

INSTALLATION AND OPERATING INSTRUCTIONS

ams® KOMBIALARM



The ultimate alarm device with sensor for liquid gas (propane/butane) and natural gas (methane) and anesthetic gas.

1. Generals

Having bought an alarm device **KombiAlarm** from the company **ams** demonstrates your consciousness of security and your responsibility for your family's health and property. To this fact, we render our appreciation and congratulation to you.

The **ams KombiAlarm** is an autarchic alarm system containing, besides the complete semiconductor electronics, even the sensor and the acoustic alarm signalling equipment. It is supposed to be connected to a DC voltage of 12 V.

The system is equipped with a very special sensory function which allows to use the appliance **both as a gas alarm device and as an anesthetic gas alert system.**

Furthermore the system **ams KombiAlarm** affords the opportunity – according to the size of the vehicle and the operation purpose of the alarm device – to connect **two other additional sensors.**

To connect external alarm devices (for ex. flash warning light, siren, etc.) there is a relay output available.

2. ams® KOMBIALARM as GAS WARNING DEVICE

The system reacts to **liquid gas, i e propane/butane (LPG) as well as natural gas (methane).**

Due to the setting data it is ensured that straight at the appearance of very low gas concentrations the alarm threshold is exceeded and an optic and acoustic alarm occurs.

These setting data are far beneath the lower border of explosion, i e before an explosive mixture arises.

Point of attaching: Due to their specific gravity the various gases show different behaviours in the room. Therefore, it is necessary for the function of the appliance and in this way for your security to strictly observe the installation height:

- Liquid gas (propane/butane)

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

- Attaching of the device near (approx. 20 cm) above the floor, if possible even nearby the gas-operating device.

- Natural gas (methane)

The gases are lighter than the air and mount upwards.

- Attaching of the device onto the wall, 15 – 30 cm beneath the highest point on the ceiling.

3. ams® KOMBIALARM as ANESTHETIC GAS ALERT DEVICE

The function as anesthetic gas alarm device consists in warning in time the passengers in case of robberies with anesthetic gas. The **ams KombiAlarm** 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 system reacts to all volatile hydro-carbons with anesthetic effect. The alarm threshold is adjusted very sensitively.

If the **ams KombiAlarm** is applied as anesthetic gas warning system, 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).

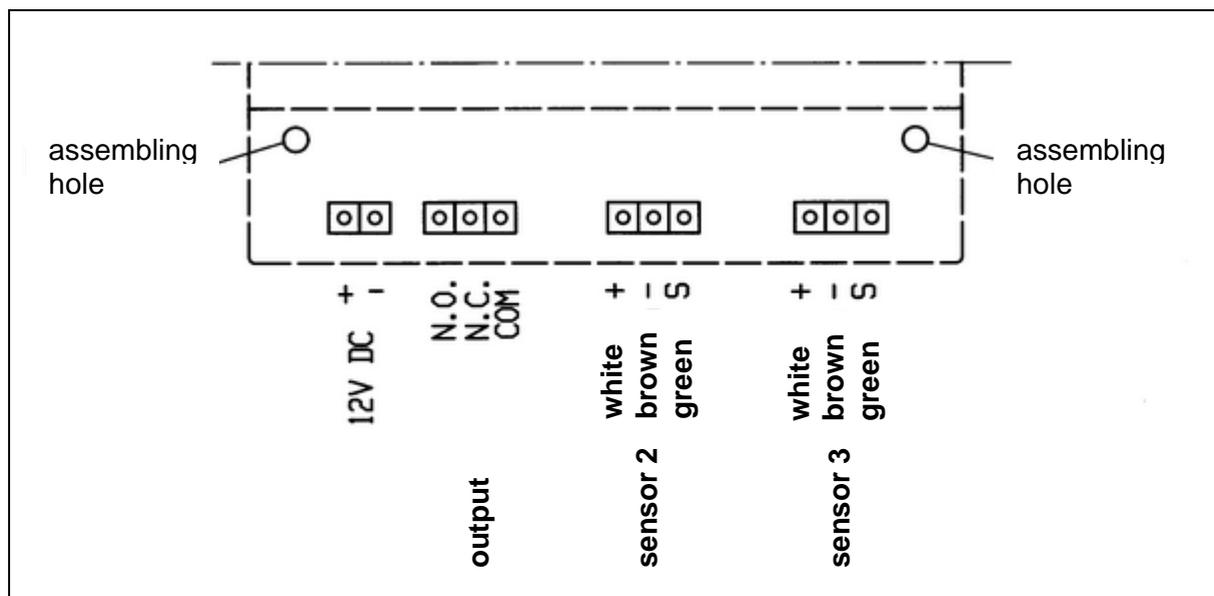
Such a safety can only be guaranteed by the installation of at least **two sensors**.

