

safe monitoring

TR-EC-NH3 (4..20mA)

GENERAL

GB

TR-EC-NH3 is a detector designed to measure the concentration of ammonia (NH₃) in engine rooms, cold rooms, and other areas where ammonia is stored or utilised. The sensors are of electrochemical type with good selectivity and high accuracy even at low concentrations.

The detectors provide a linear output signal (4..20mA) proportional to the concentration of ammonia.

Different measuring ranges are available depending on requirements and application. The electrochemical sensor has good selectivity and is not affected by hydrogen (H_2) which is a common source of interference for ammonia detectors.

STANDARDS AND REGULATIONS:

The use of ammonia in refrigeration systems is regulated by European Refrigeration Standard (EN378: 2008). All establishments with > 50 kg ammonia must have a gas detection systems installed, in engine rooms as well as other areas, where there is a risk for personnel safety or that values reach critical limits.

Also check local standards and regulations regarding personnel protection, explosion and fire hazard, exposure limits, environmental and labour protection regulations, etc.

ALARM LEVELS:

Alarm levels will depend on where the detector is located and what needs to be protected. The following levels can be regarded as benchmarks for various applications:

- Pre alarm (C) - Leakage alarm (B)

- Main alarm (A)

50–300 ppm 500–1000 ppm >3000 ppm

LOCATION / INSTALLATION

TR-EC-NH3 should be mounted on the wall, at least 150 cm above the floor and not closer to ceiling than ~20 cm from the ceiling as residual gas can be difficult to ventilate.

The detector must be installed so that it is reasonably easily accessible for service and maintenance.

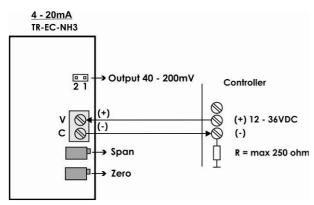
COMMISSIONING

At startup, the zero point "zero" is to be checked and adjusted when necessary. See the "Calibration"

WIRING DIAGRAM

The transmitter needs a power supply of 12..36V DC to operate. Connect the power source to the connector.

 \triangle Pay attention to the polarity.



TECHNICAL DATA:

Model: Gas type: Material: Method: Range:

Calibration interval: Lifetime sensor: Power consumption: Max (R_L): Power supply: Output: Ambient temp: Ambient temp: Ambient humidity: Enclosure: Dimensions: Weight: Approvals:

TR-EC-NH3

Ammonia (NH₃) Polycarbonate PC Electrochemical 0-100 ppm 0-1000 ppm 0-5000 ppm 0-10000 ppm > once a year. ~ 2-3 year 20mA 250 ohm (input impedance) 12..36V DC 4..20mA linear -30°C..+50°C 15-90% RH IP56 80x82x60 mm 180g CE, EMC

SENSOR LIFESPAN

The actual lifetime for sensors can be expressed as "ppmhours", i.e. if the sensor is exposed to a high concentration of gas and for a period of time, life expectancy will be shortened. Presence of other contaminant gases can also shorten the sensors lifespan expectancy.

When replacing sensor:

The spring/jumper on the sensor must be removed before connecting into the electronic circuit, then follow the instructions below.

CALIBRATION

The voltage output signal can be measured between pins 1 and 2. To obtain the current output signal, refer to the last section. The output signal has a linear range from 40..200mV and 4..20mA respectively.

To adjust the zero point;

- Make sure the sensor is clean from ammonia by ventilating it in fresh air or applying synthetic air with flow ~ 0.5 l/min for ≥ 3 minutes.

- Adjust potentiometer [Zero] until the output is 40mV.

To adjust "span";

- Apply gas with concentration (ppm) corresponding to the detector's maximum range (airflow 0,5 l/min) until the signal is stable, ~1 minute.

- Adjust potentiometer [Span] until the output signal is 200 mV.

If a gas with lower concentration than maximum is used for span calibration, the expected output signal must be calculated using a linear relationship.

Contact technical support for further assistance.

Specifications subject to change