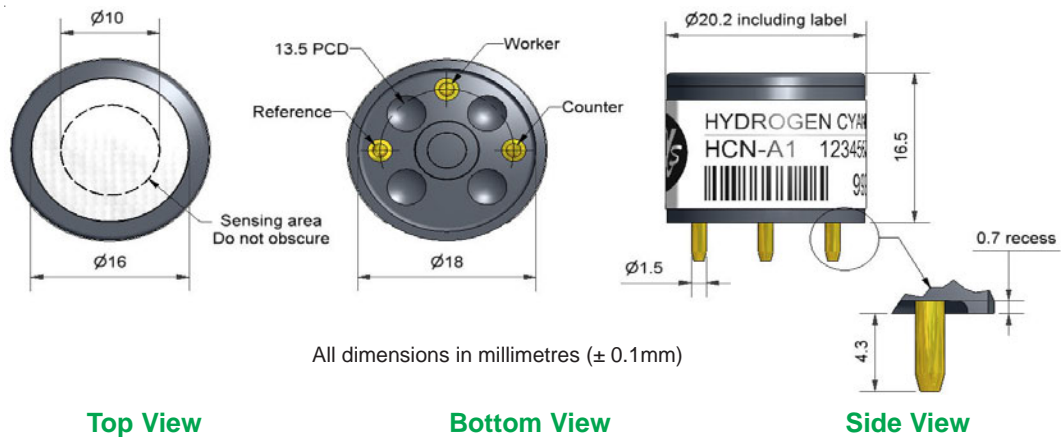


# HCN-A1 Hydrogen Cyanide Sensor




Figure 1 HCN-A1 Schematic Diagram

PATENTED



Technical Specification

|   |   |   |              |
|---|---|---|--------------|
| <b>PERFORMANCE</b>  | Sensitivity                               | nA/ppm in 30ppm HCN                                   | 60 to 80     |
|   | Response time                             | $t_{90}$ (s) from zero to 30ppm HCN                   | <45          |
|   | Zero current                              | ppm equivalent in zero air                            | < $\pm 0.5$  |
|   | 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          |
| <b>LIFETIME</b>   | Zero drift                                | ppm equivalent change/year in lab air                 | nd           |
|   | Sensitivity drift                         | % change/year in lab air, monthly test                | nd           |
|   | Operating life                            | months until 80% original signal (12 month warranted) | >12          |
| <b>ENVIRONMENTAL</b>  | Sensitivity @ -20°C                       | % (output @ -20°C/output @ 20°C) @ 30ppm HCN          | 80 to 95     |
|   | Sensitivity @ 50°C                        | % (output @ 50°C/output @ 20°C) @ 30ppm HCN           | 105 to 115   |
|   | Zero @ -20°C                              | ppm equivalent change from 20°C                       | < $\pm 0.15$ |
|   | Zero @ 50°C                               | ppm equivalent change from 20°C                       | 1 to 2       |
| <b>CROSS SENSITIVITY</b>  | H <sub>2</sub> S sensitivity              | %measured gas @ 20ppm H <sub>2</sub> S                | <400         |
|   | NO <sub>2</sub> sensitivity               | %measured gas @ 10ppm NO <sub>2</sub>                 | <150         |
|   | Cl <sub>2</sub> sensitivity               | %measured gas @ 10ppm Cl <sub>2</sub>                 | <150         |
|   | NO sensitivity                            | %measured gas @ 50ppm NO                              | <2           |
|   | SO <sub>2</sub> sensitivity               | %measured gas @ 20ppm SO <sub>2</sub>                 | <180         |
|   | CO sensitivity                            | %measured gas @ 400ppm CO                             | <0.3         |
|   | H <sub>2</sub> sensitivity                | %measured gas @ 400ppm H <sub>2</sub>                 | <0.2         |
|   | C <sub>2</sub> H <sub>4</sub> sensitivity | %measured gas @ 80ppm C <sub>2</sub> H <sub>4</sub>   | <0.1         |
| <b>KEY SPECIFICATIONS</b>   | NH <sub>3</sub> sensitivity               | %measured gas @ 20ppm NH <sub>3</sub>                 | <1           |
|   | CO <sub>2</sub> sensitivity               | %measured gas @ 5% volume CO <sub>2</sub>             | <0.1         |
|   | 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                             | $\Omega$ (recommended)                                | 10 to 33     |
|  | Bias voltage                              | mV  | not required |
|   | Weight                                    | g   | < 6          |

**NOTE:** all sensors are tested at ambient environmental conditions, with 10 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

