

# High-Sensitive Air Sampling Smoke Detection System TITANUS TOP·SENS®



## New Standards for Response Sensitivities

An earliest possible and highly reliable smoke detection is more and more important for companies using complex networks and automatic technology. Besides immense damages a fire detected too late inevitably causes an operation interruption. Nowadays, no business can afford to accept this double risk.

TITANUS TOP·SENS® has been especially developed for companies in which it is important to protect areas with objects of high value. Due to its high response sensitivity an earliest possible smoke detection is guaranteed as well as the most decisive factor in case of a fire: a minimum reaction time to take the necessary countermeasures.

## Innovative Detection System

The air sampling smoke detection system TITANUS TOP·SENS® has a display sensitivity never known before on the market. This is made possible through an innovative optical detection system with long-lived light sources. This patented solution by WAGNER offers a standard display sensitivity of 0.005 %/m light obscuration. According to the individual settings the detection unit reacts as sensitive as necessary and as early as possible.

TITANUS TOP·SENS® is suitable for a very large range of applications. In case of all types of test fires according to EN54 it has an excellent response behaviour. It reliably detects at temperatures between -20 °C and +60 °C.

Due to the technical optimisation the commissioning of the system is very easy. The new technology of the detection system allows much longer maintenance intervals.

## Special Application Fields

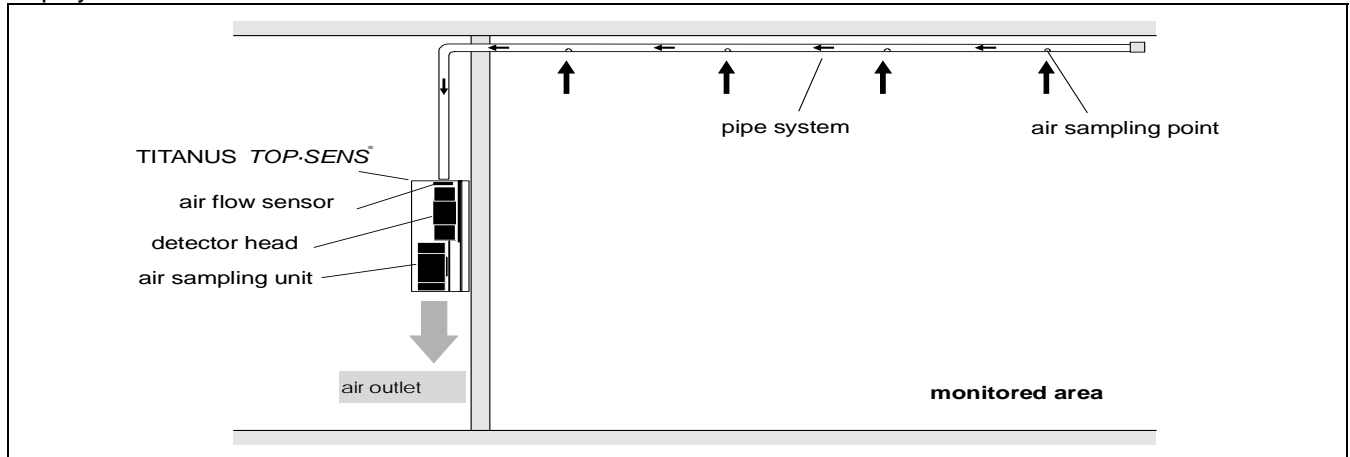
Due to its exceptionally high response sensitivity TITANUS TOP·SENS® is particularly suitable for rooms with objects of high value as e.g. in the field of EDP or telecommunications.

Further application fields are rooms with strong air flows as e.g. clean rooms and laboratories or high rooms and halls. In the past such areas have presented an unsolvable problem for very early smoke detection as the smoke is highly diluted before reaching the detection unit. Under these conditions conventional smoke detection systems react much too late or not at all. From now on the high-sensitive TITANUS TOP·SENS® guarantees a reliable smoke detection in these special areas.

## Operating Principle

Basically, there are two possibilities to guarantee a reliable monitoring of the whole area: The detection units can be installed at AC cabinets or in ac ducts in order to monitor the air flow. If this is not possible due to room conditions the air is transport through an air sampling pipe system (refer to fig. below). Air samples are taken from the monitored area and are passed to the detection unit via the pipe system with defined air sampling points. The smoke concentration is immediately indicated by means of a 10-digit bargraph display. When the detection unit detects smoke

particles, up to three alarm levels are indicated by LEDs and respective signals sent to the fire control panel via potential-free (dry) contacts. TITANUS TOP · SENS® has three alarm levels (alert, action and fire alarm). The delay period of every single alarm level can be set to a value between 0 and 60 s. Variations of the air flow value, of the smoke level or other ambient interferences are reliably detected and intermediately memorized by TITANUS TOP · SENS®. The data can easily be read out through the diagnostic device DIAG1 (refer also to the section "Commissioning and Maintenance").



operating principle TITANUS TOP · SENS®

## Different Response Sensitivities

According to the individual requirements TITANUS TOP · SENS® offers a display sensitivity of up to 0.005 % light obscuration/m that can be set at stages. If required it is possible to switch automatically between the sensitivity stages (e.g. day and night switching over).

