



# Nitrogen Dioxide Transmitter E2617-NO2

*USER MANUAL*

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## Nitrogen Dioxide

A colorless toxic gas, relatively insoluble in water. When exposed to oxygen (including air), nitric oxide is converted into nitrogen dioxide.

Chemical formula		NO <sub>2</sub>
Molar weight		46
Relative gas density (to air)		1.59
Conversion		1 ppm = 1.88 mg/m <sup>3</sup>
Boiling point		21.2°C
Flammability		Powerful oxidizer, can cause many organic substances (wood, paper, oil, etc) to ignite. Irritates the skin, eyes, and respiratory tract. Exposure to levels above 100 ppm can cause death due to asphyxiation from fluid in the lungs. There are often no symptoms at the time of exposure other than a transient cough, fatigue, or nausea, but over hours inflammation in the lungs causes edema.
Odor		Characteristic pungent odor
Odor threshold		0.1 to 0.4 ppm
Hazards		Irritates the respiratory tract and eyes, at high concentrations may cause lung edema and death
Exposure limits (NIOSH)	ST REL	1.88 mg/m <sup>3</sup> / 1 ppm
	IDLH	37.6 mg/m <sup>3</sup> / 20 ppm

Conversion of ppm to mg/m<sup>3</sup> is calculated for 25°C and 1 atm.

## Specifications

Sensor type	Electrochemical cell
Sampling method	Diffusion
Detection range	0-10 ppm, 0-20 ppm, 0-30 ppm
Maximum overload	100 ppm
Response time T90	< 60 s
Sensor protection	Microporous PTFE dust filter
Sensor lifetime	> 2 years in fresh air
Sensitivity drift	< 20% per annum
Warm-up time	≤ 1 min
Power supply	24VDC ± 20%
Power consumptions	< 1W
Analog output	4-20 mA / 0-10 V, user selectable
Load resistance	RL < (Us - 8 V) / 22 mA for 4-20 mA output RL > 250 kOhm for 0-10 V output
Enclosure	Grey ABS plastic, wall mount, protection class IP65
Dimensions	H82 × W94 × D35
CE marking	According to 2014/30/EU and 2014/35/EU , EN50491-4-1:2012 EN61000-6-3:2007, EN 61326-1:2013(EMC, emissions), EN 61000-6-1:2019 and EN 61000-6-2:2019(EMC, Immunity)
Operating conditions	-30...+50°C, 15-90%RH, pressure 800 to 1200 mbar

## Product Description

E2617 series gas transmitters are easy-to-install and easy-to-use instruments. The devices utilize fully novel fully calibrated gas sensors with excellent repeatability, stability, and long lifetime.

E2617 series provide an analog output with user-selectable signal type, 4-20 mA or 0-10V.

## Safety requirements

Misuse will impair the protection of the product. 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.

Removal of the PCB from the enclosure voids the warranty. Do not touch the electronic components directly, as they are sensitive to static electricity.

Connection diagrams can be found in the electrical connections section. The device might not perform correctly or be damaged if the wrong power supply is connected.

External circuits connected to the equipment should have sufficient insulation rating according to the environmental conditions and equipment power.

A disconnecting device that is marked as such and easily accessible should be included in the installation of this product

## Operating conditions

The device should be used both in a non-hazardous area and in a basic electromagnetic environment, where the latter is defined in EN 61326-1. Avoid strong mechanical shock and vibrations. Avoid corrosive atmosphere and areas highly contaminated with dust, oil mist, etc. Keep the instrument away from direct sunlight. A sudden temperature or humidity change might affect the sensitivity of the sensor.

## Installation guidelines

Before proceeding with the installation it is mandatory to read the Safety requirements section and make sure to comply with all listed instructions. Installation standards EN 60079-29-2 and EN 45544-4 are also recommended for further instructions and related information about the installation. During the installation of the transmitter the following points must be considered:

- Application (the instrument is intended for air quality or leakage control).
- Properties of the space under investigation (room geometry, direction, and velocity of airflows, etc.).
- Nitrogen dioxide is ca. 1.6 times heavier than air. The location of the sensor is determined by operating conditions. Thus, in the underground parking, the NO<sub>2</sub> rises to the ceiling with hot exhaustion gases, so the sensor should be located at 1.2...1.5 m from the floor in order to detect potentially dangerous concentrations more quickly.
- The device should be accessible for maintenance / calibration.

The aforementioned conditions above will affect the coverage area of the device. However, the coverage area for a transmitter is usually between 2.5 to 5 meters radius.

