



**NIEUWKOOP**

# LEAFLET



## GT3100

CO<sub>2</sub> TRANSMITTER

Bereik: 0-5000 ppm

4-20mA

Model 37BTV.1



TO MEASURE  TO KNOW



HD37BT...  
HD37VBT...  
HD377BT...  
HD 37V7BT...



**HD 37BT..., HD 37VBT..., HD 377BT..., HD 37V7BT...  
CO<sub>2</sub>, CO<sub>2</sub> AND TEMPERATURE TRANSMITTERS**

The series of transmitters HD37BT... and HD37VBT... are used mainly in air quality control by measuring CO<sub>2</sub> (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<sub>2</sub>, 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**,

- Wall outlet with flow separate with two tubes, connected to the electronics to the extent ventilation duct – **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 <sub>2</sub> Measurement Principle	Double wave length infrared technology (NDIR)	
CO <sub>2</sub> Measurement Range	0 ... 2000ppm 0 ... 5000ppm	
CO <sub>2</sub> Accuracy	f.s. 2000ppm ±(50ppm+3% of measurement) f.s. 5000ppm ±(50ppm+4% of measurement)	at 20°C, 50%RH and 1013hPa
Temperature Measurement Range	0 ... +50°C	Models HD377BT... and HD37V7BT...
Temperature Accuracy	±0.3°C	
Analog Outputs (according to the models)	4 ... 20mA 0 ... 10VDC	R <sub>i</sub> < 500Ω R <sub>i</sub> > 10kΩ
Digital Output (all models)	Type: Open-collector (N.O.) CO <sub>2</sub> Threshold: 1500ppm (*) V <sub>max</sub> : 40VDC P <sub>max</sub> : 400mW	(*) Factory Preset
Power supply	16...40Vdc or 24Vac ±10%	
Absorption	<2W	
Startup Stabilization Time	15 minutes	To guarantee the stated accuracy.
Response Time τ <sub>90%</sub>	120s	Wind speed of at least 1m/s.
Temperature effect %	0.2%/°C CO <sub>2</sub>	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 <sub>2</sub> 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 <sub>2</sub>	Temperature
HD37BT...	✓		✓	
HD37VBT...		✓	✓	
HD377BT...	✓		✓	✓
HD37V7BT...		✓	✓	✓

Model	Probe	CO <sub>2</sub> Measurement Range
...BTV	Wall mounted model	0...2000ppm
...BTV.1	Wall mounted model	0...5000ppm
...BT0.1	CO <sub>2</sub> model with horizontal air inlet L=115mm CO <sub>2</sub> /temperature model with horizontal air inlet L=120mm	0...2000ppm
...BT0.11	CO <sub>2</sub> model with horizontal air inlet L=115mm CO <sub>2</sub> /temperature model with horizontal air inlet L=120mm	0...5000ppm
...BT0.2	CO <sub>2</sub> model with horizontal air inlet L=315mm CO <sub>2</sub> /temperature model with horizontal air inlet L=320mm	0...2000ppm
...BT0.21	CO <sub>2</sub> model with horizontal air inlet L=315mm CO <sub>2</sub> /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



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