PRODUCT DATA SHEET

TOCSIN 102
Series Gas Detectors

4-20mA Device 2 and 3 Wire
- **Addressable Versions**
- **Compact Size**
- **EExd Certified**
- **ATEX Certified**
- **Ingress Protection IP66**

Available as:

- **2 Wire Toxic Gas Detector**
- **2 Wire Oxygen Sensor**
- **3 Wire 'Infra Red' Flammable Gas Detector**
- **3 Wire 'Infra Red' CO2 Gas Detector**

The Tocsin 102 series of gas detectors are ATEX approved sensors which incorporate micro processor technology to give a stable 4-20mA process signal output. The addressable option allows extensive reductions in cost of installation through material and labour savings. The in built processor can be used to pre-calibrate the sensor prior to installation. A range of sensing technologies can be incorporated into the housing to provide the most appropriate detection method. Available sensor types include Infra red and Electrochemical and PID devices.

General Specification

Power supply	18 to 28V DC
Electrical Outputs	2 and 3 Wire 4-20mA
Temperature	-10°C to +55°C
Humidity	15 to 90% RH non-condensing
Ingress Protection	IP66
Housing Material	Stainless Steel 316 S16
Protection Concept	Flameproof
Dimensions (mm)	50 Diameter x 80 Length
Mounting Thread	M20 x 1.75
Weight	514 grams (Toxic Gases, Oxygen, PID)
	550 grams (Infra Red)

ATEX Approved
IECEX Approved

Ex db IIC T6 Gb Ta = -20° to +40°C
Ex tb IIIC T85°C Db IP66
Ex db IIC T5 Gb Ta = -20°to +55°C
Ex tb IIIC T100°C Db IP66
IECEx EXV16.0003X   Rating 2W
ExVeritas 16ATEX 0141X

EC Declaration of Conformity

TOCSIN 102

CE

Infra Red point flammable hydrocarbon gas detector certified for use in potentially explosive atmospheres

Issuers name and address:

Oliver IGD Limited of
Triton House
Crosby St,
Stockport,
United Kingdom

Are in conformity with the provisions of the following European Directive(s) when installed, operated, serviced and maintained in accordance with the installation and operating instructions contained in the product documentation.

2004/108/EC	EMC Directive
94/9/EC	ATEX Directive

And that the standards and/or technical specifications referenced below have been applied or considered.

EN 60079-0:2018	Equipment for use in explosive atmospheres. General requirements
EN 60079-1:2014	Equipment for use in explosive atmospheres. Flameproof enclosures 'd'
EN 60079-31:2014	Equipment for use in explosive atmospheres. Housing Markings
EN 60079-29-1:2016	Explosive Atmospheres.Gas detectors. Performance Requirements Of Detectors For Flammable Gases.
EN 50271:2018	Electrical apparatus for the detection and measurement of combustible gases, toxic gases or Oxygen: requirements and tests for apparatus using software and or digital technologies. *Excluding requirements for SIL*
EN 61000-6-2: 2005	EMC Generic standards. Immunity for industrial environments
EN 61000-6-4/2007	EMC Generic standards. Emission standard for industrial environments
EN 61000-3-2/A2:2009	EMC Limits. Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
EN 61000-3-3: 2008	EMC Limits. Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase
Technical File references	T102A-TF9 Technical construction File
	AD197 ATEX Approval Document File

Product Markings	ATEX Approved	Ex db IIC T6 Gb Ta = -20° to +40°C
	IECEX Approved	Ex tb IIIC T85°C Db IP66
		Ex db IIC T5 Gb Ta = -20°to +55°C
Serial Number: xxxxxxyear		Ex tb IIIC T100°C Db IP66
	CE 2585	IECEx EXV16.0003X Rating 2W
		ExVeritas 16ATEX 0141X

Quality Assurance Certificate Number
16PQAN0014
Quality Assurance Notification Number:
2585

