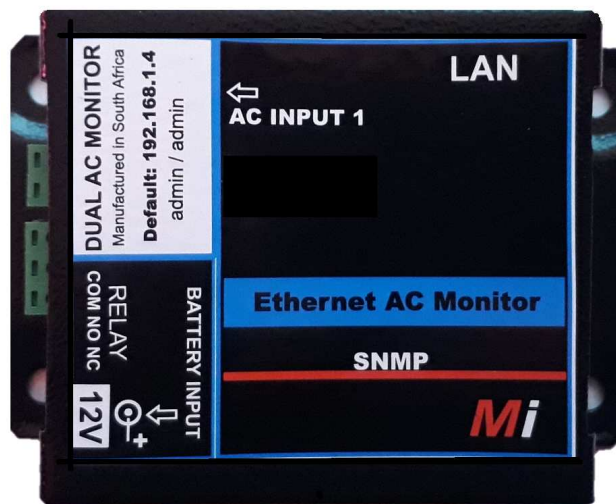




*Innovative Electronics for a changing world*

MANUAL



Our Site – Monitor products permit the monitoring and control of equipment at any site with IP connectivity in the comfort of your office. **The Ethernet Relay + e-MAIL** is the perfect addition to any remote repeater site to control and monitor equipment remotely via Ethernet , email and SNMP.

The **Ethernet AC Monitor + eMAIL** was developed to inform users about the status of **1** x 220 VAC mains input and the status of the battery voltage and the onboard Relay status at remote sites via **email , SNMP and embedded web-pages**

The **12V unit** (Ethernet AC Monitor + e-MAIL **(12)** board accepts **12Vdc** only from a standard 2.5mm Barrel DC jack connector.

The **24V unit** (Ethernet AC Monitor + e-MAIL **(24)** board accepts **24Vdc** only from a standard 2.5mm Barrel DC jack connector.

**Please order correct unit for your application – 12V or 24V unit**

The onboard Relay can be controlled via web browser and can be selected by a pcb jumper to either do a reset function for 8sec to reset remote equipment or to switch and keep its position until change by the user to switch remote equipment on or off.

The **Ethernet AC Monitor + eMAIL** will send an email and cc another email address if configured as soon as the mains input goes down or return and if the battery voltage falls below or above the user settings

## Home Page // Default IP address = 192.168.1.4

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Ethernet AC Monitor-SNMP+eMail

Home Page  
Relay Control  
Network Configuration  
SNMP Configuration  
SMTP Server Name  
SMTP Server Config  
Email Address Config  
Unit Name-CC address-Batt low

### Ethernet AC Monitor-SNMP+eMail

Stack Version: v5.36  
Build Date: Apr 09 2017 serial # Mi-0002

Relay 1  
Module Heartbeat  
AC Input : OFF  
Supply Voltage: 13.4 V

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Selector Menu on the left

Stack version and Serial number in middle

Relay Status – module heartbeat- The status of the AC input and the supply voltage on the home page

Micro Instruments

Ethernet AC Monitor-SNMP+eMail

Home Page  
Relay Control  
Network Configuration  
SNMP Configuration  
SMTP Server Name  
SMTP Server Config  
Email Address Config  
Unit Name-CC address-Batt low

### Ethernet AC Monitor-SNMP+eMail

Stack Version: v5.36  
Build Date: Apr 09 2017 serial # Mi-0002

Relay 1  
Module Heartbeat  
AC Input : OFF  
Supply Voltage: 13.4 V

Authentication Required

http://192.168.1.4 requires a username and password.  
Your connection to this site is not private.

User Name:   
Password:

