Gas Detector
E2630

User Manual

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Specifications

Response time	<1 min
Signal update	every 1 second
Warm-up time	≤ 1 min
Digital interface	UART
Relays	2 × SPDT, 250 VAC / 30 VDC, 5 A max
Power supply -with integrated mains supply module	11...30 VDC /V 24 VAC 90...265 VAC
Power consumption	< 2 VA
Electromagnetic compatibility	according to 2014/30/EU, 2014/35/EU and EN61326-1 requirements
Enclosure	grey ABS 90×145×55 mm, IP65
LEDs	green/red (operation/fault), red (gas alarm)
Buzzer	2 kHz, 85 dB

Operating and storage conditions

Avoid installing the devices with metal oxide semiconductor sensor in the rooms where silicone containing materials (silicone rubber/putty, hair grooming materials, adhesives) or other volatile silicon compounds may be present. If silicon-containing vapors adsorb onto the sensing element surface, the sensing material will be coated, irreversibly inhibiting sensitivity.
Avoid highly corrosive environments. High density exposure to corrosive gases such as hydrogen sulfide, sulfur oxide, chlorine, hydrogen chloride, etc. for extended periods may cause corrosion or breakage of the lead wires or of the heater material.
Metal-oxyde gas sensors cannot properly operate in a zero or low oxygen content atmosphere. They require the presence of normal ambient oxygen in their operating environment in order to function properly.

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.

Calibration

E2630 devices have been calibrated by Manufacturer before delivery. To ensure the accuracy E2630 series devices should be calibrated by qualified technician using standard calibration gas mixtures (see Annex for recommended calibration intervals). Refer the manufacturer for calibration guides.

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 unauthorised modification.

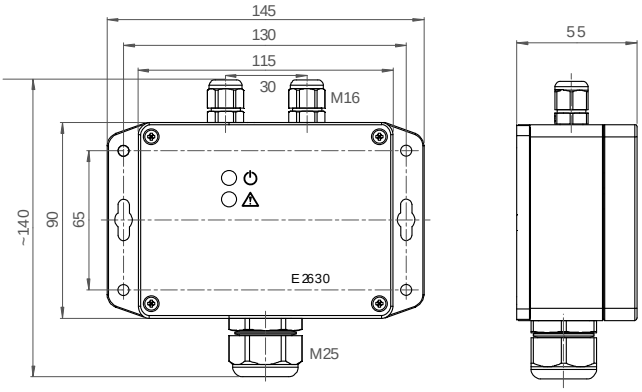
E2630 series gas detectors are compact and easy-to-use instruments.
The devices utilise novel fully calibrated and temperature compensated gas sensors with excellent repeatability, stability and long lifetime.
Two relays RE1 and RE2 with switching contacts can be used to control 24 V or 230 V powered alarm sirens, ventilation fans, shut-off valves or other actuators. The devices are equipped with visual and acoustic alarm.
This manual refers to the E2630 series in general, for more detailed information concerning particular devices see Annex.
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.

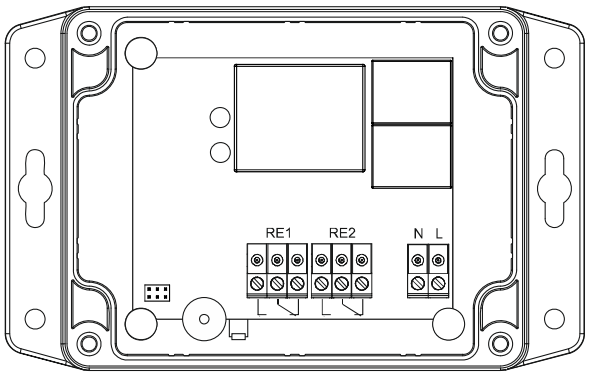
Installation and connections

1. The device is fixed on the wall using four round holes or two key slots (see dimensional drawing below). The recommended sensor orientation is vertical, pointing downwards.
The detector should be mounted in proximity to potential gas sources and away from ventilation holes or dead-air spaces such as corners (see Annex for more details).



