SPECIFICATIONS

Temperature—
displayed temperature is within the following range:
32.0 ° to 122.0 °F / 0.0 to 50.0 °C
Resolution: 0.1 °

Humidity—
Range: 0.0 to 99.9% RH
Resolution: 0.1 %

Dew Point—
Resolution: ± 0.1 °C / ± 0.1 °F
Range: 32.0 to 122.0 °F / 0.0 to 50.0 °C

AC power supply only
If the AC power supply is being used without the battery, in the event of a power outage, the meter will turn off and data logging will stop.

AC power supply and batteries together
Using the AC power supply and battery together allows the batteries to act as a backup power supply in the event of a power outage.

When using the AC power supply and batteries together, the batteries will need to be replaced periodically to insure they have sufficient power to operate the meter during a power outage (see the "Battery Replacement" section).

DISPLAY MESSAGES
The following messages may appear alternating in place of the time-of-day clock.

Battery Power
AC power supply only
Battery Replacement

MINIMUM AND MAXIMUM MEMORY
There are six points that are automatically recorded into memory.
• Minimum Ambient Temperature Achieved
• Maximum Ambient Temperature Achieved
• Minimum Ambient Relative Humidity Achieved
• Maximum Ambient Relative Humidity Achieved
• Minimum Dew Point Temperature Achieved
• Maximum Dew Point Temperature Achieved

Checking the Minimum/Maximum Memories
The meter does not have to be in the Min/Max memory display mode to clear the minimum/memories.

To clear the minimum/memories:
1. Press the MIN button to show the minimum value.
2. Press the CLEAR button to clear the memory.

To clear the maximum/memories:
1. Press the MAX button to show the maximum value.
2. Press the CLEAR button to clear the memory.

DISPLAYING °F OR °C
With the meter turned on, to toggle the display between °Fahrenheit or °Celsius, press and hold the ◄ button for 3 seconds.

When using the data logging function, the temperature values recorded will match the selected display unit (°F or °C).

SETTING HIGHLOW ALARM LIMITS
While setting the High/Low alarm limits, if no alarm limits have been set for a particular reading, press the MIN button, “- -.-” will appear on the display indicating the alarm for the value has been disabled.

Each high and/or low alarm value has been set for a particular reading, the alarm will be enabled. Apparent the left of the display indicates that an alarm is enabled for that reading. Each readings High/Low alarm limits may be independently enabled/disabled allowing selecting of high alarm only, low alarm only, both high and low alarm monitoring. Depending on the alarm, a high alarm, low alarm or both high and low alarms are enabled for that reading.

To enable an alarm that has been disabled, while viewing the disabled alarm (“- -.-” no longer appearing), press the ◄ or ► button to increment the value to the desired alarm level. An alarm with value selected (“- -.-” no longer appearing), the alarm will be enabled.

Each High/Low alarm limit may be independently enabled/disabled allowing selecting of high alarm only, low alarm only, both high and low alarm monitoring.

DISABLENABLE HIGHLOW ALARM LIMITS
Once alarm limits have been set, if no steps are taken to change the High/Low Alarm limits section to view the values that have been set. Press the SET button to cycle through the values that have been disabled.

An alarm limit may be disabled while being displayed by pressing the MIN button, “- -.-” will appear on the display indicating the alarm for the value has been disabled.

While alarm, the sound may be turned off by pressing the SET button (“OFF” will appear on the display and “Lo” will only turn off the alarm sound). This will turn off the alarm sound and no audible alarms will sound while the alarm sound is turned off. The sound may be turned back on by reaching alarm condition and pressing the SET button to turn the sound back on; therefore, it is not recommended to turn off the alarm sound.

The flashing “- -.” and LED alarm are not affected by this setting.

DATA LOGGER
The built-in data logger is capable of utilizing SD (2GB maximum) and SDHC (4GB maximum) memory cards.

