Out-of-Band Management Card for APC Symmetra® *Power Array*™

AP9608

User's Guide

Related Documents

For information on installing and setting up the Out-of-Band Management Card, see the *Installation Guide:* Out-of-Band Management Card *(990-0122C)*, which came with the card.

The online User's Guide that you are reading describes how to use the card with APC Symmetra *Power Array* after installation and setup. For information on using the card with other supported APC UPSs, see the following online manuals:

- *User's Guide: Out-of-Band Management Card for APC Silcon DP300E Series UPSs (990-6032A)*
- *User's Guide: Out-of-Band Management Card for APC Smart-UPS and Matrix-UPS UPSs (990-0715)*

You can obtain either of these user's guides in the same way in which you obtained this guide:

- From a CD, if one was included with the card
- From **http://www.apc.com/support**. Click **User Manuals** and download the guide from the list under **Out-of-Band Management Card**.

APC User's Guide: Out of Band Management Card

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User's Guide: Out-of-Band Management Card

Beginning Operations

Logging on

Locally. To log on to the Out-of-Band Management Card locally:

1. Connect the supplied null-modem cable (940-0103) to an available serial port on your computer and to the management port on the front panel of the card.

   Note: You may need an adapter (not supplied) to connect the serial port to the cable.

2. Run a terminal emulation program (such as Windows® HyperTerminal®).
3. Configure the selected serial port with the following communication parameters: 9600 bps, 8 data bits, no parity, and 1 stop bit.

   Note: Some terminal emulation programs require that you disconnect and reconnect for the new serial settings to take effect.

4. Make sure that the status LED is on steadily, which indicates that the card is running. Then press CTRL+P.
5. At the prompt, enter your password (APC by default, if you have not changed it).
6. From the opening screen, press any key to display the Main menu.

Remotely. To log on to the Out-of-Band Management Card remotely:

1. Use a modem to connect to the site of the UPS.
2. Press CTRL+P.
3. At the prompt, enter your password (APC by default, if you have not changed it).
4. From the opening screen, press any key to display the Main menu.

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Navigating through the menus

To access any function of the Out-of-Band Management Card from the Main menu, type the number associated with that function, and press ENTER. The following prompts and keystrokes enable you to navigate through the menus.

Prompt or Keystrokes	Description
>	The card's menu prompt.
ENTER	Press this key to refresh the screen.
>>	Requests a configurable value. In some cases, you can select an item on the menu, press the Space Bar to cycle through possible settings, and press ENTER to change the value to the setting displayed.
Are You Sure?	In response to this prompt, type YES in uppercase letters to confirm the command. Any other response cancels the command.
ESC	Press this key to do either of the following: • From any other screen, return to the Main menu. • From the Main menu, end the session and hang up the modem.

On-line help is available whenever ? appears on a menu.

Customizing Settings

Setup menu

To view or configure the Out-of-Band Management Card settings, go to the Main menu, type 5, and press ENTER:

```
------------------------ CALL-UPS SETUP -------------------------
          Model Number: AP9608                    H/W Rev: A2
         Serial Number: WA990201184               F/W Rev: R4
           Manuf. Date: 11/19/99
----------------------------------------------------------------
    1-       Set Date: 03/28/01    8-            Baud Rate: 9600,N
    2-       Set Time: 08:21:34    9-          Answer Ring: 0
    3-  Set Password: ********   10-       Answer Lockout: 0 min
    4-      Dial Back: OFF        11- Modem Initialization: ON
    5- Dial Back Str: DT5551212
    6-       Location: Physical Location of This UPS
    7-     Ansi Color: OFF
----------------------------------------------------------------
   12- UPS Present: ON
   13- Reset Call-UPS to Default Settings
    ?- Help
<ENTER> Display Menu
  <ESC> Return to Previous Menu
```

Display-only fields

The top section of the **Setup** menu displays the following information about the Out-of-Band Management Card, which you need when requesting technical support:

- **Model Number:** The model number of the card.
- **H/W Rev:** The card's hardware revision code.
- **Serial Number:** The serial number of the card
- **F/W Rev:** The card's firmware revision code.
- **Manuf. Date:** The date on which the card was manufactured.

