GREISINGER GT10-CO2-1R Transducer

GREISINGER GT10-CO2-1R Transducer Instructions

Contents

GREISINGER electronic GmbH

GREISINGER GT10-CO2-1R Transducer

Product Information

Specifications

- **Model:** GT10-CO2-1R
- **Output Signal:** Please refer to the type plate, free scalable
- **Scaling:** By entering display values for 4mA (or 0V) and 20mA (or 1V/10V) output
- **Connection:** 4 – 20 mA (3-wire) Voltage (3- or 4-wire)
- **Auxiliary Energy (Supply Voltage):**
  - Uv = 12 – 30 V DC, max. 500mA (at 4-20mA, 0-1V)
  - Uv = 18 – 30 V DC, max. 500mA (at 0-10V) or refer to the type plate
- **Reverse Voltage Protection:** 50V permanent
- **Perm. Burden (at 4-20mA):** RA < 200 Ohm, RL > 3000 Ohm
- **Adjusting:** Via keypress by editing offset and scale
- **Display:** Approx. 10 mm high, 4-digit LC display
- **Min-/Max-Value Memory:** Min and max measured values are stored
- **Ambient Conditions for Electronics:**
  - **Nominal Temperature:** 5 to 95 %RH (non-condensing)
  - **Operating Condition:** 850 … 1100 hPa
  - **Storage Condition:** 700 … 1100 hPa
- **Housing:** Dimensions, Mounting, Mounting Distance, Electrical
  - **Connection:** Not specified
- **EMC:** Not specified

Product Usage Instructions

Operating Advice

CO2 gas is outweighed than air (rel. density = 1.52). The suggested mounting level is near the ground floor.

Safety Requirements

This device has been designed and tested by the safety regulations for electronic devices. However, its trouble-

free operation and reliability cannot be guaranteed unless the standard safety measures and special safety advice given in this manual are 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 the 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 the 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 at 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
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.

FAQ

- **Q: What is the recommended mounting level for the CO2 transmitter?**
  A: The suggested mounting level is near the ground floor.
- **Q: What are the ambient conditions for electronics?**
  A: The nominal temperature range is 5 to 95 %RH (non-condensing). The operating condition should be within 850 … 1100 hPa and the storage condition should be within 700 … 1100 hPa.
- **Q: Can I connect the device to other devices?**
  A: Yes, you can connect the device to other devices (e.g., via PC). However, the circuitry must be designed carefully to avoid not-permissible voltages that may impair or destroy the device or another connected device.
- **Q: What should I do if there is visible damage to the device?**
  A: If there is visible damage to the device, it should be switched off immediately and marked accordingly to avoid re-starting. It is recommended to return the device to the manufacturer for repair or maintenance.
- **Q: Can I use the product as a safety or emergency stop device?**
  A: No, these products should not be used as safety or emergency stop devices or in any other application where failure of the product could result in personal injury or material damage.

Specification

- **Measuring range:** 0 … 2000 ppm CO2
- **Accuracy:** (at 20°C, 1013mbar) ± 50 ppm ± 2 % of reading
- **Output signal:** please refer to the type plate, free scaleable
    - **Scaling:** By entering display values for 4mA (or 0V) and 20mA (or 1V/10V) output

    - **Connection:** 4 – 20 mA (3-wire) Voltage (3- or 4-wire)
    - **Auxiliary energy:** (supply voltage) Uv = 12 – 30 V DC, max. 500mA (at 4-20mA, 0-1V) Uv = 18 – 30 V DC, max. 500mA (at 0-10V) or refer to type plate
    - Reverse voltage protection: 50V permanent
    - Perm. burden (at 4-20mA): RA < 200 Ohm
    - Permissible load (at 0-…V): RL > 3000 Ohm
- **Adjusting:** via keypress by editing offset and scale
- **Display:** approx. 10 mm high, 4-digit LC display
- **Min-/Max-Value Memory:** min and max measured values are stored
- **Ambient conditions for electronics:**
    - **Nominal temperature:** 25°C
    - **Operating condition:** -10 to 50°C 5 to 95 %RH (non-condensing) 850 … 1100 hPa
    - **Storage condition:** -25 to 60°C 5 to 95 %RH (non-condensing) 700 … 1100 hPa
- **Housing:** ABS (IP65)
    - **Dimensions:** 82 x 80 x 55 mm (without elbow-type plug and tube)
    - **Mounting:** With holes for wall mounting (in housing – accessible after the cover has been removed)).
    - **Mounting distance:** 50 x 70mm, max. shaft diameter of mounting screws is 4 mm.
    - **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 correspond 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 EN61326 +A1 +(appendix A, class B), additional errors: < 1% FS
    - When connecting long leads adequate measures against voltage surges have to be taken.

Operating advice
CO2 gas is outweighed by air (rel. density = 1.52). The suggested mounting level is near the ground floor.

Safety Requirements

This device has been designed and tested by the safety regulations for electronic devices.

However, its trouble-free operation and reliability cannot be guaranteed unless the standard safety measures and special safety advice given in this manual are 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 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 the 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 restarting.

