

# IBM UPS5000 HV Uninterruptible Power Supply for IBM System x

## Product Guide (withdrawn product)

The IBM UPS5000 HV is a 5 KVA rack-mountable uninterruptible power supply (UPS) that utilizes advanced backup power technology to ensure maximum protection of equipment and data and increase availability. High power efficiency is delivered through the capability of automatically switching the UPS to the efficiency mode appropriate for required power protection. Support for different line cords lets multinational customers implement this single model UPS5000 HV in multiple geographies.

The IBM UPS5000 HV uninterruptible power supply is shown in Figure 1.



Figure 1. IBM UPS5000 HV uninterruptible power supply for IBM System x

### Did you know?

The UPS5000 HV packs 4500W of power into a space-efficient 3U form. This provides maximum power density, thereby leaving more space for other computer hardware in rack and BladeCenter server environments.

Double Conversion UPS technology provides maximum protection from potential power input problems. This leads to higher availability and fewer problems that threaten data and equipment.

## Part number information

Table 1. Ordering part numbers and feature codes

Description	Part number	Feature code
IBM UPS5000 HV uninterruptible power supply	2419-5KX	Not applicable
IBM UPS 3U Online Battery Pack	39Y8857	5743
IBM DPI 32a Line Cord (IEC 309 P+N+G)	40K9612	6502
IBM DPI 30a Line Cord (NEMA L6-30P)	40K9614	6500
IBM DPI Australian/NZ Line Cord	40K9617	6505
IBM DPI Korean Line Cord	40K9618	6506

The uninterruptible power supply designated by part number IBM UPS5000 HV includes the following items:

- One IBM UPS5000 HV with network management card
- Accessory kit, containing the following items:
  - Front bezel
  - Serial cable (5m, 15 ft)
  - Network Management Card console cable (2 m, 6 ft)
  - Temperature sensor AP9335T on a 4 meter (13 ft) cable
  - Left and right rack mount rails
- Miscellaneous Hardware Kit, containing the following items:
  - Miscellaneous hardware
  - Rack mounting hardware
- Documentation Kit, containing the following items:
  - Warranty flyer
  - The publication *IBM UPS5000 HV Quick Installation Guide*
  - Important Notices flyer
  - Documentation CD
  - Software CD, which contains PowerChute Business Edition, PowerChute Network Shutdown, and MIB files

Note: The uninterruptible power supply does not ship with any line cords. These must be ordered separately.

Figure 2 shows three of the four available line cords as listed in Table 1.



Figure 2. Line cords (l-r): Australian/NZ Line Cord, Korean Line Cord, 30a Line Cord (NEMA L6-30P)

## Features

The IBM UPS5000 HV uninterruptible power supply includes the following features and capabilities:

- High efficiency 5KVA (4.5 kW) UPS for increased rack power density.
- Occupies only 3U of vertical rack space.
- Eight C13 and two C19 receptacles with 20A circuit breaker protection.
- Requires a 200 V to 240 V, 30-32 A single-phase circuit.
- Advanced technology Double Conversion operation providing protection from four more power failures than typical interactive UPS technology.
- Bimodal operation provides 97% efficiency when Double Conversion protection not required.
- Hot swap battery capability increases availability.
- Optional Online Battery Packs for additional runtime capacity. With four external battery packs, the UPS can supply up to 75 minutes of run time at full load. Up to 10 external battery packs can be attached to the UPS.
- A suite of easy-to-use management tools.
- Network Management Card provides standard serial and Ethernet (10/100 MBps) communications as well as connections for environmental management. A temperature sensor on a 13 foot cable is supplied with the UPS. Additional sensors can be purchased from APC using part number AP9335T.
- Emergency Power Off option to remotely power off UPS unit to prevent battery operation during power failure.
- Load: Up to 5000VA or up to 4500W.

## Physical specifications

- Height: 130 mm (5.1 in)
- Width: 483 mm (19.0 in)
- Depth: 660 mm (26.0 in)
- Weight: 59 kg (130 lb)

## Operating environment

The IBM UPS5000 HV uninterruptible power supply is supported in the following environment:

- Temperature:
  - Operation: 0 to 40 °C (32 to 104 °F)
  - Storage: -15° to 30° C (5° to 86° F) - charge the UPS battery every six months
  - Storage: 30° to 45° C (86° to 113° F) - charge the UPS battery every three months
- Relative humidity: 5 to 95%
- Maximum altitude:
  - Operation: 3,000 m (10,000 ft)
  - Storage: 15,000 m (50,000 ft)

## Warranty

The IBM UPS5000 HV uninterruptible power supply has a three-year limited warranty.

## Supported rack installation

The IBM UPS5000 HV uninterruptible power supply requires 3 U of rack space in one of the following rack cabinets:

- IBM 42U Enterprise rack
- IBM S2 42 U Dynamic rack
- IBM S2 25 U rack
- IBM S2 42 U rack
- IBM 11U Office Enablement kit

## Front panel controls

Figure 3 shows the front panel of the UPS 5000VA HV uninterruptible power supply.

