COMPUR Monitors

Gas detection for your safety

Monitox

AsH_3

Cl_2

CO

$COCl_2$

ClO_2

H_2S

HCl

HCN

N_2H_4

NO_2

O_2

PH_3

SO_2

Compur Monitox plus

Imitated by all, duplicated by none.

With decades of outstanding performance, this latest version of the Monitox is the best yet. The Monitox plus provides unmatched performance and value. It shows the actual gas concentration on a recessed LCD display and responds to hazardous concentrations within seconds giving an audible as well as visual alarm.

Monitox plus is very small and lightweight. Its housing is made of sturdy, galvanized ABS, withstanding the harshest industrial environments. The metalized surface protects it from electromagnetic interference. Handling the Compur Monitox plus is quick and easy. Sensor replacement is a breeze since a plug-in socket sensor can be easily replaced without even opening the instrument.

A recessed button on the front side of the instrument gives easy access to a menu for automatic zero and calibration. Thus even calibrations can be done without opening the instrument.

Two alarms can easily be set to any value within the measuring range of the instrument by push-button.

For added safety the Monitox plus features smart technology such as a "missing sensor-alarm" which detects if the electrical connection to the sensor has been damaged.

Despite all these advantages the Monitox plus is inexpensive to purchase and maintain.

With the optional Compur gas generator a 100 % performance test can be done within 10 seconds, without a gas cylinder.

Dositox

Compur Dositox

The Dositox measures, calculates the exposure and stores the data.

To protect personnel from potential hazards by gas, the concentration of a toxic gas must be measured. Any potentially dangerous substance has a specific toxic impact. Based on these characteristics, threshold limits of allowable concentrations and the total exposure by shift have to be calculated.

The powerful microprocessor of the Dositox continuously compares the actual gas concentration, and the total exposure calculated according to local regulations, with the allowable level. Once it is exceeded the instrument will provide an audible and visual alarm. The data logger will store the values which can be downloaded later to a personal computer for permanent storage and evaluation.

When calculating these average values, it is important to have a high time resolution and the averaging starts once the TLV is exceeded. A fixed time frame could cut a concentration peak that would have exceeded the STEL, in two halves having an average below the STEL.

Therefore the Dositox is programmed to start an averaging interval whenever the TLV value is exceeded. This allows the best possible exposure determination for increased safety.

The measured values can be downloaded to any personal computer that operates with Windows software via a bidirectional RS 232 Interface. The evaluation program DATALOG provides three types of reports: A measurement report with all relevant information, a listing of the measured values with a variable time base and a graphic display of the concentration profile versus time including a zooming option.

The Dositox can also be programmed to operate as a gas detector alarming at TLV values with data logging capability.

AsH_3

Cl_2

CO

$COCl_2$

ClO_2

H_2S

HCl

HCN

NO_2

O_2

PH_3

SO_2

Minitox

H_2S

Compur Minitox

A disposable H2S detector and a field-proven safety concept.

This handy instrument offers reliable protection against hydrogen sulphide. The alarm threshold is adjusted to 10 ppm.

This instrument is a disposable unit with an expected lifetime of two years.

A remarkable option is the gas test with the Compur gas generator, which can perform a go / no go test within 10 seconds. This option guarantees optimum safety for the user without handling gas cylinders.

The on/off switch helps to conserve battery power to obtain maximum benefit of the long-life sensor.

If required, the instrument can be recalibrated.

Ex plus

COMBUSTIBLE GASES

Compur Ex plus

A warning system for combustible gases in a small package.
Common warning instruments for combustible gases are cumbersome, heavy and large. Not so with the Ex plus, one of the lightest instruments on the market.

Compur Ex plus continuously measures the actual concentrations of combustible gases and vapors. The measured value is displayed on an easy-to-read LCD display in '% LEL' (percent Lower Explosion Limit). If one of the two freely adjustable alarm thresholds is exceeded, it gives visual and audible warnings within seconds. The two alarm thresholds are identified by different alarm tones.

With its rugged ABS housing, it withstands even the harshest industrial environment. The sensor is a field-proven catalytic combustion sensor (pellistor).

Compur provides the sensors pre-calibrated for the gas or vapor to be measured. For substances which make recalibration difficult, the sensor will be calibrated with an additional reference gas. The reference gas and the reference factor are printed on the sensor label. This facilitates the recalibration of the instrument in the field.

A simple push of a button gives access to the gas calibration- or the alarm level adjustment menu, without opening the instrument. The sensor bridge voltage can even be displayed on the LCD display - an excellent indication of the sensor condition.

The Ex plus is available with two different battery packs: the mini-version providing four hours opera-

tion time, or the long-time monitoring version providing up to fifteen hours operation time. The explosion proof rechargeable battery packs can easily be changed in seconds, no tools needed. This allows users to convert the mini-detector into a long-time monitor even in hazardous areas.

Tracer

ClO_2
$COCl_2$
Cl_2
HCl
HCN
H_2S
NO_2

Tracer – Leak detection in the ppb range

Application

The Tracer has its strength where other methods of leak detection would fail because of their cross sensitivities to other gases. Such selectivity is required in plants using or producing extremely toxic substances. These plants always have a "Zero Emission Policy" in force. Here high sensitivity in combination with good selectivity is required.

Sensor technology

Electrochemical sensors can be designed to be very selective and sensitive at the same time by the right material choice for electrodes and electrolyte. These sensors will not respond to less dangerous substances that might be around in the plant such as hydrocarbons, carbon monoxide, hydrogen or even humidity. A detection limit of Phosgene as low as 2 ppb is no problem for this sensor technology!

A disadvantage of electrochemical sensors compared to physical methods has been their comparatively slow response. The working electrode must transform analyte to confer a response – and this takes its time.

Tests in Compur's laboratories have shown that the material transformation process at the working electrode can be speeded up by increasing the mass transfer of the analyte to the sensing surface compared to gas access by diffusion. It was a short step from there to develop an instrument with a built-in pump and a special measuring chamber with optimized flow characteristics. In this way the response time of the instrument is almost as short as would be obtained with a physical detection method.

The Tracer is capable to detect even traces of toxic gases. The detection limit is in the low ppb range depending on the substance to be detected. As a leak detector might be exposed to very high concentrations, it must not be used as a personal monitor. To avoid it being abused as such, it displays no concentration, but only a dimensionless figure or a bar graph.

Using the Tracer

To locate a leak, move the sample intake along the surface to be inspected. The measured value will increase when a leak is approached. The display can be selected between bar graph and digital. A control tone and LED will increase in frequency with mounting measured value similar to a Geiger counter.

