



UPS Uninterruptible Power Supply

Line-Interactive UPS
F6C325/F6C425/F6C525/F6C625

User Manual



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Important Safety Instructions

Thank you for selecting Belkin as your Uninterruptible Power Supply (UPS). It will provide you with the best protection for your connected equipment.

Please read this manual!

This manual provides safety, installation and operating instructions that will help you obtain the highest performance and service life that the UPS has to offer.

Please save this manual!

It includes important instructions for the safe use of this UPS and for obtaining factory service should the proper operation of the UPS come into question.

Please save or recycle the packaging materials!

The UPS shipping materials were designed with great care to provide protection from transportation related damage. These materials are invaluable if you ever have to return the UPS for service. Damage sustained during transit is not covered under the warranty.

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Introduction

Have you ever noticed your lights dim or flicker when you turn on your dishwasher or air-conditioning? This common occurrence is attributed to an under-voltage of power, also known as a **BROWNOUT**.

A Brownout is a period of insufficient power-line voltage. It is the most common power problem, accounting for 80% of all power disturbances.

Effects: A brownout can deprive a computer of the power it needs to function, causing unwanted damage to your computer, such as frozen keyboards and hard drive crashes. Such problems will cause you to incur computer repairs, lost data and downtime.

Solution: A Belkin Line-Interactive Uninterruptible Power Supply (UPS) with Automatic Voltage Regulation (AVR). Typical "Stand-by" UPS units do not have AVR to increase the output voltage or decrease the output voltage to your computer. A surge protector can only protect your computer from over voltages due to irregular power. Belkin Line-Interactive UPS units protect against surges, spikes, brownouts and blackouts!

Only a Belkin Line-Interactive UPS with AVR can give your computer clean and consistent power at all times.

Note: There is no guarantee that interference to radio/TV will not occur in a particular installation. If this UPS causes interference to radio or television reception, which can be determined by turning the UPS power off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Increase the separation between the equipment and the receiver.
- Reorient or relocate the receiving antenna.

Safety

CAUTION!

- To reduce the risk of electric shock, disconnect the UPS from the main power supply before installing a computer interface signal cable. Reconnect the power cord only after signaling interconnections have been made.
- The internal energy source (the battery) cannot be de-energized by the user. The output may be energized when the unit is not connected to a main power supply, thus a shock hazard may be present.

- **CAUTION: (RISK OF ELECTRIC SHOCK) - HAZARDOUS LIVE PARTS INSIDE THIS UNIT ARE ENERGIZED FROM THE BATTERY SUPPLY EVEN WHEN THE INPUT AC POWER IS NOT CONNECTED.**
- **CAUTION: (RISK OF ELECTRIC SHOCK) - DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE, PLEASE REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**
- **WARNING: TO REDUCE THE RISK OF FIRE, ONLY REPLACE THE FUSE WITH THE SAME TYPE AND RATING.**

Presentation

FRONT PANEL

3.0 REPLACE BATTERY indicator (RED-LED)

The LED illuminates when the UPS battery is no longer useful and must be replaced. Refer servicing to qualified service personnel. (See EcoBattery Service Program, page 13).

3.1 BACK-UP indicator (YELLOW-LED)

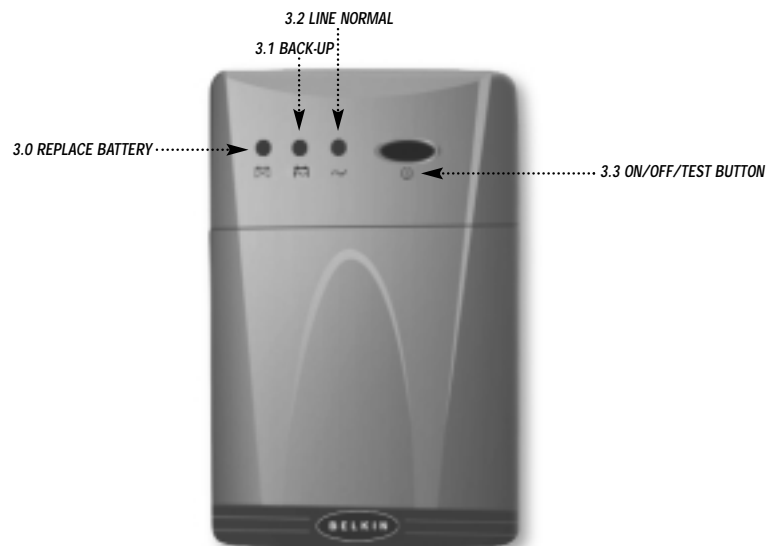
The LED illuminates when the UPS is supplying battery power to the loads.

