OPERATING INSTRUCTIONS

CO gas alarm GX - C300P

Professional CO warning device

Item number:

300256

Thank you very much for your trust!
In order to guarantee optimum function and performance of the product at all times and to ensure your personal safety, we would like to ask you to read these operating instructions carefully before installation and initial start-up and, above all, to follow the safety instructions!
The operating instructions are an integral part of this product. Please keep them for future reference!

Scope of delivery
1 GX-C300P CO warning device
2 metres of hose (item no. 21002)
1 dust filter (item no. 300259) with small screw + dowel and 2 cable ties
1 instruction manual and installation material (4 screws, 4 plugs, 2 screwdrivers, 2 large + 1 small PG screw fitting)

Safety instructions
Read the instructions for use carefully before installing or operating the appliance.
Packaging materials are not children's toys. Keep them away from children.
Installation must be carried out by a qualified specialist.

Environmental conditions
The standards used to assess the product specify limits for use in residential, commercial and small business environments, whereby the use of the product is intended for these operating environments:
Residential buildings/spaces such as houses, flats, rooms, etc. Sales areas such as shops, wholesale markets and others with residential-like use
Small business premises such as workshops, service centres, etc.
All locations are characterised by the fact that they are connected to the public low-voltage grid..

Technical data

Operating voltage:	100 - 240 V AC / 50-60 Hz
Power consumption:	max. 6 VA, depending on operating status
Sensor technology:	internal, electrochemical
Relay contact alarm Re1:	250 V~ AC / 5 A (potential-free changeover contact)
Fault relay contact Re2:	60 V= DC / 5 A (potential-free changeover contact)
Sound pressure control unit:	85 dB(A) (100 cm distance)
Software version control unit / sensor:	X 0.80
Control unit operating range:	-15°C ... +50°C / 10 ... 90% rH, non-condensing
Functional range continuous operation:	+10°C ... +50°C / 10 ... 90% rH, non-condensing
Sensor operating range:	0°C ... 50°C / 10 ... 90% rH, non-condensing
Service life* Sensor max.:	6 years @ max. 40°C + min. 40% rH 10 years @ max. 28°C + min. 30% rH
Protection class:	IP 20 (IP65 possible on request)
Control unit dimensions:	80x160x55 mm (HxWxD)

*)The sensor is filled with chemically pure water that reacts with the CO molecules in the environment. The water is isolated from the air inlet by a layer of activated carbon, but can evaporate just above it. The service life of the sensor therefore depends on the ambient conditions: the cooler and more humid the environment, the longer the sensor will last. Once the last µl has evaporated, this is detected by the sensor test and a non-recoverable fault is displayed.
Have your GX-C300P fitted with a new sensor and recalibrated by Elektrotechnik Schabus.

Intended use

The GAS ALARM GX-C300P is a carbon monoxide warning device with an integrated electro-chemical sensor for use in residential, commercial and small business environments. An LCD display provides constant information on the operating status and the exact ppm CO concentration measured in the monitored room, which is either thermally demanding or heavily contaminated with dust. The warning device is connected to the room via a hose.
The alarm is signalled acoustically and visually, and a potential-free relay is switched at the same time, e.g. to activate forced ventilation or to lock the gas supply line with a solenoid shut-off valve so that no more CO can escape in the event of a defect in the gas boiler.
A further relay switches when faults occur, which the warning device detects itself.

The CO sensor, measuring cell, evaluation and software have been subjected to an extensive full test in accordance with DIN EN 50291 at TÜV Süd, and the system has been certified as safe and stable.
The device for fixed installation must not be used in potentially explosive atmospheres. The device is not authorised for any use other than that described above.

Installation must be carried out by a qualified specialist.
Observe the 5 safety rules

Assembly instructions

The GAS ALARM GX-C300P may only be installed on a wall in dry indoor areas. The installation position 'at medium height' is selected so that the display is easy to read when standing. This ensures that the warning device functions perfectly.

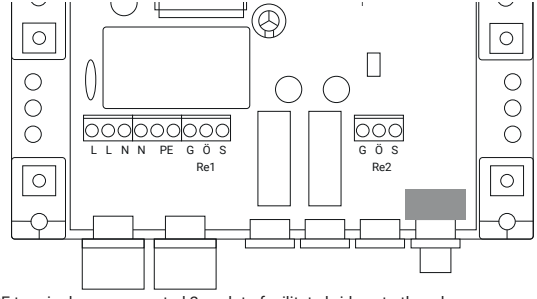
Wall mounting GX-C300P
The four housing screws must be loosened for wall mounting. Then remove the front panel and, if necessary, disconnect the ribbon cable from the connector. The bottom shell of the housing can now be mounted on a wall (mounting material included).

