TIP TEMPerature Products
EVERY DEGREE MATTERS™

MULTI-PROBE ALARM SYSTEM

OPERATING INSTRUCTIONS

sku: HAMALM004

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Limited Warranty

TIP TEMPerature Products warrants each manufactured item against defects in material and workmanship, when used as recommended, for a period of one year from original purchase. Products believed to have such defects must be returned to the factory by prepaid transportation.

TIP TEMPerature Products' obligation under this warranty is limited to the repair or replacement, at its option, of those items which upon examination prove to be defective. Such repair or replacement will be made without charge.

This warranty will be void if repairs or alterations are made or attempted without factory authorization; or if the item has been subject to misuse, negligence or accident.

TIP TEMPerature Products assumes no liability for consequential damages of any kind. The purchaser, by acceptance of the product, assumes all liability of the consequence of its use or misuse.

TIP TEMPerature Products makes no other warranty, whether expressed or implied, in connection with the sale or use of its products.

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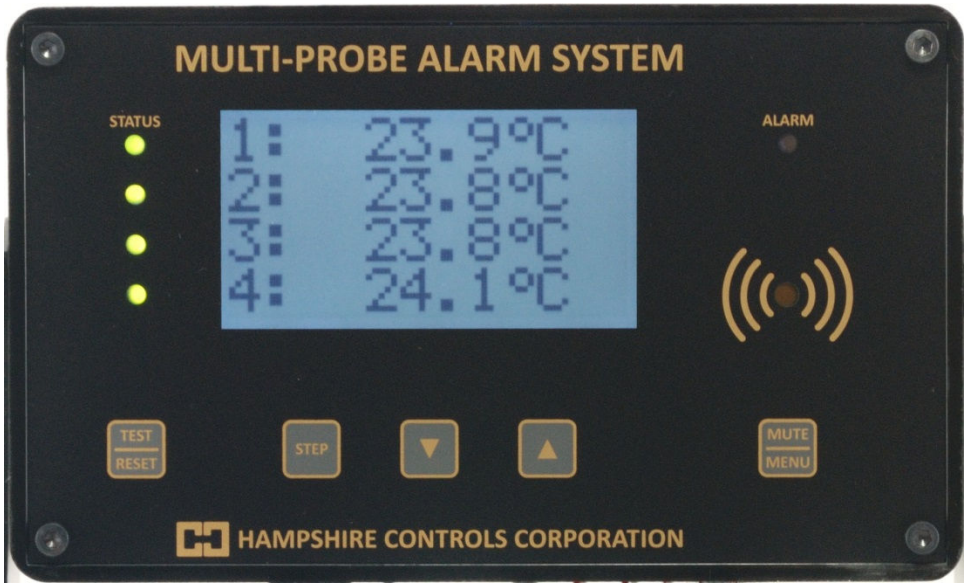
Front Panel

The Multi-Probe Alarm System front panel consists of the following:

- Graphic LCD
- Channel Status LEDs (*STATUS*)
- Alarm LED (*ALARM*)
- Audible alarm indicator (buzzer)
- Buttons
    - Test & Reset (*TEST/RESET*)
    - Step button (*STEP*)
    - Alarm Limits & decrement button (*vv*)
    - Min/Max & increment button (^^)
    - Mute & Menu increment button (*MUTE/MENU*)



Sensor Probe

The probes supplied with the Multi-Probe Alarm System are highly accurate temperature sensors. The sensor may be put in water or other mild aqueous solutions from -100°C to 100°C.
NOTE: Avoid submerging the probe in solvents or harsh chemicals. Use protective thermowells when monitoring such materials.
NOTE: The warranty does NOT cover damage to probes or electronics that is caused by exceeding temperature limitations, or damage to probes caused by using them in solvents or other unsuitable environments.
NOTE: If the displayed temperature shows a consistent high (> 100°C) or low (< -100°C) value, most likely, the probe has failed. The unit should be returned for probe replacement and recalibration.

Probe Installation

The probe may be used in air or in simulated product.
If installing the sensor in a refrigerator, try to place the probe in propylene glycol.
If installing the sensor in a cabinet or enclosure (particularly freezers), make sure to use good techniques to prevent room moisture from getting into the cabinet. Whenever possible, install the probe through an existing access port provided by the cabinet manufacturer, then reseal the port. Alternatively, the probe can be run under, over, or through the door-sealing gasket. Often a door gasket will have a joint at one or more corners. Open that joint slightly by carefully making a slit with a razor blade. Insert the probe wire and then reseal the joint with flexible silicone sealing compound. Inside the cabinet, run the probe wire so that it will not become snagged during loading, unloading or cleaning procedures.

