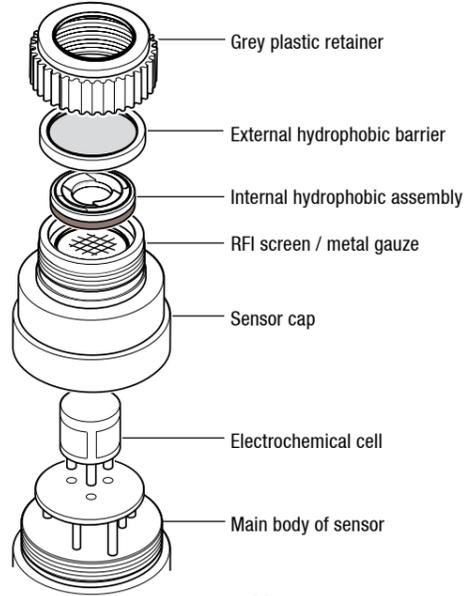


7.1 CHANGING THE ELECTROCHEMICAL CELL AND THE INTERNAL FILTER

1. Unscrew and remove the grey plastic retainer (or accessory if fitted) from the sensor.
2. Remove the old internal hydrophobic assembly by pushing against the snap fit, through one of the retaining slots, with a small flat bladed screwdriver. The assembly will pop out. Do not attempt to lever the assembly out as this may damage the housing.
3. Remove the internal metal gauze insert.



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4. Open the enclosure by unscrewing the sensor cap assembly from the sensor main body, ensuring that the electrochemical cell does not rotate with the cap.
  5. Gently pull the old electrochemical cell from the pcb. (Dispose of this in accordance with local regulations).
  6. Remove the new cell from its packaging and remove the shorting link across the base of cell.
  7. Plug the new cell into the PCB. (For Oxygen Signalpoint, unscrew the old cell connections, and screw in the new one).
  8. Screw the sensor cap assembly back onto the sensor main body.
  9. Fit the new internal metal gauze assembly.
  10. Fit the new internal hydrophobic assembly.
- Note: The sensor should now be calibrated. See Section 5.1*
11. Replace the grey plastic retainer or accessory.
  12. In the event of an apparatus failure, return unit to Zellweger Analytics Ltd.

7.2 CHANGING EXTERNAL FILTERS

Remove grey plastic retainer (or accessory). Remove the old external hydrophobic barrier and replace with the new one. Replace the grey plastic retainer.

7.3 RESPONSE CHECKING:

Use gas test module to ensure sensor is operative.

*NOTE - this is not a calibration device.*

In the event of failure within the warranty period, return to Honeywell Analytics Ltd or its authorised agent.

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Operating temperature range: (H<sub>2</sub>S; CO; NH<sub>3</sub>; Cl<sub>2</sub>) -20°C to +40°C.

Operating temperature range: (O<sub>2</sub>) -15°C to +40°C.

Operating humidity range:  
20% to 90% RH continuous.  
10% to 99% RH intermittent - non-condensing.

Operating pressure range:  
90 to 110 k Pa.

Warm up time:  
see Table 1.

Voltage range:  
18 to 30 V.

Power consumption:  
0.9W maximum.

Signal output:  
4 to 20 mA loop powered.

Calibration flow rate:  
1 l/min.

Expected operating life:  
H<sub>2</sub>S, CO: no less than 24 months.  
NH<sub>3</sub>, Cl<sub>2</sub>, O<sub>2</sub>: no less than 12 months.

IP rating:  
IP54 for indoor applications.

Certification:  
this product complies with the relevant CE standards concerning performance. EMC to EN50270.

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Replacement sensing elements (including hydrophobic barrier):

| gas type                  | replacement cell |
|---------------------------|------------------|
| O <sub>2</sub>            | 2106B1545        |
| Cl <sub>2</sub>           | 2106B1547        |
| CO                        | 2106B1548        |
| H <sub>2</sub> S          | 2106B1549        |
| NH <sub>3</sub> (1000ppm) | 2106B1595        |
| NH <sub>3</sub> (50ppm)   | 2106B1596        |

Weather protection .....02000-A-1635

Flow housing (standard) .....02000-A-1645

Flow housing (for adsorbent gases).....02000-A-3120

Gas test kit .....(Pending)

To reorder a complete new unit, see the label inside the base of the Signalpoint, or contact Honeywell Analytics Ltd.

