

ExDetector X5

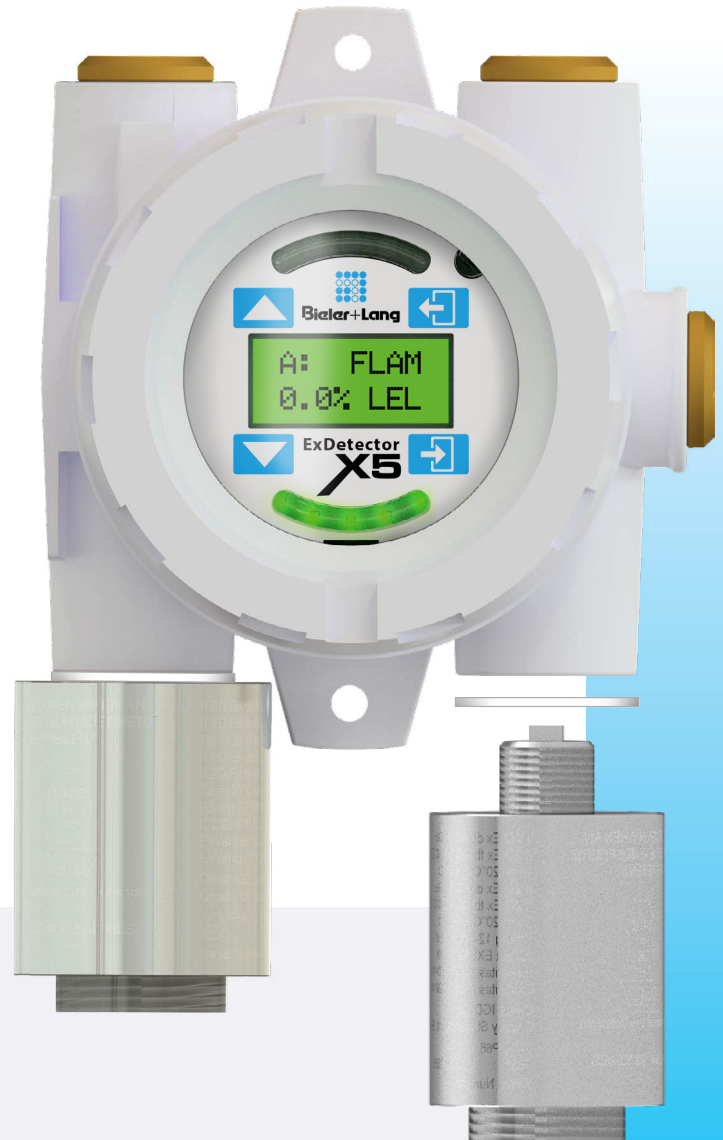
Data sheet

ExDetector X5
Data sheet V1.0
Based on
IGD SL-008 V22.2
Firmware V1.029



Advanced Gas Detector Transmitter

- ▶ **Unparalleled Versatility**
2 Independent 4-20mA outputs.
2-Wire Sentinel+™ digital communication.
1 Fault and 2 alarm relays.
- ▶ **Fully Certified**
ATEX, IECEX and UKCA certified.
Built to withstand Zone 1 and 2 hazardous areas.
- ▶ **Easy to Use**
Intuitive digital display, concentration, alarms and fault status.
Plug-and-Play sensors.
- ▶ **Peace of Mind**
Durable and robust with low maintenance costs.
All compliance is supported by 3rd party certification.



Introducing the Bieler+Lang

ExDetector X5

The X5 is a gas detector approved for explosive environments in ATEX zones 1 and 2, as well as for dust-laden environments in zones 21 and 22. It can be easily integrated into our addressable 2-wire BUS system. Alternatively, the X5 can be used as a 4–20 mA gas detector. Stand-alone operation is also possible.

The ExDetector X5 offers a wide range of new possibilities, including non-intrusive one-person calibration, and accommodating up to 2 independent sensors, 2 analogue outputs, three relays and our 2-Wire digital communication.

