

## PolyGard® Silane SiH<sub>4</sub> Transmitter ADT53 1188

### DESCRIPTION

Silane transmitter including digital measurement value processing and temperature compensation for the continuous monitoring of the ambient air to detect silane 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 silane within a wide range of industrial and commercial applications. Due to the standard output signal and the RS-485 interface the silane transmitter is compatible to the PolyGard Gas Controller series by MSR-E as well as to any other electronic control or automation system.



Standard enclosure



### 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 – 10V 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	Silane (SiH <sub>4</sub> )	
Sensor element	Electrochemical, diffusion	
Measuring range	0 - 50 ppm	
Pressure range	Atmospheric ± 10 %	
Humidity range	15 – 90 % RH non-condensing	
Storage temperature	5 °C to 30 °C (41 °F to 86 °F)	
Storage time	Max. 6 months	
Mounting height	0.8 m (2.5 ft.)	
Accuracy	0,2 ppm	
Repeatability	< 2 % of reading	
Long-term output drift	< 2% signal loss/month	
Response time	t <sub>90</sub> < 60 sec.	
Sensor life expectancy	> 2 years/normal operating environment	
Temperature range - continuous	-10 °C to + 45 °C (14 °F to 113 °F) w/o heating	
Cross sensitivity <sup>1</sup>	Concentration (ppm)	Reaction (ppm SiH <sub>4</sub> )
Carbon monoxide; CO	200	0
Phosphine, PH <sub>3</sub>	2	2
Sulphur dioxide, SO <sub>2</sub>	5	1
Hydrogen sulphide, H <sub>2</sub> S	5	8
Hydrogen, H <sub>2</sub>	200	0

### Electrical

Power supply	18 - 28 VDC/AC, reverse polarity protected
Power consumption (without options)	22 mA, max. (0.6 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 <sup>2</sup>	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 <sup>2</sup> (24 AWG) max. 2.5 mm <sup>2</sup> (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

1 year on material (without sensor)

<sup>1</sup> 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.

<sup>2</sup> 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
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### 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-53-1188-X-XXXXXXXX**

Version	
1XXXXXXXX	Relay output <sup>2</sup>
X1XXXXXXXX	Buzzer int.
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 customer-specific
XXXXX1XXX	Calibration/ addressing mode tool
XXXXX2XXX	Manual calibration
XXXXX3XXX	Manual addressing
XXXXX4XXX	Manual calibration/ addressing
XXXXXX1XX	LCD display <sup>3</sup>
XXXXXX2XX	LED status display <sup>2,3</sup>
XXXXXXX1X	4 - 20 mA analog input
XXXXXXX5	Factory calibration 0 – 50 ppm

Enclosure <sup>1</sup>	
A	Plastic enclosure
B	Duct mounting
5	Stainless steel

<sup>1</sup> See Data sheet "PolyGard ADT Enclosure"

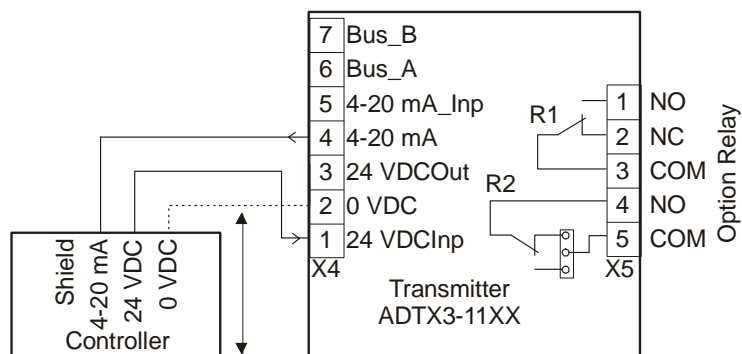
<sup>2</sup> Please indicate thresholds for low and high alarm when ordering.

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

**Example:** Silane SiH<sub>4</sub> transmitter, stainless steel housing, calibration tool, factory calibration 0- 50 ppm

**Ordering No.:** ADT-53-1188-5-XXXXX1XX5

## CONNECTING DIAGRAM



0 VDC: Two-wire operation only with 4- 20 mA output signal!