

## INSTALLATION AND OPERATING INSTRUCTIONS

ams® KOMBIALARM



### ADDITIONAL SENSOR with sensor for anesthetic gas

#### Introduction

These operating instructions provide important information on the correct installation and operation of your additional sensor. Please read the instructions completely and carefully before installation. Keep the instructions and pass them on to third parties as necessary.

#### Intended use

The additional sensor is designed to detect anesthetic gas. It is intended for use in caravans and campers. The included sensor additionally detects liquid gas, i.e. propane/butane (LPG) as well as natural gas (methane). We draw to your attention that the alarm device is designed to detect anaesthetic gas.

#### Scope of delivery

- 1 Additional sensor
- 2 fixing screws
- 1 Installation and Operating Instructions

#### Safety information

- Do not operate the additional sensor with the operating voltage specified for the device.
- This device is only suitable for indoor use. Keep away from moisture.
- Modifications made to the additional sensor can result in electric shock or malfunction.
- Do not open the device. Opening the device voids all guarantee claims.

#### General overview

As a standard the KombiAlarm offers the possibility to connect up to two additional sensors. The additional sensors are available in different designs:

- Additional sensor for anesthetic gas
- Additional sensor for carbon monoxide (CO)

The additional sensors can be connected to either one of the two additional inputs SENSOR 2 and SENSOR 3 irrespective of the type of sensor used.

#### Placement

The additional sensor is designed to be wall-mounted. The installation location must be selected in accordance with the following criteria:

##### Anesthetic Gas

###### Point of attachment

The function as anesthetic gas alarm device consists in warning in time the passengers in case of robberies with anesthetic gas. The additional sensor detects such anesthetic gases in the atmosphere just in the lowest concentrations, i.e. yet before they can spread their anesthetizing effects and eliminate the passengers' reactivity.

This warning is made by means of a loud alarm signal, for ex. to wake up the passengers asleep at night.

By the loud alarm signal the proximate neighbours' attention is called to the crime, too.

The additional sensor reacts to all volatile hydro-carbons with anesthetic effect. The alarm threshold is adjusted very sensitively.

##### Placement

We recommend to install a second sensor (additional sensor) even in case of a normal-sized caravan or camper.

Anesthetic gases are very multifarious and show different behaviours in the air. So, a sensor should be attached once on the ceiling and once on the floor at one time.

Thereby, you arrange the conditions that both these anesthetic gases are detected which are lighter than the air (mounting upwards) and such gases which are heavier than the air (falling down to the floor).

Such a safety can only be achieved by the installation of at least two sensors.

For a very big caravan we recommend to connect a third sensor.

**The system should be installed near by the sleeping area in the vehicle.**

#### Propane/Butane/Methane

##### Point of attachment

The installed sensor for the detection of anesthetic gas reacts also to liquid gas, i.e. propane/butane (LPG) as well as town gas/natural gas (methane).

The Alarm threshold is for beneath the lower border of explosion, i.e. before an explosive mixture arises.

##### Placement liquid gas (Propane/Butane)

Escaped liquid gas is heavier than the air so falls to the floor and spreads there.

For the detection of liquefied gas, the distance from the floor should be 15 - 30 cm and the distance to the gas device at most 4 m. Please make sure that the selected installation site is not directly next to an exit.

##### Placement town gas / natural gas (Methane)

Town gas and natural gas are lighter than the air and mount upwards.

For the detection of town gas/natural gas, the additional sensor should be installed 15 - 30 cm below the ceiling and at most 6 m from the gas device. Please make sure that the selected installation site is above the highest window or door opening.

##### Attention:

Devices designed to detect combustible gases are no substitute for correct gas installation and proper operation of gas plants.

#### The following locations are not suitable installation sites:

- Outside of the vehicle, e.g. for the monitoring of open bottle crates
- Separated areas (e.g. closet interiors or behind curtains) which could, in the event of a gas leak, prevent the alarm from triggering
- In air currents from fans (ventilation, air-conditioning, etc.) or in the vicinity of doors or windows
- Close to a smoke exhaust
- Areas in which the temperature can fall below -10°C or rise above +40°C
- Wet rooms such as bathrooms and showers where the relative humidity can rise above 95%
- Directly next to a cooking stove
- Directly above cooking facilities
- Directly above a drain (for town gas/natural gas)
- Directly below a drain (for liquefied gas)
- Areas where dirt and dust can clog the sensor
- In rooms with potentially explosive atmospheres



**The alarm may not be used outdoors!**

#### Installation



**Make sure that the voltage is disconnected during installation and when connecting the power supply!**

The additional sensor CO can optionally be fixed by sticking or by screws or a combination of both.

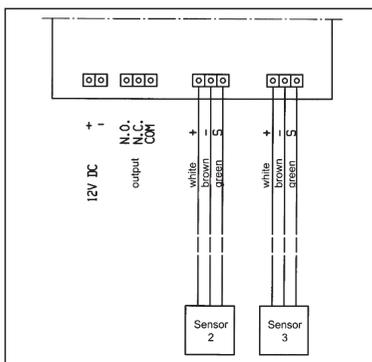


**Make absolutely sure to install the alarm at the height specified in the chapter entitled 'Placement'!**

## Electrical connection

The additional sensor will be delivered with a 3-wire cable of about 3 m in length.

