



Security Tech Germany

# COWM300

## ABUS CO alarm



### USER GUIDE

**CE**<sub>14</sub>

EN 50291-1:2010 + A1:2012

Version 1.3



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# Introduction

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## Introduction

### Information on User Guide

Dear customer,

Thank you for purchasing this CO alarm. This device is a product that has been built using state-of-the-art technology.

This user guide contains important information on starting operation and using the device. Store this user guide in a safe place for future reference. These instructions are a part of this product – bear this in mind if you pass on this product to others.

You will find a list of contents with the corresponding page numbers in the contents.

### Intended use

Only use the device for the purpose which it was designed and built for. Any other use is not considered to be the intended use.

This device may only be used for the following purpose:

- Carbon monoxide detection in private households

## Limitation of liability

Please observe the notes and instructions in this user guide! If you do not follow these instructions, any guarantee claim is invalidated. No liability can be accepted for resulting damage. No part of the product may be changed or modified in any way.

Everything possible has been done to ensure that the content of these instructions is correct. However, neither the author nor ABUS August Bremicker Söhne KG, Altenhofer Weg 25, 58300 Wetter can be held liable for loss or damages caused by incorrect or improper use or failure to observe the safety instructions and warnings.

We reserve the right to make changes to these instructions without prior notice.

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# Safety information

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## Safety information

### Explanation of symbols

The following symbols are used in this manual and on the device:

Symbol	Signal word	Meaning
	<b>Caution</b>	Indicates a risk of injury or health hazards.
	<b>Caution</b>	Indicates a risk of injury or health hazards caused by electrical voltage.
	<b>Important</b>	Indicates possible damage to the device/accessories.
	<b>Note</b>	Indicates important information.



# Safety information

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## General

Before using this device for the first time, please read the following instructions carefully and observe all warning information, even if you are familiar with the use of electronic devices.



### Caution

All guarantee claims are invalid in the event of damage caused by non-compliance with these instructions.

We cannot be held liable for resulting damage.



### Caution

In the event of personal or material damage caused by improper operation or non-compliance with the safety information, we cannot be held liable.

All guarantee claims are void in such cases.

Store these instructions in a safe place for later use.

If you sell or pass on the device on to third parties, you must include these instructions with the device.

# Safety information

## Battery warning information

The device is supplied with 9 V direct current from a 9 V alkaline block battery. To guarantee a long service life and avoid fire and injury, please note the following:



- The batteries must not be directly exposed to heat or sunlight, and must not be stored in a place with a very high temperature.
- The batteries must not be burned.
- The batteries must not come into contact with water.
- The batteries must not be dismantled, pierced or otherwise damaged.
- The battery contacts may not be short-circuited.
- The batteries must be kept away from small children.
- The batteries cannot be recharged.
- Do not dispose of the batteries in domestic waste.

# Safety information

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## Packaging



- Keep packaging material and small parts away from children - danger of suffocation!
- Remove all packaging material before using the device.

## Functioning of the device

To ensure that the device functions correctly, please note the following points:



- Do not cover the device.
- Do not paint over the device or cover it with wallpaper.
- Do not, on any account, open or repair the device. Failure to observe this instruction will invalidate the warranty.
- Do not use the device if it has been dropped or damaged in any other way.