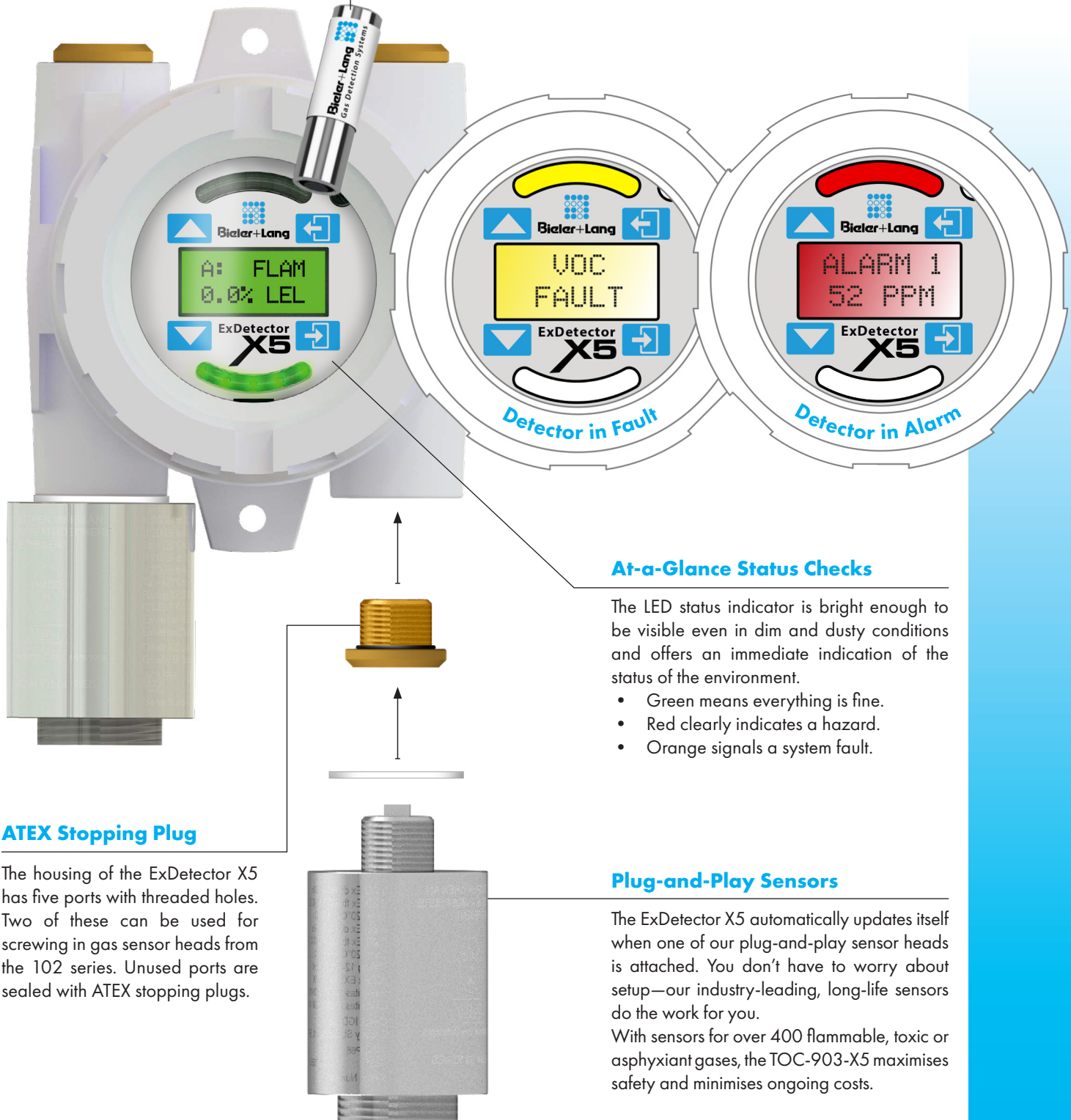
The X5 can monitor over 400 flammable, toxic or asphyxiant gases, as well as oxygen. This ensures suitability for a variety of applications, making the ExDetector X5 one of the most versatile detectors on the market.

The X5 is easy to install, user-friendly, and durable. Its development is based on more than a century of experience and innovation from IGD's engineers. IGD is the UK partner of Bieler+Lang.

Features

Magnetic Wand

The Magnetic Wand operates as a stylus allowing you to access the controls without removing the ATEX housing. With the Magnetic Wand, personnel can perform a one-person calibration in ATEX-zoned areas without a hot works permits.



ATEX Stopping Plug

The housing of the ExDetector X5 has five ports with threaded holes. Two of these can be used for screwing in gas sensor heads from the 102 series. Unused ports are sealed with ATEX stopping plugs.

