#### **Features**

- Integrated thermister for accurate temperature compensation
- EEPROM programmed with sensor specific performance characteristics

# **Performance Characteristics**

Nominal Range | 0-5% vol. CO,

**MTBF** >5 years

Minimum Resolution 0.005% CO<sub>2</sub> at zero, 0.15%

CO<sub>2</sub> at range

Within  $\pm (0.1\% \text{ vol CO}_2 + 4\% \text{ of}$ Accuracy (-20°C to +50°C)

concentration)

**Temperature Range** -20°C to +50°C

> **Pressure Range** 700 to 1300mBar with

> > compensation

T<sub>an</sub> Response Time <35 seconds

**Relative Humidity Range** 0-99% RH (non-condensing)

<80ppm CO<sub>2</sub> per month **Long Term Zero Drift** 

Repeatability

Zero <±0.003% CO. 5%CO, <±0.075% CO<sub>2</sub>

**Warranty Period** 12 months from date of

despatch

N.B. All performance data is based on conditions at 20°C 50% RH and 1013 mBar, operated using CTL evaluation electronics.

### **Physical Characteristics**

Weight | 23g

**Position Sensitivity** None

-20°C to +50°C Recommended

**Storage Temperature** 

## **Electrical Characteristics**

3-5V DC, 3.3V to utlise Supply voltage

EEPROM cal.

**Power consumption** <100mW at 3.3V

Recomended lamp

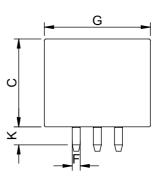
frequency

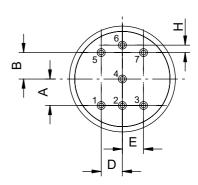
2Hz, 50% duty cycle

Warm up time

<10 Sec

#### **Outline Dimensions**





Symbol Symbol	mm (nominal)		
Α	5.0	Pin	Function
В	5.0	1	Lamp return
С	16.6	2	Lamp +5V
D	4.0	3	+5V pryo supply
E	4.0	4	Detector output
F	1.5 +/-0.05	5	Reference output
G	20.0	6	Thermistor output
Н	1.4	7	0V pryo supply
K	4.7		1 7 33117

NB: 1. Label adds additional 0.2mm to IRceL diameter.

2. Allow 1mm additional height in instrument for potting meniscus.

IMPORTANT NOTE: Connection should be made via PCB sockets only. Soldering to the pins will seriously damage your sensor.

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### **Product Approval**

**Approval Body:** 

UNDERWRITERS LABORATORIES INC®

Test Standard:

CSA.C22.2 No 157 **Product Categories:** Class 1, Division 1, Groups A, B, C, D

File Number:

E180262

Approval Body: **SIRACERTIFICATION SERVICE** 

Test Standard: EN 50014:1997 (amendments A1 & A2)

EN 50018:2000

EN 50281-1-1:1998

EExdI/IIC T4 (T<sub>amb</sub> -20°C to +55°C), x II2GD/IM2,  $\textcircled{\textbf{C}}$  0518 **Product Categories:** 

Sira 04ATEX1084X Certificate Number:

> Instructions specific to hazardous area installations (reference European ATEX Directive 94 / 9/ EC, Annex II, 1.0.6.)

The following instructions apply to equipment covered by certificate number Sira 04ATEX1084X;

- 1. The equipment may be used with flammable gases and vapours with apparatus groups IIA, IIB and IIC and with temperature classifications T1, T2, T3 and T4.
- 2. The equipment is certified for use in ambient temperatures of -20°C to +55°C.
- 3. The equipment has not been assessed as a safety related device (as referred to by Directive 94 /9/EC Annex II, clause 1.5).
- 4. Installation of the equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice (e.g. EN 60079-14)
- 5. Inspection and maintenance of this equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice (e.g. EN 60079-17).
- 6. Repair of this equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice (e.g. EN 60079-19).
- 7. Special conditions for safe use
- 7.1. The IRceL is designed to be connected to a gas detector which shall provide an intrinsically safe supply and having a maximum output power (P<sub>0</sub>) not greater than 1.0 watt.
- 7.2. Because the IRceL has not been proven to withstand the impact and drop tests prescribed in EN 50014:1997 clause 23.4.3, additional protection shall be provided to ensure that it cannot be subjected to such mechanical stresses.



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8. The certification of this equipment relies upon the following materials used in its construction;

Enclosure material: either 303 stainless steel, which contains less than 6% magnesium

or 304 stainless steel, which contains less than 6% magnesium

Flame arrester: 316 stainless steel mesh

Cement: CW2248/HY956EN

Manufacturer Ciba-Geigy
Type of compound Epoxy resin
Colour Beige (natural)

Filler type and % 55.2% trihydrated Al<sub>2</sub>O<sub>3</sub>

Other additives 8.3%
Surface treatments None
Temperature index 170°C
City Tech reference RM 497

If the equipment is likely to come into contact with aggressive substances, then it is the responsibility of the user to take suitable precautions that prevent it from being adversely affected, thus ensuring that the type of protection is not compromised.

Aggressive substances: e.g. acidic liquids or gases that may attack metals, or solvents that

may affect polymeric materials.

Suitable precautions: regular checks as part of routine inspections or establishing from

the material's data sheet that it is resistant to specific chemicals.

9. The IRceL is available in several formats depending upon the optical filter and components employed. The Certification marking is shown below using the IRceL CH4 label as an example:





PO6 1SZ, UK.
Patents Pending

IRceL® - CH4 Methane Sensor



01.07862134 056 SIRA 04ATEX1084X EEx d I/IIC T4 (Tamb -20C to +55C) Pmax 1.0W IP6X





HANDLING!
Observe precautions for handling.

WARNING!

Electrostatic sensitive

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Performance characteristics on this data sheet outline the performance of newly supplied sensors. Output signal can drift below the lower limit over time.

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