

⚙️ Description:

This full-featured CPU based device is ideal for the detection of Air Contami-nants. In residential and commercial environment, Omicron’s IAQ Sensor has high sensitivity to VOCs and odorous gases. This unit comes with an LCD display with back lighting for easy viewing. It comes standard with humidity and temperature reading capabilities, which are vital when managing air quality control, and with the manual jumper output selection, your readings have never been more precise.

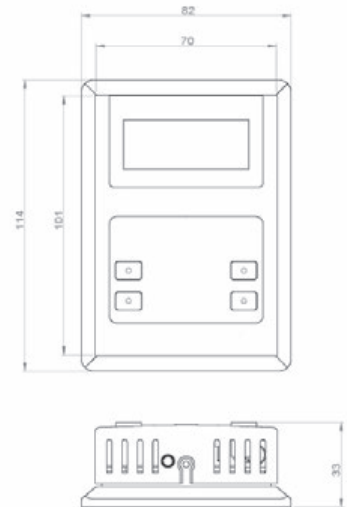


⚙️ Features:

- High Sensitivity to VOCs and Odorous Gases
- High Impact Plastic Enclosure provides Durability in Commercial Environments
- Low Energy Consumption
- Back-lit LCD Display
- Temperature and Humidity readings all in one
- RS485 Network connection, Modbus RTU at 19.2k and 9600 baud
- Three transducer outputs, 4-20mA, 0-5V or 0-10V selectable

⚙️ Specifications:

Operating temperature	:	-30~70°C (-22~158°F)
Supply Voltage	:	12~24Vac±20%, 50~60Hz 12~24Vdc±20%, 50~60Hz
Power Consumption	:	55mA @ 24Vdc
Ambient Humidity Range	:	0~100%RH
Humidity Sensor Module	:	Omicron HUM-M2
Air Quality Sensor Element	:	Figaro TGS2600 Figaro TGS2602
Material, Enclosure	:	Flame Proof Plastic
Enclosure Rating	:	IP31
Temperature Sensor	:	10K thermistor ±0.5°C
Color	:	White / Off-white
Weight	:	200g



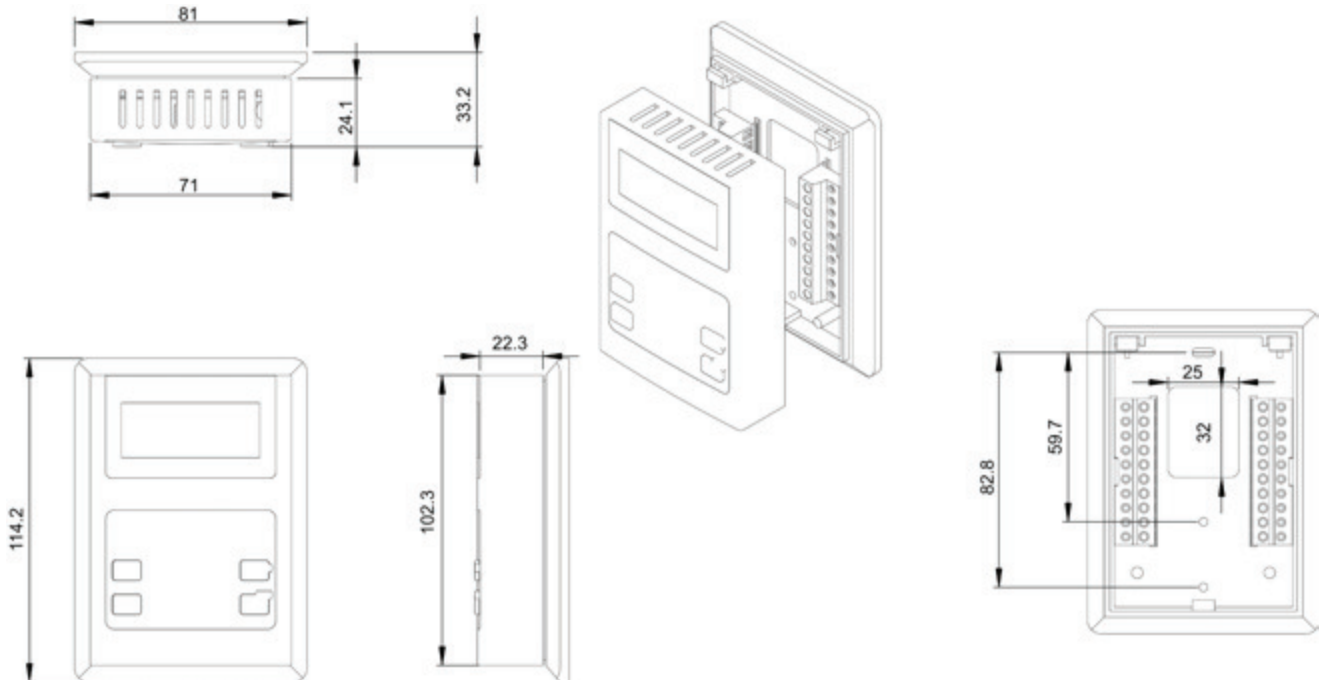
⚙️ Operation Functions:

