

Powerware® Environmental Rack Monitor User's Guide

Class B EMC Statements

FCC Part 15

NOTE This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

ICES-003

This Class B Interference Causing Equipment meets all requirements of the Canadian Interference Causing Equipment Regulations ICES-003.

Cet appareil numérique de la classe B respecte toutes les exigences du Reglement sur le matériel brouilleur du Canada.

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Requesting a Declaration of Conformity

Units that are labeled with a CE mark comply with the following harmonized standards and EU directives:

- Harmonized Standards: EN 50091-1-1 and EN 50091-2; IEC 60950 Third Edition
- EU Directives: 73/23/EEC, Council Directive on equipment designed for use within certain voltage limits 93/68/EEC, Amending Directive 73/23/EEC 89/336/EEC, Council Directive relating to electromagnetic compatibility 92/31/EEC, Amending Directive 89/336/EEC relating to EMC

The EC Declaration of Conformity is available upon request for products with a CE mark. For copies of the EC Declaration of Conformity, contact:

Eaton Power Quality Oy Koskelontie 13 FIN-02920 Espoo Finland Phone: +358-9-452 661 Fax: +358-9-452 665 68

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Chapter 1 Introduction

The Powerware® Environmental Rack Monitor (ERM) is designed to remotely monitor the temperature, humidity, and status of two contact devices via a standard Web browser, providing greater management control and flexible monitoring.

To install the ERM on a network and change its default configuration, you need a workstation running Microsoft® Windows® (9x, Me, NT4.0, 2000, XP or later). If your network dynamically configures IP address, all you need is a workstation with a Web browser.

The ERM's unique benefits include the following:

- Hot-swappable TH-Module, simplifying installation by allowing you to install the TH-Module safely without powering down the ERM.
- Monitoring of temperature and humidity information for any desired environment to protect your critical equipment.
- Monitoring the status of two user-provided contact devices to protect your critical equipment.
- Configuration from HTTP Web browser or SNMP management software.
- E-mail notification through SMTP (simple mail transport protocol) via e-mail client software, a PCS (personal communication services) phone, or alphanumeric pager when acceptable alarm limits are exceeded or contact status changes.
- History log files (data and events) for recording temperature and humidity problems. Changes in contact closure status are logged in the ERM's Event History Log.

For more detailed information that is not included in this manual, first register your product at warranty.powerware.com, then visit our Web site: www.powerware.com/rackmonitor. You can also download firmware upgrades, the latest manuals, and other documentation.

1

Safety Warnings

IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

This manual contains important instructions that you should follow during installation and maintenance of the Environmental Rack Monitor. Please read all instructions before operating the equipment and save this manual for future reference.



DANGER

All repairs and service should be performed by **AUTHORIZED SERVICE PERSONNEL ONLY**. There are **NO USER SERVICEABLE PARTS** inside the ERM.



2

WARNING

- To reduce the risk of fire or electric shock, install the Environmental Rack Monitor in a temperature and humidity controlled, indoor environment, free of conductive contaminants. Ambient temperature must not exceed 40°C (104°F). Do not operate near water or excessive humidity (95% maximum).
- Remove watches, rings, or other metal objects before installation or maintenance of the Environmental Rack Monitor.
- Before plugging the Environmental Rack Monitor power adapter in, verify that the rating
 of the power source is matched with the rating of the power adapter.

Chapter 2 Installation

ERM Installation

To install the Environmental Rack Monitor (ERM):

 Connect the supplied straight-through CAT 5 network cable from the ERM's RJ-45 connector (labeled "TH-Module-1") to the TH-Module's RJ-45 connector (labeled "010101"). See Figure 3 on page 6.



NOTE If the supplied straight-through CAT5 network cable is not long enough for your application, you may substitute a longer cable (not to exceed 20m/65.6 ft).

2. If applicable, connect external contact closure inputs to the screw terminals on the TH-Module (see Figure 1 and Table 1).



NOTE Contact closure device 1 is connected between Pins 1 and 2. Device 2 is connected between Pins 3 and 4 (as labeled to show device 1 and 2). Contact closure devices may be normally open or normally closed.



Figure 1. TH-Module Screw Terminal

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Pin Number	Description	Normally Open/ Normally Closed
1	Contact 1 Return	NC
2	Contact 1 Signal Input	NO
3	Contact 2 Return	NC
4	Contact 2 Signal Input	NO

Table 1. TH-Module Screw Terminal Pin Assignment

- **3.** Insert the detachable power cord into the ERM power inlet (labeled "12 VDC").
- 4. Attach the cable clamp to the ERM as shown in Figure 2.



Figure 2. Cable Clamp

- 5. Plug the other end of the power cord into a power outlet.
- 6. Continue to "Configuration" on page 5 to configure the ERM.

Chapter 3 Configuration

Use the following procedures to access the Environmental Rack Monitor's (ERM's) configuration menus through a serial port, Web browser, or Telnet utility.

Configuration Through a Serial Port

Connect the ERM

To connect the ERM through a serial port:

- 1. Verify that both DIP switches on the ERM are set to the **0** (off) position (see Figure 3).
- **2.** Connect the supplied serial cable to the RJ-45 connector (labeled "TH-Module-2") on the ERM.
- **3.** Connect the other end of the serial cable to the COM port on the PC.
- **4.** Connect an active Ethernet cable (supplied) to the network connector on the ERM.

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Figure 3. Typical ERM Installation

Configure the ERM

To configure the ERM:

1. Open your terminal emulation program (such as HyperTerminal). See Figure 4.

My Computer My Briefcase						
Network Neighborhood						
Inbox DOS		G AT&T Mail M CompuServe HyperTerminal	6	Hyperterminal Multimedia Calculator	•	
Contractions Contractions Contractions	Accessories Startup Command Prompt Windows NT Expl	HyperTerminal BBS MCI Mail Microsoft BBS USHA	4 8 11 12): Character Map): Chat]: Clipboard Viewer]: Clock		
	 Administrative Too Adobe Acrobat Microsoft Visual J- Netscape Communication 	Is (Common) ++ 1.0 nicator Professional Edition		Dial-Up Networking Imaging Notepad Object Packager Paiet		
Shut Down	jej Startup		• &	pr Faint Phone Dialer ITelnet IVordPad		10:26 AM

Figure 4. Accessing HyperTerminal

2. Enter a name and choose an icon for the connection (see Figure 5).

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Connection Description		<u>?</u> ×
New Connection		
Enter a name and choose an i	icon for the connection:	
<u>N</u> ame:		
RackMonitor		
<u>l</u> con:		
🌯 🍣 🧆	MS 🛞 🐻 .	8
	OK Cance	el

Figure 5. New Connection Screen

3. Select direct COM port connection (see Figure 6).

Connect To		<u>?</u> ×			
RackMonitor					
Enter details for t	he phone number that you want to	dial:			
<u>C</u> ountry/region:	United States of America (1)	7			
Ar <u>e</u> a code:	1				
Phone number:					
Connect using:	СОМ1	•			
	OK Canc	el			

Figure 6. Select Direct to COM Port Connection

4. Set the serial line to 9600 baud, 8 data bits, No parity, 1 stop bit, and no flow control (see Figure 7).

COM	1 Properties	<u>?</u> ×
Po	rt Settings	
		_ [
	Bits per second: 9600	
	Data bits: 8	
	Parity: None	
	Stop bits: 1	
	Elow control: None	
	<u>R</u> estore Defaults	
	OK Cancel App	dy

Figure 7. COM1 Properties Screen

5. After a few seconds, the Password prompt appears (see Figure 8).

If the Password prompt does not appear, check the following conditions:

- Verify that the serial cable is connected to the RJ-45 connector labeled "TH-Module-2" on the ERM.
- Verify the serial line is set to 9600 baud, No parity, 8 data bits, 1 stop bit, and no flow control.
- If the serial line settings are correct, check the cabling to verify all connections are secure.
- Verify that your terminal program is on the correct communication port for the serial connection.
- Verify that the ERM has power (one or more LEDs on the ERM are illuminated). The ERM should be turned on.