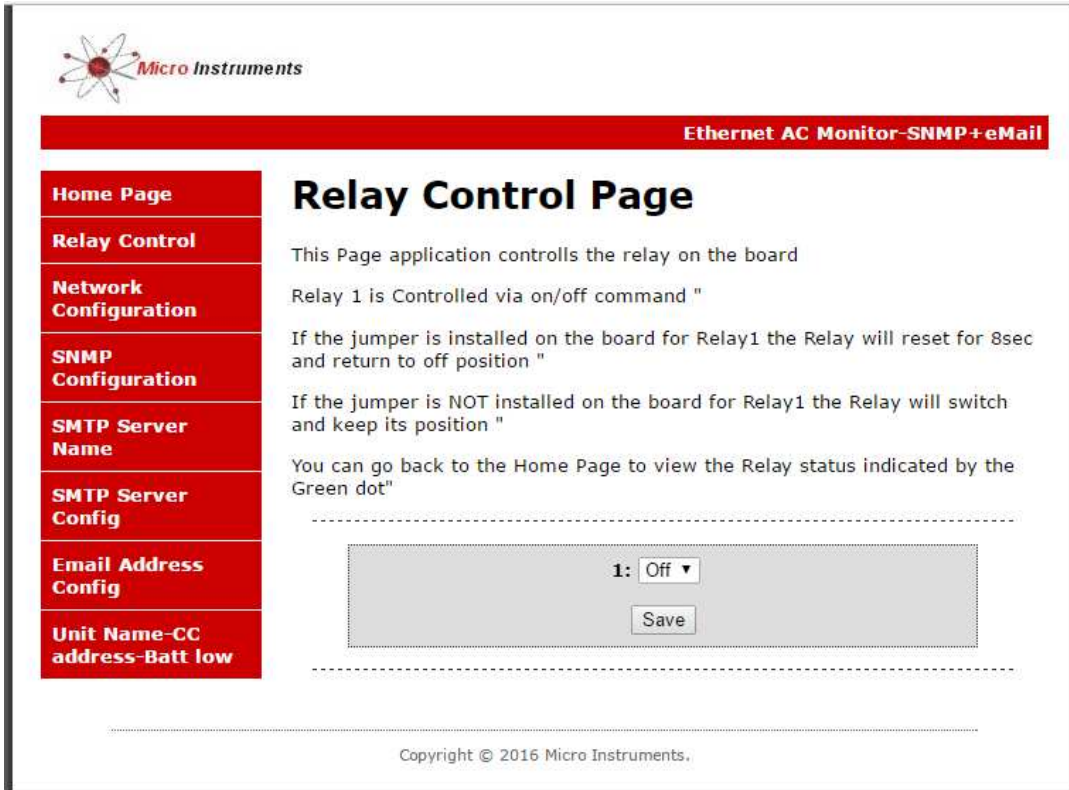
Log In Cancel

Copyright © 2016 Micro Instruments.

User name: admin // default after hard reset

Password: admin // default after hard reset

## Relay Control Page



The screenshot shows the 'Relay Control Page' of the 'Ethernet AC Monitor-SNMP+eMail' application. On the left is a red navigation menu with the following items: Home Page, Relay Control, Network Configuration, SNMP Configuration, SMTP Server Name, SMTP Server Config, Email Address Config, and Unit Name-CC address-Batt low. The main content area has a title 'Relay Control Page' and the following text:

This Page application controls the relay on the board  
 Relay 1 is Controlled via on/off command "

If the jumper is installed on the board for Relay1 the Relay will reset for 8sec and return to off position "

If the jumper is NOT installed on the board for Relay1 the Relay will switch and keep its position "

You can go back to the Home Page to view the Relay status indicated by the Green dot"

Below the text is a control panel with a dropdown menu labeled '1: Off' and a 'Save' button. At the bottom of the page, there is a copyright notice: 'Copyright © 2016 Micro Instruments.'