Important! The connection cables leading to the gas detector must be permanently installed as surface-mounted cables.

Relay connection assignment
When connecting accessory devices to the potential-free relay, please note that the switching current of **5 amps** must never be exceeded.
The limit data are for
Alarm relay Re1 (left): 250 Volt AC / 5 A (3 A) / 1250 VA (750 W)
Fault relay Re2 (right): 60 volts DC / 5 A / 300 W

Relay status in monitoring mode: the relay is 'energised' (normally open contact closed/ normally closed contact open)
Relay status in alarm or fault mode: the relay 'drops out' (NO contact open/ NC contact closed)

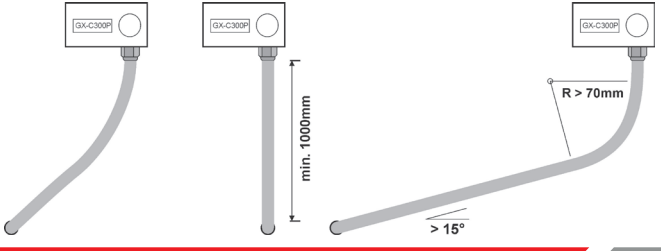
Anschlussklemmen



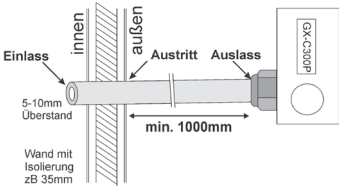
L, N and PE terminals are connected 2 each to facilitate bridges to the relay,
Relay: G = common contact, Ö = normally closed contact, S = normally open contact

Laying the hose to thermally demanding rooms

The warning device must always be positioned **above** the hose inlet
Sack formation is ruled out in any case by skilful routing
The **hose length** between the CO warning device and the wall outlet must be **at least 1000 mm**
Vertical installation is optimal, no horizontal installation!
With lateral offset, the **minimum gradient is 15°**, preferably 20°.
Hose length is max. 4 metres, the laying radius is **at least 70 mm**
The hose must not be kinked or crushed
Check the hose regularly for damage / soiling



- Depending on the position of the hole for the hose and where the warning device is attached, the hose can be shortened.
- Observe the minimum hose length of 1 metre between the outlet (hole) and the outlet (GX-C300P).
- To shorten, add the thickness of the wall and a hose protrusion of 5 to 10 mm, in the example at least 104 cm.

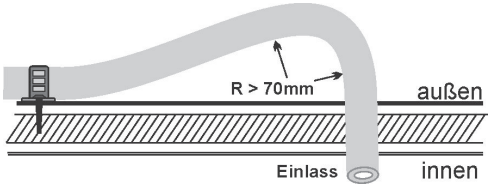


(In rooms to be monitored with dust pollution, considerably more hose is required 'inside' to connect the dust filter with a minimum installation radius).

Vertical hose routing is ideal, with lateral offset a minimum pitch of 15° - 20° must be observed. Sack formation must be avoided at all costs! Accumulations of condensation and other deposits that impair the diffusion of the medium to be monitored into the device cannot be detected by the warning device and may lead to delayed alarm behaviour or, in the worst case, to failure of the monitoring system. The user must regularly check that the hose is clean and, if necessary, clean it or replace it with a hose of the same quality. We only recommend thick-walled types made of silicone, e.g. Schabus item no. 21002. If other types or hoses with a total length of more than 4 metres are used, the response time can be considerably delayed.

Hose routing and fastening

If the GX-C300P is installed vertically above the outlet hole, it is not necessary to fix or guide the hose, unless the area is a public space.
If public traffic is to be expected (e.g. sauna), we recommend a cover with a standard cable duct.
For installation with lateral offset, we recommend the use of empty conduits or plastic hose clamps.
The specialist who carries out the installation is responsible for finding the appropriate fastening for the respective environment and thus contributes to the intended function of the warning device within the framework of the specifications (see top left).



As the hose must not be crushed or kinked, the formation of loops cannot be avoided if the smallest installation radius of 70 mm is adhered to.

Using the dust filter

In dry indoor rooms with a high dust load that are to be monitored, e.g. wood workshops or pellet bunkers, please attach the supplied dust filter to the hose inlet and secure it with a cable tie.

The dust filter can be easily attached to the wall using a screw and dowel in the screw hole of the filter. Please observe the smallest installation radius of 70 mm, however, if the warning device and dust filter are located in the same room, the hose may be considerably shorter than 1000 mm, as would be necessary in thermally demanding rooms. Minimum lengths do not have to be observed.

