

Rise time test for the Viamed gas sample pump box

Equipment:	Viamed part number:	Supplier part number:
Pump box	7900300	7900300
Analyser	7900100	7900100
Tubing (2.4mm bore)	9700031	TCS 602
Filter	Sample	ANP2522

An issue with the pump and sample lines becoming blocked or running with an insufficient sample draw have been reported by some customers, particularly those related to the food industry. Particles and oils have been causing premature pump failure and a solution to the problem needed to be found. Placing a filter in the gas sample input line would likely prevent, or significantly reduce the issue. The filter would also likely cause the gas sample reading to take longer. After enquiring with Gilson Scientific, a suitable filter was suggested, and samples were obtained. A test was devised to determine the effect a filter would have on the response time of the pump box/analyser combination.



The test would measure the time it took the gas sample to reach the pump box/analyser by observing the Oxygen rise as displayed on the analyser. The test required that the gas to be sampled was not pressurised, so that gas was not pushed down the sample line. The sample time must be from the pumps draw alone. A sample bag, containing Oxygen, was lightly inflated for this purpose and flushed out with air after each test. A five-metre sample

line was placed between the pump box and the gas sample bag, which gave the gas sample a sufficiently measurable time to reach the pump box/analyser combination. The results were recorded. The test was repeated several times.

The same test was repeated, this time with a filter in place. The results were recorded. The test was repeated several times.

Test:	Response time:
Rise time test 1 – No filter	5.1 seconds
Rise time test 2 – No filter	5.0 seconds
Rise time test 3 – No filter	5.0 seconds
Rise time test 4 – No filter	5.1 seconds
Rise time test 5 – No filter	5.0 seconds
Rise time test 1 – With filter	6.0 seconds
Rise time test 2 – With filter	6.1 seconds
Rise time test 3 – With filter	6.0 seconds
Rise time test 4 – With filter	6.1 seconds
Rise time test 5 – With filter	6.1 seconds

The results show that the filter added around one second to the response time, which seems reasonably acceptable for the application. The life span of the filter is unknown and customer feedback should be requested.