The sampling rate for the data logger may be set to record readings from every 1 minute to every 720 minutes in 1 minute increments. A 1 minute interval will record 1440 readings/day. A 220 minute interval will record 720 readings/day.

INSERTING/REMOVING SD MEMORY CARD
1. Turn off data logging (see the “Turning On/Off Data Logging” section).
2. Turn the meter off, by pressing the ON/OFF button.
3. Open the SD card door by lifting up on the bottom of the door.
4. Push the SD memory card until it “clicks”, then release the allow the card to be ejected.

To insert the SD memory card:
1. Turn the meter off, by pressing the ON/OFF button.
2. Open the SD card door by lifting up on the bottom of the door.
3. Make sure that the SD memory card is oriented properly (see image) and insert by pushing the card into the slot.
4. Close the SD card door by snapping it shut.
5. Turn the meter on by pressing the ON/OFF button.
6. Turn data logging on, if desired (see the “Turning On/Off Data Logging” section).

The supplied 256MB SD memory card is ready for immediate use. When utilizing 3rd party SD/SDHC cards, insure that they are formatted as FAT16 or FAT32, NTFS format is not supported. SD cards up to 2GB and SDHC cards up to 4GB are supported. Cards over 4GB and MMC/SDXC cards are not supported.

Higher capacity memory cards require more power to operate; therefore, larger cards will exhaust the batteries more rapidly (see the “AC Power Supply / Battery Power” section).

To remove the SD memory card:
1. Turn off data logging (see the “Turning On/Off Data Logging” section).
2. Turn the meter off, by pressing the ON/OFF button.
3. Open the SD card door by lifting up on the bottom of the door.
4. Push the SD memory card until it “clicks”, then release the allow the card to be ejected.

AC power supply only
If the AC power supply is being used without the battery, in the event of a power outage, the meter will turn off and data logging will stop.

AC power supply and batteries together
Using the AC power supply and battery together allows the batteries to act as a backup power supply in the event of a power outage.

When using the AC power supply and batteries together, the batteries will need to be replaced periodically to insure they have sufficient power to operate the meter during a power outage (see the “Battery Replacement” section).

Battery Power
AC power supply only
Battery Replacement

MINIMUM AND MAXIMUM MEMORY
There are six points that are automatically recorded into memory.
• Minimum Ambient Temperature Achieved
• Maximum Ambient Temperature Achieved
• Minimum Ambient Relative Humidity Achieved
• Maximum Ambient Relative Humidity Achieved
• Minimum Dew Point Temperature Achieved
• Maximum Dew Point Temperature Achieved

Checking the Minimum/Maximum Memories
The meter does not have to be in the Min/Max memory display mode to clear the minimum/memories.

To clear the minimum/memories:
1. Press the MIN button to show the minimum value.
2. Press the CLEAR button to clear the memory.

To clear the maximum/memories:
1. Press the MAX button to show the maximum value.
2. Press the CLEAR button to clear the memory.

DISPLAYING °F OR °C
With the meter turned on, to toggle the display between °Fahrenheit or °Celsius, press and hold the ◄ button for 3 seconds.

When using the data logging function, the temperature values recorded will match the selected display unit (°F or °C).

SETTING HIGHLOW ALARM LIMITS
While setting the High/Low alarm limits, if no alarm limit has been set for a particular reading, press the MIN button, “- -.-” will appear on the display indicating the alarm for the value has been disabled.

Each high and/or low alarm limit has been set for a particular reading, the alarm will be enabled. Apparent the left of the display indicates that an alarm is enabled for that reading. Each readings High/Low alarm limits may be independently enabled/disabled allowing selecting of high alarm only, low alarm only, both high and low alarm monitoring. Depending on the alarm, a high alarm, low alarm or both high and low alarms are enabled for that reading.

To enable an alarm that has been disabled, while viewing the disabled alarm (“- -.-” no longer appearing), press the ◄ or ► button to increment the value to the desired alarm level. An alarm with value selected (“- -.-” no longer appearing), the alarm will be enabled.