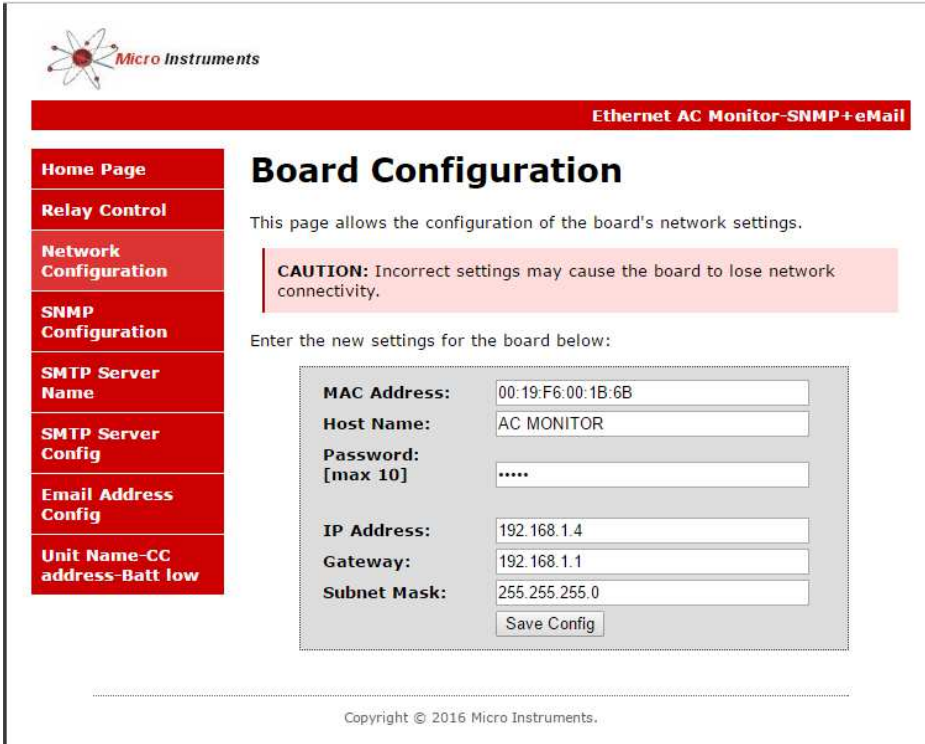
The user can control the onboard relay via this page to either switch or reset equipment


The status of the relay is indicated by a green dot on the home page – green if energized

**J9** jumper on board for **Relay1**(Reset/Pulse) jumper installed – **Relay 1** will energize for 8sec and then return to off position ( reset a device)

**J9** jumper on board for **Relay1** (Reset/Pulse) jumper **NOT** installed – **Relay 1** will energize and keep the position until switched off.

## Ethernet Interface Settings Page



 **Ethernet AC Monitor-SNMP+eMail**

**Home Page**  
**Relay Control**  
**Network Configuration**  
**SNMP Configuration**  
**SMTP Server Name**  
**SMTP Server Config**  
**Email Address Config**  
**Unit Name-CC address-Batt low**

## Board Configuration

This page allows the configuration of the board's network settings.

**CAUTION:** Incorrect settings may cause the board to lose network connectivity.

Enter the new settings for the board below:

<b>MAC Address:</b>	<input type="text" value="00:19:F6:00:1B:6B"/>
<b>Host Name:</b>	<input type="text" value="AC MONITOR"/>
<b>Password:</b> [max 10]	<input type="password" value="....."/>
<b>IP Address:</b>	<input type="text" value="192.168.1.4"/>
<b>Gateway:</b>	<input type="text" value="192.168.1.1"/>
<b>Subnet Mask:</b>	<input type="text" value="255.255.255.0"/>

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Here the IP address, Gateway and subnet mask can be specified to match your network settings

The Host name is changeable by user

Also a user configurable Password can be specified / don't forget there is no back door for forgotten password / unit will have to be hard reset.