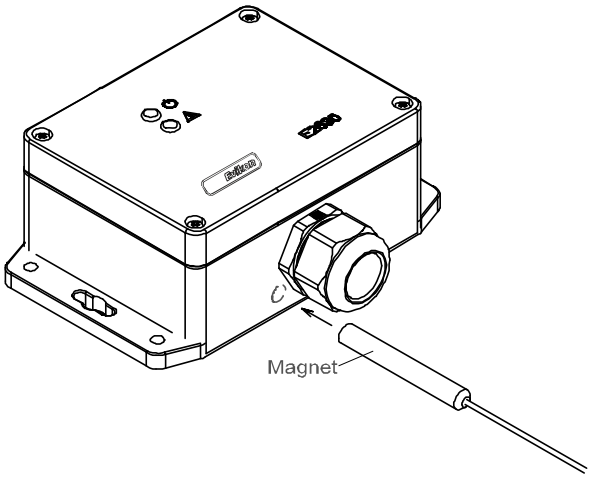
2. Unscrew the four screws and remove the front panel. Use two M16 cable glands to pass the cables of the power supply and of the external devices.
Connect power terminals N and L to the 24 V AC/DC source if you are using detector version -24 or to 230 VAC mains if you are using detector version -230. Respect the polarities when connecting to AC source.
The terminals on the E2630 series devices are suitable for a wide range of wires with cross-section 0,2...1,5 mm^2. The recommended wire stripping length is 8...9 mm. Loosen the screw, insert the wire end into terminal hole and tighten the screw.
Relay switch-over outputs may be used to control directly 24 V or 230 V powered alarm sirens, ventilation fans, shut-off valves or other actuators.
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.

3. When the external devices are connected, replace the panel and fix it with the screws. Make certain that the cable glands are properly tightened to ensure the conformity to IP65 protection class.



Operating

During first 30 seconds after powering on E2630 performs a warming-up and self-diagnostic routine, indicated by flashing each LED. The upper dual-color LED remains continuously green in normal operation and blinks red in case of device or sensor fault.
If gas concentration exceeds the LOW alarm setpoint, the bottom red LED starts flashing at a rate 1 Hz, and the relay RE1 switches over. The first alarm stops automatically when the gas concentrationl falls 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 2 Hz, and also the relay RE2 switches over. The HIGH alarm stops automatically (option -A) or can be stopped with a short touch of the magnet key (option -M), on condition that the gas level has fallen below 80% of the LOW alarm setpoint. Upon contact the key should activate the reed switch located inside the device, to the left of the sensor (see drawing below)



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Annex. Characteristics of detectors depending on gas

Solvent vapors detector E2630-VOC is is intended for detection of various solvent vapors, e.g. toluene, xylene, ethanol.
Applications include storages, painting chambers and other confined spaces, where toxic or potentially explosive concentration of volatile organic compounds can accumulate.
Detected vapors are heavier than air and tend to sink. The sensor should be placed near the floor, pointing downwards.

Specifications

Detected gases	Toluene, Xylene, Ethanol
Sensor type	metal oxide semiconductor
Sampling method	diffusion
Detection range	0...100% LEL or 0...500 ppm
Default alarm/ release setpoints Release-LOW-HIGH	7 - 10 - 25 %LEL 70 - 100 - 300 ppm
Recommended coverage area f	50...100 m^2 (4...5,5 m radius)
Sensor lifetime	> 5 years
Calibration interval	12 months
Operating conditions	-40...+50 °C, 15...90 % RH, 85...110 kPa explosion-safe (non ATEX -rated) indoor areas without aggressive gases; no volatile silicon compounds in the air, normal oxygen concentration

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Carbon monoxide CO is a highly toxic, colorless and odorless gas. Monitoring is required in places where CO may be formed from incomplete combustion.

