

PCE[®]

UPS SYSTEMS



XP Series

**Uninterruptible Power Supply
Line-Interactive (Network) UPS**

■ USER'S MANUAL ■

For Models

XP Pro: XP-1200E, XP-1200P, XP-1400P, XP-1700P, XP-2000P

XP RM: XP RM 1200, XP RM 1500

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IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS



This manual contains important safety instructions that must be followed during initial installation and while performing periodic maintenance of the UPS and its batteries.

The following is a list of basic safety guidelines that should be adhered to when working with this PCE XP UPS:

- This UPS is intended to be installed in a controlled environment.
- Servicing of batteries should be performed or supervised by personnel knowledgeable of the required battery installation precautions. Please keep unauthorized personnel away from the batteries.
- When changing the battery, make sure you replace it with an identical battery having the same part number and type.
- **CAUTION** - Never dispose of batteries in fire. This may cause the batteries to explode.
- **CAUTION** - Do not open, tamper with, or mutilate the batteries. The released electrolyte is harmful to the skin and eyes and may be toxic.
- Before attempting to service the UPS or change its location, please unplug it from the power mains and disconnect all devices attached to it.
- Please remove watches, rings, or other metal objects before working with the UPS.
- Use tools with insulated handles and wear rubber gloves and boots to avoid the risk of electric shock.
- Do not lay tools or metal parts on top of batteries.
- Disconnect the charging source prior to connecting or disconnecting battery terminals.
- **CAUTION** - Never connect a laser printer or plotter to the UPS Outlets along with other computer equipment. A laser printer or plotter periodically draws significant power even when it is idle and may overload the UPS. It is advised that you connect your laser printer to the Bypass outlet to protect it from surges without overloading the UPS. (Bypass outlets are not available in all models)

1) INTRODUCTION

Thank you for selecting this PCE XP Uninterruptible Power Supply (UPS). The XP UPS provides you with perfect protection for your connected equipment. This manual is your guide to install and use the XP UPS. It includes important safety instructions for operation and correct installation of the UPS. Should you have any problems with the XP UPS, please refer to this manual before contacting customer service.

2) PRODUCT OVERVIEW

The PCE XP is a Line-Interactive Uninterruptible Power Supply (UPS). When the utility input is normal and reliable, the UPS provides surge protection and charges its internal battery. Whenever there's any power failure or low voltage below 27% of input or high voltage more than 27%, the UPS automatically switches to the battery and immediately supplies regular AC power to the load. In addition, the PCE XP UPS provides you with better protection by employing the following features:

- (1). Microprocessor-based control minimizes the dependency on hardware and maximizes system flexibility.
- (2). Automatic frequency selection (50Hz/60Hz) to match the utility power.
- (3). High quality battery charger to prolong the battery life.
- (4). Overload protection in both the line mode and battery mode.

The following are diagrams showing the location of each of the XP UPS components. Please note that, depending on your model, you may not have all the features portrayed here:

1. Power Switch

2. LED Indicator

3. LED Description

4. USB Port

5. RS-232 Port

6. UPS OUTPUT Outlets

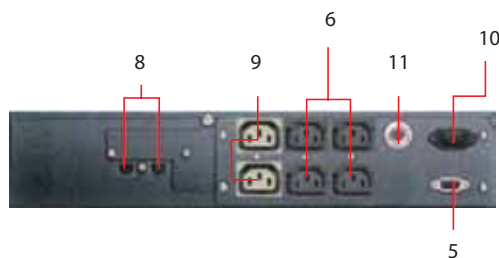
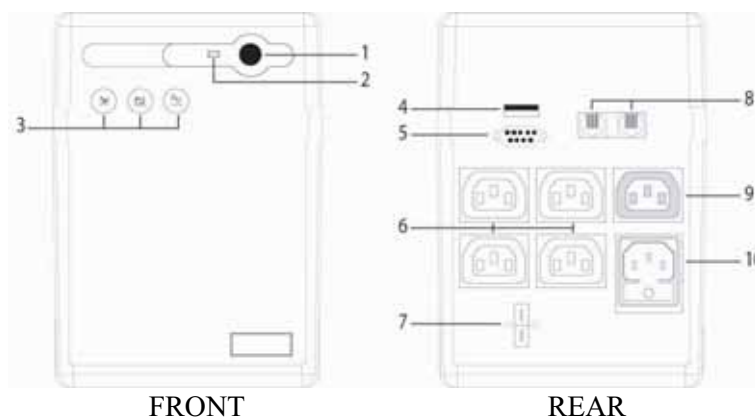
7. External Battery Connector

8. RJ-45 Data Ports (IN/OUT)

9. BYPASS OUTPUT(Surge)Outlet

10. AC INPUT

11. Circuit BREAKER



3) INSTALLATION

3.1 Inspection

Please inspect the UPS upon receipt. The packaging is recyclable; save it for re-use or dispose of it properly.

