

EX-TEC® Combi



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Multi-gas measuring device for work place monitoring
with active and passive explosion protection

Application Ranges

Work place monitoring of up to 5 gases

The **EX-TEC® Combi** is a combined warning and measuring device for various gases and consists of:

- ▶ The basic device with built-in pump and data storage for documentation
- ▶ Space to plug-in 4 sensors for the measuring of max. 5 different gases

The sensor chamber can be equipped optionally with the following sensors:

- ▶ Methane CH_4
- ▶ Carbon dioxide CO_2
- ▶ Oxygen O_2
- ▶ Hydrogen sulphide H_2S
- ▶ Carbon monoxide CO
- ▶ Combination sensor $\text{H}_2\text{S} / \text{CO}$
- ▶ Further gases on request

Application range – GAS WARNING

Atmosphere control (work place monitoring) of pits and cavities in the areas

- ▶ Drinking water supply (stop tap pits)
- ▶ Gas supply
- ▶ District heating
- ▶ Telecommunication (PTT pits)
- ▶ Waste water technical installation (sewage plants, pumping pits, areas at digestion chambers, rainwater settling tanks)
- ▶ Public traffic
- ▶ Walkable water crossing
- ▶ Chemical industry

Application range – GAS MEASURING

Determination of gas concentrations

- ▶ **Pin-pointing of leaks (without heavy gas proof)**
 - ▶ Measuring of gas concentrations in bar holes
 - ▶ Indicating the bar hole with the maximum concentration
- ▶ **Gasing/Inertisation**
 - ▶ Controlling the filling process with natural gas and the decrease of oxygen concentration
 - ▶ Controlling the sweeping process with nitrogen and the decrease of natural gas concentration
 - ▶ Measuring the methane and oxygen concentration



Measuring Ranges

TLV Measuring (... according to TRGS 402 and TRGS 900)



0 ... 100 % LEL and
0 ... 100 vol.-% **methane**

Warning of combustible mixtures

- By leaking gas pipes near the pit
- Near deposits of oil, carbon, natural gas or LPG
- Near sanitary landfills, marshes, chemical companies, petrol stations or refineries
- By cleaning or coating works with substances containing solvents
- By inadmissible leading flammable substances into the sewerage system (e.g. leaking petrol)



0 ... 5 vol.-% **carbon dioxide**

Warning of lack of oxygen

- By an increase of other gas components
- By digestion processes of organic waste in pits (e.g. wet leaves)
- By welding and heating processes with open flame
- By the consumption of breath



0 ... 25 vol.-% **oxygen**

Warning of toxic gases

- By formation of carbon dioxide for reasons of bacterial processing
- By formation of carbon dioxide in areas containing mineral water
- By formation of carbon dioxide in exhaled air
- By formation of hydrogen sulphide in sewage
- By formation of carbon monoxide for reasons of incomplete burning processes (e.g. badly adjusted heaters)
- By formation of carbon monoxide near streets or near parking places



0 ... 500 ppm **carbon monoxide**



0 ... 100 ppm **hydrogen sulphide**



Technical Data

Characteristics

- ▶ large, illuminated LCD
- ▶ micro-processor controlled
- ▶ self-test when switched-on
- ▶ visible and audible alarm
- ▶ TLV measuring and alarming according to TRGS 402 and TRGS 900
- ▶ extensive menu functions for personal device adjustments
- ▶ PIN code distribution for directed access control
- ▶ minimum and maximum value display per gas
- ▶ adjustable pre-alarm and main alarm per gas
- ▶ short and long term alarm per gas
- ▶ adjustable inspection interval for regular inspection dates
- ▶ adjustable test gas concentrations

Sensorics

Gas	Measuring range	Durability expected	Measuring principle
CH ₄	0 ... 100 % LEL and 0 ... 100 vol.-%	5 years	catalytic combustion / thermal conductivity
CO ₂	0 ... 5 vol.-%	5 years	infrared
O ₂	0 ... 25 vol.-%	2 years	electro-chemical
H ₂ S / CO	0 ... 100 ppm / 0 ... 500 ppm	3 years	electro-chemical

further gases on request

Technical Data

operating time: min. 9.5 h (pump operating)
power supply: NiCd-accumulator, rechargeable
EX-protection (CENELEC) II 2 G EEx ib d IIB T3
test institute: Physikalisch-Technische Bundesanstalt, Braunschweig
▶ certificate No.: PTB 96 ATEX 2166, 3. Supplement
▶ identification: II 2 G EEx ib d IIB T3
protection type: IP 54
operating temperature: - 10 °C ... + 40 °C
storage temperature: - 20 °C ... + 40 °C
humidity range: 15 ... 95 % r. h., non-condensing
dimensions (W x H x D): 129 x 192 x 65 mm
weight: 1.500 g
(subject to sensor equipment)

Accessories

- ▶ Charging technique for 12 V, 24 V or 100 - 240 V
- ▶ Compact cases in 2 sizes
- ▶ Leather carrying bag
- ▶ Hand probe
- ▶ Floating probe and probe hoses 1 m, 2 m or 6 m
- ▶ Test set and test gases

