

AMA – Modular Aspirator Assemblies

Ready For Aspirator (Sampling) System Integrations

Need to detect gas &/or smoke for safety in difficult to reach locations?

The best solution is utilising aspirator systems.

These can often be complex to integrate, use & maintain?

They do not have to be. Our modular aspirator assemblies provide the solution to these challenges for systems integrators and end users. They can easily be paired with a large selection of gas &/or smoke detectors to suit the client's needs and locations.



What are the benefits of using aspirator (sampling) systems?

Aspirator systems aid gas &/or smoke detection in difficult to cover areas, anywhere:

- too high,
- too inaccessible,
- too hot,
- too cold,
- too dirty.

A sample can be continuously drawn from these locations via tubing to your detectors in easier to access locations.

This leads to: **Reduced Costs** - costs associated with detector access and environmental degradation.

Improved Reliability – the environment for the detector(s) is greatly improved increasing lifespan and reducing down time.

What are the benefits of using AirMotiv modular aspirator assemblies in your aspirator systems?

Our assemblies allow for all the benefits standard aspirators provide plus they make the integration, use and maintenance easier for both integrators and end users. This is achieved by:

Modular Design – our assemblies allow for the integration of aspirator systems with the least amount of compression fittings out of any aspirator system on the market, no other system has this few compression fittings greatly reducing potential leak points. No complex maze of tubing and a user-friendly easy assembly to use and maintain.

Human Centred Design – our assemblies are designed to be safely used with minimal training and no prior knowledge. We believe in safety by simplicity.

Calibration & Purge Function - ability to calibrate/purge individual detector channels without effecting operation of other detectors.

Live Detector Replacement – even with the best conditions detectors can inevitably fail. Depending on application there are many instances where detectors can be swapped live without downtime or loss of coverage of the remainder of the system.

Ease of integration – paired with suitable detectors, tubing, electrical terminations and enclosure or back plate by competent personnel and the system is ready to ship.

AMA Operating Principle

The assembly is driven by compressed air supply, the compressed air is dropped in pressure via a regulator before driving an eductor utilising the venturi principle in individual channels, with 1 to 4 channels available per assembly. Each channel the flow rate can be adjusted via needle valve to suit the detectors being utilised in the system. Each channel the sample is drawn into the system and over the connected gas detectors and exhausted out.

Depending on application and location (including hazardous areas) we have a series of different low flow sensors that can be utilised to ensure you have the confidence the system is sampling as it should be.

A quick release connector is provided for calibration/bump test gas to be applied to the system. This can be individually applied to each channel by pressing the corresponding test gas button whilst not effecting the operation of any other channel in the system. Where voting logic is being utilised on a system the detectors can be tested and/or calibrated or even replaced whilst the system is live without triggering a shutdown event.

Our system also benefits from a line purge button for each channel. This redirects the full compressed air pressure back into the sample line. If this is done at regular intervals it will increase the lifespan of the sample lines reducing the build up of dirt and dross in the sample lines in time.

