T39.0.XX.6C-03

EN

GREISINGER electronic GmbH

CO - Transmitter

Operating Manual

GT1 - CO

in accordance with VDI2053

CE

Made in Germany

with option VO

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Intended use

The GT1-CO is a transmitter for measuring poisonous carbon monoxide gas up to a concentration of 300 ppm (0.03 vol %). The 4-20mA output is intended to be connected to suitable displays or apparatus. The gas is measured at the sensor inlet sideways (blue), assembly position: Inlet pointing downwards.
The measuring gas feed is realised via diffusion, therefore low air movement can delay measuring. Because of the verification according to VDI2053 the transmitter is permitted for underground car parks etc.

Operating advice

CO gas is slightly lighter than air (rel. density = 0.97).
The suggested mounting level is at 1.5 – 1.8m above ground floor, sensor opening downwards.

Safety Requirements

This device has been designed and tested in accordance with the safety regulations for electronic devices.
However, its trouble-free operation and reliability cannot be guaranteed unless the standard safety measures and special safety advises given in this manual will be adhered to when using the device.

1. Trouble-free operation and reliability of the device can only be guaranteed if the device is not subjected to any other climatic conditions than those stated under "Specification".
   If the device is transported from a cold to a warm environment condensation may cause in a failure of the function. In such a case make sure the device temperature has adjusted to the ambient temperature before trying a new start-up.
2. General instructions and safety regulations for electric, light and heavy current plants, including domestic safety regulations (e.g. VDE), have to be observed.
3. If device is to be connected to other devices (e.g. via PC) the circuitry has to be designed most carefully. Internal connection in third party devices (e.g. connection GND and earth) may result in not-permissible voltages impairing or destroying the device or another device connected.
4. If there is a risk whatsoever involved in running it, the device has to be switched off immediately and to be marked accordingly to avoid re-starting.

   Operator safety may be a risk if:

   - there is visible damage to the device
   - the device is not working as specified
   - the device has been stored under unsuitable conditions for a longer time

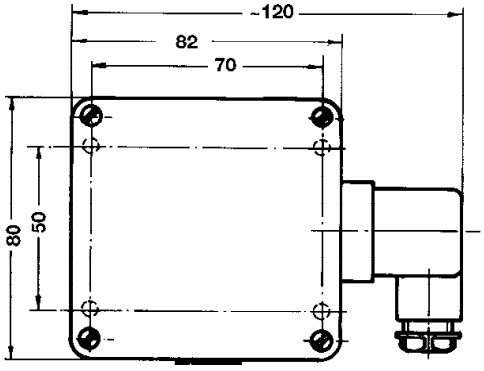
   In case of doubt, please return device to manufacturer for repair or maintenance.
5. **Warning:**
   Do not use these products as safety or emergency stop devices, or in any other application where failure of the product could result in personal injury or material damage. Failure to comply with these instructions could result in death or serious injury and material damage.

Disposal instructions

The device must not be disposed in the regular domestic waste.
Send the device directly to us (sufficiently stamped), if it should be disposed. We will dispose the device appropriate and environmentally sound.

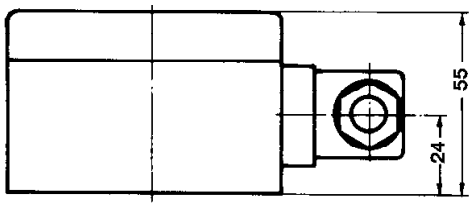
Installation

Dimensions

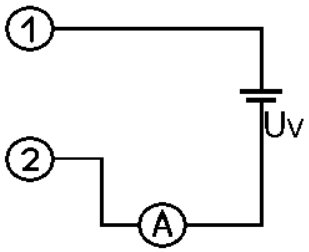


General elbow-type plug installation instructions

To mount the connection cable (3-, or 4-wire depending on type of device) the elbow-type plug screw has to be loosened and the coupling insert has to be removed by means of a screw driver at the position indicated (arrow).
Pull out connection cable through PG glanding and connect to the loose coupling insert as described in the wiring diagram.
Replace loose coupling insert onto the pins at the transmitter housing and turn cover cap with PG glanding in the direction desired till it snaps on (4 different starting positions at 90° intervals).
Re-tighten the screw at the angle plug.



