NIEUWKOOP

METEN.NL

USER MANUAL

GT3100

CO_2 TRANSMITTER

Bereik: 0-5000 ppm

4-20mA

Model 37BTV.1



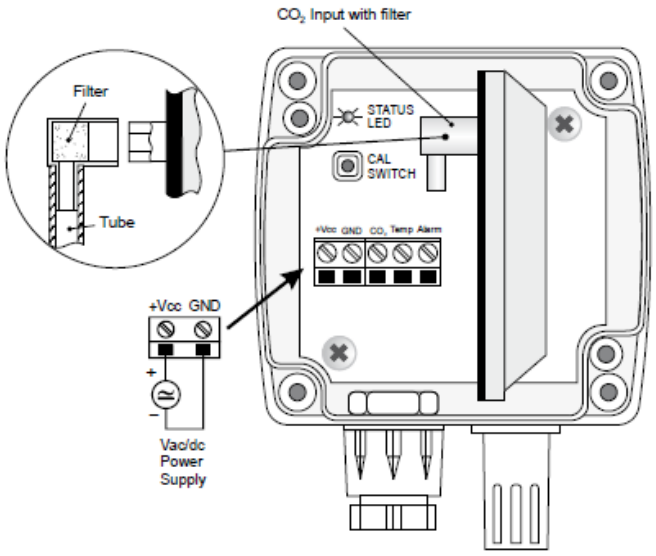

TO MEASURE = TO KNOW

Calibration

The instruments are calibrated at the factory and do not usually require further action by the user.
However, it is possible to perform a new calibration that corrects the sensor offset:
- (approx. 400ppm) in clean air
- to 0ppm with nitrogen bottles (code MINICAN.20A).

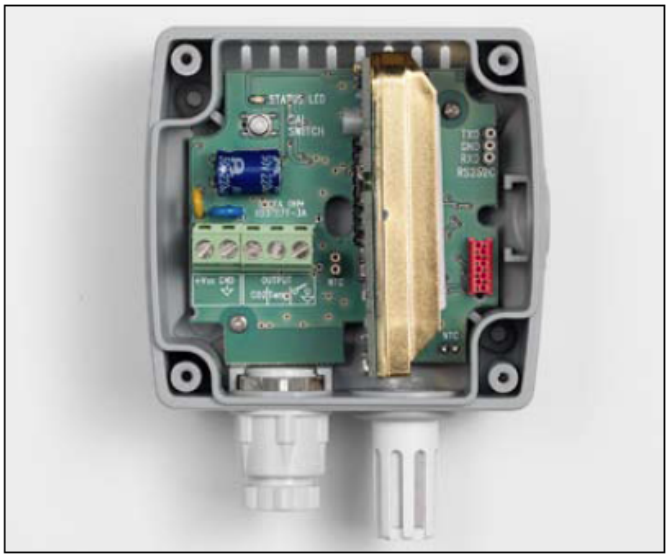
The instrument is able to recognize automatically the calibration methods used: whether 400ppm or 0ppm. The calibration should be performed one point only: each new calibration cancels the previous one.

Proceed as follows:



Open the instrument top cover to discover the CAL SWITCH calibration key on the board and the calibration gas inlet.

1. Let open the entrance if you want to calibrate around 400ppm: in which case, be sure to attach the instrument clean air.
2. For a calibration at 0ppm, connect the tube from the nitrogen bottle to the CO_2 input. Adjust the bottle flow meter on a flow from 0.3 to 0.5l/min.
3. Power up the instrument according to specifications and wait at least 15 minutes before proceeding.
4. Supply CO_2 for at least 2 minutes so as to stabilize the measurement.
5. Continue to provide CO_2 to the instrument, hold the CAL SWITCH key pressed for at least 5 seconds until the STATUS LED flashes: the two-minute calibration starts. At this stage the instrument is calibrated to measure CO_2 and a value close to 0ppm, if you use the nitrogen cylinder, to 400ppm, if you calibrate to clean air.
6. Wait the **two minutes** necessary for calibration without changing the working conditions.
7. When the LED turns off, the calibration is completed.



HD37VBTV

Installation Notes

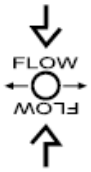
The choice of the number of CO_2 transmitters to be used in a typical installation and location, should be based on the fact that the distribution CO_2 in the atmosphere is influenced by the same factors that determine temperature distribution. Among these factors are convection, diffusion and forced air movement in the environment.
For an accurate control, you should use a CO_2 transmitter (TV model) in any place where there is a temperature control. You can also opt for a single device (TO or TC model) installed at the point of air quality control.