The Tracer will protect itself from poisoning. If the measured value goes out of range the pump will go off and start again when it drops below 95% of the range.

The graphic display is easy to read. At night or in dark places in the plant a backlight can be switched on.

Consumables such as sensor, filter or sampling probe can easily be replaced without tools.

Statox 501

Statox 501

Fixed gas detection system for oxygen, toxic and combustible gases

The DIN – rail mounted modern controller saves space, money and installation time.

One safe controller for all gases: Any combination of a sensor head plus a controller is a complete gas detection system. This is what makes the Statox 501 so safe and reliable. The Statox 501 also gives you the opportunity to alter or expand existing systems with minimum expenditure.

Programs for any gas and measuring range are permanently stored in the memory of the controller. The user-friendly software program allows authorized personnel to select different configurations by a simple push of a button.

Easy to install and easy to use

The controller power supply and common alarm module clip on to a DIN rail. The remote sensor heads and any alarm or recording devices connect to terminals on the front of the controller. The Statox 501 controller has three relays for alarm 1 and 2 system failure (115 / 230 V AC / 2 A). An analog output for recorder or process control systems is also included.

Measured values are displayed on a 4 digit LED-display. It is easy to program or calibrate the new 501 controller! Just follow the menu!

If sensor heads are to be installed in division 1 areas, they can be connected via intrinsically safe repeaters.

The 24 V power supply as well as the signals for the common alarm module are transmitted via bus from one controller to the next. All terminals are easily accessible from the front.

Field proven sensors for reliable gas detection

Compur manufactures electrochemical sensors for the detection of oxygen deficiency and toxic gases. These sensors generate an electrical current proportional to the actual gas concentration. The remote sensor heads are designed as intrinsically safe certified 4 - 20 mA transmitters and have an integrated concentration display.

Combustible gases are detected with a variety of catalytic beads (pellistors). These sensor heads are certified and can be connected directly to the controller even if they are to be used in classified areas. The controller can supply and operate different designs of catalytic sensors. With so many possibilities, the system can easily be tailored to suit your individual application needs.

Easy maintenance saves time and money

Maintenance of the 4 – 20 mA transmitters is very easy. A one-man calibration or replacement of the sensors can be done without further precautions, even in classified areas.

Accessories

A range of wall-mount cabinets for a maximum of 5, 8 or 32 controllers as well as a 19”-carrier, ensure an easy professional installation.

AsH_3
Cl_2
CO
$COCl_2$
ClO_2
H_2S
H_2
HCl
HCN
NH_3
N_2H_4
NO_2
O_2
PH_3
SO_2
THT
com-
busti-
ble
gases

Statox 501 IR

Statox 501 IR detects gases in the LEL and ppm range.

Protecting people and assets from hydrocarbons

The infrared absorption method of detection is ideal for the detection of larger hydrocarbon molecules such as fuels. It features enough sensitivity to expand the range of application into the ppm range. For instance fuels such as gasoline, diesel or kerosene are mixtures of hydrocarbons.

Infrared gas detection theory of operation

Some gases absorb light at a certain wavelength (color). This absorption band is specific to the gas. The rate of the absorption depends not only on the substance to be detected but also on the number of gas molecules (i.e. the concentration of the gas). This premise is used to detect gases. For example, the C – H bond in hydrocarbon molecules will oscillate and absorb light at 3,4 mm. This fact makes it so easy to detect fuels. Hexane, for instance has 14 C – H bonds compared to Methane that has only 4!

A light beam is directed through a cuvette filled with the gas to be detected. The more hydrocarbons present, the more light will be absorbed. A photo detector at the other end of the cuvette measures the remaining light intensity. The difference between the original and remaining light intensity corresponds to the gas concentration.

A reference beam with a different wavelength compensates for potential interferences of dust, humidity or variations of intensity from the light source.

Fail-safe technology

Failure of important components such as the light source or photo detector will trigger a "system fail" alarm. Most local authorities will accept this as a self-diagnostic feature. Systems including a self-check require less maintenance and calibration, saving time and money.

Simple maintenance: Easy to read display and non–intrusive calibration

The bright LED display of the Statox 501 IR shows the gas concentration in percent L.E.L. (Lower Explosion Limit). An important accessory is the calibration adapter, featuring control buttons operating Hall-sensors inside the Ex d housing.

The service menu is password protected preventing unauthorised access. All parameters can be checked and changed, or a calibration can be done all without opening the transmitter. The adapter is also equipped with a gas outlet so that it can be used for flow-through applications.

Impervious compact design

The dimensions of the Statox 501 IR are small and compact. The sensor compartment is completely sealed, not allowing dust or insects to enter. It is located in the center of the sensor head. This allows heat radiation from the electronics and the infrared lamp to keep the unit a few degrees above the ambient temperature thus avoiding condensation. This innovative design makes any additional heating unnecessary, allowing the sensor head to be very energy efficient. This saves additional money by eliminating more expensive wiring and a bigger power supply that would otherwise be necessary.

Hydrocarbons, Unsaturated hydrocarbons, CO_2

The sensor head is rated protection class IP 67 (6 = protection even against fine dust, 7 = submerged 1 m deep in water for 30 minutes). You can have confidence that this system will safely operate even in the harshest environment.

Statox 4120

The system consists of an intrinsically safe sensor head communicating with a control module. Up to 9 control modules can be located in a 19”-rack where each combination sensor head - control module works as an independent detection system. Therefore the total system can be expanded without limitation.

System Reliability by Automatic Self Check

Today’s monitoring requirements demand a high degree of reliability and fault-free performance. The Statox system incorporates an automatic self check routine every 24 hours. The system completely verifies and tests all components including the sensor for proper operation. The sensor is dynamically tested via an internally generated target gas which assures that its’ response and recovery meet acceptable performance specifications. If a fault is detected in any of the components, it immediately notifies the control unit. The test can be initiated manually either from the control panel or the remote sensor head.

No electromagnetic interference

The remote sensor heads are made of chromium plated ABS. This makes them extremely sturdy and resistant to electromagnetic radiation. The Statox is CE – approved. Its safety against electromagnetic interference has been proven by a qualified laboratory.

One – man calibration and fault diagnosis

Sensor calibration and system fault diagnosis are easily achieved via the use of the Statox portable calibration and diagnostic unit. This intrinsically safe unit is connected by an optic coupler to the sensor head and allows one person to electronically calibrate a new sensor, diagnose any faults, or initiate a complete system test. All this is done without ever having to open the sensor head.