ExVeritas

Units 16-18 Abenbury Way,
Wrexham Industrial Estate,
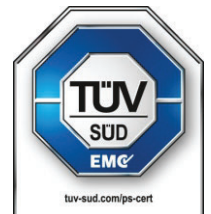Wrexham, LL13 9UZ
United Kingdom

Oliver IGD Limited operate an independently assessed ISO9001:2015 Quality Management and ISO14001:2015 Environmental Management System

Certificate Numbers
FS0646773 & EMS696504

BSI Assurance UK LTD,
London, W4 4AL

EMC Tested by:

TUV - SUD
Octagon House
Concorde Way
PO 15 5RL Fareham

Certificate Number
E8N 15 02 91327 002

TUV Certificates and reports can be checked on-line at
https://www.tuev-sued.de/industry_and_consumer_products/certificates
Select Oliver IGD when prompted on the website to view certificates

Issued by:	Oliver IGD Limited, Stockport, SK2 6SH , United Kingdom

Signature:	Declaration of Conformity in accordance with EN ISO/IEC 17050-1:2010
Name	Andrew J Collier M.I.O.D
Position: Managing Director	Date: 10 February 2020 Declaration Ref: 102CE-4

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ISO 9001 Quality Management
ISO 14001 Environmental Management

FS646773   EMS696504

TOCSIN 102
Toxic, Flammable & Oxygen Gas Detectors

Sensor type	Basic Part Number	Suffix 'A' For Addressable Sensor	Min Range	Max Range
Flammable Gases Infra-Red Point Methane Propane n-Butane n-Pentane n-Hexane	5107901	A		0-100%LEL 0-100%Vol 0-3000ppm 0-5000ppm
Carbon Dioxide Infra-Red Point	5112701	A		0-2% 0-5% 0-100%
Carbon Monoxide	5107101	A	0-100ppm	0-4000ppm
Nitric Oxide	5106801	A	0-50ppm	0-250ppm
Nitrogen Dioxide	5106301	A	0-20ppm	0-50ppm
Hydrogen Cyanide	5107201	A	0-10ppm	0-200ppm
Chlorine (safe area only non ATEX)	5106601	A	0-5ppm	0-50ppm
Hydrogen Sulphide	5105501	A	0-10ppm	0-5000ppm
Ammonia	5107001	A	0-100ppm	0-500ppm
Oxygen	5106702	A	0-5%	0-25%
Sulphur Dioxide	5106401	A	0-5ppm	0-50ppm
Hydrogen Chloride	5106101	A	0-5ppm	0-50ppm
Hydrogen	5106901	A	0-200ppm	0-2000ppm
Methanol	5112801	A	0-200ppm	0-200ppm

IGD Manufactured Pellistors

MKIII MKIV & Type B

Poison Resistant

High Reliability

Field Proven

Infra Red Gas Detectors

Electrochemical Gas Detectors

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Fax: +44 (0) 161 484 2345
Email: sales@internationalgasdetectors.co.uk
Website: www.internationalgasdetectors.co.uk

bsi.

ISO 9001 Quality Management

ISO 14001 Environmental Management

FS646773   EMS696504

TOCSIN 102
Infra Red Point Gas Detectors

The Tocsin 102IR series of gas detectors uses the proven Non-Dispersive (NDIR) principle to detect and monitor the presence of gases.

The detectors are supplied as pre-calibrated units with linear 4-20mA outputs. If necessary the detector head can be field calibrated or re-configured for different gases or ranges using its inbuilt serial port and separate data terminal. The infra red detectors employed have been field proven over many years use resulting in a series of detector heads with excellent stability and reliability in the most arduous conditions. The detector heads have their own control software which continually monitors the head performance. This ensures that in the unlikely event that a fault occurs it is detected and reported immediately. Using the inbuilt serial port this series of detector heads can be integrated onto addressable systems such as the Tocsin 700 or 900 control panels allowing sensors to be 'daisy' chained for ease of installation and operation.