## Scope of delivery | Technical data

### Scope of delivery

- ABUS CO alarm
- 9 V alkaline block battery
- Mounting material
- User guide

### Technical data

<ul style="list-style-type: none"><li>• Power supply</li></ul>	DC 9 V alkaline block battery (battery life time: up to 2 years) <ul style="list-style-type: none"><li>- Duracell 9 V Alkaline (6LR61, MN1604)</li><li>- GP 9 V Alkaline (6LR61, 1604A)</li></ul>															
<ul style="list-style-type: none"><li>• Trigger sensitivity</li></ul>	Conforms to EN 50291-1:2010 + A1:2012 <table border="1" data-bbox="430 660 926 931"><thead><tr><th data-bbox="430 660 622 759">CO concentration</th><th data-bbox="622 660 762 759">No alarm within</th><th data-bbox="762 660 926 759">Alarm at the latest after</th></tr></thead><tbody><tr><td data-bbox="430 759 622 809">30 ppm</td><td data-bbox="622 759 762 809">120 min</td><td data-bbox="762 759 926 809">-</td></tr><tr><td data-bbox="430 809 622 858">50 ppm</td><td data-bbox="622 809 762 858">60 min</td><td data-bbox="762 809 926 858">90 min</td></tr><tr><td data-bbox="430 858 622 908">100 ppm</td><td data-bbox="622 858 762 908">10 min</td><td data-bbox="762 858 926 908">40 min</td></tr><tr><td data-bbox="430 908 622 935">300 ppm</td><td data-bbox="622 908 762 935">-</td><td data-bbox="762 908 926 935">3 min</td></tr></tbody></table>	CO concentration	No alarm within	Alarm at the latest after	30 ppm	120 min	-	50 ppm	60 min	90 min	100 ppm	10 min	40 min	300 ppm	-	3 min
CO concentration	No alarm within	Alarm at the latest after														
30 ppm	120 min	-														
50 ppm	60 min	90 min														
100 ppm	10 min	40 min														
300 ppm	-	3 min														

## Functional principle and features

• Sensor type	Electrochemical
• Sensor lifespan	7 years
• Sensor range	0 to 1,000 ppm
• Detection range	max. 60 m <sup>2</sup>
• Power consumption	< 80 µA (∅ standby)    < 25 mA (∅ alarm)
• Operating temperature	0° to 40° C
• Humidity	30% to 95% (non-condensing)
• Sound pressure	> 85 dB (A)@1 m (3.5 +/- 0.5 kHz pulsing)
• Alarm muting	5 minutes
• Installation location	Wall

## Functional principle and features



- According to EN 50291, the COWM300 ABUS CO alarm is designed and approved exclusively for detecting CO (carbon monoxide) in private homes.
- Application in industrial facilities, offices, boats, caravans or mobile homes is therefore not permitted.

## Functional principle and features

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- The battery-operated ABUS CO alarm (COWM300) detects carbon monoxide (CO) in even low concentrations, then gives off an acoustic as well as optical signal.
- The purpose of the CO alarm is to protect persons against the acute effects of carbon monoxide. However, it cannot prevent the chronic affects of carbon monoxide exposure or offer persons with special risks complete safety.



- The CO alarm is not a substitute for smoke, fire or other alarms.
- It does not detect smoke, heat or other gases.
- In addition, the electrochemical sensor can only detect CO on time in a limited area (max. 60 m<sup>2</sup>, depending on the environmental conditions).

# Formation & dangers from carbon monoxide

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## Formation & dangers from carbon monoxide

### Poisonous effect



- Carbon monoxide (CO) is a colourless, odourless, non-irritating gas which can quickly become a deadly threat.
- Carbon monoxide bonds to the pigment of the red blood cells, thereby preventing the transport of oxygen, which can lead to unconsciousness and death by suffocation.
- High concentrations of CO can lead to death in just a few minutes.

# Formation & dangers from carbon monoxide

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## Typical symptoms of poisoning

Low CO concentration	Mild headaches, nausea, tiredness, flu-like symptoms
Medium CO concentration	Bad headaches, racing heart, vomiting
High CO concentration	Cramps, confusion, unconsciousness, cardiac arrhythmia



- Please note that the symptoms can occur earlier with children, pregnant women, senior citizens and persons with respiratory or heart diseases and even low CO levels could cause organ damage in unborn children.



