

# CLCMNA172 Wall Module

## Product Data & Installation Instructions



### GENERAL

The CLCMNA172 Wall Module contains a room air quality sensor suitable for measuring air quality in rooms, offices, and production bays.

This mixed-gas sensor can be used to control ventilation plants. It detects unpleasant odors, tobacco smoke, and vapors emitted by such materials as furniture, carpets, paint, glue, etc. As proven in practice, this device detects those substances typically present in air having a poor quality, some of which may otherwise go undetected by the room occupants, themselves. This sensor has proven itself in numerous applications over many years.

### FUNCTION

The electrical conductivity of a heated tin-dioxide semiconductor sensor varies in proportion to the number of molecules of the reducing agents. This leads to a voltage at the measuring element which is amplified to an output voltage of 0...10 Vdc.

The following particulates and gases can be detected: cigarette smoke, hydrogen, carbon monoxide, ethanol, ammonia, etc. The mixed gas sensor does not measure or indicate the concentration of individual gases, and thus cannot be used for the monitoring or control of specific substances.

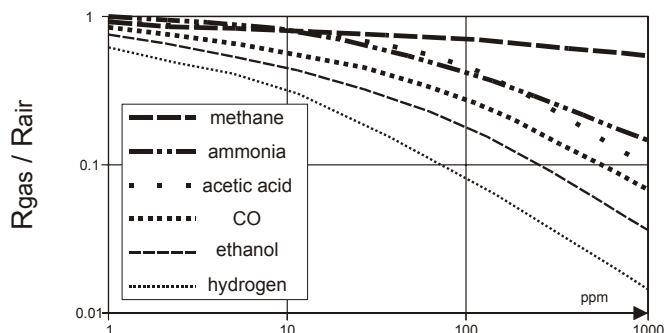


Fig. 1. Sensor sensitivity with different gases

### FEATURES

- Measurement of a variety of air quality factors
- Output signal: 0...10 Vdc (varied via potentiometer)
- Adjustable output offset
- Easy installation and wiring connection

### SPECIFICATION

Supply voltage	15...30 Vdc / 24 Vac (+/-10%)
Power consumption	< 1 W
Output signal	0...10 Vdc (increases as air quality worsens); adjustable using the potentiometer between 0...10 V
Max. load at output	5 k Ω
Weight /Dimensions	approx. 125 g / see Fig. 3
Electrical connection	Screw terminal block for conductors up to 1.5 mm <sup>2</sup>

#### Air Quality Sensor

Sensitivity/Linearity see Fig. 1

#### Ambient Limits

Transport and storage temperature	-30...+60 °C
Operating temperature	0...+50 °C
Humidity	5...95% rh, non-condensing

#### Safety

Protection class	II as per EN60730-1
Protection standard	IP30 as per EN60529

### INSTALLATION

All wiring must comply with local electrical codes and ordinances or as specified on installation wiring diagrams. Wall module wiring can be sized from 1.5 to 0.34 mm<sup>2</sup>, depending on the application. The max. length of wire from a device to a wall module is 305 m. Twisted pair wire is recommended for wire runs longer than 30.5 m.

### Cover Disassembly

The sub-base mounts separately for ease of installation; to disassemble the cover and the sub-base, see Fig. 2.

