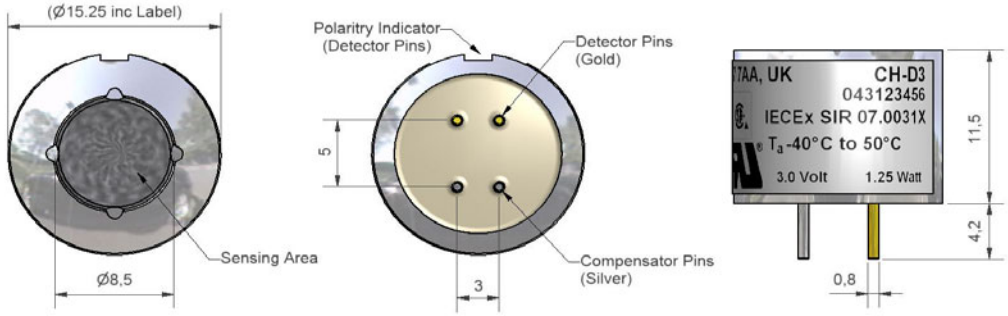
CH-D3 Combustible Gas Pellistor

Miniature Size

Technical Specification

Figure 1 CH-D3 Schematic Diagram



All dimensions in millimetres (± 0.1mm)

Plan View **Underside View** **Side View**

PERFORMANCE	Sensitivity	mV / % methane	10 to 17
	Response time	t_{90} from air to 50% LEL methane (s)	< 12
	Zero	mV in zero air	±25
	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	101.5 to 103.5
	Zero @ -20°C	% LEL change, referenced to 20°C	< -1.5
	Zero @ 50°C	% LEL change, referenced to 20°C	< -1.5
	Temperature Range	Certification to T4	-40° to 50°C
	Humidity	12% sensitivity loss from 0% to 80% rh (22°C)	
		Typically +0.8mV zero increase from 0 to 80%rh (22°C)	
	Pressure	Sensitivity change from 0 to 75kPa (gauge)	<3%
INHIBITION/POISONING			
	Chlorine	12hrs 20ppm Cl_2, 50% LEL sensitivity loss	<10% loss
	Hydrogen Sulfide	12hrs 40ppm H_2S, 50% LEL sensitivity loss	<50% loss
	HMDS	hrs until 50% activity loss @ 10ppm HMDS	10
SENSITIVITY	Hydrogen	% sensitivity, relative to methane	120 to 140
	Ethane	% sensitivity, relative to methane	120 to 140
	Propane	% sensitivity, relative to methane	140 to 170
	Butane	% sensitivity, relative to methane	150 to 180
	Pentane	% sensitivity, relative to methane	170 to 200
	Hexane	% sensitivity, relative to methane	190 to 220
	Heptane	% sensitivity, relative to methane	190 to 220
	Octane	% sensitivity, relative to methane	200 to 230
	Nonane	% sensitivity, relative to methane	190 to 220
	Ethene	% sensitivity, relative to methane	150 to 170
	Acetylene	% sensitivity, relative to methane	140 to 160
	Isobutylene	% sensitivity, relative to methane	170 to 190
ELECTRICAL	Voltage	V (±0.2 V)	3.0
	Power consumption	mW	190
	Voltage sensitivity	% sensitivity change / 0.1V change	<3

Sira 07ATEX 1088X  II 2 G Ex d IIC T4 -40°C to 50°C 5V, 1.25W	IECEx SIR07.0031X Ex d IIC T4 5VRc, 1.25W, T_a -40° to 50°C
UL913 091007-E253708 ClassI, II and III, Division1 10V, 1.5W, 10µH	CSA 22.2 1906313 Class 4828 31

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 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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CH-D3 Performance Data