The dust filter must not be used in thermally demanding, i.e. particularly warm or cold environments. The combination of extraction from a room and the use of the dust filter requires at least similarly tempered rooms in which people are (or can be) permanently present.

Like the GX-C300P itself, the dust filter is only permanently suitable for temperatures between +10°C and +50°C.

Remove dust from the dust filter by blowing regularly and avoid moisture / wetness on the filter.
The filter should be replaced after one year of operation.

A note on the pump for better understanding:

The original idea for thermal treatment of the air to be monitored was actually to use an extraction system from the room through the hose into the device, heat or cool it there, measure it and then release it into the ambient air.

Several thoughts and countless attempts led us to abandon this idea. You

have probably already noticed that we have made the housing relatively tight. On the one hand, you can't poison yourself in the event of an alarm and CO-laden air escaping while you watch the display intently, and on the other, we save the time-consuming processes of 'cooling' or 'heating', as this already takes place in the piece of hose, which is at least 1 metre long. The magic word is 'diffusion', the CO molecules diffuse into the warning device by themselves. This happens more quickly with warmer air and more slowly with cold air. Instead of using a relatively loud pump that is susceptible to faults and usually quite expensive, we have decided to simply accelerate the diffusion process with a quiet PC fan that is suitable for continuous operation.
The fan's speed signal is monitored and the operating status is shown on the start page of the display. Fan: Ready means the fan is running, Fan: Fault means the fan is not running. A fan that is not running is also recognised as a fault and the associated relay Re2 drops out.
However, even if the fan is not running, the CO measurement and, if necessary, the alarm will continue to take place, albeit with a slight delay. How long the delay lasts depends directly on the hose length used and the temperature of the air to be monitored. For this reason, we specify a maximum hose length of 4 metres so that a reliable alarm can still be triggered if the worst comes to the worst.

And how does the CO get out of the appliance?
Quite simply, also by diffusion. We assume that you will lower the CO concentration in the affected room again when the alarm is triggered, either by switching off the gas boiler and/or by activating forced ventilation. The CO molecules always endeavour to achieve a balanced state in a closed system and will therefore move back into the ventilated room.
Inbetriebnahme | Funktionstest | Alarm (Re1)

An electrical function test is carried out for a few seconds when the mains voltage is applied, after which the warning system is immediately operational and monitors the room. During initial commissioning, a brief false alarm may occur at the start, which goes out after a few seconds; if the green LED lights up alone, the warning system is OK and ready for operation.

To check the sensor relay, press the test button for approx. 5 seconds, after which a sensor test is carried out. We recommend carrying out this sensor test every four weeks.

Alarm

When the alarm thresholds are reached, the alarm is signalled with a loud, piercing sound from a piezo sounder, the display light and the red LED flash and the alarm relay Re1 drops out.
Acknowledge the acoustic alarm with the test/reset button and the alarm delay time starts again if the immediately initiated ventilation measures have not significantly reduced the CO concentration value to at least below 5 ppm.

Alarm thresholds and delay times

CO concentration measured by the sensor	no alarm within at the	Alarm latest after	display in the display
0 ppm	-----	-----	Ready
ab 1 ppm	-----	-----	ppm**
30 ppm	120 min	-----	30 ppm*
50 ppm	60 min	90 min	50 ppm*
100 ppm	10 min	40 min	100 ppm*
300 ppm	-----	3 min	300 ppm*

Behaviour in the event of an alarm

- Ventilate the room and switch off the CO source to ensure that no further carbon monoxide can escape. Inform other people and ask them to leave the room.
- Keep calm and open all doors and windows, stop all use of combustion appliances, activate the emergency shut-off valve on gas appliances. Provide fresh air!
- If the alarm continues to sound or sounds again, evacuate the building and leave all windows and doors open. Make sure that everyone in the building is warned.
- Provide medical assistance to anyone showing symptoms of carbon monoxide poisoning and advise that carbon monoxide inhalation is suspected. If necessary, dial the emergency number so that the source of the CO leak can be recognised and eliminated.
- Do not put the combustion appliance back into operation until it has been checked by a competent person and authorised for use again.

Self-tests and faults (Re2)
An in-built intelligence (32-bit µController) constantly monitors the system at around 300 points in hardware and software, several temperatures, voltages and currents are measured and compensated, some of the results are saved for internal long-term tests, offset against each other and some of them are shown on the display.
No automatic self-test is carried out for the sensor element - please start manually, see Maintenance.