Carbon monoxide detector E2630-CO is intended for for carbon monoxide control in underground parkings, boiler houses, kitchens, and other confined spaces, where potentially toxic concentration of carbon monoxide can accumulate.
Carbon monoxide has practically the same density as air and spreads evently in the room. The detector should be mounted in the breathing zone (ca. 1,5 m from the floor)

Specifications

Sensor type	electrochemical cell
Sampling method	diffusion
Detection range	standard 0...200 ppm high 0...1000 ppm
Default alarm/ release setpoints Release-LOW-HIGH	standard 18 - 25 - 125 ppm high 88 - 125 - 250 ppm
Recommended coverage area f	80...120 m^2 (5...6 m radius).
Sensor lifetime	> 6years
Calibration interval	6 months
Operating conditions	-40...+70 °C, 15...95 % RH, 85...110 kPa explosion-safe (non ATEX -rated) indoor areas without aggressive gases

Combustible gas detector E2630-LEL is ntended for underground parkings, boiler houses, kitchens, and other confined spaces, where potentially explosive concentration of combustible gases can accumulate.
To detect gases lighter than air (methane, hydrogen) install the sensor near the ceiling, for gases heavier than air (propane, butane) not higher than potential leak source.

Specifications

Detected gases	Methane, Butane, Propane, Acetylene, Hydrogen
Sensor type	metal oxide semiconductor
Sampling method	diffusion
Detection range	0...100% LEL
Default alarm/ release setpoints Release-LOW-HIGH	7 - 10 - 25 %LEL
Recommended coverage area f	80...120 m^2 (5...6 m radius).
Sensor lifetime	>10 years
Calibration interval	12 months
Operating conditions	-40...+50 °C, 15...90 % RH, 85...110 kPa explosion-safe (non ATEX -rated) indoor areas without aggressive gases; no volatile silicon compounds in the air, normal oxygen concentration

Ammonia (NH_3) is a colorless gas with a characteristic pungent smell. Highly hazardous, toxic, corrosive. Boiling point -33.34 °C.

Ammonia detector E2630-NH3 is intended for use in agriculture (poultry, dairy, cattle farms) and refrigerating industry.
Ammonia is lighter than air (ca. 0,6 of air density).
For air quality control the detector should be mounted in the breathing zone.
For leakage control install the device near the ceiling or higher than potential leakage source.
NB Do not use detector with electrochemical sensor in areas with constatnly high ammonia contents, such as poultry and cattle sheds.

Specifications

Sensor type	metal oxide semiconductor	electrochemical cell (on request)
Sampling method	diffusion	
Detection ranges	0...100 ppm 0...300 ppm	0...100 ppm 0...500 ppm
Default alarm/ release setpoints Release-LOW-HIGH	18 - 25 - 35 ppm 25 - 35 - 150 ppm	18 - 25 - 35 ppm 25 - 35 - 300 ppm
Recommended coverage area f	80...120 m^2 (5...6 m radius)	
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 gasesin the air	
	-40...+70 °C; no volatile silicon compounds in the air, normal oxygen concentration	-10...+50 °C

Nitrogen dioxide (NO_2) is intended brown gas with pungent odour. It is formed in most combustion processes when using air as the oxidant.

Nitrogen dioxide irritates eyes and skin. It is toxic when inhaled.

Nitrogen dioxide detector E2630-NO2 is intended for underground parkings, boiler houses, laboratories, industrial premises and other confined spaces, where potentially toxic concentration of nitrogen dioxide can accumulate.
Nitrogen dioxide is 1.6 times heavier thanair. The location of the sensor is determined by operating conditions. Thus, in the underground parkings NO_2 raises to the ceiling with hot exhaustion gases, so the sensor should be located a 1,2...1,5 m from the floor in order to detect potentially dangerous concentration more quickly.

Specifications

Sensor type	metal oxide semiconductor
Sampling method	diffusion
Detection range	0...10 ppm
Default alarm/ release setpoints Release-LOW-HIGH	2 - 3 - 6 ppm
Recommended coverage area f	up to 700 m^2 (15 m radius)
Sensor lifetime	> 2 years
Calibration interval	6 months
Operating conditions	-20...+50 °C, 15...95 % RH, 85...110 kPa explosion-safe (non ATEX -rated) indoor areas without aggressive gases; no volatile silicon compounds in the air, normal oxygen concentration