

# EATON

# Powerware

## Powerware Environmental Rack Monitor

Product Focus

A full-featured yet cost-effective solution for remotely monitoring environmental conditions in your data centre



### Features

- Monitors temperature and humidity at two locations plus the status of up to four additional input contact sensor devices
- Helps to protect critical assets from heat, humidity, smoke, water leaks or intrusion
- Displays real-time status to a PC, internet-ready wireless device or Network Management System (NMS) software
- Automatically notifies designated recipients of out-of-range conditions
- Simplifies operations with an intuitive, web browser interface, rich graphing of data, auto-discovery and auto-aggregation utilities, and more

### Product Snapshot

**Measures** ambient temperature and humidity at the rack level.

**Monitors** the status of up to four additional contact devices/sensors.

**Displays** real-time and historical status of all sensors via the intranet or Internet.

**Stay informed** of alarms via email and PDA's.

**Act** before problems affect sensitive equipment.

**Aggregates real-time information** from up to 100 Environmental Rack Monitors via a single Web page.

Yesterday's racks of equipment typically consumed less than 5 kW of power, but new blade servers can push that requirement four times higher in a single rack — now up to 20 kW per rack. The heat generated by these highintensity servers is expected to double in the next 10 years. Even as IT environments are getting hotter, racks and equipment rooms are more tightly packed than ever, leaving less open space for air circulation.

The result is unbalanced airflow and undesirable hot spots in and around sensitive equipment, which can be disastrous from a server's point of view. It has been found that heat-related issues are to blame for 60 percent of data centre hardware downtime.

Other environmental threats, such as humidity, water leaks, smoke and cabinet intrusion can be equally harmful to the mission critical data centre environment. If the rack environment isn't supervised at the equipment level, 24/7, how would you know?

# Introducing the Powerware Environmental Rack Monitor

## Around-the-Clock Monitoring of Environmental Conditions at the Rack Level

The Powerware Environmental Rack Monitor (ERM) continuously monitors environmental conditions at the rack level, providing an extra level of security for critical assets. The primary application is for high-density data centres, but this compact, full-featured rack can observe conditions in laboratories, hospitals, warehouses, libraries, museums and any other indoor location where favourable environmental conditions must be maintained all time.

In the typical rack application, the 1U-size rack monitor base unit can be placed horizontally or vertically in any unused space within the rack. This base unit supports up to two combination temperature and humidity sensor units (known as TH-Modules) that can be placed anywhere in the enclosure. Each hot-swappable TH-Module can support up to two additional input contact sensor devices, for a total of eight sensors per rack monitor. The standard package comes with one TH-Module. Additional TH-Modules and sensors can be purchased separately. The ERM also supports third party contact sensors.

### View real-time environmental conditions.

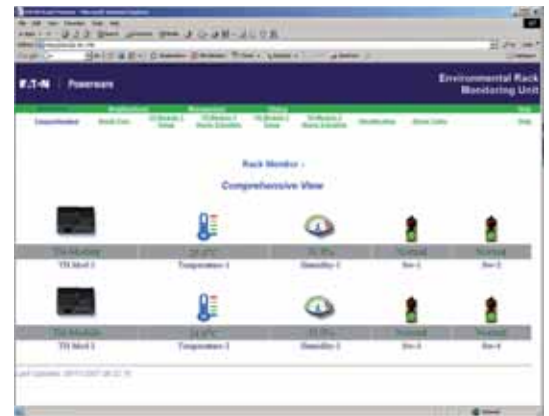
Simply point your Web browser to the IP address of the unit to display the current status of the temperature, humidity and the status of the contact sensors. You can access this password-protected information from a PC or workstation, Internet-ready wireless device or SNMP management software.

### Use an intuitive, visual interface.

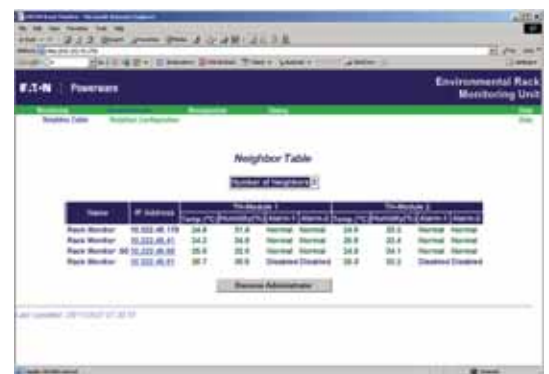
The monitor has a built-in web server. No external software is required except a standard web browser. A clean, user-friendly interface, coupled with content sensitive online help, makes it easy to navigate and use system features.