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6. Type your *password* (the default is *admin*) and press Enter. The Main Menu screen appears (see Figure 8).

```
[ Rack Monitor Configuration Utility Main Menu ]
Т
                                        T
Enter Password: *****
L
       [ Rack Monitor Configuration Utility Main Menu ]
                                        +-----+
 1. Rack Monitor Configuration
 2. TH-Module Configuration
 3. Access Control Table
 4. Trap Receiver Table
 5. Reset Configuration To Default
 6. Restart Rack Monitor
 0. Exit
Please Enter Your Choice => _
```

Figure 8. ERM Configuration Menu

7. Type 1 on the Main Menu to display the Rack Monitor Configuration Menu screen (see Figure 9).

```
[ Rack Monitor Configuration Utility Main Menu ]
                                           1
1. Rack Monitor Configuration
 2. TH-Module Configuration
 3. Access Control Table
 4. Trap Receiver Table
 5. Reset Configuration To Default
 6. Restart Rack Monitor
 0. Exit
Please Enter Your Choice => 1
[ Rack Monitor Configuration Menu ]
1. System Group
 2. Control Group
 3. Parameter Group
 4. Email Group
 0. Return to previous menu
Please Enter Your Choice =>
```

Figure 9. ERM Configuration Menu

Configure the System Group Parameters

To configure the IP address, Gateway address, and Network Mask parameters:

- Type 1 on the Rack Monitor Configuration Menu screen to display the System Group Configuration Menu screen (see Figure 10 and Table 2).
- 2. Type **0** to return to the Rack Monitor Configuration Menu screen.



NOTE To complete the ERM configuration, continue to the following section, "Modify the Control Group Parameters" on page 13 or connect the ERM through a Web browser (see page 22).

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```
1
        [ Rack Monitor Configuration Menu ]
                                                             1. System Group
  2. Control Group
  3. Parameter Group
  4. Email Group
  0. Return to previous menu
Please Enter Your Choice => 1
[ System Group Configuration Menu ]

      Rack Monitor Version
      : Rack Monitor v1.00.b4 (SN

      Ethernet address
      : 00 E0 D8 09 10 6D

      1. Ip Address
      : 203.67.163.40

      2. Gateway Address
      : 203.67.163.254

      3. Network Mask
      : 255.255.255.0

                                                        )
  0. Return to previous menu
Please Enter Your Choice => 0
```

Figure 10. System Group Configuration Menu

Table 2. System Group Parameters

Number	Function	Description	Example/Remark
1	IP Address	The ERM IP address.	192.168.1.100
2	Gateway Address	The network default gateway.	192.168.1.254
3	Network Mask	The sub-net mask setting.	255.255.255.0

Modify the Control Group Parameters

To modify the access password and enabled/disabled status of the available network protocols:

- Type 2 on the Rack Monitor Configuration Menu screen to display the Control Group Configuration Menu screen (see Figure 11 and Table 3).
- 2. Type 0 to return to the Rack Monitor Configuration Menu screen.

+=====	[Rack Monitor Configuration Menu]
+===== 1. 2. 3. 4. 0.	System Group Control Group Parameter Group Email Group Return to previous menu
Please	e Enter Your Choice => 2
+=====	[Control Group Configuration Menu]
1. 2. 3. 4. 5. 6. 7. 8. 9. 0.	HTTP Login Username : EATON Community Read-Only : public Community Read/Write : * BOOTP/DHCP Control : Enable TFTP Upgrade Control : Enable PING Echo Control : Enable Telnet Control HTTP Control SNMP Control Return to previous menu

Figure 11. Control Group Configuration Menu

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Table 3. Control Group Parameters

Number	Function	Description	Example/Remark
1	HTTP Login Username	HTTP access login string.	"EATON"
2	Community Read-Only	General password for read-only access.	"public"
3	Community Read/Write	Administrator password for read and write access.	"admin"
4	BOOTP/DHCP Control	Enable/disable the BOOTP/DHCP protocols.	Enable
5	TFTP Upgrade Control	Enable/disable the TFTP protocol for firmware upgrades through the local network.	Enable
6	PING Echo Control	Enable/Disable the ERM to respond to Ping request.	Enable
7	Telnet Control	Enable/disable the TELNET protocol.	Enable
8	HTTP Control	Enable login and password request for HTTP access.	Enable
9	SNMP Control	Enable login and password request for SNMP access.	Enable

Modify the Parameter Group Parameters

To modify the SNMP identification information and the speed of reading data from the ERM:

- **1.** Type **3** on the Rack Monitor Configuration Menu screen to display the Parameter Group Configuration Menu screen (see Figure 12 and Table 4).
- 2. Type 0 to return to the Rack Monitor Configuration Menu screen.

++
[Rack Monitor Configuration Menu]
++
1. System Group
2. Control Group
3. Parameter Group
4. Email Group
0. Return to previous menu
Plaza Enter Your Chaiga -> 3
riedse Enter four Choice -/ 5
+======================================
[Parameter Group Configuration Menu]
+======================================
1. sysContact : Technical Support
2. sysName : Rack Monitor
3. System Location :
4. Poll Rate : 5
0. Return to previous menu

Figure 12. Parameter Group Configuration Menu

Tabla A	Devementer	C	Devemeters
rabie 4.	Parameter	Group	Parameters

Number	Function	Description	Example/Remark
1	sysContact	Alphanumeric string	Technical Support Team
2	sysName	Alphanumeric string	Rack Monitor
3	System Location	Alphanumeric string	Technical Support Lab
4	Poll Rate	The time interval in seconds the ERM update measurement (Temperatures and Humidity) from sensor, valid value is between 3 to 60.	

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Configure the Email Group Parameters

To configure the Email Group parameters:

- Type 4 on the Rack Monitor Configuration Menu screen to display the Email Group Configuration Menu screen (see Figure 13 and Table 5).
- 2. Type **0** to return to the Rack Monitor Configuration Menu screen.
- **3.** Type **0** again to return to the Main Menu.

+======================================
[Rack Monitor Configuration Menu]
+======================================
1. System Group
2. Control Group
3. Parameter Group
4. Email Group
0. Return to previous menu
Please Enter Your Choice => 4
+======================================
[Email Group Configuration Menu]
+======================================
1. Mail Server :
2. User Account :
2. User Account : 3. User Password :
 User Account : User Password : DNS IP Address : 0.0.0.0
 User Account : User Password : DNS IP Address : 0.0.0.0 Mail Receivers
 User Account : User Password : DNS IP Address : 0.0.0.0 Mail Receivers Test Email Configuration
 User Account : User Password : DNS IP Address : 0.0.0.0 Mail Receivers Test Email Configuration Return to previous menu
<pre>2. User Account : 3. User Password : 4. DNS IP Address : 0.0.0.0 5. Mail Receivers 6. Test Email Configuration 0. Return to previous menu Please Enter Your Choice => 0</pre>

Number	Function	Description	Example/Remark
1	Mail Server	As Administrator, you may enter the IP Address or Hostname of a SMTP mail server that will be used to send email messages from the ERM.	
2	User Account	As Administrator, you may enter the User Account of the mail server that will be used by the ERM to login mail server to forward mails.	
3	User Password	As Administrator, you may enter the User Password of User Account.	
4	DNS IP Address	As Administrator, you are required to enter the IP address of your network DNS server if you entered a Hostname for the Mail Server. Otherwise, this field will contain 0.0.0.0.	

Table 5. Email Group Parameters

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Set the TH-Module Configuration

To change the status and name of the TH-Module-1 and TH-Module-2:

 Type 2 on the Main Menu to display the TH-Module Configuration Menu screen (see Figure 14).

