

Instructions for Safe Use of the MICROpeL™ 75 Pellistor

Instructions specific to hazardous area installations (reference European ATEX Directive 2014/34/EU, Annex II.1.0.6)

The following instructions apply to equipment covered by certificate numbers Sira 02ATEX1161X.

Marking

Product Marking

CITY TECHNOLOGY

MODEL DESIGNATION

SERIAL NUMBER (to include year of manufacture)

Sira 02ATEX1161X



The sensor may also contain information relevant to other certification bodies.

Packaging Marking

CITY TECHNOLOGY AND/OR CITY TECHNOLOGY LOGO

CITY TECHNOLOGY ADDRESS, PO6 1SZ, UK

MODEL DESIGNATION

Ex db ia I Mb (Ta -20°C to +55°C) @ Pmax 0.8W
Ex da ia IIC T4 Ga (Ta -20°C to +55°C) @ Pmax 0.8W
Ex tb IIIC T135°C Db (Ta -20°C to +55°C) @ Pmax 0.8W

or

Ex db ia I Mb (Ta -20°C to +40°C) @ Pmax 0.49 W
Ex da ia IIC T5 Ga (Ta -20°C to +40°C) @ Pmax 0.49 W
Ex tb IIIC T100°C Db (Ta -20°C to +40°C) @ Pmax 0.49 W

or

Ex db ia I Mb (Ta -20°C to +55°C) @ Pmax 0.42 W
Ex da ia IIC T5 Ga (Ta -20°C to +55°C) @ Pmax 0.42 W
Ex tb IIIC T100°C Db (Ta -20°C to +55°C) @ Pmax 0.42 W

Instructions for Safe Installation

- Pellistors are not sensitive to orientation and can be mounted in any orientation with no significant effect on performance. The mounting method should ensure a gas tight seal.
- Sensor pins must not be soldered to, as excessive heat may damage the sensor. Connectors are available to assist in mounting the sensors to PCBs. Please contact City Technology for further details.
- The equipment has not been assessed as a safety-related device (as referred to by Directive 2014/34/EU Annex II, clause 1.5).
- Installation of the equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice (e.g. EN/IEC 60079-14).
- This sensor is not a standalone device. It is the responsibility of the detector/instrument manufacturer or designer that uses the sensor to ensure that the sensors are connected to ground with a maximum impedance of $10^{\circ}\Omega$.

Instructions for Safe Use

- It is recommended that confirmation of adequate sensor performance be conducted on a regular basis by means of a defined, sensor calibration procedure. The calibration frequency will depend upon the environment in which the sensor is operated and on the perceived level of risk from the build up of flammable atmospheres.
- Certain substances are known to have a detrimental effect on catalytic elements as used in the MICROpeL™ Series Gas Sensing Head.
- The MICROpeL™ range of sensors are designed to be used in safety critical applications. To ensure that the sensor and/or instrument in which it is used are operating properly, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. Failure to carry out such tests may jeopardise the safety of people and property. Use of the sensor outside of these parameters may result in inaccurate gas measurement and possible sensor damage.
- Excessive vibration and shock can result in mechanical breakage of the sensor.

Poisoning

Some compounds will decompose on the catalyst and form a solid barrier over the catalyst surface. This action is cumulative and prolonged exposure will result in an irreversible decrease in sensitivity. The most common of these substances are lead or sulphur containing compounds, silicones and phosphates.

Inhibition

Certain other compounds, especially hydrogen sulphide and halogenated hydrocarbons, are absorbed or form compounds that are absorbed by the catalyst. The resultant loss of sensitivity is temporary and in most cases a sensor will recover after a period of operation in clean air.

- The certification of this equipment relies upon the following materials used in its construction;
Enclosure material: PEI, PPS or PTFE
Flame Arrester: Stainless steel 316 mesh

- 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.

Performance Specifications and Limitations of Use

Measurement Range	0 % to 100 % LEL	Operating Temperature Range	-20°C to 55°C *
Operating Voltage	3.30 Vdc ±0.02 Vdc	Operating Pressure Range	1 atm ± 20%
Detector Operating Current	78 mA ±6 mA*	Operating Humidity Range	0 %rH to 90 %rH non-condensing
Max. Power Consumption	295 mW*		

* Please note the restrictions imposed by the Operating Temperature/Pmax certification marking requirements in Packaging Marking section above.

Special Conditions for Safe Use (Denoted by X After the Certificate Number)

- The product does not meet the drop tests described in EN 60079-0, it shall therefore be protected from mechanical stresses caused by impact.
- The MICROpeL™ 75 miniature combustible gas sensors shall only be connected to a gas detector that provides an intrinsically safe supply and having maximum output power (P_{max}) not greater than that detailed in the marking section.
- This product is not resistant to light as required by clause 7.3 of EN 60079-0; therefore, it shall only be installed in a location where it is not exposed to ultra-violet (UV) light.
- The sensor is not a standalone device. It is the responsibility of the detector/instrument manufacturer or designer that uses the sensor to ensure that the sensors are connected to ground with a maximum impedance of 109 Ω.
- This equipment is only to be used with portable combustible gas detectors, per the requirements of EN 60079-1.
- In case of usage in explosive dust applications, the gas sensor shall be incorporated into the portable combustible gas detector in a way that only the raised surface of the metal bezel can be exposed to the explosive dust atmospheres

Return of Faulty Product

MICROpeL sensors are non-repairable products. Faulty products should be returned to the manufacturer address below, accompanied by the manufacturers RMA form (found within the quality section of www.citytech.com).

Manufacturer Address : City Technology Ltd.,
City Technology Centre,
Walton Road,
Portsmouth,
Hampshire,
Great Britain,
PO6 1SZ



In accordance with the company's policy of continued product improvement City Technology reserves the right to make product changes without notice. The products are always subject to a programme of improvement and testing which may result in some changes in the characteristics quoted. As the products may be used by the client in circumstances beyond the knowledge and control of City Technology, we cannot give any warranty as to the relevance of these particulars to an application. City Technology warrants goods of its manufacture as being free of defective materials and faulty workmanship during the applicable warranty period. City Technology's standard product warranty applies unless agreed to otherwise by City Technology in writing; please refer to your order acknowledgment or consult your local sales office for specific warranty details. If warranted goods are returned to City Technology during the period of coverage, City Technology will repair or replace, at its option, without charge those items that City Technology, in its sole discretion, finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall City Technology be liable for consequential, special, or indirect damages.** Though City Technology provides application assistance personally, or through our literature and website, it is buyer's sole responsibility to determine the suitability of the product in the application. Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this writing. However, City Technology assumes no responsibility for its use.