HCN-A1 Hydrogen Cyanide Sensor

Figure 1 HCN-A1 Schematic Diagram

All dimensions in millimetres (± 0.15mm)

**PERFORMANCE**

- **Sensitivity**: nA/ppm in 30ppm HCN 55 to 85
- **Response time**: t90 (s) from zero to 30ppm HCN < 70
- **Zero current**: ppm equivalent in zero air < ±2
- **Resolution**: RMS noise (ppm equivalent) < 0.05
- **Range**: ppm HCN limit of performance warranty 100
- **Linearity**: ppm error at full scale, linear at zero, 40ppm HCN 4 to 8
- **Overgas limit**: maximum ppm for stable response to gas pulse 150

**LIFETIME**

- **Zero drift**: ppm equivalent change/year in lab air
- **Sensitivity drift**: % change/year in lab air, monthly test
- **Operating life**: months until 80% original signal (12 month warranted) > 12

**ENVIRONMENTAL**

- **Sensitivity @ -20°C% (output @ -20°C/output @ 20°C) @ 30ppm HCN**: 75 to 95
- **Sensitivity @ 50°C% (output @ 50°C/output @ 20°C) @ 30ppm HCN**: 105 to 120
- **Zero @ -20°C**: ppm equivalent change from 20°C < 0 to 1
- **Zero @ 50°C**: ppm equivalent change from 20°C < ±1

**CROSS SENSITIVITY**

- **H₂S sensitivity**: %measured gas @ 20ppm H₂S < 300
- **NO₂ sensitivity**: %measured gas @ 10ppm NO₂ < -180
- **Cl₂ sensitivity**: %measured gas @ 10ppm Cl₂ < -12
- **NO sensitivity**: %measured gas @ 50ppm NO < 1
- **SO₂ sensitivity**: %measured gas @ 20ppm SO₂ < 10 (transient)
- **CO sensitivity**: %measured gas @ 400ppm CO < 0.1
- **H₂ sensitivity**: %measured gas @ 400ppm H₂ < 0.1
- **C₂H₄ sensitivity**: %measured gas @ 80ppm C₂H₄ < 0.1
- **NH₃ sensitivity**: %measured gas @ 20ppm NH₃ < 1
- **CO₂ sensitivity**: %measured gas @ 5% volume CO₂ < 0.1

**KEY**

- **Temperature range**: °C -30 to 50
- **Pressure range**: kPa 80 to 120
- **Humidity range**: %rh continuous 15 to 90
- **Storage period**: months @ 3 to 20°C (stored in original container) 6
- **Load resistor**: Ω (recommended) 10 to 33
- **Bias voltage**: mV not required
- **Weight**: g < 6

At the end of the product’s life, do not dispose of any electronic sensor, component or instrument in the domestic waste, but contact the instrument manufacturer, Alphasense or its distributor for disposal instructions.

NOTE: all sensors are tested at ambient environmental conditions, with 47 ohm load resistor, unless otherwise stated. As applications of use are outside our control, the information provided is given without legal responsibility. Customers should test under their own conditions, to ensure that the sensors are suitable for their own requirements.
**HCN-A1 Performance Data**

**Figure 2 Sensitivity Temperature Dependence**

Figure 2 shows the variation in sensitivity caused by changes in temperature. This data is taken from a typical batch of sensors. The mean and ±95% confidence intervals are shown.

**Figure 3 Zero Temperature Dependence**

Figure 3 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C. This data is taken from a typical batch of sensors.

**Figure 4 Response to 30ppm HCN**

The HCN-A1 shows fast response and stable output when exposed to 30ppm HCN.