Click Save Configuration, the board will reboot with the new settings

## SNMP Configuration Page

Read and Write communities can be specified here

Dude screenshot on SNMP walk

Snm Walk: 192.168.1.4

From: server  
To: 192.168.1.4  
Profile: v1-public  
List: Tree Table

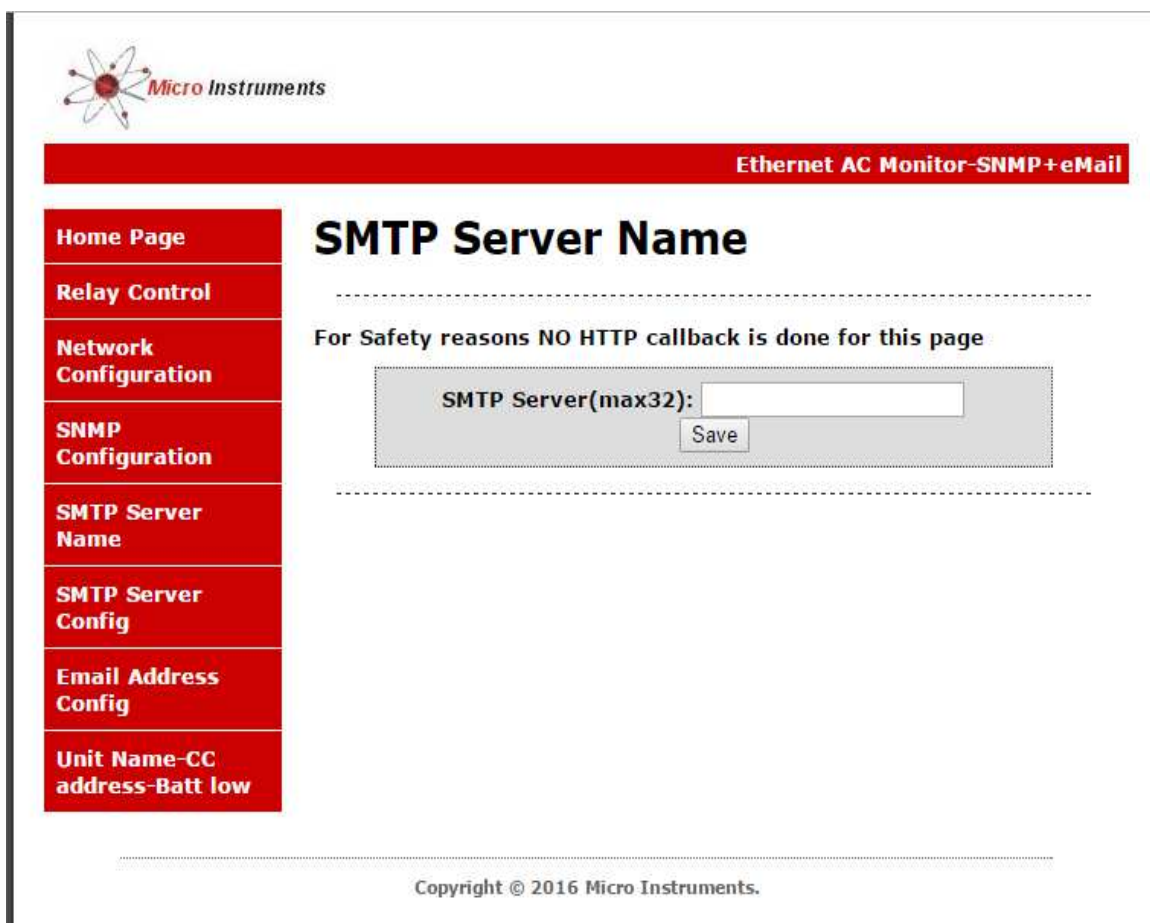
#	OID	Simple OID	Type	Value
1	iso.org.dod.internet.mgmt.mib-2.system.sysDescr.0	1.3.6.1.2.1.1.1.0	octet string	Ethernet AC Monitor
2	iso.org.dod.internet.mgmt.mib-2.system.sysObjectID.0	1.3.6.1.2.1.1.2.0	object id	iso.org.dod.internet.private.enterprises.45501
3	iso.org.dod.internet.mgmt.mib-2.system.sysUpTime.sysUpTimeInstance	1.3.6.1.2.1.1.3.0	timeticks	00:14:13.11
4	iso.org.dod.internet.mgmt.mib-2.system.sysContact.0	1.3.6.1.2.1.1.4.0	octet string	admin
5	iso.org.dod.internet.mgmt.mib-2.system.sysName.0	1.3.6.1.2.1.1.5.0	octet string	Micro Instruments
6	iso.org.dod.internet.mgmt.mib-2.system.sysLocation.0	1.3.6.1.2.1.1.6.0	octet string	Remote
7	iso.org.dod.internet.mgmt.mib-2.system.sysServices.0	1.3.6.1.2.1.1.7.0	integer	10
8	iso.org.dod.internet.mgmt.mib-2.system.sysDescr.0	1.3.6.1.2.1.1.1.0	octet string	Ethernet AC Monitor
9	iso.org.dod.internet.mgmt.mib-2.system.sysObjectID.0	1.3.6.1.2.1.1.2.0	object id	iso.org.dod.internet.private.enterprises.45501
10	iso.org.dod.internet.mgmt.mib-2.system.sysUpTime.sysUpTimeInstance	1.3.6.1.2.1.1.3.0	timeticks	00:14:13.77
11	iso.org.dod.internet.mgmt.mib-2.system.sysContact.0	1.3.6.1.2.1.1.4.0	octet string	admin
12	iso.org.dod.internet.mgmt.mib-2.system.sysName.0	1.3.6.1.2.1.1.5.0	octet string	Micro Instruments
13	iso.org.dod.internet.mgmt.mib-2.system.sysLocation.0	1.3.6.1.2.1.1.6.0	octet string	Remote
14	iso.org.dod.internet.mgmt.mib-2.system.sysServices.0	1.3.6.1.2.1.1.7.0	integer	10
15	iso.org.dod.internet.private.enterprises.45501.1.1.1.0	1.3.6.1.4.1.45501.1.1.1.0	octet string	SNMPv1/2Agent
16	iso.org.dod.internet.private.enterprises.45501.1.1.2.0	1.3.6.1.4.1.45501.1.1.2.0	octet string	V1