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EC DECLARATION OF CONFORMITY



1

1. INTRODUCTION & 2. ASSOCIATED DOCUMENTATION

1. INTRODUCTION

Signalpoint is a combined sensor and junction box for the detection of toxic gases and is designed for light industrial and commercial use.

It employs an electrochemical cell sensor device which is gas specific and used as part of 4-20mA powered measuring circuit.

Different sensor versions detect different gases. Sensors are available for the detection of H<sub>2</sub>S, CO, O<sub>2</sub>, Cl<sub>2</sub> and NH<sub>3</sub>. All accept accessories from the specified range. Should you require information outside the scope of these instructions please contact Honeywell Analytics Ltd.

This product is not certified for use in explosive atmospheres. It is protected against water and dust ingress to IP54 for indoor non-aggressive environments.

The sensor provides preset alarm level sensing in the form of a flashing light ring around the sensor.

2. ASSOCIATED DOCUMENTATION

2106M0504 Signalpoint Technical Handbook.

Refer to the relevant control system manual for connection information.

2

Find out more  
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**Please Note:**  
While every effort has been made to ensure accuracy in this publication, no responsibility can be accepted for errors or omissions. Data may change, as well as legislation, and you are strongly advised to obtain copies of the most recently issued regulations, standards, and guidelines. This publication is not intended to form the basis of a contract.



3.1 WARNINGS

- This apparatus is not suitable for use in Oxygen enriched atmospheres (>25%V/V). Oxygen deficient atmospheres (<6%V/V) may suppress the sensor output.
- The operator should be fully aware of the action to be taken if the gas concentration exceeds an alarm level.

3.2 CAUTIONS

- The ECC (electrochemical cell) contains a small quantity of acid.
- Exposures to gas above the design range of the sensor may require the sensor to be re-calibrated.
- Sensors should be disposed of in accordance with local disposal regulations. The materials used are:  
**Box:** nylon.  
**Sensor:** Fortron® (PPS-polyphenylene sulphide).  
**Cell:** PPO (modified polyphenylene oxide).

4.1 CONTROLS AND DISPLAYS

The light ring around the sensor will flash once every 8 seconds when the Signalpoint is functioning normally.

The local alarm for toxic sensors is factory preset to 20% of FSD. In the event of the gas concentration rising above this level the light ring will flash 2 to 3 times per second.

At 50% of FSD the light ring will flash rapidly (6 times per second).

In the event of the gas level returning below the alarm levels the light ring will return to normal operation and flash once every 8 seconds.

For Oxygen Signalpoint the normal operation pulse from the light ring is set for 21% V/V Oxygen. The rapid 6 times per second flash begins when the Oxygen concentration drops below 16% V/V Oxygen.

5.1 INSTALLATION

The apparatus should be installed in a location free from direct heat sources. The unit should be fitted with an M20 cable gland rated to IP54 or above to maintain ingress protection. Cabling should be multicore, two wires plus screen, conductor size 2.5mm<sup>2</sup> max. Installation should be on a flat solid surface.

The unit requires an 18 to 30V, 30mA, current-loop-powered supply.

Installation is to be performed by a qualified installation engineer, with the power to the unit disconnected.

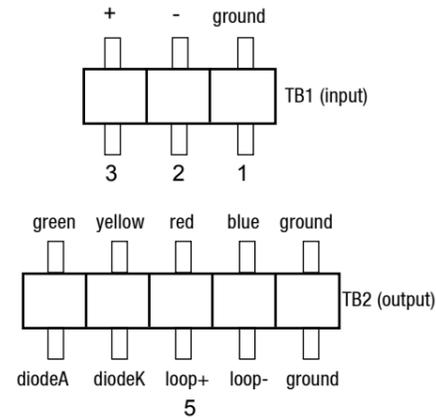
*Note: It is not normally necessary to remove the lid assembly from the base in order to mount the sensor, however, should this be necessary, the lid can be disconnected from the base by opening the closure to 180°, pressing*

down on the hinge, and sliding the lid sideways off the base (page 6). Note the positions of the wiring connections and disconnect them from the terminal block. After loosely fixing the base in position (see below) reattach the lid by pushing the hinge inwards and upwards. Check that this operation can be performed before finally fixing Signalpoint in position. Reconnect the wiring connections to the same positions as before.