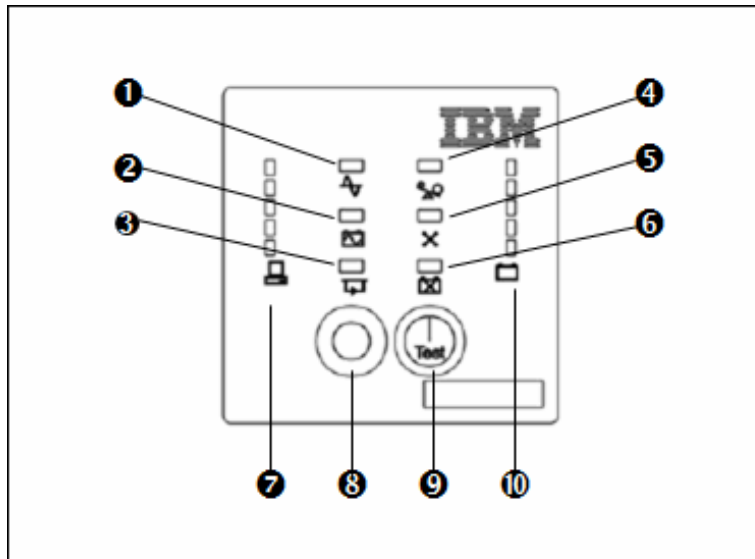


Figure 3. Front panel

The callouts in Figure 3 correspond to the following functions:

1. Online indicator
2. On battery indicator
3. Battery bypass indicator
4. Overload indicator
5. Fault indicator
6. Replace battery indicator
7. Load on the uninterruptible power supply indicator
8. Power off button
9. Power on / Test button
10. Battery charge level / Diagnostic utility voltage indicator

## Rear panel

Figure 4 shows the rear panel of the UPS 5000VA HV uninterruptible power supply.

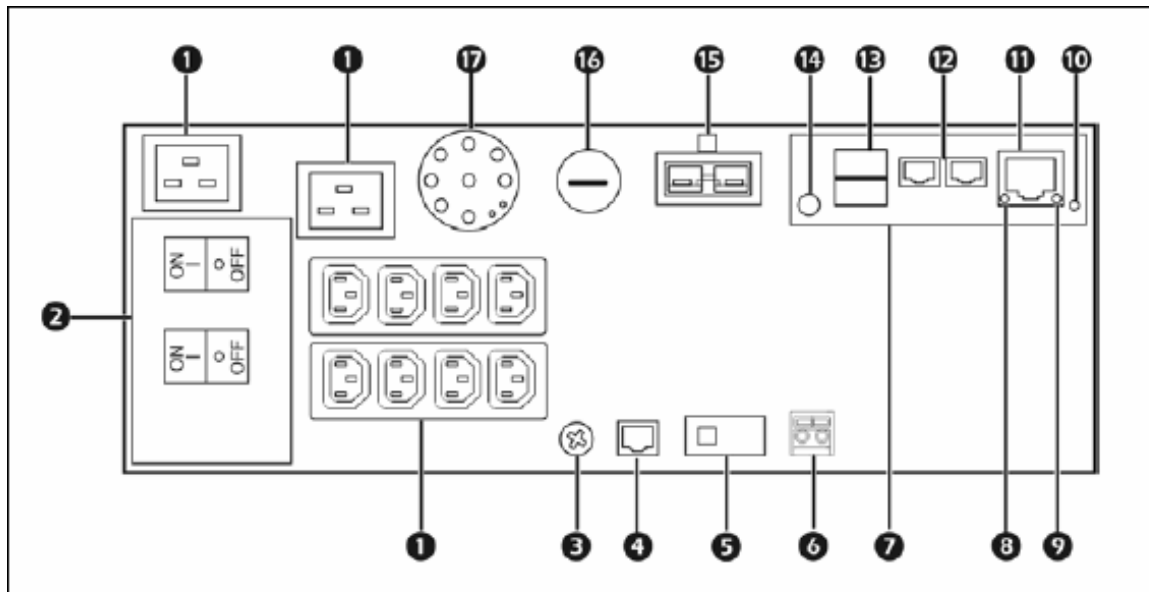


Figure 4. Rear panel of the UPS5000 HV uninterruptible power supply

The callouts in Figure 4 correspond to the following components:

1. Outlets - eight C13 and two C19 receptacles
2. Output circuit breakers
3. Transient voltage surge-suppression (TVSS) screw
4. Serial port (use the supplied serial cable; standard cables are incompatible)
5. Bypass switch
6. Emergency Power Off (EPO) terminal
7. Network management card
8. Ethernet Link LED
9. Ethernet Status LED
10. Network management card reset
11. Ethernet port
12. Environmental sensor connectors
13. USB connector (reserved for future use)
14. Console connector
15. Connectors for optional Online Battery Packs for extended run time (remove the metal cover first)
16. Input fuse
17. Input power connector

Figure 5 shows a photo of the rear of the UPS5000 HV uninterruptible power supply.



