

## Back-UPS LS **Back-UPS LS 700**



APC Back-UPS LS, 410 Watts / 700  
VA, Input 120V / Output 120V, Interface Port  
USB

**Includes:** CD with software, Cord management  
straps, USB cable, User Manual

**Standard Lead Time:** Usually in Stock

# Back-UPS LS Features & Benefits

Protection	
Battery-protected and surge-only outlets	Reserves power capacity and run time for connected equipment that require battery back-up while providing surge only protection for less critical equipment
Boost Automatic Voltage Regulation (AVR)	Preserves battery life and maximizes runtime by correcting low voltages without discharging the battery.
Data line surge protection	Provides protection of connected equipment from power surges on the data lines.
Lifetime data recovery warranty	Provides peace of mind by providing professional data recovery services in the event data is lost due to the failure of the unit.
Safety-agency approved	Ensures the product has been tested and approved to work safely with the connected service provider equipment and within the specified environment. UL, FCC, CE, C-Tick approvals.
Power conditioning	Protects connected loads from surges, spikes, lightning, and other power disturbances.
Convenience	
Audible Alarms	Provides notification of changing utility power and UPS conditions.
Automatic restart of loads after UPS shutdown	Automatically starts up the connected equipment upon the return of utility power.
Automatic self-test	Periodic battery self-test ensures early detection of a battery that needs to be replaced.
Battery replacement without tools	Allows quick, easy battery replacement.
Cold-start capable	Provides temporary battery power when the utility power is out.
LED status indicators	Quickly understand unit and power status with visual indicators.
Hot-swappable batteries	Ensures clean, uninterrupted power to protected equipment while batteries are being replaced
Resettable circuit breakers	Enables a quick recovery from overload events.
Transformer-block spaced outlets	Protect equipment with input transformer blocks without blocking access to other receptacles.
User-replaceable batteries	Increases availability by allowing a trained user to perform upgrades and replacements of the batteries reducing Mean Time to Repair (MTTR)
Manageability	
USB Connectivity	Provides management of the UPS via a USB port (not available on all models).
Intelligent Battery Management	Micro-processor controlled battery charging and diagnostic testing ensures maximum battery life.

# Output

Output Power Capacity	410 Watts / 700 VA
Max Configurable Power	410 Watts / 700 VA
Nominal Output Voltage	120V
Output Voltage Note	--
Output Connections	(3) NEMA 5-15R (Surge Protection)
	(4) NEMA 5-15R (Battery Backup)



# Input

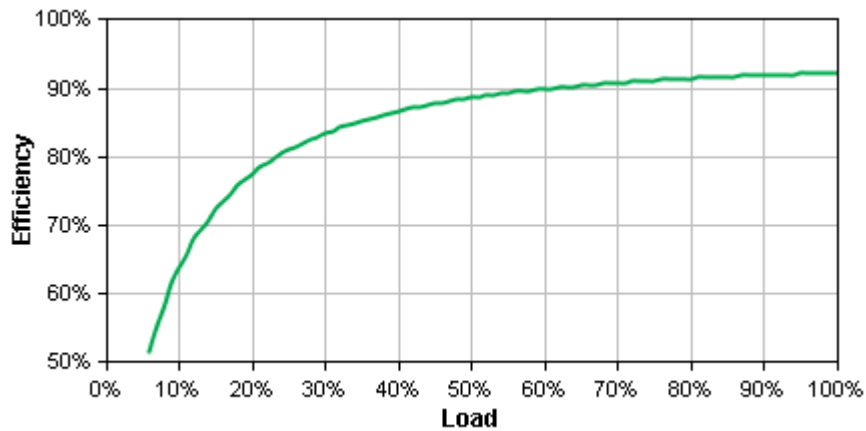
Nominal Input Voltage	120V
Input Frequency	50/60 Hz +/- 3 Hz (auto sensing)
Input Connections	NEMA 5-15P
Cord Length	1.83 meters
Input voltage range for main operations	93 -130V
Input voltage adjustable range for mains operation	82 - 144V



