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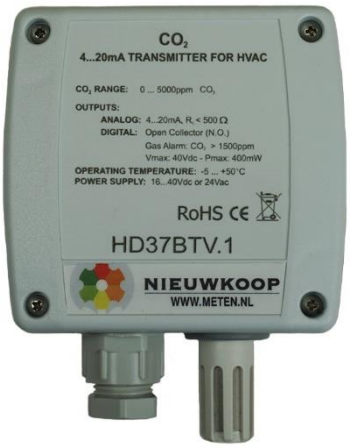
# LEAFLET




## GT3100

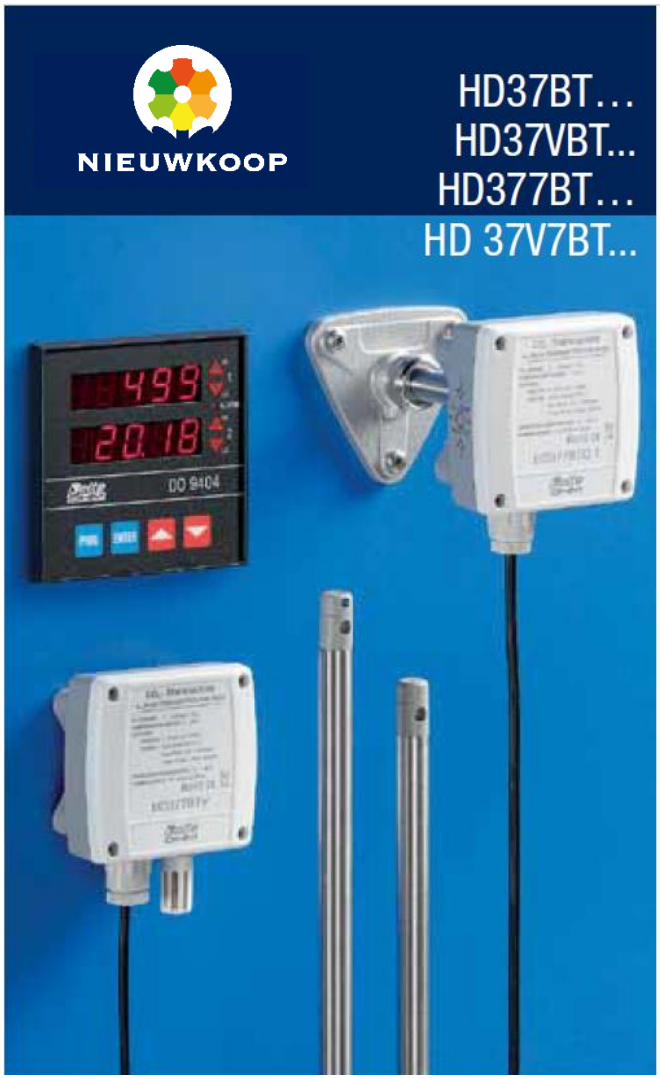
$CO_2$ TRANSMITTER

Bereik: 0-5000 ppm

4-20mA

Model 37BTV.1

TO MEASURE = TO KNOW




**HD 37BT…, HD 37VBT..., HD 377BT…, HD 37V7BT...**
**$CO_2$, $CO_2$ AND TEMPERATURE TRANSMITTERS**

The series of transmitters HD37BT… and HD37VBT... are used mainly in air quality control by measuring $CO_2$ (carbon dioxide) in the ventilation systems. This allows you to vary the number of air change per hour according to ASHRAE and IMC norms.
The purpose is twofold: have a good air quality in the presence of people and save energy, increasing or decreasing parts of air per hour, depending on the air quality set.
Their use is for environments where there is overcrowding of people, discontinuous crowding, cafeterias, auditoriums, schools, hospitals, greenhouses, livestock breeding, etc.
The models HD377BT... and HD37V7BT... measure, in addition to $CO_2$, also the temperature. ***The analog outputs, current 4...20mA or voltage 0...10Vdc, should be specified when ordering.***
All transmitters have an alarm digital output suitable to control, for example, an external relay coil. All transmitters have a digital alarm suitable to control, for example, an external relay coil. The alarm is activated to pass a threshold set at the factory to 1500ppm, the threshold beyond which a man feels uncomfortable.
The sensing element is made of a particular infrared sensor (NDIR technology: Non-Dispersive Infrared Technology) that compensates the effect of its aging thus ensuring accurate and stable measurements for a long time, by the use of a double filter and a particular measurement technique.
The use of a protective membrane, through which the air to be analyze is diffused, minimizes the negative effect of atmospheric agents and dust on the performance of the transmitter. A removable and washable filter is placed at the air flow transmitter inlet.
The installation methods may be:
- Wall mounted – ***TV Version***,
- With power flow horizontally fixed to the container, to be extent ventilation duct – ***TO Version***,
- Wall outlet with flow separate with two tubes, connected to the electronics to the extent ventilation duet – **TC Version**,

