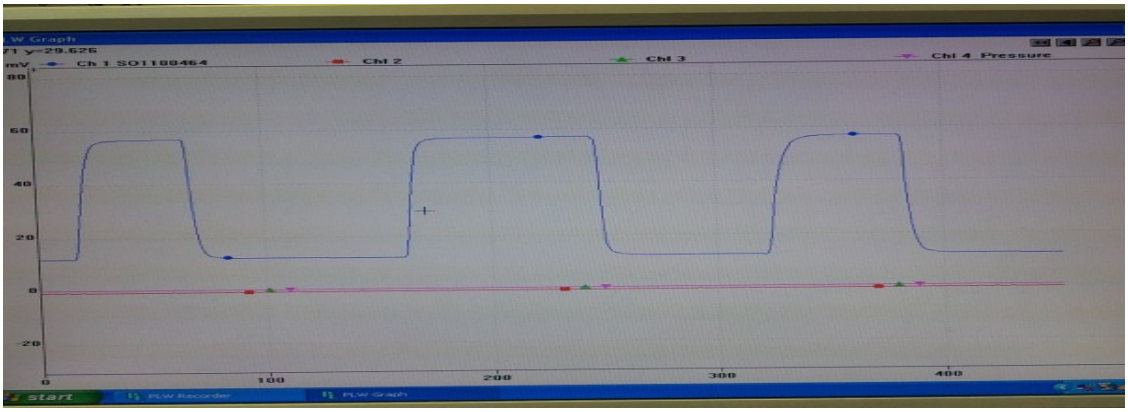
Vandagraph Sensor Technologies

COMPANY OPERATING PROCEDURE

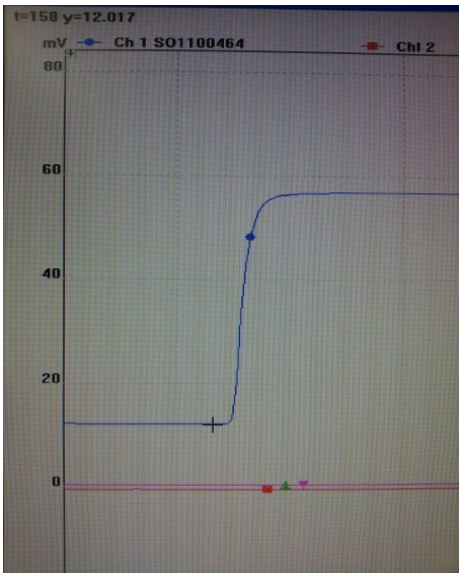
VM3/COP/41.10
Sensor Rise Time & Linearity tests

Date 01/09/12	Revision Date 01/09/12	Issue 1

1. Use the above test rig in conjunction with an Air cylinder and Oxygen cylinder both fitted with 2l flow restrictors
2. Using the pico load " A Master Rise time single sensor "
   NB this is a read only file .
   Save as SRN xxxxxx
3. The test rig has two one-way vales.
4. Fix the narrow (gas input) to the flow restrictor on the Air cylinder and turn on
5. When the baseline is steady start recording using the Red triangle.
6. After 10-20 seconds turn off the Air cylinder and turn on the Oxygen cylinder.
7. Move the test rig from the Air cylinder to the Oxygen cylinder as quickly as possible.

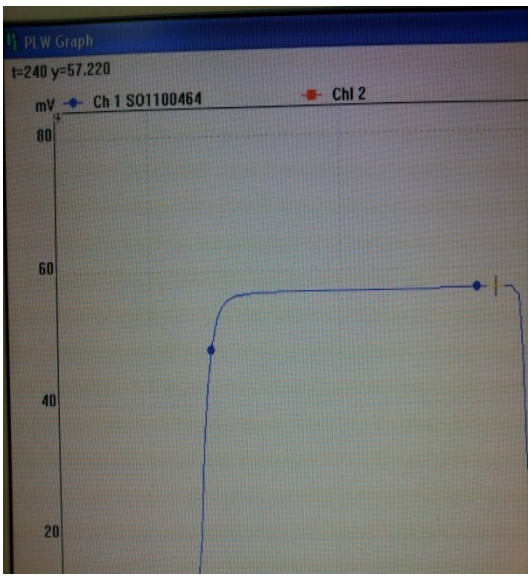


8. When the reading has reached a maximum (about a minute) or has slowed down its rate of increase to a very small amount (3rd decimal place) switch off the Oxygen and switch the Air on then move the test rig back to the Air cylinder
9. Tie time out is set at 1000 seconds so this can be repeated.
10. A good check is to use the cursor to ensure the starting point is very near the end point at the end of the cycle.
11. Check Linearity



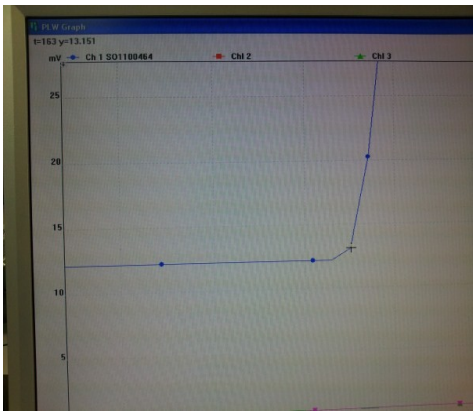
Place the curse on the baseline and read Y=
Place cursor on the top line and read maximum
Y=
Ratio Max to baseline
should be 4.78

12. The ratio is derived 100/20.9 = 4.78
Errors should be within +/- 2%



13. Rise Time. This is defined as the time taken for the sensor to respond to a 90% step change.
14. Measure the maximum output with the cursor and obtain the 90% level.

The baseline is distorted by moving the test rig but should be within 1 second.
Choose the two points shown and deduce the rise time.



The graphs can be expanded for more accurate readings