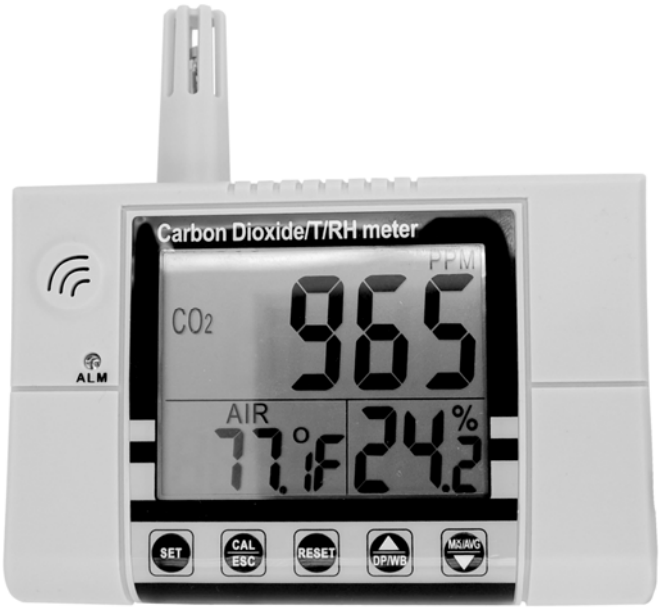
Temp / RH / CO_2 Wall-Mount Meter

PRODUCT MANUAL

Item # 3440



Spectrum®
Technologies, Inc.

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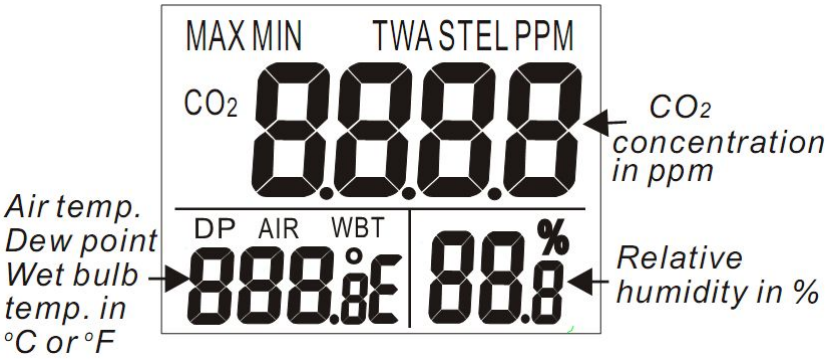
Thank you for purchasing the Temp/RH/CO_2 Wall-Mount Meter. With an NDIR (non-dispersive infrared) CO_2 sensor, this unit is stable for long-term monitoring. Please read this manual thoroughly before using your meter.

SPECIFICATIONS

CO_2 Range	0—2000 ppm
CO_2 Accuracy	±50ppm ±5% of reading
Pressure Dependence	+0.16% of reading per 1 hPa deviation from normal pressure of 1000 hPa
Temperature Range	14 to 140°F (-10 to 60°C)
Temperature Accuracy	±0.9°F (±0.6°C)
Humidity Range	0.0 to 99.9% RH
Humidity Accuracy	±3% RH (10 to 90% RH, else ±5% RH)
Warm up	30 seconds
Power Supply	100-240VAC adapter to 12VDC

Description

LCD Display



Symbols:

MAX/MIN	Maximum/Minimum readings
TWA	Time weighted average (8 hours)
STEL	Short-term exposure limit (15 minutes weighted average)
DP	Dew point temperature
AIR	Air temperature
WBT	Wet bulb temperature

Keypad

SET	Enter Setup mode Save and finish settings.
CAL/ESC	With Up/DP/WB, enter CO_2 calibration With M^X_N/AVG/Down, enter RH calibration Exit Setup mode
RESET	Reset meter and clear Max/Min values Terminate calibration process
Up/DP/WB	Select AIR/DP/WBT temperature display Select mode or increase value in setup or calibration
M^X_N/AVG/Down	Activate MAX/MIN/STEL/TWA display Select mode or decrease value in setup or calibration

Operation

Power On/Off

Plug in the adaptor and the meter turns on automatically with a short beep. It will perform a 30 seconds countdown for meter warm up, then enters normal mode with current CO_2, temperature, and humidity readings displayed.

Taking a Measurement

The meter measures continuously and updates the LCD every second. With a significant environmental change, the CO_2 sensor requires 30 seconds, and the RH sensor 30 minutes to respond. Note: Do not hold the meter close to the face because exhalation affects the CO_2 reading.

Switch Temperature Measurement

Press the Up/DP/WBT key to cycle the temperature display between air, dew point, and wet bulb temperatures.

MIN, MAX, STEL, TWA

Press the M^{N}_{X}/AVG/Down button to switch between the normal, minimum, maximum, and weighted average readings.

In MIN and MAX modes the minimum and maximum readings for CO_2, air/dew point/wet bulb temperature, and RH will display.

In STEL and TWA modes, the display shows the weighted average of the CO_2 readings for the past 15 minutes (STEL) or 8 hours (TWA), as well as the current readings for air/dew point/wet bulb temperature, and RH.

Setup

In normal mode, hold down the SET button for at least 1 second to enter setup mode. To exit setup, press the CAL/ESC button.

P1.0 Set CO_2 Alarm

When entering setup mode, “AL” and “P1.0” are displayed on the LCD. Press the SET button again to enter “P1.1” to set the CO_2 alarm upper limit (exceeding this triggers the alarm).

