

E2630 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 RE1 and RE2 with switching contacts can be used to control alarm sirens, ventilation fans, shut-off valves or other actuators. The devices are equipped with visual and acoustic alarm. The version of your detector is marked on the package.

Safety requirements

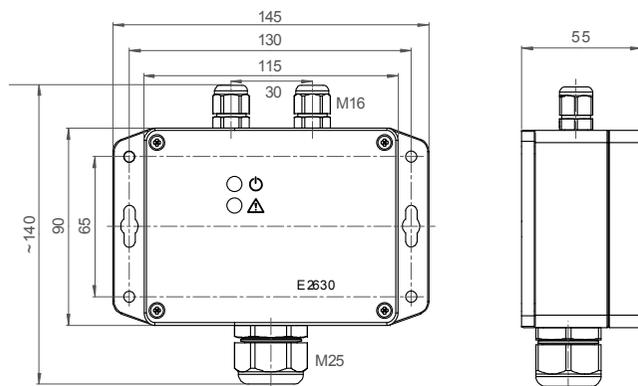
Always adhere to the safety provisions applicable in the country of use. Do not perform any maintenance operation with the power on. Do not let water or foreign objects inside the device.

Operating and storage conditions

- The device should be used in explosion-safe (non ATEX -rated) indoor areas at the atmospheric pressure $\pm 10\%$ and RH 15...95 % 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

When stored without powering in normal air for a long period, or in an environment contaminated with organic vapors or volatile oils, the sensor may show a reversible drift in resistance according to the environment.

Mounting dimensions



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),
- 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 device is mounted on the wall using four round holes or two key slots (see dimensional drawing in the previous section).

Connections

1. Unscrew four lid screws and detach the the front from the device.
2. Attach the device to the wall. (This step may be done after the step 3, consider your convenience).
3. Use two M16 cable glands to let in the cables of the power supply and of the external devices.

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 E2630 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 use the wire end sleeves. To connect wire, loosen the screw, insert the wire end into terminal hole and tighten the screw.

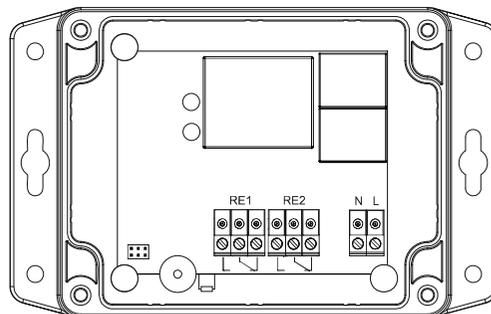
To use relay outputs, connect the chosen actuators to the relay terminals RE1 and/or RE2.

NB! Actuator short-circuits shall be avoided, to protect the instrument relays use external fuses or safety switches.

4. Place the lid back and fix it with the screws. Make certain that the cable glands are properly tightened to ensure the conformity to IP65 protection class.

5 Turn on the power. It may take up to five minutes after switching on for the sensor to stabilize.

For stable operating it is recommended to keep the detector powered constantly, except for periods of maintenance and calibration, displacement etc.

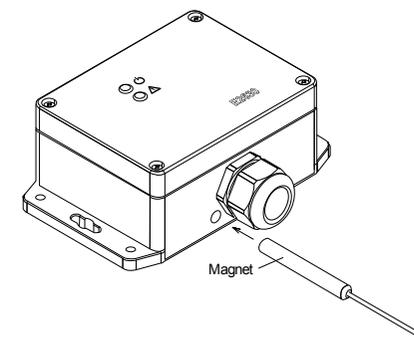


Operating. Alarm release mode

During the first ca. 60 seconds after powering on E2630 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. Touch the device with the magnet key on the spot shown at the drawing below. A short touch (< 2 s) enables the automatic mode, a touch of 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 with a short touch of the magnet key, if the gas level has dropped below 80% of the LOW alarm setpoint. Upon contact the key should activate the reed switch located left of the sensor inside the device.



Apart from the warming-up period, a 2...10 s touch causes the device to reset and perform the self-diagnostic routine for testing purposes.

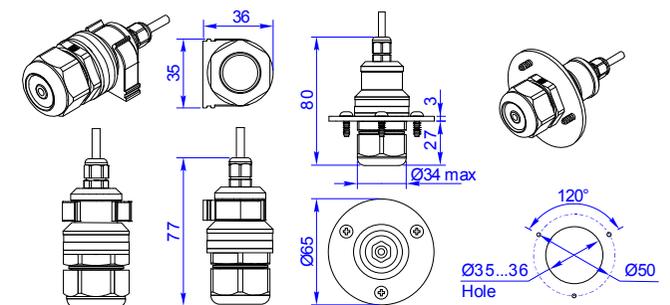
To check the visual and acoustic alarm, touch the device with the magnet key for more than 10 s. This will launch blinking and beeping (stops as soon as the key is withdrawn).

Sensor probe handling

The E2630 series detectors are available with remote probe (see drawing below for dimensions). The remote probe is connected to the main unit with shielded cable. Default connection cable length is 3 m. The sensor probes of all types are equipped with a hydrophobic microporous PTFE filter to protect the sensor from dust, dirt and water drops. The filter may be replaced if it gets strongly contaminated. To replace the PTFE filter, unscrew the M25 nut and remove the old filter. Place a new filter into the nut and tighten it again.

NB! Never stab or press the filter near its centre where the sensor is located since this may damage the sensor.

The recommended orientation of sensor probe is vertical with the sensor tip pointing downwards. This prevents possible accumulation of condensed water on the sensor protection filter.



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 refrigerator, 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 and connections** 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

E2630-NH3 detectors have been calibrated by Manufacturer with standard gas mixtures before delivery. Provided that the sensor is used under moderate conditions, field recalibration is recommended every 6 months for electrochemical sensor and every 12 months for MOS sensor. Please contact your dealer for more information.

Maintenance

Do not perform any maintenance operation with the power on.

Clean the device with soft damp cloth. Do not use any abrasive cleaning agents. Do not immerse the device into water or any cleaning media.

Delivery set

- Detector E2630
- Mounting accessories:
 - 4 screws with plastic dowels
 - fixing clamp for remote probe version

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	
Signal update	every 1 second	
Sensor lifetime	> 5 years	>2 years
Calibration interval	12 months	6 months
Operating conditions	15...95 % RH, 85...110 kPa explosion-safe (non ATEX -rated) indoor areas without aggressive gases in the air	
	-40...+70 °C; no volatile silicon compounds in the air, normal ambient oxygen level	-10...+50 °C
Warm-up time	up to 5 minutes, depending on unpowered period and atmosphere	
Power supply	11...30 VDC / 24 VAC with integrated mains supply module 90...265 VAC	
Power consumption	< 2 VA	
Digital interface	UART	
Relay outputs	2 × SPDT, 250 VAC / 30 VDC, 5 A max	
Alarm signalling	Buzzer 2 kHz, 85 dB; red LED	
LEDs	green/red (operation/fault), red (gas alarm)	
Enclosure	grey ABS, wall mount, protection class IP65	
Dimensions	H90 × W145 × D55 mm (overall dimensions H140 × W145 × D55 mm)	
Electromagnetic compatibility	according to 2014/30/EU, 2014/35/EU and EN61321-1 standard requirements	

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 Detector E2630-NH3

User manual

