

PolyGard® Acetonitrile C₂H₃N Transmitter ADT-43 4049 with Semi-conductor Sensor

DESCRIPTION

C₂H₃N transmitter with semi-conductor sensor for the continuous monitoring of the ambient air to detect acetonitrile concentrations. The semi-conductor typical, non-linear signal is translated into a linear, temperature-compensated output signal. A comfortable calibration routine 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 acetonitrile concentrations in the ambient air. Due to the standard analog signal and the RS-485 serial interface the C₂H₃N 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
- 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
- Manual addressing for RS-485 mode (optional)
- 4 – 20 mA analog input for external analog 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	Acetonitrile (C ₂ H ₃ N)
Sensor element	Semi-conductor sensor
Measuring range	20 - 1000 ppm
Response time	t ₉₀ < 50 sec
Temperature range	-15 °C to + 50 °C (5 °F to 122 °F) w/o heating
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 ModBus)
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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 Directives 2004/108/EC
EN 61010-1:2010
ANSI/UL 61010-1
CAN/CSA-C22.2 No. 61010-1
CE

Warranty

One year on material (without sensor)

*For further enclosure types see datasheet ADT Enclosure.

GAS ALARM SYSTEMS

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, each 16 characters
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 \pm 2° C (37.5 °F \pm 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

ORDERING INFORMATION

ADT-43-4049-X-XXXXXXXX

Options

1XXXXXXXX	Relay output ²
X1XXXXXXXX	Warning buzzer integrated
X2XXXXXXXX	Flashlight (LED)
X3XXXXXXXX	Warning buzzer and flashlight
XX1XXXXXXXX	Heating
XXXX1XXXX	RS-485 protocol for DGC-05 series
XXXX2XXXX	RS-485 protocol ModBUS
XXXX3XXXX	RS-485 protocol customers' specifications
XXXXX2XXX	Manual calibration
XXXXX4XXX	Manual calibration / addressing
XXXXX5XXX	Manual calibration / tool addressing
XXXXXX1XX	LCD display ³
XXXXXX2XX	LED status display ^{2,3}
XXXXXXX1X	4 - 20 mA analog input
XXXXXXXXE	Factory calibration 20 – 1000 ppm ⁴

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

⁴ The sensor has also a cross-sensitivity to other gases.

Example: Acetonitrile semi-conductor transmitter, plastic housing, manual calibration/ tool addressing, factory calibration 20 – 1000 ppm

Ordering number: ADT-43-4049-A-XXXXX5XXE

CONNECTION DIAGRAM

