

SmartOnline® Hot-Swappable UPS Systems (12 to 20kVA)



ON-LINE DOUBLE CONVERSION

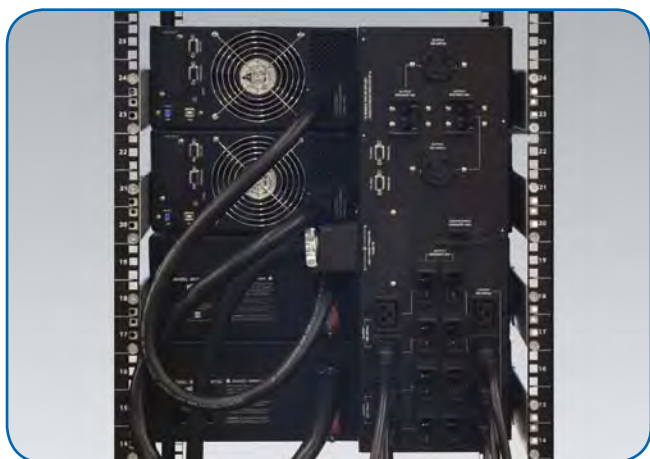
- Parallel Hot-Swappable Power Modules
- Built-in N+1 Redundancy
- Best-in-Class Energy Efficiency
- High Output Power Factor (0,9)
- Industrial Overload Capacity
- Wide Input Voltage Range
- Pure Sine Wave Output
- Scalable Runtime

MAXIMIZE AVAILABILITY

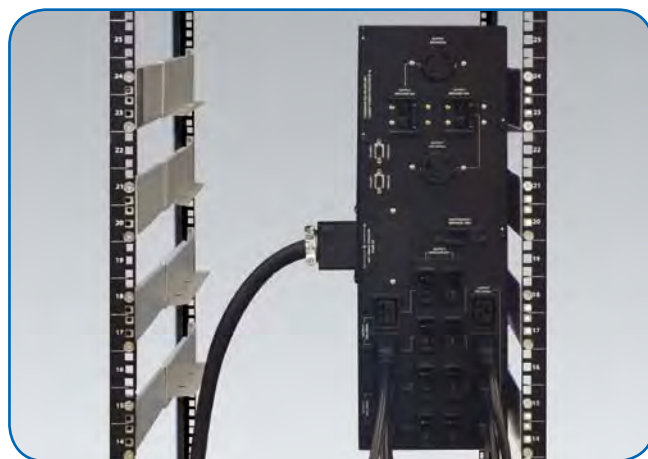
You invest in UPS systems to maintain system availability, but the wrong UPS system will actually cause downtime. Traditional UPS systems typically require you to power down equipment for an hour or more during UPS maintenance and repair. You may even need to disconnect your equipment and hire a repair technician to rewire power connections before you can restore operation.

Tripp Lite's SmartOnline Hot-Swappable UPS Systems maximize uptime, simplify maintenance and reduce service expenses. You can remove one or both power modules without powering down your equipment or hiring repair technicians. The detachable PDU remains connected to your AC source and your equipment, maintaining system availability without any interruption to normal operation.

Remove the Power Modules...



...And Your Equipment Stays On



SmartOnline Hot-Swappable UPS Systems allow you to remove both power modules without powering down your equipment.

SmartOnline Hot-Swappable UPS Systems Eliminate Downtime!

