

# FLAMMABLE GAS SENSOR MK111

The Diffusion Controlled Pellister (DCP) was developed and patented by IGD in 1979 as the first truly poison-resistant catalytic gas sensor. The type 'B' DCP sensor is a recent development from the original formulation and is intended for application in severely contaminated industrial atmospheres, particularly where silicone or sulphur vapours may be present.

In both cases, two matched catalytic elements are housed in a stainless steel and safety certified enclosure and are suitable for the detection of volatile and gaseous flammable hydrocarbons at concentrations of up to the Lower Flammable Limit (LFL;LEL)

Materials used in the sensor gas path are highly resistant to corrosion, both saline and acidic.

## Features

- Poison Resistant Catalytic Sensor.
- Corrosion Resistant Stainless Steel Housing.
- Fast Response time.
- Certified by BASEEFA and CSA.

BASEEFA Standard SFA 3009 EXs II T6 Certificate Ex 79123.

CSA Standard C22.2 Class 1, Groups C and D Certificate LR 51033



## Operational Data for DCP & Type 'B' DCP

Using Recommended Bridge Circuit

Note: Both sensors are interchangeable electrically and mechanically.

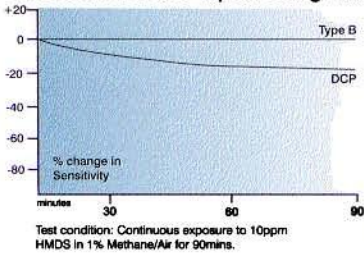
Bridge Supply.	360mA±5mA.
Minimum Sensitivity.	18mV / % Methane.
Maximum Power Consumption.	1.1W (0.9W Type B).
Linearity.	Sensibly linear up to 3% methane.
Response time.	10 secs (Type B:12 secs).
(T <sub>90</sub> for methane).	
Zero drift in clean air.	2mV / month.
Max air velocity without additional protection.	6m / Sec.
Zero drift wrt.	20±20°C ±2mV.
Temperature.	20±30°C ±3mV.
Length (overall).	52mm.
Diameter (body).	33mm.
Wt.	210 grams.
Materials in sensor gas path.	316 S16 Stainless steel. Teflon / Gold.

## Correction Factors & Calibration of the Mark III Sensor

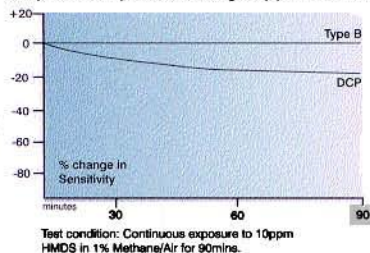
Gas/Vapour	Relative Sensitivity Experimental	With 1% Methane in air (20% LEL) Adjust 'CAL' (span control) for the readout to display	For Example: Using 1%CH <sub>4</sub> in Air as the calibrating gas, it is necessary to adjust 'Cal' (Span Control) to make the display read 35, if a calibration correct for n-Butane is required.  Using 1% Propane in Air (50% LEL) as the calibrating gas, it is necessary to adjust 'Cal' or span control to make the display read $\frac{55}{0.11} \times 50 = 77$ , if a calibration correct for Acetone is required.
Methane	1.00	20	
Propane	0.63	35	
n-Butane	0.59	35	
n-Pentane	0.53	40	
n-Hexane	0.42	50	
n-Heptane	0.42	50	
n-Octane	0.39	55	
Hydrogen	0.69	30	
Methanol	0.70	30	
Ethanol	0.48	40	
iso Propyl alcohol	0.38	55	
Acetone	0.41	50	
Methyl Ethyl Ketone	0.41	50	
Benzene	0.39	55	
Toluene	0.34	60	
Di-ethyl ether	0.52	10	
Cyclohexane	0.43	50	
Ammonia	1.24	15	

## SENSOR RESISTANCE TO TYPICAL CONTAMINANTS

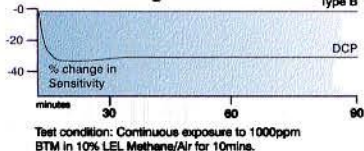
### Silicone Oil & Grease Vapours using Hexamethyl Disiloxane



### Sulphur compounds using 30ppm H<sub>2</sub>S in Air



### Halon Fire Extinguishant



## Sensors and Accessories

PART NO.	DESCRIPTION
501 001	Mk III DCP Sensor 20mm entry.
501 051	Mk III Type 'B' DCP sensor 20mm entry.
401 321	Hawke PJB1 Junction box (Exe).
401 341	Hawke CBS Junction box (Exd IIC).
401 471	Weather protection Assy. Includes Test Gas.
401 091	Collector cone assembly.
401 800	Universal Mounting Bracket.

WITHUS

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