

Smart-UPS® RT

220/230/240V

Versatile, high density power protection for computer networks, telecommunications, and industrial applications



Smart-UPS® RT Features:

- Double Conversion On-Line
- Rack/Tower Convertible
- Continuous Voltage and Frequency Regulation
- High Power Density
- Wide Input Voltage Range
- User Replaceable, Hot-Swappable Batteries
- Scalable Runtime
- Built-in Automatic & Manual Bypass
- Faster Recharge Time
- Cold Start
- Intelligent Battery Management
- Lightning and Surge Protection
- Sine-wave Output
- Network Grade Line Conditioning
- Emergency Power Off
- Unattended Safe & Graceful Shutdown
- Alarms and Indicators
- PowerChute® Software
- Single- and Three-phase Input Available in a Single Product
- Multiple Output Voltages
- Auto-sensing and Programmable Frequency
- Flash Programmable Firmware
- Terminal Mode Programmability
- Built-in SmartSlot
- Input Power Factor Correction

Warranty & Approvals

- 2 year warranty
- Safety Approvals: EN62040-1-1, IEC62040-1-1, EN60950-1:2001, IEC 60950-1, CE Low Voltage Directive (73/23/EEC)
- EMC: EN50091-2, IEC 62040-2, EN55022 (CISPR 22), EN55024, EN61000-2-2, -3-2, -3-3, -4-2, -4-3, -4-5, -4-6, -4-8, -4-11, CE EMC Directive (89/336/EEC)
- Product Marking: VDE/GS, CE, C-TICK, PCBC (1000 and 2000VA models), GOST, BSMI, SABS
- Performance: IEC 62040-3, EN50091-3

Overview

Smart-UPS® RT is a family of high performance UPSs for servers, networking equipment, telecommunication systems, industrial and medical equipment, and other mission-critical applications. The Smart-UPS RT is based on the field-proven, industry-leading Smart-UPS functionality, but features double conversion on-line topology, which delivers tight voltage and frequency regulation, zero transfer time to and from battery, and input power factor correction.

While offering advanced performance and high availability features, the Smart-UPS RT

can be managed using PowerChute® software, as well as an array of SmartSlot accessories. Smart-UPS RT provides battery back up to the load through the use of internal batteries. However, an unlimited number of external battery packs can be added to meet desired levels of runtime. All Smart-UPS RTs and battery packs ship in tower configuration, while easily converting to the 19" rack-mount mode with the addition of an APC Rail Kit.

Contents

Features and Benefits	p. 2
Management Peripherals	p. 3
UPS Wiring Devices and Hardware Accessories	p. 4
APC Global Service Programs	p. 5
Runtime Chart	p. 5
Technical Specifications	p. 6
InfraStruXure™ Type A	p. 7

Typical Applications

- Servers
- Networks
- Storage
- VolP
- Telecommunications
- Industrial equipment
- Medical diagnostic equipment



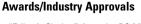
Smart-UPS RT 1000



Smart-UPS RT 2000



Smart-UPS RT 7500



- "Editor's Choice" Award PC Magazine (Russia)
- "Best Product 2002" Award *PC Magazine (Russia)* "Editor's Choice" Award *PC Magazine (Greece)*
- "Eutors choice Award I c Magazine (Dreece)
- "Best on-line UPS" Award PC Direct (Germany)



3000



Smart-UPS RT 5000



Smart-UPS RT 10000

Features and Benefits

Availability

Zero Transfer Time ensures no interruption of mission-critical applications when UPS transfers to/from the batteries.

Wide Input Voltage Range 160-280 VAC input voltage range at full load allows less time on battery while preserving battery capacity for blackout conditions. Input voltage can go as low as 100 VAC, at half load, without using the battery.

Continuous Voltage and Frequency Regulation Smart-UPS® RT provides premium, regulated sinewave power for sensitive equipment. Smart-UPS RT is also generator-set compatible.

Built-in Automatic & Manual Bypass ensures continuous supply of power to the critical loads in the event of electronic failure, overload condition, or scheduled maintenance.

Scalable Runtime Unlimited number of matching battery packs can be added to increase runtime to desired levels.