```
+_____
Т
         [ Rack Monitor Configuration Utility Main Menu ]
                                                    1
1. Rack Monitor Configuration
  2. TH-Module Configuration
  3. Access Control Table
  4. Trap Receiver Table
  5. Reset Configuration To Default
  6. Restart Rack Monitor
  0. Exit
Please Enter Your Choice => 2
[ TH-Module Configuration Menu ]
                                                    1
1. TH-Module-1 Setup
  2. TH-Module-2 Setup
 0. Return to previous menu
Please Enter Your Choice =>
               Figure 14. TH-Module Configuration Menu
            2. Type 1 or 2 on the TH-Module Configuration Menu screen to select
              the TH-Module-1 or TH-Module-2 Setup screens, respectively. See
              Figure 15 and Figure 16.
```

0. Return to previous menu

Please Enter Your Choice => _

Figure 15. TH-Module-1 Setup Screen

18

```
+-----+

| [ TH-Module-2 Setup ] |

+-----+

1. TH-Module-2 Status : Auto

2. TH-Module-2 Name : Desktop Sensor

0. Return to previous menu
```

Please Enter Your Choice =>

Figure 16. TH-Module-2 Setup Screen

- 3. Type 0 to return to the TH-Module Configuration Menu screen.
- 4. Type 0 again to return to the Main Menu.

Configure the Access Control Table

If you wish to use a workstation with SNMP Manager installed, or if you wish to set more restrictive ERM access, use the access table to add the IP address of the PCs on which you wish to modify the access permissions.

- 1. Type **3** on the Main Menu to display the Access Control Table screen (see Figure 17).
- **2.** Type **1** on the Access Control Table screen to modify an entry in the Access Control Table.
- **3.** Type **2** on the Access Control Table screen to reset an entry to the default setting.
- 4. Type 0 to return to the Main Menu.



NOTE The configuration of Access Control Table is configured for SNMP and HTTP Network Management. Access through Telnet or RS-232 is permitted only when using the "Community Read/Write" password in the Control Group.

NOTE The community strings entered in the Community String fields are visible only in the RS-232 connection. The TELNET connection does not display the string. An asterisk "*" will be shown in the field.

NOTE If a "NotAccess" access right is associated with an IP address, the associate workstation will not be able to display any information regarding the ERM, even if the Community Read-Only string is entered.

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+===			+
1	IP Address	Community String	Access
+===			+
[1]	0.0.0.0	*	NotAccess
[2]	0.0.0.0	*	NotAccess
[3]	0.0.0.0	*	NotAccess
[4]	0.0.0.0	*	NotAccess
[5]	0.0.0.0	*	NotAccess
[6]	0.0.0.0	*	NotAccess
[7]	0.0.0.0	*	NotAccess
[8]	0.0.0.0	*	NotAccess
(COMMANDS -		
	1. Modify - Modify	an entry of table	
:	2. Reset - Reset ar	n entry to default from tabl	e
	0. Return to previo	ous menu	

Please Enter Your Choice => _

Figure 17. Access Control Table

Set Trap Receivers

If you want to use a PC and perform the SNMP manager 'trap' function in order to manage the TH-Module through the ERM, the IP address of the PC must be added to the ERM list.

- 1. Type 4 on the Main Menu to display the Trap Receiver Table screen (see Figure 17).
- **2.** Type **1** on the Trap Receiver Table screen to modify an entry in the Access Control Table.
- **3.** Type **2** on the Trap Receiver Table screen to reset an entry to the default setting.
- 4. Type 0 to return to the Main Menu.



NOTE The Set Trap Receivers configuration is used only for SNMP Network Manager.

+===				+
I	IP Address	Community String	Severity	Description
+===				=================+
[1]	192.168.65.235	*	Informational	
[2]	192.168.61.168	*	Informational	
[3]	0.0.0.0	*	Informational	
[4]	0.0.0.0	*	Informational	
[5]	0.0.0.0	*	Informational	
[6]	0.0.0.0	*	Informational	
[7]	0.0.0.0	*	Informational	
[8]	0.0.0.0	*	Informational	
-	1. Modify - Modif 2. Reset - Reset	y an entry of table an entry to default	from table	
(). Return to prev	ious menu		
Plea	ase Enter Your Ch	pice => _		

Figure 18. Trap Receiver Table

Complete ERM Configuration

After configuration is complete, press "0" to exit the console connection. It is not necessary to reboot the ERM.

If you wish to reboot the ERM, type **6** to exit the console connection and restart the ERM.



NOTE If you want the ERM to load the factory configuration default, type **5** to Reset Configuration To Default. After completing all the settings, type **0** to terminate the connection without starting the ERM again or type **6** to terminate the connection forcing the ERM internal program to start again. At this point, the initial ERM configuration is complete.

NOTE If you want to restore the default ERM configuration data set in the factory, type **5**.

Configuration Through a Telnet Connection

To configure the ERM parameters through a Telnet connection:

- 1. Verify that a TCP/IP network is already installed.
- 2. Run a command shell (i.e., Windows MS-DOS prompt).
- **3.** The ERM initially tries to acquire an IP address from the DHCP network service, if it exists, on the network.
- Type Telnet <*IP address obtained from DHCP*> and press Enter. Continue to Step 7.
- 5. If there is no DHCP network service on the network, contact your network administrator to obtain an IP address for your workstation that has the same network's address as the ERM's default IP address.



NOTE The default IP address of the ERM is 172.17.XXX.ZZZ where XXX and ZZZ is the last two pairs of the MAC address of the ERM in decimal.

- 6. Type Telnet 172.17.XXX.ZZZ and press Enter.
- **7.** From this point, the configuration procedures are the same as the configuration via RS-232.

Configuration Through a Web Browser

Connect the ERM

To connect the ERM through a Web browser:

- 1. Verify that an active 10/100BaseT cable is connected to your PC's Ethernet card's network connector.
- **2.** Verify that your PC is using a Web browser such as Microsoft Internet Explorer.
- **3.** Connect another network cable (twisted-pair cable) from the ERM network connector to an active 10BaseT hub port (see Figure 3 on page 6).
- **4.** Verify that both DIP switches on the ERM are set to the **0** (off) position (see Figure 3 on page 6).

Setup the IP Address

To set up the IP address:

- Verify that an active 10/100BaseT cable is connected to the ERM's network connector.
- 2. If the IP address of the computer is on the same network with the ERM, you can run the Web browser directly; continue to the following section, "Configure the ERM." Otherwise, continue to the following step.