### View the status of up to 100 racks on one screen – an Eaton exclusive.

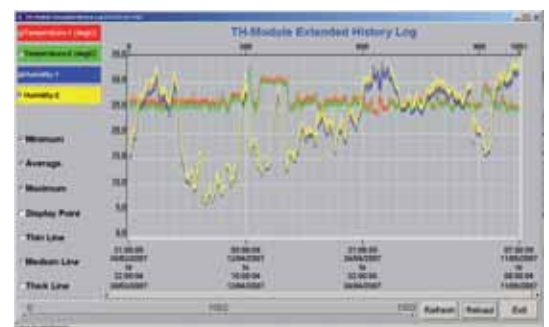
The Environmental Rack Monitor can automatically aggregate information from up to 100 monitors on a single web page. A built-in, auto-discovery feature scans the network (or a range of IP addresses you specify), automatically finds other rack monitors in that domain and displays their status in one table. This feature is not available on competitors' monitors.



Displays real-time status to a PC, Internet-ready wireless device or Network Management System (NMS) software using SNMP protocol. A MIB is provided.



Aggregates realtime information from up to 100 Environmental Rack Monitors in a single Web page



Simplifies operations with an intuitive, web browser interface, rich graphing of data, auto discovery and auto aggregation utilities, and more

**Automatically display the status of up to 100 Rack Monitors in a single Web page.**



Onboard flash memory to store historical data and event logs



OU device with its own web server



TH-module

### Get automated notification of out-of-range conditions.

When acceptable temperature or humidity limits are exceeded, or contact status changes, the monitor automatically logs the event. It notifies key personnel by email, which can also be routed to a mobile device or can send an SNMP trap to a Network Management System, such as HP OpenView or IBM Tivoli. A full MIB (Management Information Base) is also provided.

### Assess trends over time.

Internal flash memory retains historical environmental data even when the unit is powered off. A rich graphic interface displays historical trends and helps in troubleshooting. This data can be easily downloaded from the device for archiving and further analysis.

### Install and activate quickly.

The Environmental Rack Monitor and TH-Modules are mounted in unused side or rear channels within rack enclosures ensuring that they don't occupy any additional space needed for IT equipment. The unit has screw holes for wall-mounting and rubber feet for placement on any flat surface. The TH-Module also comes with a screw hole and matching screws. Device activation is simple and can be done remotely over the network or locally using the serial port.

### Streamline administration with user-friendly utilities.

The unit comes with utilities to enable a remote upgrade of firmware in multiple rack monitors in a single broadcast session plus discovery tools to search other rack monitors on the network. The unit can also be rebooted remotely.

### Count on reliable performance.

Powerware data centre solutions, including the Environmental Rack Monitor, have been designed for the rigours of high-density computing environments. For instance, our TH-Module sensors are housed in a rugged protective casing and can be firmly affixed to a rack using its screw-mount hole. Competitors' offerings have flimsy, exposed sensors that hang loose and break easily. To find out more about this product or other elements of Eaton's data centre solutions— such as enclosures, power quality and backup power systems, and power distribution systems—visit our Web site at [www.powerware.com](http://www.powerware.com).

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**Connect up to two humidity, two temperature and four input contact sensors per monitor for a very cost-effective rack solution. Display colour graphs of heat/humidity trends, to identify areas for proactive action.**

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## Technical Specifications

ERM	
CPU	16-bit micro control
Memory	2 Mb Static RAM 2 Mb Flash ROM
Serial Communication	Two asynchronous serial ports
LAN Chip	Auto-Sense 10/100 Mbps Fast Ethernet controller
Network Connection	10/100 TX RJ-45 jack connector
Network Protocol	SNMP over UDP/IPHTTP over TCP/IPARP, TFTP, and ICMP
Supported MIB	Environmental Rack Monitor (ERM) MIB
Operating Temperature	0–40°C
Operating Humidity	10–80%, noncondensing
Power Input	12 Vdc unregulated
Power Consumption	3.0 Watts Maximum
Size (W x H x D)	134 mm x 27 mm x 86 mm
Weight	170 g
EMC Statements	Class B: FCC Part 15, ICES-003, CE

TH-Module	
Sensor	Humidity & Temperature sensors Measures temperatures between 0°C and 80°C with an accuracy of $\pm 1^\circ\text{C}$ Measures relative humidity between 10% and 90% RH with accuracy of $\pm 3\%$
Digital input	Two inputs (normally-open or close)
LED	Power / Status
Power Input	No need for external Power supply
Connector	2 asynchronous RJ45 connectors for TH-Module communication
Cable	Twisted pair, RJ-45, max.dist. 20 m

In the interests of continual product improvement all specifications are subject to change without notice.

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