REED

Model 8706

Digital Pocket Psychrometer

Instruction Manual

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This unique meter offers several features, such as; the sensor is protected by tunable cap, it's pocket-sized, battery operated. It quickly and easily measures humidity, dry bulb, dew point, wet bulb, external temperature as well as temperature differential measurements. The psychrometer is a micro-processor design. A must device for HVAC engineers use. No need to whirl the meter or refer to the chart.

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Features

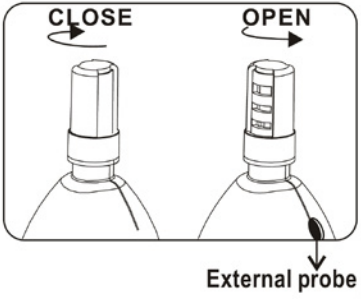
- Measures humidity, wet bulb, dew point, air temperature plus external probe temperatures (requires 87P6 probe)
- Simultaneous display with %RH, temperature and dew point or wet bulb or external probe temperature (requires 87P6 probe)
- Calculates T1-T2, Air temperature – External probe temperature (requires 87P6 probe)
- Triple display with backlighting
- Max/Min readings
- Sensor cap closes to protect probe during storage
- Retrieve Max/Min/Avg readings from stored data
- Real time clock
- Triple LCD digital display
- Pocket size, fits easily in your pocket
- Low battery indication
- Fast response
- Accurate reading
- Maximum record function
- Minimum record function
- Dew Point calculated in seconds
- Wet Bulb calculated in seconds
- Microprocessor circuitry for reliability
- Auto power off, time frame selectable
- Disable power off
- Batteries included (2 x AAA)

Specifications

FUNCTION	RANGE	RESOLUTION	ACCURACY
Humidity:	0 to 100% RH	0.1% RH	±3% RH
Dew Point:	-109.7 to 122°F/ -78.7 to 50°C	0.1°F/°C	
Wet Bulb:	-69 to 122°F/ -21.6 to 50°C	0.1°F/°C	
Internal Temp.:	-4 to 122°F/ -20 to 50°C	0.1°F/°C	±1°F/0.6°C
External Temp.	-4 to 158°F/ -20 to 70°C	0.1°F/°C	±1°F/0.6°C
Power Supply:	2 x 1.5V AAA batteries (included)		
Dimensions:	7 x 1.9 x 1" (179 x 48 x 25mm)		
Weight:	3.3 oz (95g)		
Accessories:	Optional External Temperature Probe (Model 87P6) Optional Calibration Salt Bottles; 33% (Model RHA-33) & 75% (Model RHA-75) Soft Carrying Case (Model CA-03)		

WARNING

Be sure to open the sensor protection cap before starting the measurement in order to get an accurate value.



Instrument Description

1) ⏻ Power On/Off Button

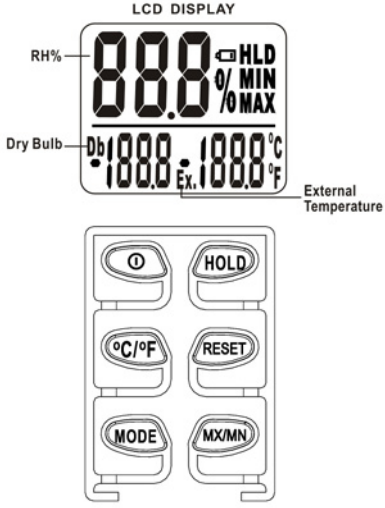
2) **°C/°F** Button, Switch between °C and °F

3) **MODE** Button, Switch between Db & DP (Db=Air Temperature)

4) **HOLD** Button
   a) Hold display
   b) ⏻ Power Button + HOLD = Non-Sleep mode (The default setting is auto-sleep in 5 minutes)

5) **RESET** Button, Reset Min/Max memory

6) **MN/MX** Button
   a) Display minimum value of memory from when the meter is turned on to now.
   b) Display maximum value of memory from when the meter is turned on to now.



Measuring Procedures

WARNING

Plugging in an external probe when the meter is on, could cause a "ER 5" error in the min. or max. mode for external temperatures. Press the "RESET" button to remove the error.

Auto Power Off (Sleep Function)

The meter will turn itself off after 5 minutes.
To override Auto Power Off function, press ⏻ + HOLD while the meter is off. When "n" appears (see figure A), release the HOLD button. The meter is now in Non-Sleep Mode.

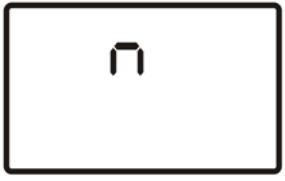


Figure A

Mode Options

1. Turning on the protective sensor cap in counterclockwise direction.
2. Turn meter on by pressing ⏻ power button (see figure B).
3. Press C/F key for more than 1 second to convert reading to desired unit. Both the temperature and relative humidity measurement will display simultaneously (see figure C).