17	iso.org.dod.internet.private.enterprises.45501.1.1.3.0	1.3.6.1.4.1.45501.1.1.3.0	octet string	June 16
18	iso.org.dod.internet.private.enterprises.45501.1.2.1.1.1.0	1.3.6.1.4.1.45501.1.2.1.1.1.0	integer	0
19	iso.org.dod.internet.private.enterprises.45501.1.2.1.1.1.1	1.3.6.1.4.1.45501.1.2.1.1.1.1	integer	1
20	iso.org.dod.internet.private.enterprises.45501.1.2.1.1.2.0	1.3.6.1.4.1.45501.1.2.1.1.2.0	integer	0
21	iso.org.dod.internet.private.enterprises.45501.1.2.1.1.2.1	1.3.6.1.4.1.45501.1.2.1.1.2.1	integer	0
22	iso.org.dod.internet.private.enterprises.45501.1.2.1.1.3.0	1.3.6.1.4.1.45501.1.2.1.1.3.0	ip address	0.0.0.0
23	iso.org.dod.internet.private.enterprises.45501.1.2.1.1.3.1	1.3.6.1.4.1.45501.1.2.1.1.3.1	ip address	0.0.0.0
24	iso.org.dod.internet.private.enterprises.45501.1.2.1.1.4.0	1.3.6.1.4.1.45501.1.2.1.1.4.0	octet string	
25	iso.org.dod.internet.private.enterprises.45501.1.2.1.1.4.1	1.3.6.1.4.1.45501.1.2.1.1.4.1	octet string	
26	iso.org.dod.internet.private.enterprises.45501.1.3.1.0	1.3.6.1.4.1.45501.1.3.1.0	integer	0
27	iso.org.dod.internet.private.enterprises.45501.1.3.2.0	1.3.6.1.4.1.45501.1.3.2.0	integer	0
28	iso.org.dod.internet.private.enterprises.45501.1.3.3.0	1.3.6.1.4.1.45501.1.3.3.0	integer	0
29	iso.org.dod.internet.private.enterprises.45501.1.3.4.0	1.3.6.1.4.1.45501.1.3.4.0	octet string	13.6
30	iso.org.dod.internet.private.enterprises.45501.1.3.4.0.0	1.3.6.1.4.1.45501.1.3.4.0.0	null	
31	iso.org.dod.internet.private.enterprises.45501.1.3.4.0.0.0	1.3.6.1.4.1.45501.1.3.4.0.0.0	null	
32	iso.org.dod.internet.private.enterprises.45501.1.3.4.0.0.0.0	1.3.6.1.4.1.45501.1.3.4.0.0.0.0	null	
33	iso.org.dod.internet.private.enterprises.45501.1.3.4.0.0.0.0.0	1.3.6.1.4.1.45501.1.3.4.0.0.0.0.0	null	
34	iso.org.dod.internet.private.enterprises.45501.1.3.4.0.0.0.0.0.0	1.3.6.1.4.1.45501.1.3.4.0.0.0.0.0.0	null	
35	iso.org.dod.internet.private.enterprises.45501.1.3.4.0.0.0.0.0.0.0	1.3.6.1.4.1.45501.1.3.4.0.0.0.0.0.0.0	null	

