

NH₃ GAS MEASURING SYSTEM

1. PROPERTIES

The Ammonia NH₃ gas measuring system determines the concentration of NH₃ gas in the air at ambient temperatures of -10° C to +50° C. The housing is made of aluminium and suitable for wall mounting.

The gas measuring system is calibrated with the help of the respective test gas using a potentiometer; there is no or negligible cross-sensitivity to other substances.

Basic processing and output of the measured values (linear output, 4-20 mA) are integrated into the measuring system. Evaluation and further processing of the measured values occur in a downstream device according to the users specifications (for e.g. ventilation system, limit monitor, display, programmable logic controller).

The measuring system offers a range of 0-100ppm NH₃.



NH₃ Gas Measuring System

Part no.: 2112B0312

Measuring range: 0 – 100 ppm

2. DESIGN

The electrochemical sensor is mounted inside aluminium housing on a sensor holder above the diffusion opening. The cable entry is a screwed cable gland (PG11) and is located on the opposite site. In addition, a transmitter containing a signal amplifier and an output of 4-20 mA is arranged in the housing. The transmitter is based on the two-wire system and processes and transmits the measured signals.



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3. TECHNICAL DATA

Transmitter

Power supply:	Screw terminals
Terminal voltage:	Min. 14 Vdc \pm 5%
Current:	Approx. 30mA
Connections:	2 polarised screw terminals: 24 Vdc \pm 5% and 4-20mA
Potentiometer PZ:	Zero setting (three electrode sensor only)
Potentiometer PS:	Span setting
Test pins (+) and (-):	Digital voltmeter connection
Ambient temperature:	-10° C to +50° C
Air pressure:	900 hPa to 1100 hPa
Permissible humidity:	15-95% relative humidity, non-condensing
Output:	4-20 mA
Housing:	Aluminium, red
Protection class of housing:	IP 54
Housing weight:	Approx. 500 g
Housing dimensions:	Approx. L90 x W85 x H65 mm
Connecting cable:	2x1.5 ² Cu + functional ground, shielded cable
Length:	100 Ω go and return

Sensor

Gas access:	By diffusion
Expected operating life:	2 years in air
Resolution:	2 ppm
T ₉₀ response time:	< 60 seconds
Output linearity:	Linear

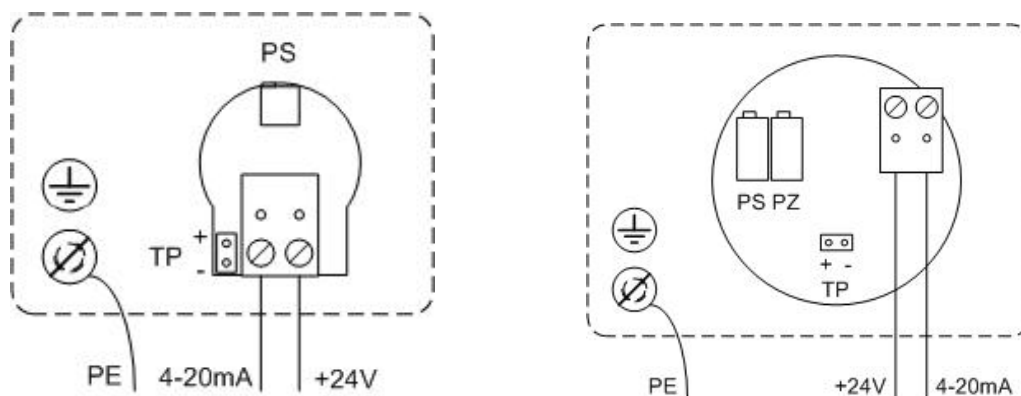


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Sensor cross-sensitivity data

Interfering Gas	Concentration	Reading
CO	300 ppm	0 ppm
SO ₂	20 ppm	-7 ppm
NO	20 ppm	-1 ppm
H ₂	300 ppm	0 ppm
H ₂ S	20 ppm	7 ppm
Cl ₂	20 ppm	-55 ppm
NO ₂	20 ppm	-20 ppm

4. CONNECTION



Connection diagram. Left: version with two-electrode sensor; right: version with three-electrode sensor; PE, potential earth; PS, potentiometer span for setting the span; PZ, potentiometer zero for setting zero (three-electrode sensor only); TP (+) (-), test pins for connecting the voltmeter; 2 polarized screw terminals for power supply (+24 V DC) and measured signal output (4-20 mA).



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The gas measuring system must be connected to any downstream equipment by means of a three-core, shielded cable with maximum 100 Ω cable resistance, including go and return line. Do not lay this line next to a high-tension power cable as there is a danger of radiated interference. The cable must be capable of withstanding the anticipated mechanical, chemical and thermal stresses.

The gas measuring system is connected to the electric circuit (+24 V DC) by means of one of the two polarized screw terminals. The measured data (4-20 mA) is read by means of the second polarized screw terminal. The system earth (potential earth) is connected to the housing.

5. CALIBRATION & ACCESSORIES

The gas measuring system is calibrated manually with the help of two potentiometers (PZ, PS) and two test pins inside the housing. For this, synthetic air and NH₃ test gas are required. A test gas cap is available for ease of test and calibration.

MODBUS solutions and Gas Limit Monitors/Controllers are also available with this system. Please ask Euro-Gas for details.



Test Gas Cap

Part no: 2112B1010



MODBUS card

Part no: 2112B1055



Gas Limit Monitors

Part no: 2112BGWZ-S2/4/6

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