In versions with power flow channel and separate electronics, the air is drawn into the measurement chamber. The same flow then returns to the channel through a second tube. **The air flow needs to be at least 1m/s.**
To fix the air inlet to the duct, you can use the HD9008.31 flange, a 3/8" universal biconical fitting or a PG16 metallic fairlead with a Ø 14 mm internal diameter.
The air inlets connected to the transmitter by means of flexible tubes are attached to the channels flowing air: we supply air inlets for square or rectangular ducts (code HD3719) and for circular ducts (code HD3721). In order to maintain the specified accuracy, the cable length should be 1m.

| Technical characteristics | | | Notes |
|---|---|---|---|
| $CO_2$ Measurement Principle | | Double wave length infrared technology (NDIR) | |
| $CO_2$ Measurement Range | | 0 … 2000ppm<br>0 … 5000ppm | |
| $CO_2$ Accuracy | f.s. 2000ppm | ±(50ppm+3% of measurement) | at 20°C, 50%RH and 1013hPa |
| | f.s. 5000ppm | ±(50ppm+4% of measurement) | |
| Temperature Measurement Range | | 0 …+50°C | Models HD377BT… and HD37V7BT… |
| Temperature Accuracy | | ±0.3°C | |
| Analog Outputs (according to the models) | | 4 …20mA<br>0 …10VDC | $R_L$ < 500Ω<br>$R_L$ > 10kΩ |
| Digital Output (all models) | Type | Open-collector (N.O.) | (*) Factory Preset |
| | $CO_2$ Threshold | 1500ppm (*) | |
| | Vmax | 40VDC | |
| | Pmax | 400mW | |
| Power supply | | 16…40Vdc or 24Vac ±10% | |
| Absorption | | <2W | |
| Startup Stabilization Time | | 15 minutes | To guarantee the stated accuracy. |
| Response Time $\tau_{63\%}$ | | 120s | Wind speed of at least 1m/s. |
| Temperature effect % | | 0.2%/°C $CO_2$ | Typical value |
| Atmospheric Pressure effect | | 1.6%/kPa | Deviation compared to the value at 101kPa |
| Long-term Stability | | 5% of the range / 5 years | Typical value |
| Calibration | | At one point at 0ppm or 400ppm clear air | Automatic detection of the applied $CO_2$ level. |
| Working Temperature/ Relative Humidity | | -5 …+50°C, 0 ... 90%RH without condensation | |
| Storage Temperature/Relative Humidity | | -10 …+60°C, 0 ... 90%RH without condensation | |
| Electronics Protection Degree | | IP21 | Wall mounted models (TV). |
| | | IP65 | Horizontal probe models (TO), probe excluded. |
| | | IP65 | Separate probe models (TC), probe excluded. |
| Case size | | 80x84x44 | Probe excluded. |
| Case material | | ABS | |

### *Model description*

| Model | Type of output | Measured quantities | | |
|---|---|---|---|---|
| | 4 … 20mA | 0 …10Vdc | $CO_2$ | Temperature |
| HD37BT... | ✓ | | ✓ | |
| HD37VBT... | | ✓ | ✓ | |
| HD377BT... | ✓ | | ✓ | ✓ |
| HD37V7BT... | | ✓ | ✓ | ✓ |

| Model | Probe | $CO_2$ Measurement Range |
|---|---|---|
| ...BTV | Wall mounted model | 0...2000ppm |
| ...BTV.1 | Wall mounted model | 0...5000ppm |
| ...BT0.1 | $CO_2$ model with horizontal air inlet L=115mm<br>$CO_2$ /temperature model with horizontal air inlet L=120mm | 0...2000ppm |
| ...BT0.11 | $CO_2$ model with horizontal air inlet L=115mm<br>$CO_2$ /temperature model with horizontal air inlet L=120mm | 0...5000ppm |
| ...BT0.2 | $CO_2$ model with horizontal air inlet L=315mm<br>$CO_2$ /temperature model with horizontal air inlet L=320mm | 0...2000ppm |
| ...BT0.21 | $CO_2$ model with horizontal air inlet L=315mm<br>$CO_2$ /temperature model with horizontal air inlet L=320mm | 0...5000ppm |
| ...BTC | Wall mounted model with attachments for an air inlet separate from the duct | 0...2000ppm |
| ...BTC.1 | Wall mounted model with attachments for an air inlet separate from the duct | 0...5000ppm |

### 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:

TO MEASURE = *TO KNOW*

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