

Temperature Guard

Model CM712



Manual and Installation Instructions

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General Description

The CM712 is an advanced environmental monitor and alarm that monitor's temperature and humidity wherever it is located. These sensors are referred to as "internal sensors".

The CM712 can also monitor two additional temperature zones with optional temperature sensors that can be located up to 200 feet away. These sensors are referred to as "external sensors".

Other advanced features include the ability to monitor two door sensors (dry contact inputs) and a water sensor.

The CM712 has a rechargeable battery backup included that allows it to continue monitoring for up to 10 hours without power. CM712 will also send a warning text when the battery voltage gets below 5.8VDC. This setting is not user adjustable.

The CM712 is programmed and notifies you of alarm conditions by sending and receiving text messages via the cellular network. No phone land line is required. The CM712 can send alarm condition text messages to four cell phones.

Additional Features

Configure the CM712 to send a daily status text at the time you specify.

All program settings can be password protected

Sensors can be named to help identify the cause of the alarm.

Temperature readings can be set to Fahrenheit or Celsius.

You can request the current status at any time.

FCC ID: RI7HE910

IC:5131A-HE910

More documentation can be found here;

<http://www.temperatureguard.com/CM712.html>

Installation

Installation location depends on which features of the CM712 you are using.

If you are using the internal temperature and humidity sensor, located the CM712 in the area of interest away from direct sunlight or air streams.

If you are using the external sensor(s), locate the CM712 convenient to power.

Connect any external temperature sensors, door sensors, or water sensors purchased from www.temperatureguard.com. See wiring diagram on page 12.

If you are providing your own SIM card

Turn the power off by sliding the power switch to the OFF position.

Remove the power jack.

Remove the four screws holding the cover on.

Insert the SIM card into the SIM slot.

Replace the cover, insert and tight the four screws.

Plug in the power jack.

Turn on the CM712 by sliding the power switch to the ON position.

The CM712 will power up and register itself on the cell network.

The green LED indicates the connection to the cellular network.

Steady blinking means that it is not registered on the network.

Blinking on and then off for 2 seconds means that the CM712 is registered on the network.

The Yellow LED indicates power and should be on.

The CM712 will now continuously cycle thru the status of all inputs.

Signal strength will be shown as bars, one to five in the lower right of the LCD screen. Five being the strongest signal. Five X's will appear if no SIM is inserted, and five dashes will appear if there is no signal.

Programming with a Cell Phone

Programming can be done with a cell phone or by email. This section only covers programming with a cell phone.

It is recommended that you add the SIM number to your cell phone's address book.

It is recommended that you program the password last.

Programming is accomplished with commands. For example, if you want the 1st alert cell phone number to be 860-555-1212, then you would send a text message to the phone number of the SIM card. The text would read,

P1:8605551212

See table for complete set of commands. Commands are not case sensitive except for password programming.

All commands cannot be sent at once in a single text message. It is recommended that it be broken into several different messages. If possible programming with email is much easier.

Suggested Text or Email Programming Order (see pg. 14 for examples)

| | |
|---------|-------------------------|
| Text 1 | Units: |
| Text 2 | P1: through P4: |
| Text 3 | UID: |
| Text 4 | AU:, AL:, AT:, and AID |
| Text 5 | HU:, HL:, HT:, and HID: |
| Text 6 | BU:, BL:, BT:, and BIT: |
| Text 7 | CU:, CL:, CT:, and CID: |
| Text 8 | PT:, WT:, RT:, and ST: |
| Text 9 | D1: and 1ID: |
| Text 10 | D2: and 2ID: |
| Text 11 | PW: |

At the minimum:

You must program at least one cell phone number to receive alarm text messages.