At-a-Glance Status Checks

The LED status indicator is bright enough to be visible even in dim and dusty conditions and offers an immediate indication of the status of the environment.

- Green means everything is fine.
- Red clearly indicates a hazard.
- Orange signals a system fault.

Plug-and-Play Sensors

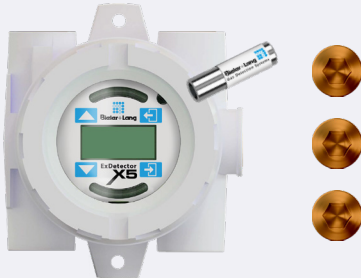
The ExDetector X5 automatically updates itself when one of our plug-and-play sensor heads is attached. You don't have to worry about setup—our industry-leading, long-life sensors do the work for you.

With sensors for over 400 flammable, toxic or asphyxiant gases, the TOC-903-X5 maximises safety and minimises ongoing costs.

Note: All illustrations are simplified schematics. Cables on the sensor head are not shown.

Configurations

ExDetector X5 is provided with:



- 1 ExDetector X5 Transmitter
- 1 Magnetic Wand
- 3 ATEX Stopping Plugs

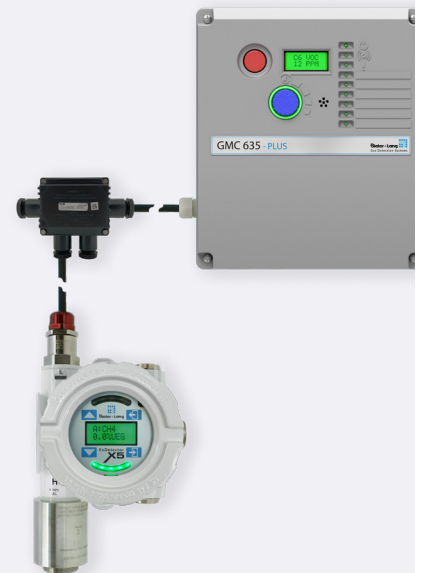
A) 4–20 mA version with one or two sensor heads attached to the X5

You will need:

- 1 ExDetector X5
- 1 ATEX-sealed cable 4-20 mA
- 1 Ex junction box
- 1–2 sensor heads from the 102 series (see pp. 6 + 7)



B) The X5 on an Addressable System



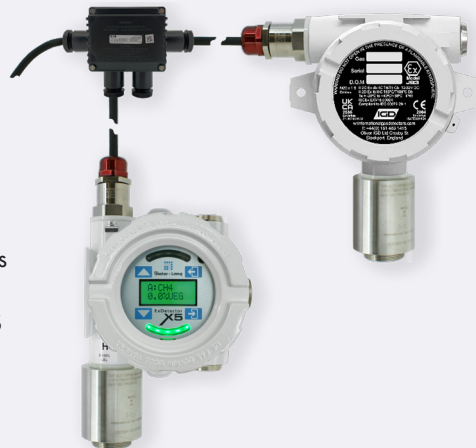
You will need at least:

- 1 ExDetector X5
- 1–2 sensor heads from the 102 series
- 1 termination resistor**
- 1 ATEX-sealed cable for 2-wire BUS applications
- 1 Ex junction box
- 1 controller, either GMC 750/650 or GMC 635 Micro/Plus

C) Stand-Alone-Option with one remote detector: ExDetector X5 + ExDetector 750X

For example, you will need:

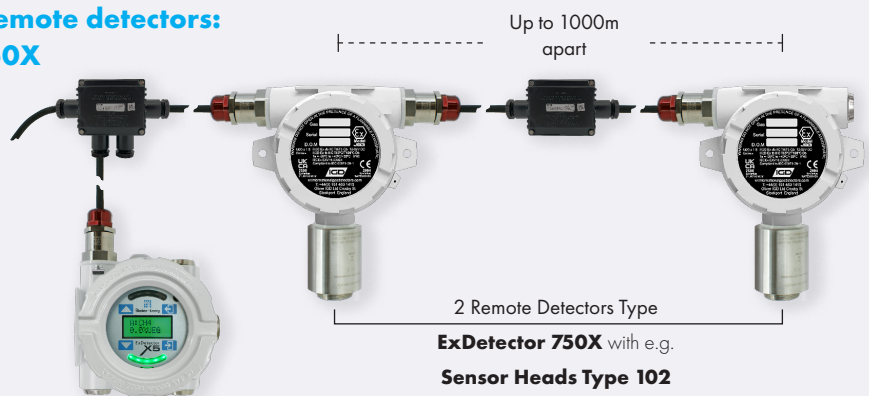
- 1 ExDetector X5
- 1–2 sensor heads from the 102 series
- 1 filter module*
- 2 ATEX-sealed cables for 2-wire BUS applications
- 1 Ex junction box
- 1 ExDetector 750X