Traditional UPS System (5+ kVA)

Schedule Downtime (Typically After Hours)	Hours to Days
Wait for UPS Repair Technician	4 to 24 hours
Shut Down and Disconnect Equipment	10+ minutes
Disconnect and Remove Old UPS	15 minutes
Install New UPS in Rack and Power Up	20 minutes
Plug In, Start Up and Test Equipment	15+ minutes

Estimated Time to Repair 5 to 25+ hours

Estimated System Downtime 60+ minutes

SmartOnline Hot-Swappable UPS System (5+ kVA)

Schedule Downtime	Not Required
Wait for UPS Repair Technician	Not Required
Turn Bypass Switch and Detach PDU	1 minute
Remove Old Power Module	1,5 minutes
Install New Power Module	1,5 minutes
Reattach PDU and Turn Bypass Switch	1 minute

Estimated Time to Repair 5 minutes

Estimated System Downtime Zero

PROVIDE BUILT-IN REDUNDANCY

SmartOnline Hot-Swappable UPS Systems automatically provide N+1 redundancy when the equipment load is ≤50% of the UPS capacity. If one of the parallel power modules requires maintenance, repair or replacement, equipment still receives perfect power and battery backup from the redundant power module. If the equipment load is >50% of the UPS capacity, the parallel power modules work together to support the heavier load.

SAVE ENERGY AND REDUCE COSTS

SmartOnline Hot-Swappable UPS Systems provide exceptional energy efficiency. For each 80kVA of on-line UPS capacity, SmartOnline Hot-Swappable UPS Systems can save more than 100 megawatt-hours of electricity and USD \$10000 per year while reducing CO₂ emissions by nearly 70 metric tons.*

*The estimate compares a SmartOnline Hot-Swappable UPS System operating at 96% efficiency in Economy Mode to a traditional on-line UPS system operating at 86% efficiency. The calculations assume a 24x7 duty cycle and estimated electricity cost of USD \$0,10 per kilowatt-hour. Savings vary with application and actual electricity cost.

SUPPORT HEAVIER LOADS

A high output power factor (0,9) allows you to connect more equipment to the UPS and better utilize your facility's existing circuits and space. Industrial-grade overload capacity supports higher inrush currents at equipment startup and fluctuating power demands during operation without interrupting production lines. SmartOnline Hot-Swappable UPS Systems handle overloads up to 150% for brief periods and transfer to bypass dynamically to sustain productivity during higher overloads for extended periods.

SUPPLY PERFECT POWER

On-line operation with continuous double conversion corrects input voltages as low as 100V and as high as 300V.* SmartOnline Hot-Swappable UPS Systems deliver pure sine wave output, regulate output voltage within 2% of nominal, regulate frequency within 0,1% of nominal and comply with international standards for voltage- and frequency-independent operation.**

*Input voltage range is 156 to 280V at 100% load, plus 281 to 300V at 90% load and 100 to 155V with linear derating to 50% load at 100V. **Voltage- and frequency-independent (VFI-SS-111) operation complies with EN 62040-3:2001.

CENTRALIZE POWER MANAGEMENT

SmartOnline Hot-Swappable UPS Systems connect to the network through the optional SNMPWEBCARD accessory or through a networked computer connected to the built-in USB or serial port.



PowerAlert Software

The included PowerAlert Network Management System (NMS) allows you to manage hundreds of networked UPS systems and PDUs over the network.