For the wall mounted TV models

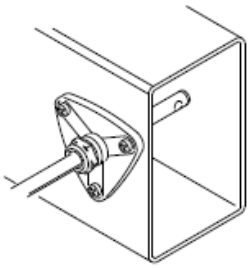
The transmitter has to be installed into a location with good air circulation, away from doors, windows or entry points of fresh air from outside.
The height from the floor should be at least 1.5 meters.

For the TO models with horizontal air inlet from the duct

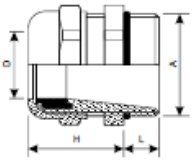
- The transmitter should be installed so that the air inlet is correctly oriented with the flow into the channel. In the probe head there is an arrow indicating the correct direction of airflow. To facilitate installation, on the left side face of the container, **near the air input to the sensor**, is engraved with the following symbol.



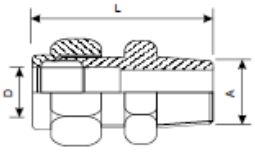
- To set the probe into a duct, with flat surface (square or rectangular), use the HD9008.31.12 flange, a PG16 metallic fairlead with Ø 14 mm internal hole, or a 3/8" biconical universal fitting with Ø 14 mm internal hole.



HD9008.31 flange



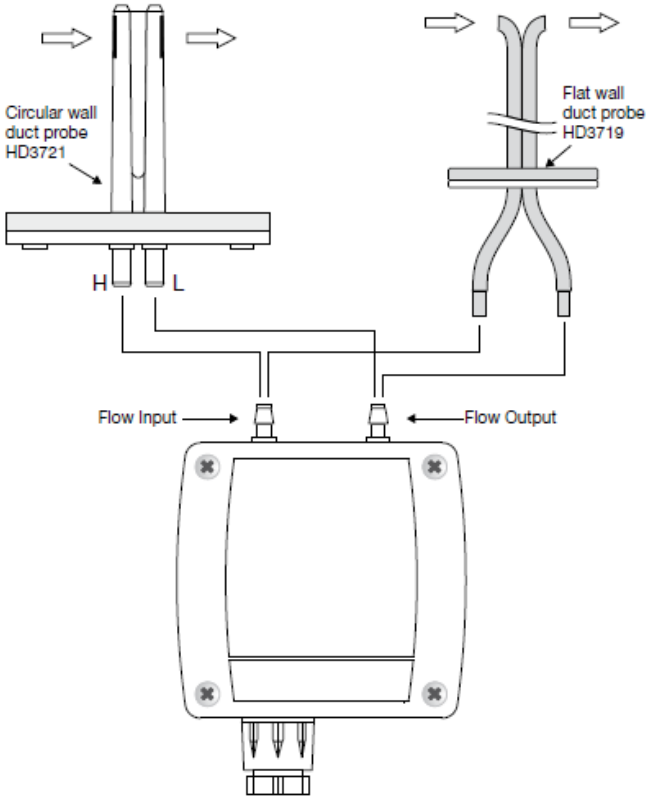
PG16 metallic fairlead
D = 10...14mm
L = 6.5mm
H = 23 mm
A = PG16



Biconical universal fitting
L = 35 mm
D = 14 mm
A = 3/8"

For the TC models with air inlet separate from electronics

We have two probes: One (code HD3719) for flat walls ducts (square or rectangular section), another (code HD3721) for circular section ducts. Please see the following figure.



The duct air inlet should be oriented so that the flow enters from the entrance connected to the junction on the left in the container leaving from the right one.

Electrical connections

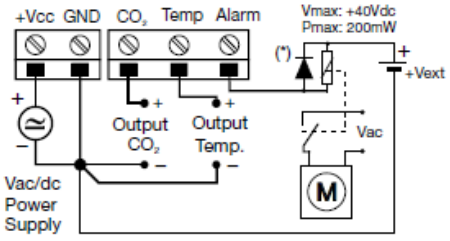
Power supply

Supply the instrument with the voltage according to what indicated in the technical characteristics: the power supply terminals are indicated by +Vdc and GND.

Analog Outputs

The output signal is acquired, depending on model:

- Between the CO_2 and GND terminals for CO_2 transmitters,
- Between the CO_2 and GND, Temp and GND terminals for CO_2 and temperature transmitters,