	AsH_3	Cl_2	ClO_2	CO	CO_2	$COCl_2$	Combustible	H_2	H_2S	HCl	HCN	N_2H_4	NH_3	NO_2	O_2	PH_3	SO_2	THT
Monitox	x	x	x	x		x			x	x	x	x		x	x	x	x	
Dositox	x	x	x	x		x			x	x	x			x	x	x	x	
Minitox									x									
Ex plus							x											
Tracer		x	x			x			x	x	x			x				
Statox 501	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x
Statox 501 IR					x		x											
Statox 4120		x	x	x		x			x	x	x			x			x	

COMPUR Monitors

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COMPUR Monitors

Compur Monitox plus

The portable gas warning system for toxic gases and oxygen

Compur Monitox plus

AsH_3

Cl_2

ClO_2

CO

$COCl_2$

HCl

HCN

H_2S

N_2H_4

NO_2

O_2

PH_3

SO_2

O_2

Reliability is everything

With decades of outstanding performance, this latest version of the Monitox is the best yet. The Monitox plus provides unmatched performance and value. It shows the actual gas concentration on a recessed LCD display and responds to hazardous concentrations within seconds giving an audible and a visual alarm.

The electrochemical sensors manufactured by Compur Monitors undergo strict quality control and calibration at TLV concentration. This assures best measurement technology and reliable alert.

Monitox plus is very small and lightweight. Its housing is made of sturdy, galvanized ABS, withstanding the harshest industrial environments. The chromium plated surface protects it from electromagnetic interference. Handling the Compur Monitox plus is quick and easy. Sensor replacement is a breeze since a plug-in socket sensor allows replacement without even opening the instrument.

A recessed button on the front side of the instrument allows easy access to a menu for automatic zero and calibration. Thus, even calibrations can be done without opening the instrument.

Two alarms can easily be set to any value within the measuring range of the instrument by push-button.

For added safety the Monitox plus features smart technology such as a „missing sensor-alarm" which detects if the electrical connection to the sensor has been damaged.

Despite all these advantages, the Monitox plus is inexpensive to purchase and maintain.

With the optional Compur gas generator a 100 % performance test can be done within 10 seconds, without a gas cylinder.

Your safety should be worth it.

Technical data	
Monitox	
Measuring range	typ. 0 – 10 * TLV, O_2: 1 – 35 %
Alarm thresholds	adjustable
Measuring principle	electrochemical
Accuracy	+/-10 %
Temperature of operation	-20°C to +40°C
Humidity	typ. 20 – 90 % r. H.
Power supply	Lithium batteries ca. 1000 h per set
Alarms	audible 80 dB(A), LED
Display	LCD four digit
Dimensions	115 x 62 x 24 mm
Weight	130 g
Protection	II 2 G EEx ib IIC T6
Generator	
Power supply	1 x 9 V Mallory for ca. 800 Tests
Dimensions	133 x 65 x 40 mm (H x B x T)
Weight	250 g

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COMPUR Monitors

Compur Dositox - This Gas Detector Measures, Calculates the Exposure and Stores the Data

Compur Dositox - the Egghead – A Gas Detector with Data-logger and Personal Computer Interface

To protect personnel from potential hazards by gas, the concentration of a toxic gas must be measured. Any potentially dangerous substance has a specific toxic impact. Based on these characteristics, threshold limits of allowable concentrations and the total exposure by shift are calculated. These threshold limits are stored in the microprocessor of the Dositox and are continuously compared to the actual gas concentration. When the allowable level is exceeded, the instrument will provide an audible and visual alarm. The datalogger will store the values which can be downloaded to a personal computer for permanent storage and evaluation.

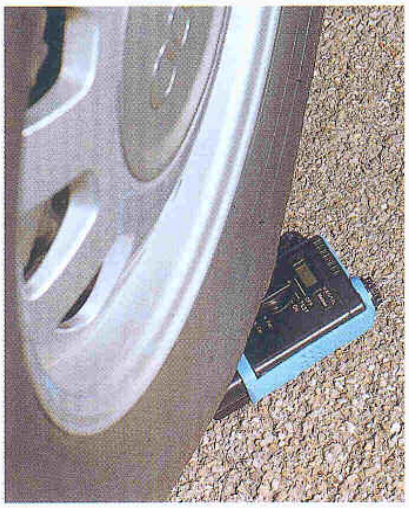
Calculation of the Total Exposure – every 10 Seconds ...

The authorities have published lists with the specific threshold limits for many substances. They distinguish between LTEL (Long-Term-Exposure-Limit) and STEL (Short-Term-Exposure-Limit) values. LTEL is defined as an 8-hour average while STEL is based on a 15 minutes averaging period. None of these values should be exceeded at any time.

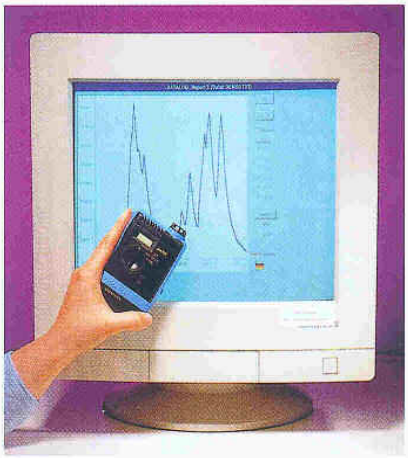
When calculating these average values, it is important to have a high time resolution and the averaging starts once the TLV is exceeded. A fixed time frame could cut a concentration peak, that would have exceeded the STEL, in two halves having an average below the STEL. Therefore, the Dositox is programmed to start an averaging interval whenever the TLV value is exceeded. This allows the best possible exposure determination for increased safety.

Concentrations between LTEL and STEL are only allowed for a certain period of time, depending on the local regulations. Substances- and country specific formulas are stored in the microprocessor of the Dositox so that a concentration profile can be continuously compared to the allowable level in accordance with the local regulations.

Whenever the LTEL and/or STEL is exceeded, the instrument will give a visual and an audible alarm. The built-in datalogger stores a new measurement value every 10 seconds so that detailed concentration profiles can be recorded. This data can be downloaded to any personal computer that operates with Windows software. The evaluation program DATALOG provides three types of reports: a measurement report with all relevant information, a listing of the measured values with a variable time base and a graphic display of the concentration profile versus time including a zooming option.