D) Stand-Alone-Option with two remote detectors: ExDetector X5 + two ExDetector 750X

You will need:

- 1 ExDetector X5 as an evaluation unit
- 2 ExDetector 750X
- 2 sensor heads from the 102 series
- 1 filter module*
- 3–4 ATEX-sealed cables for 2-wire BUS applications
- 2–3 Ex junction boxes
- 1–2 additional ATEX stopping plugs



* In stand-alone mode, a filter module (Order No.: 15.TOC-X5-PWR) must be connected upstream of the ExDetector X5.

** Each end device must be equipped with a termination resistor (X5 Bus Termination - Order No.: 15.TOC-X5-TERM).

All illustrations are simplified schematics. They are intended solely to illustrate possible device configurations.

Specifications

Power

18 to 30V DC

Weight

1.1 kg
(Plus sensor heads)

Dimensions

See drawing

Temperature Range

-20°C to +40°C/+55°C
(-4° - 131 °F)

Material of the X5 Transmitter Housing

Copper-free aluminum alloy, epoxy-coated.

(Optional available in 316 stainless steel and with marine coating.)

Ingress Protection

IP66

Humidity

20% to 90%
RH non-condensing

Mounting

Wall mount.
Optional ceiling mounting brackets are available.

ATEX Explosion Protection

(for X5 Transmitter)
II 2G Ex db IIC T6/T5 Gb
II 2D Ex tb IIIC T85°C/ T100°C Db

Electrical Outputs

- 2 independent 4–20 mA outputs, auto ranged to suit fitted sensor heads
- 1 single-pole fault relay
- 2 SPCO alarm relays
- Relays: 4A at 24V DC, non-inductive
- Auxiliary power connection: max. 0.5A

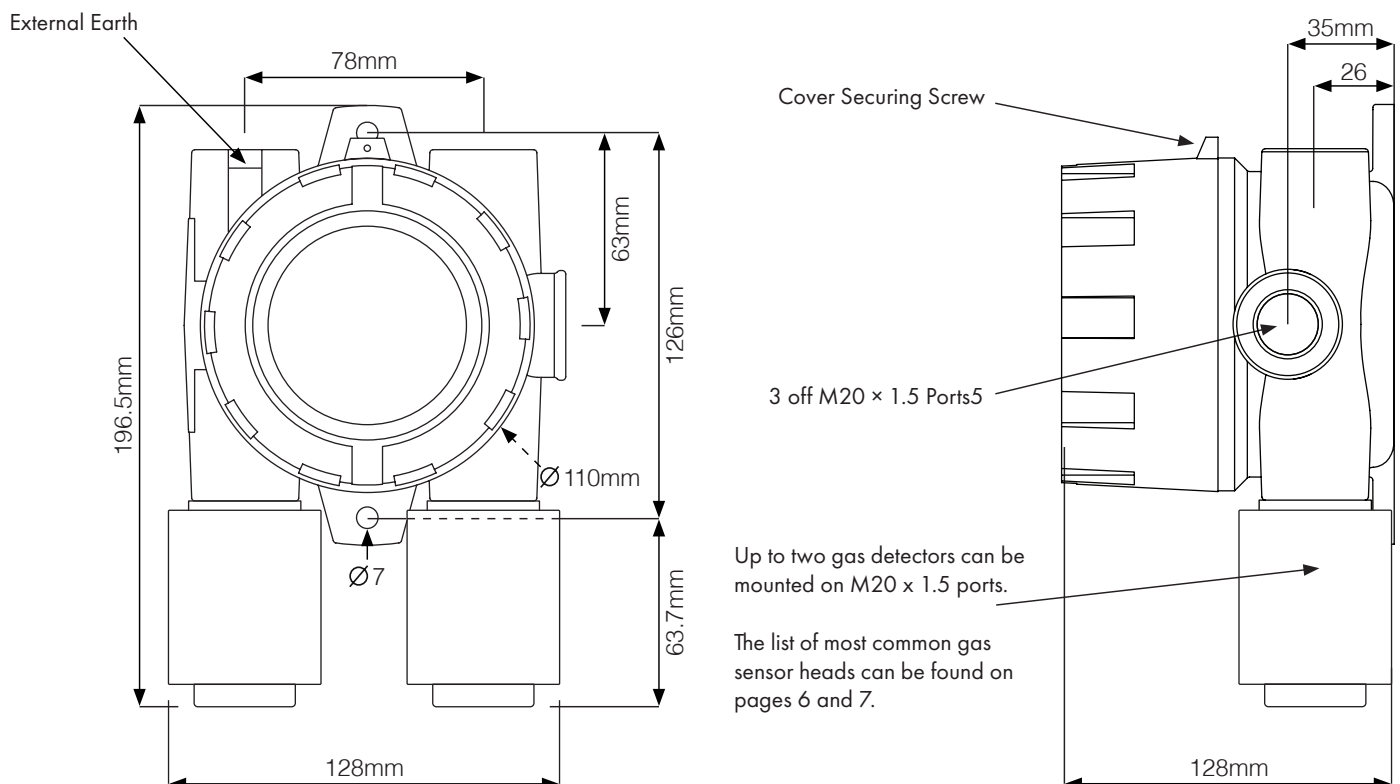
Material of Sensor Heads (Type 102)