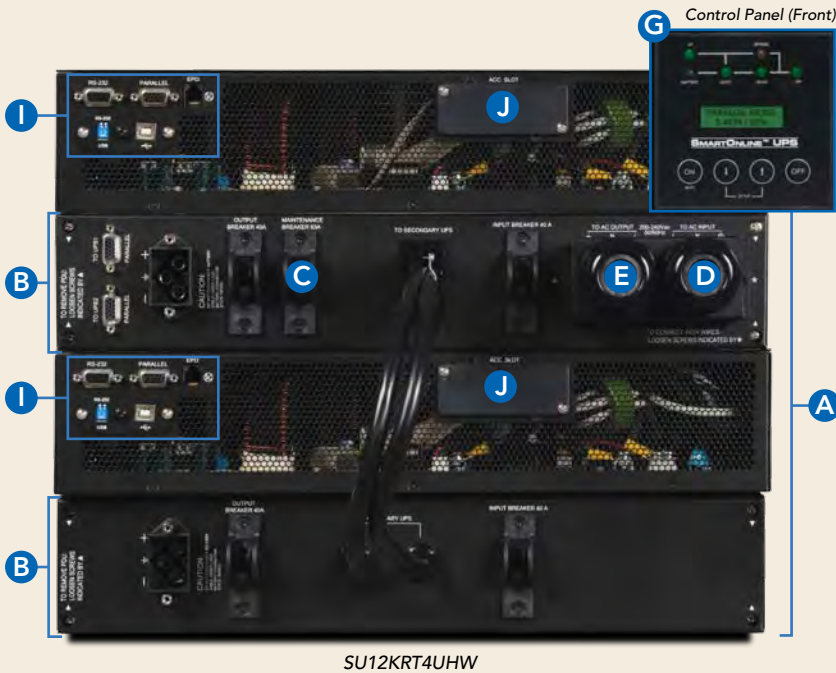
INCREASE RUNTIME

The included hot-swappable batteries provide sufficient backup runtime to support uninterrupted operation during typical outages. For applications or adverse power conditions that require additional runtime, you can connect as many external battery packs as you need.

Estimated Battery Backup Runtime

Model	Connected Equipment Load								
	2kW	4kW	6kW	8kW	10kW	12kW	14kW	16kW	18kW
12kVA UPS (Included Batteries)	29 min	12 min	7 min	4,5 min	2,8 min	—	—	—	—
12kVA UPS and (2) BP192V12-3U	133 min	59 min	36 min	25 min	18 min	—	—	—	—
16kVA UPS (Included Batteries)	80 min	35 min	20 min	13 min	11 min	8,4 min	6,7 min	—	—
16kVA UPS and (2) BP240V10RT3U	184 min	84 min	52 min	36 min	27 min	21 min	17 min	—	—
20kVA UPS (Included Batteries)	80 min	35 min	20 min	13 min	11 min	8,4 min	6,7 min	4,9 min	4,3 min
20kVA UPS and (2) BP240V10RT3U	184 min	84 min	52 min	36 min	27 min	21 min	17 min	17 min	14 min

Runtime varies with load, temperature, battery condition and other factors. Visit www.tripplite.com for additional runtime options.



SU12KRT4UHW

A Power Modules

Contain the inverter, rectifier and control circuitry of the UPS. SU12KRT4UHW power modules also contain hot-swappable internal batteries.

B Detachable PDU

Provides AC input and output connections.

C Manual Bypass Switch

When the switch is set to the bypass position, you can remove one or both power modules without powering down connected equipment.

D Hardwire Input

E Hardwire Output

F AC Outlets

See Specifications for outlet configurations.