Technical Specification

Figure 2 Sensitivity Temperature Dependence

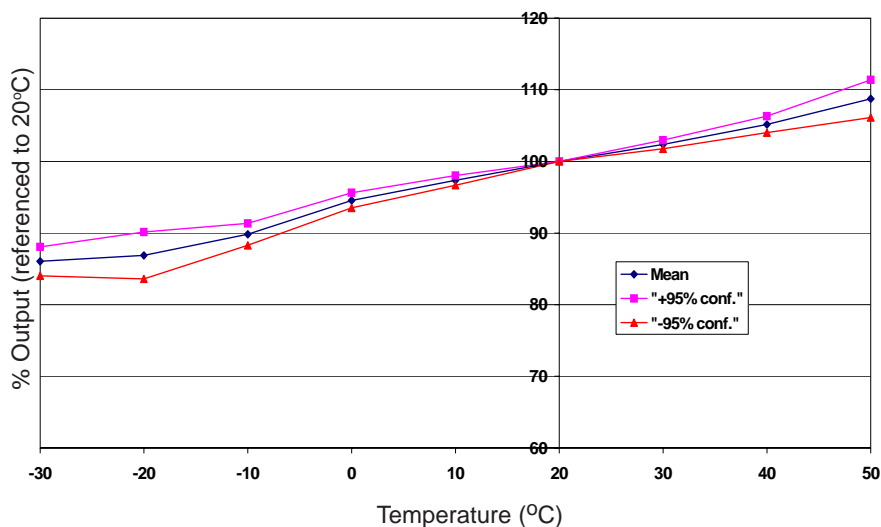


Figure 2 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors. The mean and  $\pm 95\%$  confidence intervals are shown.

Figure 3 Zero Temperature Dependence

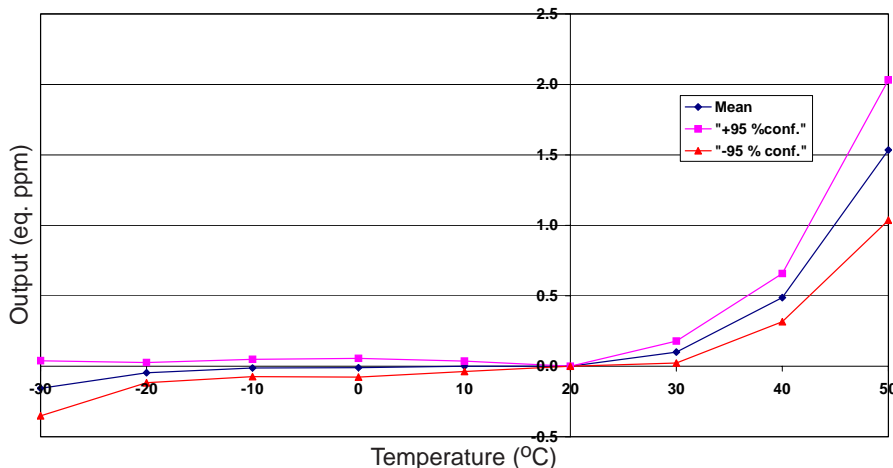
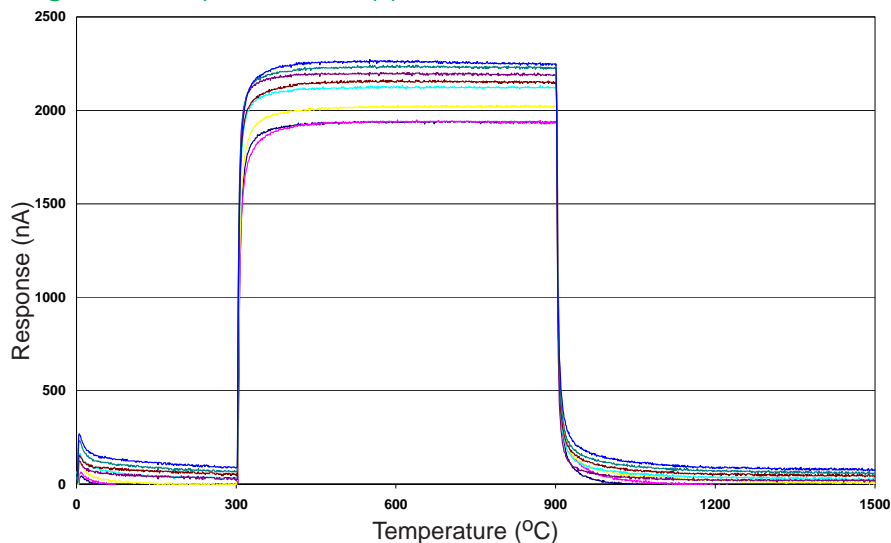


Figure 3 shows the variation in zero output caused by changes in temperature expressed as ppm gas equivalent.

This data is taken from a typical batch of sensors. The mean and  $\pm 95\%$  confidence intervals are shown.

Figure 4 Response to 30ppm HCN



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