Assignment of elbow-type plug



2-wire-connection (mA)

1 = signal +

2 = signal -

Check of Transmitter

To maintain function of the transmitter, it should be checked with test-gas periodically.
The transmitter will be connected to a specified test gas and the referring display is checked.
Make sure that you can read the display during the test, or perform the test with the help of a second person.

Necessary equipment:
- Test gas cap GT (GZ-01)
- Test gas bottle (GZ-02 – 30ppm CO, GZ-03 – 300ppm CO)
- Extraction valve MiniFlo for gas bottle (GZ-04)

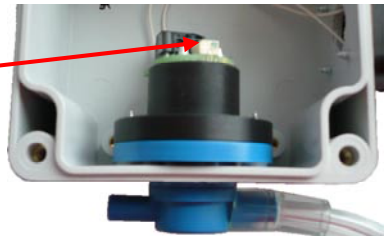
Preparation:
- Screw the closed MiniFlo valve on the bottle
- Connect the tube of the test gas cap to the valve
- Snap the test gas cap to the transmitter

Execution:
- Keep bottle upright, open valve slowly, until the ball in the flow indicator shows 0.5 l/min. (lowest marking of indicator)
- The display rises to a max. value within 1 minute and should be within ±2% of the test-gas concentration.

Note: If there is larger deviation, the transmitter can be adjusted, see "Adjustment".

Adjustment

To adjust the transmitter output: Open housing by unscrewing the 4 screws.
A single potentiometer is situated at the circuit board.
By this the output slope of the transmitter can be changed.



Equipment and preparation: Please refer to “Check of Transmitter”

Execution:
- Keep bottle upright, open valve slowly, until the ball in the flow indicator shows 0.5 l/min. (lowest marking of indicator)
- The display rises to a max. value within 1 minute.
  The adjustment should be performed quickly at the maximum value (best, if not longer than 30 seconds) – falling values afterwards should be ignored.

Specification

Measuring range:	0 ... 300 ppm CO	
Measuring principle:	electrochemical, continuous measurement	
Reproducibility:	≤ 3 ppm acc. to VDI2053	
Response time:	< 60 s	
Cross sensitivity:	≤ 2 % at 300 ppm CO acc. to VDI2053	
Linearity error:	≤ 2 % at 300 ppm CO acc. to VDI2053	
Offset adjustment:	automatically	
Output signal:	4 - 20 mA (2-wire)	
Auxiliary energy:	12 ... 28 V DC	
with option VO:	16 ... 28 V DC	
Perm. burden:	R_A [Ω] = (Uv[V] - 12 V or 16 V) / 0,02 A	
	R_A < 500 Ohm	
Adjusting:	via potentiometer at the PCB	
Display:	Optional: approx. 10 mm high, 4-digit LC-display	
Ambient conditions for electronics:		
Nominal temperature:	25°C	
Operating condition:	-10 to 40°C 15 to 95 %RH (non-condensing)	850 ... 1100 hPa
Storage condition:	-10 to 40°C 15 to 95 %RH (non-condensing)	700 ... 1100 hPa
Housing:	ABS (IP20)	
Dimensions:	82 x 80 x 55 mm (without elbow-type plug)	
Mounting:	With holes for wall mounting (in housing - accessible after cover has been removed).	
Mounting distance:	50 x 70mm, max. shaft diameter of mounting screws is 4 mm.	
Wight:	approx. 190 g	
Electrical connection:	elbow-type plug conforming to DIN 43650 (IP65), max. wire cross section: 1.5 mm², wire/cable diameter from 4.5 to 7 mm	

EMC:
The devices corresponds to the essential protection ratings established in the regulations of the council for the approximation of legislation for the member countries regarding electromagnetic compatibility (89/336/EWG). *In accordance with EN50081-1 and EN50082-2 B, additional errors: < 1% FS.*

When connecting long leads adequate measures against voltage surges have to be taken.