Probe Location

Install the sensor probe in a location where it will respond to the average temperature of the space being monitored and not to local conditions caused by door openings, etc.
The object of the probe location is to provide some safety for the area being monitored without generating “false” or nuisance alarms. For example, locating the sensor probe on the bottom of a chest freezer will result in the alarm being sounded later than if it was located near the top. However, locating the sensor too close to the top of the chest freezer could result in the alarm being sounded due to routine lid opening. Choose a probe location that offers the safety desired for the enclosure contents.

Power-up

Shows MPS startup screen.

NO BATTERY
Power Down + Install Battery

The unit will run without a backup battery but will show “NoBatt!” on the display to indicate lack of backup battery.

When a battery is properly installed battery status is shown on the display

up arrow	charging
solid block	full charge
flashing block or block with blank lines	battery problem

Power-down Sequence

To shut off the battery to allow complete power down:
Tap the TEST/RESET button to enter relay test, then unplug unit.
Alternately you may Press-and-Hold the TEST/RESET button to trigger a hardware reset, and while the screen is blank unplug the unit and then Release the button.

Runtime Display

The runtime display shows the current readings of 2, 3 or 4 probes.

Alarm Conditions

Temperature Alarms

If the readings are within the alarm limits, the STATUS LED will blink green.
When the temperature reading meets or exceed the temperature limits the STATUS LED will blink red.
After the probe's alarm delay time is exceeded the unit will blink the ALARM LED and beep the buzzer.
The user can MUTE the buzzer by tapping the MUTE/MENU button. The unit will reduce the audible signal from a loud beep, to a quieter and less frequent chirp. It will remain muted until MUTE time expires or a different probe goes into alarm.
Once the Alarm state has been signaled the unit will wait the appropriate Relay Delay(s) time before tripping the appropriate Relay(s). Units with individual channel relays, have individual Relay Delay times. Units with a single relay have one Relay Delay time that applies to any alarm condition.

Limit Parameters
1 Low, 1 High, 2 Low, 2 High, 3 Low, 3 High, 4 Low, 4 High

Time Parameters
1AlarmDelay, 2AlarmDelay, 3AlarmDelay, 4AlarmDelay
Single Relay Units
RelayDelay
Individual Channel Relays
1RelayDelay, 2RelayDelay, 3RelayDelay, 4RelayDelay

Door Switch Alarm (Optional)

A dry-contact switch input is available as an option on the Multi-Probe Alarm System.

Typically this input is used in conjunction with a magnetic reed switch mounted to a refrigerator or freezer door. If the door is left open for longer than the Time parameter DoorAlrmDly, an alarm condition is generated. The switch input can be used with either normally open (NO) or normally closed (NC) contacts.

The user should set the Setup parameter DoorAlarm to activate this feature. To view the current status of the Door Input, tap the STEP button.

Setup Parameter

DoorAlarm -1: AlarmOnContactClosed
0 : NoAlarm
1: AlarmOnContactOpen

Time Parameter

DoorAlmDly 0-30 minutes

Door Status Display

Door Input	**Door Input**	**Door Input**	
Closed	**Open**	**Open**	<DoorStatus: Open/Closed>
Ok	**Delay**	**Alarm**	<AlarmStatus: Ok/Delay/Alarm>

Low / High Alarm Limits

For a quick view the Low and High Alarm Limits tap the DOWN ARROW.

1	**AlarmLow**	**2.0'C**
	AlarmHigh	**8.0'C**
2	**AlarmLow**	**2.0'C**
	AlarmHigh	**8.0'C**
3	**AlarmLow**	**2.0'C**
	AlarmHigh	**8.0'C**
4	**AlarmLow**	**-40'C**
	AlarmHigh	**-20'C**

Min/Max Readings

To view the Min/Max readings since power up or user commanded reset, tap the UP ARROW.

1	**ActualMin**	**3.1'C**
	ActualMax	**6.8'C**
2	**ActualMin**	**3.6'C**
	ActualMax	**6.6'C**
3	**ActualMin**	**3.0'C**
	ActualMax	**7.2'C**
4	**ActualMin**	**-38'C**
	ActualMax	**-32'C**

To manually reset the Min/Max readings, while the Min/Max readings are shown on the display, tap the TEST/RESET button. You will be asked to repeat TEST/RESET to confirm.

MPS Email Notification Feature

The MPS sends email on unit reset, alarm, continued alarm and recovery from alarm.
The unit sends email 5 minutes after email failure and repeats every 10 minutes after that.
Once daily, it sends a report of the last 24 hours that includes temperatures on the hour and alarms to contact #1.

The email subject line identifies the unit and reports the current temperature. The message reports the last 10 minutes of data. The unit is identified by the name ID001, where 001 is the unit number assigned by the user as an MPS parameter. All mail settings are setup using web pages accessed by the IP assigned to the unit.