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Configurable settings

The bottom section of the **Setup** menu lists the configurable settings of the Out-of-Band Management Card:

No.	Setting	Description
1	Set Date	Sets the current date in the format *mm*/*dd*/*yy*.
2	Set Time	Sets the current time in the format *hh*:*mm*:*ss*. Specify the hour (*hh)* in 24-hour format.
3	Set Password	Sets the password for the card. To specify that no password is required, press ENTER without typing any characters when prompted. *Default:* APC *Maximum:* eight alphanumeric characters
4	Dial Back	When the dial-back security feature is on, the card hangs up when called and then calls the number set for `Dial Back Str` (number 5, below). *Default:* OFF
5	Dial Back Str	Specifies the telephone number of the modem to be called back by the `Dial Back` security feature (number 4, above). Use an industry-standard dial string. The card prefaces the string with the attention command, so do not include AT in the string. To start a new line in the string, use the vertical line (pipe) character. Make sure the remote modem is set to answer calls. *Default:* DT5551212 *Maximum:* 20 alphanumeric characters

6	Location	Describes the physical location of the UPS. Use the vertical line (pipe) character to start a new line. For example, `ACME Company|Any Town` displays the following:
		`ACME COMPANY`
		`ANY TOWN`
		Default: Physical Location of This UPS
		Maximum: 40 alphanumeric characters

7	Ansi Color	A value of ON causes the card to send ANSI-standard color display escape sequences. *Default:* OFF

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Configurable settings, continued

No.	Setting	Description
8	Baud Rate	Sets the card's communication setting in bits per second: 1200, 2400, 9600, or 19200 bps. Specify the highest supported bit rate of the DTE port of the modem or other DCE equipment in use. To support data compression, many modems have DTE port rates that are higher than the communication link rate. For example, many 9600 baud modems support bit rates of 19200 or higher at their DTE ports. See the manual for your modem. *Default:* 9600, No Parity
9	Answer Ring	The number of rings that the card's modem waits before answering a call. After each communication session, the modem's SO register is set to this value. To set the modem to be available for paging at all times and not to answer calls, use the value 0. *Default and minimum:* 0 *Maximum:* 15
10	Answer Lockout	The time, in minutes, that the modem waits after a communication session before it accepts incoming calls. Use a non-zero value when multiple devices are on the same telephone line as the card. The modem attached to the card must be the first device in the telephone line chain. (A subsequent automatic answering device in the chain will receive a call only if that device is set to answer after a greater number of rings than you specified for the card's `Answer Ring` setting, number 9 above.) *Default and minimum:* 0 min *Maximum:* 99 min
11	Modem Initialization	OFF disables the initialization commands to the modem and prevents the modem from disconnecting after a dial-in session terminates. Use the OFF setting when multiple devices are configured to use the same modem. *Default:* ON
12	UPS Present	Use ON if the Out-of-Band Management Card is connected to a UPS. Use OFF if the Out-of-Band Management Card is connected only to an Environmental Monitoring Card. OFF shortens the menu structure and the polling sequence. *Default:* ON
13	Reset UPS to Default Settings	Resets the card to factory defaults.

Paging

Modem requirements

To set up the Out-of-Band Management Card so that it dials a pager to report UPS problem events, you must have a modem that can interpret industry-standard AT commands.

Format of reported events

When paging is enabled, and a UPS problem occurs, the Out-of-Band Management Card reports an event to the pager in the following format:

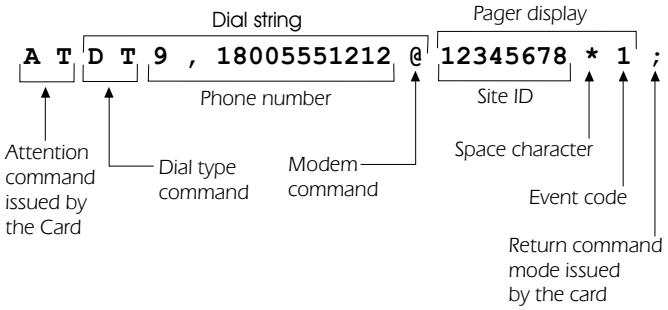
[*Site ID*][*space character*][*event code*]

For example, if the UPS whose Site ID is 17523658 is reporting the event whose code you configured to be 1, the pager displays the following:

```
17523658 1
```

Modem command string

When a reportable condition occurs, the Out-of-Band Management Card issues a modem command string similar to the following:

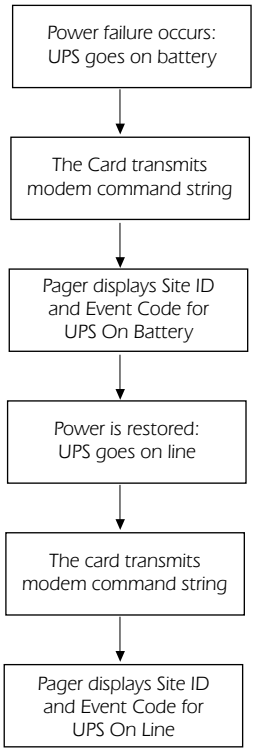


Continued on next page

Paging *continued*

Paging sequence

The following example shows a typical sequence of events during a utility power outage when the Out-of-Band Management Card is configured for paging.



