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 503 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).

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 503 Control module

Statox 501 IR with opened terminal box

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 – 99% 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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