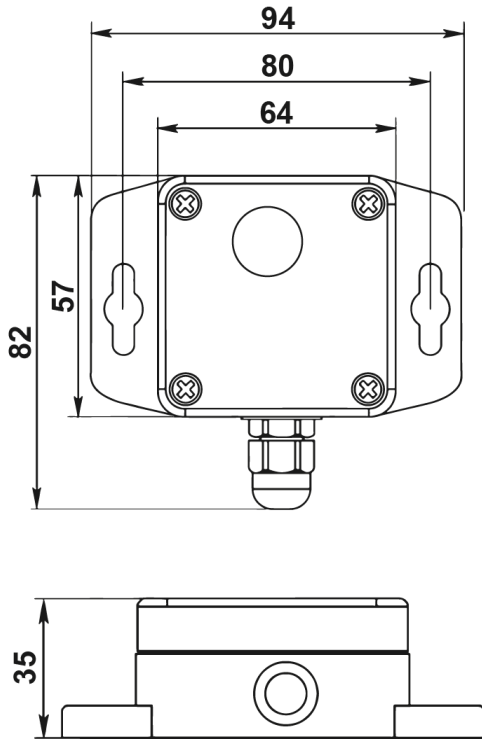
For early leakage detection, install the transmitter as close as possible to the potential leakage sources (flanges, valves, pressure reducers, pumps, etc.), taking into consideration other points listed above.

For general area monitoring without definite leakage sources, the transmitters should be distributed evenly in the room.

For personal safety control, the transmitters are installed in the breathing zone (at the height of the head of people or animals).

For installing the device, attach the device to the wall using provided screws through the key slots on both sides of the device.

## Mounting dimensions

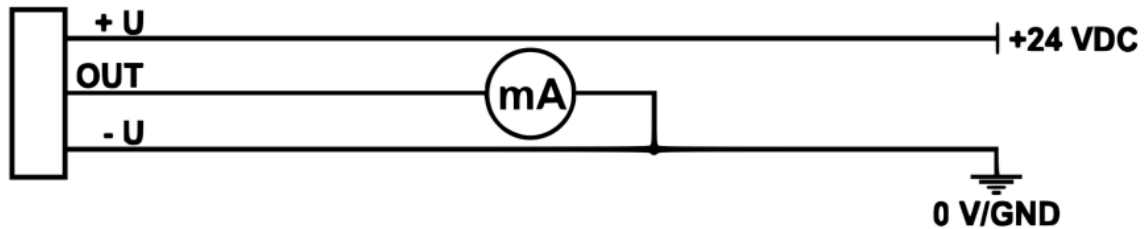


The IP65 instrument sensor is equipped with a hydrophobic microporous PTFE filter to protect the sensor from dust, dirt, and water drops.

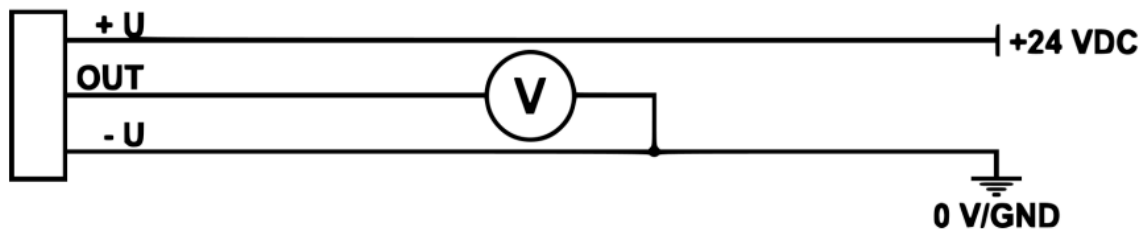
**NOTE!** Never stab or press the filter near its center where the sensor is located since this may damage the sensor. Do not remove the filter as it may cause the device to show incorrect values.

## Electrical connections

### 3-wire 4-20 mA output



### 3-wire 0-10 V output



The terminals on the E2617 series devices are suitable for a wide range of wires with a cross-section of 0.34...2.5 mm<sup>2</sup>. We recommend to strip the wire end by 8...9 mm and use wire end sleeves.

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

The analog output can be changed between 4-20 mA and 0-10 V type using jumper on the transmitter's PCB.

## Delivery set

- Transmitter E2617-N02
- Mounting accessories:
  - 2 screws with plastic dowels



## Warranty

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

## Manufacturer contacts

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