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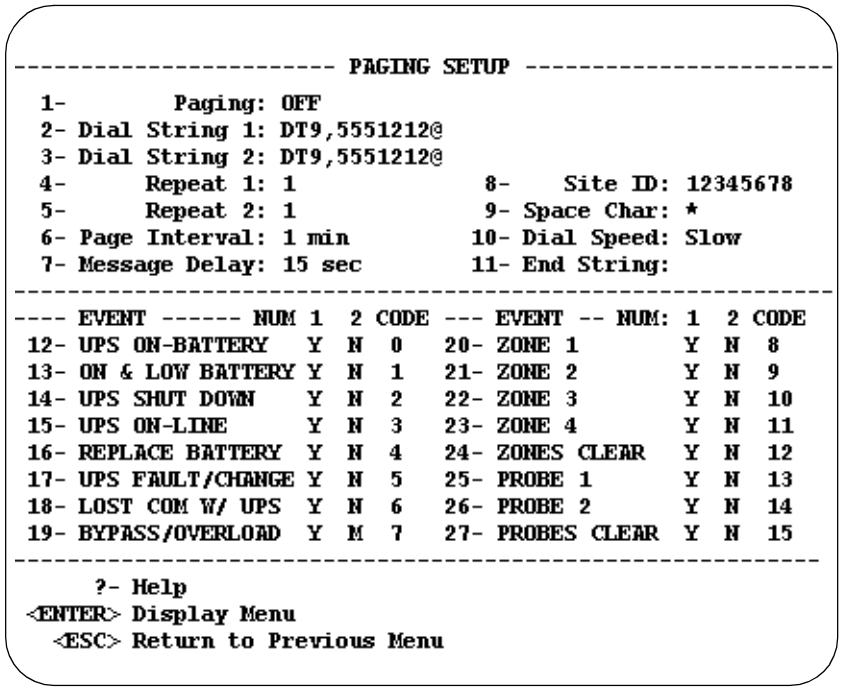
Paging Setup menu

To display the **Paging Setup** menu, type 6 from the Main menu, and customize the settings to work with your modem and pager.



```
------------------------ PAGING SETUP -----------------------
  1-        Paging: OFF
  2- Dial String 1: DT9,5551212@
  3- Dial String 2: DT9,5551212@
  4-      Repeat 1: 1               8-    Site ID: 12345678
  5-      Repeat 2: 1               9- Space Char: *
  6- Page Interval: 1 min          10- Dial Speed: Slow
  7- Message Delay: 15 sec         11- End String:
-------------------------------------------------------------
---- EVENT ------ NUM 1  2 CODE --- EVENT -- NUM: 1  2 CODE
 12- UPS ON-BATTERY   Y  N  0    20- ZONE 1        Y  N  8
 13- ON & LOW BATTERY Y  N  1    21- ZONE 2        Y  N  9
 14- UPS SHUT DOWN    Y  N  2    22- ZONE 3        Y  N  10
 15- UPS ON-LINE      Y  N  3    23- ZONE 4        Y  N  11
 16- REPLACE BATTERY  Y  N  4    24- ZONES CLEAR   Y  N  12
 17- UPS FAULT/CHANGE Y  N  5    25- PROBE 1       Y  N  13
 18- LOST COM W/ UPS  Y  N  6    26- PROBE 2       Y  N  14
 19- BYPASS/OVERLOAD  Y  M  7    27- PROBES CLEAR  Y  N  15
-------------------------------------------------------------
      ?- Help
 <ENTER> Display Menu
   <ESC> Return to Previous Menu
```

No.	Setting	Description
1	Paging	To turn on paging, press 1. To turn off paging, press 0. Default: OFF
2	Dial String 1	A character string that the card sends to the modem to contact your pager. The dial string must contain the following items: • The dial type command (DT or DP) at the beginning of the string. • The phone number of the pager. • Any modem commands needed for tasks such as timing, waiting for a dial tone, accessing an outside telephone line, and providing the pager PIN number. For an example of a dial string, see **Modem command string on page 6**. *Default:* DT9, 5551212@ *Maximum:* 40 characters

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Paging Setup menu, continued