HD37BTC

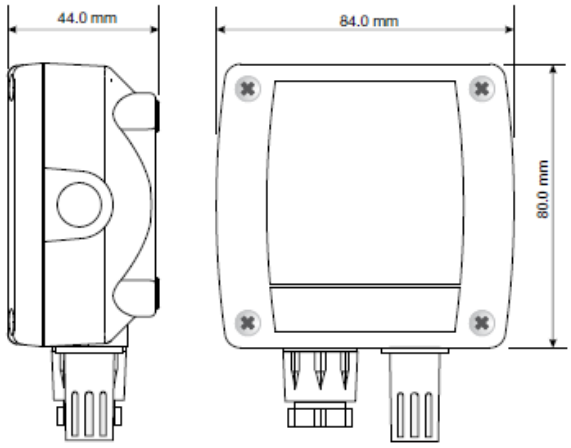
Digital Output

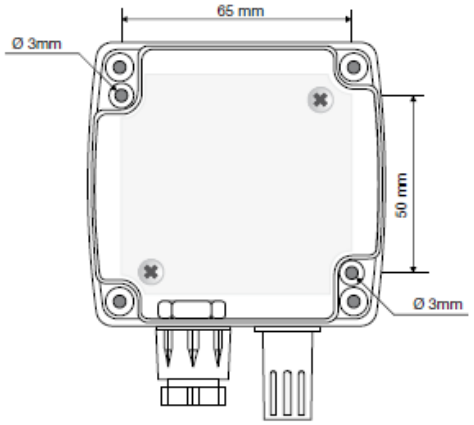
The diagram shows an example of application for a digital output that controls, in this case, an ***external relay*** coil. When exceeding the alert threshold (1500ppm), the relay contact closes and activates an adjustment device.

(*) ***Warning***: Protect the digital output by applying a protection diode as shown in the figure.

Do not exceed the maximum reverse voltage and power limits indicated in the technical information.

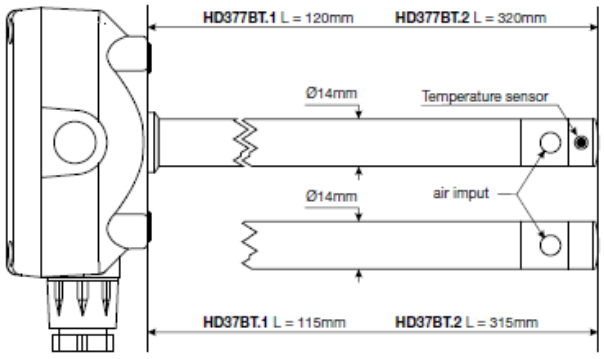
HD37BTV / HD377BTV sizes

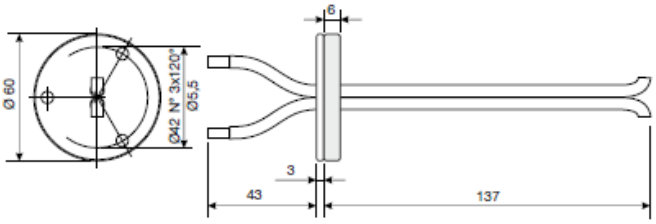




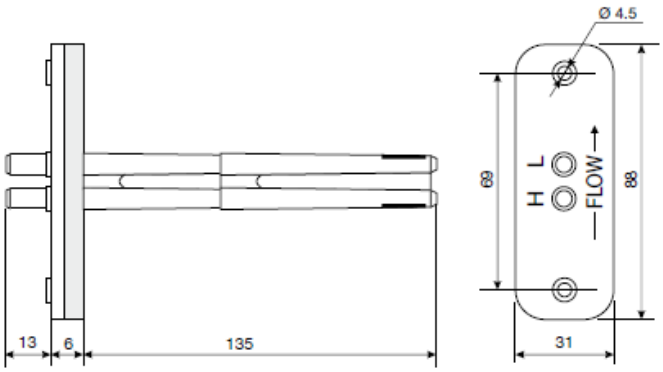
Drilling template

Duct air inlet sizes





HD3719 Duct Probe



AP3721 Duct Probe

Purchasing codes

HD37BT...: CO_2 active transmitter, analog output 4…20mA. Power supply 16...40VDC or 24VAC. Functioning temperature -5°C ... +50°C. Alarm digital output for levels of CO_2 > 1500ppm.
HD37BTV: Wall mounted one-piece version. CO2 Measurement Range 0…2000ppm.
HD37BTV.1: Wall mounted one-piece version. CO2 Measurement Range 0…5000ppm.
HD37BTO.1: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=115mm. CO_2 Measurement Range 0…2000ppm.
HD37BTO.11: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=115mm. CO_2 Measurement Range 0…5000ppm.
HD37BTO.2: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=315mm. CO_2 Measurement Range 0…2000ppm.
HD37BTO.21: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=315mm. CO_2 Measurement Range 0…5000ppm.
HD37BTC: Wall mounted one-piece version with attachments for an air inlet separate from the duct CO_2 Measurement Range 0…2000ppm.
HD37BTC.1: Wall mounted one-piece version with attachments for an air inlet separate from the duct CO_2 Measurement Range 0…5000ppm.

