



PolyGard®

Transmitter ADT-23-34XX for combustible gases

ADT transmitter with digital processing of the measured values and temperature compensation for the continuous monitoring of the ambient air and detection of combustible gases and vapours.

The calibration routine with selective access release enables the comfortable calibration of the transmitter. In addition to the standard analog output (0) 4-20 mA or (0) 2- 10 V DC the ADT-23 is equipped with a RS-485 interface for different protocols. Two relays with adjustable switch threshold are available as an option.

APPLICATION

The transmitter is used within a wide commercial range for detecting flammable gases and vapours. Due to the output signal and the RS-485 interface the transmitter ADT-23 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 measured values including temperature compensation
- Continuous monitoring
- Low zero-point drift
- Good poisoning permanence
- Long life sensor
- Modular design (plug-in)
- Simple maintenance
- Comfortable calibration with selective access release
- Reverse polarity protected, overload protected 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 (optional)
- Manual addressing at RS-485 mode (optional)
- 4 – 20mA analog input for external 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)
- LED status display (optional)
- Heating (optional)
- Duct mounting (optional)



Standard Housing





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SPECIFICATIONS

General sensor performance

Gas type	Combustible gases/ vapours (see order inform.)
Sensor element	Ex sensor, catalytic bead (pellistor)
Measuring range	0 - 100% LEL
Accuracy	± 1 % of reading
Long-term zero point drift	< ± 6 % measuring range /year
Long-term sensitivity drift	< ± 1.5 % measuring range / month
Response time	t ₅₀ ≤ 3 s; t ₉₀ ≤ 10 s /methane
Sensor life expectancy	3 years/normal operating environment
Temperature range	-20 °C to +50 °C (-4 °F to 122 °F) w/o heating
Temperature drift	≤ 1 %
Humidity range	5 – 95 % RH non-condensing
Pressure range	Atmospheric ± 20 %
Storage temperature	5 °C to 30 °C (41 °F to 86 °F)
Storage period	Max. 6 months
Mounting height	Depending on gas type

Electrical

Power supply	16 - 28 V DC/AC, (reverse polarity protected)
Power consumption (without options)	35 mA, max. (0.85 VA)

Output signal

Analog output signal	(0) 4 – 20 mA, load ≤ 500 Ω,
Selectable: Current / tension	(0) 2 - 10 V, load ≥ 50 kΩ
Starting point 0 / 20 %	proportional, overload and short-circuit proof

Serial interface

Transceiver	RS 485 / 19200 Baud (9600 for Mod_Bus)
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Physical characteristics

Enclosure Plastic Type A*	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.)

Guidelines

EMC Directives 2014/30/EU
EN 61010-1:2010
ANSI/UL 61010-1
CAN/CSA-C22.2 No. 61010-1
CE

Warranty

1 year on sensor (not if poisoned or overloaded)
2 years on device

*For further enclosure types see datasheet ADT Enclosure.



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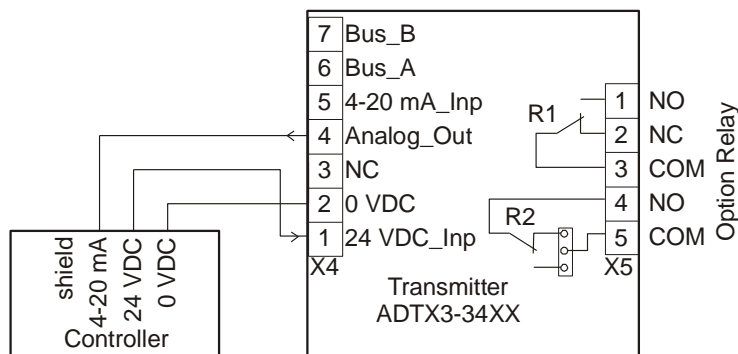


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Options

Relay output	
Alarm relay 1	30 V AC/DC, 0.5 A, potential-free, SPDT
Alarm relay 2	30 V AC/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)
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 (37.5 °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 V DC max. charge 50 mA

CONNECTION DIAGRAM





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ORDERING INFORMATION

ADT-23-34 XX- X- XXXXXXXXX

Version

- 1XXXXXXXX Relay output²
- X1XXXXXXXX Warning buzzer int.
- X2XXXXXXXX Flashlight (LED)
- X3XXXXXXXX Warning buzzer and flashlight
- XX1XXXXXXXX Heating
- XXX1XXXXX RS - 485 protocol for DGC-05 series
- XXX2XXXXX RS - 485 protocol for ModBUS
- XXX3XXXXX RS - 485 protocol for customers' specifications
- XXXX1XXXX Tool calibration / addressing mode
- XXXX2XXXX Manual calibration
- XXXX3XXXX Manual addressing
- XXXX4XXXX Manual calibration / addressing
- XXXXX2XX LED status display^{2,3}
- XXXXXX1X 4 - 20 mA analog-input
- XXXXXXX1 Factory calibration 0 – 100 % LEL

Enclosure¹

- A Plastic enclosure
- B Duct mounting
- 5 Stainless steel

Gas types⁴

00	Methane	CH ₄
08	Ammonia	NH ₃
10	Ethylene	C ₂ H ₄
25	Ethyl alcohol	C ₂ H ₅ OH
27	Ethyl acetate	CH ₃ COOC ₂ H ₅
30	Benzene	C ₆ H ₆
35	n-Hexane	C ₆ H ₁₄
40	Hydrogen	H ₂
45	Iso propanol alcohol	(CH ₃) ₂ CHOH
50	Methanol	CH ₃ OH
58	Methyl ethyl ketone	C ₄ H ₈ O
60	n-Butane	C ₄ H ₁₀
68	Iso butanol	C ₄ H ₁₀ O
70	n-Octane	C ₈ H ₁₈
75	n-Pentane	C ₅ H ₁₂
80	Propane (LPG)	C ₃ H ₈
85	Acetone	(CH ₃) ₂ CO
90	Toluene	C ₇ H ₈
91	n-Heptane	C ₇ H ₁₆
98	JP8	

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

Ex gas transmitter for propane gas, stainless steel housing, tool mode, 0- 100 % LEL factory calibration

Order Number: ADT-23-3480-5-000001001

