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INSTRUMENTACION INDUSTRIAL

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Microtector III G888

7-Gas-Detector with integrated wireless module

- Integrated wireless module for transmission of all measurement data and dead man's warning
- 10cm small / 225g light
- Full featured, rugged design (IP67)
- Optical alarm system with colour-change display
- Extremely loud alarm, 103 dB(A) for optimum personnel protection
- Simultaneous monitoring of hydrocarbons (methane, propane and acetylene) and carbon dioxide
- 4-beam infrared sensor (NDIR)
- Up to 4 selective electrochemical sensors

Technology for people and the environment

Safe and simple

The Smallest All-rounder
The Microtector Ⅲ G888 is the smallest and lightest multi-gas detector with a wireless module in the world. With five sensor slots and the ability to measure up to seven gases simultaneously, the Microtector Ⅲ G888 offers more than comparable detectors. Depending on which sensors it is equipped with, this gas detector warns users of hazards due to toxic, flammable gases and vapors, as well as against a lack of oxygen or excess oxygen. Due to individual sensor combinations and a wide range of accessories, the Microtector Ⅲ G888 is suitable for every set of requirements.

Wireless
A special highlight of the Microtector Ⅲ G888 is its ability to transmit the current measurement data wirelessly to a nearby control center. This means the head of operations always has precise information about the current hazards to which his or her employees are exposed. An additional acceleration sensor informs the head of operations when the detector carrier is in motion and even in which position it is in (vertical/horizontal). In addition, the Microtector Ⅲ G888 is equipped with a dead-man's warning. In an emergency, this means no time will be lost before you are able to take appropriate rescue measures. The range of the wireless unit is 100 m. The wireless signal can be amplified using a separate repeater so that the range of the signals can be extended to 1500 m and can penetrate stable brick walls.

Easy operation
The Microtector Ⅲ G888 has just three buttons. The device is ready for operation after pressing just one button. Two more buttons and a clearly structured menu guarantee intuitive handling.

Device variants and sensor combinations
Depending on the version of the device used, you can use a combination of precalibrated, plug-in sensors. All sensors such as electrochemical sensors or infrared sensors are detected automatically, and all parameters, properties, and gas-specific limit values are applied. The sensors are characterized by a long service life, high measuring accuracy, quick response, and low cross-sensitivities.

Devices variants
The sensor slots can be equipped as desired with the following number of sensors:
1 catalytic combustion sensor (CC) for CH_4, 1 infrared sensor (IR) and 4 electrochemical sensors (EC). Some sensors can detect several gases at the same time, which, when optimally combined, can be used to implement up to 8 gas monitoring tasks simultaneously using a single device.

Sensor combinations
The design of the Microtector Ⅲ G888 allows you to use a wide variety of different sensor combinations. Many years of experience has shown, though,, that the following combinations are useful in far more than 80% of applications.

Variant 1
1 IR or 1 CC and up to 3 EC
Potential applications can be found in all areas in which gases are produced, processed, and need to be monitored. If you want to monitor flammable gases in the LEL range or in their % by volume as well as CO_2 at the same time, then our infrared sensor is the right choice. If broadband monitoring of all flammable gases is sufficient for your application, then you can use our reliable WT. Three additional electrochemical sensors can then be selected according to your needs (e.g.: O_2, H_2S, and CO)

Variant 2
1 IR and up to 4 EC
Potential applications can be found in many areas, e.g. in sewage treatment plants, in the biogas segment, or on refrigeration units, just to name a few. Equipping the sensor slots in this manner is useful and safer anywhere where you need to measure flammable gases as well as monitor chlorine or ammonia levels, for example, in addition to the "standard" gases.

Other variant are possible.

Practice-oriented Design

Reliable detection of CO_2 and CH_4
Equipped with a selectively measuring 4-beam infrared sensor (NDIR), it is possible to detect CO_2 in ppm or % by volume and flammable gases in the LEL and % by volume ranges. Damage to the sensor from substances toxic to the sensor, e.g. silicone compounds or hydrogen sulfide, is impossible when you use the IR technology. An advantage of IR sensors over heat tone sensors is that they will not be damaged, even at high gas concentrations, and will supply precise measurement values.

The infrared principle (NDIR)
With only one IR measurement chamber, the Microtector Ⅲ G888 can precisely detect carbon dioxide, methane, propane, and especially acetylene (hydrocarbons) at the same time. The sensor uses up to four detector elements to accomplish this. The absorption paths and wavelengths of the beams are optimally designed to match the gases and the measurement ranges. As an option, the infrared sensor can be equipped with pressure compensation if large fluctuations in the atmospheric pressure are expected in the application (e.g.: in underground mines).

Data logger
The integrated data logger records the measured gas concentrations and activates alarms over a period of up to 45 years. The data stored can be read out and documented using the TS400 test station or the DS400 docking station.

Large display with zoom function
Due to the clear graphic display and the 180° rotation, the measured values can be read out at any time (even under extreme conditions). This means you have both hands free in every situation. The zoom function temporarily displays individual measured values using an oversize font, which makes it easier to read individual measurement values, and it also displays additional information on the corresponding gas measured.

Innovative alarm system
Alarm situations are signaled acoustically using multi-frequency alarm tones at 103 dB (A) and are also signaled visually. The visual alarm system, based on the principle of a traffic light, significantly increases the comprehensibility of the alarm. The entire background of the display changes to the corresponding color, from green to yellow and red. In addition, the surrounding LED strip blinks in the same color as the alarm displayed:

Red
Second alarm: Highest alarm level!

