

PolyGard® Ethylene C₂H₄ Transmitter ADT-43 1189 with Semi-conductor Sensor

DESCRIPTION

C₂H₄ transmitter with semi-conductor sensor for the continuous monitoring of the ambient air to detect ethylene concentrations. The semi-conductor typical, non-linear signal is translated into a linear, temperature-compensated output signal. A comfortable calibration routine with selective access release is integrated in the transmitter. The ADT-43 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 as well as an integrated display are available as options.

APPLICATION

For monitoring ethylene concentrations caused by the maturation of fruits during transportation or storage. Due to the standard analog signal and the RS-485 serial interface the C₂H₄ transmitter is compatible to the PolyGard gas controller series by MSR-E as well as to any other controllers or automation systems.



Standard enclosure

FEATURES

- Digital measurement value processing incl. temperature compensation.
- Linear output signal
- Continuous monitoring
- Low zero point drift
- Good stability to poisoning
- Semi-conductor sensor with long life-time
- Comfortable calibration with selective access release
- Reverse polarity protected, overload and short-circuit proof
- (0) 4 - 20 mA / (0) 2 - 10V analog signal output selectable
- Serial interface RS-485
- IP65 protected
- Housing fire-resistant according to UL 94V2
- Modular plug-in technology
- Manual calibration via potentiometer (optional)
- Manual addressing for RS-485 mode (optional)
- 4 - 20 mA analog input for external analog transmitter (optional)
- Relay output (optional)
- Integrated buzzer (optional)
- LED flashlight (optional)
- LCD display (optional)
- LED display (optional)
- Heating (optional)
- Duct mounting (optional)



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SPECIFICATIONS

General sensor performance

Detected gas	Ethylene (C ₂ H ₄)
Sensor element	Semi-conductor sensor
Measuring range	20 - 2.000 ppm
Response time	t ₉₀ < 50 sec
Temperature range	-15 °C to + 50 °C (5 °F to 122 °F)
Pressure range	Atmosphere ± 10 %
Humidity range	15 – 95 % RH non-condensing
Life expectancy	> 5 years
Storage temperature	0 °C to 50 °C (32 °F to 122 °F)
Storage time	Max. 12 months

Electrical

Power supply	18 - 28 VDC/AC (reverse polarity protected)
Power consumption (without options)	60 mA, max. (1,45 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)
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Physical characteristics

Enclosure plastic type A*	Polycarbonate
Flammability	UL 94 V2
Enclosure colour	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 Directive 2004 / 108 / EEC
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Warranty

	CE
	One 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)



GAS ALARM SYSTEMS

LCD Display

LCD	Two lines, each 16 characters
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 VDC max. charge 50 mA

*For further enclosure types see datasheet AT-DT Enclosure.

ORDERING INFORMATION

ADT-43-1189-X-XXXXXXXX

Options

1XXXXXXXX	Relay output
X1XXXXXXXX	Warning buzzer integrated
X2XXXXXXXX	Flashlight (LED)
X3XXXXXXXX	Warning buzzer and flashlight
XX1XXXXXX	Heating
XXXX1XXXX	RS-485 protocol for DGC-05 series
XXXX2XXXX	RS-485 protocol ModBUS
XXXX3XXXX	RS-485 protocol customers' specifications
XXXXX1XXX	Calibration / addressing mode tool
XXXXX2XXX	Manual calibration
XXXXX3XXX	Manual addressing
XXXXX4XXX	Manual calibration / addressing
XXXXXX1XX	LCD display
XXXXXX2XX	LED display
XXXXXX1X	4 - 20 mA analog input
XXXXXXXF	Factory calibration 20 – 2.000 ppm

Enclosure²

A	Plastic enclosure
B	Duct mounting
5	Stainless steel

² See datasheet „PolyGard AT/DT Enclosures“

Example: Ethylene semi-conductor transmitter, stainless steel housing, calibration tool, factory calibration 20 – 2.000 ppm

Ordering number: ADT-43-1189-5-XXXXX1XF

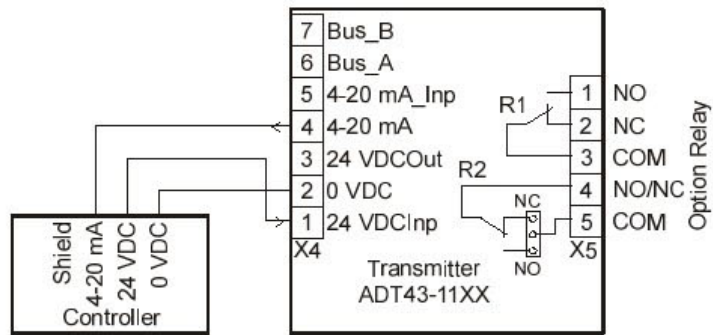


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GAS ALARM SYSTEMS

CONNECTION DIAGRAM



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