   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 long time

     In case of doubt, please return the device to the manufacturer for repair or maintenance.
5. **Warning:**

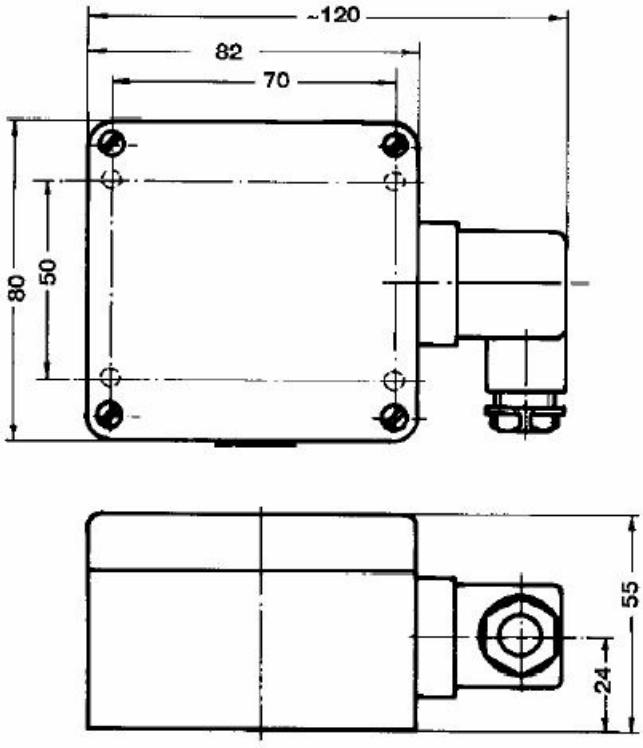
   Do not use these products as safety or emergency stop devices, or in any other application where failure of the product could result in personal injury or material damage. Failure to comply with these instructions could result in death or serious injury and material damage.

Disposal instructions

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

Installation

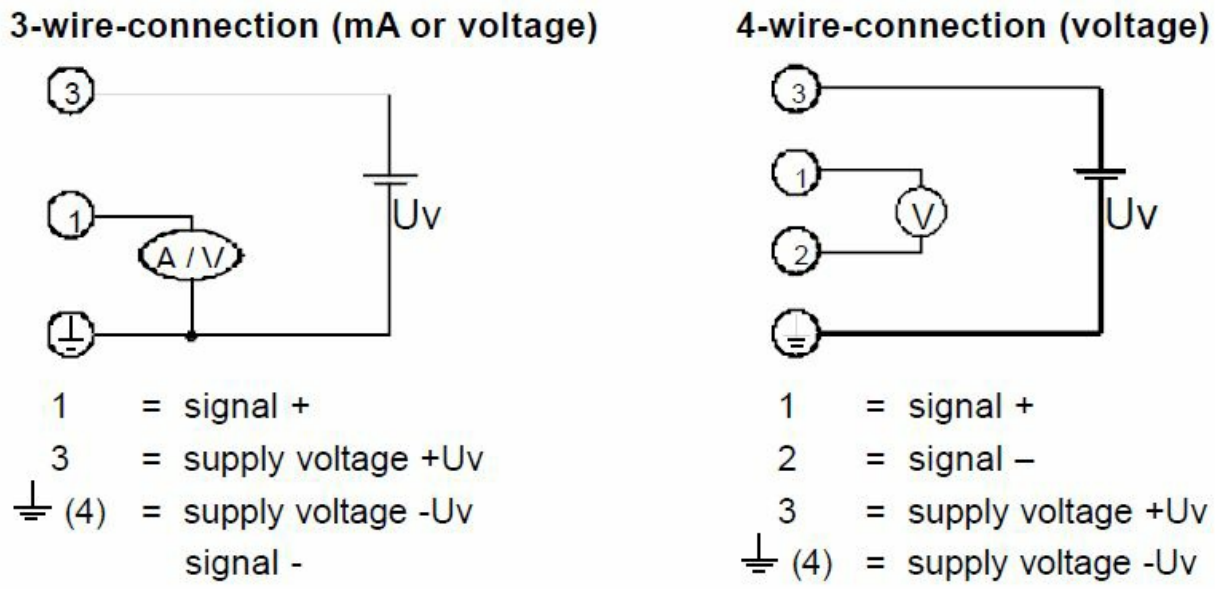
Dimensions



Elbow-type plug installation instruction
To mount the connection cable (3-, or 4-wire depending on the type of device) the elbow-type plug screw has to be loosened and the coupling insert has to be removed through a screwdriver at the position indicated (arrow). Pull out the connection cable through the PG landing and connect to the loose coupling insert as described in the wiring diagram. Replace the loose coupling insert onto the pins at the transducer housing and turn the cover cap with PG glancing 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



The type of current or voltage output is set by works and cannot be changed.

Operation

Display functions

Currently measured values: During normal operation, the CO2 display value is displayed in ppm.