# Formation & dangers of carbon monoxide

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## Sources of carbon monoxide & preventative measures



- Carbon monoxide is created, among others, during incomplete combustion processes (e.g. defective floor heating or clogged smoke outlets).
- Installing a CO alarm is not a substitute for the proper installation, use and maintenance of fuel-burning devices including related ventilation and exhaust gas systems.
- Have such devices/systems installed only by qualified persons. Acquire the devices/systems in perfect technical condition and have them regularly inspected.
- Make sure that ovens, chimneys and the like are kept clean at all times.
- Never operate barbecues, deck ovens, heating devices or other devices intended for use outside inside closed rooms.

## Behaviour in case of alarm

### Behaviour in case of alarm

When a carbon monoxide alarm sends out a signal, take the following measures in the specified order:



- (1) Keep calm and open all doors and windows to increase the rate of ventilation. Stop using all combustion devices and make sure that they are switched off.
- (2) Press the Test/Reset button to switch off the alarm signal. Do not enter the affected area until the CO concentration has fallen below the critical level.
- (3) If the CO concentration is still critical after the muting time of 5 min, the CO alarm goes off again. (For values over 999° ppm, the alarm signal cannot be switched off!)
- (4) Leave the building in particular when the CO level is high or when the source cannot be instantly detected and alert occupants, if applicable.
- (5) Call the fire service/rescue worker immediately. Follow their instructions. Inform them that you assume carbon monoxide it being inhaled.
- (6) Do not use the affected combustion device until the cause of CO emission has been removed by a professional.

## Behaviour in case of alarm | Selecting location

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- (7) Check the functionality of the CO alarm after it has triggered (using Test/Reset button) and replace the batteries if necessary.

### Selecting location

#### General

The design and spacial distribution of residential buildings as well as the number, type and location of carbon monoxide sources can vary greatly. However, there are general instructions concerning where the device should and should not be installed to keep the risk of false alarms as low as possible.

# Selecting location

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## Which room?

### Installation for optimum safety:

- In every room that contains a combustion device.
- In every room that is used as a sleeping area.
- In every hallway per floor.
- In every room in which people spend long periods of time and from which they could not hear an alarm from another part of the building.

## Selecting location

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### Minimum installation

If the number of alarms is limited or there are combustion devices in more than one room, the following criteria should be taken into account when installing the alarms.

- The alarms should be installed in rooms which contain a device without a smoke outlet or with an open smoke outlet.
- The alarms should be installed in rooms in which occupants spend the most amount of time.

### Where in the room?

Carbon monoxide (CO) has almost the same density as air and therefore distributes itself uniformly in space. Consider the following points when positioning the CO alarm:

It is impossible to give exact instructions on the correct arrangement of an alarm which apply for all types of rooms and their use. The following points should be taken into account when choosing the optimal location for each corresponding situation.

# Selecting location

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## **Alarm located in the same room as a combustion device**

When CO escapes from a combustion point, the heat initially rises. This is why you should install alarms as high as possible on a free wall in rooms with combustion devices, while considering the following points:

- The alarm should be assembled on a free wall, at least 200 mm below the ceiling.
- Install the alarm at a height at which you can reach it without tools and at which you can see all alarm displays. (Between chest and head)
- The alarm should be at a horizontal distance of 1 to 3 m from the possible source of carbon monoxide.
- If the room is divided, the alarm should be on the same side of the division as the possible source of carbon monoxide.
- In rooms with slanted ceilings, the carbon monoxide alarms should be installed at the higher side of the room.

## Selecting location

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### Alarms located in bedrooms and rooms far away from combustion devices

In rooms located far away from combustion devices, the carbon monoxide has already cooled to room temperature. Due to the fact that CO has nearly the same density as air, it distributes uniformly in the air. Consider the following points:

- In bedrooms and in rooms which are located far away from combustion devices, the devices should be at the breathing level of the occupants (e.g. "desk level" at the bed-side table in bedrooms and "eye level" in living rooms).
- Make sure there is sufficient spacing to the ceiling as well as to corners and furnishings (min. 200 mm).