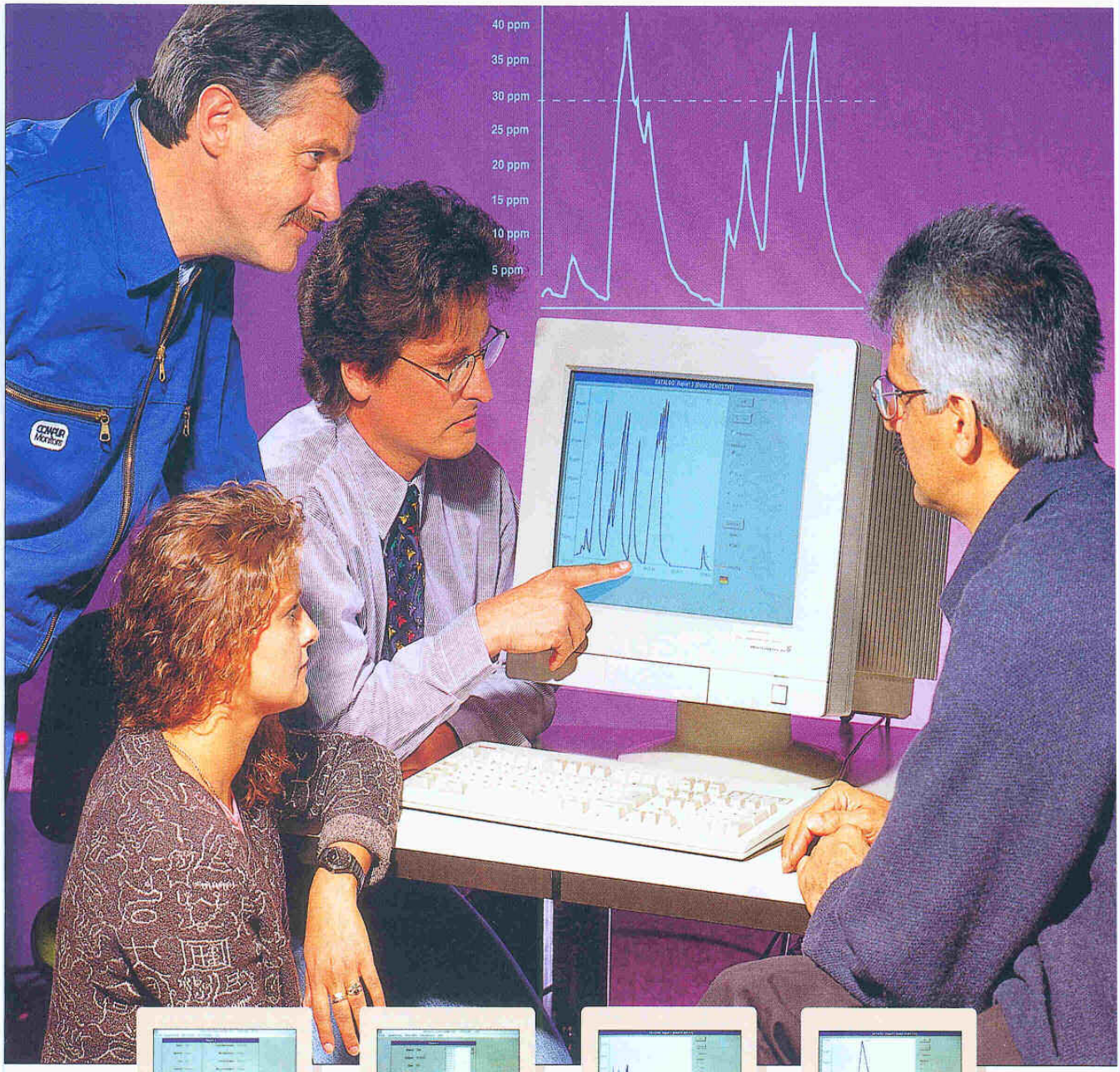
The Dositox can also be programmed to operate as a gas detector alarming at TLV values with datalogging capability. Even in this mode, the measured values can be evaluated in accordance with the local exposure regulations.



The Dositox and Your Personal Computer – Total Communication

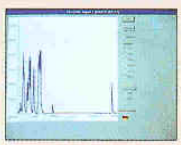
The Dositox has a bidirectional RS 232 C Interface. The interface downloads data from the Dositox and transmits commands and parameters to program the instrument from your PC. The DATALOG software includes an easy-to-use menu and a help text file that details the complete operation of the Dositox and software.

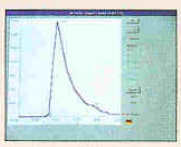
HCN, NO_2, CO, Cl_2, $COCl_2$, H_2S, HCl, AsH_3, PH_3, SO_2, ClO_2, O_2




Dositox set-up


data listing


graphical evaluation


zooming

The Dositox has a built-in serial interface for easy connection to a PC – no extra hardware required

Easy to use – More Safety

The operation of the Compur Dositox is very easy. The on/off switch has three positions (OFF/TEST/ON) and starts the detector and datalogger as soon as it is turned to the ON position. Even if the instrument is switched off, for instance during breaks, the time base for datalogging will keep running to make sure all measured values during a shift are related to the start time. The micro processor automatically stores the start date and time provided by the integrated real time clock (RTC) generator – no manual input is required. This eliminates input errors and prevents manipulations of the measurement.

The TEST position allows access to the push buttons "Function" (Fct) and "Calibration" (Cal). The button "Calibration" activates a calibration routine allowing the user to calibrate the instrument with gas or use a new pre-calibrated sensor to perform an electronic calibration of the instrument. The "Function" button activates the read out of the actual exposure value on the LCD. In this position, you can perform a function test with the Compur gas generator without recording the test peak.