Faster Recharge Time ensures battery power is available more quickly for subsequent power disturbances.

Cold Start allows the unit to be powered without input power being available.

Intelligent Battery Management utilizes microprocessor to control battery charging and diagnostic testing ensuring maximum battery life.

Hot-Swappable, User Replaceable Batteries allow continuous operation of the load when batteries are being replaced by the end user.



Protection

Sine-wave Output provides assurance of compatibility with all types of loads.

Lightning and Surge Protection Integrated Surge Suppression is superior to separate surge suppressors.

Network-grade Line Conditioning provides full time EMI/RFI filtering, thus preventing data errors caused by line noise.

Emergency Power Off (EPO) Smart-UPS RT can be attached to central EPO system for shutdown in an emergency situation.

Unattended Safe & Graceful Shutdown

prevents possible data corruption by providing systematic, unattended operating system shutdown in the event of an extended power outage.

Alarms and Indicators provide operational status information of the UPS instantaneously.

Redundancy

Automatic Transfer Switch Application provides redundant power to single-corded equipment.



PowerChute® Network Shutdown Software

allows for simultaneous management of two UPSs. Supports multiple servers as well as 2N configurations. Servers with one primary and one redundant power supply can be plugged into separate UPSs.

Economy

Input Power Factor Correction increases safety and compliance with regional wiring/ electrical standards. Also reduces the utility power and wiring costs.

Adaptability

Rack/Tower Convertible gives Smart-UPS RT a flexible form factor enabling integration into a wide variety of end-user environments.

1:1 and 3:1 Combined in a Single Product allows the same product to be wired to a singlephase or a three-phase input. This feature is available in Smart-UPS RT 7500/10000 VA models only.

Multiple Output Voltages 230 VAC nominal output voltage can be programmed for 220 or 240 VAC operation.

Auto-sensing and Programmable

Frequency automatically provides 50 or 60 Hz. The end user can also set output frequency to desired tolerance levels.

Flash Programmable Firmware makes the UPS field-upgradeable.

Terminal Mode Programmability is a menu-driven interface that allows quick and easy configuration of the UPS. Ideal for users not using PowerChute® software or a management card.

Built-in SmartSlot houses APC's accessory cards, which increase overall system manageability through timely notification of hazardous conditions.



APC accessory cards can be inserted into the built-in SmartSlot to allow monitoring of power conditions. The Smart-UPS RT 5000, 7500, and 10,000 units ship bundled with the Web/SNMP Management Card

User-friendly, hot-swappable battery replacement

INFORMATIVE LED DISPLAY PROVIDES STATUS AT A GLANCE

- (A) Load Display shows the power being drawn by the load so you can avoid exceeding capacity.
- (B) On-line LED lights when the UPS is drawing utility power and performing double conversion to supply clean power.
- (C) **On-Battery LED** lights and alarm sounds when the UPS is supplying battery power to the load.
- **Bypass LED** lights when unit is operating in bypass mode.
- (E) **Overload LED** lights and alarm sounds when the load connected to the UPS exceeds capacity.
- Fault LED lights when unit is experiencing an internal fault.



- (G) Replace Battery lights and alarm sounds when the UPS battery is nearly dead and must be replaced (typically within 30 days).
- Battery Charge/Line Voltage displays both present battery charge as a percentage of battery capacity and utility line voltage. Alarm sounds upon low battery condition.
- ① **Off Button** turns off the UPS and the load and is designed to prevent accidental shutdowns.
- ① **On/test button** turns on the UPS and activates the UPS self-test and utility line voltage displays.

Display can be rotated 90° for correct orientation as unit is shifted from tower to rack configuration.

Smart-UPS® Management Enhancements

UPS Management

PowerChute Business Edition

UPS management and safe system shutdown for servers and workstations.