Each High/Low alarm limit may be independently enabled/disabled allowing selecting of high alarm only, low alarm only, both high and low alarm monitoring.

DISABLENABLE HIGHLOW ALARM LIMITS
Once alarm limits have been set, if no steps are taken to change the High/Low Alarm limits section to view the values that have been set. Press the SET button to cycle through the values that have been disabled.

An alarm limit may be disabled while being displayed by pressing the MIN button, “- -.-” will appear on the display indicating the alarm for the value has been disabled.

While alarm, the sound may be turned off by pressing the SET button (“OFF” will appear on the display and “Lo” will only turn off the alarm sound). This will turn off the alarm sound and no audible alarms will sound while the alarm sound is turned off. The sound may be turned back on by reaching alarm condition and pressing the SET button to turn the sound back on; therefore, it is not recommended to turn off the alarm sound.

The flashing “- -.” and LED alarm are not affected by this setting.

DATA LOGGER
The built-in data logger is capable of utilizing SD (2GB maximum) and SDHC (4GB maximum) memory cards.

The sampling rate for the data logger may be set to record readings from every 1 minute to every 720 minutes in 1 minute increments. A 1 minute interval will record 1440 readings/day. A 220 minute interval will record 720 readings/day.

SD CAR SELECTION
The supplied 256MB SD memory card is ready for immediate use. When utilizing 3rd party SD/SDHC cards, insure that they are formatted as FAT16 or FAT32, NTFS format is not supported. SD cards up to 2GB and SDHC cards up to 4GB are supported. Cards over 4GB and MMC/SDXC cards are not supported.

Higher capacity memory cards require more power to operate; therefore, larger cards will exhaust the batteries more rapidly (see the “AC Power Supply / Battery Power” section).
CONTROL COMPANY.

ADJUSTING DATA LOGGER RECORDING RATE

The sampling rate for the data logger may be set to record readings from every 1 minute to every 720 minutes in 1 minute increments. A 1 minute interval will record 1440 readings/day. A 720 minute interval will record 2 read/minute.

1. Press and hold the SET button for 3 seconds, release the SET button when "SET" appears at the bottom right side of the display in place of the clock.

2. The low alarm limit for the ambient temperature will appear.

3. Press the SET button six (6) times to pass through the alarm set-points, RAME should appear on the display.

4. The number flashing is the data logger recording interval (expressed in minutes). Press the ▲ or ▼ button to increment the display to the desired value.

5. With the desired value on the display, press the SET button to return to the current temperature/humidity display.

TURNING ON/OFF DATA LOGGING

Prior to starting data logging:

Make certain that the time-of-day and date have been set properly (see the "Setting Time-of-Day/Date" section). The recorded data will be time/date stamped using the time-of-day/date setting. Make certain that an SD/EHC memory card is inserted into the meter (see the "Removing SD Memory Card" section).

Set the desired "F/C" display mode (see the "Displaying F or C" section).

Set the desired data logger recording rate (see the "Adjusting Data Logger Recording Rate" section).

To toggle data logging On/Off, press and hold the SET button for 6 seconds (each time this is performed, it will alternate on the display

OFF=EC indicates that the data logging function is off.

ON=EC indicates that the data logging function is on.

While data logging is occurring, the clock-section will alternate between displaying the time and rEC.

If the meter is turned off, the data logging will also be turned off. When the meter is turned on, data logging must be turned back on by using the above procedure.

If the SD card is removed while data logging is turned on, Err and Sel will alternate on the display in place of the clock to indicate that the meter is no longer recording data. Insert the SD card to return to data logging.

The following will cause data logging to stop:

- Turning the meter off
- Low battery power
- Power failure, when using the AC power supply only
- Removing the SD memory card
- Changing the time-of-day/date
- Changing the data logger recording rate
- Changing the High/Low alarm settings
- Changing display from "F/C", "C/F"
- Pressing the RESET button
- Once data logging has been stopped, it must be turned back on.

