INSTALLATION AND OPERATING INSTRUCTIONS

ams® KombiAlarm

CE

ADDITIONAL SENSOR CO with sensor for carbon monoxide (CO)

Introduction

These operating instructions provide important information on the correct installation and operation of your additional sensor CO. 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 CO is designed to detect carbon monoxide. It is intended for use in caravans and campers.

Attention:

- Under certain circumstances, this carbon monoxide alarm may not provide adequate protection to persons who because of their age, because of pregnancy, or because of illness are especially susceptible to the effects of carbon monoxide. If in doubt, ask your GP.
- Devices designed to detect carbon monoxide are not a substitute for the correct installation and regular maintenance of fuel-fired equipment or regular chimney cleaning!

⚠ **This carbon monoxide alarm is not suitable for use as a smoke alarm or as a detector of combustible gases!**

Scope of delivery

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

Sicherheitshinweise

- The additional sensor CO may only be installed by a person who is properly qualified.
- 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.

What is carbon monoxide?

Carbon monoxide (CO) is a highly toxic gas released when fuels are burned. It is colourless and odourless and is, therefore, very difficult for human senses to perceive. The first warning symptoms of the presence of CO in the air are usually headaches and nausea.
A dangerous amount of carbon monoxide can result from the incomplete burning of carbon-based materials, e.g. solid fuels (such as wood, coal, coke), liquid fuels (such as oil and benzene) and gas fuels (such as natural gas, town gas and liquefied petroleum gas (LPG)). This can have one or more of the following causes:

- The heating device is defective or has been inadequately maintained
- The ventilation of the room is inadequate
- A chimney is partly or completely blocked

Symptoms:

Fatigue, headaches, dizziness, nausea, general pains in the chest or stomach area

Effects of carbon monoxide poisoning

Carbon monoxide binds the haemoglobin in the blood which reduces the oxygen transported in the body. Highly concentrated CO leads to death in only minutes.

35ppm	The highest permissible CO value over a period of 8 hours
200ppm	Light headache, fatigue, dizziness, nausea after 2 to 3 hours
400ppm	Headache in the area of the forehead within 1 to 2 hours, risk of death after 3 hours
800ppm	Dizziness, nausea and convulsions within 45 minutes, loss of consciousness within 2 hours, death within 2 to 3 hours
1600ppm	Headaches, dizziness and nausea within 20 minutes, death within 1 hour
6400ppm	Headaches, dizziness and nausea within 1 to 2 minutes, death within 10 to 15 minutes

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 / SENSOR 3) irrespective of the type of sensor used.

Placement

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

When the additional sensor CO is installed in the room where there is a combustion device:

- The alarm should be installed close to the ceiling but no closer than 150 mm from the ceiling.
- The alarm should be placed at a height above that of all doors and windows.
- The carbon monoxide alarm should be placed at a distance which, measured horizontally, is between 1 m and 3 m from the possible source.
- If there is a partition in a room, the detector should be on the same side of the partition as the possible source.
- In rooms with slanted ceilings, the additional sensor CO should be installed on the higher side of the room.

When the additional sensor CO is installed in bedrooms and in rooms which are far away from a combustion device:

- The additional sensor should be installed at 1.5 m above floor level.

The following locations are <u>not</u> 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
- Next to a door or window
- In air currents from fans (ventilation, air-conditioning, etc.)
- Close to an air exhaust (e.g. smoke extraction hood) or other similar equipment Ventilation openings
- 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 or a basin
- Areas where dirt and dust can clog the sensor
- In rooms with potentially explosive atmospheres

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

Installation

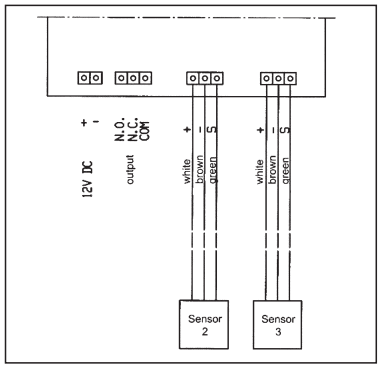
⚠ **Make sure that the voltage is disconnected during installation and when connecting the power supply!**

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 CO 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: Liyy 3x0.25 mm^2

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

For the function check of the additional sensor CO there is unfortunately no such simple method, as the reproduction of the toxic carbon monoxide is hardly possible.
To a limited extent, the sensor also reacts to the alcoholic content in breath. After the consumption of a glass of beer, liquor etc. the system must wail after being breathed on.
Perhaps, this test can even be performed with a gas lighter as mentioned above or with fumes of tobacco.

Thus, the function check of the sensor has to be effected in the following way:

- 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 concentration of gas exceeds the preset threshold, the unit immediately activates the alarm by activating the respective red warning light and the siren – volume about 85 dB (A). A signal is also transmitted to any other warning devices or appliances that might be connected.

What to do in the event of an alarm

Remain calm in the event of an alarm. Carry out the following measures:

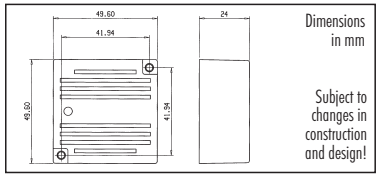
- Open all doors and windows to increase ventilation and allow the carbon monoxide to escape.
- Stop using all combustion devices and, if possible, make sure they are switched off.
- If the alarm continues, clear the vehicle. Leave doors and windows open.
- Do not enter the vehicle again until the alarm signal has muted.
- Get medical assistance for anyone who shows symptoms of carbon monoxide poisoning. Draw attention to the fact that carbon monoxide poisoning is suspected.
- Call the maintenance or service company for the equipment and explain the problem.
- Do not use the combustion equipment again until a person with the required qualification has inspected the equipment in accordance with applicable requirements and has approved the equipment for use.

False alarm

To fulfil its purpose, the alarm system is set so that it is very sensitive. The system's sensor can therefore also respond to other gaseous media. The use of aerosols (propellants in sprays, etc.) and high tobacco smoke concentrations can also trigger an alarm. The device can also react to brief emissions of exhaust gas, for example, when the equipment starts.

Technical data

Alarm thresholds / sensitivity:	
Carbon monoxide (CO)	about 200 ppm
Current consumption:	about 130 mA
Operating temperature	-10°C to +40°C
Humidity	max. 95% rel.
Protection level	IP 20 DIN 40 050



Dimensions in mm

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. Never use household cleaners with ammonia (spirits of ammonia) or other chemicals, such as cleaning agents or solvents.

The additional sensor must never be sprayed with water!

- The additional sensor must not be painted or coated.
- 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.
- Make absolutely sure that the additional sensor CO is installed at the correct height.
- Please consider permitted range of temperature and moisture.
- In case you put the system into operation in a vehicle, you may exclusivly 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 CO 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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ZS CO/KA-0612-2011-GB