

E2610 series gas detectors are compact and easy-to-use instruments.

The devices utilise novel fully calibrated and temperature compensated gas sensors with excellent repeatability, stability and long lifetime.

Two relays with switch-over contact may be used for remote signalling or ventilation control. Flashing LED and an internal buzzer give alarms at two set-points.

Safety requirements

Always adhere to the safety provisions applicable in the country of use. Do not perform any maintenance operation with the power on. Do not let water or foreign objects inside the device.

Operating conditions

- The device should be used in explosion-safe (non ATEX -rated) indoor areas at the atmospheric pressure $\pm 10\%$ and 15...90 %RH without condensation
- Avoid exposure to highly corrosive gases (H_2S , SO_2 , HCl , Cl_2 etc), or high concentrations of basic gases, such as ammonia
- Avoid mechanical shock or strong vibrations.
- Avoid sources of electromagnetic interference
- See **Specifications** table for more details

Installation

There are no precise rules or standards to follow when installing the gas detectors. The following points must be taken into account:

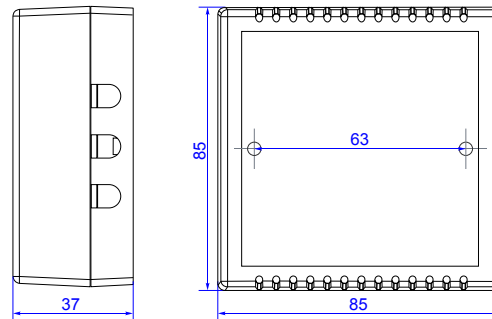
- application (air quality control or leakage detection),
- properties of the space under investigation (room geometry, direction and velocity of air flows etc),
- detected gas (relative density to air, whether the gas is flammable, or toxic, or oxygen displacing, whether the gas is heated),
- safety: strong vibrations, mechanical shock, and the sources of strong electromagnetic interference should be avoided,
- the device should be accessible for maintenance and repair.

For early leakage detection install the sensor as close as possible to the potential leakage sources (flanges, valves, pressure reducers, pumps, etc), taking into consideration other points listed above. Do not locate the detector close to ventilation openings and strong air currents. Avoid the areas without air circulation (corners, niches) as well. For general area monitoring without definite leakage sources, the detectors should be distributed evenly in the room. For personal safety control the detectors are installed in the breathing zone (at the height of the head of people or animals). Recommended sensor position is vertical, pointing downwards. See **Installation guidelines** section for more information.

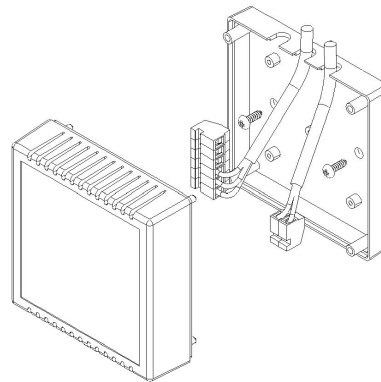
The gas detector should be mounted on a wall at a place located in proximity to possible gas source. Since carbon monoxide has practically the same density as air, the detector should be installed in the breathing zone (1.5 m above the floor, the height may vary depending on application) or near the potential leakage source. Do not locate the detector close to ventilation openings and strong air currents. Avoid the areas without air circulation (corners, niches) as well. The device should be available for maintenance and repair.

Connections

1. Detach the base of the enclosure by gently pulling along four guiding pins.
2. Attach the base to the wall with two screws. (see drawings below).



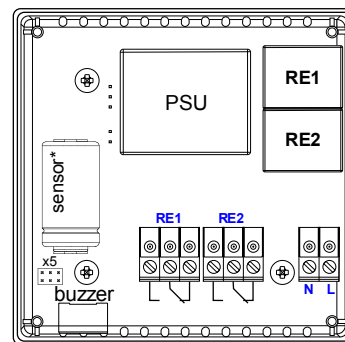
3. Use rounded cutouts on the side of the base to let in the cables from the power supply and of the external devices as shown below.



For easier connection, terminal blocks of E2610 series devices are removable. To dismantle the terminal block, pull it off from the PCB.

Connect the power terminals N and L to the 24 V AC/DC source if you are using detector version -24 or to 230 VAC mains if you are using detector version -230 (see diagram below).

The terminals on the E2610 series devices are suitable for a wide range of wires with cross-section 0,2...1,5 mm². We recommend to strip the wire end by 5...6 mm and tin it, or to use the wire end sleeves. To connect wire, loosen the screw, insert the wire end into terminal hole and tighten the screw.



*Sensors may have different shape and/or size

Connect external devices. Relay switch-over outputs may be used to control directly 24 V or 230 V (for versions -24 and -230 respectively) powered alarm sirens, ventilation fans, shut-off valves or other actuators.

Attach terminal blocks to the board

4. Push enclosure to the base.

5. Turn on the power. It will take ca. 60 seconds after switching on for the sensor to stabilize.

Operation

During the first ca.60 seconds after powering on E2610 performs a warming-up and self-diagnostic routine, indicated by the flashing of each LED. The upper dual-color LED remains continuously green in normal operation and blinks red in case of device or sensor fault. The warm-up time depends on the sensor type, unpowered period and atmosphere.