NOTE The default IP address of the ERM is 172.17.XXX.ZZZ where XXX and ZZZ is the last two pairs of the MAC address of the ERM in decimal.

3. If the IP address of the computer is not on the same network with the ERM, use a cross-over cable (not supplied) to set up the computer's TCP/IP protocol parameters temporarily to the 172.17.XXX.(YYY+1) subnet.



NOTE Refer to the operating system documentation for additional details on changing the computer's IP address.

NOTE The computer and the ERM must be on the same subnet for configuration. You can change the ERM's IP address to match your local subnet during configuration.

Configure through a Web Browser

To configure the ERM through a Web browser:

- **1.** Run the Web browser.
- Enter the URL http:\\172.17.XXX.ZZZ in the address box (where XXX and ZZZ is the last two pairs of the MAC address of the ERM in decimal). The ERM home page displays (see Figure 19).

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C•N Powerw	vare		6	9			Environmental I
Monitoring	<u>Neighborho</u>	<u>nd Management</u>	History	External	I <u>Links</u>		Monitoring
Comprehensive	<u>Detail Data</u>	TH-Module-1 Setup TH-Module-1 Alarr Schedule	TH-Module-2 Setup	TH-Module-2 Alarm Schedule	Identification	Alarm Table	н
			Rack Monitor -				
		c	Comprehensive V	iew			
=			Ç			2	8
TH-Mod	ale	24.6°C	27	.8%	N	ormal	Normal
THMod	3	Temperature-1	Hun	iidity-1	Door	Contact	switth 2
			Ç			8	
TH-Mod	ale	23.9°C	29	.3%	А	ctive	Normal
THMod	4	Temperature-2	Hun	idity-2	Vibral	tion Horiz	switch 4

Figure 19. Comprehensive View Screen

Initial Configuration

- 1. Select **Rack Monitor Setup** from **Management** of the main menu to set up the network configuration parameters (see Figure 20).
- **2.** Click the Become Administrator button at the bottom of the screen. Enter **EATON** as the login name and **admin** as the password.
- 3. Enter the ERM IP address.
- 4. Enter the ERM Gateway Address in the network.
- 5. Enter the ERM Subnet Mask of the network.
- 6. Select Set Value to save the settings.
- 7. Select **Date and Time** from **Management** of the main menu and enter the appropriate date and time information in the specified format.
- 8. Select Set Value to save the date and time settings.
- **9.** Select **Rack Monitor Control** to enable or disable the network protocols (see Figure 21).
- **10.** Select **Apply** to save the changes.
- 11. Select Restart Rack Monitor.

FAT•N	Powerware			۲			Environmenta Monitoria	al Rack ng Unit
Monitoring	a Neighborhood	Management	History	Exter	nalLinks	Lieles Cater	CCL Durit CA Catur	tielp
		R	ack Monitor Con	figuration			A MI SHOP	
		Rack M	onitor IP Address	10.222.45.40	1			
		Rack M	onitor Gateway Address	10.222.45.254				
		Rack M	onitor Subnet Mask	255.255.255.0				
		System	Name	Rack Monitor				
		System	Contact	Technical Support				
		System	Location					
		History	Log Interval (Sec)	60				
		Extende	ed Log Interval <i>(Min</i>)	60				
		Configu	ration Log	Enabled				
		Rack M	onitor Polling Rate (Sec)	5]			
			Become Administ	rator				

Figure 20. Rack Monitor Configuration Screen

N Powe	rware									
<u>Aonitoring</u> Date and Time	Neighborhood Rack Monitor Setup	Management Rack Monitor Control	Histor Access Control	y Extern Trap Receivers	<u>al Links</u> Email Setup	Links Setup	SSL Root CA Setup	Hel		
			Rack Monitor	Control						
		Pro	tocol Port	Status						
		BootP/D	нср	Disable 💌						
		PING Ec	ho	Enable 💌						
		Network	Upgrade UDP 69	Enable 💌						
		Telnet C	onnection TCP 23	Enable 💌						
		HTTP Su	pport TCP 80	Enable 💌						
		SNMP S	upport UDP 161	Enable · Apply	1					
					-					
			Reset to De	fault						
			Restart Back N	Appitor						

Figure 21. Rack Monitor Control Screen

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Chapter 4 ERM Management

You can manage the ERM from a Web browser or from an SNMP network management system.



NOTE The IP address of the PC must be entered in the ERM Access Control Table to prevent unauthorized users from configuring the ERM via HTTP or SNMP protocols.

NOTE If you do not add the IP address of the workstation to the Access Control Table (via RS-232 or Telnet) or the SNMP/HTTP Access Control (via Web Browser) in the ERM, you can only view the in TH-Module status; it will not be able to perform any configuration on the ERM/TH-Module.

ERM Home Page

- 1. Start the Web Browser and enter the ERM IP address.
- 2. The ERM home page displays on the screen.
- **3.** Click the Help button at the bottom of each page for a detailed description of each item.

ERM Monitoring

The main menu contains all the measurements and data read from the ERM.

All the sub-menus are read-only for all users; write-mode access is not allowed.

Comprehensive View

This page gives a snapshot of all the parameters of the ERM. The parameters are updated automatically every five seconds.

∴ T•N Powerw	vare			Environmental Rack Monitoring Unit				
Monitoring	Neighborho	20d M	lanagement	History	External	Links		lisip
Comprehensive	<u>Detail Data</u>	TH-Module-1 Setup	TH-Module-1 Alarm Schedule	TH-Module-2 Setup	TH-Module-2 Alarm Schedule	Identification	Alarm Table	Help
				Rack Monitor -				
			Co	mprehensive	View			
				(2	8
TH-Mod	ıle	2	24.6°C	2	7.8%	N	Iormal	Normal
THMod	3	Terr	nperature-1	H	midity-1	Doc	or Contact	switth 2
				Ç				8
TH-Mod	ıle	2	23.9°C	1	9.3%		Active	Normal
THMod	4	Terr	nperature-2	H	imidity-2	Vibr	ation Horiz	switch 4

Figure 22. Comprehensive View Screen

Detail Data

This page gives the detail information of all parameters. This page refreshes automatically every five seconds.

N Powerw	are		Monito			
Monitoring	Neighborhood	Management	History	Externa	I Links	
Comprehensive	Detail Data TH-Module-1 Setup	TH-Module-1 Alarm Schedule	TH-Module-2 Setup	TH-Module-2 Alarm Schedule	Identification	Alarm Table
			Detail View			
TH-Module	27.0°C		27.1%		Normal	Normal
THMod 3	Temperature-1		Humidity-1		Door Contact	switth 2
Record Since	11/17/2006 11:38:18		11/17/2006 11:38:18		11/17/2006 11:38:18	11/17/2006 11:38:18
Mazimum Value	28.1°C @11/28/2005 18:03:41		30.5% @1108/2006 13:07:01			
Minimum Value	23.2°C @1121200612:21.21		17.2% @11/21/2005 10:58:05			
Last Alarm At	N/A		11/17/2006 11:38:33		N/A	N/A
Reset All	Reset		Reset		Reset	Reset
TH-Module	26.0°C		29.1%		Active	Normal
THMod 4	Temperature-2		Humidity-2		Vibration Horiz	switch 4
Record Since	11/17/2006 11:38:18		11/17/2006 11:38:18		11/17/2006 11:38:18	11/17/2006 11:38:18
Maximum Value	27.1°C @11/28/2005 16:21:24		32.0% @ 11/28/2006 13:06:38			
Minimum Value	22.4°C @ 11/31/3006 13:05/03		19.3% @11010006.08:24:25			
Last Alarm At	N/A		11/28/2006 14:37:30		11/28/2006 17:46:02	N/A