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.

4. INSTALLATION

The device is flushed with the wall by two screws (s. ill.). Use the enclosed screws. The assembling holes as well as the terminals lie under a cover plate. This cover is only attached by two pins and can be removed without any tools by lateral intervention.



Please observe strictly the installation height due to chapter 2 and 3!

5. ELECTRICAL CONNECTION

Electrical connection only to a DC voltage of 12 V.

Tolerance: -10% / +20%.

For connection we recommend a conduit with conductor designation.

Recommended connection: double wire red/black 2 x 0.34 mm² Liyz.

Connect the cable to the terminals marked with '+12 V DC' and ', -12 V DC' .

A smaller conductor cross section is not permitted!

Observe the right terminal connections!

6. ADDITIONAL SENSORS (accessories)

Up to two additional sensors can be connected to the **ams KombiAlarm**. These ones are available in specialized stores.

If the whole system is used as anesthetic gas warning device we strongly recommend to connect at least one additional sensor.

This is the only way to guarantee the utmost security due to the different behaviours of the anesthetic gases.

7. EXTERNAL DEVICES (accessories)

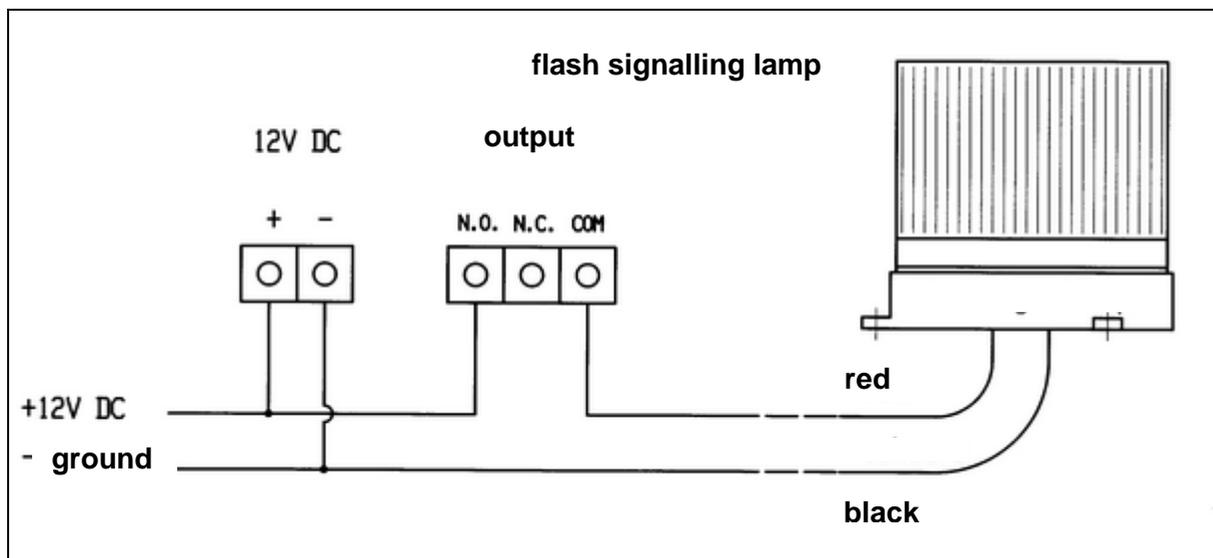
In addition to the integrated siren the **ams KombiAlarm** affords the opportunity to access to external appliances – for ex. flash signalling lamp, additional siren, ventilator, etc. Hereto is disposable a floating maker or breaker contact.

These contacts can be charged by at most 1 A / 30 V DC.