- **LONG MTBF**

   EXTENDED CALIBRATION PERIODS

   ALL STAINLESS STEEL CONSTRUCTION

   ADDRESSABLE SERIAL PORT

- **CAN BE FIELD CALIBRATED**

- **LINEAR 4-20mA OUTPUT**

- **AVAILABLE FOR A WIDE RANGE OF FLAMMABLE GASES AND CO2**

Performance	
Operation	Continuous
Resolution	2%FSD
Warm up time to final zero	< 20 s
Warm up time to specification	< 30 minutes
Response time to target gas T90	< 20 s
MTBF	> 5 years
Long Term Zero Drift Per Month	+/-0.05%
Zero Repeatability During Operation	+/-0.1%
Span (5%) Repeatability During Operation	+/-0.1%
Environmental:	
Operating Temperature	-10 to +55 Deg C
Storage Temperature	-20 to +60 Deg C
Relative humidity (non-condensing)	0 to100%
Connections	
Outputs	3 Wire 4-20mA
Power Input	18 to 32V DC
Power Consumption	90mW
Physical	
Ingress Protection	IP66
Housing Material	Stainless Steel 316 S16
Protection Concept	Flameproof
Dimensions (mm)	50 Diameter x 80 Length
Mounting Thread	M20 x 1.75
Weight	550 grams

ATEX Approved
IECEX Approved

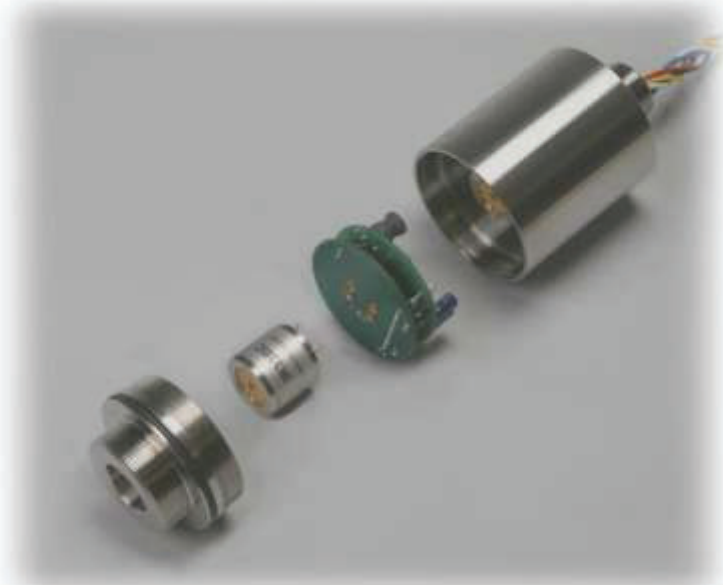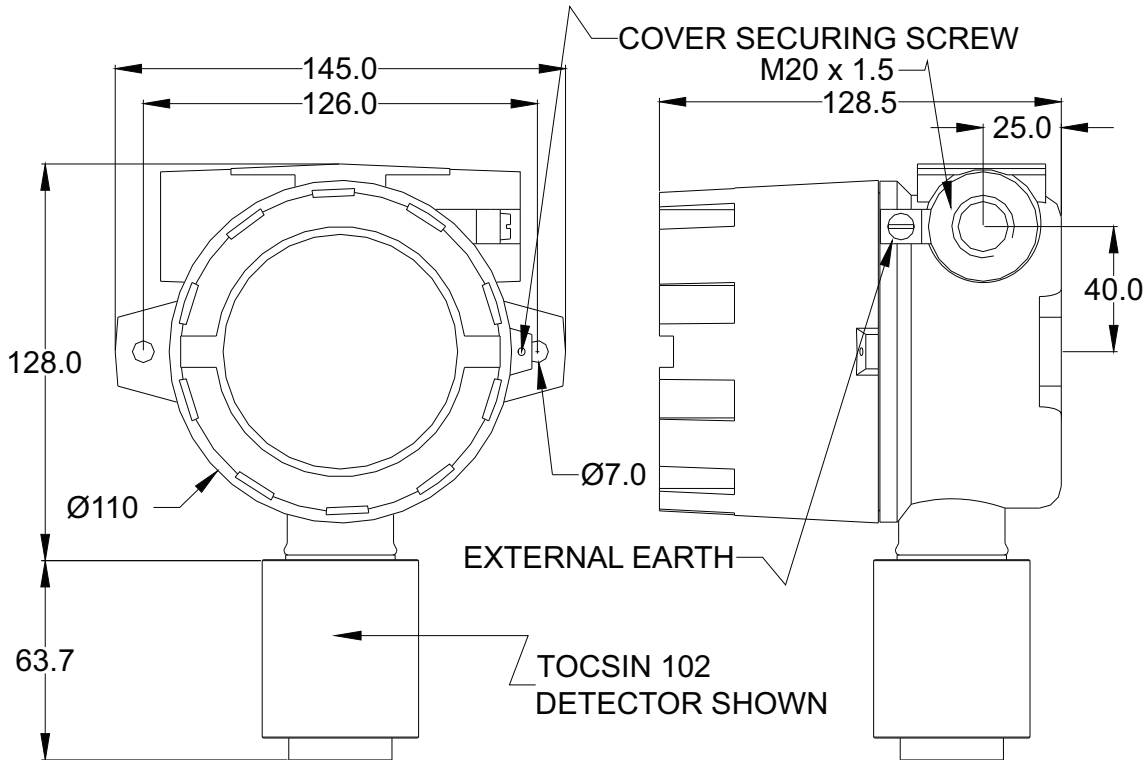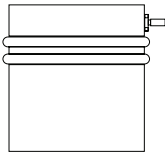Ex db IIC T6 Gb Ta = -20° to +40°C
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IECEx EXV16.0003X   Rating 2W
ExVeritas 16ATEX 0141X

