

PolyGard® Formaldehyde CH₂O Transmitter ADT53 1185

DESCRIPTION

CH₂O transmitter including digital measurement value processing and temperature compensation for the continuous monitoring of the ambient air to detect formaldehyde concentrations. Integrated in the transmitter there is a comfortable calibration routine with selective access release. The ADT-53 possesses a standard analog output (0) 4- 20 mA or (0) 2- 10 V DC, and an RS-485 interface. 2 relays with adjustable switching thresholds are available as an option.

APPLICATION

For the detection of formaldehyde within a wide range of industrial and commercial applications. Due to the standard output signal and the RS-485 interface the CH₂O transmitter is compatible to the PolyGard Gas Controller series MGC and DGC by MSR-E as well as to any other electronic control or automation system.

FEATURES

- Digital processing of the measurement values incl. temperature compensation
- Continuous monitoring
- Low zero point drift
- Good stability to poisoning
- Long-life sensor
- Modular plug-in technology
- Easy maintenance
- Comfortable calibration with selective access release
- Reverse polarity protected, overload and short-circuit proof
- (0) 4 - 20 mA / (0) 2 – 10 V analog signal output, selectable
- Serial interface RS-485
- IP65 protected
- Manual calibration via potentiometer (option)
- Manual addressing for RS-485 mode (option)
- 4 – 20 mA analog input for an external AT transmitter (optional)
- Approved according to EN 61010-1; ANSI/UL 61010 1; CAN/CSA-C22.2 No. 61010-1
- Relay output (optional)
- Integrated buzzer (optional)
- LED flashlight (optional)
- LCD display (optional)
- LED status display (optional)
- Heating (optional)
- Duct mounting (optional)



SPECIFICATIONS

General sensor performance

Detected gas	Formaldehyde (CH ₂ O)
Sensor element	Electrochemical, diffusion
Measuring range	0 - 10 ppm (factory set) adjustable from 0 - 5 to 0 - 10 ppm
Temperature range	-10 °C to + 45 °C (14 °F to 113 °F) w/o heating
Pressure range	Atmospheric ± 15 %
Humidity range	15 – 90 % RH non-condensing (abrupt change of the relative humidity may cause a short-time sensor signal)
Storage temperature	5 °C to 30 °C (41 °F to 86 °F)
Storage time	Max. 3 months
Mounting height	0.3 to 0.8 m (1 to 2.5 ft.)
Resolution	0.01 ppm
Accuracy	± 5 %
Repeatability	< 2 % of reading
Long-term output drift	< 2% signal loss/month
Response time	t ₉₀ < 50 sec.
Sensor life expectancy	> 3 years/normal operating environment
Cross sensitivity ¹	Reaction (%)
Carbon monoxide; CO	10 -18 %
Hydrogen, H ₂	1 - 3 %
Electrical	
Power supply	18 - 28 VDC/AC, reverse polarity protected (for 2- wire mode only VDC)
Power consumption (without options)	
- Analog mode	22 mA, max. (0.6 VA)
- Bus mode	12 mA, max. (0.3 VA)
Output signal	
Analog output signal	(0) 4 – 20 mA, load ≤ 500 Ω,
Selectable: Current / tension	(0) 2 - 10 V; load ≥ 50 k Ω
Starting point 0 / 20 %	proportional, overload and short-circuit proof
Serial interface	
Transceiver	RS 485 / 19200 Baud (9600 at Mod_Bus)
Protocol	Depending on version
Physical characteristics	
Enclosure Plastic Type A ²	Polycarbonate
Flammability	UL 94 V2
Enclosure color*	RAL 7032 (light grey)
Dimensions (W x H x D)	94 x 130 x 57 mm (3.7 x 5.12 x 2.24 inch.)
Weight	Approx. 0.5 kg (1.1 lbs.)
Protection class	IP 65
Installation	Wall mounting
Cable entry	Standard 1 x M 20
Wire connection	Screw type terminal, min. 0.25 mm ² (24 AWG) max. 2.5 mm ² (14 AWG)
Wire distance	Current signal ca. 500 m (1500 ft.) Voltage signal ca. 200 m (600 ft.)