Figure 5. Rear panel of the UPS5000 HV uninterruptible power supply

### IBM UPS 3U Online Battery Pack

The 3U Online Battery Pack is a 3U rack-mounted device that contains additional batteries. Up to 10 can be connected to the UPS5000 HV to provide longer uptime when running on battery power. Figure 6 and Figure 7 show the front and rear of the 3U Online Battery Pack.



Figure 6. IBM 3U Online Battery Pack front



Figure 7. IBM 3U Online Battery Pack rear (green/yellow ground wire not shown)

Figure 8 shows the UPS connected to two 3U Online Battery Packs. The units are connected together using the battery connectors shown in Figure 7 plus a green/yellow ground wire.



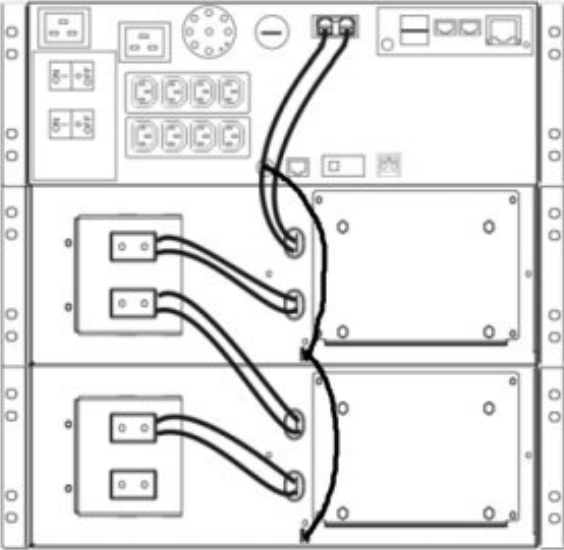


Figure 8. IBM UPS5000 HV uninterruptible power supply with two 3U Online Battery Packs

## Battery run times and recharge times

Table 2 lists the approximate run times for the uninterruptible power supply when operating on battery power. The run times vary depending on the load attached to the UPS. The table also lists the run times when one, two, three, or four 3U Online Battery Packs (OBP) are attached.

Table 2. Run times when running on battery

Load	UPS5000 battery (hours:minutes)	With 1 OBP (hours:minutes)	With 2 OBPs (hours:minutes)	With 3 OBPs (hours:minutes)	With 4 OBPs (hours:minutes)
50 W	6:49	18:03	31:32	45:33	59:56
100 W	4:50	12:51	22:29	32:30	42:46
200 W	3:00	8:03	14:06	20:23	26:50
300 W	2:09	5:47	10:10	14:42	19:22
400 W	1:39	4:30	7:54	11:26	15:04
500 W	1:20	3:39	6:26	9:19	12:17
600 W	1:07	3:04	5:24	7:50	10:20
700 W	0:57	2:38	4:39	6:45	8:54
800 W	0:50	2:18	4:04	5:55	7:48
900 W	0:44	2:02	3:37	5:15	6:56
1000 W	0:39	1:50	3:15	4:43	6:14
1200 W	0:32	1:30	2:41	3:55	5:11
1400 W	0:26	1:16	2:17	3:20	4:25
1600 W	0:22	1:06	1:59	2:54	3:50
1800 W	0:19	0:58	1:45	2:33	3:23
2000 W	0:17	0:52	1:33	2:17	3:01
2500 W	0:12	0:40	1:13	1:47	2:22
3000 W	0:09	0:32	1:00	1:28	1:57
3400 W	0:07	0:25	0:50	1:12	1:40
4000 W	0:06	0:23	0:43	1:00	1:25
4500 W	0:05	0:20	0:38	0:54	1:15

Table 3 lists the number of hours needed to recharge the IBM UPS5000 HV uninterruptible power supply and optional Online Battery Packs.

Table 3. Recharge times

	UPS5000 battery	With 1 OBP	With 2 OBPs	With 3 OBPs	With 4 OBPs
<b>Recharge time</b>	3 hours	9 hours	15 hours	21 hours	27 hours

## Related publications

For more information refer to these documents:

- *IBM UPS5000 HV Uninterruptible Power Supply Operation and Setup Guide*  
<http://www.ibm.com/support>
- *IBM 3U Extend Run Battery Pack Operation and Setup Guide*  
[ftp://ftp.software.ibm.com/systems/support/system\\_x\\_pdf/25r5637a.pdf](ftp://ftp.software.ibm.com/systems/support/system_x_pdf/25r5637a.pdf)
- *IBM System x Configuration and Options Guide*  
<http://www.ibm.com/support/docview.wss?uid=psg1SCOD-3ZVQ5W>

## Related product families

Product families related to this document are the following:

- [Uninterruptible Power Supplies](#)

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