



# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEx SIR 05.0006X** Page 1 of 5 Certificate history:  
Status: **Current** Issue No: 2 [Issue 1 \(2009-11-24\)](#)  
[Issue 0 \(2007-03-08\)](#)  
Date of Issue: 2020-03-03  
Applicant: **Teledyne Gas Measurement Instruments Ltd.**  
Inchinnan Business Park  
Renfrew  
Scotland PA4 9RG  
**United Kingdom**  
Equipment: **GT-XX**  
Optional accessory:  
Type of Protection: **Intrinsic safety and Flameproof**  
Marking: Ex ia d IIB T3

Approved for issue on behalf of the IECEx  
Certification Body:

**Neil Jones**

Position:

**Certification Manager**

Signature:  
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
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Certificate issued by:

**SIRA Certification Service**  
**CSA Group**  
**Unit 6, Hawarden Industrial Park**  
**Hawarden, Deeside, CH5 3US**  
**United Kingdom**

**sira**  
CERTIFICATION





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Manufacturer: **Teledyne Gas Measurement Instruments Ltd.**  
Inchinnan Buisness Park  
Renfrew  
Scotland PA4 9RG  
**United Kingdom**

Additional  
manufacturing  
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

## STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

**IEC 60079-0:2000** Electrical apparatus for explosive gas atmospheres - Part 0: General requirements  
Edition:3.1

**IEC 60079-1:2003** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:5

**IEC 60079-11:1999** Electrical apparatus for explosive gas atmospheres - Part 11: Intrinsic safety 'i'  
Edition:4

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

## TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[GB/SIR/ExTR06.0056/00](#)

[GB/SIR/ExTR09.0177/00](#)

[GB/SIR/ExTR20.0015/00](#)

Quality Assessment Report:

[GB/SIR/QAR06.0031/09](#)



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The GT-XX is a battery powered unit designed for measuring and displaying the concentrations of combustible and non-combustible gases in a sample. It is also capable of measuring Oxygen deficiency. The "XX" defines such things as the gas types, calibration range and readout units.

The unit comprises electronic components mounted on several printed circuit boards, a liquid crystal display, a backup battery for memory retention purposes, a buzzer, a gas measuring chamber containing up to 2 sensors plus a third sensor mounted externally at the end of a hand-held probe, a combustible gas measuring chamber containing 2 pellistors, a pump and a battery compartment containing three C size (LR14) cells, these are all housed in a plastic enclosure. Mounted on the front of the enclosure is a keypad to interrogate the measurements displayed on the liquid crystal display.

The hand-held probe is in the form of a short wand mechanically attached and connected both electrically and pneumatically to the GT-XX by a plug and socket arrangement.

Additional features include an LED torch light and an infra-red data (IRDA) communications port.

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

1. When the batteries are replaced, only the following non-rechargeable cells are permitted:

Energizer No. E93, Alkaline, (Zn/MnO<sub>2</sub>), LR14 Size 'C' cell.

Duracell Procell, Alkaline, (Zn/MnO<sub>2</sub>), LR14 Size 'C' cell.

Duracell Plus, Alkaline, (Zn/MnO<sub>2</sub>), LR14 Size 'C' cell.

Duracell, Alkaline (Zn/MnO<sub>2</sub>), LR14 Size 'C' cel.

2. During battery replacement, only the following rechargeable cells are permitted:

Panasonic 3000mAh Sub-C size, Nickel Metal Hydride cells type HHR300SCP.

Panasonic 3000mAh sub C size, Type HHR-2SRE Nickel Metal Hydride cell.

The re-chargeable cells are not to be changed in the hazardous area.

The battery pack must be charged in a safe area.



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## Equipment (continued):

The GT-XX is NOT designed for use in oxygen levels above 21%.

The GT-XX is available in different configurations equipped to detect the following combinations of gas

Model ID	Description	Model ID	Description
GT-40	Flammable gas/CO	GT-43	Flammable gas/CO/O2/H2S
GT-41	Flammable gas/O	GT-44	Flammable gas
GT-42	Flammable gas/CO/O2		

The permitted cells are

Energizer No. E93, Alkaline, (Zn/MnO <sub>2</sub> ) Cell	Duracell Procell, Alkaline, (Zn/MnO <sub>2</sub> ) Cell
Duracell Plus, Alkaline, (Zn/MnO <sub>2</sub> ) Cell	Duracell, Alkaline (Zn/MnO <sub>2</sub> ) Cell

As an option, the three cells may be replaced by three nickel-metal hydride re-chargeable cells, the permitted cells are

Panasonic 3000mAh Sub-C size, Nickel Metal Hydride cells type HHR300SCP  
Panasonic 3000mAh sub C size, Type HHR-2SRE Nickel Metal Hydride cell

For the charging contacts (J7, J8)

$U_i = 9\text{ V} \pm 5\%$   $I_i = 1.9\text{ A}$

The battery pack must only be charged in a non-hazardous (safe) area

For the charging connector J6

$U_i = 9\text{ V} \pm 5\%$   $I_i = 400\text{ mA}$

The battery pack must only be charged in a non-hazardous (safe) area

## Conditions of Manufacture

The Manufacturer shall comply with the following condition of manufacture:

1. Only a type No. 1016006G pump manufactured by Faulhaber and specified as having an inductance of 60µH and a resistance of  $(20.1 \pm 12\%)\Omega$  at 20°C may be used.
2. Only the following non-rechargeable cells are permitted:
  - Energizer No. E93, Alkaline, (Zn/MnO<sub>2</sub>) Cell
  - Duracell Procell, Alkaline, (Zn/MnO<sub>2</sub>) Cell
  - Duracell Plus, Alkaline, (Zn/MnO<sub>2</sub>) Cell
  - Duracell, Alkaline (Zn/MnO<sub>2</sub>) Cell
3. Only the following rechargeable cells are permitted:
  - Panasonic 3000mAh Sub-C size, Nickel Metal Hydride cells type HHR300SCP.
  - Panasonic 3000mAh Type HHR-2SRE Nickel Metal Hydride cell.
4. The buzzer shall not contain capacitance totaling more than 30 nF.



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## **DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

**Issue 1** – this Issue introduced the following changes:

1. The main PCB was re-laid to accommodate the following modifications:
  - D3 and D4 (BAT54) were replaced by 2 new diodes D3 and D4 (BAT54C).
  - The package type of U4 on the main PCB was changed from a DIP18/SOL to a TSOP-20-2.
  - The addition of a ground to pin 5 on U9.
2. More land was added to connector J6 pin 28 on the main PCB.

**Issue 2** – this Issue introduced the following changes:

1. To allow the use of an alternative Ni-MH re-chargeable cell type in the battery pack, namely Panasonic HHR-2SRE.
2. To allow the conditions of manufacture and specific conditions of use to be updated.
3. To recognise the change of company name from Gas Measurement Instruments Ltd to Teledyne Gas Measurement Instruments Ltd.