

Ammonia Sensor

Additional information

Aeroqual sensors utilize gas sensitive semiconductor (GSS) technology. Combined with our proprietary system this offers rapid response, high accuracy, stability, low cross-sensitivity, and low drift characteristics. Materials are carefully selected (not tin oxide). Aeroqual's product design uses the concept of removable/replaceable sensor heads. The benefits of this design include minimization of downtime, elimination of field-calibration and lower overall cost of ownership.

Sensor heads are pre-calibrated and designed to clip on and off our standard range of bases. The software recognizes which sensor is attached. The heads are simply swapped out at the end of their life for either new or refurbished ones at up to half the cost.

Aeroqual's product range includes handheld and industrial/commercial monitors, together with network system products. We offer comprehensive functionality including data logging, self diagnostics, min/max/average reports, user defined control and alarm points at cost effective price points.

Performance

A key feature of Aeroqual sensor performance is reliable operation at low temperatures and high humidity. The two most common sensing technologies are electrochemical and solid-state. Electrochemical ammonia sensors exhibit poor sensor life, especially when exposed to ammonia continuously. Solid state sensors suffer from poor accuracy and reliability. The Aeroqual sensor has excellent sensor life and performance. The key technical advantage of Aeroqual's ammonia sensors is longer sensor life with continuous exposure to ammonia. Sensor aging is unaffected by the background ammonia concentration. In addition, field maintenance and downtime are reduced by the use of replacement pre-calibrated new or refurbished heads.

Target Markets

- Refrigeration and cold stores
- CAFO (concentrated animal feeding operations i.e. poultry, cow, pork)
- Fertilizer production
- Food waste sites

Sensor life

Sensor head warranty: 6 months

Sensor design life: 5 years

Recommended calibration or refurbishment period: 12 months

Sensor head shelf-life

The sensor heads do not degrade in storage (unlike electrochemical sensors). They will maintain performance and calibration for longer than 5 years in storage.

Ammonia Sensor Cross-sensitivity

Approximate responses of the Aeroqual Ammonia Sensor to other gas concentrations in air are given in the table below. If a gas with high cross-sensitivity is present in the ammonia sensing application please contact Aeroqual regarding a custom solution.

Gas	Sensor Reading/ppm
Ammonia 100 ppm	100
Butane 1000 ppm	60
Carbon monoxide 100 ppm	5
Carbon dioxide 1000 ppm	0
Chlorine 1 ppm	0
Ethanol 20 ppm	40
Hydrogen 500 ppm	30
Hydrogen sulfide 4 ppm	80
Methane 5000 ppm	0
Nitrogen dioxide 1 ppm	0
Ozone 0.1 ppm	0
Perchloroethylene 50 ppm	0
Propane 5000 ppm	100
Sulfur dioxide 20ppm	100
Toluene 10 ppm	5

Other features

On board diagnostics “sensor failure”.

Ammonia Sensor Head Specifications

	Ammonia 0 - 100 ppm	Ammonia (leak) 0 - 1000 ppm
Measurement range *	0 - 100 ppm	0 - 1000 ppm
Suggested maximum exposure	200 ppm	2000 ppm
Lowest detectable limit	0.5 ppm	2 ppm
Accuracy	< ± 5 ppm (0 - 100 ppm)	< ± 10%
Resolution	0.1 ppm	1 ppm
T90 response	< 60 s	< 60 s
Reading update	30 s	2 s
Operating temperature range	-20°C to 60°C	-20°C to 60°C
Operating relative humidity range	5 to 95% non-condensating	5 to 95% non-condensating

* Other ranges available on request