G Control Panels

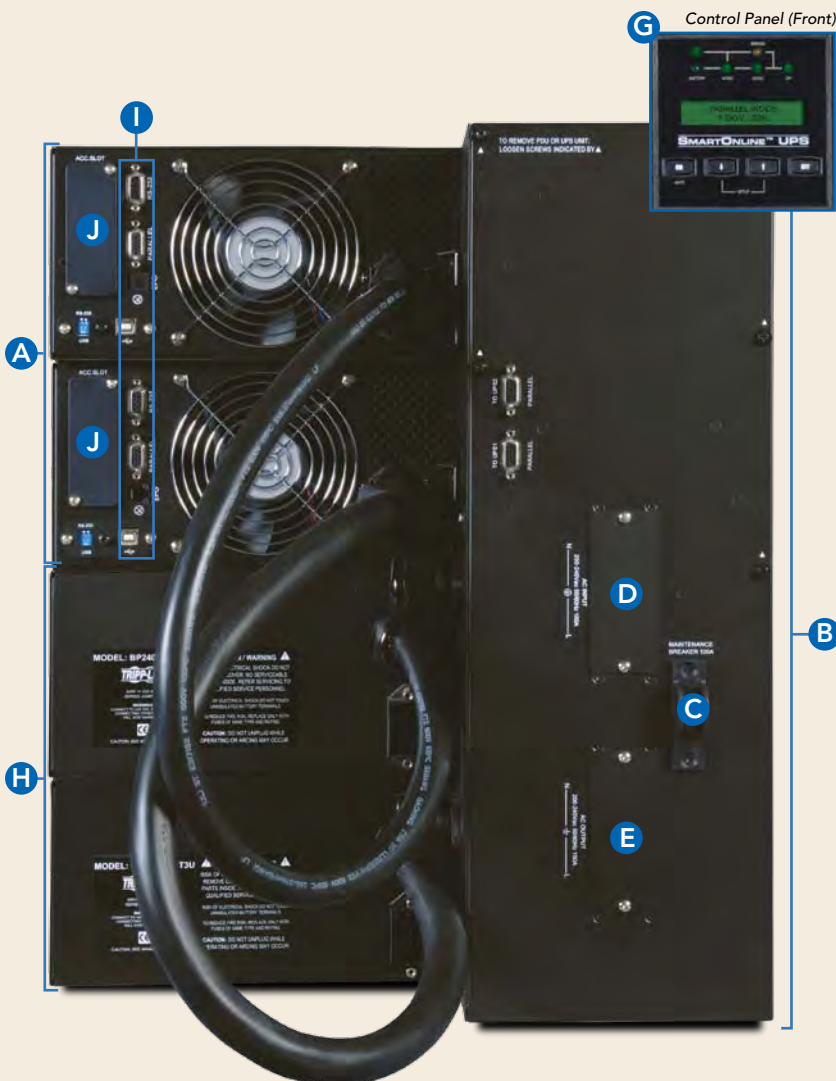
Allow you to access UPS settings and data.

H Hot-Swappable External Battery Packs

I Communication Ports (USB, Serial, EPO)

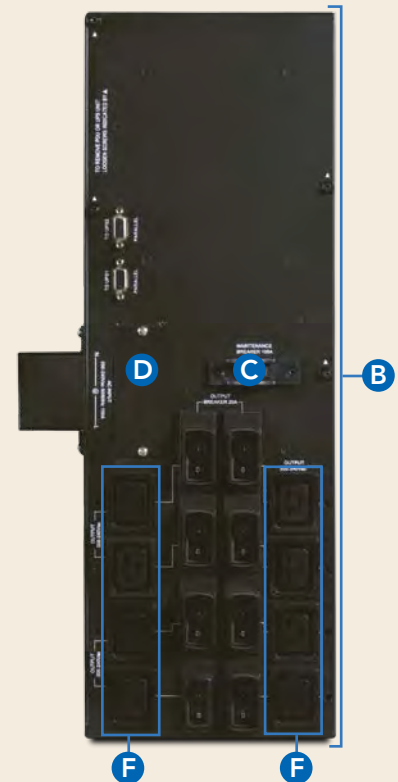
J Accessory Card Slots

Accommodate optional internal SNMPWEBCARD, RELAYOCARD or MODBUSCARD.



SU16KRTHW/SU20KRTHW

Similar Models: SU16KRTG/SU20KRTG (Alternate PDU)



PDU with IEC Outlets
(Included with SU16KRTG/SU20KRTG)

