



### WARRANTY CARD

There is 24 months guarantee on the product

1. ZAMEL provides a two-year warranty for its products.
2. The ZAMEL warranty does not cover:
  - a) mechanical defects resulting from transport, loading / unloading or other circumstances
  - b) defects resulting from incorrect installation or operation of ZAMEL products;
  - c) defects resulting from any changes made by CUSTOMERS or third parties, to products sold or equipment necessary for the correct operation of products sold;
  - d) defects resulting from force majeure or other aleatory events for which ZAMEL is not liable;
  - e) power supply (batteries) to be equipped with a device in the moment of sale (if they appear);
3. All complaints in relation to the warranty must be provided by the CUSTOMER in writing to the retailer after discovering a defect.;
4. ZAMEL will review complaints in accordance with existing regulations.;
5. The way a complaint is settled, e.g. replacement of the product, repair or refund, is left to the discretion of ZAMEL.
6. Guarantee does not exclude, does not limit, nor does it suspend the rights of the PURCHASER resulting from the discrepancy between the goods and the contract.

Salesman stamp and signature,  
date of sale

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## CTW-01 CARBON MONOXIDE DETECTOR

Carbon monoxide, commonly referred to as coal smoke, is a highly toxic, colourless and odourless gas easily spreading in the air. It is produced in the process of an incomplete combustion of many fuels such as wood, fuel oil, gas, gasoline, kerosene, propane, coal and oil. Since the gas is colourless and odourless, that is why it is so important to detect earlier the dangerous concentration of coal smoke in a room we usually stay in. It is hard to specify the dangerous value of the carbon monoxide level as it is dependent on the length of time someone spent in this particular room. The standard defines that a detector should activate an alarm in less than 3 minutes if the carbon monoxide concentration is at a level of 300 ppm.

#### FEATURES:

- tested in Poland, certificate of a proper concentration detection 300ppm in less than 3 minutes
- electro-chemical type of sensor
- LCD screen showing the current concentration of carbon monoxide fumes and information messages
- battery powered
- optical signalling
- sound signalling (85 dB)
- battery discharge signalling
- sensor failure signalling

Before sensor mounting,  
first read the manual instruction included in the packaging.



# zameL

## CARBON MONOXIDE DETECTOR

# CTW-01

Tested in  
Poland –  
Efficiency  
Certificate

Tested in Poland

Alarm volume: 85 db

LCD display

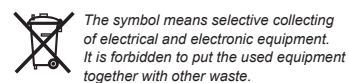
Battery powered

Power: 3 x battery 1.5 V type AA;  
IP20  
Product net weight: 0.117 kg



Made in PRC for Zamel Sp. z o.o.

Declaration of Conformity on the website [www.zamel.com](http://www.zamel.com)



The symbol means selective collecting  
of electrical and electronic equipment.  
It is forbidden to put the used equipment  
together with other waste.

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## TECHNICAL DATA

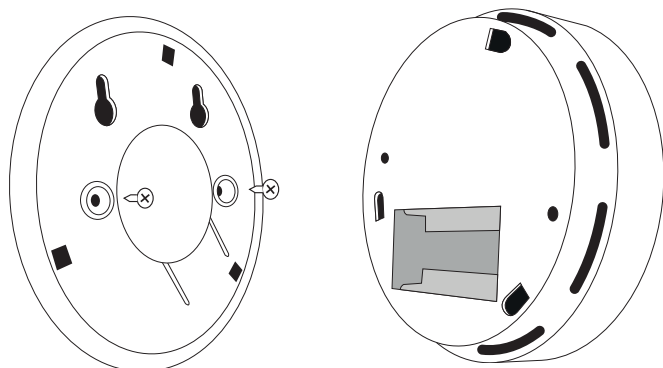
- Power supply voltage: 3 x battery 1.5 V type: AA
- Sensor type: electrochemical
- Current consumption during stand-by mode: 20 mA
- Current consumption during alarm: 30 mA
- Sound level: 85 dB
- Optical signalling of alarm
- CO level displayed on the LCD screen
- Certified detection sensitivity of carbon monoxide: 300 ppm in less than 3 minutes
- Protection class III
- IP protection degree: IP 20
- Operating temperature range: from 0 °C do 40 °C
- Humidity operating range: from 20 % to 90 % RH
- Dimensions [mm]: 33 x 110 x 35

## MOUNTING

Detectors should be mounted mainly near places particularly exposed to the presence of carbon monoxide, which is produced due to the combustion of fuels such as: gas, wood, coal. In order to avoid false alarms it is recommended to keep a 2 meter distance from the possible carbon monoxide sources. Sensors should be mounted at a height of 150 cm from the ground. In order to provide an optimum protection, sensors should be also mounted in closed rooms where the household members stay for a longer time, e.g. especially in bedrooms. In multi-storey buildings it is advised to mount at least one sensor per each floor. Detectors should not be installed both in the so called blind spaces (e.g. a niche covered by furniture or curtains or in the gable of the roof, etc.) and in places where their operation will be affected by the direct supply of fresh air (e.g. near doors, windows, ventilation grilles, fans). Also, these devices should not be placed in areas exposed to dust, dirt, aerosols and household chemicals that can permanently damage the detector.

### In order to mount the device it is required to:

- remove the back cover in the counter-clockwise direction to release the clips
- check if the batteries are properly mounted, in case mount new ones (3 batteries AA type)
- screw the back cover to the wall by means of the attached screws and mount the device on it by turning it in the clockwise direction until you can hear a click



## FUNCTIONS

### First activation

After batteries are properly mounted, the device switches on the LCD screen, the red LED and emits a single sound signal. Next press the „TEST“ button to activate the testing procedure. In case the test has been successful, the device switches off the LCD screen and switches to the operation mode that is signalled every 10 seconds by the green LED flash.