No.	Setting	Description
3	Dial String 2	The dial string for a second pager number. See the preceding description for `Dial String 1`. *Default:* DT9, 5551212@
4	Repeat 1	The number of times to retry the first pager number. The card cycles through `Repeat 1`, `Repeat 2`, and `Page Interval` for each reportable event. Events are buffered and prioritized during paging to keep the operator updated with the best information. **Note:** To turn off paging for all events if you use only one pager number, set this value to 0 to disable the pager instead of disabling paging for each event. *Default:* 1 *Minimum:* 0 *Maximum:* 99
5	Repeat 2	The same as `Repeat 1` for the pager associated with `Dial String 2`.
6	Page Interval	The time in minutes between paging cycles. This time-out occurs after both pagers have been paged. After the time-out, paging continues with the next pager number that is still eligible to be retried (as set by `Repeat 1` and `Repeat 2`). With `Page Interval` set to 0, the card repeats paging messages without delay. *Default:* 1 *Minimum:* 0 *Maximum:* 10
7	Message Delay	The time in seconds that the card waits after on-battery operation before initiating paging. This feature prevents paging during brief power disturbances. *Default and Minimum:* 15 *Maximum:* 120

Continued on next page

Paging Setup menu, continued

No.	Setting	Description
8	Site ID	The identification number for the connected UPS to be reported during paging. *Default:* 12345678 *Maximum:* 8 numeric characters
9	Space Char	The character that the specific pager requires to display as a space separating the Site ID and the event code. Select from *, @, #, and none. *Default:* *
10	Dial Speed	The dial speed for the pager. Select Slow (the default), Medium, or Fast. Use Slow unless you are sure that a faster speed is compatible with the pager and other telephone equipment. *Default:* Slow
11	End String	One or more characters appended to the Dial String. Use an end string if the paging service has a menu for reviewing and leaving messages. The card appends a semicolon (;) after the end string to hang up the modem and return it to command mode.

Events that initiate a paging message

The remaining fields in the **Paging Setup** menu define the following:

- The events that initiate a paging message. If an Environmental Monitoring Card or its probes are not attached, ignore events related to zones and probes.
- The pagers to be paged when the event occurs. You can set each event type so that either, both, or neither of the pagers are paged for that event. The defaults are Y (ON) for the first pager, and N (OFF) for the second.
- The code to be displayed on the pagers. You can assign an event code from 0 to 15 to each event type.

For example, when an event occurs whose default is Y N 5, only the first pager receives a paging message, and that pager displays 5 after the Site ID when it receives the paging message.

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Events that initiate a paging message, continued

The following table describes each event and its default setting. The default code numbers vary by type of UPS.

No.	Setting	Description
12	UPS ON-BATTERY	The UPS is operating on battery power because of utility power problems, and the **Message Delay** setting has been exceeded. See **Message Delay on page 9**.
13	AC-FAIL/LOW BATTERY	Utility power failed, the UPS is operating on battery power, and the UPS battery is nearly exhausted.
14	UPS SHUT DOWN	The UPS was shut down by command or by a low-battery condition.
15	UPS ON-LINE	The UPS returned to on-line operation from an on-battery, low-battery, or shutdown condition.
16	REPLACE BATTERY	The UPS issued a Replace Battery alarm.
17	UPS FAULT	The UPS detected an internal fault.
18	LOST COM W/ UPS	Communication has been lost with the UPS.
19	BYPASS/ OVERLOAD	The UPS is in bypass or is overloaded.
20–23	ZONE *N*	For use with the Environmental Monitoring Card only. The zone monitor for zone *N* (1, 2, 3, or 4) detected a condition that is outside the limits configured for that zone monitor.
24	ZONES CLEAR	Conditions that initiated earlier zone alarms have been cleared.
25, 26	PROBE *N*	For use with the Environmental Monitoring Card only. The probe monitor for probe *N* (1 or 2) detected a temperature or humidity condition that is outside the limits configured for that probe.
27	PROBES CLEAR	Conditions that initiated earlier probe alarms have been cleared.

UPS Status Screen

How to display the screen

From the **Main Menu**, type 1 to display the **UPS Status** screen, which is similar to the following:

```
  IM Status: On & Ok                    Last Xfer: None
 RIM Status: On & Ok                 Last Self Test: None
-------------------------------- INPUT/OUTPUT --------------------------------
              Input: 209.6V          Output: 214.9V      Current: 16.3A
    Input Frequency: 60.00Hz                    Output Frequency: 60.00Hz
           Capacity: 08.0kVA         Load Assuming No Redundancy: 030%W 050%VA
      Alarm if Over: 05.0kVA         Allowing For n+2 Redundancy: 052%W 072%VA
-------------------------------- POWER MODULES -------------------------------
    Installed: 03                                 Fault Tolerance: n+2
          Bad: 00                                  Alarm if Under: n+2
---------------------------------- BATTERIES ---------------------------------
    Installed: 006           Voltage: 137.4 VDC           Runtime: 0616 min.
          Bad: 001          Capacity: 097.0 %      Alarm if Under: 030 min.

System Status: On-Line
               Replace Battery
               UPS Fault

       Faults: Bad Battery Module

1- Main Frame Information
2- External Battery Frame Information for frame(s): 1
<ENTER>=Refresh, <ESC>=Previous Menu, ?=Help
```