3.2 Utility Power Connection

Before attempting to operate the UPS, please ensure that the voltage of the input utility power matches the UPS's operating voltage. For example, if the UPS operates at 220V then the input utility power has to be 220V as well.

Plug one end of the power cord provided with the UPS to the AC Input socket on the rear panel and plug the other end into the mains power socket.

3. Switching On

Start the UPS into one of the modes explained in the next section then plug the equipment you wish to protect (such as computer) into the UPS Output sockets on the rear panel.

If your UPS model contains Bypass sockets, you can use these to plug non-essential equipment, such as a printer, that does not need to have uninterruptible power when the AC input goes off. Equipment plugged into the Bypass sockets will be protected against surges and voltage irregularities when AC input is available. However, the Bypass socket receives no power when the UPS is operating using the batteries.

4) OPERATING MODES

The following is a description of all the possible operating modes that the XP UPS provides:

4.1 "Green Mode" (Power Saving)

This mode activates the Light-Load Shutdown power-saving function which automatically turns off the UPS after about four minutes of no load or light load (less than 20W) on the UPS. In order to activate this mode, start the UPS by pressing the "ON" button for less than 3 seconds.

This mode may be enabled when the UPS is operating on either the AC Input or the batteries.

ATTENTION: When the UPS is operating from batteries, it will be automatically turned off if none of the connected loads is operating. Once the utility AC power is restored, the unit wakes up automatically.

4.2 Full Power Mode

This mode disables the power-saving features of the UPS. Please use this mode if the load is lighter than 20W to avoid any inconvenience caused by the Green Mode shutdown function.

In order to activate this mode, start the UPS by pressing the "ON" button until the beeping sound stops (around 3 seconds). At this point, connect the equipment you wish to protect to the UPS Output sockets at the rear panel of UPS.

This mode may be enabled when the UPS is operating on either the AC Input or the batteries.

4.3 Silent

When UPS is on DC power, press the power switch more than 1 second to silence the audible alarm (The function is disabled when the UPS experiencing “LOW BATTERY” or “OVERLOAD” alarms)

4.4 Self Test

Press the power switch while utility power is connected. The UPS will perform self-test procedure automatically.

4.5 OFF

To shut down the UPS, press the power switch and keep pressing more than 3 seconds.

5) ALARMS

In specific instances, the XP UPS emits certain alarms by sounding an audible beep and flashing the Status LED indicator. The following is an explanation of these alarms:

5.1 “BACKUP” (slow alarm)

When the UPS switches to DC power, it emits an audible alarm and the Status LED flashes accordingly every 2 seconds. The alarm stops when the UPS returns to AC power. At this point, the status LED stops flashing to indicate operation on AC power.

ATTENTION: The UPS provides a mute function for this warning. When the beeping sound occurs, press the "ON" switch to stop it. You may press the "ON" switch again to re-enable the alarm sound.

5.2 “LOW BATTERY” (rapid alarm)

When the UPS is working under DC power for some time and the battery reaches a low energy level (about 20%~30% of full-charged capacity), the UPS beeps rapidly and the Status LED flashes accordingly every 0.5 seconds until one of two events occur:

- The battery is drained and the UPS shuts down, or
- AC power is restored, at which point the alarm stops and the Status LED stops flashing

ATTENTION: The rapid “LOW BATTERY” alarm cannot be muted.

5.3 “OVERLOAD” (continuous alarm)

When the connected loads exceed the maximum rated capacity of the UPS, the UPS becomes working under overload condition. When such a condition occurs, the UPS emits a continuous alarm as a warning. In order to protect the unit and the loads, the UPS will automatically shut down.

When an “OVERLOAD” alarm occurs, please disconnect all non-essential devices from the UPS to eliminate the overload alarm and return to normal operating conditions.

6) SOFTWARE AND INTERFACE PORTS

6.1 Power Monitoring Software

The PowerTrack™ software included with the UPS utilizes a standard RS-232 (serial) or USB port in your PC to perform UPS monitoring functions and provide an orderly computer shutdown in the event of a power failure. Moreover, PowerTrack™ provides you with a visual display of all the diagnostic parameters, such as Voltage, Frequency, Battery Level and so on. The software is available for Windows 98/ME/NT/2000/2003/XP, Novell Netware, Linux, and others. Please call your dealer for more information on solutions tailored for your operating system.

6.2 Interface Kits

The XP UPS comes with an interface kit that includes the special interface cable required to connect the UPS to the computer. The interface cable must be connected to REMOTE PORT at the rear of the UPS. At the PC end, the interface cable must be connected to the serial port (COM1 or COM2) or a USB port, depending on your UPS model. For more detailed instructions, please refer to the READ.ME file on the PowerTrack™ software installation disk.