### Test procedure

After pressing the TEST button, the device performs the test procedure by checking the sensor's efficiency. The display shows „000“ and every 5 seconds a repeated sound signal is emitted and the red LED remains switched on. After 30 seconds the device should return to the operation mode signalled by switching off the LCD screen and a flashing green LED (every 10 seconds). It means the test procedure has been successful. Device testing is recommended at least once a month.

### Alarm

If a sensor detects a dangerous carbon monoxide level, it will automatically switch on the LCD screen showing the carbon monoxide level and will emit a sound alarm every 5 seconds, whereas the red LED will flash. In case an alarm occurs, it is required to ventilate immediately the particular room and to leave it at once. It is also important to notify the relevant services to check the cause of excessive concentration of carbon monoxide.

### Mute alarm function

In case the alarm is activated, press the TEST button to mute the sound signal for a few minutes. If the dangerous carbon monoxide level is still so high, the alarm will be activated again.

### Battery discharge signalling

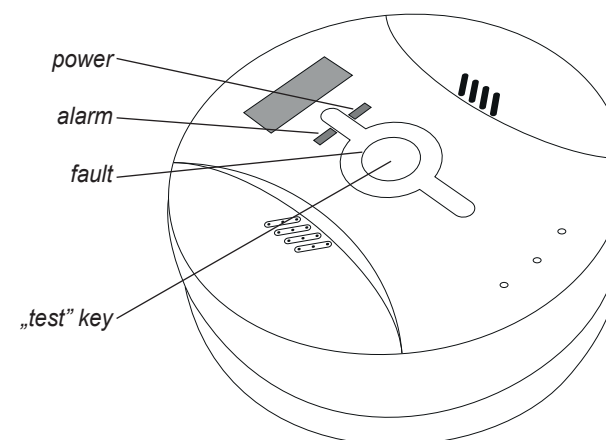
In case the battery charge level is low the display shows the following message „Lb“ and starts emitting a single sound signal with a flashing red LED every 20 seconds. It is required to change the battery immediately.

### Device failure signalling.

The device is equipped with an auto-diagnostic system, which shows „Err“ on the LCD screen in case of a sensor failure occurrence. Additionally, a double sound signal is emitted and the yellow LED starts flashing. The alarm is repeated every 5 seconds. The device failure requires its user to contact the service.

### Signalling the electro-chemical sensor's end of life

After the lifetime of an electrochemical sensor is exceeded, the display shows „End“ and, additionally, a triple sound signal is emitted every 50 seconds with a flashing yellow LED. This means the end of life of the sensor and the necessity to replace it with a new one.



Carbon monoxide, commonly referred to as coal smoke, is a highly toxic, colourless and odourless gas easily spreading in the air. It is produced in the process of an incomplete combustion of many fuels such as wood, fuel oil, gas, gasoline, kerosene, propane, coal and oil. Incomplete combustion is caused by a lower oxygen level necessary for a complete combustion. The above may be due to a lack of fresh (external) air supply to the device where the combustion takes place or due to contamination, usage or improper adjustment of the gas burner or too early closure of the fire box or oven. The following can also be the causes of carbon monoxide accumulation: clogged chimneys and clogged ventilation ducts. The above is especially dangerous in homes where windows are tightly closed or sealed for winter. The danger of asphyxiation is due to the fact that carbon monoxide is an undetectable gas to humans because it is colourless and odourless. It enters the body through the respiratory system and next it is absorbed into the bloodstream. In the human's respiratory system, carbon monoxide is assimilated with haemoglobin 210 times faster than oxygen blocking the flow of oxygen to the body. The above results in a serious threat to human health and life. It prevents the proper distribution of oxygen in the blood and causes damage to brain and other organs. The consequence of an acute poisoning can be an irreversible damage to the central nervous system, coronary insufficiency, heart attack or even death. That is why, it is so important to mount carbon monoxide detectors in lodgings, to control regularly carbon monoxide generating equipment (stoves, boilers, gas water heaters, etc.) and to control ventilation ducts.

### In case of an alarm it is required to:

- Ventilate the particular room by opening the windows and doors
- immediately leave the room, although the alarm is switched off, it is important to define the cause of its occurrence by controlling the condition and the flow of ventilating ducts, the condition of the heating units and eventually notify the relevant services (e.g. fire-brigade, gas-works),
- in case any of the household members has a poisoning symptom (headaches and dizziness, nausea) it is required to immediately notify the ambulance.

### Maintenance and usage remarks

- Clean the device regularly, keep clean the sensor's air inlet - mount the device in places meeting the requirements regarding temperature and humidity,
- do not cover the device with paint while painting the room,
- do not spray the cleaners directly on the device,
- do not allow to flood the sensor,
- mount the sensor according to the requirements,
- it is absolutely required to replace the sensor in case the sensor's end of life.

It is important to take into account that carbon monoxide sensors perfectly raise the protection of household members, but they do not provide 100% certainty of carbon monoxide fumes detection due to a possibility of a device failure, battery discharge and the impact of external factors on the sensor. Therefore, it is required to systematically test the sensor's efficiency (in accordance with this manual instruction) and the heating units (stoves, cookers) to minimize the risk of occurrence of a dangerous carbon monoxide level in the air.

Before mounting the sensor, read this manual instruction first.

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