3.2 LINE NORMAL indicator (GREEN-LED)

The LED illuminates when the line input voltage is normal.

3.3 ON/OFF/TEST/ button

Press the button more than 3 seconds to turn the UPS on or off, press the button less than 1 second to activate the UPS self-testing or to silence the back-up alarm.



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Presentation (continued)

REAR PANEL

3.4 SERIAL PORT (F6C425/F6C525/F6C625 models only)

Provides both RS232 and relay signal to support NOVELL®, UNIX®, DOS®, WINDOWS® and other operating systems.

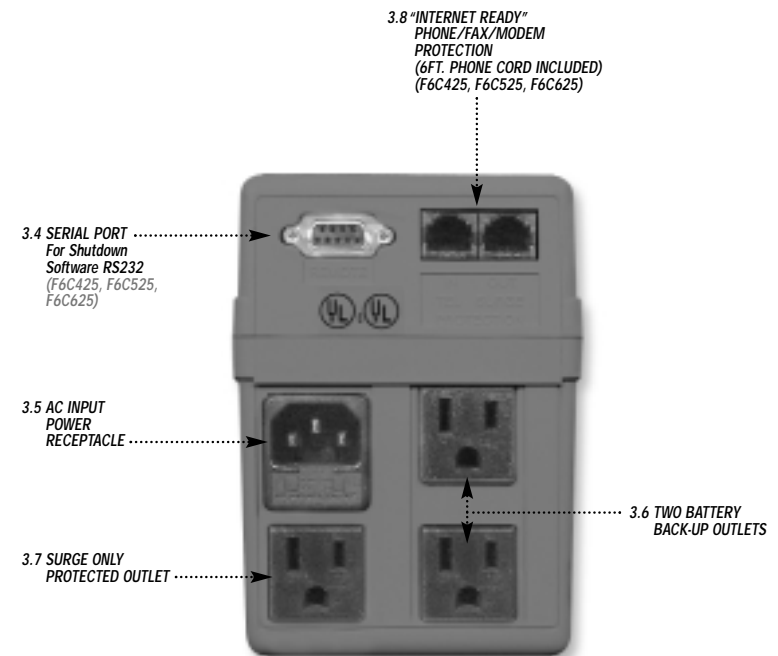
3.5 AC INPUT POWER RECEPTACLE

3.6 BATTERY BACK-UP OUTLETS

3.7 SURGE ONLY PROTECTED OUTLET

3.8 PHONE/FAX/MODEM PROTECTION (F6C425/F6C525/F6C625 models only)

Telephone/Fax/Modem lines are surge protected and provide complete safety for Internet connection.



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Installation

4.0 Inspection

Inspect the UPS upon receipt. The packaging is recyclable; save it for reuse or dispose of it properly.

4.1 Placement

Install the UPS in a protected area with adequate air flow and free of excessive dust. Do not operate the UPS where the temperature and humidity are beyond the specified limits.

4.2 Connect Computer Interface (F6C425/F6C525/F6C625 models only)

Belkin shutdown software and RS232 cable can be used with this UPS. If used, connect the interface cable to the 9 pin computer interface port on the back panel of the UPS and then connect to the serial port on your PC.

Note: Computer interface connection is optional. The UPS works properly without a computer interface connection.

4.3 Connect to Utility

Connect the AC input power connector to utility power to power up the UPS.

4.4 Charge the Battery

The UPS charges its battery whenever it is connected to the utility power. For best results, charge the battery for 4 hours prior to initial use.

4.5 Connect the Loads

Plug the loads into the output connectors on the rear of the UPS. To use the UPS as a master on/off switch, make sure all of the loads are switched on.

Caution: Never connect a laser printer or scanner to the UPS with other computer equipment. A laser printer or scanner periodically draws significantly more power when in use than when idle. This may overload the UPS.

Installation (continued)

4.6 Connect the telephone/fax/modem lines (F6C425/F6C525/F6C625 models only)

Connect a single line telephone/fax/modem line into the surge protected sockets on the back of the UPS. The RJ-45/RJ-11 modular sockets accept standard single line telephone connections. This connection will require another length of telephone cable (supplied).

Note: This connection is optional but highly suggested as phone/fax/modem lines often carry dangerous surges and spikes. The UPS works properly without a phone/fax/modem connection.