Reset All	Reset		Reset		Reset	Reset

Figure 23. Detail Data Screen

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TH-Module-1 Setup

This page lets the user configure all necessary parameters of the TH-Module-1.

F:T•N Powerware			Environmental Rack Monitoring Unit				
Monitoring <u>Neighborhood</u>	Manageme	14	History	External	Links		Help
Comprehensive Detail Data TH-Modul	le-1 Setup TH-Modu Schr	tdule II	H-Module-2 Setup	Schedule	Identification	Alarm Table	Help
		TH-N	Module-1 Set	up			
		THM	Vlod 3 : TH-Modul	le			
Sensor	Sensor Name	Set P Warning	Point (Low) Critical	Set Point (H Warning C	<i>ligh)</i> Tritical	s Calibration Offset	
Temperature (°C)	Temperature-1	20	☑ 15	30 🔽	35 2	0.0 💌	
Humidity (%)	Humidity-1	🔽 15	10	35 🔽	40 5	0.0 💌	
Alarm-1 (Sec)	Door Contact	Normal Close	Informational	Door Contact 💌	0		
Alarm-2 (Sec)	swicth 2	Normal Open	Informational	Other 💌	0		
Device Name	THMod 3	Auto 💌					
			Set Value				

Figure 24. TH-Module-1 Setup Screen

TH-Module-2 Setup (optional)

This page lets the user configure all necessary parameters of the optional TH-Module-2.

E:T·N Powerwa	re		۲					Environmental Rack Monitoring Unit
Monitoring	Neighborhood	Managem	ent	History	Externa	l Links		Help
Comprehensive	Detail Data TH-Modu	le-1 Setup III-Mod	ule-1 Alarm TH-P	Module-2 Setup]	H-Module-2 Alarm Schedule	Identification	Alarm Table	Help
			TH-M	odule-2 Setu	ıp			
			THM	d 4 : TH-Module	Cast Darlant (1)	e.a.		
	Sensor	Sensor Name	Warning	Critical	Warning (ngn) Critical Hysteresi	s Offset	
	Temperature (°C)	Temperature-2	20	☑ 15	V 30 V	35 2	0.0 💌	
	Humidity (%)	Humidity-2	☑ 15	10	🔽 31 🔽	40 5	0.0 💌	
	Alarm-1 (Sec)	Vibration Horiz	Normal Close 💌	Informational 💌	Door Contact	0		
	Alarm-2 (Sec)	switch 4	Normal Open 💌	Informational 💌	Other 💌	0		
	Device Name	THMod 4	Auto 💌					
			1	SetValue				

Figure 25. TH-Module-2 Setup Screen

Rack Monitor Identification

This page lets you get all the ERM information.

F:T	•N Pow	verware				۲			Environmental Rack Monitoring Unit
	Monitoring	Neighborho	od	Management	History	External	Links		Help
	Comprehensive	<u>Detail Data</u>	TH-Module-1 Setup	TH-Module-1 Alarm Schedule	TH-Module-2 Setup	TH-Module-2 Alarm Schedule	Identification	Alarm Table	Help
				Rack	Monitor Iden	tification			
			Rack Mon	itor Firmware Revisi	on Rack M	onitor v1.00.b4 (SN 111	1001640002)		
			Rack Mon	itor Manufacturer	EATON				
			Rack Mon	itor Contact	Techni	al Support			
			Rack Mon	itor Name	Rack M	onitor			
			Rack Mon	itor Location					
			Rack Mon	itor System Date(mm	/dd/yyyy) 11/29/20	106			
			Rack Mon	itor System Time (hh	::mm:ss) 00:31:33	l.			
			Rack Mon	itor Up Time (days hi	himmiss) 11day 1	2:53:39			

Figure 26. Rack Monitor Identification Screen

Alarm Table

Select **Alarm Table** from **Monitoring** on the main menu to get a table of the TH-Module alarms present. This menu refreshes automatically.



Figure 27. Alarm Table Screen

ERM Management

This menu contains the control parameters of the TH-Module connected to the ERM.

All the sub-menus are available in read-only for all users. Only the administrator has access in read/write mode.

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Date and Time

This page lets you manually set the ERM internal date and time.

Aromoning Date and Time	Reishborhond Rack Monitor Setup	Rack Monitor Control	Access Control	Externi Trap Receivers	Email Setup	Links Setup	SSL Root CA Setup
		Rack Mo Rack Mo	nitor System Date (<i>mm/d</i> / nitor System Time (<i>hh:m</i> i	d'yyyy) [11/29/2006] m:ss) [00:37:57			
		 Synchronize Computer D Computer T 	e with computer time ate (<i>mm/dd/yyyy</i>) ime (<i>hh:mm:ss</i>)	11/29/2006			
		C Synchroniz IP address Time Zone	e with NTP server 0.0.0.0 GMT Dublin.Lisbon.L Enable Daylight 1	ondon 💌			
		C Set manu Date (mm Time (hh:	ally /dd/yyyy) mm:ss)	11/29/2006			
		Date Display F	ormat n	nm/dd/yyyy 💌			

Figure 28. Date and Time Screen

ERM Configuration

This page lets the Administrator set the local network configuration parameters for the ERM.

F ⊥T•N Power	ware		Environmenta Monitoria	al Rack ng Unit				
Monitoring Date and Time	Neighborhood	Management Back Monitor, Control	History Assess Control	Exter Tran Baselmere	rnal Links	Lioke Setup	SSI Doot CA Satur	Help
		R	ack Monitor Com	figuration				
		Rack M	onitor IP Address	10.222.45.40]			
		Rack M	onitor Gateway Address	10.222.45.254				
		Rack M	onitor Subnet Mask	255.255.255.0				
		System	Name	Rack Monitor				
		System	Contact	Technical Support				
		System	Location					
		History	Log Interval (Sec)	60				
		Extend	ed Log Interval <i>(Min</i>)	60				
		Configu	ration Log	Enabled				
		Rack M	onitor Polling Rate (Sec)	5				
			Become Administ	rator				

Figure 29. ERM Configuration Screen

ERM Control

This page lets you enable or disable the communication protocols available in the ERM and affect a restart and reset of the ERM internal parameters. Some of the items in this menu are visible only to those having read/write access rights.



Figure 30. ERM Control Screen

Access Control

This page displays a list of the workstations enabled for read/write access to the ERM.



NOTE An administrator can customize this configuration to limit different workstations or subnets using different passwords with different Access Types. While different workstations or subnets use a password with Read/Write Access Type to login, only allowing modification of the ERM parameters and Access Type, to prevent someone arbitrarily from changing it unless they login with the Admin password.

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FAT•N Powe	rware		Environmental Rack Monitoring Uni					
Monitoring	Neighborhood	Management	t <u>History</u>	<u>External I</u>	Links			Help
Date and Time	Rack Monitor Setup	Rack Monitor Control	Access Control	Trap Receivers	Email Setup	Links Setup	SSL Root CA Setup	Help
			SNMP/HTTP Acces	s Control				
		Index N	MS IP Address Commu	nity Access Type				
		1 0.0	1.0.0	Not Access				
		2 0.0	10.0	Not Access 💌				
		3 0.0	1.0.0	Not Access				
		4 0.0	1.0.0	Not Access 💌				
		5 0.0	1.0.0	Not Access •				
		6 0.0	1.0.0	Not Access				
		7 0.0	1.0.0	Not Access 💌				
		8 0.0	.0.0	Not Access 💌				
			SetValue					

Figure 31. Access Control Screen

Trap Receivers

This page can hold a maximum of four entries. It holds the list of the IP address of the Network Management Stations (NMS), which will receive the SNMP traps sent by the ERM.

T•N Power	rware				۲		Environmental Rack Monitoring Uni			
Monitoring Date and Time	Neighborhood Rack Monitor Setup	B	Managem ack Monitor Control	Management History ck Monitor Control Access Control		Externi Receivers	I Links Email Setup	Links Setup	SSL Root CA Setup	Help Help