Model	Capacity and Efficiency				High Availability					Input and Output			Form Factor		
	Volt-Amps (VA)	Watts	Output Power Factor	Economy Mode Operation (User-Selectable)	Maximum Load for N+1 Redundancy ⁽¹⁾	Hot-Swap Power Modules	Hot-Swap Batteries	Battery-Independent Startup ⁽²⁾	Scalable Runtime	3-Wire Hardwire Input (100 to 300 V, 50/60 Hz)	C19 (16 A, 220/230/240 V)	Hardwire Output (220/230/240 V)	Total Rack Size	Maximum Installed Depth	Cabinets Included: P=3U Power Module, B=3U Battery Pack, PB=4U Power/Battery Module
SmartOnline Hot-Swappable UPS Systems															
SU12KRT4UHW	12 kVA	10,8 kW	0,90	✓	5,4 kW	✓	✓	✓	A	✓		✓	8U	61 cm	2 (2PB)
SU16KRTG	16 kVA	14,4 kW	0,90	✓	7,2 kW	✓	✓	✓	B	✓	8		12U	83 cm	4 (2P+2B)
SU16KRTHW	16 kVA	14,4 kW	0,90	✓	7,2 kW	✓	✓	✓	B	✓		✓	12U	83 cm	4 (2P+2B)
SU20KRTG	20 kVA	18 kW	0,90	✓	9 kW	✓	✓	✓	B	✓	8		12U	83 cm	4 (2P+2B)
SU20KRTHW	20 kVA	18 kW	0,90	✓	9 kW	✓	✓	✓	B	✓		✓	12U	83 cm	4 (2P+2B)

Model	Description
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Optional External Battery Packs

A BP192V12-3U	192 V external battery pack and cable. Black 3-pole connector. 3U rack/tower. Expandable via daisy chain.
B BP240V10RT3U	240 V external battery pack and cable. Black 3-pole connector. 3U rack/tower. Expandable via daisy chain.

Replacement/Spare Power Modules

SU6000RT4UHVPM	6 kVA hot-swappable replacement/spare UPS power/battery module for SU12KRT4UHW. 4U rack/tower.
SU8000RT3UPM	8 kVA hot-swappable replacement/spare UPS power module for SU16K Series. 3U rack/tower.
SU10000RT3UPM	10 kVA hot-swappable replacement/spare UPS power module for SU20K Series. 3U rack/tower.

Additional Accessories

2-9USTAND	Base stand kit adapts rackmount cabinets for tower installation. Adjusts from 2U to 9U. Two kits adjust from 10U to 14U.
2POSTRMKITHD	Heavy-duty 2-post rack mounting kit for 2U to 4U UPS cabinets. Order one kit per cabinet.
MODBUSCARD	Adds interface for MODBUS RTU industrial communications protocol, RS-422/485 and RS-232.
RELAYIOCARD	Adds programmable dry contact closure interface. Includes six outputs and one input.
RELAYIOMINI	Adds dry contact closure port (DB9) to SmartOnline Hot-Swappable UPS Systems. Replaces USB port.
SNMPWEBCARD	Adds network interface to UPS systems for remote management via SNMP, Web, SSH or telnet, including free PowerAlert NMS.
ENVIROSENSE	Connects to SNMPWEBCARD for remote temperature and humidity monitoring. Also monitors and controls contact closure devices.

All models have on-line voltage/frequency-independent (VFI-SS-111) operation compliant with EN 62040-3:2001. Input voltage range is 156 to 280V at 100% load, plus 281 to 300V at 90% load and 100 to 155V with linear derating to 50% load at 100V. Output voltage regulation is user-selectable 200/208/220/230/240V ±2%. Frequency is 50/60Hz ±0.1%. All models have a USB port, a serial port (RS-232/DB9), an emergency power off (EPO) jack and an accessory card slot to accommodate an optional SNMPWEBCARD, MODBUSCARD or RELAYIOCARD. All models also support dry contact closure communications through the optional RELAYIOMINI accessory, which replaces the built-in USB port. (1) N+1 redundancy is available up to the load shown (50% of capacity). Beyond 50% of capacity, the UPS system provides increased capacity without N+1 redundancy. (2) Battery-Independent Startup ensures that the UPS system is able to restore power after an outage—even if batteries are badly worn, damaged or disconnected.

Learn more about Tripp Lite's complete line of data centre solutions—including UPS systems, PDUs, racks, cooling, KVMs, IP console servers, power management tools and cables—
at www.tripplite.com.



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