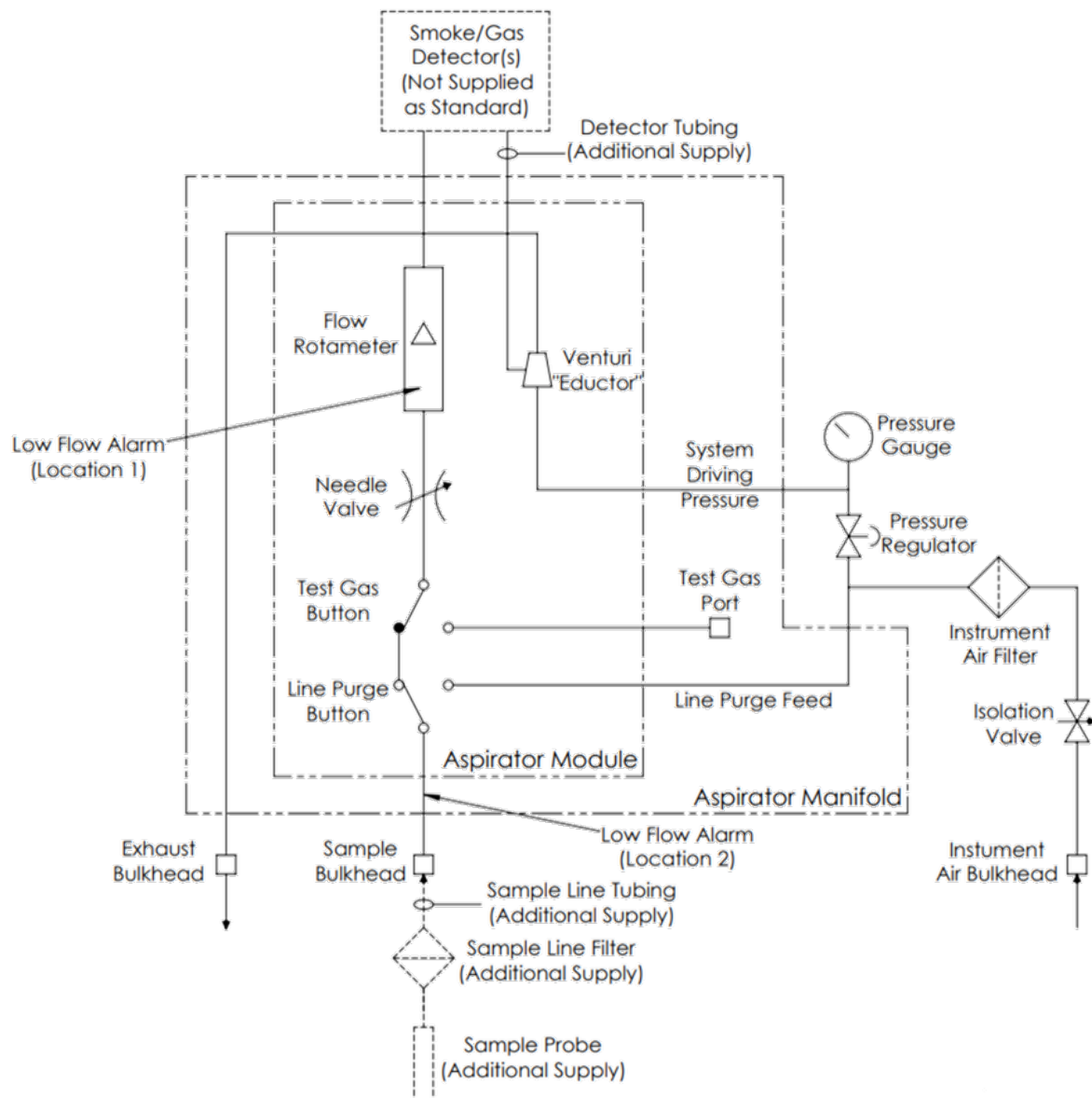


Figure 1. Example 1 Channel Assembly Schematic

Typical Applications

Applications include but are not limited to monitoring for:

- Flammable gas, toxic gas, and smoke in HVAC ducts.
- Flammable gas leaks in and around gas turbine installations.
- Flammable & Toxic gas build up in confined spaces.
- Protection of temporary refuges.
- Flammable gas in riser caissons.
- Flammable gases in moonpool areas and turret spaces in FPSO's and drilling vessels.
- Hydrocarbon break-through in nitrogen blanketed expansion tanks.
- Flammable & toxic gases in sub-sea depressurisation tanks & crude oil storage tanks.
- Gas build up in battery rooms, cargo holds & ballast tanks of ships.
- Hydrogen sulfide in drilling areas.

Typical Industries



Oil & Gas



Downstream Hydrocarbons



Power Generation



Chemical



Water & Waste



Brewing

Technical Data:

Instrument Air Requirement:	4-30 Bar (58-435 psi), IN2 ISO Class 2.2.1 instrument air minimum
System Regulator:	0-4 Bar (0-58 psi)
Sample Flow Rates:	1 l/m typ. For electro chemical & catalytic detectors 3 l/m typ. For optical detectors
Vacuum (full shutoff):	Up to 15" Hg (204" H ₂ O)
Vacuum (typical operation):	~4" Hg (54" H ₂ O)
Response Time:	Detector response time + 3 sec + 0.25 to 0.75 sec/m sample line tubing
Manifold Assembly Materials:	Tecaform AH Black with H ₂ S resistant naval brass internals and 316 stainless steel fasteners
Available Flow Switches:	SIL, Ex i & Ex m, ATEX, IECEx, UL, et al. Please contact to discuss, availability geographical
Samples Per Assembly:	1 to 4 independent "channels" (client selectable)
Fittings Used:	Swagelok, Parker, Hoke et al (client selectable). Please contact to discuss higher specifications.
Fitting Units:	Choice between Metric & Imperial (client selectable)
Tagging:	Supplied 316 stainless steel blank 1 per channel (option to provide engraving, extra tags including Traffolyte)
Recommended Detector Tubing:	Tygon. Please contact to discuss alternatives (suppliable)
Recommended Extras:	Sample line filters, sampling point or self-compensating sampling point assemblies (suppliable)
Recommended Sample Line Tubing:	6mm or 1/4" internal diameter, larger will negatively affect performance
Recommended Enclosure Material:	316SS or Composite Construction, with or without window of antistatic design (not supplied)

Why choose AirMotiv assemblies for your aspirator integration needs?

We have world leading industry expertise in modular aspirator systems for sampling gas &/or smoke for safety applications. With prior industry exposure to approximately 260 engineered to order modular aspirator systems worldwide. Further to this our carefully selected partners so far have decades of experience in the aspirator systems market.

We simplify aspirator systems so that the benefits of modular aspirator systems can be realised for all involved, be it the system integrators or end users.

We can provide full training, sales materials and support for modular aspirator systems, from project pursuit sale training, full system design training, through to commissioning and maintenance training.

We also offer inspection & maintenance services.

Part Number Configurations