Compur Dositox

- exposure alarm according to local regulations
- built-in datalogger
- visual and audible alarm
- STEL and LTEL measurement
- concentration triggered averaging interval
- DATALOG – a Windows based evaluation program
- detailed concentration profiles
- easy to use
- small and lightweight
- electronic- or gas calibration
- built-in real time clock

Technical Data

Dositox	
Measuring components:	HCN, NO_2, CO, Cl_2, $COCl_2$, H_2S, HCl, AsH_3, PH_3, SO_2, ClO_2, O_2
Measuring range:	typ.: 0–10 MAK
Measuring principle:	electrochemical amperometric sensors
Accuracy:	± 10%
Operation temperature:	–20 °C to +40 °C (–4 °F to +104 °F)
Humidity:	typ.: 20–95% relative humidity
Power supply:	rechargeable NiCd battery pack
Operating time per charge:	18 hours
Datalogger:	max. 12 hours recording time (4320 points at 10 seconds
	averaging interval)
Alarms:	exposure (LTEL/STEL) alarm or concentration (TLV) alarm
Alarming indications:	audible: typ. > 80 dB(A); visual: bright LED
Display:	LCD, four digits
Dimensions:	124 x 65 x 25 mm / 4,9 x 2,6 x 1 in (H x W x D)
Weight:	240 g / 8,5 oz
Connectors:	Earphone
	serial RS 232 C interface
Ex-approval:	EEX ib IIC T6
Protection class:	IP 54
Sensor warranty:	12 months ($COCl_2$, HCl, AsH_3, PH_3, SO_2, ClO_2: 6 months)
Min. system requirement	386 CPU, 4 MB RAM, standard VGA-graphic card, one
for the evaluation	serial interface (COM1-COM4), Windows 3.1x, 95 or NT
program DATALOG:	

Gas Generator	
Power supply:	9 V battery, size IEC 6LR61
Battery operation time:	approx. 800 Tests
Dimensions:	133 x 65 x 40 mm / 5,5 x 2,5 x 1,5 in (H x W x D)
Weight:	250 g (8,8 oz)

For more detailed information please order our technical data sheets. Personal advice will be given by our agents or directly by the Compur Monitors Hotline:

Tel. ++49 / 89 – 6 20 38-268

Give us a call.

Compur Monitors
Technology from people.
For people.

COMPUR Monitors

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COMPUR
Monitors

The Compact Warning System for Combustible Gases: Compur Ex plus

Compur Ex plus.
For Your Safety: A Powerful Instrument in a Small Package

The presence of combustible gases and vapors can create the hazard of an explosion. Detailed regulations give guidelines for the handling of such substances. Especially during shut downs and maintenance work, detectors for combustible gases are imperative for your safety. A remarkably powerful and handy instrument is the Compur Ex plus.

Compact, Robust, User- and Service Friendly, Small and Powerful.
Compur Ex plus is one of the smallest detectors for combustible gases. Its` rugged ABS housing withstands the roughest environment. An additional elastic strap protects it against water and shock. The instrument is extremely easy to handle. The Ex plus completes Compur`s range of personal gas detectors.

Fast and Versatile
Compur Ex plus measures continuously the actual concentration of combustible gases and vapors. If the alarm thresholds are exceeded, it gives visual and audible warnings within seconds.

The measured value is displayed on the easy to read LCD display in "% LEL" (lower explosion limit).

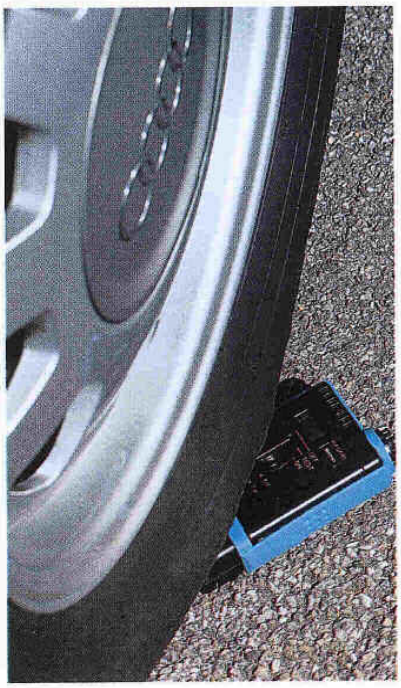
The instrument has two adjustable alarm levels. Ex plus is available with two different battery packs:

- declassification version, 4 h operation time. Equipped with the small battery pack the instrument is super lightweight
- monitoring version, 15 h operation time

The battery packs can be replaced in hazardous areas without any tools.

The Compur Ex plus is ideal for

- **Chemical plants**
- **Refineries**
- **Manufacturing industries**
- **Wastewater treatment plants**
- **Gas utilities**
- **Landfills**



The ABS-housing can take a lot of stress.

Reliable Measurement by Field-Proven Sensor Technology
The measurement is based on the principle of catalytic combustion. Compur ships the sensors pre-calibrated for the gas to be measured. The calibration to vapors can be done by a reference gas. The reference gas as well as the reference factor are mentioned on the sensor label.
Sensor replacement does not require tools. For measurements in corrosive atmosphere the sensor can be protected by filters against catalyst poisons. If the sensor is missing or defective, the instrument will give an alarm and thus contribute even more to your safety.

Simple Handling – Optimum Safety
Safety starts with easy handling. The Ex plus has an ON/OFF switch and two keys, so that without opening the instrument the following functions can be performed:

- **Zero adjustment**
- **Gas calibration**
- **Adjustment of the two alarm levels**
- **Display bridge voltage - which is a good indication for sensor condition**

Two instruments in one: Simple replacement of the battery pack converts the detector to a long-term monitoring instrument.

The Charging System: Intelligent and Comfortable

Part of the Ex plus system is either a 1- or 4-fold charging station. All charging stations check the battery capacity and automatically switch to the conservation mode which makes it impossible to overcharge a battery pack. The charging station also automatically recognizes the type of battery an charges it accordingly.

Compur Monitors Service

Together with a full range of detectors, Compur Monitors offers friendly and reliable service. Experienced technicians support you in all technical and application related questions: before and after sales. Compur Monitors also offers training seminars for users and maintenance personnel.

Compur Ex plus

- extremely lightweight and handy
- alarms within seconds
- 2 adjustable alarm thresholds
- automatic self-check
- maintenance-friendly
- calibration without opening the instrument
- 2 battery pack versions
- display of bridge voltage
- intelligent charging system

Technical Data

Ex plus

Measuring components	combustible gases and vapors
Measuring range	0-100% LEL
Alarm levels	adjustable over full range
Principle of measurement	catalytic combustion
Accuracy	1% LEL
Response time	t_{90} less than 10 s, at +20°C (+68°F)
Operational temperature range	typ.: −20°C to +40°C (−4°F to +104°F)
Relative humidity range	typ.: 0−95%
Power supply	standard: NiMH battery pack
	long term: NiCd battery pack
Operation time	standard: 4h
	long term: 15h
Alarm	audible: typ. >80 dB(A), 30cm
	optical: LED
Display	LCD, 3 digits
Dimensions	with standard battery pack: 124 x 65 x 25 mm (4,9 x 2,6 x 1 in.) h x w x d
Weight	with standard battery pack: 250 g (8,8 oz)
	with long-term battery pack: 375 g (13,2 oz)
Outputs	earphone jack
Ex-certificate	sensor: EEx d IIC T4
	instrument: EEx ib IIC T4
Protection class	IP 54

For more detailed information please order our technical data sheets. Personal advice will be given by our agents or directly by the Compur Monitors Hotline:

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Give us a call.

