

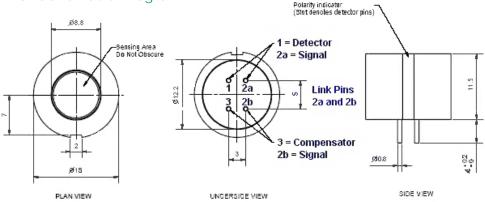
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## **CH-D3 Combustible Gas Pellistor**



Figure 1 CH-D3 Schematic Diagram



All dimensions in millimetres (± 0.1mm)

Plan View

**Underside View** 

**Side View** 

**PERFORMANCE** Sensitivity

Sensitivity

mV / % methane t<sub>90</sub> from air to 50% LEL methane (s) 11 to 17 < 12(typically 7)

Response time Zero

mV in zero air % LEL methane

±20 0 to 100

6

Range Linearity

**ENVIRONMENTAL** Sensitivity @ -20°C

inearity % methane when 5% non-linear

Sensitivity @ 50°C Zero @ -20°C

Zero @ 50°C

% sensitivity change, referenced to 20°C % sensitivity change, referenced to 20°C % LEL change, referenced to 20°C % LEL change, referenced to 20°C

Temperature Range Certification to T6

101 to 102 < +0.5 < -0.5

103 to 105

-40° to 45°C

SENSITIVITY n-pentane % LEL pentane / % LEL methane

acetylene HMDS % LEL pentane / % LEL methane % LEL acetylene / % LEL methane hrs until 50% activity loss @ 10ppm HMDS 0.50

0.70

10

ELECTRICAL Voltage V (±0.2 V) 3.0

Power consumption mW 190
Voltage sensitivity % sensitivity change / 0.1V change <3

Sira 07ATEX 1088X

 $\langle \epsilon_{\rm x} \rangle$ 

II 2 G Ex d IIC T4 -40°C to 50°C 5V. 1.4W

IECEX SIR07.0031X Ex d IIC T4

5VRc, 1.25W, T<sub>a</sub> -40° to 50°C

UL913 091007-E253708

ClassI, II and III, Division1 10V, 1.5W, 10µH CSA 22.2 1906313 CI

Class 4828 31

**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.



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1900

## **CH-D3 Performance Data**

## % sensitivity (sensitivity at 3.2V) / (sensitivity at 3.2V) / (sensitivity 4 %) / (sen

2500

Bridge voltage (V)

2700

2900

3100

Figure 2 shows the variation in sensitivity caused by changes in pellistor voltage. The pellistor is relatively insensitive to small voltage variations at 3volts, avoiding individual bridge voltage adjustments.

Data are taken from a typical batch of sensors.



2300

Figure 2 Voltage Sensitivity

2100

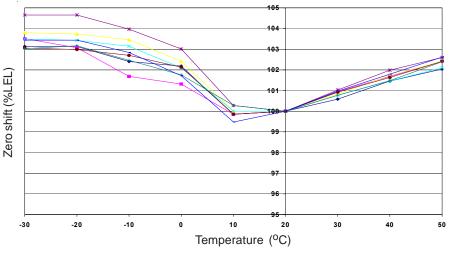
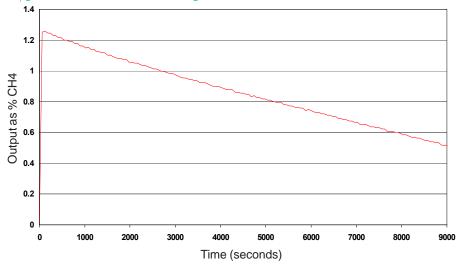


Figure 3 shows the variation in output caused by changes in temperature, expressed as % change, referenced to 20°C.

## Figure 4 HMDS Poisoning



When exposed to 42ppm HMDS in 25% LEL methane, sensitivity loss is slower than equivalent pellistors.

For further information on the performance of this sensor, on other sensors in the range or any other subject, please contact Alphasense Ltd. For Application Notes visit "www.alphasense.com".

In the interest of continued product improvement, we reserve the right to change design features and specifications without prior notification. The data contained in this document is for guidance only. Alphasense Ltd accepts no liability for any consequential losses, injury or damage resulting from the use of this document or the information contained within it (©ALPHASENSE LTD) Doc. Ref. TDS/CHD3/Issue 12