Stainless Steel 316 S16

Cable Entry

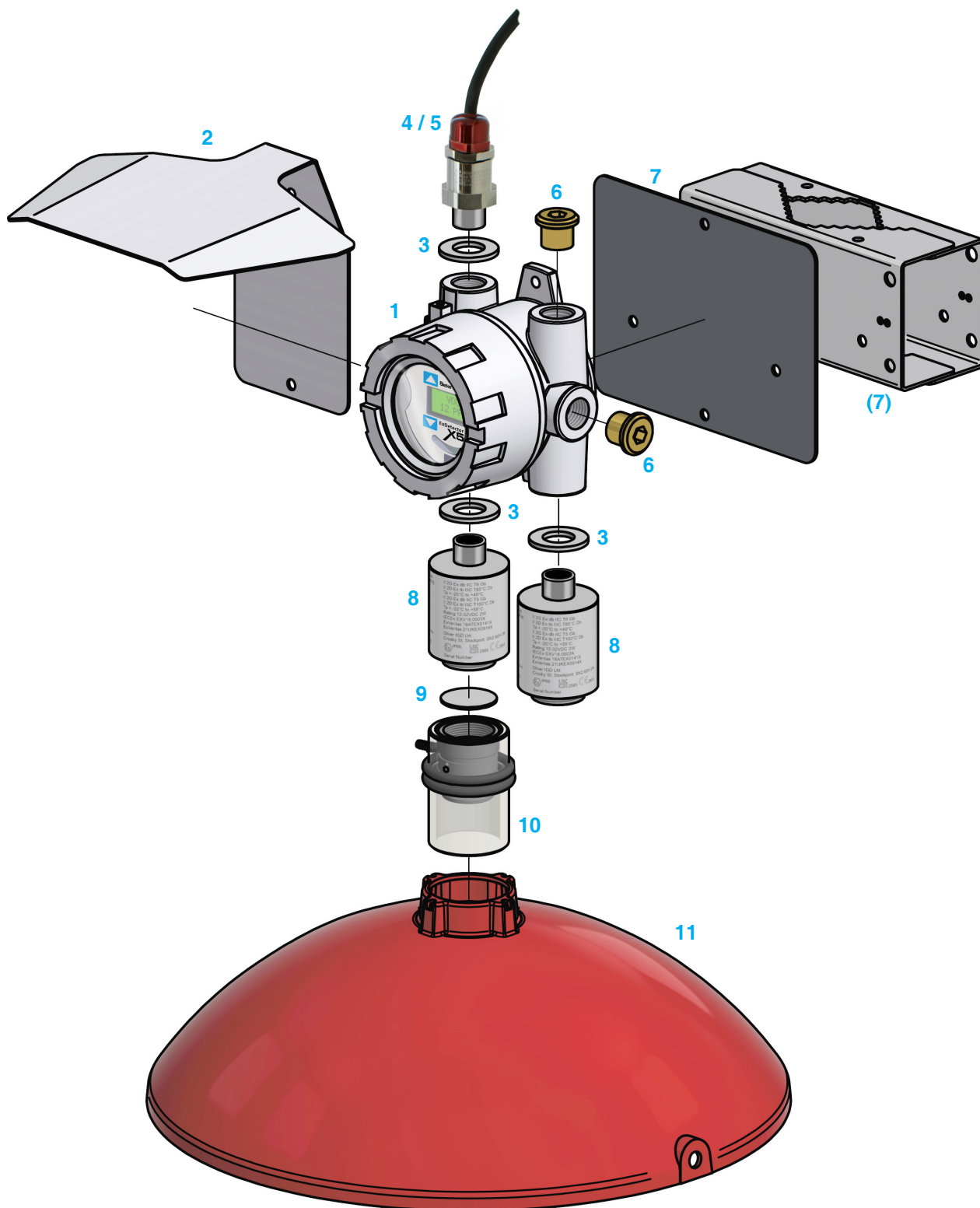
5 × M20 × 1.5 (see drawing)