There are four buttons that operate the AQ:

Buttons	Functions	
Adjust		AQ value displayed/adjust:AQ level 1/2/3, Temperature unit C/F, Display scrolling On/Off
		Temperature value displayed/ Move in the menu
Mode		Humidity value displayed/adjust:AQ level 1/2/3, Temperature unit C/F, Display scrolling On/Off
		Enter in the menu/Move in the menu



⚙️ Dimensions:



⚙️ Sensors:

- The controller monitors the temperature, humidity and air quality conditions in the room. Changes in any of the mentioned elements are monitored continuously, with the shortest time constant possible.
- Humidity monitoring is done with the OMICRON Humidity Sensor Module HUM-M2.
- Air Quality monitoring is done with the Figaro TGS2602 sensor element
- Temperature monitoring is done with a 10K Thermistor.

⚙️ Humidity Calibration:

The main criteria for selecting the OMICRON Humidity Sensor Module HUM-M2 was for its linear behavior with respect to Relative Humidity. This reduces its complexity and increasing its reproducibility and reliability to an overall 2% accuracy. Nonetheless, with error induced in PCB production and associated chips production, accuracy may be compromised.

In factory, all the sensors pass a seven points calibration procedure under a controlled humidity environment to guarantee 2% accuracy.

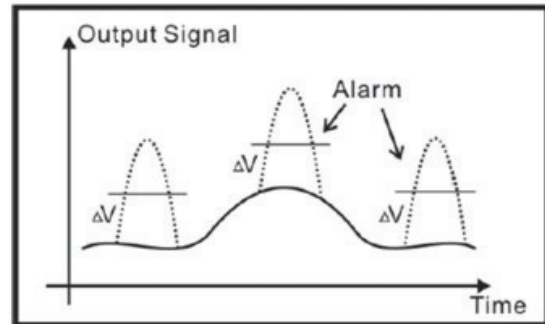
User can also perform a single point calibration with an accurate meter by adjusting the offset.

Note: This might cause the loss of the accuracy.



⚙️ Air Quality Calibration:

Special consideration must be made for the Air Quality Calibration to avoid false alarms. The Figaro sensing element is dependent on temperature humidity or basic environmental changes. To counter this effect, the Microprocessor of the thermostat calculates the average value of the sensor and determines if there are any air pollutants present. Any sudden change in the sensor will trigger the alarm telling the user hazardous air is present.



⚙️ Calibration of Temperature:

To calibrate the temperature shown on the Air Quality Sensor display, you will need a handheld mercury thermometer or digital thermometer. Hold the meter close to the thermostat and allow it to come to equilibrium. Connect Air Quality Sensor to the PC via a RS485 cable. And then, run a Modbus Tool to show and modify the registers. After temperature comes to equilibrium, write a correct temperature to the Register 101, you can repeat writing if necessary till the readings on the thermostat and meter agree. Note that the written value should be ten times of actual temperature to avoid point, for example, if the temperature is 22.3 degree, then you should write 223. The thermostat will store the calibration figures even through extended power outages and should not need to be adjusted for many years. The main point to keep in mind when calibrating is to let everything come to equilibrium. The thermostat should be powered up for 5 minutes prior to any calibration and the thermometer should be left near the thermostat for about the same amount of time.