Caution: The telephone/fax/modem protection feature could be rendered inoperable if improperly installed. Make sure that the telephone line from the wall is plugged into the connector marked "IN", and the device to be protected (telephone/fax/modem) is plugged into the connector marked "OUT."

Caution: This surge protection device is for indoor use only. Never install telephone wiring during a lightning storm.

Operation

5.0 Switch On

With the UPS plugged in, press and hold the on/off/test button for more than 1 second until the "LINE NORMAL" LED lights up to switch the UPS on. The UPS will perform self-testing each time it is switched on.

Note: When switched off the UPS maintains the battery charge and will respond to commands received through the computer interface port.

5.1 Switch Off

Press and hold the on/off/test/ button for more than 3 seconds until the "LINE NORMAL" or "BACK-UP" LED goes off.

5.2 SELF-TEST

Use the self-test to verify both the operation of the UPS and the condition of the battery. In normal utility power, push the on/off/test button less than 1 second and the UPS performs a self-test function. During the self-test, the UPS operates in back-up mode.

Note: During the self-test, the UPS briefly operates the loads on-battery (the on-battery LED comes on).

If the UPS passes the self-test, it returns to on-line operation. The on-battery LED goes off and the on-line LED goes on steady. If the UPS fails the self-test it immediately returns to on-line operation and lights the replace battery LED. The loads are not affected. Recharge the battery overnight and perform the self-test again. If the replace battery LED is still on, the battery will need to be replaced.

5.3 SILENCE

In "BACK-UP" mode, push on/off/test less than 1 second to silence the audible alarm. (The function is void when under condition of "LOW BATTERY" or "OVERLOAD").

Note: In back-up mode, the UPS can be automatically turned off if none of the connected loads are operating.

Alarm

6.0 BACK-UP (slow alarm)

When in "BACK-UP" mode, the YELLOW LED illuminates and the UPS sounds an audible alarm. The alarm stops when the UPS returns to LINE NORMAL operation.

6.1 LOW BATTERY (rapid alarm)

In "BACK-UP" mode, when the battery energy runs low, the UPS beeps rapidly until the UPS shuts down from a depleted battery or returns to LINE NORMAL operation.

6.2 OVERLOAD (continuous alarm)

When the UPS is overloaded (the connected loads exceed the maximum rated capacity) the UPS emits a continuous alarm to warn of an overload condition. Disconnect nonessential equipment from UPS to eliminate the overload.

Software Options

7.0 Belkin Shutdown Software

Belkin shutdown software receives communication through the RS232 interface to perform monitoring functions, and also provides an orderly shutdown of a computer in the event of power failure. Moreover, Belkin shutdown software displays all of the diagnostic symptoms on screen, such as Voltage level, Frequency, Battery level and etc.

The software is available for DOS, Windows® 3.x, Windows® 95, Windows® 98 and Windows® NT V3.5 or higher.

7.1 Interface Kits

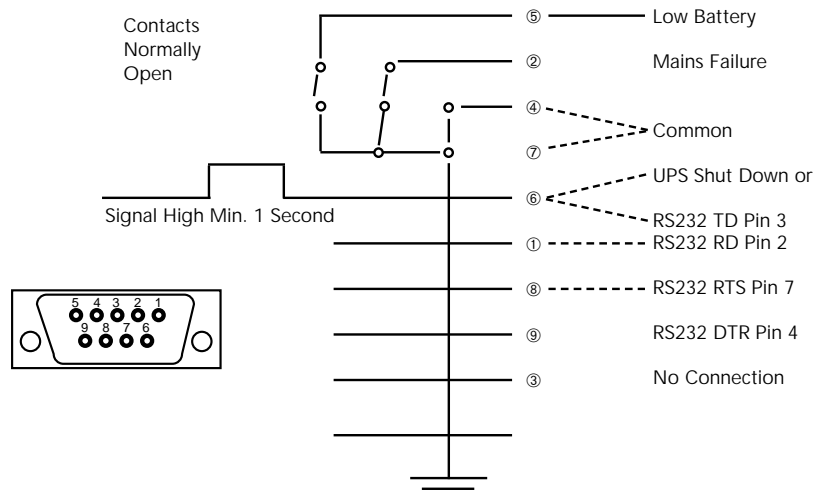
Each interface kit includes a special interface cable which is required to convert status signals from the UPS into signals that the individual operating system can recognize. The interface cable must be connected to the REMOTE PORT on the UPS. The other side of the interface cable can be either connected to COM 1 or COM 2 of your PC. For other installation instructions and features, please refer to the READ.ME file.

