

Product Data Sheet – NH3 SAFE Series

Ammonia Monitoring

Ammonia monitors should be considered where there is a risk of elevated NH₃ concentration. Ammonia gas is non-flammable, but because it is mixed with oxygen in certain concentration and could explode if ignited, it is treated as flammable. For more information, please see LELSAFE- Flammable (LEL) & GAS SAFE - multi gas systems.

Ammonia can be toxic and cause irritation and corrosive harm. At 2 hours exposure to 50ppm NH₃ you would show of irritation to eyes, nose, and throat. Extremely high levels of ammonia can be fatal due to airway obstruction.

To determine if you need ammonia monitoring, a risk assessment of the area and activities should be carried out. If the risk assessment identifies that long term workplace exposure limit (25ppm for 8 hours*) or short-term workplace exposure limit (35ppm for 15 minutes*) are calculated, you require an ammonia monitor. However, a required risk assessment often does not cover specific areas where a leak may occur (such as directly next to NH₃ storage tank) and even in situations in which ammonia concentration does not reach life-threatening levels, the effect of NH₃ levels on the health of working personnel is still a major health and safety concern.

*Health and Safety Executive, EH40/2005 Workplace Exposure Limits (Fourth Edition 2020)

Series Overview

Britannia's solution for ammonia monitoring and alarming is the NH₃ SAFE Series. Whether it be a standalone single zone sensor, or up to a 32 multi-zone system a solution is available.

The range of NH₃ SAFE units allows a bespoke and cost-effective solution depending on your requirements.

NH₃ SAFE Standalone– Standalone, single sensor oxygen monitor with advanced options

NH₃ SAFE Multi-zone– Multi-zone touch screen system, up to 32 sensor ammonia monitors with advanced features

Sensor Details

The NH₃ sensor used is an electrochemical cell that continuously operates and monitors by diffusion. The cell has an approx. life span of 2 years but requires routine calibration to maintain accuracy.



Figure 1-Multizone - Touch Screen & Sensing Unit



Figure 2 – NH₃SAFE Standalone w/ Display option

NH3 SAFE Series

Models	Sensors	Range/Accuracy	Features
Standalone	1 x built in Sensor	- Range: 0-100ppm - Accuracy: $\pm$ 2ppm	- Power & Status Indicators - Internal Sounder - Supplied with 1 remote alarm (sounder & xenon) - LCD Display (<i>Optional</i>) - Analogue Output (<i>Optional</i>) - Additional Single Relay (<i>Optional</i>) - Wireless Transceiver (<i>Optional</i>)
Multi-Zone	Up to 32 sensing units	As Standalone	+ 7-inch coloured touch screen + Dual Relay + user interaction is very intuitive + up to 32 remote zones + Sensor measurement data is recorded + Graphing of data is available + User levels can be assigned that are password protected. + Audit trail is recorded + Up to 8 configurable relays typically used for. - Supply Tank Shut Off feature - Supply Tank Override - Fan control - Activate Klaxons/ additional remote alarms - Connect to Building Management Systems

Additional Hardware Options

Hardware Option	Usage
LCD Display	LCD Display installed on the sensing unit to show the gas concentration
Analogue Output	Output to monitor the gas concentration on third party equipment
Additional Single Relay	Additional Relay to control other items of equipment
Battery Back-up	Allows the unit to stay operational if the power supply is interrupted
Remote Alarms & Klaxons	Additional remote alarms to warn of any alarms (<i>all entrances should have a remote alarm</i>)
Remote alarms with Displays	Inclusion of a display to the remote alarm to indicate gas measurement
PIR	An infrared (IR) light sensor that once triggered by objects in its field of view can activate/deactivate. - Fans (Ventilation & Extraction) - Remote Alarms & Klaxons - Door Locks
Emergency buttons/ key switches	An emergency button or key switch that once operated can activate/ deactivate. - Fans (Ventilation & Extraction) - Remote Alarms & Klaxons - Door Locks
Ventilation + Extraction	Wall mounted or Inline fans to provide ventilation to remove hazardous gases or deliver fresh air.
Wireless Hardware	Additional wireless hardware that allows the sensing zones and remote alarms to be installed without long cable runs.
Perspex stand	Stand to house portable units
Secondary Touch Screen	Touch screens with restricted functionality, that display the gas concentration
Britannia's Wireless Monitoring System	Wireless monitoring system to allow thorough logging and analysis for the gas measuring data.

For any site-specific requirements, please contact Britannia.



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The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct. If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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