Unscrew the grey plastic retainer and remove the protection disk from the sensor. (For Oxygen versions, remove the neoprene stopper and snap the RFI screen and internal hydrophobic assembly (supplied separately) into place (page 11)).

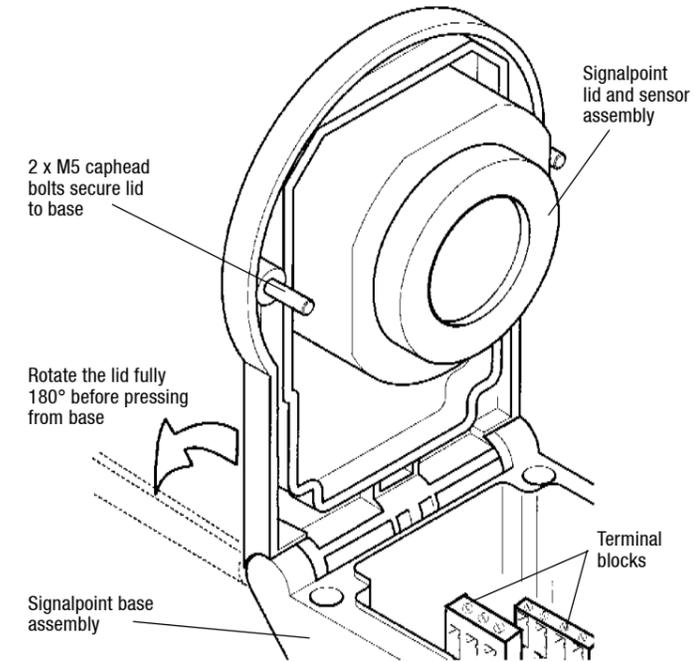
Replace the grey plastic retainer. Affix the base to a flat solid surface using No 6 wood screws or M3.5 screws in the holes, as shown in the diagram on page 7.

Connect the wires to the terminal block TB1 as shown below. Close the lid ensuring that the wires are not trapped. Fix the lid to the base using the two M5 cap head bolts provided.



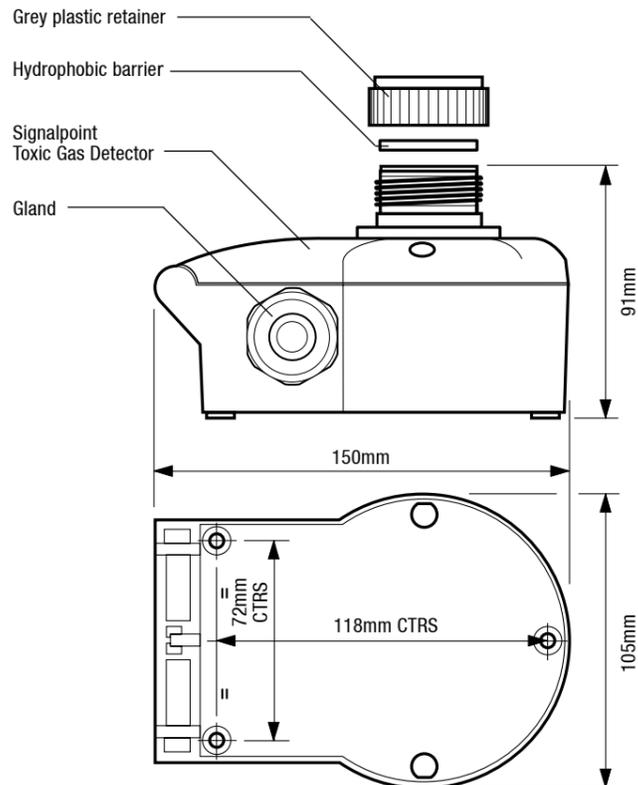
6. OPERATIONS

5.3 HINGED LID ARRANGEMENT



5. INSTALLATION

5.3 MOUNTING DETAILS



The underside of the Signalpoint Sensor showing the position of the mounting holes.

6. OPERATIONS

6.1 CALIBRATION

Signalpoint toxic units are supplied pre-calibrated, however, for increased accuracy in specific applications, on-site calibration is recommended.

Re-calibration should only be attempted by qualified service personnel. Calibration should only be attempted after sensor has been installed and powered for a time exceeding the warm up time (Table 1).