You must program limits for the sensors that you are using. The factory default limits are very wide and thus may not cause an alarm text to be sent.

| CMD | Function | Example |
|---------------|---|--------------------|
| Units: | Sets monitor to Celsius or Fahrenheit | Units:F |
| P1: | Sets 1st phone number | P1:8605551212 |
| P2: | Sets 2nd phone number | P2:8605552424 |
| P3: | Sets 3rd phone number | P3:8605553636 |
| P4: | Sets 4th phone number | P4:8605554848 |
| UID: | Names the monitor | UID:Mountain Cabin |
| AU: | Upper temp limit of internal sensor | AU:85 |
| AL: | Lower temp limit of internal sensor | AL:35 |
| AT: | Time delay of internal temperature sensor | AT:2 |
| AID: | Internal sensor name | AID:Room Sensor |
| HU: | Upper limit of internal humidity sensor | HU:70 |
| HL: | Lower limit of internal humidity sensor | HL:0 |
| HT: | Time delay of internal humidity sensor | HT:15 |
| HID: | Humidity sensor name | HID:Humidity |
| BU: | Upper limit of external sensor 1 | BU:30 |
| BL: | Lower limit of external sensor 1 | BL:-10 |
| BT: | Time delay of external sensor 1 | BT:5 |
| BID: | External sensor 1 name | BID:Freezer |
| CU: | Upper limit of external sensor 2 | CU:20 |
| CL: | Lower limit of external sensor 2 | CL:-15 |
| CT: | Time delay of external sensor 2 | CT:10 |
| CID: | External sensor 2 name | CID:Refrigerator |
| PT: | Power outage time delay | PT:1 |
| WT: | Water sensor time delay | WT:1 |
| RT: | Text message reminder/repeat time | RT:120 |
| ST: | Status update time | ST:13 |
| D1: | Door sensor 1 time delay | D1:2 |
| 1ID | Door 1 name | 1ID:Front Door |
| D2: | Door sensor 2 time delay | D2:2 |
| 2ID | Door 2 name | 2ID:Garage Door |
| PW: | Sets the password | PW:5964 |
| CPW: | Clears the set password | CPW:5964 |

Commands Explained

In bold is the command, example in parenthesis.

- ◆ **Units:** (Units:C or Units:F) Unit is shipped in Fahrenheit. There is no need to use this command if you want degrees displayed in Fahrenheit. Changing from Fahrenheit to Celsius does not automatically change the limits. It applies to all sensors, you cannot set one to C and another to F.
- ◆ **P1:-P4:** (P1:8605551212) You may program up to four cell phone numbers you wish to receive alerts when temperatures go out of limits for the programmed time delay. Phone numbers must be at least 10 digits. To delete a phone number send the command with no number. P1: for example.
- ◆ **UID:** (UID:Mountain Cabin) This command names the monitor. It will be displayed in the From portion of a text message sent by the monitor. This is very useful if you have more than one. **10 characters minimum, 16 max!**
- ◆ **AU:** (AU:85) This example sets the upper limit of the internal temperature sensor to 85 degrees. If the temperature were to exceed 85 degrees for more than the programmed time limit, a text message would be sent.
- ◆ **AL:** (AL:35) This example sets the lower limit of the internal temperature sensor to 35 degrees. If the temperature were to drop below 35 degrees for more than the programmed time limit, a text message would be sent.
- ◆ **AT:** (AT:2) This example sets the time delay of the internal temperature sensor to 2 minutes. This means that once the temperature went out of range, the monitor would wait 2 minutes before sending text alerts.
- ◆ **AID:** (AID:Room Sensor) Sets the name of the internal temperature sensor to Room Sensor.
- ◆ **HU:** (HU:70) This example sets the upper humidity limit of the internal sensor to 70%.
- ◆ **HL:** (HL:0) This example sets the lower humidity limit of the internal sensor to 0%.
- ◆ **HT:** (HT:15) This example sets the time delay of the internal humidity sensor to 15 minutes. This means that once

the humidity went out of range, the monitor would wait 15 minutes before sending text alerts.