¹ The table doesn't claim to be complete. Other gases, too, can have an influence on the sensitivity. The mentioned cross sensitivity data are only reference values valid for new sensors.

² For further enclosure types see datasheet ADT Enclosure.

GAS ALARM SYSTEMS

Guidelines	EMC Directives 2004/108/EC EN 61010-1:2010 ANSI/UL 61010-1 CAN/CSA-C22.2 No. 61010-1 CE
Warranty	1 year on material (without sensor)
Options	
Relay output	
Alarm relay 1	30 VAC/DC 0.5 A, potential-free, SPDT
Alarm relay 2	30 VAC/DC 0.5 A, potential-free, SPNO/SPNC
Power consumption	30 mA, max. 0.8 VA
Warning buzzer	
Acoustic pressure	85 dB (distance 300 mm) (1 ft.)
Frequency	3.5 kHz
Power consumption	30 mA, max. 0.8 VA
LCD Display	
LCD	Two lines, 16 characters each
Power consumption	10 mA, max. 0,3 VA
LED display	
Green-yellow-red	Supply, low alarm, high alarm
Power consumption	10 mA, (max. 0.3 VA)
Heating	
Temperature controlled	3 °C ±2°C (37.4 °F ± 3.6 °F)
Ambient temperature	- 40 °C (- 40 °F)
Power consumption	0.3 A; 7.5 VA
Analog Input	
Only for RS-485 mode	4 – 20 mA overload and short-circuit proof, input resistance 200 Ω
Power supply for external transmitter	24 VDC max. load 50 mA

ORDERING INFORMATION

ADT-53-1185-X-XXXXXXXXXX

Version

1XXXXXXXXX	Relay output ²
X1XXXXXXXX	Buzzer int.
X2XXXXXXXX	Flashlight (LED)
X3XXXXXXXX	Warning buzzer and flashlight
XX1XXXXXXXX	Heating
XXXX1XXXXX	RS - 485 protocol for DGC-05 series
XXXX2XXXXX	RS - 485 protocol Modbus
XXXX3XXXXX	RS - 485 protocol customer-specific
XXXXX1XXX	Calibration/ addressing mode tool
XXXXX2XXX	Manual calibration
XXXXX3XXX	Manual addressing
XXXXX4XXX	Manual calibration/ addressing
XXXXXX1XX	LCD display ³
XXXXXX2XX	LED status display ^{2,3}
XXXXXXX1X	4 - 20 mA analog input
XXXXXXXXX1	Factory calibration 0 – 10 ppm
XXXXXXXXX2	Factory calibration 0 – 5 ppm

Enclosure¹

A	Plastic enclosure
B	Duct mounting
5	Stainless steel

¹ See Data sheet "PolyGard ADT Enclosure"

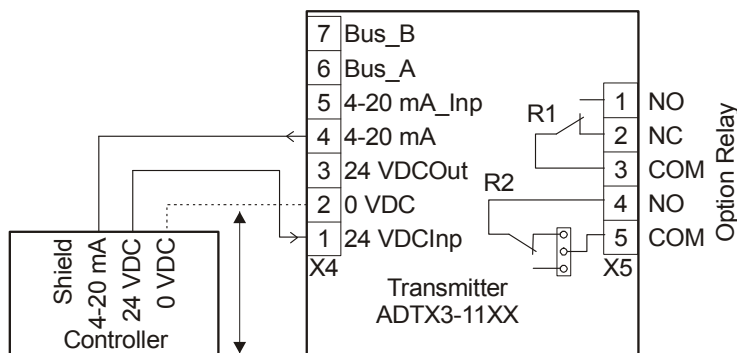
² Please indicate thresholds for low and high alarm when ordering.

³ Not in connection with stainless steel housing, not in connection with option Relay or RS-485 interface

Example: Formaldehyde transmitter, stainless steel housing, RS-485 protocol for DGC-05 series, calibration tool, measuring range 0- 10 ppm

Ordering No.: ADT-53-1185-5-XXXX11XX1

CONNECTING DIAGRAM



0 VDC: Only with options