- 5 Node basic version included with Smart-UPS RT 1000/2000/3000/5000VA models.
- 25 Node Deluxe versions also available

Which vo



Which version of PowerChute Business Edition is right		
for you?	Basic	Deluxe
Graceful, unattended, system shutdown	1	1
Hibernation and "Shutdown-and-off" option*	1	1
Risk Assessment Summary	1	1
Manage up to 5 UPSs centrally	1	1
Get the advanced features you need		1
Get the advanced features you need		1
manage up to 25 UPSs centrally		1
Identify periodic power disturbances		1
Create unattended "silent" installs for		
mass deplayment*		1
Discover UPSs in remote network segments		1
Minimize time-torecovery for*,		1
- Siebel		
- Lotus Notes/Domino		
- Microsoft SQL Server™		
- Microsoft Internet Information Services (IIS)		
- Microsoft Exchange Server		

* Check APC,s Web Site at www.apc.com for specific operating system and version support information.

UPS Dry-contact Management

Control and monitor power through a dry-contact interface.



Environmental Management

Environmental Management System

Network manageable device enabling comprehensive environmental management



Sensors

Environmental and access sensors for use with APC solutions.

نو ^{الر}

UPS Network Management Card

Embedded management of UPSs protecting servers and networking equipment.

- Connect UPS directly to the network with a dedicated IP address
- · Embedded technology enables the UPS to reboot hung equipment.
- · Manage each APC UPS individually via web browser, telnet or SSH.
- · Notification features inform you of problems as they occur.
- For protected servers, graceful unattended shutdown is provided in case of extended power outages.
- Included with Smart-UPS RT5000/7500/10000VA models.

UPS Out-of-Band Management

Embedded management of UPSs via external modem.



UPS Interface Expanders

Safe system shutdown for up to eight servers power by one UPS.



Handheld control panel to configure and control APC UPSs.



UPS Remote Power Off Interface

Immediately turns off the power output of connected APC UPSs.



Environmental Monitoring Card

UPS enhancement card enabling monitoring of basic environmental conditions



Environmental Monitoring Unit Networked appliance enabling monitoring of environmental conditions.

Network-Critical Physical Infrastructure Management

InfraStruXure[™] Manager

Centralized management of your APC network critical physical infrastructure.

- Get Visibility to your Network-Critical Physical Infrastructure
- Monitor to up 1000 APC UPSs and Other APC Devices
- Browser-accessible Centralized Management
- Notification of Threatening Situations
- Plan for Changes in Availability, Power, Runtime or Cooling
- Integrates into your Preferred Management System



Wiring Devices/Hardware Accessories

Battery Packs

An unlimited number of rack/tower convertible external battery packs can be added to achieve desired levels of runtime. Smart-UPS® RT battery packs are hot-swappable so you never have to take down your mission-critical loads to service the unit.

SURT48XLBP (pictured) - Battery pack for Smart-UPS RT 1000/2000 VA models, 2U in a rack

SURT192XLBP - Battery pack for Smart-UPS RT 3000/5000/7500/10000 VA models, 3U in a rack

See page 6 for SURT48XLBP and SURT192XLBP technical specifications

Input Isolation Transformers

Input Isolation Transformers for use with Smart-UPS RT 3000/5000VA models. Provides isolated neutral to ground bond.

3000VA (SURT001)

- · Black color
- 3U
- Rack/Tower Convertible

5000VA (SURT002)

- Black color
- 3U
- Rack/Tower Convertible



Rail Kits

Enables a Smart-UPS RT UPS, battery pack and isolation transformer to be installed in either a 2-post or 4-post 19" rack.

AP9625 - 2-post rail kit for Smart-UPS RT

SURTRK - 4-post rail kit for Smart-UPS RT 1000/2000 VA models and SURT48XLBP

SURTRK2 - 4-post rail kit for Smart-UPS RT (3000/5000/7500/10000 VA models), SURT192XLBP, and SURT001/002

Service Bypass Units

Rack Mount/Wall Mount/Tower Service Bypass Panels featuring a quick transfer rate and Wraparound System Bypass. Includes rail kits.

SBP5000RMI2U - Designed for 230V Smart-UPS RT 3000/5000VA; 2U inside the rack, 2x IEC 320 C19 and 8x IEC 320 C13 outlets

SBP10KRMI4U - Designed for 230V Smart-UPS RT 7500/10000VA; 4U inside the rack, 2 x IEC 320 C19 and 8 x IEC 320 C13 outlets

SBP5000RMI2U

Automatic Transfer Switches

Provides redundant power to single corded equipment.

