The Model AQH-20 Indoor Air Quality Meter reduces the number of instruments a contractor has to carry by measuring the carbon dioxide concentration, air temperature, and humidity in one device. A large backlit LCD display shows all three parameters simultaneously. The Model AQH-20 can display dew point, or wet bulb temperatures in place of the ambient temperature. Minimum, maximum, and average readings are easily accessible through the function buttons. By pressing the hold key, the current values are held so that they can be recorded. An audible alarm warns the user that the current ambient conditions are becoming hazardous. The Model AQH-20 includes a hard carrying case and four AA alkaline batteries.

OPERATING INSTRUCTIONS
Taking Measurements
Press the button to turn the meter on. The meter takes 30 seconds to warm up before displaying the current reading.

SPECIFICATIONS
Measurement Ranges:
- CO2: 0 to 2000 ppm.
- Temperature: 14 to 140°F (-10 to 60°C).
- Relative Humidity: 0.0 to 99.9% RH.
Accuracy:
- CO2: ±30 ppm ±5% of reading;
- Temperature: ±0.9°F (±0.6°C);
- Humidity: ±3% RH (10 to 90%), ±5% (0.0 to 9.9% or 90 to 99%).
Resolution:
- CO2: 1 ppm;
- Temperature: 0.1°F (0.1°C);
- Humidity: 0.1% RH.
Response Time:
- CO2: < 30 seconds;
- Temperature: < 2 minutes;
- Humidity: <10 minutes.
Display: Four digits for temperature/CO2 and 3 digits for humidity.
CO2 Sensor: Non-dispersive infrared.
Operating Temperature:
- 32 to 122°F (0 to 50°C).
Operating Humidity (Non-Condensing):
- 0 to 95% RH.
Power Requirements: Four AA alkaline batteries.
Warm Up Time: 30 seconds.
Weight: 6.76 oz (200 g).
Agency Approval: CE.

Selection of Temperature Parameter
The Model AQH-20 can display ambient air temperature, dew point temperature, or the wet bulb temperature. Press the button to cycle between air temperature, dew point temperature, and wet bulb temperature. The temperature and measurement type will be displayed in the lower left corner of the display.

Changing the CO2 Alarm Set Point
Hold down for more than one second during normal mode.
When “Al” and “P1.0” are displayed on the LCD, press the button to enter alarm setup mode.

The current alarm value will be blinking on the LCD. “Al” and “P1.0” will be displayed on the bottom displays. Press the button to increase the value and press the button to decrease the value.
When desired value is reached, press the button to save the value and return to the main menu or press button to return to main menu without saving the changes.

If the alarm sounds, simply press any key (but power key) to silence the alarm.

Changing Engineering Units
Hold down for more than one second during normal mode to reach the main menu.
Press the or the to toggle between alarm setup and unit setup.

When “Units” and “P3.0” are displayed on the LCD, press the button to enter engineering unit setup.

The current temperature unit will be blinking on the lower left of the display. Press the or the to toggle between Celsius and Fahrenheit.

When desired unit is set, press the button to save and return to the main menu without saving the changes.

Max, Min, and Average Data Functions
Press the button to cycle through the MIN, MAX, STEL, and TWA functions. To exit, cycle through until none of the four mentioned functions appear on the screen.

MIN and MAX readings show the minimum and maximum CO2 readings on the main display, respectively. STEL and TWA readings show the weighted average of the CO2 readings on the main display. STEL uses all the CO2 readings from the past 15 minutes to calculate the average. TWA uses all the readings from the past 8 hours to calculate the average. The current temperature and humidity continues to be displayed at the bottom of the LCD.

CO2 Calibration
The CO2 sensor should be calibrated in fresh outdoor air that is well ventilated and in good weather conditions. Do not calibrate in areas with high CO2 concentrations such as crowded areas.

Procedure:
1. Place meter in the calibration site.
2. Turn the unit on and hold down and simultaneously to enter CO2 calibration mode.
3. “400ppm” and “CAL” should be blinking on the display.
4. Wait about 60 minutes until “CAL” and the calibrating value stop blinking.

33% Calibration Procedure:
1. After 33% calibration, plug the sensor probe into 33% salt bottle.
2. Hold down and simultaneously to enter CO2 calibration mode.
3. “CAL” and the calibrating value should be blinking on the LCD with current temperature displayed but not blinking.
4. Wait about 60 minutes until “CAL” and the calibrating value stop blinking.

Users can also calibrate either calibration point individually. For the 33% calibration point, press the or once the 33% calibration is complete. For the 75% calibration point, press the or within the first five minutes while initializing the 33% calibration.

Automatic Power Off (Sleep Mode)
The instrument will shut off automatically after 20 minutes of operation to conserve battery life if no button is pressed. To disable the sleep mode, press “0 set” and the “HOLD” buttons simultaneously before power on. An “n” icon will appear in the center of the display once disabled.

BATTERY REPLACEMENT
The Air Quality Handheld displays as a visual low battery indication.

When “Lob” appears on the LCD and a beeper sounds, the batteries must be replaced.

If the unit fails to power on, it is likely that the batteries also need to be replaced.

To Replace the Battery:
1. Make sure the unit is powered off.
2. Lay face down on a clean, flat surface.
3. Open battery compartment by pushing in tab and lifting cover.
4. Replace battery, taking note of the indicated polarity.
5. Replace the cover.

Notices
Model AQH-20 requires at least 5 minutes worth of values in order to calculate either of the CO2 averages.

The RH must be calibrated with the default calibration salt. If not done properly and with the correct salts, it will cause permanent damage.

The RH calibration should be done at 25ºC and humidity close to the calibration salt being used (must at least be stable).

33% Calibration Procedure:
1. After 33% calibration, plug the sensor probe into 33% salt bottle.
2. Hold down and simultaneously to enter 33% calibration.
3. “CAL” and the calibrating value should be blinking on the LCD with current temperature displayed but not blinking.
4. Wait about 60 minutes until “CAL” and the calibrating value stop blinking.

Users can also calibrate either calibration point individually. For the 33% calibration point, press the or once the 33% calibration is complete. For the 75% calibration point, press the or within the first five minutes while initializing the 33% calibration.

MAINTENANCE
A periodic check of the system calibration is recommended. Model AQH-20 is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.