The sensor is connected to the main unit at either of the two inputs labelled 'SENSOR 2' or 'SENSOR 3':



**Attention must be paid to connecting the wires to the correct terminals.**

If necessary the cable length can be extended by 5 m at the most.

Recommended extension cable: Lyyi 3x0.25 mm<sup>2</sup>

**Do not use a cable with a smaller cross section!**

## Operation

The sensor has no separate ON/OFF switch. It is activated together with the main unit (main switch in position 'I'). When switched on, the green LED on the sensor lights up. After the yellow LED has gone out and the green LED on the main unit is activated, the add-on sensor is also ready for operation.

The sensitivity is adjusted automatically. The system is designed for continuous operation and should be activated at all times while you are on holiday.

## Function Check

The function check at the system in operation (LED green lights up) is performed as follows:

- Ensure that the entire system is ready-to-run (green LED of the main system lights up).
- Hold a normal gas lighter in front of the case opening sensor and let escape gas **without** igniting the flame.
- In case of proper operating the KombiAlarm gives alarm within a few seconds by lighting up the red LED – relevant for the sensor - and activates the acoustic warning signal.
- The alarm goes out as soon as the gas concentration has evaporated.

**The function test should be carried out regularly, at least every 4 weeks!**

## Alarm

If the anesthetic gas concentration or the gas concentration is exceeding the threshold of sensitivity adjusted ex works, the device immediately gives an alarm – volume about 85 dB (A) – by the red warning light and the siren.

A signal is probably transmitted towards other connected alarm units or appliances.

- Open then immediately all windows and doors
- Avoid arcing (do not press electrical switches)
- Turn off all gas-operating appliances and open fire
- Do not hesitate to bring children and persons asleep to leave the car.
- Immediately try to find out the cause of the alarm.
- Especially in case of leaking gas system, ensure that the repair is made by a specialist.



**Do not switch of the device in the event of an alarm!**

## False Alarm

According to its purpose, the warning system is adjusted very sensitively. Therefore, the sensor of the system reacts to other gaseous materials.

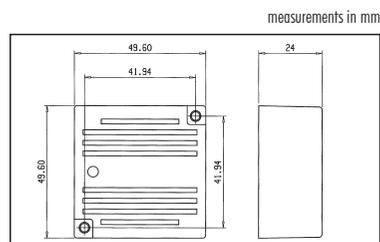
The use of aerosols (fuel gas in sprays, etc) but also dense tobacco fume or alcoholic evaporations can release an alarm, even if no anesthetic gas or gas is existing.

## Technical data

Alarm threshold / sensitivity (for anesthetic gas):  
Lowest possible from ca 100 ppm  
(depends on the anesthetic gas used)

Alarm threshold/sensitivity (for gas), guiding value:  
butane (liquid gas) ca 0.4% in the ambient air  
propane (liquid gas) ca 0.5% in the ambient air  
methane (natural gas) ca 0.8% in the ambient air

Power consumption: ca 60 mA  
Temperature range: -10°C / +40°C  
Humidity: max. 95% rel.  
Protection level: IP 20 DIN 40 050



Subject to changes in construction and design!

## Service life

When operating continuously under normal ambient conditions, the expected service life of the sensor is approx. 7 years.

**Replace the additional sensor after a service life of 7 years!**

Various chemicals can damage the sensor permanently. Do not subject the sensor to the following substances and environments:

- Sprays and adhesives containing silicone
- Aggressive environments in which hydrogen sulphides, sulphur dioxide, chlorine or hydrogen chloride is present (cleaning agents containing chlorine, descaler sprays)
- Moisture and condensate
- Salt-laden atmospheres

## Maintenance and cleaning

- Regularly clean the housing of the device with a duster or slightly damp cloth. Remove as much of the dust deposits as possible from the slit openings in the housing.

**The additional sensor must never be sprayed with water!**

- Regularly check the functionality of the device (see the chapter on function tests).

## Important

- The additional sensor must be installed properly. Please work as specified in the operating instructions.
- Please consider permitted range of temperature and moisture.
- In case you put the system into operation in a vehicle, you may exclusively activate the system if the engine is turned off.
- We reserve the right to make improvements to the construction and design so we are always able to supply state-of-the-art warning devices.

## Disposal



Electrical devices may not be disposed of in normal household waste. In accordance with the law, used electrical devices must be recycled in an environmentally compatible way. At the end of its service life, take the device to the waste disposal facility of your city or community.

## Guarantee

We guarantee this device for 2 years from the date of purchase. The guarantee applies only to material and manufacturing defects. Further claims or other claims, especially those for compensation for injury to persons or damage to property outside of the device, are excluded. There is no legal claim for the compensation of damage arising from fire or explosion. We are under no obligation to make repairs or to replace components whose defects derive from misuse, damage or modification after the date of purchase. The obligation to bear liability arising from the sale of the additional sensor will under no circumstances exceed the cost for replacement of the product. Under no circumstances will we assume liability for consequential damages arising from product defects. The warranty does not cover any damages (property damages or injuries to persons) resulting from a robbery with an anesthetic gas. The guarantee applies in connection with the sales receipt which must be sent in with the device. The cost of postage is borne by the customer. Unauthorised work on the device invalidates all guarantee claims. Your statutory rights are not limited by this guarantee.

The product is intended for private use only, and not for commercial use.

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