

GDA - Gas & Smoke Aspirator Systems

Monitoring Gas or Smoke

Benefits:

- Easy, quick, and economical maintenance
- Choose any detector
- Samples can be drawn from negative pressure areas
- Monitor for sample line blockages
- Suitable for sour gas applications
- Fail safe sample line clearance and detector testing
- Can be utilized in high temperature applications
- Can be used in low temperature applications

Technical Specification

Applications

Applications include monitoring for:

- Ingress of flammable gas, toxic gas, and smoke into HVAC ducts
- Flammable gas in riser caissons
- Protection of safe refuges
- Flammable gas entering combustion air, ventilation air intakes and ventilation exhausts of gas turbines
- Flammable gas leaks under acoustic enclosures of gas turbines
- Flammable gases in moonpool areas and turret annulus spaces in FPSO's
- Leaks from the gas seals of gas compressors
- Hydrocarbon break-through in nitrogen blanketed expansion vessels
- Flammable gases in subsea depressurization tanks and crude oil storage tanks
- Gas build up beneath gas tight floors
- Hydrogen sulfide in drilling areas
- Gas build up in cargo holds and ballast tanks
- Gases in low or high operating temperatures



Features

- Modular standard component design
- Built in line purge and calibration gas buttons per channel
- Low flow alarm per channel
- Suitable for use in Zone 1 & 2 hazardous areas
- Explosion-proof pump version available
- Aspirator internals are H₂S resistant
- SIL rated low flow alarm available
- Industry standard gas or smoke detectors can be utilized

Table 1 - Technical Details

Instrument air pressure	15–150 psi
Regulator	0–4 bar (0–58 psi)
Instrument air consumption:	1.0 L/min/channel @ 100 psi
Aspirator response time:	three (3) s to pass through aspirator module plus 0.25 to 0.75 s/m of sample line, depending on detector type
Vacuum drawn by eductor:	152 Hg (203" H ₂ O gauge) - Input pressure @ 110 psi
Mounting options:	316 stainless steel cabinet or a stainless steel back plate

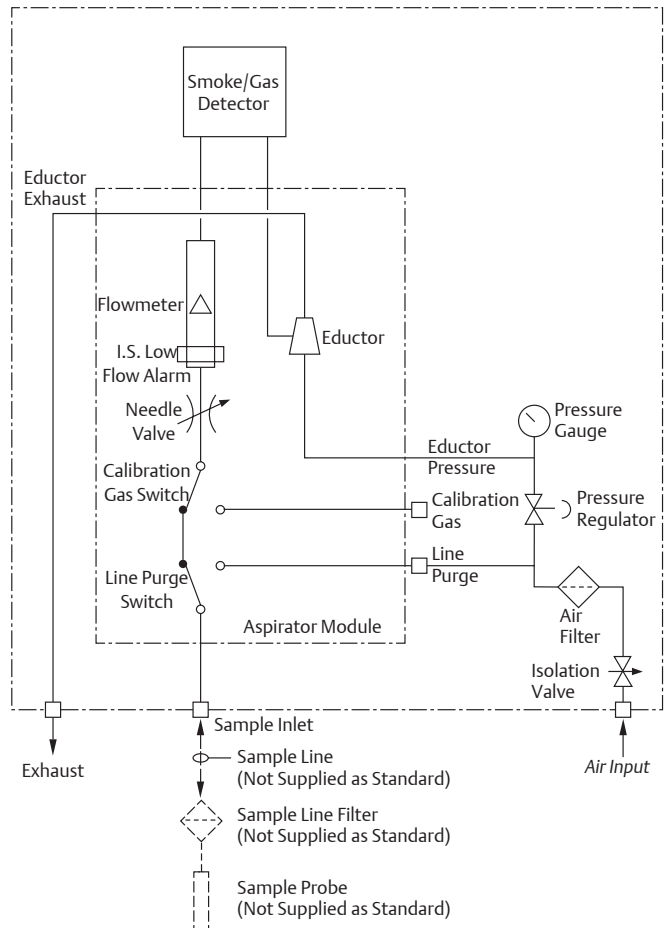
GDA Operating Principle

The sample being measured is pulled under an adjustable vacuum created by an air driven eductor. Flow rates are controlled by an integral needle valve with the velocity being indicated on a flow meter. The sample is passed across the sensor and exhausted, along with instrument air, via the exhaust port. If the aspirator is positioned in a "safe" area, it is advisable to pipe the exhaust back to the area it has come from.

Sample line dross can be cleared by pressing the line purge button, diverting full pressure instrument air down the sample line.

Calibration of the gas sensor is carried out via an AVS coupling. Reference lists are available, please ask for further details.

Figure 1 - GDA Schematic



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