Gas Measuring & Alarm Systems
Solutions from Safe Monitoring Group

International Gas Detectors

Gas Measuring & Alarm Systems

Exmonitor

- **One-Person Calibration**
- **Electro-Chemical Measuring Cell**
  Easy to change sensors
  Detection of toxic gases and oxygen
  4-20 mA Signal
  Dual conductor design
- **ATEX Area Detector**
  For potentially explosive atmospheres with continuous display of gas concentrations
  ATEX-conformity for applications in hazardous areas zone 1 and 2

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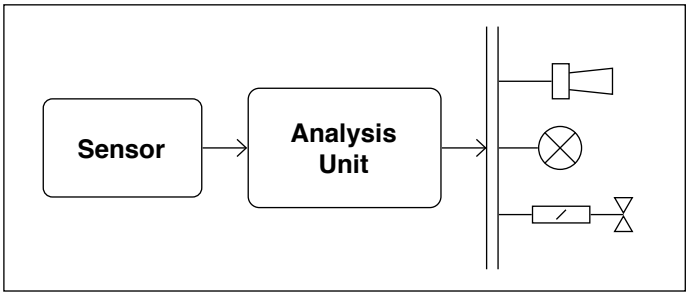
bsi. ISO 9001:2015 Quality Management

Exmonitor

Application/Structure

The Exmonitor sensors used have the following functions:
- Measuring and displaying the current concentration of toxic gases or oxygen.
- Monitoring and warning for:
  - Excessive concentrations of toxic gases
  - Lack of oxygen
- Initiating protection measures:
  - Technical: the increase in concentration is counteracted or adequate oxygen content/ supply is ensured (ventilator, cut-out functions)
  - Organisation: optical and acoustic alarms

A gas alarm unit comprises the following components:
- Sensor
- Analysis system
- Controllable units such as ventilators, warning lights and solenoids.



Mode of Function

3-Electrode Sensor for Toxic Gases
The eletrodes are surrounded by an electrolyte. The upstream Teflon membrane protects the cell from exposure to dust and moisture.

A capillary diffusion barrier ensures that only allows a limited quantity of test gas reaches the inside of the cell, which helps to minimize the pressure inflow.

The electro-chemical reaction takes place at the measuring electrode, as a result the potential conditions of the sensor change.

The potential changes are measured above the reference electrode.

The counter electrode is addressed by a potentiostat (controlled diffusion) such that the potential changes of the cell are compensated.

The oxygen required for this process is drawn from the ambient air to the inside of the cell.

Dual electrode sensor for oxygen measurements
The electrodes are surrounded by an electrolyte. The upstream Teflon membrane protects the cell from exposure to dust and moisture. The diffusing oxygen causes a reaction at the measuring electrode, this changes the potential conditions of the sensor and the cell supplies a measuring current.

Electronics
The system includes an amplifier, a 4-20 mA transmitter and operating elements. The sensor signal is converted into a 4-20 mA signal. The latter is transmitted to the analysis unit, shown as current value in the display, and finally analyzed.

Calibrating the Measuring Sensor
During calibration the sensor delivers a pulsating output signal. The connected analysis unit thus suppresses an alarm output. A malfunction signal is transmitted at the same time.

There are two options for calibrating:

- Direct sensor calibration using test gas:
  1. Select operating mode “cal gas”.
  2. Test gas is applied to the sensor and the unit is calibrated with the help of the display and the potentiometers for zero and amplification.
  3. The sensitivity (calibration number) of the sensor can be read.
- Without test gas using a calibrated sensor:
  1. Plug in a sensor filled with test gas. Zero is set in air free of test gas. This sensor carries a calibration number.
  2. Using the potentiometer for sensitivity, set the display to the calibration number of the sensor.

Sensor Technical Specifications

M. Gas	Standard M. Range	Special M. Range	Resolution (Standard Range)	Response Time T_{90}	Repeatability of Signal	Type: Exmonitor
CO	0-300 ppm	0-1000ppm	1 ppm	<30sec.	1%	CO 1000
H_2S	0-100ppm	0-1000ppm	1 ppm	<35sec.	1%	H2S 200
H_2S	0-50ppm	0-500ppm	1 ppm	<30sec.	1%	HS2 50
SO_2	0-100ppm	0-500ppm	1 ppm	<20sec.	1%	SO2 100
SO_2	0-20ppm	0-100ppm	0.1 ppm	<15sec.	2%	SO2 20
NO	0-100ppm	0-1000ppm	1 ppm	<10sec.	2%	NO 100
NO_2	0-20ppm	0-200ppm	0.1 ppm	<35sec.	2%	NO2 20
Cl_2	0-10ppm	0-200ppm	0.1 ppm	<60sec.	2%	CL2 20
HCN	0-100ppm	0-200ppm	1 ppm	<100sec.	2%	HCN 100
HCl	0-100ppm	0-200ppm	1 ppm	<120sec.	2%	HCl 100
H_2	0-1000ppm	0-2000ppm	2 ppm	<30sec.	2%	H2 1000
O_2	0-25ppm	--	0.1 vol%	<15sec.	n.a.	O2 25
NH_3	0-50ppm	0-200ppm	1 ppm	<150sec.	<10%	NH3 50
NH_3	0-1000ppm	--	10 ppm	<60sec.	<10%	NH3 1000