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For people.

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COMPUR Monitors

Tracer

Leak Detector for Gases in the ppb – and ppm Range

Tracer – Leak detection in the ppb range

Application
The Tracer has its strength where other methods of leak detection would fail because of their cross sensitivities to other gases. Such selectivity is requested in plants using or producing extremely toxic substances. These plants always have a „Zero Emission Policy“ in force. Here high sensitivity in combination with good selectivity is required.

Sensor technology
Electrochemical sensors can be designed to be very selective and sensitive at the same time by the right material choice for electrodes and electrolyte. These sensors will not respond to less dangerous substances that might be around in the plant such as hydrocarbons, carbon monoxide, hydrogen or even humidity. A detection limit as low as 2 ppb is no problem for this sensor technology!

A disadvantage of electrochemical sensors compared to physical methods has been their comparatively slow response. The working electrode must transform analyte to confer a response – and this takes its time.

Tests in Compur`s laboratories have shown that the material transformation process at the working electrode can be speeded up by increased mass transfer of analyte to sensing surface compared to gas access by diffusion. It was a short step from there to develop an instrument with a built-in pump and a special measuring chamber with optimized flow characteristics. In this way the response time of the instrument is almost as short as would be obtained with a physical detection method.

Which gases can be detected with the Tracer?
The Tracer is available for the following gases:
$COCl_2$, HCN, HCl, Cl_2, NO_2, ClO_2 and H_2S.

The Tracer is capable to detect even traces of toxic gases. The detection limit is in the low ppb range depending on the substance to be detected. As a leak detector might be exposed to very high concentrations, it must not be used as a personal monitor. To avoid it being abused as such, the detector displays no concentration, but only a dimensionless figure or a bar graph.

The “HIGH- Range” Tracer
Some applications such as leak detection in containments or analyser cabinets do not require an ultra- low measuring range. For these your Tracer can be converted to the high – range version by just replacing the low by the high range sensor. This can be done in minute – no tools and no adjustment required.

Using the Tracer
To locate a leak, move the sample intake along the surface to be inspected. The measured value will increase when a leak is approached. The display can be selected between bargraph and digital. A control tone and LED will increase in frequency with mounting measured value similar to a Geiger counter.

The Tracer will protect itself from poisoning. If the measured value goes out of range the pump will go off and start again when it drops below 95% of the range.

The graphic display is easy to read. At night or in dark places in the plant a backlight can be switched on.

Consumables such as sensor, filter or sampling probe can easily be replaced without tools.

Technical Data

Product name	COMPUR Tracer
Type	5910 100
Measuring principle	electrochemical
Response time	≤ 2 s
Operating temperature	-20°C to +40°C -4°F to 104°F short term to +60°C/140°F
Storage temperature	-25°C to +40°C -13°F to 104°F short term to +60°C/140°F
Humidity	0 - 99% r.H., non condensing
Flow	200 ml/min
Ex approval	EEx ia IIC T4
Scope of application	II 2 G
Certificate	BASEEFA 03 ATEX 0742
Battery	NiMH
Charger	IN: 100-240 VAC OUT: 9 VDC
Power	20 mA - with backlight on: 140 mA
Dimensions (LxWxD)	450 x 60 x 50mm 17,7 x 2,4 x 1,9 in
Weight	0,55 kg / 19,4 oz
Housing material	conductive PP
EMV: EN 61326:1997 (+A1/A2)	Emission threshold B and general impact protection

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COMPUR Monitors

They are here –
Their Mission: Safety
Statox 501 IR

Infrared gas detection – Theory of operation

Some gases absorb light at a certain wavelength (colour). This absorption band is specific to the gas. The rate of the absorption depends not only on the substance to be detected but also on the number of gas molecules (i. e. the concentration of the gas) This effect can be used to detect gases: The oscillation of the C – H bond in hydrocarbon molecules for instance absorbs light at 3,4 µm.

A light beam is directed through a cuvette filled with the gas to be detected. The more hydrocarbons are present in its way the more light will be absorbed. A photo detector at the other end of the cuvette measures the remaining light intensity. The ratio between original and remaining light intensity is corresponding to the gas concentration.

A reference beam with a different wavelength compensates for potential interferences of dust, humidity or variations of intensity from the light source.

Fail-safe technology

Failure of important components such as the light source or photo detector will trigger a “system fail” alarm. Most local authorities will accept this as self diagnostic feature. Systems including a self check require less frequent maintenance and calibration, thus saving time and money.

Statox 501 IR – Utmost flexibility

The sensor head works as an independent transmitter using the industry proven 4 – 20 mA current loop to transmit the signal to a control unit. This can be the dedicated Statox 501 controller or any process control system. The signal circuit is electrically isolated from the power supply.

Maximum reliability.
Minimum maintenance.

Easy installation

No separate connection box is required. The mounting bracket serves as terminal box. It features increased safety (EEx e).

Statox 501 IR with opened terminal box

Simple maintenance: Easy to read display and non-intrusive calibration

The digital display of **Statox 501 IR** shows the gas concentration in percent L.E.L. (**L**ower **E**xplosion **L**imit). An important accessory is the calibration adapter featuring Hall-sensor control buttons.

The service menu is password protected preventing unauthorised access. All parameters can be checked, changed or a calibration can be done without opening the transmitter. The adapter is also equipped with a gas outlet so that it can be used for flow-through applications too.

Statox 501 Control module

Rugged design

The dimensions of the **Statox 501 IR** are small and compact. The sensor compartment is completely sealed, not allowing dust or insects to enter.

The sensor head is rated protection class IP 67 (6 = protection even against fine dust, 7 = submerged 1 m deep in water for 30 minutes).

You can have confidence that this system will safely operate even in the harshest environment.