HD37VBT...: CO_2 active transmitter, analog output 0...10VDC. Power supply 16...40VDC or 24VAC. Functioning temperature -5°C ... +50°C. Alarm digital output for levels of CO2 > 1500ppm.
HD37VBTV: Wall mounted one-piece version. CO_2 Measurement Range 0…2000ppm.
HD37VBTV.1: Wall mounted one-piece version. CO_2 Measurement Range 0…5000ppm.
HD37VBTO.1: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=115mm. CO_2 Measurement Range 0…2000ppm.
HD37VBTO.11: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=115mm. CO_2 Measurement Range 0…5000ppm.
HD37VBTO.2: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=315mm. CO_2 Measurement Range 0…2000ppm.
HD37VBTO.21: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=315mm. CO_2 Measurement Range 0…5000ppm.
HD37VBTC: Wall mounted one-piece version with attachments for an air inlet separate from the duct CO_2 Measurement Range 0…2000ppm.
HD37VBTC.1: Wall mounted one-piece version with attachments for an air inlet separate from the duct CO_2 Measurement Range 0…5000ppm.

HD377BT...: CO_2 and temperature active transmitter, analog output 4…20mA. Temperature range 0…+50°C, non-modifiable. Power supply 16...40VDC or 24VAC. Functioning temperature -5°C ... +50°C. Alarm digital output for levels of CO_2 > 1500ppm.
HD377BTV: Wall mounted one-piece version. CO_2 Measurement Range 0…2000ppm.
HD377BTV.1: Wall mounted one-piece version. CO_2 Measurement Range 0…5000ppm.
HD377BTO.1: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=120mm. CO_2 Measurement Range 0…2000ppm.
HD377BTO.11: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=120mm. CO_2 Measurement Range 0…5000ppm.
HD377BTO.2: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=320mm. CO_2 Measurement Range 0…2000ppm.
HD377BTO.21: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=320mm. CO_2 Measurement Range 0…5000ppm.

HD37V7BT...: CO_2 and temperature active transmitter, analog outputs 0...10VDC. Temperature range 0…+50°C, non-modifiable. Power supply 16...40VDC or 24VAC. Functioning temperature -5°C ... +50°C. Alarm digital output for levels of CO_2 > 1500ppm.
HD37V7BTV: Wall mounted one-piece version. CO_2 Measurement Range 0…2000ppm.
HD37V7BTV.1: Wall mounted one-piece version. CO_2 Measurement Range 0…5000ppm.
HD37V7BTO.1: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=120mm. CO_2 Measurement Range 0…2000ppm.
HD37V7BTO.11: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=120mm. CO_2 Measurement Range 0…5000ppm.
HD37V7BTO.2: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=320mm. CO_2 Measurement Range 0…2000ppm.
HD37V7BTO.21: Duct version with horizontal air inlet in AISI 304 steel diameter 14mm, L=320mm. CO_2 Measurement Range 0…5000ppm.

HD9008.31: Wall flange with fairlead for Ø 14mm probe mounting.
PG16: Metallic fairlead for Ø 14mm probes.
HD3719: Air inlet for square or cylindrical ducts. Two 1 m tube segments Ø3.2/Ø6.4. For ...BTC and ...BTC.1 models.
HD3721: Air inlet for cylindrical ducts, in plastic material. Two 1 m tube segments Ø3.2/Ø6.4. For ...BTC and ...BTC.1 models.
MINICAN.20A: Nitrogen bottle for CO_2 at 0ppm calibration. Volume 20 liters. With adjustment valve.
MINICAN.20A1: Nitrogen bottle for CO_2 at 0ppm calibration. Volume 20 liters. Without adjustment valve.
T37…m: PVC Crystal tube Ø int. 3,2mm / Ø ext. 6,4mm, length upon request.

NIEUWKOOP

Order codes for CO_2 transmitters

HD37 [X][B] T. [X][X]

- **No sign** = Range CO_2 0…2000ppm.
  1 = Range CO_2 0…5000ppm.
- **V** = Wall mounted
  0.1 = 115mm air inlet from ducts
  0.2 = 315mm air inlet from ducts
  C = Separate probe from ducts
- **B** = CO_2 output
- **No sign** = Analog output 4…20mA
  V = Analog output 0…10Vdc

Order codes for CO_2 and temperature transmitters

HD37 [X][7B] T. [X][X]

- **No sign** = Range CO_2 0…2000ppm.
  1 = Range CO_2 0…5000ppm.
- **V** = Wall mounted
  0.1 = 120mm air inlet from ducts
  0.2 = 320mm air inlet from ducts
- **B** = CO_2 output
  7 = Temperature output
- **No sign** = Analog output 4…20mA
  V = Analog output 0…10Vdc

TO MEASURE = TO KNOW

Nieuwkoop BV
Aalsmeerderweg 249 -S
1432 CM AALSMEER

0297 325836
info@nieuwkoopbv.nl
www.meten.nl

NIEUWKOOP