MPS EMAIL SETUP PARAMETERS -- IP, Setup Web Page Passcode

NAME	Description	Explanation	Factory Set
IP1	IP 1	First number of IP (1.2.3.4)	192
IP2	IP 2	Second number of IP	168
IP3	IP 3	Third number of IP	0
IP4	IP 4	Fourth number of IP	141
NetworkCode	PassCode	5 digit PassCode for Setup web page access (-30000 to 30000)	-22718

Main page:

Access by entering IP address on your browser's URL.
Main page displays
- the designated email server and the email address
- the last 10 minutes of data from the MPS
- the contact list of up to 8 email addresses

Main page has links to
- edit the contact list *
- send a test email to all contact list addresses
- view a log of alarm emails and test emails
- clear the email log *
- retry getting date & time from nist server

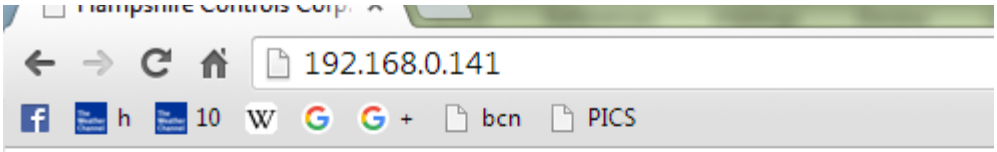
* requires list name/password

Setup page:
Requires the Master name "setupadmin", and the MPS five digit passcode.
Allows specification of Subnet Mask, Gateway, DNS Server, SMTP Server, SMTP auth user, SMTP password, List Administrator Name, List Password, Time zone [EST: -5, CST: -6, MST: -7, PST –8], Daylight Savings start and end, and the time the daily report should be sent [0-23].

Edit contact link:
Requires the List User Name and List Password for access.
Allows specification of up to 8 email contact addresses.

Web Pages:

[Main Page]
[Access by entering the IP in browser address bar]



MPS Email Alarm Notification v1.0
Server: smtp.1and1.com Address: mpsdemo@hampshirecontrols.com

Last Data Reported
01/11/2016 14:14..Ok 61'F 61'F 61'F 61'F
01/11/2016 14:15..Ok 61'F 61'F 61'F 61'F
01/11/2016 14:16..Ok 61'F 61'F 61'F 61'F
01/11/2016 14:17..Ok 61'F 61'F 61'F 61'F
01/11/2016 14:18..Ok 61'F 61'F 61'F 61'F
01/11/2016 14:19..Ok 61'F 61'F 61'F 61'F
01/11/2016 14:20..Ok 61'F 61'F 61'F 61'F
01/11/2016 14:21..Ok 61'F 61'F 61'F 61'F
01/11/2016 14:22..Ok 61'F 61'F 61'F 61'F
01/11/2016 14:23..Ok 61'F 61'F 61'F 61'F
[01/11/2016 14:23]

Contact List
1:lindastewart@hampshirecontrols.com
2:
3:
4:
5:
6:
7:
8:

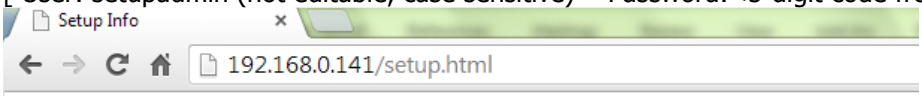
Edit Contact List

Send test email (to all) --click once and please wait
View Test/Email/Time Log Clear Log

View Single Email Debug

retry nist time --click once, wait 1 minute, then check log

[Setup page – "initial setup"]
[Access by adding "setup.html" to the IP]
[User: setupadmin (not editable, case sensitive) Password:<5-digit code from MPS>]

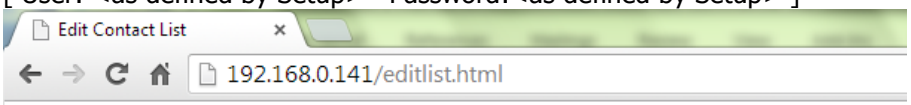


Setup Info

Subnet Mask	255.255.255.0
Gateway	192.168.0.1
DNS Server	192.168.0.1
SMTP Server	smtp.1and1.com
SMTP auth user	mpsdemo@hampshirecontrols.com
SMTP password	*********
List/Log User	listadmin
List/Log Password	idoemaillist
Timezone(EST:-5,PST:-8)	-5
DST *starts (mm/dd/yy)	3/13/16
DST *ends (*Sunday)	11/6/16
Daily Report Time(0-23)	8

Submit Reset

[Contact List Page for maintaining contact list]
[Access via link from main page]
[User: <as defined by Setup> Password:<as defined by Setup>]



Edit Contact List

1	lindastewart@hampshirecontrols.com
2	
3	
4	
5	
6	
7	
8	

Submit Reset

Defaults:

Web	Setup Administrator	setupadmin	*this is coded into the firmware and is not editable
	Setup Password	-22718	*use MPS NetworkCode as password
Web	List Administrator	listadmin	
	List Password	idoemaillist	