# Batteries & Runtime

Battery Type	Maintenance-free sealed Lead-Acid battery with suspended electrolyte : leakproof
Typical recharge time	10 hour(s)
Replacement Battery	<a href="#">RBC17</a>
RBC™ Quantity	1
Typical Backup Time at Half Load	13.8 minutes (205 Watts)
Typical Backup Time at Full Load	4.5 minutes (410 Watts)
Runtime Chart	<a href="#">Back-UPS LS</a>

# Energy Use/Efficiency



Curve fit to measured efficiency data. All measurements taken in normal operating mode, at typical environmental conditions, with nominal electrical input and resistive load output.

[View Enlarged Chart](#)

## Communications & Management

Interface Port(s)	USB
Control panel	LED status display with On Line : On Battery : Replace Battery and Overload indicators
Audible Alarm	Alarm when on battery : distinctive low battery alarm : overload continuous tone alarm

## Surge Protection and Filtering

Surge energy rating	510 Joules
Filtering	Full time multi-pole noise filtering : 5% IEEE surge let-through : zero clamping response time : meets UL 1449
Data Line Protection	RJ-11 Modem/Fax/DSL protection (four wire dual line)

## Physical

Maximum Height	239.00 mm
Maximum Width	127.00 mm
Maximum Depth	201.00 mm
Net Weight	7.74 KG
Shipping Weight	8.64 KG
Shipping Height	290.00 mm
Shipping Width	213.00 mm
Shipping Depth	328.00 mm
Color	Charcoal

# Environmental

Audible noise at 1 meter from surface of unit	0.00 dBA
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# Conformance


Regulatory Approvals	CSA,FCC Part 68,UL 1778
Standard Warranty	2 years repair or replace


\*\*The time to recharge to 90% of full battery capacity following a discharge to shutdown using a load rated for 1/2 the full load rating of the UPS.


## Status Indicators





There are four indicator lights (numbered for easy identification below) and a speaker grille on the front panel to indicate UPS status, as follows:


 **① On Line (green):** This indicator is lit when conditioned utility power is powering the Battery Backup outlets.


 Single Beep: The alarm sounds when the On/Test button is pressed.

 **② On Battery (yellow):** This indicator is lit when utility power is outside safe limits and the UPS battery is powering the Battery Backup outlets. If the outage is extended, APC software can close software applications, and then shut down the operating system and the UPS.

 Four Beeps Every 30 Seconds: This alarm is sounded whenever the UPS is running On Battery.


 Continuous Beeping: This alarm is sounded whenever a low battery condition is reached. Battery runtime is very low. Promptly save your data, exit all applications, and then shut down the operating system.


 **③ Overload (red):** This indicator is lit when equipment connected to Battery Backup outlets is drawing more power than the UPS can provide. Move one or more pieces of equipment to the Surge Protection outlets.

 Continuous Tone: This alarm is sounded whenever the Battery Backup outlets are overloaded.



**Circuit Breaker:** The circuit breaker button will stick out if an overload condition forces the UPS to disconnect itself from utility power. If this happens, disconnect non-essential equipment and reset the circuit breaker by pushing the button in.

 **④ Replace Battery (red):** This indicator is lit whenever the automatic diagnostic test has determined the battery is near the end of its useful life. The battery should be replaced within two weeks (see Order Replacement Battery). Failure to replace the battery may result in insufficient runtime during a power outage.

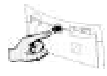

 Chirps for 1 Minute Every 5 Hours: This alarm is sounded whenever the battery has failed the automatic diagnostic test.

