

VALTRONICS IAQ Monitor

Model 2011

Instruction Manual



990116

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Description

The Valtronics Model 2011 is a portable Carbon dioxide (CO₂) Monitor designed for use in indoor air quality (IAQ) monitoring.

In addition to CO₂, the unit also measures air temperature, dew point, wet bulb temperature and humidity.

The CO₂ Monitor uses non-dispersive infrared (NDIR) technology to insure outstanding reliability and long term stability.

The unit is powered by four AA batteries or a DC adapter. When the DC Adapter is used, it cuts off the batteries. The Adapter can not be used as a battery charger.

Material Provided

2011 IAQ Monitor
AA Batteries (4X)
Instruction Manual
Carrying Case

Optional Accessories

Calibration Kit with 33% and 75% Rh salt solutions and instructions
Calibration Kit with 100% N₂ and 400 ppm CO₂ adapter and instructions
Power Adapter (9VDC output/100V-240VAC input)
RS-232 Cable and software for Computer Monitoring

Features

NDIR Technology

Triple displays of CO₂, temperature, and humidity.

Statistics of weighted averages.

 TWA (8 hours of weighted averages)

 STEL (15 minutes weighted averages)

Audible CO₂ warning alarm

Backlight on display

Easy manual calibration for CO₂ and humidity


PC connector via RS232 interface

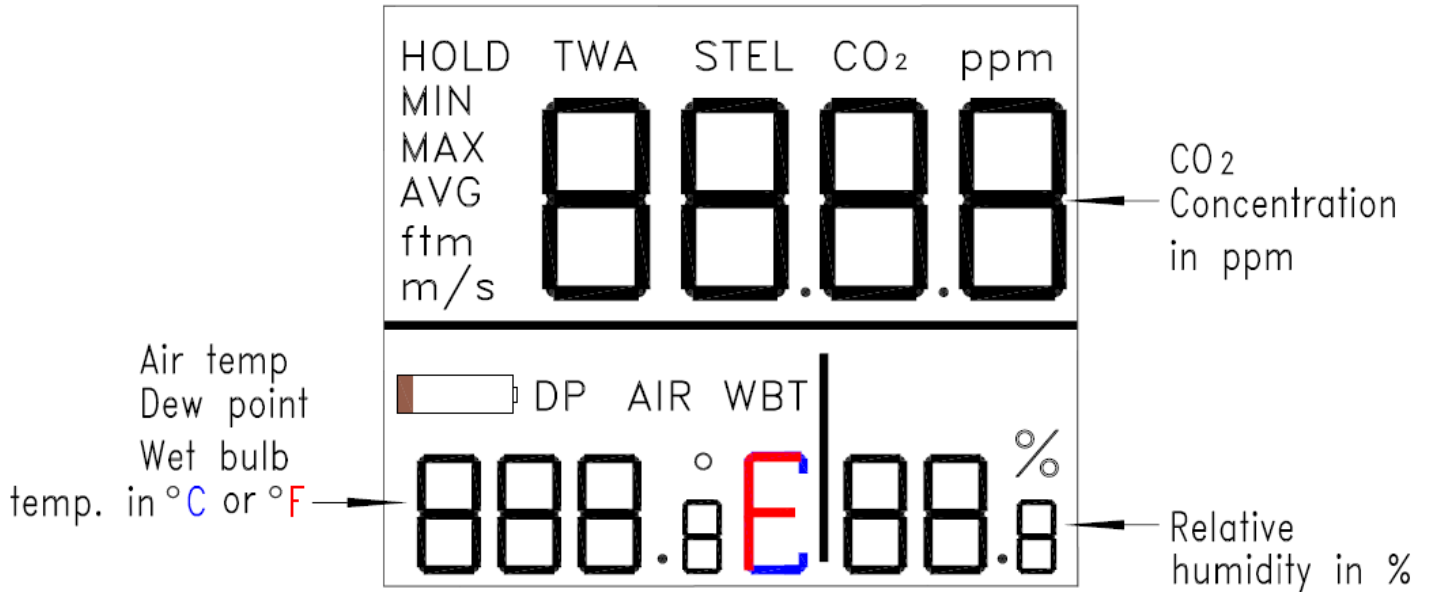
Applications

- Indoor air quality
- Wineries and breweries
- Greenhouses
- Food processing
- Detection of CO₂ for NFPA 12 regulations
- CO₂ storage facilities

Display





Symbols

TWA	Time weighted average (8 hours)
STEL	Short-term exposure limit (15 minutes weighted average)
HOLD	Readings are frozen unchanged
MIN/MAX	Minimum/maximum readings
	Low battery indicator
DP	Dew point temperature
Air	Air temperature
WBT	Wet bulb temperature
%	Unit of relative humidity
° (C/F)	Celsius/Fahrenheit



Key Pad



- Turns power on and off
- Enters set-up mode
- Sets as non-sleep mode with HOLD 
- Exits set-up page/mode
- Enters CO₂ calibration with MODE 
- Enters RH calibration with DP/WBT 
- Freezes the current readings 
- Cancels data hold function

- Activates or cancels the backlight
- Selects unit or increases value in set-up
- Selects AIR, DP and WBT temps display
- Selects unit or decreases value in set-up
- Activates MIN, MAX, STEL & TWA functions
- Saves and finishes settings

Operation

Power ON/OFF

Press the SET button to turn the meter ON or OFF. At power up, the unit emits a short beep and starts a 30 second count down for warm up, and then enters its normal mode for displaying CO₂, temperature, and humidity readings.

