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STS Instruments - Portable Siloxane Monitor Specification

The STS Siloxane Monitor is UKCA / CE certified.

The Siloxane monitor has the following requirements:

1. 110V 6A or 230V 12A – (IEC rear connector) wired to flex outlet from Distribution box.
2. N₂ carrier gas line: ¼" Nylon/PTFE/SS piping (1/4" Swagelok connector supplied) Set at 1Bar at cylinder regulator Technical Grade 99.999%.
3. Biogas feed line - ¼" PTFE/SS piping (1/4" Swagelok connector supplied) Maximum 1Bar input pressure.
4. Vent line - ¼" PTFE/SS piping (1/4" Swagelok connector supplied) Vented ~3m high, end of Line flame arrester to be fitted.

Biogas Flow rates:

The instrument samples approx. 2L of biogas during a 20minute window every 1hour, at a flow of approx. 100ml/min. This is passed through the instrument then vented to atmosphere.

N₂ Flow rate:

The instrument consumes approx. 4L of N₂ every hour. Resulting in 0.1m³ of N₂ per day. This is passed through the instrument then vented to atmosphere.

STS recommend using the largest N₂ cylinder to avoid regular replacement.

Air Products: X47S: 80kg 200bar 8.9m³. Technical Grade.

Regulator : BOC 8500 or similar, 300Bar inlet, 0-4 bar outlet.

This should last approx. 90days, 3 months.

The water Traps require the following:

1. Auto drain traps with float activated drain lines on each sample line -powered by 24V supplied from instrument.

Sampling Regime and LOD

The monitor may be programmed to sample each line on a timed basis. The operator may select how many repetitions are measured on each line before the line is switched to the other incoming feed.

For example:

Sample line 1 - 6 Repeats (this will take 6 readings on this line -one each hour for 6 hours)

Sample line 2 - 9 Repeats (this will take 9 readings on this line- one each hour for 9 hours)

Then sequence will then repeat

Sample line 1 - 6 Repeats

Sample line 2 - 9 Repeats



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And so on until the instrument is stopped or the schedule changed.
Any repeat can be set from 1 to 24 ie 1 hour to 1 day on each line.

STS would recommend that a minimum of 3 repeats are set to ensure that any residual gas or siloxanes are pushed through giving a more accurate result. If measuring a particularly contaminated sample against a very clean one then we would suggest less repeats on the contaminated sample and more on the cleaner one.

For example

Sample line 1 - 6 Repeats Contaminated
Sample line 2 - 18 Repeats Clean

This will reduce the amount of dirty gas passed through the instrument and also allow the clean line to average out the effect of any contamination residual in the system.

Peli-Case:

The case will has 8 external connections:

1. Biogas IN 1
2. Biogas IN 2
3. N2 IN
4. Vent OUT
5. Drain OUT
6. Data comms Out
7. 110V supply IN.

Biogas Supply:

Regulated in the kiosk to 35mbar, normal inlet pressure to the regulators should not exceed 350mbar. If a higher pressure is present, the regulator will require re-specification.

The electrical supply:

A 110V/230V earthed connection is required to the externally mounted switch.

Safety:

1. The instrument uses an air purge system to ensure safe operation, this is achieved with 2 high capacity fans mounted in the instrument which force a constant stream of air through the case. The flow of air through the instrument ensures that even in a catastrophic joint failure that the LEL of CH₄ would not be exceeded. The purge fans are monitored so that if they are inactive the instrument will be placed into "Safe Mode"



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2. The instrument has an on-board methane sensor which will place the instrument into "Safe Mode" if it exceeds 10% of the LEL. An on-board temperature sensor will place the instrument in "Safe Mode" if the temperature in the cabinet exceeds 55C.
3. Incoming bio-gas lines are controlled by Solenoid valves in the Pelicase which are in the Normally Closed position unless activated, the internal instrument also has a solenoid valve on the incoming biogas line which is Normally Closed, any power failure will therefore close these valves stopping gas flow. "Safe mode" shuts the incoming gas valves, turns off all heaters and runs the case fans to vent.
4. The Case itself is force cross ventilated by 2 high capacity fans which draw and purge air through the case.

The Siloxane Monitor & Kiosk is not EX or ATEX rated and as such should be sited outside of any zoned area.

RACK (MM)

Rack Length	610
Rack Width	483
Rack Height	311

INT. LID DEPTH (MM)

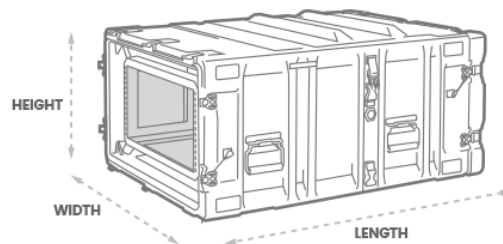
Front Lid	56
Back Lid	132

WEIGHT & CAPACITY

Weight	23.13 kg
Rack Units	7U
Shipping Cube	0.29 m ³

EXTERNAL (MM)

Length	978
Width	625
Height	467



The image above is to illustrate dimensions.
It is not necessarily this specific model





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