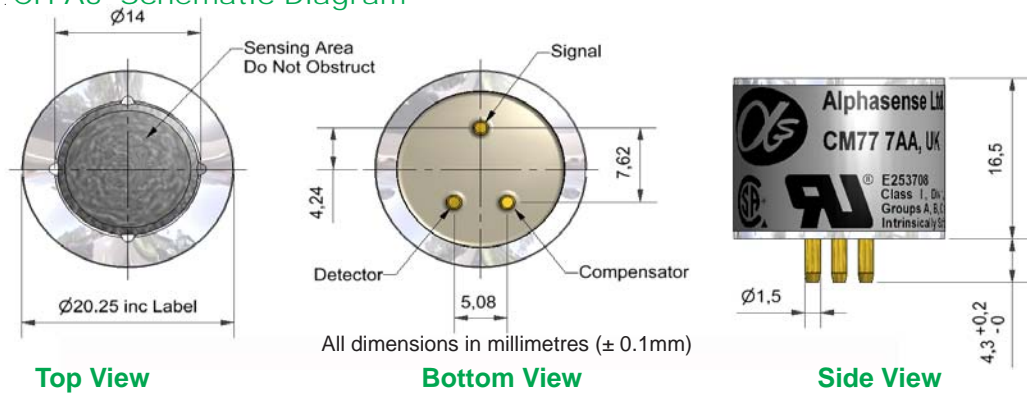


CH-A3 Combustible Gas Pellistor



Figure 1. CH-A3 Schematic Diagram



Technical Specification

PERFORMANCE

| | | |
|---------------|--|----------------------|
| Sensitivity | mV / % methane | 15 to 21 |
| Response time | t_{90} from air to 50% LEL methane (s) | < 15 (typically < 7) |
| Zero | mV in zero air | ± 20 |
| Range | % LEL methane | 0 to 100 |
| Linearity | % methane when 5% non-linear | 6 |

ENVIRONMENTAL

| | | |
|---------------------|---|------------------|
| Sensitivity @ -20°C | % sensitivity change, referenced to 20°C | < 100.5 to 105.5 |
| Sensitivity @ 50°C | % sensitivity change, referenced to 20°C | < 100 to 103 |
| Zero @ -20°C | % LEL change, referenced to 20°C | < +0.5 to -2 |
| Zero @ 50°C | % LEL change, referenced to 20°C | < 0 to -1.5 |
| Temperature Range | Certification to T4 | -40° to +55°C |
| Humidity | 12% sensitivity loss from 0% to 80 % rh (22°C) | |
| | Typical zero increase % LEL from 0 to 80 %rh (22°C) | 1.0 |
| Pressure | Sensitivity change from 0 to 75 kPa (gauge) | < 3% |

INHIBITION/POISONING

| | | |
|---|--|------------|
| Chlorine | 12hrs 20ppm Cl_2 , 50 % sensitivity loss, 2 day recovery | < 10% loss |
| Hydrogen Sulfide | 12hrs 40ppm H_2S , 50 % sensitivity loss, 2 day recovery | < 50% loss |
| HMDS | hrs until 50% activity loss @ 10ppm HMDS | 9 |
| Optional H2S disposable filter can be ordered. Part no. ASF-1 | | |

ELECTRICAL

| | | |
|---------------------|------------------------------------|-----|
| Voltage | V (± 0.2 V) | 3.0 |
| Power consumption | mW | 190 |
| Voltage sensitivity | % sensitivity change / 0.1V change | 3 |

KEY SPECIFICATIONS

| | | |
|----------------|--|------|
| Weight | g | < 26 |
| Operating life | months until 75% original sensitivity (24 month warranted) | > 24 |

Table 1 Sensitivity

| Hydrocarbon/Gas | % Sensitivity relative to Methane | % LEL Sensitivity to Methane | Hydrocarbon/Gas | % Sensitivity relative to Methane | % LEL Sensitivity to Methane |
|-----------------|-----------------------------------|------------------------------|-----------------|-----------------------------------|------------------------------|
| Hydrogen | 130 to 140 | 160 to 175 | Carbon Monoxide | 42 to 44 | 17 to 18 |
| Propane | 150 to 190 | 350 to 450 | Acetylene | 150 to 170 | 300 to 340 |
| Butane | 150 to 180 | 420 to 500 | Ethylene | 150 to 170 | 270 to 320 |
| n-Pentane | 180 to 200 | 600 to 670 | Isobutylene | 180 to 200 | 450 to 500 |
| Nonane | 150 to 170 | 800 to 950 | | | |



NOTE: all sensors are tested at ambient environmental conditions, with methane, 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.