OID 1.3.6.1.4.1.45501.1.3.1.0 = Relay 1 ( 0 for off and 1 for On)

OID 1.3.6.1.4.1.45501.1.3.3.0 = AC Input ( 0 for off and 1 for On)

OID 1.3.6.1.4.1.45501.1.3.4.0 = Supply voltage from either DC jack or pcb terminal (as per 12v or 24v unit)

SMTP SERVER SETTINGS for e-mail



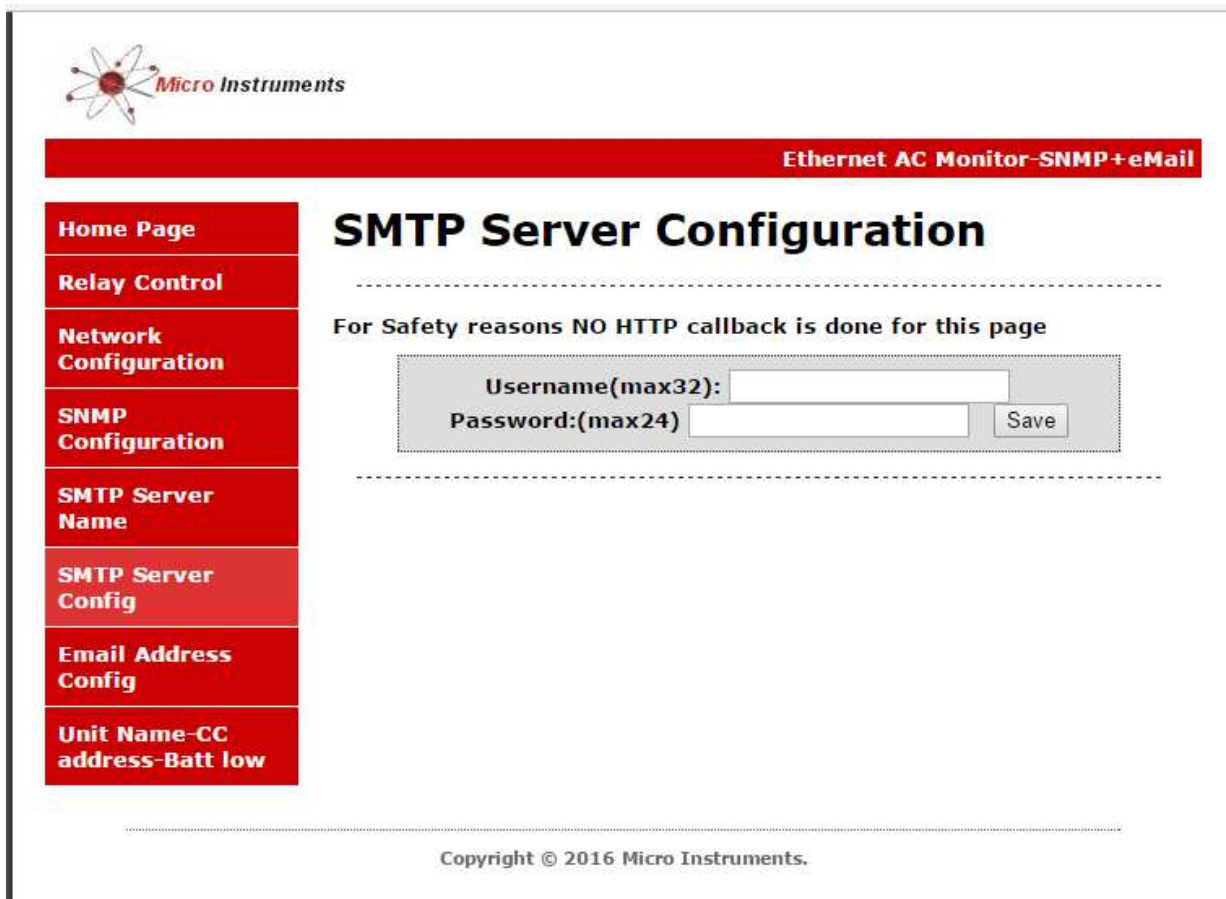
The screenshot shows a web interface for "Ethernet AC Monitor-SNMP+eMail". On the left is a navigation menu with red buttons: Home Page, Relay Control, Network Configuration, SNMP Configuration, SMTP Server Name (selected), SMTP Server Config, Email Address Config, and Unit Name-CC address-Batt low. The main content area has a title "SMTP Server Name" and a warning: "For Safety reasons NO HTTP callback is done for this page". Below this is a form with a label "SMTP Server(max32):" and an empty text input field. A "Save" button is positioned below the input field. At the bottom of the page, it says "Copyright © 2016 Micro Instruments."