The connection for the maker contact (usually broken -> makes contact in case of alarm) is made to the terminals N.O. and COM. The one for the breaker contact (usually made -> breaks in case of alarm) is made to the terminals N.C. and COM.

Connection example for an external

flash signalling lamp of 12 Volt: - lights up in case of alarm!

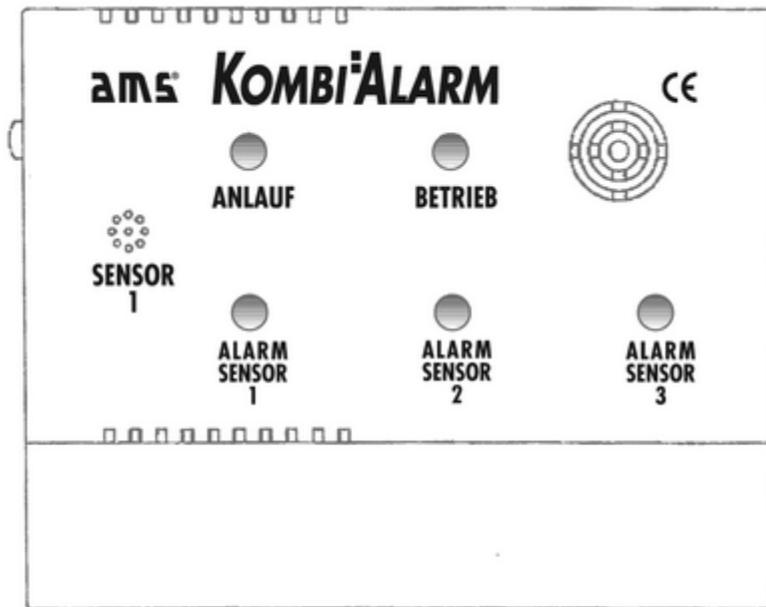


8. PUTTING INTO OPERATION

After the successful connection and the connection of possible add-on sensors or an external alarm unit the system can be put into operation:

Therefore turn the main switch to position ,I'. Then the yellow LED display ,ANLAUF' lights up. Wait until the yellow LED goes out after about 10 minutes and the green LED display ,BETRIEB' is activated. Now your system is ready-to-run. The sensitivity of the threshold is automatically adjusted.

To put the appliance out of operation, turn the main switch to position ,0'. The system **ams KombiAlarm** is – especially as gas warning device – supposed to **run permanently** during your vacancies.



The system is fitted out with the 5 following LED displays:

LED yellow ,ANLAUF'

*Lights up for about 2 min. straight at the switch-on
(system is in activation phase, i e the sensor is brought up to operation temperature)*

LED green ,BETRIEB'

*Lights up after about 2 min.
(system is ready-to-run))*

LED red ,ALARM SENSOR 1'

Lights up, when alarm is given by the integrated sensor.

LED red ,ALARM SENSOR 2'

Lights up, when alarm is given by the additionally installed sensor 2.

LED red ,ALARM SENSOR 3'

Lights up when alarm is given by the additionally installed sensor 3.

9. FUNCTION TEST

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

- Hold a normal gas lighter in front of the case opening ,SENSOR 1' and let escape gas **without** igniting the flame.
- In case of proper operating the **ams KombiAlarm** gives alarm within a few seconds by lighting up the red LED and activation of the acoustic warning signal.
- The alarm goes out as soon as the gas concentration has evaporated.

10. ALARM

If the gas concentration or the anesthetic gas concentration exceeds the threshold of sensitivity adjusted ex works, the device immediately gives an alarm – volume about 85 dB (A) / 3 m – by the respective 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.

11. 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 gas or anesthetic gas is existing.

12. TECHNICAL DATA

Voltage: 12 V DC (-10% / +20%)

Alarm threshold/sensitivity (for gas):

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

Alarm threshold / sensitivity (for anesthetic gas):

Lowest possible	from ca. 100 ppm
(depends on the anesthetic gas used)	