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Items in the screen

Item	Definition
IM Status	Reports whether the main Intelligence Module (IM) is installed and functioning properly.
RIM Status	Reports whether the Redundant Intelligence Module (RIM) is installed and functioning properly. If both the IM and the RIM are removed or fail, all communication with the UPS is lost.
Last Xfer	The cause of the most recent transfer of the UPS to battery operation: Test, Low Voltage, Hi Voltage, Rate of Change, Notch/ Spike, or None.
Last Self-Test	The result of the last self-test (Passed or Failed), or None if no self-test has been performed since installation.

Input/Output	
Item	**Definition**
Input	Line-to-line voltage of the utility line input in volts AC.
Output	Line-to-line voltage of the UPS output to the load in volts AC.
Current	The current in amps that the load is drawing from the UPS.
Input Frequency	The frequency to the UPS from its power source in Hertz.
Output Frequency	The frequency from the UPS to its supported equipment in Hertz.
Capacity	The maximum load, in thousands of volt-amps (kVA) that the UPS can support at its presently configured redundancy level.
Load Assuming No Redundancy	The percentage of full UPS capacity (the capacity of all functioning power modules) that the load is using, in watts and volt-amps. Any configured redundancy is not considered.
Alarm if Over	The load, in thousands of volt-amps (kVA) at or above which an alarm condition occurs.
Allowing for N+*number* Redundancy	The percentage of UPS capacity that the load is using, in watts and volt-amps, based on non-redundant power modules only. For example, if the configured redundancy is N+2 (two more power modules than are needed to support the load), and the UPS has four functioning power modules, this value is based on the capacity of the two non-redundant power modules only.

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Items in the screen, continued

Power Modules	
Item	**Definition**
Installed	The total number of installed power modules
Bad	The number of installed power modules that are faulty.
Fault Tolerance	The redundancy setting of the UPS, e.g. N+2 requires two more functioning power modules than are needed to support the load.
Alarm if Under	The redundancy level below which an alarm condition occurs.

Batteries	
Item	**Definition**
Installed	The total number of batteries connected to the UPS.
Bad	The number of faulty batteries connected to the UPS.
Voltage	Total voltage of the UPS batteries in volts DC
Capacity	The present capacity of the UPS batteries as a percentage of full capacity.
Runtime	The estimated total runtime of the UPS in minutes, based on the present load and the number and capacity of the batteries.
Alarm if Under	The number of minutes of runtime below which an alarm occurs.
System Status	On-Line if the UPS is providing utility power to the load; On-Battery if the UPS is running on battery power. This field also provides other status information such as whether a battery needs to be replaced and whether a UPS fault condition exists.

Note: Below the System Status field (the last field on the screen), a brief message appears if any UPS fault occurs.

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Obtaining detailed status

To obtain detailed status on the main Intelligence Module (IM), the Redundant Intelligence Module (RIM), the power modules and the batteries, choose from the following two menu options at the bottom of the Status screen.

No.	Menu Option	Description
1	Main Frame Information	View the operational status of the IM, RIM, power modules, and batteries in the main frame. The display shows the following: • Where each component is located within the main frame. • Whether each IM, RIM. or power module is present and operating properly. • Whether each battery is OK or Failed. To obtained detailed status about a power module, enter its location code (e.g. LI, L2, L3). The screen then displays the power module's firmware revision (F/W Rev), hardware revision (H/W Rev), date of manufacture (Manuf. Date), serial number (S/N), and information useful to Customer Support for troubleshooting (Raw Status).
2	External Battery Frame Information for frame(s)	Enter a battery frame number, when prompted, to determine where a failed battery is located and to obtain the following information: • Batteries possible: the maximum number of batteries you can install in the frame. • Batteries installed: the number of batteries installed in the frame. • Information, set at the factory, about the battery frame: firmware revision (F/W Rev), hardware revision (H/W Rev), date of manufacture (Manuf. Date), and serial number (S/N).

