PolyGard® Chlorine Cl_2 Transmitter ADT53 1193

DESCRIPTION

Cl_2 transmitter including digital measurement value processing and temperature compensation for the continuous monitoring of the chlorine 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.

Standard enclosure

APPLICATION

For the detection of chlorine within a wide range of industrial and commercial applications like waterworks, sewage plants, swimming pools etc. Due to the standard analog signal and the RS-485 interface the Cl_2 transmitter is compatible to the PolyGard series MGC and DGC by MSR-E as well as to any other electronic control or automation system.

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 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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Specification subject to change without notice
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SPECIFICATIONS

General sensor performance		
Detected gas	Chlorine (Cl_2)	
Sensor element	Electrochemical, diffusion	
Measuring range	0 – 10 ppm (factory-set) 0 – 2 ppm / 0 – 5 ppm / 0 – 20 ppm (optional)	
Temperature range	-10 °C to + 50 °C (14 °F to 122°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	0,1 ppm	
Repeatability	< 2 % of reading	
Long term output drift	< 2% signal loss/month	
Response time	$t_{90} \leq 90$ s	
Sensor life expectancy	> 2 years, normal operating environment	
Cross sensitivity[1]	Concentration (ppm)	Reaction (ppm)
Carbon monoxide, CO	300	0
Hydrogen, H_2	300	0
Nitrogen dioxide, NO_2	20	~ 20
Nitric oxide, NO	35	0
Sulphur dioxide, SO_2	5	0
Electrical		
Power supply	18 - 28 VDC/AC, reverse polarity protected (2-wire mode only VDC)	
Power consumption (without options) - Analog mode - Bus mode	 22 mA, max. (0,6 VA) 12 mA, max. (0,3 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 Mod_Bus)	
Protocol	Depending on version	
Physical characteristics		
Enclosure Plastic Type A[2]	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^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.)	

[1] 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.

[2] For further enclosure types see datasheet "ADT Enclosures".

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)
	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, 16 characters each
Power consumption	10 mA, (max 0.3 VA)
LED indicator	
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	- 30 °C (- 22 °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

ORDERING INFORMATION

ADT-53-1193–X–XXXXXXXXX

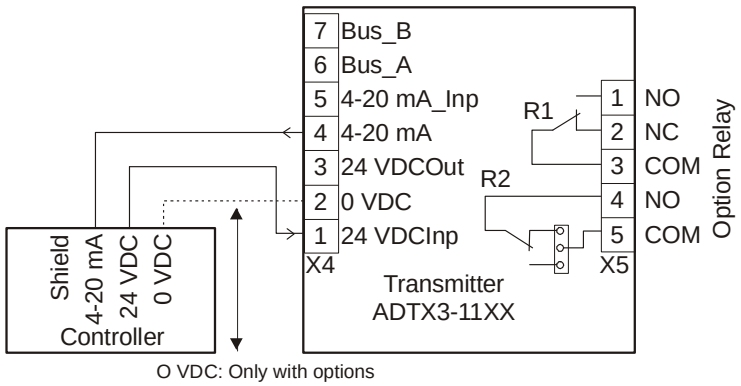
Options	
1XXXXXXXX	Relay output[2]
X1XXXXXXX	Buzzer integrated
X2XXXXXXX	Flashlight (LED)
X3XXXXXXX	Warning buzzer and flashlight
XX1XXXXXX	Heating
XXXX1XXXX	RS- 485 protocol for DGC-05 series
XXXX2XXXX	RS- 485 protocol ModBUS
XXXX3XXXX	RS- 485 protocol customers' specification
XXXXX1XXX	Calibration / addressing mode tool
XXXXX2XXX	Manual calibration
XXXXX3XXX	Manual addressing
XXXXX4XXX	Manual calibration / addressing
XXXXXX1XX	LCD display[3]
XXXXXX2XX	LED status display[2,3]
XXXXXXX1X	4 – 20 mA analog input
XXXXXXXX1	Factory calibration 0 – 20 ppm
XXXXXXXX2	Factory calibration 0 – 10 ppm
XXXXXXXX3	Factory calibration 0 – 5 ppm
XXXXXXXXV	Factory calibration 0 – 2 ppm

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

Example: Chlorine transmitter, stainless steel housing, calibration tool, factory calibration 0 – 20 ppm
Ordering No.: ADT-53-1193-5–XXXXX1XX1

CONNECTING DIAGRAM



O VDC: Only with options