First zero control system with no gas present on the sensor. If target gas is suspected to be in the vicinity of Signalpoint, flow clean air over the sensor using a flow housing (see below).

Fit a flow housing and connect a cylinder of either air, for a zero, or a known concentration of gas in air (approximately 50% FSD) to the flow housing using nylon or PTFE tubing. Tubing lengths should be kept to a minimum to avoid extending the speed of response. Connect the outlet of the flow housing to a safe exhaust area. Pass the gas through the flow housing at a flow rate of approximately 1 l to 1.5 l per minute. Allow the sensor to stabilise. When gassing with air, adjust the control card to indicate zero. For span, the control card should be adjusted to indicate the concentration of the target gas being applied. Remove the flow housing and the gas supply.

*Note: for Oxygen, the span gas is normally air at 20.8%V/V O<sub>2</sub>. The control card should be adjusted to indicate this when the sensor is in either clean ambient air, or in a flow of 20.8%V/V O<sub>2</sub> in nitrogen from a cylinder. A zero adjustment is not normally required, however it is recommended that the alarm levels are tested using a cylinder of a lower concentration of Oxygen in nitrogen.*

See Table 1 for details of concentrations and times to be used. If the controller cannot be spanned, consult the technical handbook.

Table 1:

| Gas              | Replacement Sensing Element | Range         | Recommended Test Concentration | Application Time | Warm up Time | Alarm 1 | Alarm 2 |
|------------------|-----------------------------|---------------|--------------------------------|------------------|--------------|---------|---------|
| H <sub>2</sub> S | 2106B1549                   | 0 to 20 ppm   | 10 ppm                         | 3 mins           | 3 mins       | 4 ppm   | 10 ppm  |
| H <sub>2</sub> S | 2106B1549                   | 0 to 50 ppm   | 20 ppm                         | 3 mins           | 3 mins       | 10 ppm  | 25 ppm  |
| H <sub>2</sub> S | 2106B1549                   | 0 to 100 ppm  | 50 ppm                         | 3 mins           | 3 mins       | 20 ppm  | 50 ppm  |
| CO               | 2106B1548                   | 0 to 100 ppm  | 50 ppm                         | 3 mins           | 3 mins       | 20 ppm  | 50 ppm  |
| CO               | 2106B1548                   | 0 to 200 ppm  | 100 ppm                        | 3 mins           | 3 mins       | 40 ppm  | 100 ppm |
| CO               | 2106B1548                   | 0 to 500 ppm  | 250 ppm                        | 3 mins           | 3 mins       | 100 ppm | 250 ppm |
| Cl <sub>2</sub>  | 2106B1547                   | 0 to 5 ppm    | 3 ppm                          | 10 mins          | 5 mins       | 1 ppm   | 2.5 ppm |
| *O <sub>2</sub>  | 2106B1545                   | 8 to 25% V/V  | 16% V/V                        | 1 min            | 5 mins       | -       | 16% V/V |
| NH <sub>3</sub>  | 2106B1596                   | 0 to 50 ppm   | 25 ppm                         | 10 mins          | 3 mins       | 10 ppm  | 25 ppm  |
| NH <sub>3</sub>  | 2106B1595                   | 0 to 1000 ppm | 500 ppm                        | 10 mins          | 3 mins       | 200 ppm | 500 ppm |

*\*Note: not suitable for the detection of low concentrations of Oxygen, e.g. ingress into inert atmospheres.*

6. OPERATIONS

6.2 FAULT FINDING

Sensor reads non-zero all the time:

- gas could be present, ensure there is no target gas in the atmosphere. Background or other volatile organic gases, eg solvents, can interfere with the operation of the sensor.

Sensor reads non-zero when no gas is present:

- adjust the zero of the control card.

Sensor reads low when gas is applied:

- adjust the span of the control card.
- for Oxygen versions, check that the neoprene plug has been removed from under the plastic retainer.

Sensor reads high when gas is applied:

- adjust the span of the control card.

Sensor reads zero when gas is applied:

- check the wiring.
- check that the dust protection cap has been removed.
- check that the sensor is not obstructed.
- replace the sensor if failure is suspected.
- for Oxygen versions, check that the neoprene plug has been removed from under the plastic retainer.

Cannot adjust the span or zero at the control card:

- refer to the Technical Handbook.