Technical Specification

Figure 2 Voltage Sensitivity

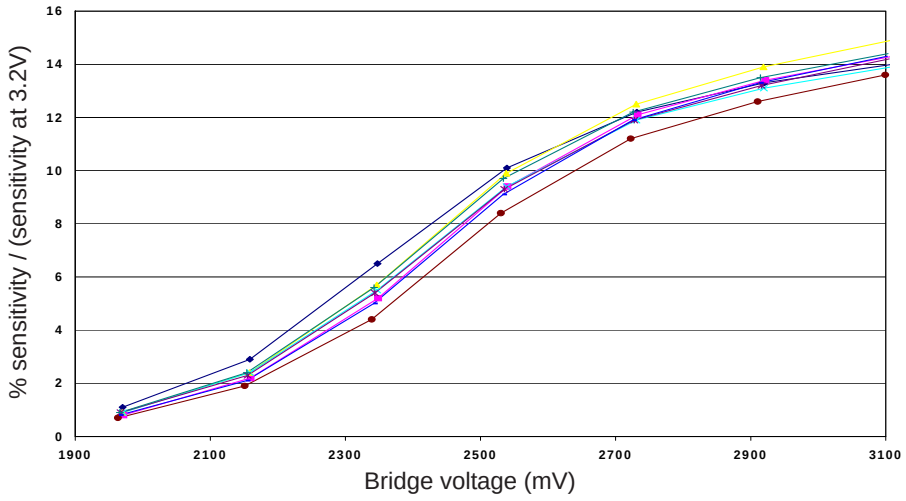


Figure 2 shows the variation in sensitivity caused by changes in pellistor voltage. The pellistor is relatively insensitive to small voltage variations at 3volts, avoiding individual bridge voltage adjustments.

Data are taken from a typical batch of sensors.

Figure 3 Zero Temperature Dependence

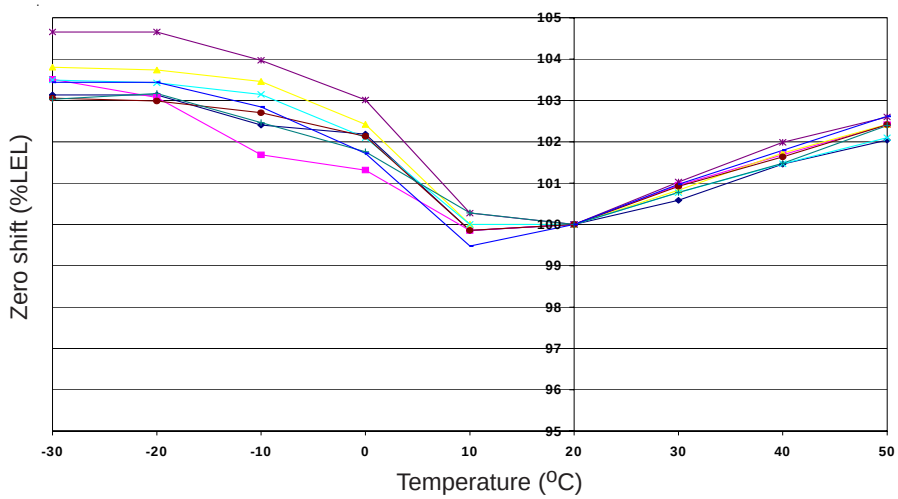
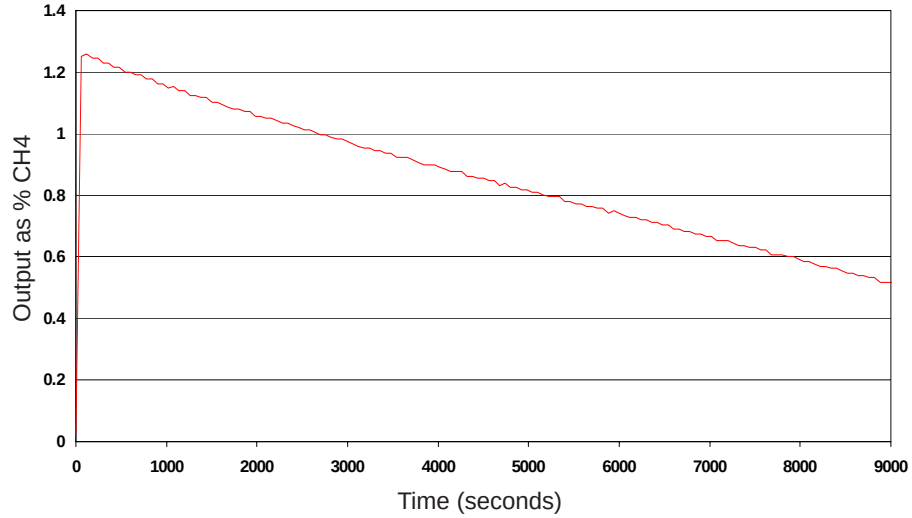


Figure 3 shows the variation in output caused by changes in temperature, expressed as % change, referenced to 20°C.

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".