Min/Max Value Memory

- **watch min values (Lo):**
  press ‘down‘(2) shortly once the display changes between ‘Lo‘ and Min values
- **watch max values (Hi):**
  press ‘up‘(3) shortly once the display changes between ‘Hi‘ and Max values
- **restore current values:**
  press ‘down‘(2) or ’up’(3) once again current values are displayed
- **clear min values:**
  press ‘down’(2) for 2 seconds Min values are cleared. The display shows shortly ‘CLr‘.
- **clear max values:**

press ‘up’(3) for 2 seconds Max values are cleared. The display shows shortly ‘CLr‘.

After 10 seconds the currently measured values will be displayed again.

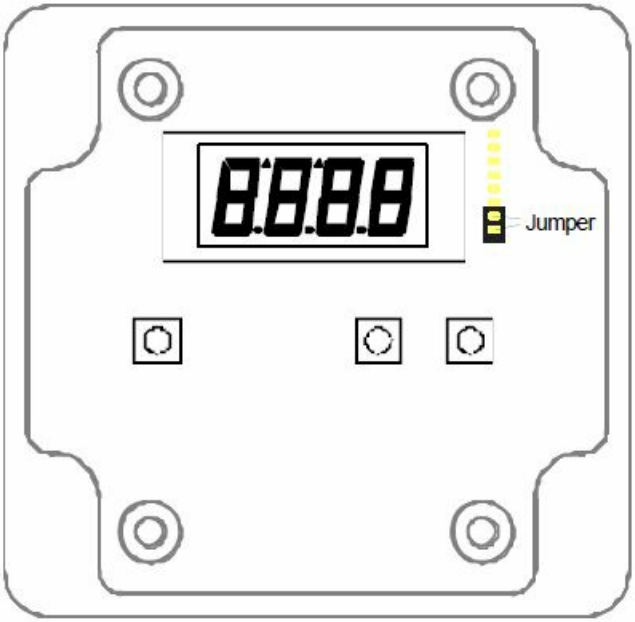
Min/Max Alarm
Whenever the measured value exceeds or undershooting the alarm values that have been set, the alarm value and the means. value will be displayed alternating.

Error and system messages

Display	Description	Possible fault cause	Remedy
Err.1	measuring range exceeded	Wrong signal	Take care of fresh air
Err.7	System fault	Error in device	Disconnect from the supply and reconnect. If the error remains: return to t he manufacturer
Err.9	Sensor error	Sensor defective	
Er.11	Calculation not possible	Calculation variable missin g or invalid	Check temperature
8.8.8.8	Segment test	The transducer performs a display test for 2 seconds after powering up . After that, it will change to the display of the measuring.	

Configuration

- In the configuration, the device parameters can be changed.
- The jumper has to be set, p.r.t. figure right-hand side. To set or remove the jumper, the housing cover has to be removed. Ex works the jumper is set.
- To change parameters press “SET” (key 1) for four seconds, then the parameter selection is started with the first parameter (display shows “dA.Lo”).
- By pressing “SET” the desired parameter is selected, and the editing of the parameter values happens via keys **Δ** (key 3) or ∇ (key 2).
- Pressing “SET” again (after editing the parameter values) returns to the parameter selection.
- Pressing “SET” again after the last parameter finishes the configuration, stores the changes and the instrument returns to the normal mode.



Description of configuration parameter:

- ‘dA.Lo’: Display at zero output (output scaling) Enter the display value at which the output should have 4mA (or 0V).
- ‘dA.Hi’: Display at maximum output (output scaling) Enter the value at which the output should have 20mA (or 1 / 10V).
- ‘DA.Er’: Preferred state of output

Display	Preferred state of the analogue o utput	Annotation
Lo	in case of failure inactive	Output signal = 0 mA or 0 V
Hi	in case of failure active	Output signal = >23 mA or >10.5 V (or >1.1V)

- **‘AL.Hi’: Upper boundary of alarm**
  - At Al.Hi, the boundary is set from which max. alarm will be given.
  - Selectable range: ‚AL.Lo‘ … 2001
- **‘AL.Lo’: Lower boundary of alarm**
  - At Al.Lo, the boundary is set from which min. alarm will be given.
  - Selectable range: -1 … ‚AL.Hi‘
- **‘A.dEL’: Alarm delay**
  The value at A.dEL declares the alarm delay in minutes.
- **‘OFFS’: Offset of CO2-measuring**
  - The offset of the measuring will be shifted by this value, the input is in ppm. (calculation: see by scale)
  - Selectable range: -200…+200 ppm or ‘off’: offset is deactivated (=0, ex works)
- **‘SCAL’: Scale correction of CO2-measuring**
  The scale of the measuring is changed by this value. Selectable range: -10,00…+10,00 or ‘oFF’: scale is deactivated (=0, ex works)

The adjusting by offset and scale is intended to be used to compensate for deviations in the CO2-measuring.

It is recommended to keep the scale correction deactivated (“oFF”). The display value is given by the following formula:

- CO2-display = measured value – offset

With a scale correction the formula changes:
CO2 display = (meas. value – offset) * (1 + scale correction/100)

Documents / Resources

	GREISINGER GT10-CO2-1R Transducer [pdf] Instructions GT10-CO2-1R Transducer, GT10-CO2-1R, Transducer

References

- Manual-Hub.com - Free PDF manuals!
- User Manual