- ◆ **HID:** (HID:Humidity) This example sets the name of the internal humidity sensor to Humidity.
- ◆ **BU:** (BU:30) This example sets the upper limit of the external temperature sensor 1 to 30 degrees. If the temperature were to exceed 30 degrees for more than the programmed time limit, a text message would be sent.
- ◆ **BL:** (BL:-10) This example sets the lower limit of the external temperature sensor 1 to -10 degrees. If the temperature were to drop below -10 degrees for more than the programmed time limit, a text message would be sent.
- ◆ **BT:** (BT:5) This example sets the time delay of the external temperature sensor 1 to 5 minutes. This means that once the temperature went out of range, the monitor would wait 5 minutes before sending text alerts.
- ◆ **BID:** (BID:Freezer) This example sets the name of external sensor 1 to Freezer.
- ◆ **CU:** (CU:20) This example sets the upper limit of the external temperature sensor 2 to 20 degrees. If the temperature were to exceed 20 degrees for more than the programmed time limit, a text message would be sent.
- ◆ **CL:** (CL:-15) This example sets the lower limit of the external temperature sensor 2 to -15 degrees. If the temperature were to drop below -15 degrees for more than the programmed time limit, a text message would be sent.
- ◆ **CT:** (CT:10) This example sets the time delay of the external temperature sensor 2 to 10 minutes. This means that once the temperature went out of range, the monitor would wait 10 minutes before sending text alerts.
- ◆ **CID:** (CID:Refrigerator) This example sets the name of external sensor 2 to Refrigerator.
- ◆ **PT:** (PT:1) This example sets the power outage time to 1 minute. Once power has been out for one minute, a text will be sent. **Note: A setting of PT:0 will not alarm on a power outage of less than 3 seconds.**
- ◆ **WT:** (WT:1) This example in the table and parenthesis would set the time delay of the optional water sensor to 1 minute. This means that once the water sensor became wet a text would be sent one minute later.

| CMD | Default Setting | Allowable Range | Your Setting |
|---------------|------------------------|-------------------------|---------------------|
| Units: | F | C or F | |
| P1: | Empty | 10 digit minimum | |
| P2: | Empty | 10 digit minimum | |
| P3: | Empty | 10 digit minimum | |
| P4: | Empty | 10 digit minimum | |
| UID: | Empty | 10-16 characters | |
| AU: | 200 | -20to 120 | |
| AL: | -200 | -20to 120 | |
| AT: | 15 | 0-900 | |
| AID: | Internal Temp | 2-16 characters | |
| HU: | 100 | 10-95% | |
| HL: | 0 | 5-85% | |
| HT: | 15 | 0-900 | |
| HID: | Humidity | 2-16 characters | |
| BU: | 200 | | |
| BL: | -200 | | |
| BT: | 15 | 0-900 | |
| BID: | External Temp 1 | 2-16 characters | |
| CU: | 200 | | |
| CL: | -200 | | |
| CT: | 15 | 0-900 | |
| CID: | External Temp 2 | 2-16 characters | |
| PT: | 999 | 0-900* | |
| WT: | 999 | 0-900 * | |
| RT: | 0 | 60-900 ** | |
| ST: | 0 | 1-23** | |
| D1: | 999 | 0-900 * | |
| 1ID: | Door 1 | 2-16 characters | |
| D2: | 999 | 0-900 * | |
| 2ID: | Door 2 | 2-16 characters | |
| PW: | Empty | Any 4 digits or letters | |
| CPW: | N/A | | |

** 0 is disabled.

* 999 is disabled.

- ◆ **RT:** (RT:120) This example in the table and parenthesis would set the reminder time to 2 hours. The monitor will continue to send text alerts every 2 hours as long as the condition remains in alarm. **Zero is the default and is disabled when set to zero.**
- ◆ **ST:** (ST:13) This example would send a status message at 1:00 pm every day. 0 is disabled, therefore you cannot receive a status update at midnight. Status contains everything the ? Query returns.
- ◆ **D1:** (D1:2) This example in the table and parenthesis would set the time delay of the optional door sensor 1 to 2 minutes. This means that a text would be sent after the door was open for two minutes. To disable a door sensor, set the delay to 999. D1:999
- ◆ **1ID:** (ID:Front Door) This example sets the 1st door sensor name to Front Door.
- ◆ **D2:** (D2:2) This example in the table and parenthesis would set the time delay of the optional door sensor 2 to 2 minutes. This means that a text would be sent after the door was open for two minutes. To disable a door sensor, set the delay to 999. D2:999
- ◆ **2ID:** (2ID:Garage Door) This example sets the 2nd door sensor name to Garage Door.
- ◆ **PW:** (PW:5964) This example in the table and in parenthesis would set the password of the monitor to 5964. This means that any further texts or emails sent to the monitor should include on the first line the number 5964. It can be any 4 digits or letters. **Letters are case sensitive.**
- ◆ **CPW:** (CPW:5964) This example in the table and in parenthesis would clear the password of the monitor which was set to 5964 in the previous example.
- ◆ **Warning: The commands for PW: and CPW: must be in all caps!** If you forget your password, the only way to clear it is to set the monitor back to factory defaults. That can only be done by turning the monitor off, pressing and holding the reset button, while turning it back on. It can be done remotely, but if it happens on a Friday night tech support will not be able to help until Monday morning.