Yellow/orange
First alarm: Caution!

Green
All measured values are in the normal range

Alarm limit values
Three alarm limit values for flammable gases and oxygen as well as two current limit values for toxic gases indicate its high performance. In addition to the Occupational Exposure Limit value (OEL), the Long-Term Average value (LTA) and Short-Term Average value (STA) are also monitored automatically, and their average values are stored. All limit values are protected by a code that you can specify individually.

Water-resistant
Due to its high quality rubber coating, the Microtector Ⅲ G888 is slip-resistant, shock-resistant, and water-resistant (IP67).

Ex-protected lamp
The Microtector Ⅲ G 888 is equipped with an integrated explosion-protected lamp. Among other uses, the lamp can be used to illuminate dark shafts or channels in a room.

Safety meets design
The Microtector Ⅲ G888 unites technical innovation with attractive design. Independent design awards confirm the outstanding performance in terms of design and functionality, while highlighting its compact size and exceptionally low weight in particular.

German Design Award
SPECIAL MENTION 2015

product design award
iF 2014

reddot design award winner 2013

Technical data

Microtector Ⅲ G888

Detection principle
Electrochemical (EC) (up to 4):
Toxic gases and oxygen
(ppm / %Vol)

Catalytic combustion (CC):
Flammable gases and vapours
(to 100 %LEL)

Infrared (IR):
Carbon dioxide (%Vol / ppm)
Flammable gases and vapours
(100 %LEL and %Vol)

Expected sensor lifetime:
Up to 5 years, depending on sensor

Test gas supply:
Diffusion

Display:
Illuminated full-graphic LCD with colour change for alarm, automatic size adjustment for optimal readout, zoom function for maximum readability, gas concentration at current value and peak level, indication of battery capacity and real time clock

Alarms:
Depending upon gas type, 3 instantaneous and 2 calculated exposure alarms, battery alarm

Optical alarm:
Colouring of the display depending upon alarm condition of the equipment (green/orange/red), 360° circulating red LED

Audible alarm:
103 dB(A)
can be reduced to 90 dB(A)

Temperature:
Operation: -20°C .. +55°C
Storage: -25°C .. +55°C
               (recommended 0 .. +30°C)

Humidity:
Operation and storage:
5 .. 95 % r. h.

Pressure:
Operation and storage:
700 .. 1300 hPa

**Zero point /
calibration adjustment:**
User-friendly, calibration via AutoCal function (pre-programmed function via service menu), manual calibration via service menu (code necessary)

Power supply:
NiMH battery rechargeable

Charging:
Charge and trickle charge via drop-in charger and dockingstation

Abmessungen:
68 x 100 x 30 mm (WxHxD)
Display diagonal 55 mm

Wight:
225 g depending upon sensor configuration

Material:
Rubberised polycarbonate

Protection class:
IP67

Inspection date:
Displayed after activation

Datalogger:
30 hours (interval of 1 minute)
1800 measured values per gas, adjustable intervals (1 s – 60 min) recording of average, peak or instantaneous values selectable

Approval:
applied for

**EC Type Examination Certificate /
EEC Performance Test Approval:**
applied for

Electromagnetic compatibility:
applied for

Sensor combination		Sensor slots				
Gas	**Measurement range**	**1**	**2**	**3**	**4**	**5**
Ammonia NH_3	0-200 ppm	EC	EC	EC		
Combustible gases: Methane, Propane, Hexane, Nonane	0-100 % LEL				CC	IR
Chlorine Cl_2	0-10 ppm		EC	EC		
Chlorine dioxide ClO_2	0-2 ppm		EC	EC		
Hydrogen Chlorine HCl	0-30 ppm	EC	EC	EC		
Ethylene oxide C_2H_4O	0-20 ppm		EC	EC		
VOC - Isobutylene C_4H_8	0-500 ppm		PID			
VOC - Isobutylene C_4H_8	0-2000 ppm		PID			
Carbon dioxide CO_2 **and** Methane Methane	0-5 Vol.-% 0-100 % UEG 0-100 Vol.-%					IR
Carbon dioxide CO_2 **and** Methane, Propane, Nonane	0-5 Vol.-% 0-100 % UEG					IR
Carbon dioxide CO_2 **and** Methane, Propane, Nonane	0-25 Vol.-% 0-100 % UEG					IR
Carbon monoxide CO	0-300 ppm	EC	EC	EC		
Carbon monoxide CO reduced H_2-sensitivity	0-300 ppm 0-500 ppm	EC	EC	EC		
Carbon monoxide CO	0-1000 ppm	EC	EC	EC		
Carbon monoxide CO	0-2000 ppm	EC	EC	EC		
Carbon monoxide CO **and** Hydrogen sulphide H_2S	0-500 ppm 0-100 ppm	2x EC				
Phosphine PH_3	0-10 ppm	EC	EC	EC		
Oxygen O_2	0-25 Vol.-%	EC	EC	EC		
Sulphur dioxide SO_2	0-10 ppm	EC	EC	EC		
Hydrogen sulphide H_2S	0-100 ppm	EC	EC	EC		
Hydrogen sulphide H_2S	0-500 ppm	EC	EC	EC		
Nitrogen monoxide NO	0-100 ppm		EC	EC		
Nitrogen dioxide NO_2	0-30 ppm		EC	EC		
Hydrogen H_2	0-2000 ppm	EC	EC	EC		
Hydrogen H_2	0-1 Vol.-%	EC	EC	EC		
Hydrogen H_2	0-4 Vol.-%	EC	EC	EC		

Overview of gases and measurement ranges, more gases on request