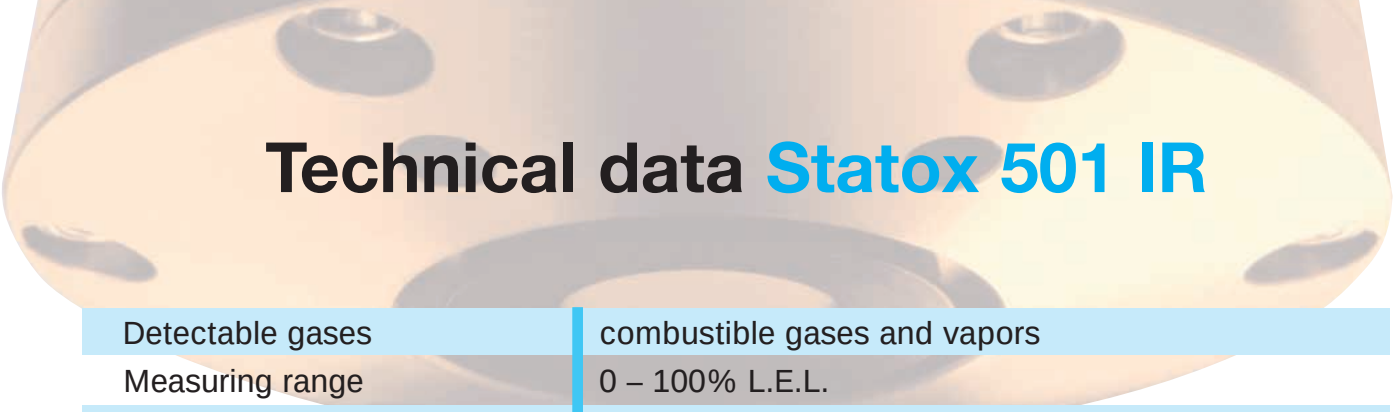
Value for money

The **Statox 501 IR** combines the advantages of an infrared gas detection system such as nearly unlimited lifetime and long maintenance intervals with low investment cost.

Compare the Statox 501 IR total cost of ownership to any other manufacturer!

Reliable safety at a competitive price!

Statox 501 IR with adapter for non intrusive one-man calibration



Technical data Statox 501 IR

Detectable gases	combustible gases and vapors
Measuring range	0 – 100% L.E.L.
Measuring principle	Infrared absorption, NDIR 2-channel
Detection limit	3% L.E.L. Methane
Response time	t_{50} < 10 s, t_{90} < 25 s
Accuracy (Full Scale)	± 2% L.E.L. at room temperature
Warm up time	20 s, full specifications after 30 min
Operating temperature	- 20°C to + 44°C (- 4°F to + 112°F)
Storage temperature	- 20°C to + 60°C (- 4°F to + 140°F)
Humidity	0 – 95% r. H. non condensing
Pressure	800 – 1100 hPa
Power supply	18 – 29 V DC/ 1 W
Connection	4 Wire
Output	4 – 20 mA, electrically isolated, max. load 220 Ω
	in the service mode 2 or 4 mA programmable,
	system fail 0 mA
Display	LED three digits
Dimensions	Height: 150 mm (5,9 in.)
	Width: 120 mm (4,7 in.)
	Depth: 120 mm (4,7 in.)
Weight	app. 3,1 kg (6,8 pounds)
Material	stainless steel
	fiber reinforced polyamide
Protection class	IP 67 (NEMA 4 and 6)
Ex-Approval ATEX Standard	II 2 G EEx de IIC T5
Approval #	BVS 04 ATEX E 006 X

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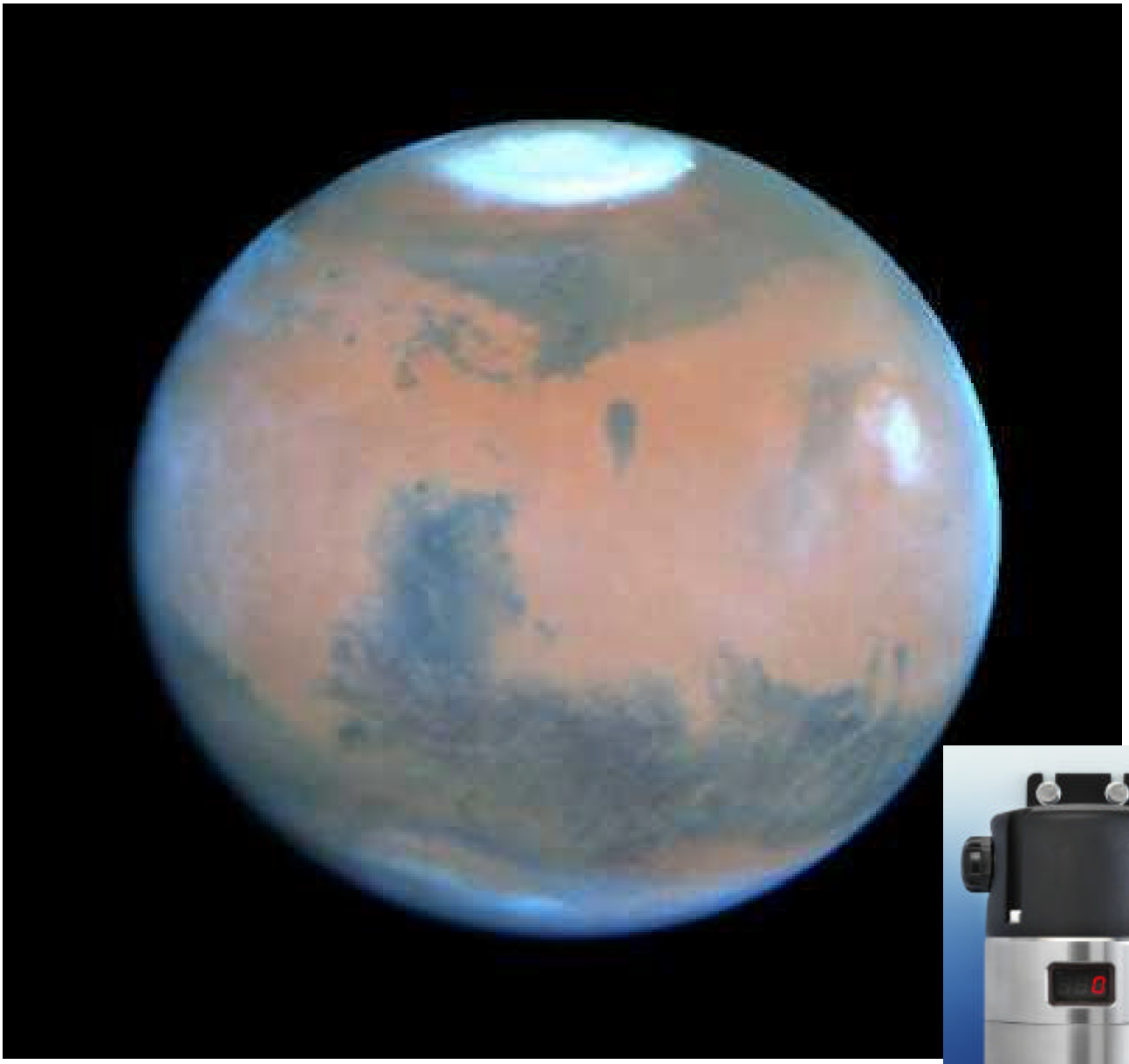
COMPUR Monitors

CO_2 Detection in a harsh Environment

Statox 501 IR CO_2



Carbon dioxide detection in industrial plants: Measuring range 0 – 5 % or 0 – 2 % vol.