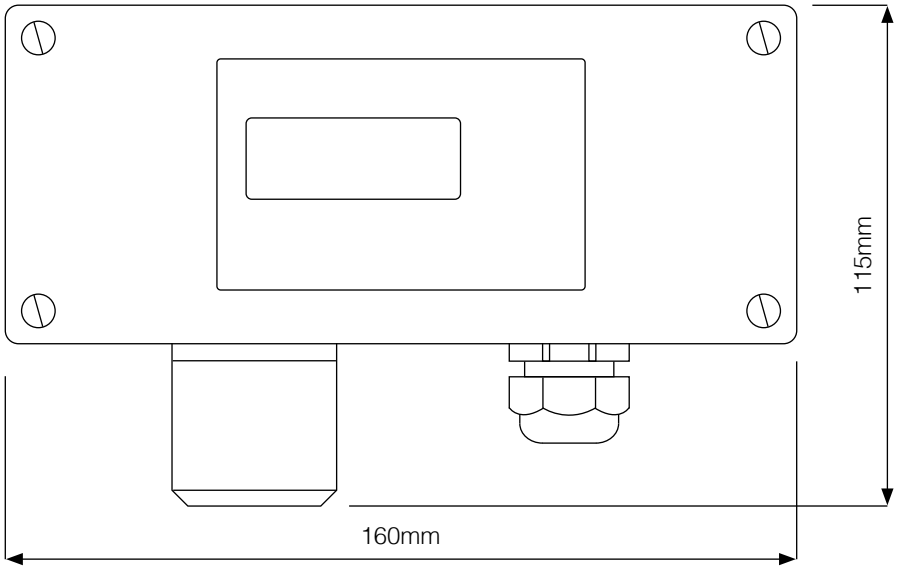
Technical Specifications

Type	Exmonitor
Measuring Principle	Electro-chemical measuring cell
Measuring Signal	4 to 20 mA
Supply Voltage on Heat Terminals	10-28 VDC Note to the lost of voltage on the cable, barrier and on the measurinng-shunt in the controller.
Temperature Range	-10°C to +50°C
Perm. Humidity	15% to 90% rel.F.
Pressure Range	900 to 1100 mBar
Storage Temperature	-10°C to 50°C
Pressure Coefficient	<0.02% of Signal / mBar
Expected Operating Life	Min. 2 Years (Toxic) 15 to 24 Months (Oxygen)
Max. Cable Length	1000m, Depending on Cable Type
Connecting Cable	2-Core, Screened, Conductor Cross-Section Depending on Cable Length
Suitable Analysis Units	GMC 8022, GMC8022E, GMC8420, GMC8364
Unit Run-Up Time	30 Minutes at First Start-Up 48 Hours with Type (NH3-50, NO-100, HCl-100)
Cross Sensitivity	On Request
EC-Type-Examination Directive 2014/34/EU	II 2 G Ex ia IIC T4 Gb BVS 03 ATEX E 384 Pi: 660 mW Ui: 28 V Ii: 93 mA Li: <= 4 µH Ci: <= 8 nF -10°C <= Ta <= 50°C
Recommended Barrier	Current Repeater

Mechnical Specifications

Designation	Exmonitor
Protection Class	IP54
Enclosure Material	Polyester
Weight (grams)	1200
Dimensions (mm) H x W x D	115 x 160 x 75
Cable Inlet	Cable diameter from 6 mm up to 12 mm
Terminals	2-Pin 0.5 to1.5 mm^2

Exmonitor



Approval	EC-Type-Examination Directive 2014/34/EU, electrical safty II 2 G Ex ia IIC T4 Gb BVS 03 ATEX E 384
Accessories	Test gas set Calibration gases Barriers
Service	Everything from one source - from project development to the installation of your new gas alarm unit. Guaranteed by our comprehensive sales and service network. Call us for the address of your local contact partner. Our after-sales technicians are happy to assist you with hands-on help and advice.

Who We Are

safe monitoring group

At Safe Monitoring Group, we believe that sustainability must be at the heart of everything we do. From the design and production of our products, to the way we manage our operations and interact with our customers, we are committed to building a business that is environmentally responsible and socially responsible.

International Gas Detectors
"Detectably Better Gas Detection"

International Gas Detectors, Ltd. design, manufacture and distribute a range of gas detection equipment for over 700 gases and vapours, operating for over a century in this field. IGD's mission is to provide clients with a Detectably Better gas detection product, service and support.

Being the oldest gas detection company in the world has given us specialist knowledge to provide a Detectably Better product, service and support for all of our clients.

Bieler+Lang GmbH
"Gas Detection and Warning Systems – Your competent partner for safety technology and occupational safety."

In many areas, the occurrence of harmful or explosive gases and vapors is to be expected.

We help you to protect people, the environment, technical equipment and property from serious damage.

For more than 50 years, our products have been providing timely and reliable warnings of gas accidents and explosions.

Bieler+Lang gas detection and warning systems were developed especially for these applications. Well-known companies rely on our quality products.

Samon AB
"Simply Reliable Refrigerant Gas Detectors"

Samon has a wide product range for detection of various gases and related control solutions. We have extensive experience of systems for cost effective and safe gas detection, both on land and on the marine side. Samon combines high and specific skills with professional service and training.

We aim to offer reliable and cost effective solutions for applications where gas detection is essential.

Samon combines high and specific skills about applications with professional service and training.

An early detection of a gas leakage is essential for safety, economy and especially the environment.