Dimensions



Accessories & Components

This overview shows a selection from our range. Additional products can be found in our price list.



Order Codes

#	Quantity	Description	Part Number
1	1	ExDetector X5 Transmitter (Copper-free aluminium housing with display, incl. magnetic wand and 3 stopping plugs (6). No additional attachments.)	15.T903-X5
2	1	X5 Sun Screen/ Rain Guard	15.590385
3	1	ATEX Sealing Washer (O-washer is also supplied with sensor heads (8))	15.034001-0
4	1	ATEX-sealed Cable for 2-Wire BUS Application	12.101289.0
5	1	ATEX-sealed Cable for 4-20 mA Application	12.101292.0
6	1	ATEX M20 Stopping Plug (3 plugs are already included with the X5 (1))	15.5880501
7	1	X5 Pole Clamp	15.5925801
8	1	Sensor Head Type 102 (Order No. see below)	n/a
9	1	X5 Disk Filter	15.401465
10	1	X5 ATEX Splash Guard	15.401451
11	1	Gas Collector Cone (Only feasible for X5 with one attached sensor head.)	15.401061

Sensor Heads

The following table shows the most common sensor heads of the 102 series. For requirements not listed here and for the configuration of remote detectors (ExDetector 750X), please contact the Bieler+Lang team.

Sensor Head Type 102	Gas	Range	Part Number
Long-Life Pellistor Sensor			
MK8	General Flammables	0 - 100 %LEL	15.T102-MK8
Infrared Sensors			
CO2	Carbon Dioxide (CO ₂)	0 - 5.000 ppm	15.T102-CO2-05
CO2	Carbon Dioxide (CO ₂)	0 - 5% VOL	15.T102-CO2-5
IRF	Flammables	0 - 100 %LEL	15.T102-IRF
HIRF	Methane (CH ₄)	0 - 100 %LEL	15.T102-HIRF
SLV	Solvents	0 - 100 %LEL	15.T102-SLV
SF6	Sulphur Hexafluoride (SF ₆)	0 - 1.000 ppm	15.T102-SF6
Long-Life Oxygen Sensor			
O2	Oxygen (O ₂) (Lead-Free)	0-25% VOL	15.T102-O2
Electrochemical Sensors			
C2H2	Acetylene (C ₂ H ₂)	0 - 200 ppm	15.T102-C2H2
CS2	Carbon Disulphide (CS ₂)	0 - 100 ppm	15.T102-CS2
CO	Carbon Monoxide (CO)	0 - 100 ppm	15.T102-CO
C2H4	Ethylene (C ₂ H ₄)	0 - 200 ppm	15.T102-C2H4
ETO	Ethylene Oxide (C ₂ H ₄ O)	0 - 10 ppm	15.T102-ETO
ETO-10	Ethylene Oxide (C ₂ H ₄ O)	0 - 100 ppm	15.T102-ETO-10

