GDS TECHNOLOGIES

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TEST GAS KIT

OPERATING & APPLICATION GUIDANCE

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TEST GAS KITS

Gas Types

It is advised that for gas testing purposes the test gas should be the same as the target gas, for the wide range of flammable gasses, methane test gas may be used along with relative response correction factors for individual gas types. Contact GDS for further information.

Note: Cylinder test gas is considered a dry gas, using a GDS Gas Alyser in line with the test gas applicator tube will ensure a similar humidity level to that of the ambient atmosphere, and therefore improved accuracy.

Connection of Gas Cylinder Components

- Ensure regulator control knob is closed (clockwise) before use.
- Screw onto outlet of the cylinder until it stops and pressure registers on the gauge.
- The regulator may now be opened by turning the control knob anti-clockwise. Gas will now be delivered at a pre-set flow rate.
- Always remove regulators after use. All cylinders will re-seal upon removal. There may be a "hiss" of gas when removal takes place.
- Attach the test gas applicator attachment to one end of the sample pipe.
- Connect the other end of the sample pipe to the output nozzle of the regulator.
- Turn the regulator adjuster anti-clockwise until a flow of gas is obtained from the sample pipe.

Fixed Sensor Testing

Using an appropriately sized gassing cap fitted directly to the sensor, or for high level detector heads via an extendable gassing pole fitted with the cap, apply test gas to the sensor at an approximate flow rate of 0.5 litre/min. Gas applied above this rate may cause the sensor cell reading to be unstable due to the cooling effect and change in pressure (gassing caps have exhaust ports to reduce this effect).

When using an extendable gassing pole, the flexible connection tube to the test gas cylinder should be allowed to run up the inside of the pole as it is extended.

Test gas should be applied until a maximum steady reading is achieved on the gas monitor display. At this time, any monitor reading should be corrected before removal of the gas.

The response time period is expected to be within approximately 30 seconds. For specific cell times, appropriate data sheets should be referenced for T90 response times (time to 90% of maximum reading).

It should be remembered that the test gas travel time along the applicator tube, whether it is fixed, portable or through a gassing pole, should be allowed for.

Sampling Systems

For sequential and single line sample systems where the sensor unit is located at the control/monitoring device, it is a requirement that the sensor be calibrated and periodically the integrity of the sample lines be confirmed.

GAS TESTING

It is expected that the sensor be gas checked at the controller by allowing test gas to be drawn directly from a gas bag until a maximum gas value read-out is obtained. Alternatively, where an adjustable high rate test gas supply is available, this can be applied directly, using a demand gas regulator or by using an excess blow off tee union. These methods will allow the pump to operate without restriction.

Where low flow rate pumps are used (less than 1 litre/min), the sensor may be gas tested directly using the cylinder/regulator supplied with the GDS Test Gas Kit.

Having carried out a sensor gas check, the above procedure should be repeated at each sampling point.

FLOW RATE INTEGRITY TEST

Sample systems are deployed generally in situations where it is not practical to use wired sensors for a variety of reasons; one of which is inaccessibility to the target area, in such situations where it is not possible to apply test gas to the sample intake point, a thorough inspection of the sample line should be made.

Alternatively the sample line integrity may be checked by recording each line flow rate at the control monitoring device followed by a flow rate check at the end of each line, both line readings should be identical. A second option is the use of a GDS porosity gauge (PorGauge®) attached to one end of the sample line while blocking the opposite end will indicate the smallest of leaks.

GDS Sample Systems are designed to monitor for sample line blockages but are not able to detect any change in the porosity of the line. In some cases, it may be prudent to incorporate a test gas injection /flowrate test point at the most extreme accessible position in the line.

For Micropore sampling networks, where sample intake modules are arranged in zones or groups and at varying heights depending upon the density of the target gas, the main sample draw line to each module group should be tested as described above with close inspection being carried out of individual intake modules.

GAS MIXTURES

110 LITRE DISPOSABLE CYLINDERS C10 valve $^{5}/_{8}$"

PART No	DESCRIPTION
17-0003	Methane 2.5% in air
17-0006	Butane 1% in air
17-0000	Carbon Monoxide 50ppm in air
17-0022	Carbon Dioxide 1% in air
17-0010	Hydrogen Sulphide 10ppm in air
17-0004	Ammonia 25ppm in air
17-0028	Nitric Oxide 25ppm in nitrogen
17-0030	Nitrogen Dioxide 5ppm in air
17-0045	Ethylene Oxide 20ppm in air
17-0016	Nitrogen 100%
17-0018	500ppm R22 in air
Other gases available on request	

Test Gas Kit
99-0010

Three Bottle Carry Bag

Test Gas Kit (Reactive/Special Gases)
99-0020

Stainless Steel Regulator

Tygon Tube 2.5m

Field Technicians Test Gas Kit
99-0030

Telescopic Pole 5.6m

Test Gas Kit Sample System
99-0040

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