



IYONI II

Personal safety equipment for the mining industry



The IYONI II is a useful combination of cap lamp and gas monitor that helps solving two decisive underground safety problems simultaneously:

- **Illumination**
- **Warning from gases**

The entire gas warning module is integrated in the cap lamp. The cap lamp and the gas monitor are easily plugged onto a hard hat. One switch is sufficient to activate both the lamp and the gas monitor. The IYONI II has been specially designed for the harsh environmental conditions in underground mining. It is impact-proof and almost insensitive for dust and humidity.

Illumination

An extremely small and lightweight but powerful halogen lamp provides a bright light for all kind of work. The cap lamp is easily plugged onto the hard hat and always light up the area, which is most important for the work carried out. No shadows or blindings occurs. The optimal light prevents accidents during operation of devices and machines.

Gas warning monitor

Toxic and explosive gases have often been the cause for accidents in underground mining. Only permanent monitoring

of the ambient air ensures safety for human beings and material. Effective personal safety, however, is only achieved, if every miner carries his own gas monitor. The IYONI II warns for one or even two gas hazards occurring in mining. The IYONY II is available in three versions:

- **Methane (CH₄) and carbon monoxide (CO)**
- **Methane (CH₄) only**
- **Carbon monoxide (CO) only**

Methane (CH₄) is a combustible gas. Methane together with air rapidly builds up an explosive mixture. Even a tiny spark will cause an explosion of the mixture. Such a spark can occur when metal strikes together, an electrical device is switched on or by lighting a cigarette.

Carbon monoxide (CO) is taste- and odorless. Even a small concentration (30 ppm TLV – Threshold limit value) is poisoning and can lead to long-term health effects.

The IYONI II warns for both gas hazards. Should a gas concentration exceed a pre-set threshold value, the IYONI II indicates an alarm through its blinking lamp. In addition to this an alarm LED lights up and indicates which gas is present in a dangerous concentration. An additional audible alarm signalizes a main alarm.

An accumulator powers both, the cap lamp and the gas monitor. The accumulator can easily be carried on a belt. For charging of the accumulator the lamp only needs to be placed on the respective docking station.

The IYONI II increases the personal safety in the mining industry.

Please contact us:

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IYONI II

Technical Data

Dimension:

(without lamp)
51 x 45 x 26 mm (WxHxD)

Weight:

(without lamp)
32 g (only CH₄)
39 g (only CO)
42 g (CO and CH₄)

Operation voltage:

3,2 .. 4,8 V, through
accumulator

Ambient temperature:

-10 .. +45 °C

Ambient pressure:

800 .. 1500 mbar

Humidity:

15 .. 99 % r.H.

Current consumption:

Only lamp: 800 mA
Lamp and CO: 850 mA
Lamp and CH₄: 920 mA
Lamp and CH₄+CO: 970 mA

Operation time:

16 hours
(depending on version)

Protection:

IP 65

Testing:

SABS IEC 79-0
Group I, 450 °C

Gas detection**Gases:**

Methane, CH₄
Carbon monoxide, CO

Alarm thresholds:

CH₄: Variable e.g. 1.4 to 2 Vol.-%
CO (alarm 1): Variable e.g. 100 ppm
CO (alarm 2): Variable e.g. 400 ppm

Gas supply:

Diffusion

Alarms:

Loud alarm horn 75 dB.
Blinking lamp.
2 alarm-LEDs for clear
distinguishing of CO and CH₄-
alarm.

Alarm thresholds are variably
and distinctively displayed.

Expected lifetime of sensors:

CH₄: 1 year
CO: 2 years

Detection principle:

CH₄: Catalytic combustion
CO: Electrochemical cell

Lamp

Powerful halogen lamp
Power, 3 Watt
Reflector diameter 65 mm

Models available:

IYONI II - incl. gas warning monitor for methane, CH₄

IYONI II - incl. gas warning monitor for carbon monoxide, CO

IYONI II - incl. gas warning monitor for methane and carbon monoxide, CH₄ + CO

We reserve the right of modification

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