Figure B

Figure C
requires 87P6 probe

Data Hold Function

1. Press "HOLD" button until (HLD) appears in display.
2. The current reading is now held and will not change until the Hold function is cancelled (see figure D).
3. Press "HOLD" button again to cancel the Hold function.

Figure D

The Hold function can be used on humidity, dew-point, dry bulb/T1, external temperature/ T2, wet bulb and temperature difference.

Dew Point Function

1. Press MODE button until "DP" appears on display.
2. Select to display dew point or dry bulb (air temp.) in any mode while the unit is on (see figure E).

Figure E

Figure E1

Wet Bulb Function

Turn the meter on by pressing ⏻ power button.
You will see "Wb" temperature indicated on the display (see figure E1).

External Temperature Function

1. Plug the optional external probe (Model 87P6) into the meter.
2. Press the RESET button until "Ex" appears on display.

The meter will now display external probe temperature. See figure F.

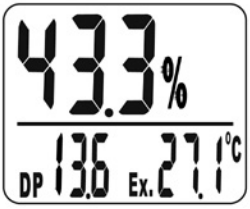


Figure F

Note: If the probe isn't plugged in meter, "Ex" won't appear on display even when pressing the RESET button.

Min./Max. Function

1. Press and hold MN/MX button until (MIN) appears on the display (see figure G). The display is now showing minimum humidity and temperature readings currently in the memory.
2. Press and hold MN/MX button again until (MAX) appears on the display (see figure H). The display is now showing maximum humidity and temperature readings currently in the memory.
3. To return to the current temperature and humidity readings press and hold the MN/MX button until Min or Max disappear from the display.
4. Press the RESET or the MN/MX button for more than two seconds to clear currently in the memory.

Figure G

continued ...

WARNING

While checking the MIN/MAX value for "Ex" don't replace the probe or you will get an error code. If you don't plug the probe into socket before turning the meter on, the error code will also appear when you check the MIN/MAX value.

Note: Low battery power tends to give inaccurate readings, therefore make sure you have enough power.

Calibration

WARNINGS

- You can exit the calibration procedure without saving the data in the memory by pressing the "ON/OFF" button before step 4. At step 4, press the "ON/OFF" button to exit the calibration mode.
- Auto power off is disabled in calibration mode.
- For the highest accuracy, the calibration should be operated at 23°C.
- If the reading is out of 75.3% 0.5% at step 4, this indicates the calibration has failed. See troubleshooting section below.

1. Turn the meter off and plug the sensor probe into 33% salt bottle. Press the "ON/OFF + C/F " buttons for more than one second to enter calibration mode.
2. "32.8%" will flash on the display, when "---.-" is showing on the display, that means the values are invalid in the calibration process. After 30 min, the flashing will stop to indicate the procedure is finished.
3. Move the sensor to 75% salt bottle and press "MN/MX" for more than one second to enter 75.3% calibration. "75.3%" will flash on the display.
4. The flashing will stop after 30 minutes, at this point the entire calibration is completed and the calibration data has been saved in memory.

Troubleshooting

Power is on but the display is not working:

A. Make sure you're pressing the ON/OFF button for more than 1 second
B. Verify that the batteries are in place and that they are in proper contact and in the correct polarity.
C. Replace with new batteries and try again.
D. Remove the batteries for one minute, put them back in and try again.

Display is not turning on:

A. Verify that the Low Battery symbol  isn't displayed before the display disappears, if yes, replace with a new battery.
B. Check if the sleep mode is active. If yes, press the ⏻ power + HOLD buttons to disable auto power off function.

Er 1

Circuit error in RH measurement channel, return the meter to place of purchase for repairs.

Er 2

Circuit error in internal temperature measurement channel, return the meter to place of purchase for repairs.

Er 3

Circuit error in reference resistor channel, return the meter to place of purchase for repairs.

Er 4

Internal temp. is out of the range.

Er 5

External temp. is out of the range.

WARNING

Plugging in an external probe when the meter is on, could cause a "ER 5" error in the min. or max. mode for external temperatures. Press the "RESET" button to remove the error.

Note:
Dry Bulb temperature means air (internal) temperature.
Dew point & Web Bulb are calculated from internal temperature.

Battery Replacement

The  Battery symbol appears on the display at the top/right corner when the battery power is low. If the batteries are not replaced the accuracy of the reading will be affected.

1. Open the battery cover at the back of the meter and remove the batteries.
2. Insert 2 new AAA batteries and make sure the batteries are in the correct polarity.
3. Reinstall the cover.

Warranty

The meter is warranted to be free from defects in material and workmanship for a period of one year from the date of purchase. This warranty covers normal operation and does not cover battery, misuse, abuse, alteration, tampering, neglect, improper maintenance or damage resulting from leaking batteries. Proof of purchase is required for warranty repairs. The warranty is void if the meter has been opened.

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Notes