## Selecting location

### Where alarms should not be installed



- Outside (use only possible in closed rooms)
- Where they can be blocked (e.g. by furniture)
- On ceilings (only suitable for wall installation)
- Next to a door or a window (reliable detection cannot be guaranteed)
- Next to an air duct or similar ventilation opening
- In areas in which the temperature can fall below 0° C and rise over 40° C
- In rooms that are exposed to large amounts of dust/dirt or grease



# Installation and start-up

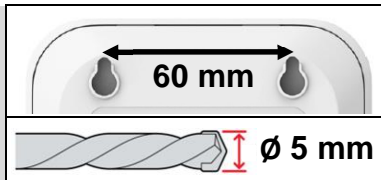
## Installation and start-up

The following two variants are possible for operating the CO alarm:

### Wall installation

Take the following steps in the specified order to install the alarm on the wall:

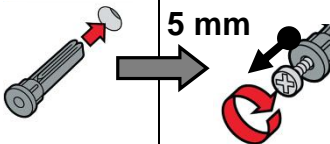
1. Use a water level to mark the drill holes in the horizontal position. (Spacing 60 mm)
2. Drill the holes with a suitable power drill at the previously marked locations. ( $\varnothing$  5 mm)



**Make sure not to damage any cables!**

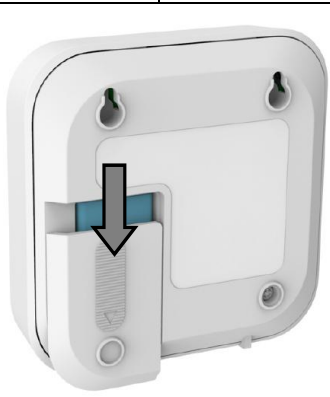
## Installation and start-up

3. Press the plastic dowels into the drill holes and screw in the two supplied screws until the screw heads stick out approx. 5 mm.



4. Open the battery compartment on the device side by pressing on the hatched area and push the cover in the direction of the arrow.

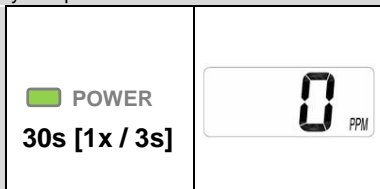
5. Fasten the battery clip on the 9V block battery with the correct polarity. All three LEDs light up briefly and all symbols appear in the display. The CO alarm confirms start-up with a beep.



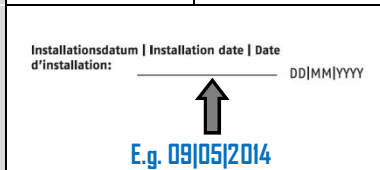
## Installation and start-up

- Place the battery into the compartment (the red safety pin is pressed downwards) and close the battery compartment.

- The green LED blinks every 3 seconds for 30 seconds. The CO alarm is then ready for operation and the green LED blinks every 30 seconds. "0 ppm" appears in the display.

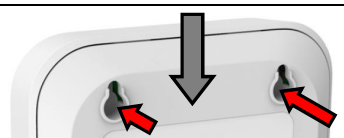


- Then enter the current date (date of installation) on the rear label of the alarm with a water- and smudge-proof pen (see adjacent figure).



## Installation and start-up

9. The alarm can then be set on the screws with the rear side of the device facing downwards and locked into place. (See adjacent figure).



10. Check whether the CO alarm is functioning as soon as it is ready for operation (the green LED blinks once every 30 seconds) by pressing the Test/Reset button. Keep the device at arm's length to protect your hearing.



# Installation and start-up

## Desk-stand

"At breathing level" in bedrooms and living rooms without combustion devices during operation.



Putting in the batteries for start-up is done as described in "Wall installation" under points 4 - 7 as well as 9 and 10.

1. Use the two feet to place the alarm on the bottom side of the housing on a flat, dust-free base.
2. Make sure that the alarm is standing securely and no objects prevent CO from entering the alarm.

# Displays and functions

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## Displays and functions

### Start-up

After connecting the battery, all three LEDs light up briefly and all symbols appear in the display. The CO alarm confirms start-up with a beep.