Display of a fault
Faults can have many causes and different effects. In any case, the fault relay Re2 drops out so that the building management system / home automation system is informed and any connected gas boiler is switched off as a precaution. The yellow LED also flashes or lights up. An acoustic alarm of a short beep sounds every 10 to 30 seconds.
Press the service button repeatedly until the display indicates the type of fault detected. The term 'error' and a number will appear. Please give this number to Elektrotechnik Schabus Technical Support, who will work with you to find a solution.

Interpretation of faults using the yellow LED
There are only a few faults that affect the measurement of the CO concentration and prevent the alarm from being triggered in the event of danger, but some faults that do not affect the warning system and perhaps only indicate adverse ambient conditions and the associated accelerated ageing or, for example, mains voltage fluctuations. Flashing rhythms of the yellow LED come directly from the µController. If this itself has a problem, the yellow LED will only light up continuously. A controller problem can only be rectified here at the factory in Stephanskirchen. Please contact us.

Troubleshooting
Press the test/reset button to energise the fault relay Re2 again. Relay Re1 remains energised even if the fault persists. Relay 2 only drops out again if there is another fault of the same or a different type.
Most faults rectify themselves or if the warning device is disconnected from the power supply, allowed to cool down for a while (approx. 15 minutes) and then restarted. If there is no improvement, please contact our

technical support, see 6.1 ‘Error’.

Maintenance

To check the sensor status, press the test button for approx. 5 seconds, after which a sensor test is carried out. We recommend carrying out this sensor test every four weeks, but at the latest after one year.

Remove any dust from the GX C300P CO warning device before the annual sensor test and only use dry cloths. Please do not vacuum the device with a hoover, as the small slits and openings in the housing could cause very high wind speeds inside, which could have a lasting effect on the sensor element. The immediate consequence would be an early defect or a greatly reduced service life.

Display information
During commissioning, i.e. when mains voltage is applied, the display welcomes you with our name and the device type. During this time, all self-tests are completed. The main display will then appear:

(01) CO: Ready Fan: Ready / Fault

Each time you press the SERVICE button, you move to the next display until the main display appears again. If you remain on a display, the appliance automatically switches back to the main display after 30 minutes (60 min. from page 06) or if you press and hold the SERVICE button a little longer.

Note for maintenance companies

Each time you press the SERVICE button, you move to the next display until the main display appears again. If you remain on a display, the appliance automatically switches back to the main display after 30 minutes (60 min. from page 06) or if you press and hold the SERVICE button a little longer.

Date	Time	Outdoor temperature	CO2 value %

Date	Time	Outdoor temperature	CO2 value %

General information

Cleaning and care
Avoid exposing the device to moisture (spray or rainwater), dust and direct sunlight. Only clean the device with a dry linen cloth, which may be slightly moistened if it is very dirty. Do not use cleaning agents containing solvents for cleaning.

Declaration of Conformity
The declaration of conformity can be found at:
www.elektrotechnik-schabus.de

Guarantee

- We grant a statutory warranty on your electronic product from Elektrotechnik Schabus for material defects and quality defects from the date of purchase. Elektrotechnik Schabus will repair or replace your device free of charge under the following conditions:
  In the case of a statutory warranty, the appliance must be sent in with the following documents: Description of the fault, proof of purchase and your address and delivery address (name, telephone number, street, house number, postcode, city, country).
  Devices that are returned to Elektrotechnik Schabus must be adequately packaged. Elektrotechnik Schabus accepts no liability for damage or loss during despatch.
  The device must have been used in accordance with the instructions for use. Elektrotechnik Schabus accepts no liability for damage or expenses of any kind resulting from the use of the equipment or accessories or for damage caused by accident, misuse, alteration or negligence.

Return shipment
If your device is defective, please contact us:

Phone	**+49 (0) 80 36 / 67 49 79 - 0**
Email	**info@elektrotechnik-schabus.de**

Please state your full address and the reason for the return. We will send you a return label by e-mail free of charge (only within Germany). Under no circumstances should you send us an unfranked parcel, as we will not accept it! Unauthorised returns that do not constitute a complaint will be charged to you retrospectively.

Environmental information
The production of the product you have purchased required the extraction and utilisation of natural raw materials. It may contain substances that are hazardous to health and the environment. To prevent the spread of these substances in your environment and to conserve natural resources, we ask you to use the appropriate take-back systems. Thanks to these systems, the materials in your product can be reused in an environmentally friendly way at the end of its service life.

WEEE-NR.: 91394868 

The crossed-out waste bin symbol on the product reminds you reminds you to use these systems.

If you require further information on collection, reuse and recycling systems, please contact your local waste advice centre. You can also contact us for more information on the environmental compatibility of our products.

QR code for downloading or reordering at:

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