UPS Control Menu

How to display and use the menu

From the **Main Menu**, type 2 to display the **UPS Control** menu.

```
------------------------------ UPS CONTROL ----------------------------

      1- Turn UPS ON
      2- Turn UPS OFF
      3- UPS Self Test
      4- Simulate Power Failure
      5- Graceful Reboot
      6- Graceful Turnoff
      7- Start Runtime Cal
      8- Put UPS in Bypass
      ?- Help

<ENTER> Display Menu
  <ESC> Return to Previous Menu

NOTE: If AutoRestart is enabled, the UPS will restart when utility
      power is within range.
```

Items in the menu

No.	Item	Definition
1	Turn UPS On	Turns on power to the load.
2	Turn UPS Off	Turns off power to the load immediately, allowing no time for graceful shutdown of the operating system.
3	UPS Self Test	Immediately performs a complete UPS self-test and displays the results
4	Simulate Power Failure	Immediately tests the UPS's ability to transfer successful to battery operation, as it would in a power failure.
5	Graceful Reboot	Causes the same sequence of events as for Graceful Turnoff (item 6), except that the UPS turns on automatically when power is restored.
6	Graceful Turnoff	Causes the UPS to switch to battery operation. The Out-of-Band Management Card reports immediately that the UPS is on battery and that the battery is almost exhausted, gracefully shuts down the operating system, and turns itself off. Graceful Turnoff uses the value set for Low Battery Duration. See **Configurable items on page 19**.

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Items in the menu, continued

No.	Item	Definition
7	Start Runtime Cal	Initiates a runtime calibration, which recalculates available runtime in relation to the present load. Battery capacity must be at 100% to being a calibration, and a calibration temporarily causes a deep discharge of the battery. Perform runtime calibration when you have significantly changed the UPS load. Otherwise, perform a runtime calibration annually only.
8	Put UPS in Bypass	Puts the UPS into bypass mode for maintenance. In bypass mode, the UPS serves as a voltage conditioner and can protect its supported equipment form power surges and minor power disturbances, but not from other power problems When the UPS is already in bypass mode, selecting this menu option returns the UPS to on-line operation.

UPS Characteristics Menu

How to display and use the menu

From the **Main** menu, type 3 to display the **UPS Characteristics** menu.

Warning: New settings may conflict with the operation of UPS monitoring software. Check the requirements of your system and your monitoring software before you change UPS characteristics.

```
---------------------------- UPS CHARACTERISTICS -----------------------
      1- UPS ID: netcomp1
      2- Output: 240V
      3- Output Freq Range: AUTO
      4- Output Voltage Reporting base: Auto
      5- If UPS fails and freq or voltage is out of range: Go to Bypass
------------------------------------------------------------------------
      6- Low Battery Duration: 10 min.
      7- Shutdown Delay: 300 sec.
      8- Return Delay: 000 sec.
      9- Return Battery Capacity: 00 %
     10- Scheduled Self Test: every 14 Days
------------------------------------------------------------------------
     11- Alarm if runtime is less than: 000 min.
     12- Alarm if load is greater than: 05.0 kVA
     13- Alarm if redundancy is less than: n+2 (0=never)
------------------------------------------------------------------------
     14- Reset UPS to Default Settings
      ?- Help
 <ENTER> Display Menu
   <ESC> Return to Previous Menu
```

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Configurable items

To configure any of the numbered menu items in the **UPS Characteristics** menu, first type the number of the item and press ENTER, then do one of the following:

- For items with selectable values, press the Space Bar when prompted to cycle to the value you want, then press ENTER.
- For item 14, to reset all configurable UPS characteristics to their default settings, type YES (all uppercase), then press ENTER.

Warning: New settings may conflict with the operation of UPS monitoring software. Check the requirements of your system and your monitoring software before you change UPS characteristics.

No.	Item	Definition
1	UPS ID	A name to identify the UPS. *Maximum:* 8 characters
2	Output	Output voltage of the UPS.
3	Output Freq Range	The frequency range within which the output frequency will phase-lock to the input frequency.
4	Output Voltage Reporting base	A value that ensures that output voltage reporting is based on the output wiring configuration used when the UPS was installed. (Symmetra models can be wired differently to produce different output voltages.) Always select Auto unless you are using the UPS to convert voltage levels.
5	If UPS fails and freq or voltage is out of range	The action the UPS will take if a UPS failure occurs or if either input frequency or input voltage is out of range. This field sets the UPS to go into bypass mode or to stop providing power to the load (“drop the load”).
6	Low Battery Duration	The time in minutes that the UPS waits after a low-battery warning before beginning a graceful shutdown and turn-off. To configure graceful shutdown and turnoff, see **Graceful Turnoff on page 16**. *Minimum:* 2 minutes *Maximum*: 10 minutes.

