

Transmitter CI21

for ammonia (NH₃)



- Selective and precise detection even in almost dry air and up to 99 % rel. humidity
- No false alarm from hydrogen, natural gas, carbon monoxide, oil vapours
- Wide dynamic detection range, from a few ppm up to % volume
- Low-cost, long-life, superior alternative for electrochemical sensors
- Resistant to constant ammonia background exposure

Worldwide Supplier Of Gas Detection Solutions



Transmitter CI21

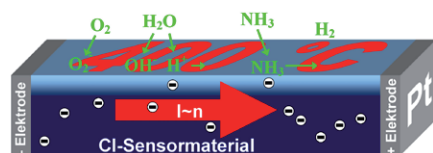
Charge Carrier Injection

What does this mean?

A proven product - with a name for a new sensor principle which has to be taken note of.

Detection principle

The principle is characterized by a specially developed, gas sensitive material, which is capable of absorbing NH_3 (ammonia) selectively. The adsorption of the NH_3 molecules injects so-called charge carriers into the sensor material. After many years of development, special micro-structured electrodes allow the accurate determination of ammonia concentration without the known disadvantages of semiconductor sensors or electrochemical cells. In long-term studies and tests GfG has adjusted and optimized this new detection principle to offer the best possible solution for the customer.



For the very first time ammonia concentrations can be monitored over an extremely wide detection range – without damaging the sensor like a semiconductor or exhausting the sensor like an electrochemical cell. In addition to this a long lifetime of the sensor can be achieved.

Alarm only for ammonia

A monitoring system for ammonia should not detect other gases which may be present in the ambient air. Unnecessary false alarms are expensive. In machine rooms on refrigerating plants oil vapours are often present. Hydrogen is generated by charging of batteries. Cleaning action releases solvent and cleaning agents in the air. The transmitter CI21 provides drastically reduced cross sensitivities for all these components. Forget the times of semiconductor sensors with frequent false alarms at night or on Sundays.

Safe even at low temperatures

In cold rooms of a refrigeration plant the humidity is very low. At -35°C the humidity is approx. 20 times lower than at $+20^\circ\text{C}$. This fact often caused detection errors for the measurement of ammonia. GfG's CI21 is fully operable even in almost dry air. Detection errors from temperature changes are eliminated within the operational range from -35°C to $+55^\circ\text{C}$.

The CI21 is the perfect solution for applications which could not be covered in the past – providing the same safety in cold and in machinery rooms. The CI21 allows ammonia to be used, as it is present at the detection point, for calibration and function check even at low temperatures. Only this makes sure that the gas monitoring system will give reliable alarms when a hazardous gas leak occurs.

Immediate reaction

In less than 8 seconds (t_{90}) the transmitter CI21 responds to ammonia

leakages. This extremely short response time allows swift action to be taken, before further damage occurs. Using the Delta-Alarm of GfG's control module GMA 300 reduces the alarm delay even further.

Low and high ammonia concentrations

Very low gas concentrations from 30 ppm up to % volume – the CI21 covers a wide operational range which other sensors do not even survive.

Good value for money

A long sensor life (independent from NH_3 concentrations) and long maintenance intervals (once or twice a year) make the CI21 a low cost transmitter for ammonia monitoring. The CI21 is supplied calibrated with NH_3 . The distance between transmitter and controller may be more than 500 m.

A robust aluminium enclosure protects the sensor and the circuitry from impacts, splash water and dirt.

Transmitter CI21 Technical Data

Gas:

Ammonia, NH_3

Detection ranges:

30 .. 200 ppm
30 .. 1,000 ppm
50 .. 10,000 ppm

Gas supply:

Diffusion through stainless steel mesh and PTFE membrane

Humidity:

1 .. 99 % r. h., non-condensing

Pressure:

800 .. 1200 hPa

Ambient temperature:

-35°C .. $+55^\circ\text{C}$

Response time:

t_{90} less than 8 seconds

Output signal:

0.2 .. 1 mA
4 .. 20 mA

Voltage supply:

10 .. 32 V

Cable:

Shielded cable
3 x 0.75 mm² for up to 500 m,
3 x 1.5 mm² for more than 500 m,
PG11 - cable gland

Weight:

370 g

Dimensions:

82 x 77 x 57 mm (WxHxD)

Expected sensor life:

2 years for normal operation
(independent from NH_3 concentration)

Casing protection:

IP54, splash water proof

Your one-stop shop

We help you to plan and implement your project:

- Consultation for gas and water monitoring
- Optimum positioning of transmitters
- Alarm concepts
- Configuration and installation of complete cabinets
- Customer-specific documentation of gas warning systems



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