



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)

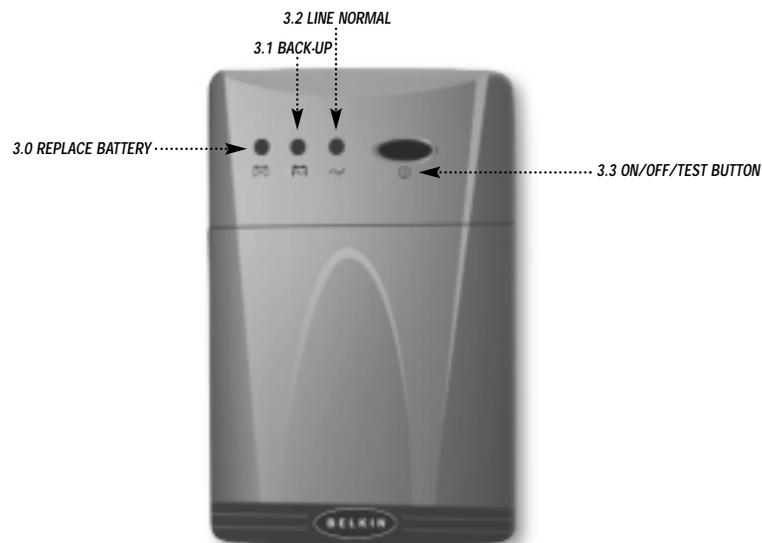
The LED illuminates when the UPS is supplying battery power to the loads.

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.

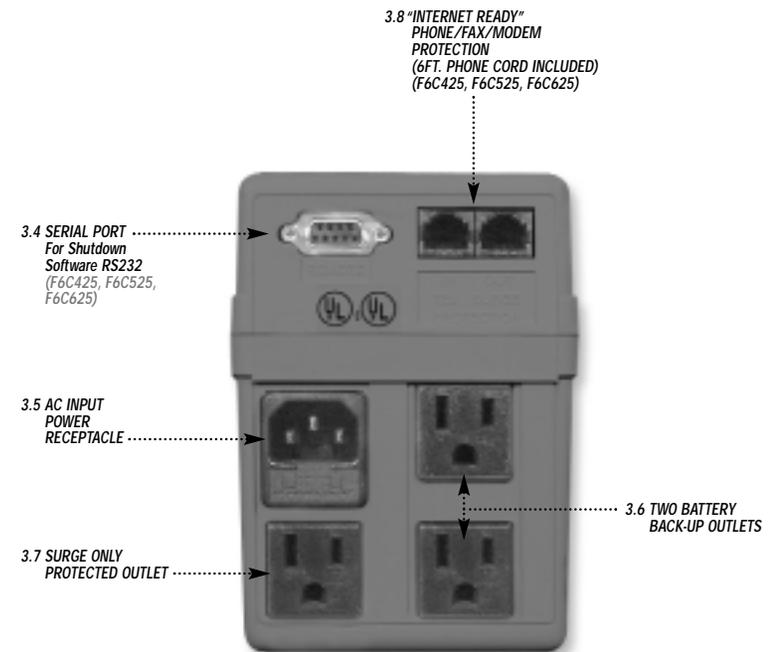
3.5 AC INPUT POWER RECEPTACLE

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

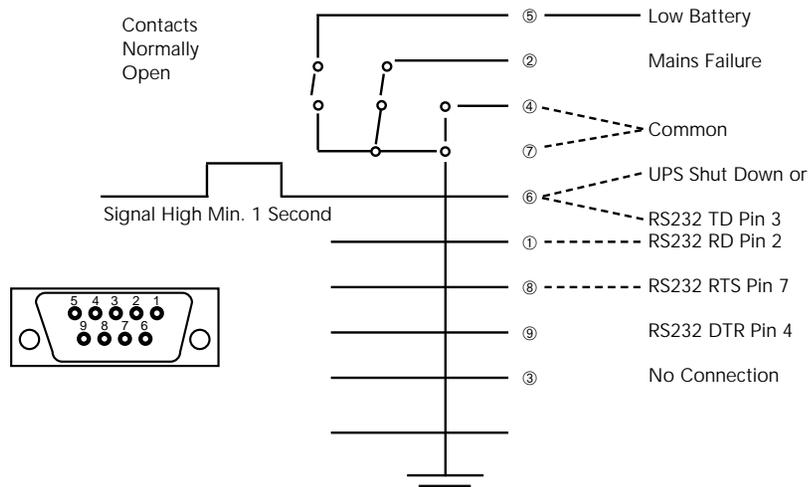
Each interface kit includes a special interface cable which is required to convert status signals from the UPS into signals that the individual operating system can recognize. The interface cable must be connected to the REMOTE PORT on the UPS. The other side of the interface cable can be either connected 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) | | | |
| BATTERY | Short Circuit | UPS output cut off immediately or input fuse protection | | | |
| | Type | Sealed, maintenance-free lead acid | | | |
| | Typical Recharge Time | 4 hours (to 90% of full capacity) | | | |
| PHYSICAL | Protection | Automatic self-test and discharge protection, replace battery indicator | | | |
| | Back up Time | Depending on computer load... | | | |
| | 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) |
| ALARM | Dimension(mm) WxDxH | 97x260x135 | | 97x320x135 | |
| | Input Inlet | IEC 320 power inlet | | | |
| | Battery Back-Up | Slow beeping sound (about 0.47Hz) | | | |
| INTERFACE | Battery Low | Rapid beeping sound (about 1.824Hz) | | | |
| | Overload | Continuous beeping sound | | | |
| CONFORMANCE | RS232 Interface | Bi-directional communication port (F6C425, F6C525, F6C625) | | | |
| | Safety | cUL, TUV, CE, meet FCC | | | |
| ENVIRONMENT | Surge | Meet IEEE 587 standard | | | |
| | 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 | | | |