## Troubleshooting


Use the table below to solve minor UPS installation or operation problems. Consult APC Online Technical Support or call APC Technical Support for assistance with problems that cannot be solved using the table below:

Possible Cause	Procedure
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### UPS will not turn on

Battery is not connected properly.	Check the battery connections. Consult "Connect battery wire" under "Setup" on the front page which shows how to access the battery and connect the wire.
UPS not connected to AC power supply.	Check that the UPS power plug is securely connected to the wall outlet.
UPS circuit breaker "tripped".	Disconnect non-essential equipment from the UPS. Reset the circuit breaker (on back of UPS) by pushing the button back in. If the breaker resets, switch the UPS On and reconnect equipment one at a time. If the breaker trips again it is likely that one of the connected devices is responsible for the overload. 
Very low or no utility voltage.	Check the wall outlet, that supplies power to the UPS, with a table lamp. If the lamp is very dim, have the utility voltage checked by a qualified electrician. 
Utility overvoltage.	Connect the UPS to another wall outlet or have a qualified electrician check the building wiring.

### UPS operates on battery although normal utility voltage exists

UPS's circuit breaker "tripped".	Disconnect non-essential equipment from the UPS. Reset the circuit breaker (on back of UPS) by pushing the button back in. 
The specific wall outlet the UPS is connected to does not supply utility voltage.	Connect the UPS to another wall outlet or have a qualified electrician check the building wiring.

### UPS does not provide expected backup time

The UPS is excessively loaded.	Unplug non-essential Battery Back-Up connected equipment, such as printers. They can be plugged into Surge Protection outlets. <b>Note:</b> Devices that have motors or dimmer switches (laser printers, heaters, fans, lamps, and vacuum cleaners for example) should <b>not</b> be connected to the Battery Backup Plus Surge Protection outlets.
The UPS's battery is weak due to recent outage and has not had time to recharge.	Charge the battery. The battery charges whenever it is connected to utility power. Typically, six to eight hours are needed to fully charge the battery from total discharge. UPS runtime is reduced until the battery is fully charged. You can perform a <b>self test</b> after the battery is fully recharged by pressing and holding the On/Test button for more than 1 second, then releasing it.
Battery requires replacement.	If the Replace Battery LED is lit, the battery should be promptly replaced. <b>If the UPS is operated with a weakened battery, runtime will be significantly reduced.</b> Battery capacity decreases with frequent power outages or when the UPS is operated at elevated temperatures. Batteries typically last 3-6 years.

### An indicator is lit or flashing

The Overload indicator is lit if equipment connected to Battery Backup outlets is drawing more power than the UPS can provide.	Move one or more pieces of equipment to the Surge Protection outlets.
The Replace battery indicator is lit if the battery is near the end of its useful life.	The battery should be replaced within two weeks (see Order Replacement Battery). Failure to replace the battery may result in insufficient runtime during a power outage.
The Overload indicator may flash briefly when the UPS is switched on.	This is a normal occurrence.
The On Line and Overload indicators are flashing alternately.	The UPS has entered sleep mode and battery power is switched off. This lasts for 16 seconds during a power outage and is normal when software shuts down a UPS.

### All indicator lights are flashing

UPS failure	Call APC for service.
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### UPS does not power the Computer/Monitor during an outage

Battery is not connected.	Check the battery connections. (See "Connect battery wire" under "Setup" on the front page.)
Computer and/or monitor is plugged into a Surge Protection outlet.	Move computer and/or monitor to the Battery Backup plus Surge Protection outlets.

## Specifications

Acceptable Input Voltage	0 - 160 Vac, Single Phase
Input Voltage (on line)	90 - 133 Vac
Output Voltage	103 -133 Vac
Frequency Limits (on line)	47 - 63 Hz (autosensing)
Maximum Load (350, 500, 700)	<b>350 VA</b> - 220 W; <b>500 VA</b> - 315 W; <b>700 VA</b> - 410W.
Typical Recharge Time	6 to 8 hours from total discharge
Operating Temperature	32 to 104(F (0 to 40(C)
Storage Temperature	5 to 113(F (-15 to 45(C)
Operating and Storage Relative Humidity	0 to 95%, non-condensing
Size (H x W x D)	9.4 x 5.0 x 7.9 in (23.9 x 12.7 x 20.0 cm)
Weight (350, 500, 700)	<b>350 VA</b> -14.8 lb (6.7 kg); <b>500 VA</b> - 15.8 lb (7.2 kg); <b>700 VA</b> - 17.0 lb (7.7 kg).
Shipping Weight (350, 500, 700)	<b>350 VA</b> - 16.8 lb (7.6 kg); <b>500 VA</b> - 17.8 lb (8.1 kg); <b>700 VA</b> - 19.0 lb (8.6 kg).
EMI Classification	FCC/DOC Class B certified

