GMT Toxic Gas Detection Head

Nitrogen Dioxide (NO_2)

- **UTILISES WELL PROVEN AND RELIABLE SENSOR TECHNOLOGY**
- **SUITABLE FOR HAZARDOUS AREA USE (WITH SUITABLE ZENER BARRIER)** **II 1 G EEx ia IIC T4**
- **INDUSTRY STANDARD ANALOGUE 4 ~ 20 mA O/P**
- **SIMPLE CONSTRUCTION ALLOWS EASY SENSOR REPLACEMENT**
- **VERY ROBUST STAINLESS STEEL CONSTRUCTION**

GMT Detection Head

The GMT range of detection heads provides a comprehensive range of toxic gas detectors for connection to our gas detection control panels. They are designed to provide a rugged, reliable, easy to maintain solution to your fixed gas detection needs. They can be used in safe area locations or when used with a suitable zener barrier device in all flammable hazardous areas as they are also designed to be intrinsically safe (ia).

Gas Information Nitrogen Dioxide (NO_2)

Nitrogen dioxide is the chemical compound with the formula NO_2. One of several nitrogen oxides, NO_2 is an intermediate in the industrial synthesis of nitric acid, millions of tons of which are produced each year. This reddish-brown toxic gas has a characteristic sharp, biting odour and is a prominent air pollutant.

Nitrogen dioxide is toxic by inhalation, but this could be avoided as the material is acrid and easily detected by our sense of smell. One potential source of exposure is fuming nitric acid, which is often contaminated with NO_2. Symptoms of poisoning (lung edema) tend to appear several hours after one has inhaled a low but potentially fatal dose.

Also, low concentrations (4 ppm) will anesthetize the nose, thus creating a potential for overexposure.

Long-term exposure to NO_2 at concentrations above 40 – 100 μg/m³ causes adverse health effects.

Nitrogen dioxide is formed in most combustion processes using air as the oxidant. At elevated temperatures nitrogen combines with oxygen to form nitrogen dioxide:

The most significant sources of NO_2 are internal combustion engines , thermal power stations and, to a lesser extent, pulp mills. The excess air required for complete combustion of fuels in these processes introduces nitrogen into the combustion reactions at high temperatures and produces nitrous oxides (NOx).

NO2 Relative Density (Air =1)= 2.62

Typical NO2 Detection head location would be at lowest level available.

EH40 workplace exposure recommended exposure limits :-

Long term exposure limit (8hour TWA reference period) Not stated.

Short term exposure limit (15 min TWA reference period) Not stated.

General Details

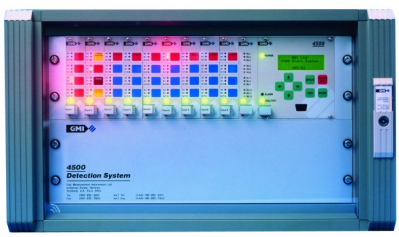
Type:	GMT—Nitrogen Dioxide
Part number	59535—0-20 parts per million（PPM）
Certification	II 1 G EEx ia IIC T4 Certificate BAS00ATEX1042X
Ingress Protection	IP 54（sensor electronics）
Sensor Type	Electrochemical
Mounting Thread	20mm. 1.5mm Pitch
Supply Voltage	24 Vdc ±10 %
Connections	Red – N.C. Yellow – Signal/supply. Blue – 0v. Green – Screen
Output	4~20 mA Linear 2/3 wire
Material	Stainless Steel 316
Weight	166gms.
Dimensions:	Body 48mm. long x 42mm. dia.
EMC Regulations	EC Directive 89/336/EEC
Low voltage	EC Directive 73/23/EEC

CE

Compatible GMI control panels

SPGA

ACTIVE-8



4500 GAS ALARM

ACTIVE-80

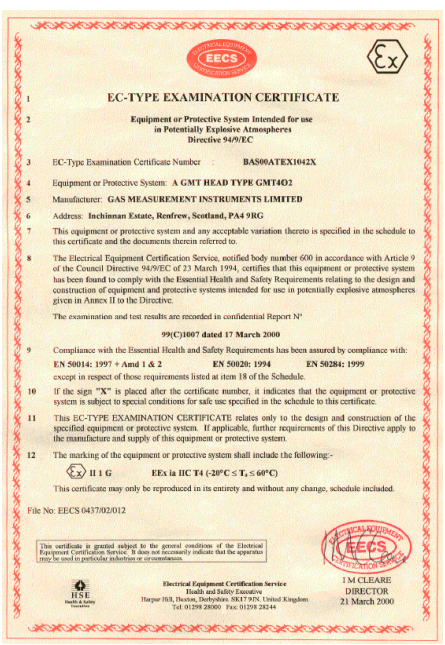
Replacement Sensor	GMI Part number 13477
Calibration Cap Assembly	GMI Part number 59614

Sensor Specification

Nominal Range	0-20 ppm
Maximum Overload	200 ppm
Expected Operating Life	24 Months in Air at STP
Temperature Range	-20ºC. to +50ºC.
Pressure Range	Atmospheric ±10 %
Response Time	Typically 35 seconds to T90 Typically 10 seconds to T50.
Relative Humidity Range	15 to 90% non-condensing
Repeatability	2% of reading
Output Linearity	Linear
Warranty Life	12 Months from date of despatch
Calibration frequency	6 months recommended

BSI UKAS QUALITY MANAGEMENT 003
Q 09760

CoGDEM
The Council of Gas Detection and Environmental Monitoring


EECS

EC-TYPE EXAMINATION CERTIFICATE

Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

EC-Type Examination Certificate Number : BAS00ATEX1042X

Equipment or Protective System: A GMT HEAD TYPE GMT4O2

Manufacturer: GAS MEASUREMENT INSTRUMENTS LIMITED

Address: Inchinnan Estate, Renfrew, Scotland, PA4 9RG

This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

The Electrical Equipment Certification Service, notified body number 600 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report N°

99(C)1007 dated 17 March 2000

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014: 1997 + Amd 1 & 2 EN 50020: 1994 EN 50284: 1999

except in respect of those requirements listed at item 18 of the Schedule.

If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment or protective system.

The marking of the equipment or protective system shall include the following:-

II 1 G EEx ia IIC T4 (-20°C ≤ T_a ≤ 60°C)

This certificate may only be reproduced in its entirety and without any change, schedule included.

File No: EECS 0437/02/012

This certificate is granted subject to the general conditions of the Electrical Equipment Certification Service. It does not necessarily indicate that the apparatus may be used in particular industries or circumstances.

HSE Health & Safety Executive

Electrical Equipment Certification Service Health and Safety Executive Harpur Hill, Buxton, Derbyshire, SK17 9JN, United Kingdom Tel: 01298 28000 Fax: 01298 28244

I M CLEARE DIRECTOR 21 March 2000

As a BS EN ISO 9001:2008 approved company, GMI Ltd's quality assurance programmes demand the continuous assessment and improvement of all GMI products. Information in this leaflet could thus change without notification and does not constitute a product specification. Please contact GMI or their representative if you require more details.

Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.

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