Please define:
MPS: IP (IP1, IP2, IP3, IP4)
NetworkCode: number –30000 to 30000
Web Setup: Subnet Mask SMTP Server
Gateway SMTP auth user
DNS Server SMTP password
Contacts: At least 1 email contact

Installation Instructions:

#1 – Set Your IP
From the MPS front panel: Tap Menu to ender Edit.
Tap Test and Menu simultaneously, to switch to the *SETUP* group of parameters.
Use Step to advance to IP1,IP2,IP3,IP4 and set them accordingly.
If desired modify your Unit ID and NetwordCode.
Tap Menu 3 times to advance out of Edit and back to the runtime temperatures.
Hold Reset until the display goes blank, then release.

#2 -- Define your network and email settings
Using your web browser enter the IP address to access the unit.
After reviewing main web page, add "/setup.html" to the IP, to access the Setup Info.
Name: setupadmin (unchangable, case sensitive) Passcode: -22718
Enter your Subnet Mask, Gateway, DNS Server.
Enter your SMTP server, SMTP auth user, and SMTP password.
Submit.
Back at the main page verify server and address at top of page, then click "Edit Contact List"
Name: listadmin Passcode: idoemaillist
Please add one contact email address.
Submit.

#3 -- Test
Back at main page click "Send test email", and wait.
Click "View Test/Email Failure Log".
Success: "Admin Test 1sent"
Failure: "Admin Test 1fail"
Check your email for message received

After Daylight Savings Time ends in November, and before it begins in March, please update the Setup Parameters DST start and end to ensure proper date/time.

DST Start	DST End
Sunday March 13, 2016	Sunday November 6, 2016
Sunday March 12, 2017	Sunday November 5, 2017
Sunday March 11, 2018	Sunday November 4, 2018
Sunday March 10, 2019	Sunday November 3, 2019
Sunday March 8, 2020	Sunday November 1, 2020
Sunday March 14, 2021	Sunday November 7, 2021
Sunday March 13, 2022	Sunday November 6, 2022

MPS Overview

Buttons: **TEST/RESET**, **STEP**, **DOWN**, **UP**, **MUTE/MENU**

Runtime Display

```
1:   8.9'C
2:   8.4'C
```

Edit Parameters

At Runtime tap **MENU**

```
Edit Limits
1 Low
    -30.3
To STEP BACK tap TEST
```

Repeat **MENU**, **MENU**,.. To **Edit Limits** , **Edit Times** , Return to Runtime or while in Edit tap **MENU** AND **RESET** simultaneously to access ***SETUP*** group

To step through parameters in group use **STEP**

To modify parameter values use **DOWN** , **UP**

To step out of edit and back to runtime screen use **MENU**

Group 1 **Limits**

1 Low, 1 High, 2 Low, 2 High

Group 2 **Times**

1AlarmDelay, 2AlarmDelay, DoorAlrmDly,
1RelayDelay, 2RelayDelay, Mute

Special Group ***SETUP***

1 Offset, 2 Offset,
 # channels,
1 Define, 0:tenthC 1:wholeC 2:tenthF 3:wholeF 4:wholeRH
2 Define,
Relay Def, 0:single unit relay 1:individual channel relays
DoorAlarm -1:AlarmOnContactClosed 0:NoAlarm 1:AlarmOnContactOpen
Unit ID -1:AlarmOnContactClosed 0:NoAlarm 1:AlarmOnContactOpen
IP1, IP2, IP3, IP4, IP 1.2.3.4
NetworkCode **-30,000 to 30,000** Setup Web Page Password

Door Status Display

Upon Door Alarm, the Door Status Displays until user responds,OR By User command at Runtime tap **STEP**

Door	**Door**	**Door**	
Closed	**Open**	**Open**	<DoorStatus: Open/Closed>
Ok	**Delay**	**Alarm**	<AlarmStatus: Ok/Delay/Alarm>

Low/High Alarm Setpoint Display

At Runtime tap **DOWN**

```
1  AlarmLow   2.0'C
   AlarmHigh  8.0'C
2  AlarmLow   2.0'C
   AlarmHigh  8.0'C
```

Min/Max Temperatures Display

At Runtime tap **UP**

```
1  ActualMin  3.1'C
   ActualMax  6.8'C
2  ActualMin  3.6'C
   ActualMax  6.6'C
```

Min/Max Reset

*while viewing Min or Max tap **RESET**

```
Min & Max
   Reset
RESET to confirm
STEP to cancel
```

Relay Test

At Runtime tap **TEST**

Relay Test	**Relay Test**
Rly1 15	**Rly2 15**
To Step, tap STEP	**To Step, tap STEP**
To Hold, hold STEP	**To Hold, hold STEP**

* seconds counting down