The current value will be blinking on the LCD. Press Up/DP/WB to increase the value, or M^N_X/AVG/Down to decrease it. Press the SET button again to enter "P1.2" to set the CO_2 alarm lower limit (when the level drops below this, the alarm will automatically stop). The current value will be blinking on the LCD. Press Up/DP/WB to increase the value, or M^N_X/AVG/Down to decrease it. Press the SET button to save the values, or CAL/ESC to exit without saving.

The meter features an audible alarm to warn by emitting 80dB beeps when the CO_2 concentration exceeds the upper-limit. The alarm can be stopped by pressing any button except SET. It will also stop when readings fall below the lower limit value.

P3.0 Set Temperature Units

From the P1.0 display, press Up/DP/WB to change to the P3.0 screen ("Unit" will display on the LCD). Press the SET button to enter "P3.1" to set the temperature units. The current units, "°C" or "°F", will be displayed on the lower left area of the LCD. Press Up/DP/WB or M^N_X/AVG/Down to switch between "°C" and "°F". Press the SET button to save the setting, or CAL/ESC to exit without saving.

P4.0 ABC Selection

ABC (Automatic Baseline Calibration) implements baseline calibration to eliminate the zero drift of the infrared sensor. The ABC function default is off when turning on the meter. To enable it, press M^N_X/AVG/Down from P1.0 or Up/DP/WB from P3.0 to change to the P4.0 screen, ("Abc" will display on the LCD). Press SET to enter P4.1 ("dis" will display on the LCD). Press Up/DP/WB or M^N_X/AVG/Down to switch to "En" (enabled). Press the SET button to save the setting, or CAL/ESC to exit without saving.

To exit setup, press the CAL/ESC button.

CO_2 Calibration

The meter is calibrated at the factory to a standard 400ppm CO_2 concentration. It is suggested to do either ABC or a manual calibration regularly to maintain good accuracy. The

calibration should be done during sunny weather in fresh outdoor air that is well-ventilated.

CAUTION: Do not calibrate the meter in the air with an unknown CO_2 concentration. It will be calibrated as 400ppm, which can lead to inaccurate measurements.

Manual Calibration

Place the meter in the calibration site. Turn on the meter and hold down CAL/ESC and Up/DP/WB simultaneously to enter CO_2 calibration mode. "400ppm" and "CAL" will blink on the LCD while performing the calibration. Wait about 5 minutes for the calibration to complete, which is indicated by the blinking stops and LCD returns to normal mode. To abort the calibration, turn off the meter at any time.

To abort the calibration, press RESET for more than 1 second.

ABC - Automatic Baseline Calibration

After enabling ABC (see Setup P4.0, above), place the meter in a well-ventilated area for 7 days to set it to an ambient level of 400ppm.

RH Calibration

Humidity calculations on the meter can be recalibrated using 33% and 75% salt solutions. Ambient conditions should be at 25°C or 77°F, with stable humidity.

Plug the sensor probe into a 33% salt bottle. Hold down the CAL/ESC and M^N_X/AVG/Down buttons until "CAL" is blinking on the LCD display. In approximately 60 minutes "CAL" will stop blinking, indicating the end of this phase. To skip the 75% recalibration, press CAL/ESC to exit.

Plug the sensor probe into the 75% salt bottle, then press the SET. "CAL" will blink on the LCD until the calibration is completed in approximately 60 minutes.

The 33% calibration can be skipped by pressing Up/DP/WB or M^N_X/AVG/Down during the first 5 minutes of the 33% calibration step above.

Troubleshooting

Unable to power on
Check that the power adapter is plugged in.

Slow sensor response
Check whether the air flow channels on the back of the meter are blocked.

Error messages
E01: CO_2 sensor damaged.
E02: The value is under range.
E03: The value is over range.
E04: Error code for dew point or wet bulb accompanying a primary sensor failure code.
E07: Too low voltage to measure CO_2.
Replace batteries.
E11: Retry humidity calibration.
E17: Retry CO_2 calibration.
E31: Temperature sensor damaged.
E34: Humidity sensor damaged.

Warranty

This product is warranted to be free from defects in material or workmanship for 1 year from the date of purchase. During the warranty period Spectrum will, at its option, either repair or replace products that prove to be defective. This warranty is void if the Spectrum products have been damaged by customer error or negligence, or if there has been an unauthorized modification.

Returning Products to Spectrum

Before returning a failed unit, you must obtain a Returned Goods Authorization (RGA) number from Spectrum. You must ship the product(s), properly packaged against further damage, back to Spectrum at your expense. Clearly mark the RGA number on the outside of the package. Spectrum is not responsible for any package that is returned without a valid RGA number or for the loss of the package by any shipping company.

CE

This equipment has been manufactured for
Spectrum Technologies, Inc.
12360 S. Industrial Dr. East
Plainfield, IL 60585 USA

The Manufacturer's **DECLARATION OF CONFORMITY** is on file at the above address, and certifies conformity to the following:

Model Number:	3445
Description:	Temp/RH/CO2 Wall-Mount Meter
Type:	Electrical Equipment for Measurement, Control, and Laboratory Use
Directive:	2004/108/EC
Standards:	EN 61326-1 (2006)
	EN 61000-3-2 (2006)
	EN 61000-3-3 (1995/A1:2001/A2:2005)
	EN 61000-4-2 (1995/A1:1998/A2:2001)
	EN 61000-4-3 (2006) /-4(2004) /-5(2006)
	EN 61000-4-6 (1996/A1:2001) /-11(2004)

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