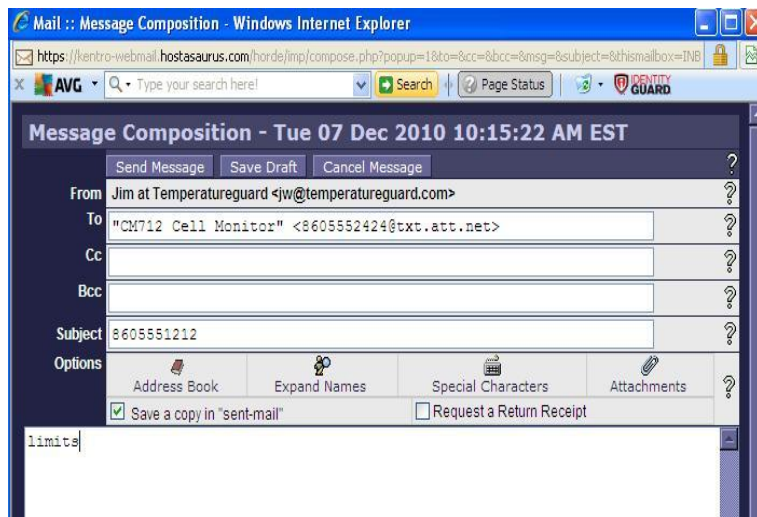
Programming with email

The monitor can be programmed with email in the same fashion as a text message with a few differences.

When sending an email delete your signature line and any other extra characters attached to a generic email. Remember 160 characters max.

Do not try to program every parameter in a single email. It won't work. Break it into several separate emails. See table on pg. 5.

The subject line must contain the ten digit cellular telephone number you would like the monitor to respond to.



This example above shows the number of the monitor is 860-555-2424 and the cell phone it will respond to is 860-555-1212. When this email is sent, the limits of the monitor will be sent via text to the cell phone. See pg. 12.

AT&T example 8605551212@txt.att.net

T-Mobile example 8605551212@tmomail.net

External Temp 1
 UL 200F LL -200F T:
 0 min

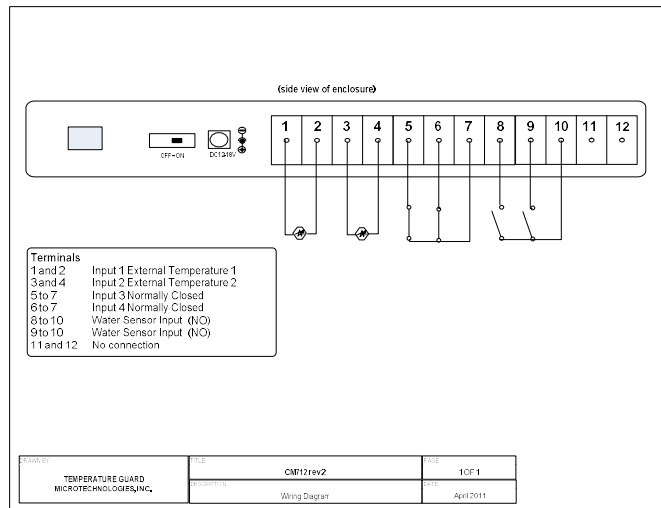
External Temp 2
 UL: 200F LL: -200F T:
 0 min

Room Temp
 UL 85F LL 33F T:2
 min

Room Humidity
 UL 90% LL 10% T:10
 min

Sent from:
 Mountain Cabin

Wiring Diagram



Querying the CM712

- ◆ **? (?)** Simply sending a text message with a ? to the monitor's cell number, a status message will be sent back to the phone it was sent from. Text will include readings from the external temperature sensors, internal sensor with humidity, door status, water status, and ID of the monitor.
- ◆ **PHONE** (phone) Sending a text message with the word phone to the monitor's cell number, a status message will be sent back to the phone it was sent from. Text will include all the programmed telephone numbers.
- ◆ **Limits** (limits) Sending a text message with the word limits to the monitor's cell number, a status message will be sent back to the phone it was sent from. Text will include the programmed temperature limits humidity limits and their respective time delays.
- ◆ **Delays** (delays) Sending a text message with the word delays to the monitor's cell number, a status message will be sent back to the phone it was sent from. Text will include the programmed time delays for power, door sensors, water sensor, and the reminder time delay.
- ◆ **IDS** (ids) Sending a text with the letters IDS will return the names of all the sensors.
- ◆ **TESTCELL** (TESTCELL) This will send a text to all programmed numbers. Must be all caps!