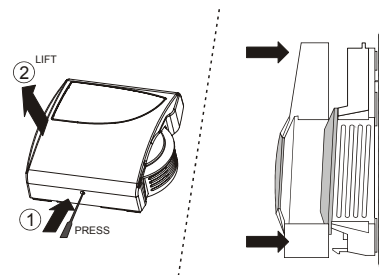


Fig. 2. Cover disassembly / assembly

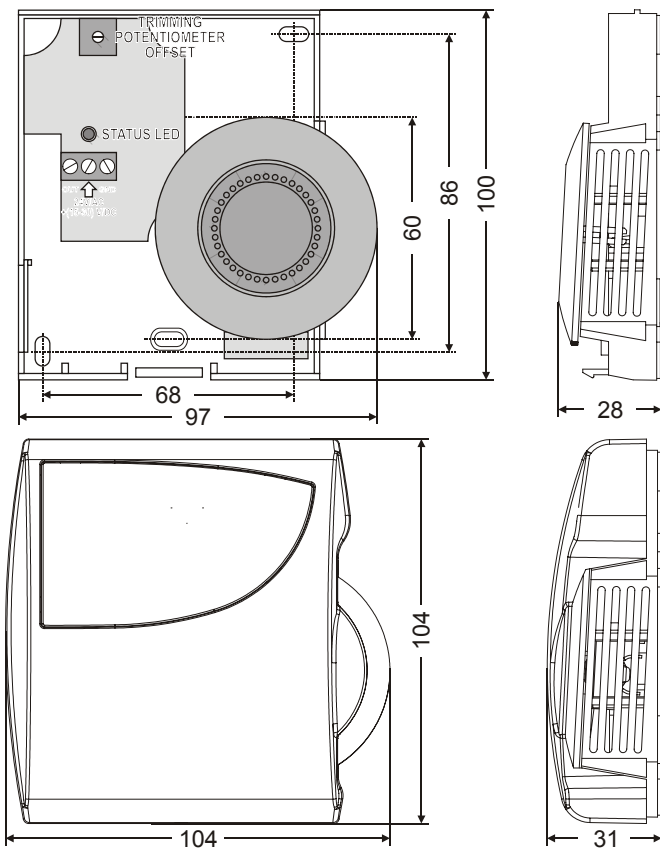


Fig. 3. Dimensions, mounting holes (mm)

### Positioning

To avoid falsifying the measuring results, the device should be installed at sites at which typical air quality prevails. Direct exposure to sunlight and drafts should be avoided. If the device is mounted on a standard flush box, the end of the installation tube in the flush box must be sealed so to avoid any draft in the tube falsifying the measuring result. Maintain a mounting clearance of approx. 4 in. (10 cm) to the right-hand side of the module in order to allow free airflow to the air quality sensor.

### Mounting Procedure

1. The cover of the wall module is fixed by a tab on the underside of the unit; to disassemble the cover and the sub-base, see Fig. 2.
2. Mount the sensor onto the wall outlet box or bore wall holes as specified in Fig. 3 and mount the wall module with appropriate screws.

#### IMPORTANT

*Screw-type terminal blocks are designed to accept no more than one 1.5 mm<sup>2</sup> conductor.*

3. Connect the wires to the terminal block as follows:
  - a) Strip 5 mm of insulation from the conductor.
  - b) Insert wire in required terminal location (see Fig. 3) and tighten the screw to complete the termination.
4. Remount the cover as shown in Fig. 2 and make sure that the tab on the underside engages.
5. Adjust the trimming potentiometer offset (see section "Adjustment Procedure").
6. The sensor is now operational. When the air quality deteriorates, the voltage of the output signal will rise.

### Offset Setting

After mounting the device, the output signal should be adjusted in accordance with expected ambient conditions and individual preferences.

The output signal is adjusted using the trimming potentiometer located on the sensor board (see Fig. 4). The offset of the output signal is increased or lowered by means of this potentiometer.

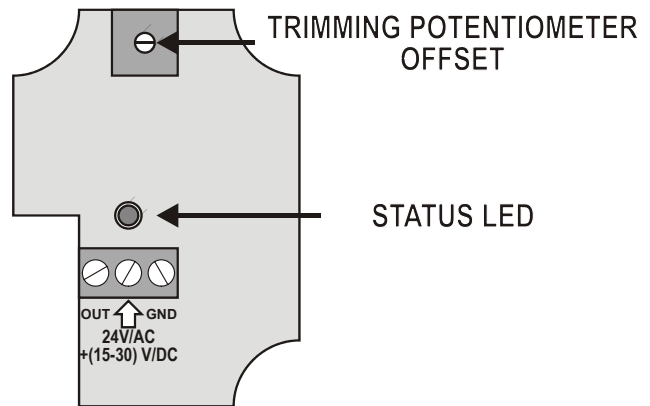


Fig. 4 Wiring Connection and Trimming Potentiometer

- Turning the potentiometer counterclockwise decreases the output signal.
- Turning the potentiometer clockwise increases the output signal.

### Adjustment Procedure

1. Connect sensor and switch operating voltage on.
2. Ensure good air conditions close to the sensor (by means of ventilation, etc.).
3. After approx. 30 minutes of operation, one must verify the output signal. The voltage level should lie in the range 1...3 V. Correct an excessively high or excessively low voltage level using the trimming potentiometer: The potentiometer should be turned to counterclockwise until the red status LED (located on the sensor board, see Fig. 4) is almost extinguished. The output signal will then amount to approx. 0.7 V.

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