

PRODUCT DATA SHEET

Control Systems

Transmitters

Sensors

Accessories

TOCSIN 102 Series Infra Red Gas Detectors

4-20mA Device 3 Wire

- Addressable Versions
- Compact Size
- EExd Certified
- ATEX Certified
- Ingress Protection IP66

Available as:

- 0- 100% LEL (State Flammable Gas)
- 0- 100% Volume (as Methane)
- 0- 5000ppm CO2
- 0- 5% Volume CO2
- 0- 100% Volume CO2



Tocsin 102 Series Infra Red gas detectors utilise the latest technology to provide small format high reliability gas detection in an ATEX package. High stability is ensured by using dual beam technology with dual detectors for sample and reference channels. Temperature compensation and linearity correction are built in giving a fully linearised output. The basic detector is available as a three wire 4-20mA transmitter with the option for a fully digitally addressable version for use with the latest IGD systems. Detectors are supplied pre-calibrated for the chosen range and target gas.

General Specification

Power supply	18 to 28V DC
Electrical Outputs	3 Wire 4-20mA (4 Wire Addressable Option)
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	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



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Document Ref: ROS165 V6 Page 1



FS646773

EMS696504

EC Declaration of Conformity

Issuers name and address:

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



TOCSIN 102IR

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

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**
2014/34/EU **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. <i>Excluding requirements for SIL</i>
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

Serial Number- XXXXXXXX

ATEX Approved
IECEX Approved



Ex db IIC T6 Gb Ta = -20° to +40°C
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Quality Assurance Certificate Number
16PQAN0014
Quality Assurance Notification Number:
2585

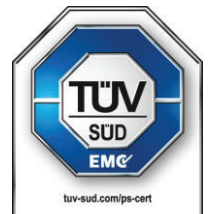


Oliver IGD Limited operate an independently assessed ISO9001:2015 Quality Management and ISO14001:2015 Environmental Management System

Certificate Numbers
FS0646773 & EMS696504

EMC Tested by:

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



Certificate Number
E8N 15 02 91327 002



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

BSI Assurance UK LTD,
London, W4 4AL

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: 102IRCE-4



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Document Ref: ROS165 V5 Page 2

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 625,700 or 920 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 to 100%
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

Gases, Ranges and Order Codes

Sensor type	Basic Part Number	Suffix 'A' For Addressable Sensor	Min Range	Max Range
Flammable Gases Infra-Red Point Methane Petrol Vapour Propane Common Solvents n-Butane Kerosene n-Pentane Ethylene n-Hexane Benzene	5107901	A		0-100%LEL 0-100%Vol
Carbon Dioxide Infra-Red Point	5112701 5112702	A A		0-5000ppm 0-5% 0-100%

4-20mA Output Range	
2.0mA	Fault
3.2mA	-10% Full Scale
4.0mA	0 (Zero)
20.0mA	Full Scale
21.6mA	110% Scale

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



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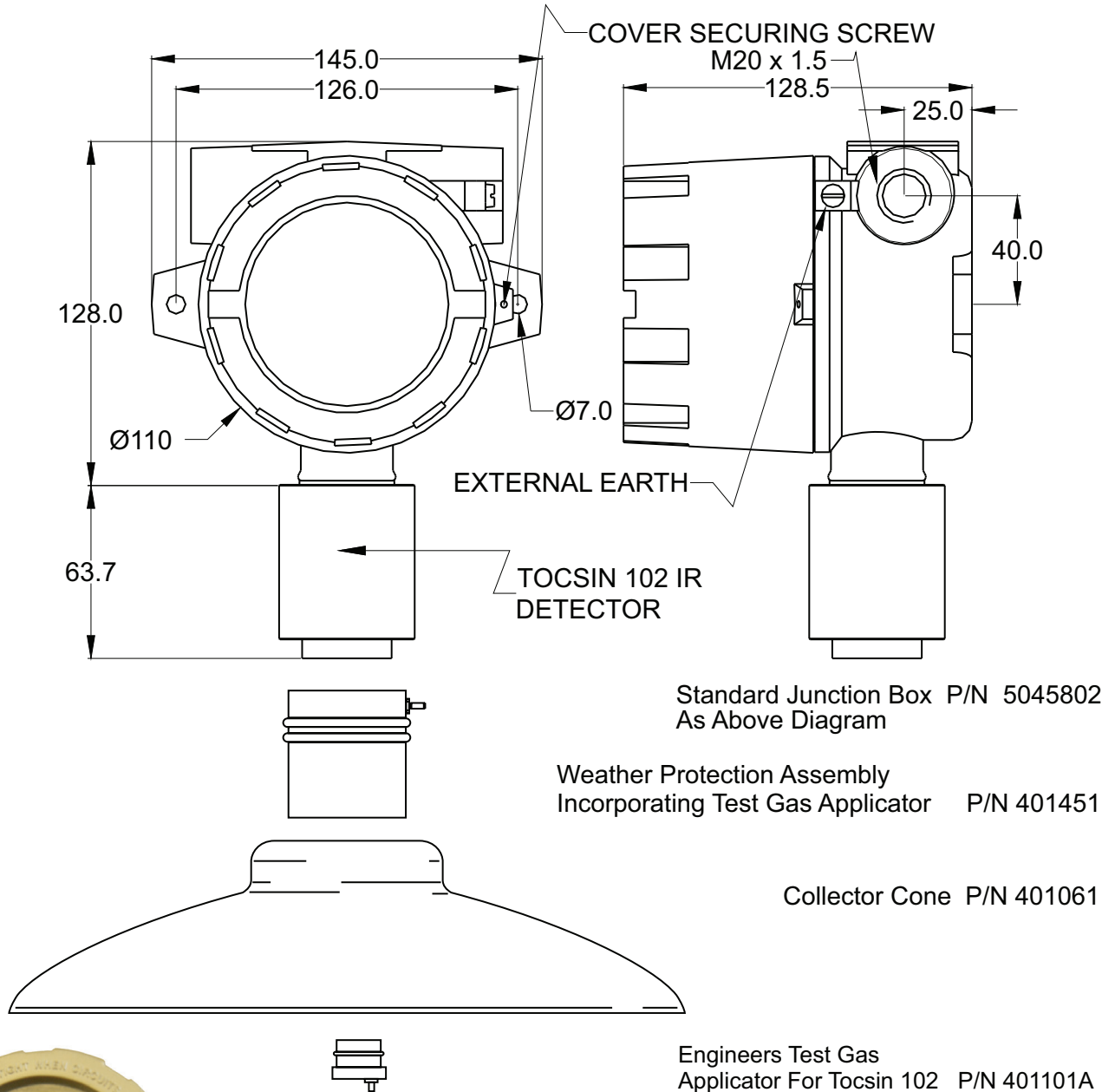
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TOCSIN 102

SENSOR OPTIONS & ACCESSORIES

TOCSIN 102 SHOWN WITH EExd JUNCTION BOX



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



Tocsin 102 Series H2S Detector
Fitted With 903 Series EXd
Single Channel Controller

For Compatible Oliver IGD Control Panels See:

- The Tocsin 625 Small System controller
- The Tocsin 700 One to 64 Channel Controller
- The Tocsin 920 Addressable System Controller
- The Tocsin 903 EEx Single Channel Controller



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