Caution: Use only factory supplied or authorized UPS monitoring cable!

Computer Interface Port

The computer interface port has the following characteristics:

D-SUB 9 Pin Female Connector



Battery Replacement

The average life of a battery is 3-5 years before ever needing to be replaced.

EcoBattery Service Program

In the event that the UPS needs a battery replacement, Belkin offers its **EcoBattery Service Program**. This program offers a battery replacement and full service check on your UPS to ensure it is working properly in protecting your connected devices. It also ensures that the battery in the UPS is discarded properly in an effort to keep our environment clean. All participants in the program will receive a two-year extended product warranty. Please call Belkin Components for detailed information regarding the cost of the program and shipping procedures.

**NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL OR CONTACT
BELKIN COMPONENTS.**

Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
UPS not on LED not lit	On/off/test/ button not pushed or pushed less than 1 second	Press the on/off/test button more than 1 second
	Battery voltage less than 10V	Recharge the UPS at least 4 hours
	Load less than 20W at battery mode	Normal condition
UPS always at battery mode	Power cord loose	Replug the power cord
	AC fuse is burned out	Replace the AC fuse
	Line voltage too high, too low or black out	Normal condition
Back up time too short	Battery not fully charged	Recharge the UPS at least 4 hours
The UPS continuously beeps	Overload	Remove the noncritical loads
RED LED lit	Battery failure	Replace battery

Storage

11.0 Storage Conditions

Store the UPS covered and upright in a cool, dry location, with its battery fully charged. Before storing, charge the UPS for at least 4 hours. Disconnect any cables connected to the computer interface port to avoid unnecessary drainage of the battery.

11.1 Extended Storage

During extended storage in environments where the ambient temperature is -15°C to +30°C (+5°F to +86°F), charge the UPS battery every 6 months.

During extended storage in environments where the ambient temperature is +30°C to +45°C (+86°F to +113°F), charge the UPS battery every 3 months.

Specifications

MODEL	F6C325	F6C425	F6C525	F6C625	
INPUT	Capacity	325VA	425VA	525VA	625VA
	Voltage	100V, 110V, 120V, ±25%			
	Frequency	50Hz or 60Hz ±5% (auto sensing)			
OUTPUT	Voltage (on battery)	Simulated sine wave at Line Input ±5%			
	Frequency (on battery)	50Hz or 60Hz ±0.5%			
	Voltage Regulation AVR	AVR automatically increases output voltage 15% above input voltage if -9% to -25% of nominal. AVR decreases output voltage 13% below input voltage if +9% to 25% of nominal			
	Transfer Time	2-4 milliseconds, including detection time			
PROTECTION AND FILTERING	Spike Protection	320 Joules, 2ms			
	EMI/RFI filter	10dB at 15MHz, 50dB at 30MHz			
	Overload Protection	UPS automatic shutdown if overload exceeds 110% of nominal at 60 second and 130% at 3 seconds			
	Unit Input	Fuse for overload and short circuit protection			
	10Base-T Cable Port	Network (UTP, RJ45) compatible jacks (F6C425, F6C525, F6C625)			
Short Circuit	UPS output cut off immediately or input fuse protection				
BATTERY	Type	Sealed, maintenance-free lead acid			
	Typical Recharge Time	4 hours (to 90% of full capacity)			
	Protection	Automatic self-test and discharge protection, replace battery indicator			
	Back up Time	Depending on computer load...			
PHYSICAL	Net Weight Kg(lbs)	4.7(10.4)	5.8(12.8)	6.2(13.7)	6.5(14.3)
	Shipping Weight Kg(lbs)	5.0(11.0)	6.1(13.4)	6.5(14.3)	6.9(15.2)
	Dimension(mm) WxDxH	97x260x135		97x320x135	
	Input Inlet	IEC 320 power inlet			
	ALARM	Battery Back-Up	Slow beeping sound (about 0.47Hz)		
Battery Low		Rapid beeping sound (about 1.824Hz)			
Overload		Continuous beeping sound			
INTERFACE	RS232 Interface	Bi-directional communication port (F6C425, F6C525, F6C625)			
CONFORMANCE	Safety	cUL, TUV, CE, meet FCC			
	Surge	Meet IEEE 587 standard			
ENVIRONMENT	Ambient operation	6,000 meters max. elevation, 0-95% humidity non-condensing, 0-48°C			
	Audible noise	<40dBA (1 meter from surface)			
	Storage condition	15000 meters max. elevation			

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