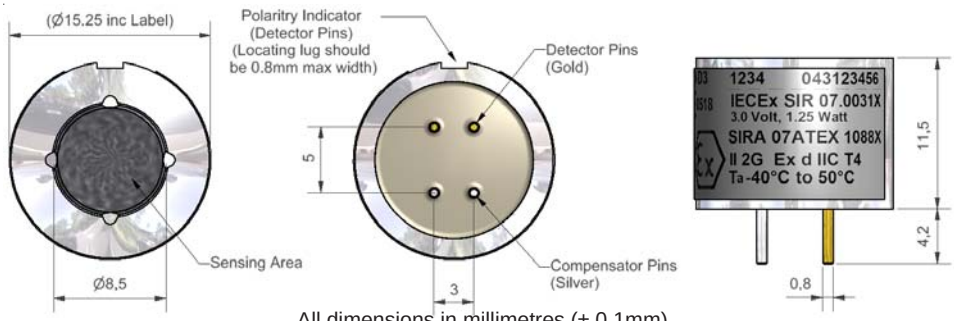
CH-D3 Combustible Gas Pellistor

Miniature Size

Technical Specification

Figure 1 CH-D3 Schematic Diagram



Plan View | Underside View | Side View

All dimensions in millimetres (± 0.1mm)

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	101.5 to 104.5
	Sensitivity @ 50°C	% sensitivity change, referenced to 20°C	101.5 to 103
	Zero @ -20°C	% LEL change, referenced to 20°C	< ±2
	Zero @ 50°C	% LEL change, referenced to 20°C	< +0.5 to -1.5
	Temperature Range	Certification to T4	-40° to 50°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	< 10
	Optional H2S disposable filter can be ordered. Part no. ASF-2		
ELECTRICAL	Voltage	V (±0.2 V)	3.0
	Power consumption	mW	190
	Voltage sensitivity	% sensitivity change / 0.1V change	< 3
KEY SPECIFICATIONS	Weight	g	< 10
	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	120 to 140	150 to 175	Heptane	190 to 220	900 to 1050
Ethane	120 to 140	200 to 230	Octane	200 to 230	1000 to 1150
Propane	140 to 170	330 to 400	Nonane	190 to 220	830 to 950
Butane	150 to 180	470 to 570	Acetylene	140 to 160	280 to 320
n-Pentane	170 to 200	570 to 670	Ethylene	150 to 170	275 to 320
Hexane	190 to 220	860 to 900	Isobutylene	170 to 190	425 to 475

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

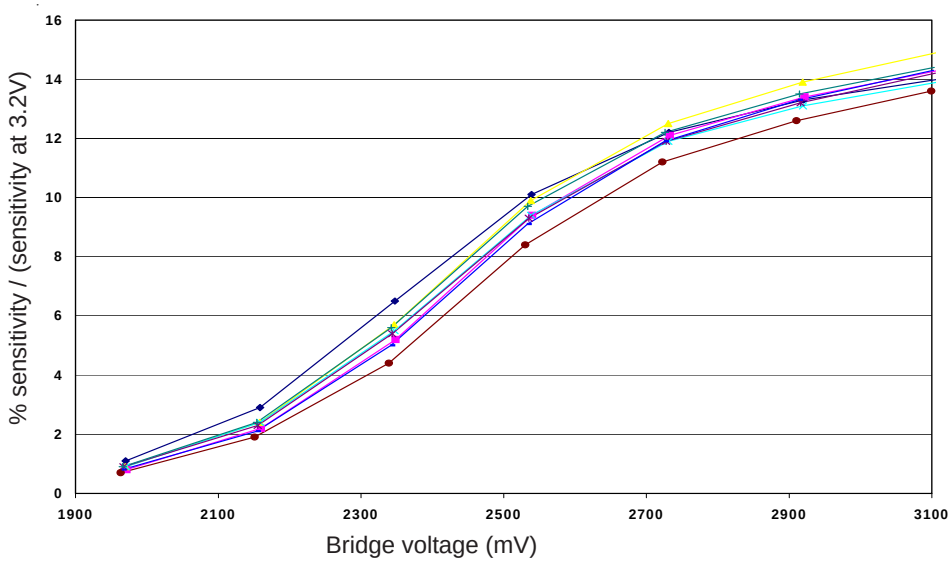

Figure 2 shows the variation in sensitivity caused by changes in pellistor voltage. The pellistor is relatively insensitive to small voltage variations at 3 volts, avoiding individual bridge voltage adjustments.

Data taken from a typical batch of sensors.

Figure 3 Zero Temperature Dependence

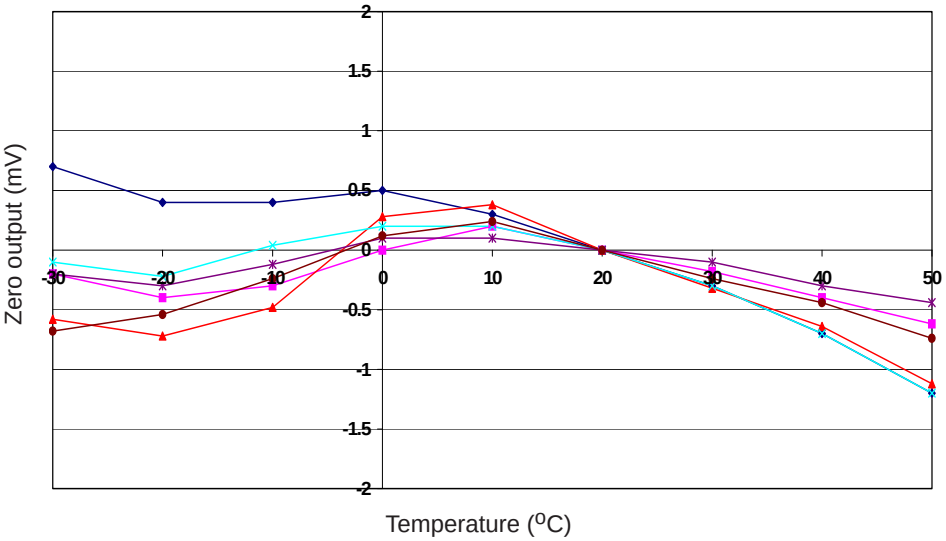

Figure 3 shows the variation in zero caused by changes in temperature. Expressed as mV change, referenced to 20°C.

I mV is equivalent to typically 0.8% LEL.

CERTIFICATION

Sira 07ATEX 1088X		II 2 G Ex d IIC T4 -40°C to 50°C 5V, 1.25 W	IECEx SIR07.0031X	Ex d IIC T4 5Vdc, 1.25 W, T_a -40° to 50°C	
UL913 091007-E253708		Class I, II and III, Division 1 10 V, 1.5 W, 10 µH	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 D - 5 Vdc, 1.25 W

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