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Configurable items, continued

No.	Item	Definition
7	Shutdown Delay	The time in seconds that the UPS waits after receiving a UPS Turn Off command before turning off its outlets. This interval provides time for graceful shutdown of a computer attached to the UPS.
8	Return Delay	The number of seconds that the UPS waits before it turns on its output power after input power returns. You can use this delay to allow other equipment to start before the UPS turns on.
9	Return Battery Capacity	After a power failure, the UPS recharges to this percentage of full battery capacity before it turns on. You can use this delay to make sure the UPS has enough capacity to provide output power if another power failure occurs.
10	Scheduled Self Test	Sets the schedule for UPS self-tests. Allowed values are At Power On, Every 14 days, Every 7 days, or Disabled (i.e., Never perform a self-test).
11	Alarm if runtime is less than	The number of minutes of runtime below which an audible alarm sounds.
12	Alarm if load is greater than	The maximum load, in kVA, above which the UPS will sound an alarm because of overload.
13	Alarm if redundancy is less than	The redundancy level below which the UPS sounds an alarm. For example, n+2 causes the UPS to sound an alarm if there are fewer than 2 power modules more than are needed to support the load. Set this value to zero to disable the alarm for redundancy.
14	Reset UPS to Default Settings	Returns all configurable UPS Characteristics to their default values.

Note: Default and optional values for these settings vary by UPS model.

Data/Event Logging

How to display and use the Logging menu

From the **Main Menu**, type 4 to display the **Logging Menu**. Use this menu to enable logging and to specify which data and events to include in the log. For the types of events that can be logged, see **Items in the Logging menu on page 23**. For a sample log, see **Sample log on page 22**.

```
------------------------ LOGGING MENU ------------------------
      1- Power Events: ON             3-    UPS Faults: ON
      2-  UPS Control: ON             4- User Activity: ON
                                      5-   Measure-UPS: ON
     Date: Jun-15 '01                      Time: 11:27:00
 ------------------------------------------------------------
   Jun-15 11:17:48 Redundancy is below alarm threshold
   Jun-15 11:37:52 Redundancy Restored
   Jun-15 11:48:56 UPS Failed Self Test
 ------------------------------------------------------------
      6- List Event Groups
      7- View Event Log
      8- Reset Event Log
      9- Log UPS Data to Screen
     10- Log Interval: 10 min
     11- Data Format : Text
      ?- Help
<ENTER> Display Menu
  <ESC> Return to Previous Menu
```

Sample log

The following is a sample log with **Data Format** set to Text:

```
Mar-22 17:12:16 Accessory Powered ON
Mar-22 17:12:16 Port Switched to Advanced Mode
Mar-22 17:12:16 UPS Communication Established
Mar-22 17:12:44 User Logged In
Mar-22 17:13:12 User Logged Out
Mar-22 19:35:48 Accessory Powered ON
Mar-22 19:35:52 No Communication With UPS
Mar-22 19:35:52 Zone 2 Alarm
Mar-22 19:35:52 Port Switched to Advanced Mode
Mar-23 16:32:52 UPS Communication Established
Mar-23 16:33:16 UPS Self Test Passed
```

