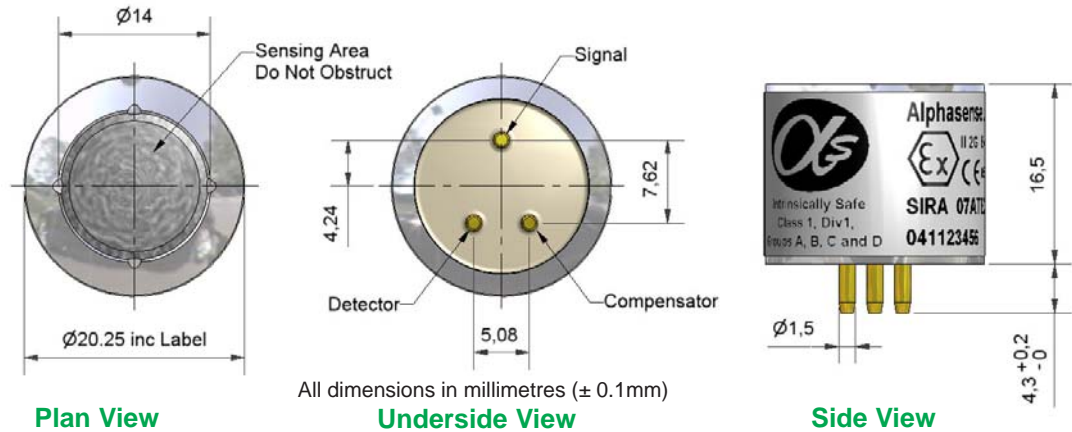




CH-A3 Combustible Gas Pellistor



Figure 1 CH-A3 Schematic Diagram



Technical Specification


PERFORMANCE	Parameter	Value
	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	Parameter	Value
	Sensitivity @ -20°C	% sensitivity change, referenced to 20°C 100.5 to 105.5
	Sensitivity @ 50°C	% sensitivity change, referenced to 20°C 102 to 103
	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 55°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	Less than 3% sensitivity change from 0 to 75kPa (gauge)

INHIBITION/POISONING	Parameter	Value
	Chlorine	12hrs 20ppm Cl ₂ , 50% LEL sensitivity loss <10% loss
	Hydrogen Sulfide	12hrs 40ppm H ₂ S, 50% LEL sensitivity loss <50% loss
	HMDS	hrs until 50% activity loss @ 10ppm HMDS 9

ELECTRICAL	Parameter	Value
	Voltage	V (± 0.2 V) 3.0
	Power consumption	mW 190
	Voltage sensitivity	% sensitivity change / 0.1V change 3

Limits of Use

Sira 07ATEX 1088X	 II 2 G Ex d IIC T4 -40°C to 55°C 5V, 1.25W	IECEX SIR07.0031X Ex d IIC T4 5VRC, 1.25W, T _a -40° to 55°C
UL913 091007-E253708	Class I, II and III, Division 1 10V, 1.5W, 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, 1.40 W



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.



CH-A3 Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

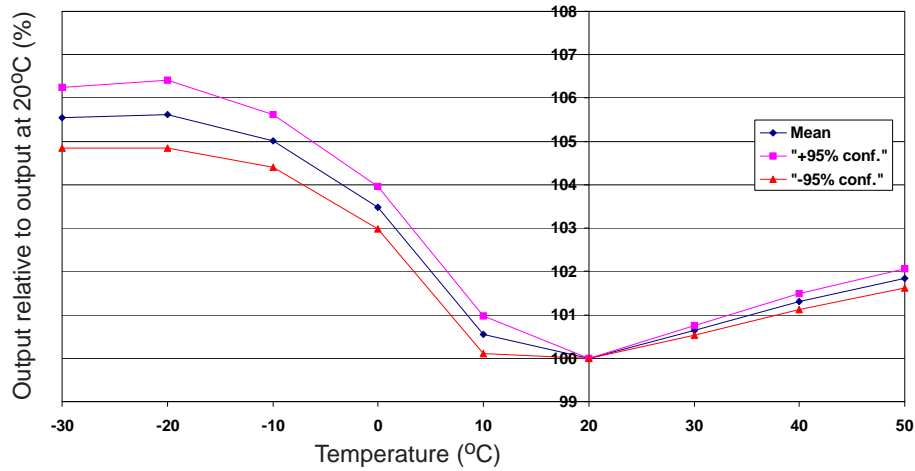


Figure 2 shows the variation in sensitivity caused by changes in temperature.

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

Figure 3 Linearity

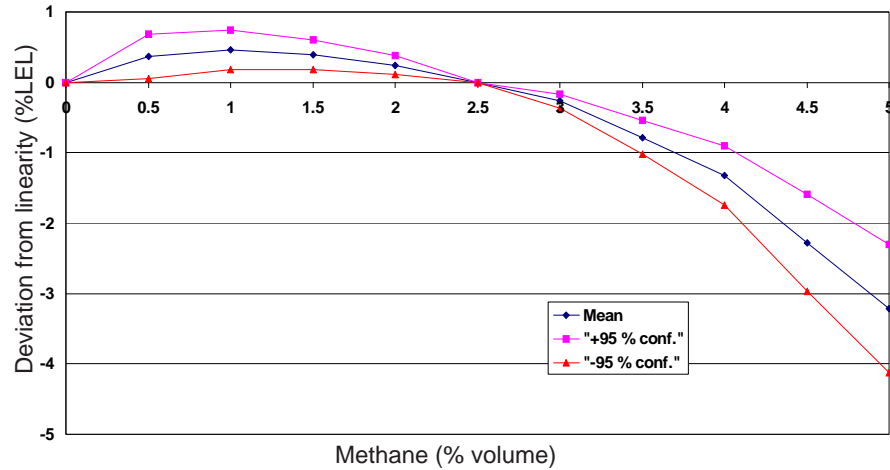


Figure 3 shows the non-linearity from 0 to 5% methane (volume). Sensor non-linearity at 100% LEL is less than 4%.

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

Table 1 Sensitivity

Sensor type	% sensitivity relative to methane
Propane	150 to 190
Ethylene	150 to 170
Nonane	150 to 170
Acetylene	150 to 170
Butane	150 to 180
Isobutylene	180 to 200
Hydrogen	130 to 140
n-Pentane	180 to 200
Carbon Monoxide	42 to 44

For further information on the performance of this sensor, 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. ©ALPHASENSE LTD) Doc. Ref. CHA3/JUN11