Sensor Head Type 102	Gas	Range	Part Number
Electrochemical Sensors			
CH2O	Formaldehyde (CH ₂ O)	0 - 5 ppm	15.T102-CH2O
H2	Hydrogen (H ₂)	0 - 1.000 ppm	15.T102-H2
HH2	Hydrogen (H ₂)	0 - 2.000 ppm	15.T102-HH2
VHH2	Hydrogen (H ₂)	0 - 40.000 ppm 0 - 100 %LEL	15.T102-VHH2
HCN	Hydrogen Cyanide (HCN)	0 - 10 ppm	15.T102-HCN
H2S-5	Hydrogen Sulphide (H ₂ S)	0 - 50 ppm	15.T102-H2S-5
H2S-10	Hydrogen Sulphide (H ₂ S)	0 - 100 ppm	15.T102-H2S-10
H2S-50	Hydrogen Sulphide (H ₂ S)	0 - 5.000 ppm	15.T102-H2S-50
NO2	Nitrogen Dioxide (NO ₂)	0 - 5 ppm	15.T102-NO2
NO	Nitrogen Monoxide (NO)	0 - 5 ppm	15.T102-NO
SiH4	Silane (SiH ₄)	0 - 20 ppm	15.T102-SiH4
SO2	Sulphur Dioxide (SO ₂)	0 - 5 ppm	15.T102-SO2
Photolionisation Sensors (PIS)			
PID-01	VOCs	0 - 10 ppm	15.T102-PID01
PID-1	VOCs	0 - 100 ppm	15.T102-PID1
PID-2	VOCs	0 - 200 ppm	15.T102-PID2
PID-10	VOCs	0 - 1.000 ppm	15.T102-PID10
PID-20	VOCs	0 - 2.000 ppm	15.T102-PID20
PID-50	VOCs	0 - 5.000 ppm	15.T102-PID50
Ionic Ammonia Sensors			
NH3-1	Ammonia (NH ₃)	0 - 100 ppm	15.T102-NH3-1
NH3-5	Ammonia (NH ₃)	0 - 500 ppm	15.T102-NH3-5
NH3-50	Ammonia (NH ₃)	0 - 5.000ppm	15.T102-NH3-50
Refrigerant Gas Sensors			
IRR	IR Based Refrigerants	0 - 2.000 ppm	15.T102-IRR
R1	R1 Group Refrigerants: R-407C, R-22, R-134A, R-404A, R-410A	0 - 1.000 ppm	15.T102-R1
R2	R2 Group Refrigerants: R-32, R-22, R-410A, R-404A, R-454B, R-1234yf, R-1234ze, R-290	1.000 - 10.000 ppm	15.T102-R2

Response Times

Sensor response times and accuracies are determined by the type of sensor used. The following table provides general guidance for tests carried out by manufacturer IGD at standard conditions.

Type	T90 Response	Accuracy
Pellistors	<10s	+/-2% LEL
Semiconductor	<15s	+/-5% of Range
Infrared	<15s	+/-2% of Range
Electrochemical as O2	<15s	+/-2% of Range
as CO, H2S, SO2	<30s	
as NO2, CL2, NH3	<50s	

EC Declaration of Conformity

Declares the product listed as:
TOCSIN 903-X5

Single/dual channel gas detector controller with display certified for use in potentially explosive atmospheres Can be combined with 102 series detectors. Interfaces for alarm relay outputs, 4-20mA signal, Sentinel+ Addressable.

Issuers name and address:

Oliver IGD Limited of
Triton House
Crosby St
Stockport, SK2 6SH
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.

2004/30/EC
2014/34/EU
2011/65/EU

EMC Directive
ATEX Directive
RoHS Directive

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

IEC/EN 60079-0:2017

Explosive Atmospheres Equipment General Requirements

IEC/EN 60079-29-1:2016 2nd Ed

Explosive Atmospheres. Gas Detectors. Performance Requirements of Defectors for Flammable Gases.

IEC/EN 60079-1:2014

Equipment protection by flameproof enclosures 'd'

IEC/EN 60079-31:20

Equipment dust ignition protection

EN 50270

Electromagnetic compatibility - Electrical Equipment for the Detection and Measurement of Combustible Gases, toxic Gases or Oxygen
Degree of Protection to IP66

IEC 60529

EN 60068-2-6

EN 50271

Vibration

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
Electrical Safety

Technical File Reference

T903-X5-TF9

Oliver IGD Limited Operate an
Independently assessed ATEX/IECEX
QAN.

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

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

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
United Kingdom



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: 24 April 2024
Declaration Ref: DEC-14