Enter your SMTP server name here as eg: smtp.xxx.co.za

For safety reasons no HTTP call-backs is done on this page – every time the user logs into this page the field will be blank



SMTP SERVER CONFIGURATION PAGE



The screenshot shows the 'SMTP Server Configuration' page. At the top left is the 'Micro Instruments' logo. A red navigation bar contains the text 'Ethernet AC Monitor-SNMP+eMail'. On the left is a vertical menu with red buttons: 'Home Page', 'Relay Control', 'Network Configuration', 'SNMP Configuration', 'SMTP Server Name', 'SMTP Server Config', 'Email Address Config', and 'Unit Name-CC address-Batt low'. The main content area has the title 'SMTP Server Configuration' and a warning: 'For Safety reasons NO HTTP callback is done for this page'. Below this is a form with two input fields: 'Username(max32):' and 'Password:(max24)', followed by a 'Save' button. At the bottom, a copyright notice reads 'Copyright © 2016 Micro Instruments.'

Enter your SMTP server username and password here

For safety reasons no HTTP call-backs is done on this page – every time the use log into this page the field will be blank

## Unit Name configuration page

**Unit Name Configuration**

Low BATT Volts(max4): 10.0  
 High BATT Volts(max4): 12.5  
 Unit Name(max14): TowerA  
 CC To(cc:email address-max32):  
 Save

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Enter LOW BATT Volts : eg 10.3 - unit will send a email to the specified email address and the cc address if specified as soon as the battery voltage is equal or smaller than 10.3 VDC

Enter HIGH BATT Volts : eg 12.6 - unit will send a email to the specified email address and the cc address if specified as soon as the battery voltage is equal or smaller than 12.6 VDC

Enter the Unit name : eg TowerA – this name will appear in the email body to easily determine from which tower the email came from / example email received from low and then recovered battery voltage

From: sales@microinstruments.co.za  
 To: info@microinstruments.co.za  
 Subject: Mi AC Monitor

T o w e r A

MAINS OFF

BATTERY: 08.1V

EMAIL GENERATED - LOW BATTERY CONDITION !:

Current Battery volts settings

eMail LOW BATTERY @10.0V

eMail HIGH BATTERY @12.5V

From: sales@microinstruments.co.za  
 To: info@microinstruments.co.za  
 Subject: Mi AC Monitor

T o w e r A

MAINS OFF

BATTERY: 13.6V

EMAIL GENERATED - BATTERY OK !:

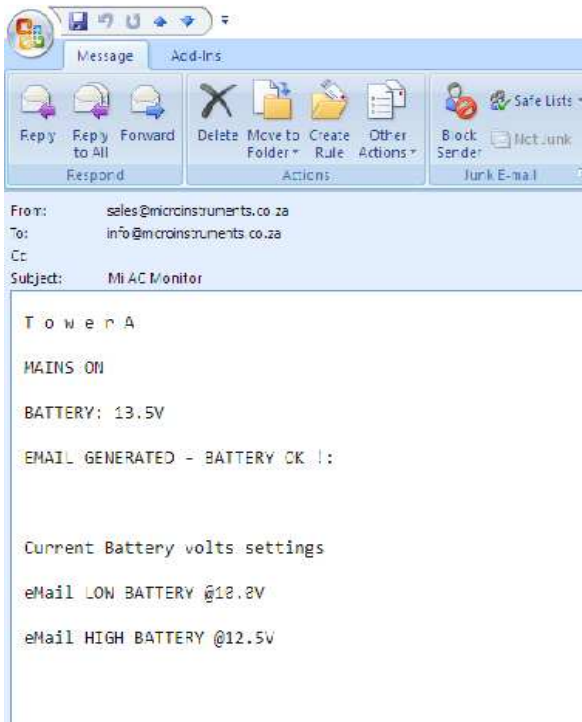
Current Battery volts settings

eMail LOW BATTERY @10.0V

eMail HIGH BATTERY @12.5V



Example email received from low and then recovered battery voltage



Physical

**Default IP : 192.168.1.4 // factory default**

L=80mm – W = 70mm – H = 30mm

Power supply – 12v or 24 volt as per unit specification

Consumption with relay on = 100mA @12V / =50mA@24V

Consumption with relay off = 60mA @12V / = 30mA@24V