				SNMP TR	AP Receiver	S				
		Index	NMS IP Address	Community String	Severity	Des	cription			
		1	0.0.0.0	*	Informational 💌					
		2	0.0.0.0	*	Informational 💌					
		3	0.0.0.0	*	Informational 💌					
		4	0.0.0.0	*	Informational 💌					
		5	0.0.0.0	*	Informational 💌					
		6	0.0.0.0	*	Informational 💌					
		7	0.0.0.0	*	Informational 💌					
		8	0.0.0.0	*	Informational 💌					
				s	let Value					

Figure 32. SNMP TRAP Receivers Screen

Email Notification

This page describes the ERM email notification setting to allow the administrator to configure the mail server and mail receiver in order to receive notification or report from the ERM by email once the sensor event has occurred.



Figure 33. Email Notification Screen

External Links

This page describes the setting of external links. Up to five links can be set up by this page, each link can be configured to an external Web page that users can easily connect to related Web pages.

ware		Environmental F Monitoring					
Neighborhood	Management	History	External L	inks			He
Rack Monitor Setup	Rack Monitor Control	Access Control	Trap Receivers	Email Setup	Links Setup	SSL Root CA Setup	
		External Lin	iks				
	Index Screen	Text	Link Address	Status			
	1 EATON products	http://web	eaton.com/NASApp/cs/0	Enable 💌			
	2			Enable 💌			
	3 test	http://www	v.eatonelectrical.com/NAS	Enable -			
	4			Disable 💌			
				Dischus III			
	Warte Heidhlachood Rack Monifor Setua	Mart P Brief Monitor Seture Black Mention Control Reak Monitor Seture Black Mention Control Index Screen [] [EATON products 2] 3] [est]	Mark Manual Massion Back Monitor_Serius Back Monitor_Control Access_Control External Lin External Lin External Lin External Lin 1 Extors Screen Toxt Impr/web 2 Impr/web Impr/web Impr/web 3 test Impr/web Impr/web	Martin Enternal Links Index Screen Text Insk Address Image: Status Eack Meeting Control Access Control True Deceleors	Martin Enderson External Links Index Screen Control Access Control Tron. Receiver:a Email Setue ExtEnd Rack. Monthline Control Access Control Tron. Receiver:a Email Setue External Links External Link Address External External Link Address External 1 EATCH products Information Com/NASAppCon/C Enable gradies 2 2	Martin Endow Endow <t< td=""><td>Martie Ender Monitori Name Back Monitor Satura Back Monitor Control Monitoria Ender Enderson Links Status Status</td></t<>	Martie Ender Monitori Name Back Monitor Satura Back Monitor Control Monitoria Ender Enderson Links Status Status

Figure 34. External Links Screen

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ERM History

Through this menu you can view all types of TH-Module and ERM log messages displayed in chronological order, such as the History Log, Extended Log, Sensor Events Log, and ERM Events Log. These log messages can help you detect and diagnose problems with the ERM.

History Log

This page gives a snapshot of all the fundamental TH-Module parameters. The existing values are overwritten when the maximum number of entries (rows) has been reached. The Administrator has the access rights to delete the table entries.



NOTE To save the History Log to a file in Microsoft Excel format, go to the **Clear/Save** Log sub-menu and click on **History Log** under the **Save Log Data** title bar.

N Pow	verware				Environmental Ra Monitoring U				
Monitoring	Neighborhood	orboad Management		Hist	ory	Extern	al Links		
History Log	H/T.Graph Ex	tended Log Ea	tended H/T Graph	Sensor	Events	Rack Monitor E	venta	Clear/Save Log	ł
				History Lo	og Data				
		Log Date	Log Time	Temperature-1	Temperatur	e-2 Humidity-1	Humidity-2]	
		(mm/dd/yy)	y) (hh:mm:ss)	(PC)	(PC)	(%)	(%)		
		11/29/200	6 00:00:00	27.3	26.3	26.8	28.9		
		11/29/200	6 00:01:00	27.3	26.3	26.8	28.8		
		11/29/200	6 00:02:00	27.3	26.3	26.7	28.8		
		11/29/200	6 00:03:00	27.3	26.3	26.8	28.8		
		11/29/200	6 00:04:00	27.3	26.3	26.8	28.8		
		11/29/200	6 00:05:00	27.2	26.3	26.8	28.8		
		11/29/200	6 00:06:00	27.2	26.2	26.9	28.9		
		11/29/200	6 00:07:00	27.1	26.2	27.0	29.0		
		11/29/200	00:08:00	27.1	26.2	27.0	29.0		
		11/29/200	00:09:00	27.1	20.2	26.9	29.0		
		11/25/200	00:10:01	27.1	20.2	20.9	25.0		
		11/29/200	00:11:00	27.1	26.1	21.0	29.0		
		11/29/200	00.12.00	27.1	20.2	20.5	20.0		
		11/29/200	00:13:00	27.1	26.7	26.9	28.9		
		11/29/200	00:14:43	27.2	26.2	26.9	28.8		
		11/29/200	00:15:00	27.2	26.2	26.9	28.9		
		11/29/200	00:16:00	27.1	26.2	26.9	28.9		
		11/29/200	00:17:00	27.1	26.2	26.9	28.9		
		11/29/200	00:18:00	27.1	26.2	26.9	28.9		
		11/29/200	00-19-00	27.2	26.2	26.8	28.8		

Figure 35. History Log Data Screen

Extended Log

This page gives a consolidated view of the TH-Module parameters taken over a period. For each of the TH-Module parameters, minimum, maximum, and average values are shown in each of the records.



NOTE The Administrator can change the consolidation interval by changing the value of the Extended Log Interval in the ERM Configuration page. The existing log is overwritten when the maximum numbers of entries are reached.

N Pou	verware														Moni		
Monitoring	Neighborh	200	Manageme	nt		Histor	/		Ex	ternal Li	inks						
listory Log	H/T Graph	Extended Log	Extended	<u>H/T Graph</u>	Se	nsor Ev	ents	Rack Monitor Events			<u>its</u>		Clear	/Save	Log		
				Ex	ende	ed La	oa Da	ta									
							.y 2 a										
	Start Da	te Start Time	End Date	End Time	Temp	erature	e-1 (°C)	Temp	erature	e-2 (°C)	Humi	dity-1	(%)	lumic	lity-2 (%6)	
	(mm/dd/y	yyy) (hh:mm:ss)	(mm/dd/yyyy)	(hh:mm:ss)	min	avg	max	min	avg	max	min	avg r	nax	min a	avg m	ax	
	11/27/20	06 00:00:09	11/27/2006	01:00:05	23.6	24.1	24.9	23.0	23.4	24.1	21.2 2	22.1	3.0	2.8 2	3.6 2	4.2	
	11/27/20	06 01:00:10	11/27/2006	02:00:05	23.6	24.3	25.1	22.9	23.6	24.2	20.5	21.5	2.6 7	2.1 2	3.0 2	3.9	
	11/27/20	06 02:00:09	11/27/2006	03:00:04	23.5	24.2	24.8	22.9	23.4	23.9	20.6 2	21.3	2.2 2	2.0 2	2.6 2	3.4	
	11/2//20	06 03:00:09	11/27/2006	04:00:05	23.7	24.3	24.9	23.1	23.6	24.1	20.2	20.8	1.7	21.6 2	2.2 2.	2.9	
	11/27/20	06 04:00:10	11/27/2006	05:00:05	23.7	24.3	24.9	23.1	23.5	23.9	19.8	20.5 2	1.3	1.4 2	1.9 Z	2.6	
	11/27/20	06 00:00:09	11/27/2006	05:00:04	23.0	24.2	24.9	23.1	23.4	24.0	19.5	20.3 2	1.1 2	1.1 2	1.7 2	2.3	
	11/27/20	06 08:00:09	11/27/2006	07:00:03	23.0	24.1	24.0	23.0	23.4	23.5	19.3 4	20.2 2	0.9 2	21.0 2	1.3 2	2.1	
	11/27/20	00 07.00.10	11/27/2006	00.00.03	23.0	29.2	24.0	22.0	23.4	29.0	20.4	20.7	14 2 2	1.0 2	2 4 2	2.6	
	11/27/20	06 09:00:09	11/27/2006	10:00:04	23.6	24.1	24.5	23.0	23.2	23.0	21.0	21 8 3	123	242	3 2 2	3.7	
	11/27/20	06 10:00:09	11/27/2006	11:00:04	23.9	24.3	24.8	23.3	23.6	23.9	21.7	22.9 2	3.8	3.3 2	4.3 2	5.1	
