



Nitrogen Dioxide Transmitter

E2615-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 ₂	
Molar weight	46	
Relative gas density (to air)	1.59	
Conversion	1 ppm = 1.88 mg/m ³	
Boiling point	21.2 °C	
Flammability	Powerful oxidize, 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 (NIOSH)	limits	ST REL
		IDLH
		1.88 mg/m ³ / 1 ppm
		37.6 mg/m ³ /20 ppm

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


Specifications

Sensor type	Electrochemical cell
Sampling method	Diffusion
Detection range	0-30 ppm
Max. overload	150 ppm
Response time T90	≤ 25 s
Sensor lifetime	≥ 2 years
Calibration interval	6 months
Sensitivity drift	< ± 20% in 5 years
Power supply	24 VDC ± 20%
Power consumption	< 1 W
Analog outputs	4-20 mA / 0-10 V, user settable
Outdoor enclosure	Grey ABS plastic, wall mount, protection class IP65
Indoor enclosure	White, ivory, or black ABS plastic, wall mount, protection class IP20
Dimensions	IP65 H70 × W80 × D36 mm IP20 H71 × W71 × D27 mm
CE marking	According to 2014/30/EU and 2014/35/EU , EN 50491-4-1:2012 EN61000-6-3:2007, EN 61326-1:2013(EMC, emissions) EN 61000-6-1:2019, EN 61000-6-2:2019(EMC, Immunity) EN 60079-29-1:2016, EN 60079-29-2:2015 and EN 60079-29-3:2014
Operating conditions	-20...+50 °C 15...90 %RH, pressure 0,9...1,1 atm Explosion safe indoor areas Avoid strong mechanical shock, vibrations, or EMI

Product description

E2615 series gas transmitters are easy-to-install and easy-to-use instruments. The devices utilize novel fully calibrated gas sensors with excellent repeatability, stability, and long lifetime.

E2615 series provides analog output with user-selectable signal type, 4-20 mA or 0-10 V.

The version of your transmitter is marked on the package. If the symbol  is marked on the equipment, consult the documentation for further information.

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 NO₂ 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.

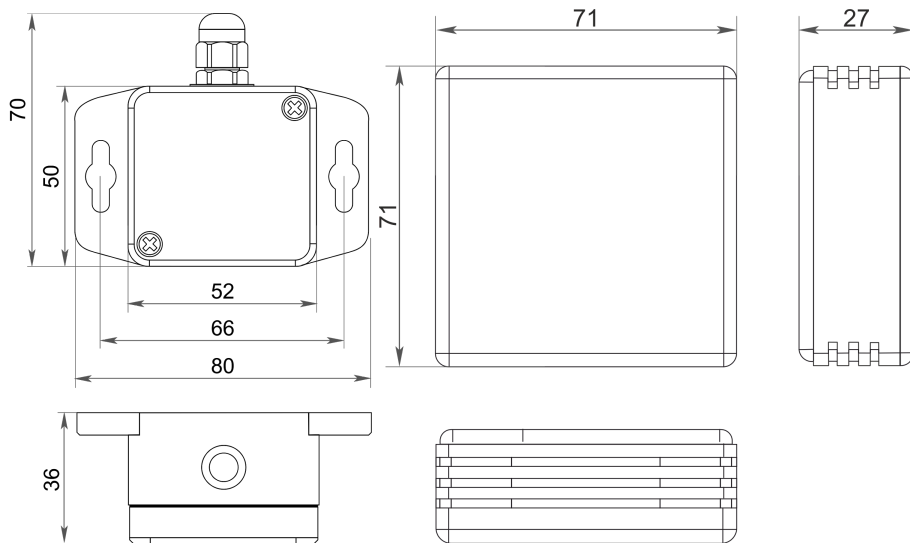
For early leakage detection, install the transmitter as close as possible to the potential leakage sources (flanges, valves, pressure reducers, pumps, etc.), taking into consideration other points listed above.

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). The recommended sensor position is vertical, pointing downwards.

For installing the IP65 device, attach the device to the wall using provided screws through the key slots on both sides of the device. For installing the IP20 device, detach the base of the enclosure by gently pulling along four guiding pins and attach the base to the wall with two screws.

Mounting dimensions

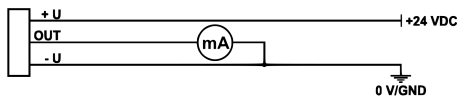


The IP65 instrument sensor is equipped with a hydrophobic microporous PTFE filter to protect the sensor from dust, dirt, and water drops.

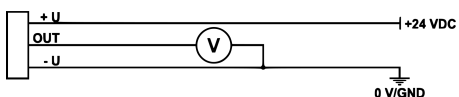
NOTE! Never stab or press the filter near its center where the sensor is located since this may damage the sensor. Do not remove the filter as it may cause the device to show incorrect values.

Electrical connections

3-wire 4-20 mA output



3-wire 0-10 V output



The terminals on the E2615 series devices are suitable for a wide range of wires with a cross-section of 0.2...1.5 mm². 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.

Operation

Turn on the power. The instrument warm-up time takes about 1 minute after switching on and the final sensor stabilization time to maximum accuracy takes about 30 minutes.

Make sure that the transmitter is properly mounted and the external devices connected. Place the lid back and fix it with the screws. The device is ready to use.

Maintenance

Do not perform any maintenance operation with the power on.

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

Calibration

E2615-NO₂ transmitters have been calibrated by the Manufacturer with standard gas mixtures before delivery. Provided that the sensor is used under moderate conditions, field recalibration is recommended every 6 months. Please contact your dealer for more information.

Delivery set

- Transmitter E2615
- Mounting accessories:
 - 2 screws with plastic dowels

Order code for E2615-NO₂ options

E2615 options	Order code
IP20 enclosure	E2615-NO ₂ -IP20
IP65 enclosure	E2615-NO ₂ -IP65

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 unauthorized modification.

Manufacturer contacts

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