Continued on next page

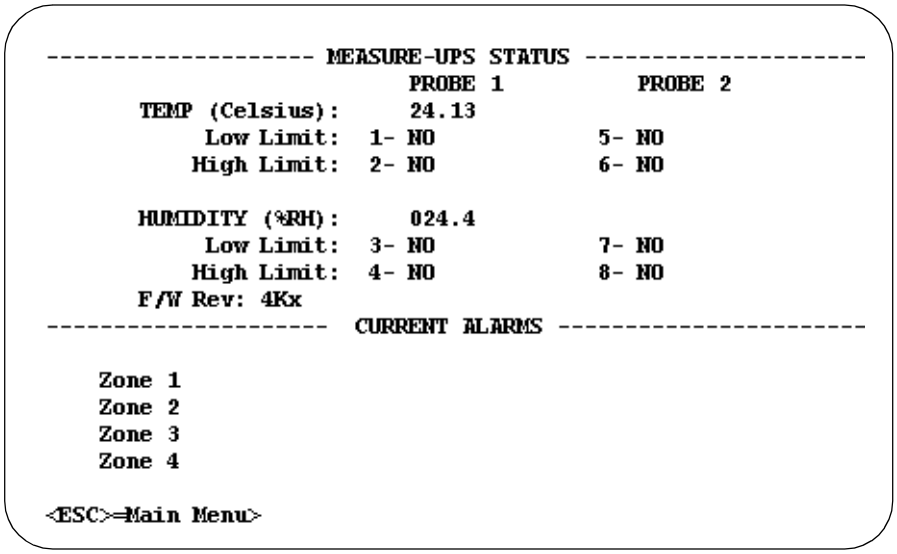
Items in the Logging menu

No.	Item	Definition
1	Power Events	Lets you enable or disable logging of power events such as “Utility Line Failure” and “Battery Exhausted.”
2	UPS Control	Lets you enable or disable logging of control events such as “UPS Turned On” and “UPS In Bypass.”
3	UPS Faults	Lets you enable or disable logging of UPS faults such as “UPS Is Overloaded” and “Internal Temperature Too High.”
4	User Activity	Lets you enable or disable logging of the events “User Logged In” and “User Logged Out.”
5	Measure-UPS	This field is displayed only if an Environmental Monitoring Card is attached to the UPS. Lets you enable or disable logging alarms from the card, e.g. high temperature, low temperature, and contact closure events.
6	List Event Groups	Displays a list of all reportable events sorted into groups.
7	View Event Log	Displays the event log, pausing after each page of log information.
8	Reset Event Log	Clears the event log. (Turning off the Out-of-Band Management Card does not clear the log.)
9	Log UPS Data to Screen	Queries the UPS for operating data at the rate specified as **Log Interval** (menu item 10) and displays the data on the screen: date, time, current, line voltage, minimum line voltage, maximum line voltage, battery voltage, line frequency, internal UPS temperature, and UPS load.
10	Log Interval	The time interval in minutes at which the Out-of-Band Management Card queries the UPS for log data. *Default and minimum:* 1 min *Maximum:* 99 min
11	Data Format	Choose one of the following data output formats: • Text, if the data will be used in word processing programs • Comma-delimited for importing the data into spreadsheets or databases. *Default:* text

Environmental Monitoring

Environmental Monitoring Card

When you are using an Environmental Monitoring Card with the Out-of-Band Management Card, type 7 and press ENTER at the Main menu to display the following **Status** screen for the Environmental Monitoring Card.



Settings and alarms

For information on the settings and alarms displayed on the **Status** screen for the Environmental Monitoring Card, see the table on the following page, **page 25**.

To change the alarm limits for either or both probes:

1. Type the number (1 through 8) of the setting that you want to change, and press ENTER.
2. Use the space bar to scroll to a the new value, and press ENTER to select that value.
3. Repeat steps 1 and 2 for each setting you want to change.
4. Press ENTER at the > prompt to refresh the screen to view your changes.
5. Press ESC to return to the Main menu.

Continued on next page

Settings and alarms, continued

Item	Description
Temp (Celsius)	The current ambient temperature of each attached probe in degrees Celsius.
Low Limit	The temperature threshold for the low-temperature alarm in degrees Celsius. *Minimum:* 0 *Maximum:* 55
High Limit	The temperature threshold for the high-temperature alarm in degrees Celsius. *Minimum:* 0 *Maximum:* 55
Humidity(%RH)	Current percentage of relative humidity for each probe.
Low Limit	The relative humidity threshold for the low humidity alarm, as a percentage. *Minimum:* 0 (None) *Maximum:* 90
High Limit	The relative humidity threshold for the high humidity alarm, as a percentage. *Minimum:* 0 (None) *Maximum:* 90
F/W Rev	Revision code of the firmware in the Environmental Monitoring Card.
CURRENT ALARMS	Any current alarm conditions, which can include the High Limit for temperature or humidity, the Low Limit for temperature or humidity, and the four contact closures (zones).

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APC Worldwide Customer Support

Customer support for this or any other APC product is available at no charge. You can contact APC Customer Support in any of the following ways:

- Use an APC web page to find answers to frequently asked questions (FAQs), to access documents in the APC Knowledge Base, and to submit customer support requests.
  - http://www.apc.com (Corporate Headquarters)
    Connect by links to APC web pages for specific countries and regions, each of which provides customer support information.
  - http://www.apc.com/support/
    Submit customer support requests.
- Contact local or regional APC Customer Support by telephone or e-mail.
  - For e-mail addresses and local, country-specific, customer support telephone numbers worldwide, go to http://www.apc.com/support/contact.
  - For e-mail addresses and technical support telephone numbers of major APC regional customer support centers, use the following list:

APC Headquarters (U.S. and Canada)	(1) (800) 800-4272 (toll free)
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Europe, Middle East, Africa	(353) (91) 702020 (Ireland) apceurtech@apcc.com
Japan	(03) 5434-2021 jsupport@apcc.com

- Contact the APC representative or other distributor from whom you purchased your APC hardware device or APC software application for information on how to obtain local customer support.

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