DATA LOGGER FILE FORMAT/STRUCTURE

With data logging turned on (see the "Turning On/Off Data Logging" section), the meter will write a file to the SD memory card. The file created is a standard text (.TXT) file.

Once data logging has started, the filename created is based on the start date (month and day number) and time. Example: Start 11/28/2013 at 16:48, will create a file with the name "11281648.TXT".

The maximum size per file is 30,000 records. During continuous data logging, once the maximum file size has been reached, a new file is automatically created using the same file naming method. A file containing 30,000 records represents over 20 days of minute by minute data. Depending on the selected data logger recording rate and the duration, continuous data logging may generate numerous files containing data.

The file created is a fixed width file data file that may be read utilizing any computer application capable of reading "TXT" files (Word®, Excel®, NotePad, WordPad, etc.).

The text file is structured as follows:

Header Column Position

Date (YYYY-MM-DD) .................. 1-10
Time (HH:MM:SS) ................. 12-20
Tair (?C) (ambient temperature) .... 21-27
RH% (ambient relative humidity) .. 28-34
DF (?T) (saturated/ambient temperature) .. 35-44

All values are decimal number (see the "Inserting/Removing SD Memory Card" section).

The text file will be read utilizing any computer application capable of reading "TXT" files (Word®, Excel®, NotePad, WordPad, etc.).

To open from Excel®, example:

File — Open — All Files (*) — locate and select the file — Open — Fixed Width — Next — place column breaks at 30, 20, 27, 34, and 44 — Finish

PLACEMENT/MOUNTING OPTIONS

Bench Stand - The meter is supplied with a bench stand that is a part of the back of the meter. To use the bench stand, locate the small opening at the corners on the back of the meter. Place your fingernail into the opening and flip the stand out. To close the stand, simply snap it shut.

Wall Mount - Set a screw into the wall at the location desired. The head of the screw will need to slip into the receptacle on the back of the meter, do not set the screw flush to the wall. Once the screw has been set properly, hang the meter in place by sliding the receptacle on the back of the meter over the head of the screw.

Magnet - A magnet is supplied with the meter. Peel the protective paper off the adhesive tape on the magnet. Press the magnet onto the back of the thermometer and mount on any metal surface.

Hook & Loop - Self adhesive hook and loop mounting tape is supplied with the meter. Peel off the protective backing. Adhere one piece to the meter and the other to any clean, flat surface.

ALL OPERATION DIFFICULTIES

If this meter does not function properly for any reason, replace the batteries with new alkaline batteries (see the "Battery Replacement" section). Low battery power can occasionally cause an "out of range" operational difficulties. Replacing the batteries with fresh batteries will solve most difficulties.

ERROR CODES

E02 Indicates that the value being measured is below the measurement range of the meter (too low).

E03 Indicates that the value being measured is above the measurement range of the meter (too high).

E04 Indicates that the temperature sensor has been damaged.

E11 Indicates that the humidity sensor has been damaged.

E22E3 Indicates that the meter has been damaged.

BATTERY REPLACEMENT

An erratic display, fast display, no display, or "E" appearing on the display are all indicators that the batteries need replacement.

If the AC power supply is not being used when the batteries are being replaced, the meter will turn off once the batteries have been removed. The meter and data logging will need to be turned back on once the batteries have been replaced.

If the AC power supply is being used when the batteries are being replaced, the meter will continue to function without interruption.

Remove the battery cover located on the back of the meter. Remove the exhausted batteries and replace them with three (3) new AA alkaline batteries. Make certain to insert the new batteries with the proper polarity as indicated on the battery case. Do not use alkaline batteries in the battery compartment, the battery compartment is for AA alkaline batteries only.

WARRANTY, SERVICE, OR RECALIBRATION

For warranty, service, or recalibration, contact:

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Control Company is ISO 9001 Quality-Certified by DNV and ISO 17025 accredited as a Calibration Laboratory by A2LA.

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