

PolyGard®



Hydrogen Chloride HCL Transmitter ADT-53-1186

HCL transmitter including digital measurement value processing and temperature compensation for the continuous monitoring of the hydrogen chloride gas 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. Two relays with adjustable switching thresholds are available as an option.

APPLICATION

For the detection of hydrogen chloride within a wide range of industrial and commercial applications. Due to the standard output signal and the RS-485 interface the HCL transmitter is compatible to the PolyGard Gas Controller series MGC and DGC by MSR-E as well as to any other electronic control or automation system.



Standard Housing

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 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)
- Heating (optional)
- Duct mounting (optional)
- 2-wire mode (not in connection with options: relay output, bus interface, heating, warning buzzer and/ or flashlight)



MSR-Electronic GmbH ::: Würdinger Str. 27 & 27A ::: 94060 Pocking ::: Germany

Specifications subject to change without notice.

Up-to-date data sheets and user manuals can be found in the download area on www.msr-24.com.

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SPECIFICATIONS

General sensor performance

Detected gas	Hydrogen chloride (HCL)	
Sensor element	Electrochemical, diffusion	
Measuring range	0 – 20 ppm, 0 – 200 ppm	
Temperature range	-10 °C to +45 °C (14 °F to 113°F) w/o heating	
Pressure range	Atmospheric ± 10 %	
Humidity range	15 – 90 % RH non-condensing	
Storage temperature	5 °C to 20 °C (41 °F to 68 °F)	
Storage time	Max. 3 months	
Mounting height	0.3 – 0.8 m	
Accuracy	0.2 ppm for 0 - 20 ppm, 2 ppm for 0 – 200 ppm	
Repeatability	< 2 % of reading	
Long-term output drift	< 2 % of reading / month	
Response time	t ₉₀ ≤ 60 s	
Sensor life expectancy	> 2 years, normal operating environment	
Cross sensitivity*	Concentration (ppm)	Reaction (ppm)
Alkohole	30	0,2
Bromwasserstoff, HBr	20	10
Carbon monoxide; CO	1000	0
Chlor, Cl ₂	20	-0.4
Ethylene, C ₂ H ₄	100	0
Hydrogen, H ₂	1%	0
Hydrogen sulphide; H ₂ S	20	31
Nitrogen dioxide, NO ₂	20	-4
Nitrogen oxide, NO	25	0
Sulphur dioxide, SO ₂	100	0

Electrical

Power supply	18 - 28 VDC/AC, reverse polarity protected (for 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)

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)
Protocol	Depending on version

* 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.



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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 2014/30/EU EN 61010-1:2010 ANSI/UL 61010-1 CAN/CSA-C22.2 No. 61010-1 CE
Warranty	1 year on sensor (not if poisoned or overloaded) 2 years on device

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)
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. 50 mA

*For further enclosure types see datasheet ADT Enclosure.

All specifications were collected under optimal test conditions.

We confirm compliance with the minimum requirements of the applicable standard.



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ORDER INFORMATION

ADT-53-1186- X- XXXXXXXXX

Options

- 1XXXXXXXX Relay output²
- X1XXXXXXXX Buzzer int.
- X2XXXXXXXX Flashlight (LED)
- X3XXXXXXXX Warning buzzer and flashlight
- XX1XXXXXX Heating
- XXX1XXXXX RS- 485 protocol for DGC-05 series
- XXX2XXXXX RS- 485 protocol ModBUS
- XXX3XXXXX RS- 485 protocol customers' specification
- XXXX1XXXX Calibration / addressing mode tool
- XXXX2XXXX Manual calibration
- XXXX3XXXX Manual addressing
- XXXX4XXXX Manual calibration / addressing
- XXXXXX1X 4 – 20 mA analog input
- XXXXXX1 Factory calibration 0 - 20 ppm
- XXXXXX2 Factory calibration 0 - 200 ppm

Housing¹

- A Plastic housing
- B Duct mounting
- 5 Stainless steel

¹ See Data sheet "PolyGard ADT Enclosure"

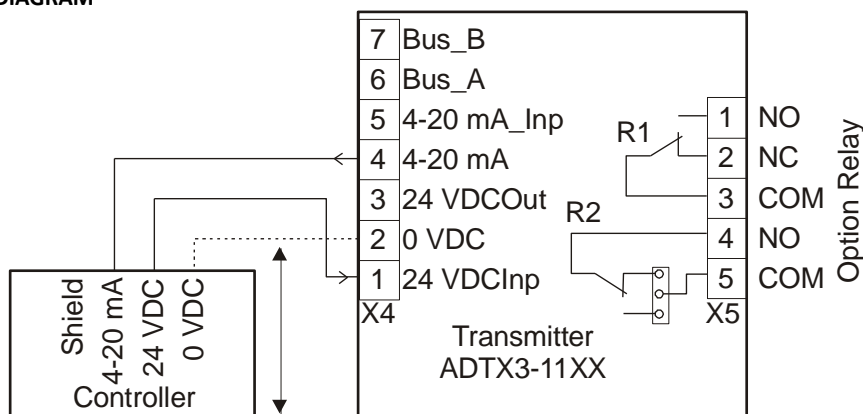
² Please indicate thresholds for low and high alarm when ordering.

EXAMPLE

Hydrogen chloride transmitter, stainless steel housing, tool mode, measuring range 0 – 20 ppm

Order Number: ADT-53-1186-5-000001001

CONNECTION DIAGRAM



0 VDC: Only with options



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