During the first 30 seconds after powering on you may select automatic or manual mode of alarm release. By shortly (< 2 s) pressing the button on the device's front panel you enable the automatic mode, by pressing the button for 2...10 s — manual mode. The activation of the automatic mode is followed by a single LED blinking and acoustic signal. If manual mode is activated, double acoustic and light signal follows.

If gas concentration exceeds the LOW alarm setpoint, the bottom red LED starts flashing at a rate of 1 Hz, and the relay RE1 switches over. The first alarm stops automatically if the gas concentration drops below 80% of the LOW alarm setpoint.

If gas level exceeds the HIGH alarm setpoint, the bottom red LED starts flashing and the buzzer starts beeping at a rate of 2 Hz, and also the relay RE2 switches over. Depending on the selected release mode, the HIGH alarm stops automatically or can be stopped by pressing the button, on condition that the gas level has dropped below 80% of the LOW alarm setpoint.

Beyond the warm-up period, holding down the button for 2...10 seconds and releasing causes E2610 to reset and perform the self-diagnostic routine for testing purposes.

When holding the button down for over 10 seconds, E2610 imitates the reaching of the HIGH setpoint with the respective light and sound indication and switching over the relays.

Warranty

This product is warranted to be free from defects in material and workmanship for a period of one year from the date of original sale. During this warranty period Manufacturer will, at its option, either repair or replace product that proves to be defective. This warranty is void if the product has been operated in conditions outside ranges specified by Manufacturer or damaged by customer error or negligence or if there has been an unauthorized modification.

Ammonia

Colourless gas, highly soluble in water, with characteristic pungent smell. Ammonia is a large-scale product of chemical industry widely used as a raw material for production of fertilizers and explosives, as a refrigerant (R17), as a cleaning and antimicrobial agent.

Ammonia is also produced naturally from decomposition of organic matter, including plants and animals.

Chemical formula	NH ₃
Molar weight	17
Relative gas density (to air)	0,59
Conversion	1 ppm = 0.70 mg/m ³
Boiling point	-33.34 °C
Low explosive limit (LEL), % vol in air	15
Upper explosive limit (UEL), % vol in air	28
Odour	Characteristic pungent smell
Odour detection threshold	0.04 ppm ...57 ppm according to different studies
Hazards	Ammonia is an irritant to skin, eyes and respiratory tract. Ammonia inhalation causes breathing difficulties (wheezing). At high concentrations may lead to pulmonary edema.
Exposure limits (Directive 2000/39/EC)	TWA 14 mg/m ³ /20 ppm STEL 36 mg/m ³ /50 ppm

Conversion of ppm to mg/m³ is calculated for 25°C and 1 atm.

Installation guidelines

(See **Installation** section for general information.)

Ammonia is lighter than air, so the sensor should be placed higher than the potential leakage or formation source.

NB Do not use detector with electrochemical sensor in areas with constantly high ammonia contents, such as poultry and cattle sheds.

Calibration

To ensure accuracy E2610-NH3 should be calibrated once a year by qualified technician using standard calibration gas mixtures. Please contact your dealer for more information.

Delivery set

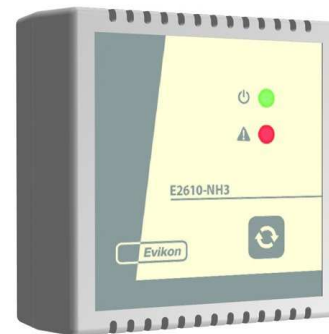
- Ammonia Detector E2610-NH3
- Mounting accessories: 2 screws and 2 plastic dowel plugs

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Specifications

Sensor type	metal oxide semiconductor	electrochemical cell
Sampling method	diffusion	
Detection range	0...100 ppm 0...300 ppm (up to 1000 ppm)	0...100 ppm 0...500 ppm (up to 1000 ppm)
Default alarm setpoints (release-LOW-HIGH)	18 - 25 - 35 ppm 25 - 35 - 150 ppm	18 - 25 - 35 ppm 25 - 35 - 300 ppm
Resolution/digital unit	1 ppm	
Sensor lifetime	> 5 years	>2 years
Calibration interval	12 months	6 months
Operating conditions	15...95% RH without condensation, 0,9...1,1 atm explosion-safe (non ATEX -rated) indoor areas without aggressive gases in the air	
	-30...+50 °C; no volatile silicon compounds in the air, normal ambient oxygen level	-10...+50 °C
Warm-up time	up to 1 minute, depending on unpowered period and atmosphere	
Power supply	11...30 V DC/AC (version -24) or 90...265 VAC (version -230)	
Power consumption	< 2 VA	
Digital interface	UART	
Relay outputs	2 × SPDT, max 5 A, 30 VDC / 250 VAC	
Alarm signalling	Buzzer 2 kHz, 85 dB; red LED	
LEDs	green/red (operation/fault), red (gas alarm)	
Enclosure	ABS plastic with ventilation slots, wall-mount, protection class IP20	
Dimensions	85 × 85 × 37 mm	
Electromagnetic compatibility	according to 2014/30/EU, 2014/35/EU and EN61321-1 standard requirements	



Ammonia Detector

E2610-NH3

User manual