CE 2585

Ex II 2 G D

ExVeritas 16 ATEX 0141X

METHANE
PROPANE
BUTANE
ACETYLENE
HEXANE
ETHYLENE
BENZENE
AIRCRAFT FUEL JP-4
PETROL VAPOURS

TOCSIN 102
SENSOR OPTIONS & ACCESSORIES

TOCSIN 102 SHOWN WITH EEXd JUNCTION BOX

COVER SECURING SCREW

145.0
126.0
128.0
Ø110
63.7

M20 x 1.5
128.5
25.0
40.0

Ø7.0

EXTERNAL EARTH
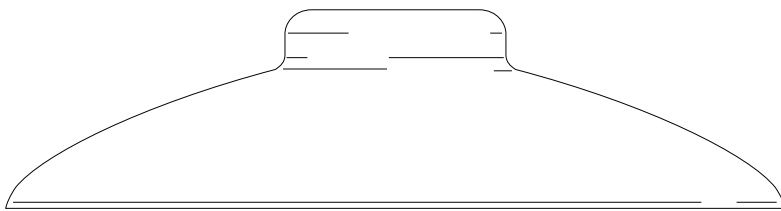
TOCSIN 102
DETECTOR SHOWN

Standard Junction Box P/N 5045802
As Above Diagram

Weather Protection Assembly
Incorporating Test Gas Applicator   P/N 401451

Collector Cone P/N 401061

Engineers Test Gas
Applicator For Tocsin 102   P/N 401101A

For Compatible Oliver IGD Control Panels See:

The Tocsin 601 Single Channel controller
The Tocsin 700 One to 64 Channel Controller
The Tocsin 920 Addressable System Controller
The Tocsin 903 EEx Single Channel Controller
The Tocsin 816 19" Rack System

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