For Martians – provided they exist – a carbon dioxide atmosphere might be their natural habitat. We earthlings can only tolerate low concentrations of this gas. It is true that we are using the special properties of CO_2 for many purposes, but in concentrations above 5000 ppm it can be hazardous to our health. Therefore it must be monitored.

In areas that are rarely accessed, such as beverage dispensing facilities, a leak detector might do as a warning device. Wherever people are present, such as workplaces in plants, industrial grade gas detection equipment is required. Here it is: Statox 501 IR.

This new version of the field proven Statox 501 IR for combustible gases operates as a 4 – 20 mA transmitter. It can be connected directly to a recording device, process control system, or the optional Statox 501 controller.

Its unmatched compact design makes it operable in any environment whether it is food industry, chemical industry, refineries, or cleaning facilities. This explosion proof instrument will do the job everywhere. It is water proof (rated IP 67). The housing materials (stainless steel and fiber-reenforced polyamide) are rugged and easy to clean.

Applications

CO_2 fertilization
Fermentation process
Quick freezing
Milling
Storage / silo inertization
Transportion
Packaging
Extraction
Pest control
CO_2 Cleaning
Fire extinguishing

Technical Data

Product	Statox 501 IR Transmitter CO_2
Measuring range	0-2 or. 0-5 Vol.%
Article No.	561708, 561709
Measuring principle	2-channel NDIR
Detection limit	0,03 Vol.% CO_2
Repeatability	< ± 2 %
Display	LED, three digit
Response time	t_{50} < 15s, t_{90} < 45s
Warm up time	20 s
Specifications reached	after 30 min
Operating temperature	-20°C to +60°C
Storage temperature	-20°C to +60°C
Humidity	0 - 99% r.F.
Pressure	800 - 1100 hPa
Power supply	24VDC (18-29VDC)
Power consumption	1 Watt
ATEX Approval	EEx de IIC T5
EMV	According to EN 50270

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Compur Statox 501 IR LC
Infrared detection of combustible gases

Compur Statox 501 IR LC - Infrared detection of combustible gases.

The Statox 501 IR LC sensor head consists of an increased safety (EEx e) terminal box and a sensor with integrated electronics. The sensor operates with IR absorption principle. The supply voltage required is the same as for a catalytic sensor. Its signal output is also identical to a catalytic sensor, therefore it can be directly connected to the 501 Controller.

The important technical advantages of an infrared gas detector are now available for almost the same low price as a catalytic gas detector. The big advantage: As this product has the same energy requirements and signal output as common gas detection systems, the Statox 501 IR LC can be used to upgrade existing systems wherever the catalytic sensor did not do the job.

The Statox 501 IR LC it is a reasonable alternative to catalytic sensors wherever gas detection equipment is used to monitor hydrocarbons. The standard ex works calibration is Methane.

Technical data

Detectable gases	Hydrocarbons
Measuring range	0 – 100 % L.E.L. Methane
Measuring principle	IR- absorption, NDIR 2-channel
Detection limit	2 % L.E.L. Methane
Response time	t_{90} < 30 s
Operating temperature	- 20 to + 60°C
Humidity	0 – 95 % r. H.
Pressure	700 – 1300 hPa
Power supply	3 - 5,0 V DC
Current consumption	app. 80 mA
Connection	3 –wire
Operation	with Statox 501 Controller or comparable supply
Weight	0,58 kg
Dimensions	110 x 130 x 60 mm HxWxD (4,3 x 5,1 x 2,4 in.)
Material	Die cast aluminum, coated
Protection class	IP 54
Ex approval	EEx de IIC T4

Statox 501 Controller

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New Gas Generator to check personal Gas Detectors
A 100% Test in just 10 Seconds

Personnel working in chemical plants protect themselves with personal gas detectors from gas exposure. Gas leaks are very unlikely to occur, so the gas detector will always display „0“.

An instrument displaying zero can do so for two reasons:
a) The concentration is zero.
b) The instrument is defective.

For good reasons a daily check of the instrument is mandatory. It would be too time consuming to perform a complete calibration every day. Regulations allow calibration intervals of up to six months.

The daily functional test with the gas generator makes sure that no instrument failure caused by abuse or wear and tear will go unnoticed. To perform a test it is sufficient to expose the sensor to a short puff of gas and see if the instrument gives an alarm. To make this test as fast, easy and cheap as possible, no accurate gas concentration is used, but approximately twice the value of the alarm threshold.

The quality criterion for the detector is not reaching a certain value, but the response time: A good sensor is also a fast sensor. So the gas generator stops gas generation after 10 seconds automatically. If the detector fails to alarm within this time interval it is not safe to be used. Thus the generator test reliably indicates the following potential errors:

- Defective electronics
- Alarm buzzer or lamp defective
- Sensor defective
- Sensor too slow
- Sensor not sensitive enough

Compur Monitors introduces a new gas generator model with the following features:

The flow of the built- in pump is adjusted to perfectly simulate the operating conditions of the gas detector.

The gas generator itself consists of an electrochemical cell filled with a electrolyte paste. This cell will only generate gas when it is activated by putting a gas detector on the receptacle.

The amount of gas produced when activated is very small. Therefore no restrictions regarding transportation and storage of the gas generator apply.

The gas generator is very easy to use. The gas detector operates a switch when put onto the receptacle. Gas production stops automatically after 10 seconds, or if the detector is removed.

The new test gas generator is compatible to Monitox, Monitox plus Minitox, Dositox and Tracer. It will replace the well known model 4100.

With this new product Compur Monitors contributes to safe operation of gas detectors.

Compur Monitors gas generator. The gas detector must be positioned into the red receptacle. Red and green LED´s indicate the status of operation.

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