

PolyGard[®] Carbon Dioxide CO₂ Analog Transmitter AT82 1160

Description

The AT82 1160 transmitter is a simple, low-cost and maintenance-free CO₂ transmitter based on modern infrared technology (NDIR) with gold-plated sensor element. The transmitter detects the CO₂ concentration of the ambient air and transforms the data into a proportional, linear, analog 0/2-10 V or 4 to 20 mA output signal. The three different housing versions makes the AT82 1160 available to almost any application or environment.



Application

The AT82 1160 is an extremely low-cost sensor solution for controlling the indoor climate or other processes requiring the CO₂ concentration in form of analog voltage values. By controlling the ventilation based on actual demand it helps you decrease your energy consumption and yet have a healthy indoor climate.

Features

- Measurement range*:0 -2000 ppm
- Internal automatic self-diagnostics
- Maintenance-free in normal applications
- Two analog outputs
 - (OUT 1) 0 - 10 V (0 - 2 000 ppm CO₂)
 - (OUT 2) 2 - 10 V (0 - 2 000 ppm CO₂)
- Cost-optimized for connection to DDC
- Option: Analog output 4 to 20 mA (0 - 2 000 ppm CO₂) (OUT 1)
- Option: Analog output (mV or mA) for 0 to 50 °C (OUT 2)
- Option: Duct mounting
- Option. Relay output
- Option: LC display
- Option: IP 65 Protection class
- Option: Heater

* other measurement ranges on request

Technical Data

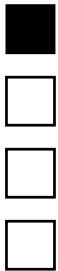
Electrical	
Power supply	24 VAC/VDC±20%, 50 Hz (half-wave rectifier input)
Power consumption	< 1 Watt (average)
Sensor	
Sensor technique	Gold-plated infrared (NDIR) wave guide technology with Automatic Background Calibration (ABC) and passive gas diffusion (no moving parts)
Response time (T1/e)	< 10 s. @ 300 mm ³ / min. flow rate < 3 min. diffusion time
Repeatability	± 20 ppm ± 1 % of reading
Accuracy	± 30 ppm ± 2 % of reading
Annual zero drift	< ± 10 ppm
Pressure dependence	+ 1.6 % reading per kPa deviation from normal pressure 100 kPa
Sensor life expectancy	> 15 years
Output Signal	
OUT1 linear	0 -10 VDC / 0 - 2000 ppm/vol
OUT2 linear	2 -10 VDC / 0 - 2000 ppm/vol. with 1 VDC used as FAULT status signal
Option: Temperature output (OUT 1)	0/2 to 10 VDC / 0 – 50 °C
Option. 4 to 20 mA (OUT 2)	R _{LOAD} < 500 Ohm
Option: Relay	50 VAC / 24 VDC / 1 A, potential-free, DPDT
D/A resolution	10 Bit, 10 mV
Electrical parameters	R _{OUT} < 100 Ohm, R _{LOAD} > 5 kOhm
Environmental Conditions	
Humidity	0 to 95% RH non-condensing
Working temperature	0 °C to + 50 °C (32 °F to 122 °F)
Storage temperature	-10 °C to + 50 °C (14 °F to 122 °F)
General Information	
Operating environment	residential, commercial and industrial spaces
Warm-up time	1 min. (@ full specs 15 minutes)
Option LC display	4 digits, 7 segments LCD with ppm indicator
Enclosure	Plastics
Color	Light gray
Protection class	IP 30 / IP 65 dependent on version
Weight	0,2 kg (0.45 lbs.)
Installation	Wall mounting, duct mounting
Wire connection	1,5 mm ² for (G+, G0) and (OUT1, OUT2)
Dimensions (W x H x D)	Standard 100 x 80 x 27 mm (3.9 x 3.15 x 1.1 in.) Option IP 65 protected 122 x 120 x 80 mm (4.8 x 4.75 x 3.15 in.)
Guideline	EMC Directive 89/336/EEC
Warranty	1 year / material



Option Heater	
Power supply	24 VAC/DC± 20%, 50 Hz
Power consumption	1,0 A (24 VA) max.
Ambient temperature	- 40 °C (-40 °F)
Thermostatic control	0 °C ± 3 °C (32 °F ± 5 °F)

Ordering Information

AT-82-1160-8-XXX



Option	
TXX	4 to 20 mA output + Temp. Sensor
1XX	TXX + Relay output
X5X	Option Heater
XDX	Option LC display
XX1	Factory calibration 0 – 2000 ppm
XX2	Factory calibration 0 – 6000 ppm
XX3	Factory calibration 0 – 2 % vol.
XX4	Factory calibration 0 – 4 % vol.
XX5	Factory calibration 0 – 10 % vol.*
XX6	Factory calibration 0 – 25 % vol.*

Enclosure	
8	Standard Enclosure
1	Option duct mounting
4	Option IP 65 protected*

* Only with 2 to 20 mA Output

Example: CO₂ transmitter incl. factory calibration 0 - 2000 ppm, with LC display
Order No.: AT-82-1160-8-0D1

Electrical Connection

Transmitter AT82 - 1160	
1	G +
2	GND
3	OUT 1
4	OUT 2