1400 VA (SU043)

Input plug: 2x IEC 320 C14 Output: 2x IEC 320 C13 Voltage in: 230V Voltage out: 230V

3000 VA (SU044-1)

Input plug: 2x IEC 320 C20 Output: 2x IEC 320 C13, 1x IEC 320 C19 Voltage in: 230V Voltage out: 230V





External Power Distribution Units (PDUs)

External Power Distribution Units For use with Smart-UPS RT 3000/5000/7500/10000VA models									
Model	Description	Part #	Mount/hight	Input	Output	Voltage			
Basic Rack PDU	Provides power outlets for rack equipment	AP9559	Horizontal/1 U	IEC320 C-20	10xC13, 2xC19	230/16A			
		AP9553	Horizontal/1 U	IEC320 C-20	12xC13	230/16A			
		AP9554	Vertical/Zero U	IEC320 C-20	14xC13	230/16A			
		AP9568	Vertical/Zero U	IEC320 C-20	15xC13	230/10A			
		AP7552	Vertical/Zero U	IEC320 C-20	20xC13, 4xC19	230/16A			
Metered Rack PDU	Monitors the aggregate power consumption	AP7621	Vertical/Zero U	IEC320 C-20	21xC13, 4xC19	230/16A			
	via a digital display. Provides power outlets for rack equipment	AP7852	Vertical/Zero U	IEC320 C-20	20xC13, 4xC19	230/16A			











SBP10KRMI4U



Global Service Programs



APC Smart-UPS® RT Service Recommendations

APC Smart-UPS RTs are easy to install and maintain, but for customers who desire hands off service, APC can provide start-up and on-site services. Additionally, extended warranties are recommended for those customers who prefer to keep their UPS for extended periods of time.

Warranty Services

PowerPlan Extended Warranties

- Next business day replacement of unit/parts
- 24x7 telephone technical support

On-Site Support Service

- Next business day on-site replacement of unit/parts
- 24x7 telephone technical support

Replacement Battery Cartridges

- Genuine APC replacement batteries
- Use of Non-APC batteries voids APC's Equipment Protection Plan

Start-up Service

 Delivers the vital resources, expertise, and tools needed to quickly and efficiently implement APC solutions