Acoustic alarm generator: ca 85 dB (A) / 3 m

Relay output: floating double-throw contact 1 A / 30 V DC

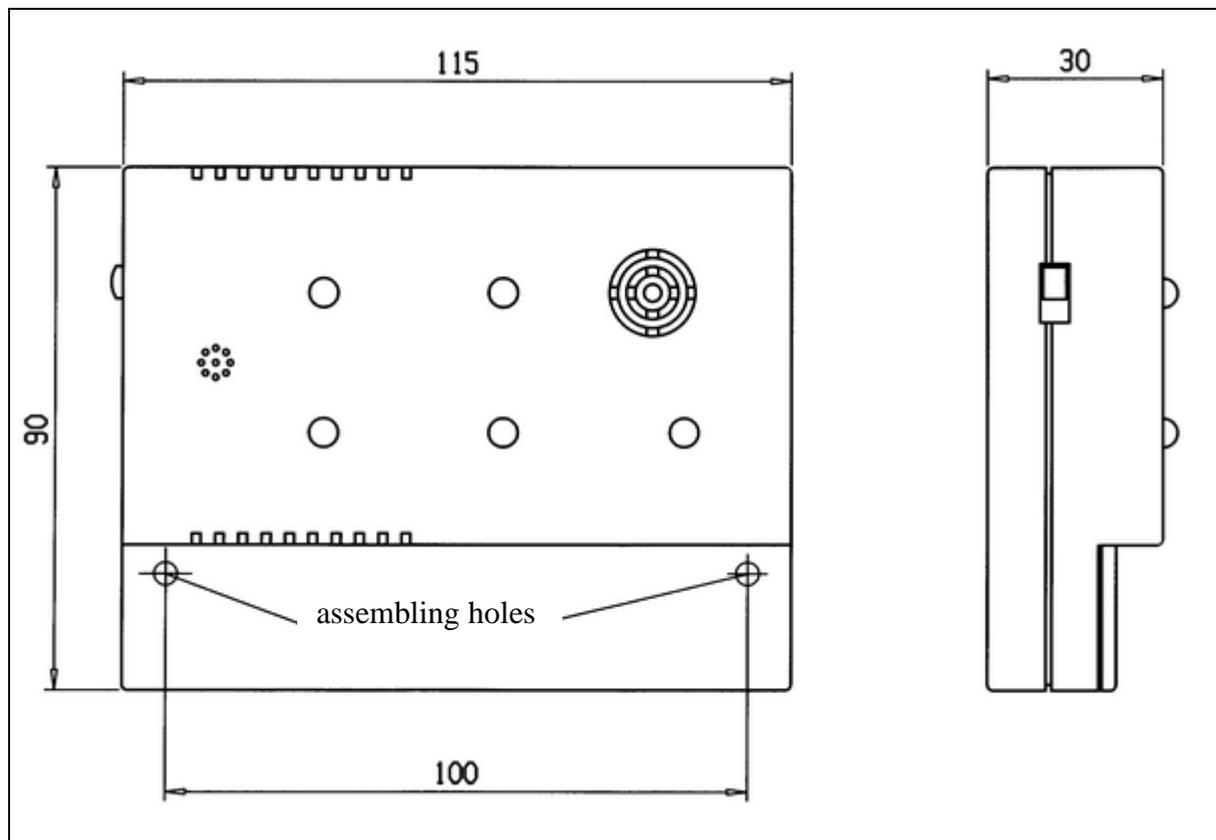
Power consumption: ca 90 mA (state of rest)
ca 145 mA (state of alarm)

Temperature range: -15°C / +40°C

Case protection: IP 20 DIN 40 050

Subject to changes in construction and design!

Measurements in mm



13. IMPORTANT ADVICES

The function test must be repeated from time to time, particularly in case of frequent and long-term rest periods. Thereby, the operating of the siren and the sensor are checked.

Strictly observe also the installation height in accordance to the kind of gas!

If the system is used in vehicles, it may only be activated when the engine is switched off!

Not to be used in the open!

14. WARRANTY

Accurate fabrication, severely examined materials and strict final clearance characterize the quality of our products. We **warrant** each product for a period of **24 months** from the day of purchase (date of invoice). Within this period, all imperfections due to faulty workmanship or construction or material are repaired free of charge.

Further or other claims for damages outside of the device, particularly injuries to persons or property damages, are excluded.

There is no claim for damage in case of a fire or an explosion. The warranty does not cover any damages (property damages or injuries to persons) resulting from a robbery with an anesthetic gas, and will be honoured only if the device is presented with the original invoice. The manufacturer accepts no liability for damage resulting from improper handling.