PolyGard® Xylene C_8H_{10} Transmitter ADT-43 4053 with Semi-conductor Sensor

DESCRIPTION

C_8H_{10} transmitter with semi-conductor sensor for the continuous monitoring of the ambient air to detect xylene 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.

Standard enclosure

APPLICATION

For monitoring xylene concentrations in the ambient air. Due to the standard analog signal and the RS-485 serial interface the C_8H_{10} transmitter is compatible to the PolyGard gas controller series by MSR-E as well as to any other controllers or automation systems.

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)

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SPECIFICATIONS

General sensor performance	
Detected gas	Xylene (C_8H_{10})
Sensor element	Semi-conductor sensor
Measuring range	20 - 300 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 Selectable: Current / tension Starting point 0 / 20 %	(0) 4 – 20 mA, load ≤ 500 Ω, (0) 2 - 10 V, load ≥ 50 k Ω proportional, overload and short-circuit proof
Serial interface	
Transceiver	RS 485 / 19200 Baud (9600 at ModBus)
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.

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 ±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

ORDERING INFORMATION

ADT-43-4053–X–XXXXXXXXX

Options

1XXXXXXXX	Relay output[2]
X1XXXXXXX	Warning buzzer integrated
X2XXXXXXX	Flashlight (LED)
X3XXXXXXX	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
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
XXXXXXXXO	Factory calibration 20 – 300 ppm[4]

Enclosure[1]

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: Xylene semi-conductor transmitter, stainless steel housing, manual calibration/ tool addressing, factory calibration 20 – 300 ppm

Ordering number: ADT-43-4053-5-XXXXX5XXO

CONNECTION DIAGRAM