Other Installation and Consulting Services

- Network Integration
- Power Audit Consulting Service

Smart-UPS RT Runtime Chart

SURT1	000XLI					
VA	Watts	SURT1000XLI	+1 SURT48XLBP	+2 SURT48XLBP	+5 SURT48XLBP	+10 SURT48XLBP
140	100	1h 16m	5h 11m	9h 23m	22h 50m	46h 44m
280	200	43m	3h 1m	5h 30m	13h 25m	27h 30m
420	300	29m	2h 5m	3h 50m	9h 23m	19h 16m
570	400	21m	1h 35m	2h 55m	7h 10m	14h 43m
710	500	16m	1h 16m	2h 20m	5h 46m	11h 52m
1000	700	10m	53m	1h 39m	4h 7m	8h 29m
SURT2	000XLI					
VA	Watts	SURT2000XLI	+1 SURT48XLBP	+2 SURT48XLBP	+5 SURT48XLBP	+10 SURT48XLBP
280	200	59m	3h 47m	6h 57m	17h 31m	37h 37m
710	500	22m	1h 33m	2h 54m	7h 23m	15h 55m
1140	800	12m	55m	1h 44m	4h 30m	9h 44m
1420	1000	8m	43m	1h 21m	3h 31m	7h 38m
1710	1200	6m	34m	1h 5m	2h 52m	6h 14m
2000	1400	4m	28m	55m	2h 24m	5h 15m
SURT3	000XLI					
VA	Watts	SURT3000XLI	+1 SURT192XLBP	+2 SURT192XLBP	+5 SURT192XLBP	+10 SURT192XLBP
710	500	1h 16m	4h 23m	7h 43m	18h 20m	37h 12m
1140	800	46m	2h 43m	4h 48m	11h 27m	23h 16m
1420	1000	36m	2h 29m	3h 48m	9h 6m	18h 31m
1710	1200	29m	1h 46m	3h 8m	7h 32m	15h 19m
2280	1600	20m	1h 17m	2h 18m	5h 33m	11h 19m
3000	2100	14m	57m	1h 40m	4h 15m	8h 48m
	000XLI					
VA	Watts	SURT5000XLI	+1 SURT192XLBP	+2 SURT192XLBP	+5 SURT192XLBP	+10 SURT192XLBP
1000	700	47m	2h 44m	4h 50m	11h 33m	23h 27m
2000	1400	21m	1h 18m	2h 20m	5h 38m	11h 28m
2570	1800	15m	59m	1h 46m	4h 18m	8h 47m
3570	2500	9m	41m	1h 14m	3h 1m	6h 11m
4280	3000	7m	33m	1h	2h 28m	5h 4m
5000	3500	5m	27m	50m	2h 5m	4h 17m
SURT7	500XLI					
VA	Watts	SURT7500XLI	+1 SURT192XLBP	+2 SURT192XLBP	+5 SURT192XLBP	+10 SURT192XLBP
875	700	1h 34m	2h 54m	4h 34m	9h 50m	19h 6m
1250	1000	1h 6m	2h 5m	3h 17m	7h 4m	13h 46m
2500	2000	32m	1h 1m	1hr 37m	3h 33m	6h 57m
3125	2500	24m	48m	1h 17m	2h 49m	5h 31m
3750	3000	19m	39m	1h 3m	2h 19m	4h 34m
5000	4000	13m	28m	46m	1h 42m	3h 21m
6250	5000	10m	21m	35m	1h 19m	2h 38m
7500	6000	7m	16m	28m	1h 5m	2h 10m
	0000XLI	,		2011		211 10111
VA	Watts	SURT10000XLI	+1 SURT192XLBP	+2 SURT192XLBP	+5 SURT192XLBP	+10 SURT192XLBP
1250	1000	1h 6m	2h 5m	3h 17m	7h 4m	13h 46m
2500	2000	32m	1h 1m	1h 37m	3h 33m	6h 57m
3750	3000	19m	39m	1h 3m	2h 19m	4h 34m
3125	4000	13m	28m	46m	1h 42m	3h 21m
6250	5000	10m	20m	35m	1h 19	2h 38m
7500	6000	7m	16m	28m	1h 5m	2h 10m
8750	7000	5m	13m	23m	55m	1h 49m
10000				20m	47m	1h 34m
10000	8000	4m	11m	zum	4/m	in 34m