## Components of the Device

The TITANUS TOP · SENS® housing consists of plastic. It contains the high-sensitive detection unit that operates optically by means of long-lived light sources and that reliably evaluates signals. Further components of the system are the patented, many years' proven air flow monitoring by WAGNER as well as an efficient ventilator with a high aspiration efficiency even suitable for long pipe lengths.

## Installation

The best installation location for TITANUS TOP · SENS® are low-resonant surfaces. The device can be mounted vertically at walls or columns as well as horizontally in ceiling voids and floor voids. Through turning of the housing bottom by 180° a modified cable and pipe installation is possible. The removable lid allows an easy accessibility to the detector head and the terminals.

## Commissioning and Maintenance

The commissioning of TITANUS TOP · SENS® is very easy. By means of DIL switches the response sensitivity, the air flow sensor technology, the delay period etc. can be set on the premises without difficulty. The adjustment of the self-learning air flow

sensor is micro-processor controlled and is started through pressing a button.

In order to improve installation the diagnostic device DIAG1 has been developed. In case of pyrolysis tests or for maintenance purposes it permits to read out and to file the device data, e.g. the smoke level. Thus, maintenance is simplified which means a considerable decrease in costs.

## Network Capability

A further special feature of TITANUS TOP · SENS® is its optional network capability. Several TITANUS TOP · SENS® can be connected through network boards to form a network. Thus, the operator can centrally monitor the smoke level, the air flow values etc. of the whole system within a minimum period of time (refer also to the short description of the fire risk management and information system VisuLAN® for TITANUS TOP · SENS®).

## Accessories

Numerous specially developed accessories such as remote displays are available for an individual design of TITANUS TOP · SENS®. The remote display has the same displays as the detection unit and thus permits to monitor the data of the whole system at a central location. By means of the infrared-interface all the data can be centrally read out and analysed. Thus, a reliable monitoring and maintenance even in areas not readily accessible can be effected much quicker and easier.

# Technical Data – TITANUS TOP · SENS®

## Detection Unit

<b>operating voltage range</b>	14 up to 30 V DC	
<b>nominal supply voltage</b>	24 V DC	
<b>current consumption quiescent (at 24 V)</b>	245 mA	
<b>current consumption alarm (at 24 V)</b>	320 mA	
<b>dimensions cable screw joints inclusive (h x w x d)</b>	366 x 240 x 132 mm	
<b>weight</b>	2,8 kg	
<b>protection class</b>	IP 20	
<b>temperature range</b>	-20 °C up to +60 °C	
<b>humidity</b>	10 up to 95 % rh	
<b>displays</b>	operating display alarm displays (alert, action and fire alarm) fault display 10-digit bargraph display for smoke level infrared-LED for wireless data transmission	
<b>display sensitivity</b>	adjustable at stages: level 1: 0.04 %/m level 2: 0.02 %/ level 3: 0.01 %/m level 4: 0.005 %/m	
<b>number of alarm thresholds/contacts</b>	3 alarm thresholds (alert, action and fire alarm) 3 potential-free switching-over contacts	
<b>fault signals</b>	collective signal for device and air flow fault 1 potential-free switching-over contact	
<b>load on contact/relay</b>	1 A, 30 V DC	
<b>terminals</b>	max. 2.5 mm <sup>2</sup>	
<b>recorder output</b>	smoke level and air flow	
<b>event memory</b>	yes	
<b>number of remote displays</b>	max. 2 per detection unit	
<b>pipe system</b> according to project planning guidelines	- max. area monitored	2880 m <sup>2</sup>
	- max. total pipe length	360 m
<b>air flow monitoring in pipe system</b>	blockage: 50% or single hole fracture : up to end of pipe	

## Remote Display

<b>voltage supply</b>	15 up to 30 V DC	
<b>current consumption quiescent (at 24 V)</b>	10 mA	
<b>current consumption alarm (at 24 V)</b>	max. 65 mA	
<b>dimensions</b>	<b>wall housing version</b>	171 x 150 x 57 mm
	<b>19"-version</b>	107 x 130 x 15 mm
<b>temperature range</b>	-20 °C up to +60 °C	
<b>humidity</b>	10 up to 95 % rh, not condensed	
<b>protection class</b>	<b>wall housing version</b>	IP 54
	<b>19"-version</b>	IP 30
<b>displays</b>	like detection unit	
<b>distance from air sampling smoke detection system</b>	max. 1,000 m	

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