The green LED blinks every 3 seconds for 30 seconds (alarm calibration). The CO alarm is then ready for operation and the green LED blinks every 30 seconds. "0 ppm" appears in the display.



### Normal state

In the Normal state, the green POWER LED blinks every 30 seconds and signals that the alarm is ready for operation. The current CO concentration in the surrounding air is shown on the display (e.g. 0 ppm).

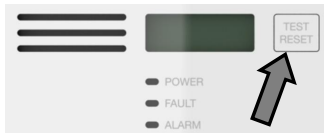
## Displays and functions

The display shows CO concentrations from 30 to 999 ppm. If the CO concentration exceeds this maximum value, the display continues to show 999 ppm.



### Testing the device electronics

Pressing the Test/Reset button triggers a device electronics test: The warning tone signals and the red ALARM LED blinks. This does not signalise that CO is present in the room; it is a confirmation that the alarm is functioning properly.



Test the alarm function after installation and after every battery change without fail (wait about 30 seconds after establishing the battery contact). A regular weekly test is also recommended.

# Displays and functions

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## Display of maximum value

If carbon monoxide is detected in your presence (values of more than 30° ppm), but the CO alarm has reset into the Normal mode because CO levels are no longer present, the device stores the peak CO value detected.


Pressing the Test/Reset button displays the stored value for 5 seconds. When the Test/Reset button is released, the CO alarm returns to the Normal state.

Press the Test/Reset button for 5 seconds to delete the stored value. When the batteries are changed, the value is automatically deleted and automatically overwritten when an alarm is triggered.




# Displays and functions

## Weak batteries

A double beep combined with the FAULT LED blinking signal that the battery is weak. In addition, "  " is shown in the display without interruption.



The acoustic warning signal can be switched off for 8 hours by pressing the Test/Reset button. The yellow FAULT LED continues to blink and "  " is shown in the display.

Replace the battery within 7 days to guarantee proper alarm function. The battery types that can be used for the alarm are listed on the label on the back of the alarm.

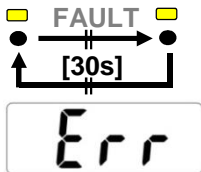
# Displays and functions

## Sensor error

If the device registers a sensor error, this is signalled by a beep (every 30 seconds) in connection with blinking of the yellow FAULT LED.

"Err" (Error) then appears in the display

In this case, replace the entire alarm - the sensor itself cannot be replaced.



## Alarm state

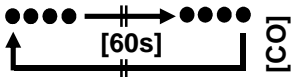
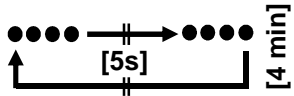
If a critical amount of CO is detected in the room, the measured CO concentration is shown in the display and the alarm outputs the following signals:

**4 short beeps**  
**|| 5 s pause ||**  
**4 short beeps**

After 4 minutes, the alarm signal changes as follows:

**4 short beeps**  
**|| 60 s pause ||**  
**4 short beeps**

Every beep is accompanied by blinking of the red ALARM LED. The alarm beeps as long as there is CO in the air. If the concentration falls below the critical threshold, the alarm goes silent and the device returns to the Normal state.



**1 x ● = 1 x ■ ALARM**

# Displays and functions

## Alarm muting function

If the alarm is in the Alarm state, the acoustic alarm can be deactivated for 5 minutes by pressing the Test/Reset button.

If the muting function is active, "🔊" is shown in the display and the red LED continues to blink (as long as there is a critical amount of CO in the air).

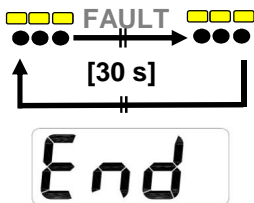
If the CO concentration is still high after a 5 minute muting, the acoustic alarm goes on again.



## Displays and functions

### The end of sensor lifespan

The lifespan of the electrochemical sensor is **7 years**. If the end of the lifespan is reached, this is signalled by a triple beep every 30 seconds in connection with blinking of the yellow FAULT LED. In addition, "End" is shown in the display. If this happens, replace the alarm immediately.