Measurements

The fast response of the meter provides an updated reading every second with the exception of rapidly changing temperatures which will require a 30 second delay for CO₂ readings, and as much as 30 minutes for the humidity to respond.

Data Hold

Pressing the HOLD button will freeze all readings except the STEL and TWA. Pressing the HOLD button again will cancel the hold mode.

Backlight

Pressing and holding the MODE button for more than 1 second will activate or cancel the Back Light mode.

STEL, TWA, MIN and MAX

Pressing the M/AV button will display the Minimum, Maximum, and average readings of CO₂. Each press of the button displays MIN, MAX, STEL and TWA in sequence and then returns to normal operation.

Alarm

The meter has an audible alarm to provide warnings when the CO₂ concentration exceeds the limit. It emits an 80 Db warning beep whenever the limit is exceeded. Pressing any button except SET will stop the alarm, and it will stop on its own when the concentration returns below the set point.

Auto Power Off

The unit will automatically turn off if there has been a 20 minute period of inactivity. To override this function, press and hold both the SET and HOLD buttons for 2 seconds.

Set-Up

To enter the Set-Up mode from Normal operation, press and hold the SET button for more than 1 second (you should see “AL” in the display window).

CO₂ Alarm

After entering the Set-Up mode (see previous section), press M/AV to set the CO₂ alarm (note: the CO₂ display will be blinking at the current alarm level). Each press of the MODE button will increase the value by 100 ppm. Pressing the DP/WBT will decrease the alarm value. The maximum range of the alarm is 100 to 9900 ppm. When the desired value is reached, press M/AV to save the setting. To return to Normal operation press CAL/Esc.

Temperature Scale

Enter the Set-Up mode, press the Mode button and then the M/AV button. You should see “Unit” in the display window and “°C” should be flashing. Press the MODE button to change between “°C” and “°F”. Press the M/AV button to save the setting (note: to return to Normal operation press CAL/Esc).

Calibration

CO₂ Calibration

The meter may be calibrated with either fresh air or with the optional Calibration Kit available from Valtronics. In most cases, by carefully selecting your calibration site and time, the fresh air will be sufficient. The calibration site should be selected to be outdoors with fresh air. Avoid areas with high automobile traffic, crowds of people, and/or ventilating outlets.

Procedure

Place the meter at the chosen site, press SET to turn on the unit and note the CO₂ display. If it indicates 400ppm +/- 25ppm it is not necessary to go any further. The accuracy is ok and it is not necessary to go through the entire calibration process. If the reading is out of specification, press and hold both CAL/Esc and MODE to enter the calibration mode. The display will now show “400 ppm” and “CAL” blinking. When the blinking stops the calibration is complete. Wait about 10 minutes until the blinking stops and the calibration is completed. The unit will automatically return to Normal mode. To abort the calibration, turn off the meter at anytime.

Rh Calibration

The Rh feature of the meter must be calibrated with the optional Calibration Kit supplied by Valtronics. This kit contains 33% and 75% Rh salt solutions and instructions for use.

Specifications

CO₂

Range	0-5000 ppm
Resolution	1 ppm
Accuracy	+/- 5% of reading

Temperature

Range	-10° to 60° Centigrade
Resolution	0.1° Centigrade
Accuracy	+/- 0.6° Centigrade

Humidity

Range	0.0 to 99.9% Rh
Resolution	0.1% Rh
Accuracy	+/- 3% from 10 to 90%
Warm up time	30 seconds
Operating temperature	0 to 50° C
Storage temperature	-20 to 60° C
Humidity	0 to 95% Rh non-condensing
Power	AA batteries (4X)
Battery life	24 hours with Alkaline

PC Connection

The meter can be linked to your PC with our RS-232 interface and software.

The Protocol is 9600 baud 8 bits and no parity.

Complete protocol information will be provided with the optional kit.

WARRANTY

Valtronics offers a one year unconditional warranty against manufacturing defects. Exclusions and/or warranty voids will include customer incurred damage, battery corrosion, water damage, or tampering of internal electronics.

RETURN POLICY

Valtronics will honor warranty repairs within one year of purchase, and will make every attempt to repair non-warranty damage, defects, or functional failures after we have provided a return authorization number (RMA).

Repairs will not commence until the customer has approved the estimated repair costs, and repair payments have been received. All repairs have a 90 day warranty on parts and labor.

Notes:

For ordering information contact Valtronics Sales Department
Phone: (209) 754-0707 • FAX (209) 754-0104 • e-mail: vti@val-tronics.com • www.val-tronics.com

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