6.3 Communication Port Features

The communication port on the XP UPS provides the following features:

The port may be connected to a host computer to allow the computer to monitor the status of the UPS and control its operation in some cases. Its major functions include the following:

- Broadcasting a warning to the PC when the power fails
- Closing any open files and gracefully shutting down the computer before the battery is exhausted
- Shutting down the UPS

Some computers may not have their serial port properly set up. Please make sure that the serial port is properly installed and configured before attempting to communicate with the UPS.

Some operating systems may need special UPS monitoring software other than PowerTrack™. Please contact your dealer for the details on the various interface kits and software solutions.

7) APPENDIX A TROUBLESHOOTING

Problems	Possible Reasons	Solutions
UPS does not turn on. LED does not light.	Power switch is not pushed or push-time too short.	Press the power switch for more than 1 second.
	Battery voltage is less than 10V.	Recharge the UPS for at least 4 hours.
	Load is less than 20W at battery mode.	Normal condition, "No load shutdown function" is active (See 4.2).
	PCB failure.	Call for service.
UPS is always at battery mode.	Power cord is loose.	Plug in the power cord.
	AC fuse is burnt out.	Replace the AC fuse.
	Line voltage is too high, too low, or no power is reaching the UPS.	Normal condition.
	PCB failure.	Call for service.
Back up time too short.	Battery is not fully charged.	Recharge the UPS at least 4 hours.
	PCB failure.	Replace PCB, call for service.
Buzzer continuous beeping.	Overload.	Disconnect some equipment.

8) TECHNICAL SPECIFICATIONS - XP Pro / XP RM Series

Model XP Pro Series		XP-1200E/P	XP-1400P	XP-1700P	XP-2000P
Output power with $\cos \varphi = 0.6$		1200VA 720W	1400VA 840W	1700VA 1020W	2000VA 1200W
Input	Voltage Frequency	160V - 280V (adjustable to 150V/294V via UPS Driver Software) 50 or 60 Hz +/-10%			
Output	Voltage (on battery) Frequency (on battery) Auto Voltage Regulation (AVR)	Simulated sinewave at 220V +/-1% (adjustable to 200V, 230V, 240V via supplied UPS Driver Software) 50 or 60Hz +/-0.1% Booster / Fader			
Protection & Filtering	Spike Protection Unit input EMI/RFI filter Overload Protection Transfer time Short Circuit 10 Base-T Cable Port	320 Joules, 2 ms Fuse or circuit breaker for overload and short circuit protection 10dB at 0.15MHz, 50dB at 30MHz UPS automatic shutdown if overload exceeds 110% of nominal at 120 seconds and 130% at 30 seconds 2~4 milliseconds (typical), including detection time UPS output cut off immediately or input fuse protection Network (UTP, RJ-45) compatible jacks (except for XP-1200E)			
Alarm	Battery Back up Battery Low Overload	Slow beeping sound (about 0.25Hz) Rapid beeping sound (about 1.00Hz) Continuous beeping sound			
Battery	Type	Sealed lead acid, maintenance free, with 3-5 years lifetime			
	DC Voltage	24VDC			
	Typical Recharge Time	4 hours (to 90% of full capacity)			
	Protection	Automatic self-test, discharge protection, replace battery indicator			
	Back up time	15 - 35min	15 - 30min		
Communication	RS-232 or USB Dry contact Compatibility	Detect battery low, schedule UPS On/Off, AC input/output power status display Sends AC failure and battery low signal, and receives shutdown signal from computer Novell, SNMP, Windows NT, Windows 95 / 98 / ME / 2000 / XP / 2003			
Physical	Input inlet Receptacles	IEC 320 power inlet IEC 320 female appliance coupler (220V) or optional country-specific receptacles			
	Dimensions WxDxH mm (inch)	130x382x201 (5.1"x15"x7.9")			
	Weight kg (lbs)	13.4(29.5)	13.5(29.7)	13.6(29.9)	14.5(31.9)
Environment	Ambient operation Audible noise	3,500 meters max. elevation, 0-95% humidity non-condensing, 0-40°C <40dBA (1 meter from surface)			
Standards	Safety Electromagnetic compatibilitiy Design, production & services Environment Marking & Certifications	EN 50091-1-1/EN 69050 (RD), IEC 60950, TUV GC - Mark EN 50091-2, EN 50022/B, IEC 62040-2, IEC 61000-3-2, IEC 61000-3-3 ISO 9001 ISO 14001 certified company CE, TUV GC - Mark			

Model XP-RM Series		XP-RM 1200	XP-RM 1500
Output power with $\cos \varphi = 0.6$		1200VA 720W	1500VA 900W
Physical	Input inlet Receptacles	IEC 320 power inlet IEC 320 female appliance coupler (220V) or optional country-specific receptacles	
	CS model (optional) Dimensions WxDxH (mm)	with up to 6 output receptacles 483 x 357 x 84 (2U)	
	Weight kg (lbs)	15.5(34.1)	15.8(34.8)

Service & Technical Notes

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