Smart-UPS® RT Technical Specifications	Smart-UPS RT	Smart-UPS RT 2000	Smart-UPS RT 3000	Smart-UPS RT 5000	Smart-UPS RT 7500	Smart-UPS RT 10000	
Output	1000	2000	3000	0000	1000	10000	
Capacity	1kVA/.7kW	2kVA/1.4kW	3kVA/2.1kW	5kVA/3.5kW	7.5kVA/6kW	10kVA/8kW	
Output Voltage		230 (defau	lt), 220, 240 VAC (user se	electable), single phase)		
Output Voltage Regulation (Typical)			+/- 1% static, 5% dyı	namic			
Output Connections	(6) IE	C C13	(8) IEC C13,	(2) IEC C19		, (4) IEC C19, hardwire minal block	
Efficiency at Full Load, Nominal Line	87%	90%	91%	92%	92%	92%	
Output Frequency (sync'd to mains)		50 or 60 Hz, +/- 3Hz (au	ito-select default) [or 50	or 60 Hz +/-0.1Hz (user	r selectable)]		
Bypass	Auto	matic		Automati	c/Manual		
Overload Capacity		105%	% - infinite, 125% - 1 min	, 150% - 30 seconds			
Output Voltage Distortion		<3%	5% for linear loads, <5% fo	or non-linear loads			
Crest Factor			3	:1			
Heat Dissipation (Watts), Nominal Line	90	140	192	305	450	650	
Input		1					
Nominal Input Voltage		220, 230 (d	efault), 240 VAC Single (0	220, 230 (default), 240) VAC Single or Three Ø	
Input Frequency			45-65 Hz Au	ito-selecting	L		
Input Connection	IEC C14	IEC	C20	Hardwire			
Input Voltage Range		1	160 - 280 VAC (at full loa	ad), 100 - 280 VAC (at ha	alf load)		
Input Power Factor at Full Load			>.	95			
Batteries							
Battery Type		Maintenance-free, Sea	aled Lead-Acid, valve re	gulated, 3-6 years typic	cal lifetime		
Recharge Time to 90% Capacity	< 3 Hours	< 4 Hours		< 3 H	lours		
Communications and Management		1					
Interface Port	1) SmartSlot acce	ssory port; (1) Serial c	ommunication port	(1) RJ-45 10/100 Base	T Connection; (1) Seria	al Communication port	
UPS Network Management Card with Environmental Monitoring	opti	onal		included			
Management Software included	PowerChute Business Edition for Windows NT/2000/XP,Novell Netware, Solaris, Linux RedHat, PowerChute plus for HP-UX and IBM AIX (Smart-UPS RT 5000 also ships with PowerChute Network Shutdown) PowerChute Network Shutdown				(P, Novell Netware, AIX		
Physical	1		1				
Dimensions HxWxD (mm and inches)		mm, 3.4x17x19 in	130x432x660 mm, 5.1x17x26 in		264x432x66	3 mm, 10.4x17x26.12 in	
U Height		2	3		6		
Weight net/shipping (kg)	23/27.8 kg	25/29.8	54.	54.5/64 111/129			
Environmental							
Operating Conditions	3,000 m max elevation; 0-95% non-condensing humidity; 0-40° C						
Storage Conditions	15,000 m max. elevation; 0-95% non-condensing humidity; -20 to 60° C						
Audible noise at 3 feet (1 m)	< 50 dB < 55 dB						
Warranty & Conformance							
Approvals	BSMI; C-Tick; CE; EN 50091-1; EN 50091-2; VDE; EN 55022 Class A; EN 60950; EN 61000-3-2; GOST; JEON; PCBC; UL 1778; CSA; VCCI						
Warranty	2 yea	ars, repair or replace, o	optional on-site warrant	es available, optional e	extended warranties av	vailable	
Ordering Guide							
Tower UPS Part Number	SURT1000XLI	SURT2000XLI	SURT3000XLI	SURT5000XLI	SURT7500XLI	SURT10000XLI	
Rack-mount UPS Part Number	SURT1000XLI (+) SURTRK	SURT2000XLI (+) SURTRK	SURT3000XLI (+) SURTRK2	SURT5000XLI (+) SURTRK2	SURT7500XLI (+) SURTRK2	SURT10000XLI (+) SURTRK2	
Tower Battery Pack Part Number	SURT48XLBP SURT192XLBP						
Rack-mount Battery Pack Part Number		P (+) SURTRK		SURT192XLBP			
Replacement Battery Cartridge	RBC31	RBC31	RBC44	RBC44	2x RBC44	2x RBC44	

Battery Packs

Models	Net Weight (kg)	Ship Weight (kg)	Rack Height	Max Dimensions	Ship Dimensions (mm/in)	For Use With:	RBC
SURT48XLBP	29.6	32.3	2U	85 x 432 x 483	287 x 630 x 595	SURT1000XLI, SURT2000XLI	2 x RBC31
				3.34 x 17 x 19	11.3 x 24.8 x 23.4		
SURT192XLBP	90.9	101.4	3U	130 x 432 x 660	414 x 600 x 1000	SURT3000XLI, SURT5000XLI	2 x RBC44
				5.1 x 17 x 26	16.3 x 23.6 x 39.4	SURT7500XLI, SURT10000XLI	

InfraStruXure™

Type A: Scalable rack systems optimized for server room environments with 1–10 racks*. Each InfraStruXure[™] Type A includes these integrated components:



Open, adaptable and integrated architecture for on-demand network-critical physical infrastructure