	11/27/20	06 11:00:09	11/27/2006	12:00:05	23.9	24.4	25.3	23.4	23.8	24.4	22.7	23.5 2	4.1	4.3 2	4.9 2	5.4	
	11/27/20	06 12:00:10	11/27/2006	13:00:05	24.4	24.8	25.3	23.8	24.2	24.6	23.1	23.6 2	4.3	4.7 2	5.0 2	5.6	
	11/27/20	06 13:00:09	11/27/2006	14:00:04	24.7	25.1	25.5	24.1	24.4	24.8	23.9	24.4 2	5.1 2	5.2 2	5.8 2	6.6	
	11/27/20	06 14:00:09	11/27/2006	15:00:05	24.8	25.1	25.6	24.2	24.4	24.9	24.5	25.5 2	6.1	6.2 2	6.9 2	7.5	
	11/27/20	06 15:00:10	11/27/2006	16:00:05	24.9	25.1	25.6	24.3	24.4	24.9	25.3	26.2 2	6.8	6.9 Z	7.8 2	8.4	
	11/27/20	06 16:00:09	11/27/2006	17:00:04	24.8	24.9	25.3	24.1	24.2	24.5	26.7	27.0 2	7.4 2	8.3 2	8.6 2	9.0	
	11/27/20	06 17:00:09	11/27/2006	18:00:05	24.9	25.2	25.7	24.2	24.4	24.8	26.4	27.0 2	7.4 2	8.3 2	8.7 2	9.0	
	11/27/20	06 18:00:10	11/27/2006	19:00:05	24.7	24.9	25.3	24.2	24.3	24.6	26.9	27.6 2	8.2 2	8.6 2	9.2 2	9.6	
	11/27/20	06 19:00:09	11/27/2006	20:00:04	24.7	25.0	25.7	24.1	24.3	24.8	26.6	27.6 2	8.3	8.4 2	9.2 2	9.7	

Figure 36. Extended Log Data Screen

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Sensor Events

This page lists all the events that have occurred since the table was cleared. The existing values are overwritten when the maximum number of entries (rows) has been reached.

N Pow	verware			Environmental Monitoring			
Monitoring	Neighborhood	1	lanagement	History	External Links		
History Log	H/T.Graph E	xtended Log	Extended H/T Graph	Sensor Events	Rack Monitor Events	Clear/Save Log	
			E	vents Log Data	9		
		17 111					
	11/17/2006	22:42:55	INFORMATIONAL	- Back Monitor Wihr	ation Noria of ThMod 4 triar	iorod	
	11/17/2000	22:42:33	INCORMATIONAL	- Rack Monitor - Vibr	ation Horiz of THMod 4 trigg	rte normal	
	11/17/2006	22:47:00	INCORMATIONAL	· Pack Monitor - Vibr	ation Horiz of THMod 4 trior	ared	
	11/17/2006	22:53:26	INFORMATIONAL	: Rack Monitor - Vibr	ation Horiz of THMod 4 bac	k to normal	
	11/17/2006	22:53:27	INFORMATIONAL	: Rack Monitor - Vibr	ation Horiz of THMod 4 trigg	iered	
	11/28/2006	11:41:16	WARNING: Rack	Monitor - Humidity-2	of THMod 4 (31.0 %) over his	th warning humidity (31 %)	
	11/28/2006	13:19:43	INFORMATIONAL	Rack Monitor - Vibr	ation Horiz of THMod 4 bac	k to normal	
	11/28/2006	13:19:44	INFORMATIONAL	: Rack Monitor - Vibr	ation Horiz of THMod 4 trigg	jered	
	11/28/2006	13:19:48	INFORMATIONAL	: Rack Monitor - Vibr	ation Horiz of THMod 4 bac	k to normal	
	11/28/2006	13:19:54	INFORMATIONAL	Rack Monitor - Vibr	ation Horiz of THMod 4 trigg	jered	
	11/28/2006	13:19:55	INFORMATIONAL	.: Rack Monitor - Vibr	ation Horiz of THMod 4 bac	k to normal	
	11/28/2006	i 13:19:59	INFORMATIONAL	.: Rack Monitor - Vibr	ation Horiz of THMod 4 trigg	jered	
	11/28/2006	13:20:00	INFORMATIONAL	: Rack Monitor - Vibr	ation Horiz of THMod 4 bac	k to normal	
	11/28/2006	13:20:06	INFORMATIONAL	: Rack Monitor - Vibr	ation Horiz of THMod 4 trigg	jered	
	11/28/2006	13:20:06	INFORMATIONAL	: Rack Monitor - Vibr	ation Horiz of THMod 4 bac	k to normal	
	11/28/2006	13-20-07	INFORMATIONAL	· Dack Monitor Vibr	ation Horiz of THMod 4 trior	arad	

Figure 37. Sensor Events Screen

ERM Events

This page lists all the ERM events that have occurred since the table was cleared. The Administrator has the access rights to delete the entries of the table.

N Pov	verware			Environmental Ra Monitoring U			
Monitoring History Log	Neighborhood H/T Graph E	Manag tended Log Exten	e <u>ment</u> ded H/T Graph	History Sensor Events	External Links Rack Monitor Events	Clear/Save Log	Hele
			Rack Mon	itor Events L	og Data		
	Data Constant	the second These the bears and			usud Daasaladau		
	14/17/20	0c 11/20/56	UT Modulo 1 Hur	niditu loss suara ota	to had changed from HTTP	hu: 10 222 105 152	
	11/17/20	06 11:39:57	HT Module 1 Hur	by 10.222.103.133			
	11/17/20	06 11:39:57	HT-Module-1 Ten	0,0,0,0			
	11/17/20	06 11:39:57	HT-Module-1 Ten	np. high warn state	had changed from HTTP b	v 0.0.0.0	
	11/17/20	06 11:41:45	HT-Module-2 Ten	np. low warn set p	int had changed from HTT	P by 10.222.105.153	
	11/17/20	06 11:41:45	HT-Module-2 Ten	np. low critical set	point had changed from HT	TP by 10.222.105.153	
	11/17/20	06 11:41:45	HT-Module-2 Ten	np. high warn set p	oint had changed from HTT	P by 10.222.105.153	
	11/17/20	06 11:41:45	HT Module 2 Ten	np. high critical set	point had changed from H	TTP by 10.222.105.153	
	11/17/20	06 11:41:45	HT Module 2 Hun	nidity low warn set	point had changed from H	TTP by 10.222.105.153	
	11/17/20	06 11:41:45	HT-Module-2 Hun	nidity low critical s	et point had changed from	HTTP by 10.222.105.153	
	11/17/20	06 11:41:45	HT-Module-2 Hun	nidity high warn se	t point had changed from H	ITTP by 10.222.105.153	
11/17/2006 11:41			HT-Module-2 Hur	nidity high critical	set point had changed from	HTTP by 10.222.105.153	
	11/17/20	06 11:41:45	HT-Module-2 ala	rm-1 name had cha	nged from HTTP by 10.222.	105.153	
	11/17/20	06 11:41:45	HT-Module-2 ala	105.153			
	11/17/20	06 11:41:45	HT-Module-2 ala	rm-2 name had cha	nged from HTTP by 10.222.	105.153	
	11/17/20	06 11:41:45	HT-Module-2 alar	rm-2 setup had cha	naed from HTTP by 10.222.	105.153	

Figure 38. ERM Events Screen

Clear & Save Log Data

This page allows the Administrator to save ERM log data to a file in Microsoft Excel format. The Administrator is also able to clear specific log data or choose to clear the log data after saving the log data.



NOTE When you select any of the hyper-links here while the "Clear the corresponding log data as you click the hyper-link below" selection is set to "Yes", the corresponding log data will be lost even if you cancel the operation.

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Figure 39. Clear & Save Log Data Screen

Chapter 5 Monitoring

History Log Monitor

Select **H/T Graph** from **History** of the main menu to open a TH-Module History Log monitor in a separate window. This monitor displays the TH-Module History Log as a line graph. By default, all the TH-Module parameters display on the same graph. You can select any combination of the parameters to be displayed on the graph by selecting the check box beside each parameter on the monitor screen and click the Refresh button.



Figure 40. TH-Module History Log Monitor

Table 6. TH-Module History Log Monitor

	Description
Display Point	Displays the log interval on the graph.
Refresh	Click the Refresh button after configuring any setting on the TH-Module History Log Monitor for the change to take effect.
Reload	Update the TH-Module History Log Monitor and reset the right display margin.
Exit	Close the TH-Module History Log Monitor window.

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Extended History Log Monitor