| Query | Answer from CM712 |
|----------|--|
| ? | Status of temperature, humidity, doors |
| phone | Programmed phone numbers |
| limits | Programmed limits |
| delays | Programmed delays |
| ids | Programmed names of unit and sensors |
| TESTCELL | Status of temperature, humidity, doors to all programmed cell phones |

Text 1 Example
Units:C

Text 2 Example
P1:8605551212
P2:8605552323
P3:8605553434
P4:8605554545

Text 3 Example
Uid:Vermont Office

Text 4 Example
Au:75 al:35 at:2
Aid:Server Room

Text 5 Example
Hu:75 hl:25 ht:5
Hid:Server Rm. Hum

Text 6 Example
Bu:55 bl:25 bt:5
Bid:AC Sensor

Text 7 Example
Cu:55 cl:25 ct:5
cid:Outside Temp

Text 8 Example
Pt:2 Wt:0 Rt:20 St:20

Text 9 Example
D1:1
1ID:Front Door

Text 10 Example
D2:0
2ID:Server Rm. Door

Text 11 Example
PW:23wF

2 spaces between commands
Don't enter any commands after programming id's.
PW: must be in caps
Always test your programming when finished using the query commands;
Limits
Delays
Phone
Ids
?
TESTCELL

Limited Warranty:

1. Warrantor: Dealer, Distributor, Retailer, and Manufacturer

2. Warranty and Remedy

We believe that this is a high quality product. Although we test all products for proper functionality, we cannot guaranty that there will never be a defective unit, or that a unit will function everywhere due to poor cell coverage, and on all cell networks.

For this reason, it must be clear that the **Warrantors are not insuring your premises or guaranteeing that there will not be damage to your person or property if you use this Product.** If this warranty is unacceptable please return the unused Product for a full refund.

One Year Limited Warranty - Microtechnologies, Inc. warrants its products to be free from defects in material and workmanship under normal use for one year, and is not responsible for consequential damage or installation costs of any nature. In event that the Product does not conform to this Warranty at any time during the period of one year from original purchase date, Warrantor will repair the defect and return it to you at no charge. **Important: The Warranty is limited to replacement of the Product ONLY.** Secondly, because cell phone service differs in signal strength and availability, we strongly encourage you to test this Product in its actual application. This should include a full test, involving the Product actually sending and receiving text messages to its' designated location and someone verifying the proper response.

This warranty shall terminate and be of no further effect at the time the Product is 1) damaged by extraneous causes such as fire, water, lightning, etc. or not maintained as reasonable and necessary: 2) modified: 3) improperly installed: 4) repaired by someone other than the Warrantor: 5) used in a manner or purpose for which the Product was not intended.

Do Not Use as Critical Component. Products sold by Microtechnologies, Inc. are not authorized for use in any manner as a component of a life support device or system, whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

WARRANTORS' OBLIGATION UNDER THIS WARRANTY IS LIMITED TO REPAIR OR REPLACEMENT OF THE PRODUCT ONLY. THIS WARRANTY DOES NOT COVER PAYMENT OR PROVIDE FOR THE REIMBURSEMENT OF PAYMENT FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

It must be clear that the Warrantors are not insuring your premises or guaranteeing that there will not be damage to your person or property if you use this Product. The Warrantors shall not be liable under any circumstances for damage to your person or property or some other person or that person's property by reason of the sale or use of this Product, or its failure to operate in the manner in which it is designed. The Warrantor's liability, if any, shall be limited to the original cost of the Product only. Use of this Product is at your own risk.

3. Procedures for obtaining performance for Warranty:

In the event that the Product does not conform to this Warranty, the Product should be shipped or delivered freight prepaid to a Warrantor with evidence of original purchase. If in any way you are not comfortable with the product or its Limited Warranty, we encourage you to return it unused for a full refund.

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