maintenance Bypass Cabinet provides complete "wrap around" protection and allows the UPS to be pulled from service without interrupting power to the loads.

The Maintenance Bypass Cabinet controls are located behind a lockable front panel to provide operation security. Controls include a manual bypass transfer switch, UPS input disconnect switch, and a branch rated output circuit breaker. Indicator lamps provide visual confirmation that the UPS input, UPS output, and bypass source are available. Models are available with and without an isolation transformer in the bypass path. The Maintenance Bypass with Transformer option provides isolation in the bypass path as well as flexibility with utility voltages. The transformer provides simultaneous output voltages of 120/120/208/240 V regardless of whether the input voltage is 208 or 240 V.



Front View

The Maintenance Bypass ships on a wooden pallet with a metal pull out ramp. The bypass cabinet includes casters and leveling feet as well as floor mounting brackets (brackets are used to secure bypass cabinet to pallet during shipping).

The Maintenance Bypass has a two year parts and labor warranty. Basic start-up is included, if the bypass cabinet is purchased at the same time as the S5K Modular UPS. Start-up of the Maintenance Bypass must occur at the same time as start-up of the UPS.

The S5KMBS-00-ISO hardwired Maintenance Bypass can be reconfigured by removing the provided plates and adding the Receptacle Kit options. The S5KMBS-00-ISO has 8 blank plates. Each plate can be removed and a Receptacle Kit option installed by a qualified electrician or electrical contractor. The hardwired output provision may also be removed adding slots for two (2) more Receptacle Kits (for a total of 10 Kits Maximum per MBS). Reassembled configurations are available for those who would prefer the MBS arrive with any needed receptacles already installed. Contact your local SolaHD Sales Representative for details.

MBS Wiring Kit Options

Optional wiring kits include all necessary conduit, wiring and conduit fittings to make the input and output connections between the UPS and the Maintenance Bypass.

| Catalog Number | Description (right or left side as viewed from front) |
|---------------------|--|
| S5KWKITR | Bypass without transformer, mounted on right of UPS |
| S5KWKITL | Bypass without transformer, mounted on left of UPS |
| S5KWKITR-ISO | Bypass with transformer, mounted on right of UPS |
| S5KWKITL-ISO | Bypass with transformer, mounted on left of UPS |

Maintenance Bypass Switch (MBS)

| Catalog Number | Description | Dimensions (H x W x D) – in (mm) Weight (lbs/kg) |
|--|---|---|
| Hardwired MBS | | |
| S5KMBS-00-ISO | Hardwired Bypass with 120/120/208/240 V output with isolation transformer | 30.40 x 9.50 x 26.50 (772.0 x 241.0 x 673.1) 300.0 (136.00) |
| S5KMBS-00 * | Hardwired Bypass with 208 or 240 V output (does not support 120 V loads) | |
| S5KMBS-C0-ISO | Hardwired Bypass with 120/120/208/240 V output with 20 kVA isolation transformer | |
| S5KMBS-C0* | Hardwired Bypass with 208 or 240 V output | |
| MBS with pre-configured distribution options | | |
| S5KMBS-01-ISO | Bypass with 120/120/240 V output with isolation transformer & the following receptacle options: (10) Duplex 5-15R | 30.40 x 9.50 x 26.50 (772.0 x 241.0 x 673.1) 300.0 (136.00) |
| S5KMBS-02-ISO | Bypass with 120/120/240 V output with isolation transformer & the following receptacle options: (6) Duplex 5-15R (2) Duplex 5-20R (1)L14-30R 120/120/240 V | |
| S5KMBS-03-ISO | Bypass with 120/120/240V output with the following receptacle options: (4) Duplex 5-20R (2) L5-20R (2) L6-20R - 240 V (2) L6-30R - 240 | |

* Note: Unit does not include an isolation transformer and does not support 120V loads.

Receptacle Kit Options (max qty 10 per MBS)