CH-A3 Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

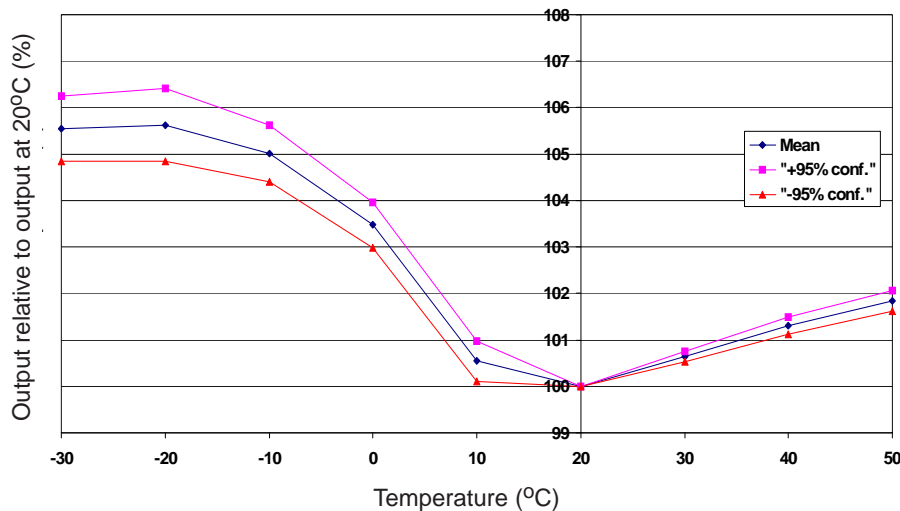


Figure 2 shows the variation in sensitivity caused by changes in temperature.

Data taken from a typical batch of sensors and the mean and $\pm 95\%$ confidence intervals are shown.

Figure 3 Linearity

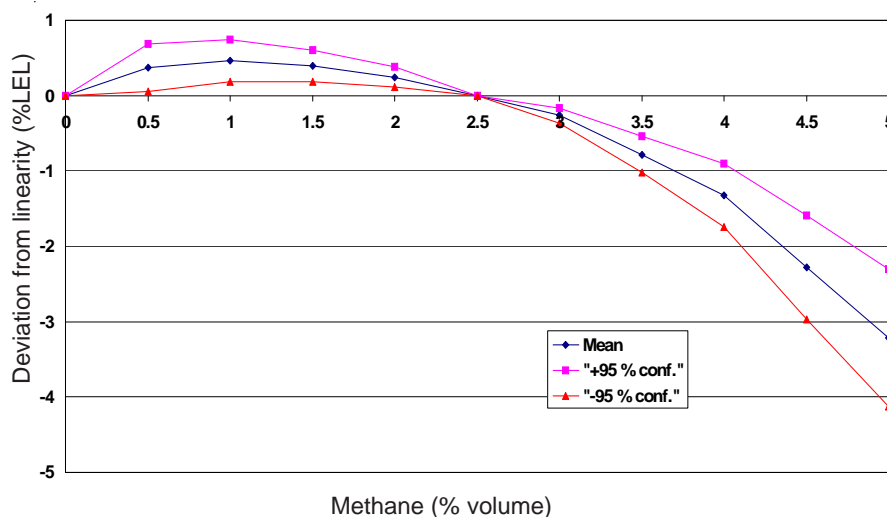


Figure 3 shows the non-linearity from 0 to 5% methane (volume). Sensor non-linearity at 100% LEL is less than 4%.

Data taken from a typical batch of sensors and the mean and $\pm 95\%$ confidence intervals are shown.

CERTIFICATION

Sira 07ATEX 1088X



II 2 G
Ex d IIC T4
-40°C to +55°C
5V, 1.4 W

IECEx SIR07.0031X

Ex d IIC T4
5Vrc, 1.4 W, T_a -40° to +55°C

UL913 091007-E253708

Class I, II and III, Division 1
10 V, 1.5 W, 10 μ H

CSA 22.2 1906313

Class 4828 31

SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

The non-metallic parts of the Flameproof Sensor Housings shall only be installed in enclosures that offer protection from mechanical impact damage and shall not be exposed to ultraviolet radiation.

The final installation of the Flameproof Sensor Housings shall ensure that any likely damage from dropping the complete device has been considered.

The Flameproof Sensor Housings shall only be connected to an electrical supply that is certified as compliant with IEC 60079-11 and limited to the following: Type A - 5 Vdc, 1.4 W