Select **Extended H/T Graph** from **History** of the main menu to open a TH-Module Extended History Log monitor in a separate window. This monitor displays the TH-Module Extended History Log as a line graph. By default, all the TH-Module parameters display on the same graph. You can select any combination of the parameters to be displayed on the graph by selecting the check box beside each parameter on the monitor screen and click the Refresh button.



Figure 41. TH-Module Extended History Log Monitor

Table 7. TH-Module Extended History Log Monitor

	Description
Display Point	Displays the extended log interval on the graph.
Refresh	Click the Refresh button after configuring any setting on the TH-Module Extended History Log Monitor for the change to take effect.
Reload	Update the TH-Module Extended History Log Monitor and reset the right display margin.
Exit	Close the TH-Module Extended History Log Monitor window.

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Chapter 6 Managing ERM via SNMP

If you intend to manage your ERM/TH-Module via SNMP Network Management Station (NMS), you may want to customize some of the SNMP settings (such as System Name, System Contact, and System Location).



NOTE Before using the ERM in an SNMP environment, the IP address, Gateway address, and other group parameters must be configured properly. See "Configuration" on page 5 for details.

SNMP Access Control Setting

The ERM supports SNMP protocol. You can use SNMP NMS to manage the TH-Module through the network.



NOTE The IP address of the PC must be entered in the ERM Access Control Table to prevent unauthorized users from configuring the ERM via HTTP or SNMP protocols.

NOTE If you do not add the IP address of the workstation to the Access Control Table (via RS-232 or Telnet) or the SNMP/HTTP Access Control (via Web Browser) in the ERM, you can only view the in TH-Module status; it will not be able to perform any configuration on the ERM/TH-Module.

SNMP Trap Receivers Setting

See "Trap Receivers" on page 32 for details.

Setup SNMP Manager Software

- 1. Add the ERM MIB file (included on the ERM CD) to the MIB database of the SNMP manager.
- 2. Search for the ERM in the network.
- **3.** To access the ERM SNMP agent, use *public* for the GET community string and the read/write password (default is **admin**) for the SET community string.

GET Community string: *public* SET Community string: *admin*

For more information, see the MIB file on the ERM CD.

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Appendix

The appendix contains:

- The Environmental Rack Monitor (ERM) panel details (connections and LEDs)
- Technical specifications
- DIP switch settings
- Serial cable definition
- Upgrading the firmware
- External contact monitoring feature
- Configuration menu settings
- Secure Sockets Layer (SSL) certificate installation
- Secure Shell (SSH) Installation
- Service and support
- Warranty

ERM Panel Details





Figure 42. ERM Panel Details

LED Description

The functions of the ERM are indicated by the Network, Status, and Power LEDs, as listed in Table 8 and Table 8.

Table 8. Network LEDs

Green	Yellow ERM Function Description	
Flashing	Off Ethernet 100 traffic	
Off	Flashing Ethernet 10 traffic	
Off	Flashing Ethernet disconnected	
On	Off	Ethernet 100 ready
Off	On	Ethernet 10 ready

Table 9. Status and Power LEDs

Status LED	Power LED	ERM Function Description
_	On	Power on
Flashing	—	TH-Module activity
Flashing	Off	Serial upgrade mode
Two LEDs Cross Flashing	Two LEDs Cross Flashing	Auto diagnostic mode
On	On	Hardware error

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Technical Specifications

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/IP HTTP over TCP/IP ARP, TFTP, and ICMP		
Supported MIB	Environmental Rack Monitor (ERM) MIB		
Operating Temperature	0-40°C (32-104°F)		
Operating Humidity	10–80%, noncondensing		
Power Input	12 Vdc unregulated		
Power Consumption	3.0 Watts Maximum		
Size (L x W x H)	13.4 cm x 8.6 cm x 2.7 cm (5.3" x 3.4" x 1.1")		
Weight	170 gm (6 oz)		
EMC Statements	Class B: FCC Part 15, ICES-003, CE		

DIP Switch Description

DIP switch definitions for the ERM are listed in Table 11.

	Table	11.	DIP	Switch	Modes
--	-------	-----	-----	--------	-------

SW1	SW2	Description
On	On	Manufacture diagnostic mode
On	Off	Serial upgrade mode
Off	On	Reserved
Off	Off	Operating mode

Serial Cable Definition

Straight-Through CAT5 Network Cable



NOTE Cable length not to exceed 20m/65.6 ft.

Table 12. Cable for the ERM TH-Module-1 Port

RJ-45	RJ-45 Color		
1	1	White/Orange	
2	2	Orange	
3	3	White/Green	
4	4	Blue	
5	5	White/Blue	
6	6	Green	
7	7	White/Brown	
8	8	Brown	

PC Cable

NOTE Pins 2 and 7 of the RJ-45 connector are connected internally.

Table 13. Cable for the ERM TH-Module-2 Port

RJ-45	DB-9 Female Description	
1	—	Not connected
3	2	Received data from PC
4	5	Signal ground
5	Case GND	Chassis ground
6	3	Transmitted data to PC
8	_	Not connected

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Upgrading the ERM Firmware

To perform firmware upgrading, the ERM must be connected to the same network as the PC from which the file is to be sent.

In the ERM Control menu, check that **Network Upgrade** is enabled and that you have the login string information and the community read/write password.

Updating ERM Firmware from Windows

To upgrade the firmware, use the **ERMupgrade.exe** program (included on the ERM CD). This program is compatible with Windows 95/98/Me, Windows NT 3.51/4.0/2000/XP and higher.



NOTE You can simultaneously upgrade up to four ERMs on the network using the **EMPupgrade.exe** program.

RM Upgrade	Environmenta le	Rack Monitor	Upgrade Utilit	y v4.10b3		>
C Device List-						
IP Address	Mac Address	Version	Account	Password	Card	
,	Set IP	Browse	<u>A</u> dd	<u>M</u> odify	<u>R</u> emove	Discover
– Image Informa	ation					
Version No.	Da	te Code		File Size		Upgrade
File Name						Open
			Quit			

Figure 43. Upgrade Utility Screen

innie in opginne	· ••••••••••••
	Description
Device List	Displays the addresses of the ERMs present in the local network.
Discover	Search for the ERM on the local network.
Add	Lets you add the IP address of the ERM to the UPS List manually.
Modify	Lets you modify the parameters of the ERM selected in the ERM List.
Remove	Removes the selected ERM from the ERM List.
Upgrade	Sends the program loaded with the Open button to the selected ERM of the ERM List.
Open	Open and load the new image file for upgrade.
Quit	Exit the program.

Table 14. Upgrade Utility Screen

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