## UPS Storage

If the UPS needs to be stored for extended periods of time, the battery needs to be charged periodically to maximize battery capacity. Before storing, charge the UPS for at least 10 hours. Store the UPS covered and upright in a cool, dry location.

The recommended period of time the unit can be stored without periodic charging is dependent on the storage temperature:

### Extended Storage

Storage Temperature	Recharge Frequency	Charging Duration
5 to 86°F (-15 to 30°C)	Every 6 Months	10 Hours
86 to 113°F (30 to 45°C)	Every 3 Months	10 Hours

## Ventilation Clearance

The recommended clearance for proper ventilation is one inch on each side and one inch at the back.

## Order Replacement Battery

The typical battery lifetime is 3-6 years (depending on number of discharge cycles and operating temperature). A replacement battery can be ordered from local retailers, APC, or the APC web site. The APC part number for the Back-UPS LS (350 or 500) Replacement Battery Cartridge is **RBC2**. The APC part number for the Back-UPS LS 700 Replacement Battery Cartridge is **RBC17**.

## Battery Replacement

Battery replacement is a safe procedure. You may leave the UPS On and equipment connected during this procedure. *Do not replace the battery when the UPS is On Battery.*

Please consult Setup, section 1, "Connect Battery Wire", overleaf during this procedure.

- Set the UPS at the edge of a table (diagram a).
- Slide the battery compartment cover down (diagram b).
- Grasp the tab attached to the battery and slide the battery partially out. Then grab the battery firmly and pull it out. The battery wires will disconnect as the battery is pulled out (diagram c).
- Carefully insert the new battery halfway into the UPS, avoid pinching the wires (diagram d).
- Connect the wires to the new battery:  
Red wire - to red terminal  
Black wire - to black terminal

Small sparks at the battery terminals are normal during connection.

- Carefully insert the battery fully into the UPS (diagram d).
- Slide the battery compartment cover back into place (diagram e).

The old battery must be recycled. Deliver the battery to an appropriate recycling facility or return it to APC in the packing carton that came with your new battery. Additional recycling information is provided with your new battery.

## Service

If the unit arrived damaged, please notify the carrier. If the UPS requires service, do not return it to the dealer: instead try the steps below in order.

- Consult the Troubleshooting section in the left column to find and eliminate common problems.
- Verify that the circuit breaker is not tripped. A tripped circuit breaker is the most common UPS problem.
- If the problem persists, consult APC Online Technical Support or call APC Technical Support.
  - When calling APC Technical Support, have the model number of the UPS, the serial number and the date purchased ready. Be prepared to troubleshoot the problem over the telephone with an APC Technical Support representative. If this is not successful, APC will issue a Return Merchandise Authorization number (RMA#) and a shipping address.
  - A UPS under warranty will be repaired at no cost.
- To return the unit:
  - Disconnect the black wire from the UPS battery. Department of Transportation (DOT) regulations require that the black battery wire be disconnected before shipping the UPS back to APC. Refer to "Connect battery wire" instructions and graphics on the front page for how to disconnect the black wire from the battery.
  - Pack the UPS in its original packaging. If the original packing is not available, contact APC Technical Support to obtain a new set. Pack the UPS properly to avoid damage in transit. Never use Styrofoam™ beads for packaging. Damage sustained in transit is not covered under warranty (insuring the package for full value is recommended).
  - Write the RMA# on the outside of the package.
  - Return the UPS by insured, prepaid carrier to the address given to you by Technical Support.