| Catalog Number | Description |
|------------------------|---|
| S5K120HW15KIT | Hardwire kit, 120 V, 15A (1) Pole Breaker, ½" & ¾" knockout |
| S5K208HW15KIT | Hardwire kit, 208 V, 15A (2) Pole Breaker, ½" & ¾" knockout |
| S5K240HW15KIT | Hardwire kit, 240 V, 15A (2) Pole Breaker, ½" & ¾" knockout |
| S5K515R2KIT | Duplex NEMA 5-15R Receptacle Kit |
| S5KL515RKIT | Duplex NEMA L5-15R Receptacle Kit |
| S5K615R2KIT208 | NEMA 6-15R 208 Vac Receptacle Kit |
| S5K615R2KIT240 | NEMA 6-15R 240 Vac Receptacle Kit |
| S5KL615R2KIT208 | NEMA L6-15R 208 Vac Receptacle Kit |
| S5KL615R2KIT240 | NEMA L6-15R 240 Vac Receptacle Kit |
| S5K120HW20KIT | Hardwire kit, 120 V, 20A (1) Pole Breaker, ½" & ¾" knockout |
| S5K208HW20KIT | Hardwire kit, 208 V, 20A (2) Pole Breaker, ½" & ¾" knockout |
| S5K240HW20KIT | Hardwire kit, 240 V, 20A (2) Pole Breaker, ½" & ¾" knockout |
| S5K520R2KIT | Duplex NEMA 5-20R Receptacle Kit |
| S5KL520RKIT | NEMA L5-20R Receptacle Kit |
| S5KL620RKIT208 | NEMA L6-20R 208 Vac Receptacle Kit |
| S5KL620RKIT240 | NEMA L6-20R 240 Vac Receptacle Kit |
| S5KL1420RKIT | NEMA L14-20R 120/120/240 Receptacle Kit |
| S5K120HW30KIT | Hardwire kit, 120 V, 30A (1) Pole Breaker, ½" & ¾" knockout |
| S5K208HW30KIT | Hardwire kit, 208 V, 30A (2) Pole Breaker, ½" & ¾" knockout |
| S5K240HW30KIT | Hardwire kit, 240 V, 30A (2) Pole Breaker, ½" & ¾" knockout |
| S5KL530RKIT | NEMA L5-30R Receptacle Kit |
| S5KL630RKIT208 | NEMA L6-30R 208 Vac Receptacle Kit |
| S5KL630RKIT240 | NEMA L6-30R 240 Vac Receptacle Kit |
| S5KL1430RKIT | NEMA L14-30R 120/120/240 Receptacle Kit |

External Battery Options *

| Catalog Number | Number of Battery Modules | Shipping Weight – lbs (kg) |
|--|--|----------------------------|
| S5KD00B1200 | 12 | 1107.0 (502.13) |
| S5KD00B1100 | 11 | 1041.0 (472.19) |
| S5KD00B1000 | 10 | 975.0 (442.25) |
| S5KD00B0900 | 9 | 909.0 (412.32) |
| S5KD00B0800 | 8 | 843.0 (382.38) |
| S5KD00B0700 | 7 | 777.0 (352.44) |
| S5KD00B0600 | 6 | 711.0 (322.50) |
| S5KD00B0500 | 5 | 645.0 (292.57) |
| S5KD00B0400 | 4 | 579.0 (262.63) |
| S5KD00B0300 | 3 | 513.0 (232.69) |
| S5KD00B0200 | 2 | 447.0 (202.75) |
| S5KD00B0100 | 1 | 381.0 (172.82) |
| Pluggable Cables for Extended Battery Options | | |
| S5KEXTBC3 | 3 ft. pluggable battery cable for connection between extended battery cabinet and UPS | |
| S5KEXTBC15 | 15 ft. pluggable battery cable for connection between extended battery cabinet and UPS | |
| S5KEXLBCKIT | External battery cable adapter (allows hardwire of up to 25 ft. of customer supplied battery cable and conduit, (2) required for use with extended battery cabinet | |

* Pluggable cables for external battery options.

Optional Equipment

| Expansion Module Options | | |
|------------------------------|---|-----------------------------------|
| Catalog Number | Description | Approx. Ship Weight – lbs (kg) |
| S5K4KPWR | 4 kVA / 2.8 kW Power Module | 30.0 (13.61) |
| S5KBATT | Battery Module | 70.0 (31.75) |
| S5KCNTRL | Control Module | 7.0 (3.17) |
| Catalog Number | Description | |
| Communication Options | | |
| SNMP WEB CARD | Ethernet communications kit, (Supports SNMP, HTTP & OCP) includes SNMP hardware, MIB, configuration cable and installation manual. | |
| IS–RELAY | Relay contact board, relay contact signals for “On Battery”, “Low Battery”, “On Bypass”, "On UPS”, “Summary Alarm” and “UPS Fault”. | |
| S5KREPOKIT | Remote Emergency Power Off Kit includes 50’ length of cable with connector to UPS and external push button switch. | |
| External Battery Connections | | |
| S5KEXTBC3 | 3 ft. Battery Connection Cable | |
| S5KBATKIT | Battery Connection Kit allows up to 25’ or customer supplied cable and conduit. | |