The acoustic warning signal can be muted for 48 hours by pressing the Test/Reset button. The yellow FAULT LED continues to blink and "⏸" is shown in the display.

If the end of the sensor lifespan is signalled for 30 days (or more), muting is no longer possible. After a period of 30 days, the alarming function is no longer guaranteed.

# Care and maintenance

## Care and maintenance

### Cleaning



- Dusty detectors must be cleaned. You can clean dust from the air vents of the detector using a vacuum cleaner or compressed air.
- If necessary, you can remove the dust with a brush.
- You can clean the surface using a cloth slightly dampened in soapy water.



- Do not allow water to penetrate inside the device.
- Do not clean the device in a dishwasher.
- Do not use sharp, pointed, abrasive, caustic or corrosive cleaning materials or hard brushes.

## Care and maintenance



- Do not use chemicals. The following substances can impair sensor function and trigger false alarms: *Methane, propane, isobutane, isopropanol, ethylene glycol, benzene, toluene, ethyl acetate, hydrogen sulphide, sulphur dioxide, products with an alcohol base, dyes, thinners, solvents, adhesives, hairsprays and cleaning products.*
- Do not use flammable liquids for cleaning the alarm.

## Maintenance



- The electrochemical sensor is subject to ageing. The sensor lifespan is thereby limited to 7 years.
- The sensor cannot be exchanged. For this reason, replace the entire device 7 years after the date of its installation at the latest. (See label on the rear side of the alarm).

# Manufacture date and software version

## Manufacture date and software version

There is a 21-digit bar code on the back of the alarm from which the date of manufacture and the software version of the alarm can be derived.

Positions 11, 12 and 21 of the bar code are relevant here:

Position 11 [year of manufacture]								
2009	2010	2011	2012	2013	2014	2015	2016	...
9	A	B	C	D	E	F	G	...

Position 12 [month of manufacture]											
Jan	Feb	Mar ch	Apr	Ma y	Jun e	Jul y	Aug	Sep	Oct	Nov	Dec
1	2	3	4	5	6	7	8	9	A	B	C

Position 21 [software version]				
A	B	C	D	...
V00	V01	V02	V03	...



COWM300###E400001AXA

E4 → date of manufacture [April 2014]

A → software [V.00]



## Warranty



- ABUS products are designed and manufactured with the greatest care and tested according to the applicable regulations.
- The warranty only covers defects caused by material or manufacturing errors at the time of sale. If there are demonstrable material or manufacturing errors, the CO alarm will be repaired or replaced at the guarantor's discretion.
- In such cases, the warranty ends when the original warranty period of 2 years expires. All further claims are expressly rejected.
- The warranty does not cover the batteries supplied.
- ABUS will not be held liable for defects and damage caused by external influences (e.g. transport, use of force, operating errors), inappropriate use, normal wear and tear or failure to observe the instructions in this manual.

## Warranty | Disposal



- In the event of a warranty claim, the original receipt with the date of purchase and a short description of the problem must be supplied along with the CO alarm.
- If you discover a defect on your CO alarm which existed at the time of purchase, contact your dealer directly within the first two years.

## Disposal



### **Disposal as per directive WEEE 2002/96 EC**

The product contains valuable raw materials. At the end of its service life, dispose of the product according to the applicable legal requirements. The product as well as any accessories must be collected and disposed of separately in the EU Devices displaying this symbol may not be disposed of with domestic waste. Please contact your dealer or dispose of the products at the local collection point for electronic waste.

# Declaration of conformity

## Declaration of conformity

ABUS August Bremicker Söhne KG, Altenhofer Weg 25, 58300 Wetter hereby declares that the device with part designation COWM300 is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC.

The declaration of conformity can be obtained from the following address:

**ABUS August Bremicker Söhne KG**

Customer Service Centre

Altenhofer Weg 25

58300 Wetter

GERMANY

