

## PolyGard® Sulphur Dioxide SO<sub>2</sub> Transmitter ADT53 1196

### DESCRIPTION

SO<sub>2</sub> transmitter including digital measurement value processing and temperature compensation for the continuous monitoring of the ozone concentration in the ambient air. A comfortable calibration routine with selective access release is integrated in the transmitter. 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 sulphur dioxide within a wide range of industrial and commercial applications. Due to the standard analog signal and the RS-485 interface the SO<sub>2</sub> transmitter is compatible to the PolyGard series MGC and DGC by MSR-E as well as to any other electronic control or automation system.



Standard enclosure

### FEATURES

- Digital measurement value processing incl. temperature compensation.
- Continuous monitoring
- Low zero-point drift
- Poisoning stable
- 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 – 20mA analog input for 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

<b>General sensor performance</b>		
Detected gas	Sulphur dioxide (SO <sub>2</sub> )	
Sensor element	Electrochemical, diffusion	
Measuring range	0 – 10 ppm (factory-set) 0 – 20 ppm, 0 – 100 ppm (optional)	
Temperature range	-10 °C to + 45 °C (14 °F to 113°F) w/o heating	
Pressure range	Atmospheric ± 15 %	
Humidity range	15 – 90 % RH non-condensing	
Storage temperature	5 °C to 30 °C (41 °F to 86 °F)	
Storage time	Max. 3 months	
Mounting height	0.2 m (0.7 ft.)	
Accuracy	0.2 ppm	
Repeatability	< 2 % of reading	
Long term output drift	< 2% signal loss/month	
Response time	t <sub>90</sub> ≤ 20 s	
Sensor life expectancy	> 2 years, normal operating environment	
Cross sensitivity <sup>1</sup>	Concentration (ppm)	Reaction (ppm)
Carbon monoxide, CO	100	< 1
Ethylene, C <sub>2</sub> H <sub>4</sub>	100	0
Hydrogen, H <sub>2</sub>	100	< 1
Nitrogen dioxide, NO <sub>2</sub>	100	~ - 125
Nitric oxide, NO	100	0
Hydrogen sulphide, H <sub>2</sub> S	10	0
<b>Electrical</b>		
Power supply	18 - 28 VDC/AC, reverse polarity protected (2-wire mode only VDC)	
Power consumption (without options)		
- Analog mode	22 mA, max. (0.6 VA)	
- Bus mode	12 mA, max. (0.3 VA)	
<b>Output signal</b>		
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	
<b>Serial Interface</b>		
Transceiver	RS 485 / 19200 Baud (9600 at Mod_Bus)	
Protocol	Depending on version	
<b>Physical characteristics</b>		
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.)	

<sup>1</sup> The table doesn't claim to be complete. Other gases can have an influence on the sensitivity, too. The mentioned cross sensitivity data are only reference values valid for new sensors.

<sup>2</sup> For further enclosure types see datasheet "ADT Enclosures".

# GAS ALARM SYSTEMS

<b>Guidelines</b>	EMC Directives 2004/108/EC EN 61010-1:2010 ANSI/UL 61010-1 CAN/CSA-C22.2 No. 61010-1 CE
<b>Warranty</b>	One year on material (without sensor)
<b>Options</b>	
<b>Relay output</b>	
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)
<b>Warning buzzer</b>	
Acoustic pressure	85 dB (distance 300 mm) (1 ft)
Frequency	3.5 kHz
Power consumption	30 mA, (max 0.8 VA)
<b>LCD Display</b>	
LCD	Two lines, each 16 characters
Power consumption	10 mA, (max 0.3 VA)
<b>LED display</b>	
Green-yellow-red	Supply, low alarm, high alarm
Power consumption	10 mA, (max. 0.3 VA)
<b>Heating</b>	
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
<b>Analog Input</b>	
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. 50 mA

## ORDERING INFORMATION

ADT-53-1196-X-XXXXXXXXXX

### Options

1XXXXXXXX	Relay output <sup>2</sup>
X1XXXXXXXX	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' specification
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
XXXXXXX1	Factory calibration 0 – 20 ppm
XXXXXXX2	Factory calibration 0 – 10 ppm
XXXXXXX7	Factory calibration 0 – 100 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:** Sulphur dioxide transmitter, stainless steel housing, calibration tool, factory calibration 0 – 20 ppm,

**Ordering No.:** ADT-53-1196-5-XXXXX1XX1

## CONNECTING DIAGRAM

