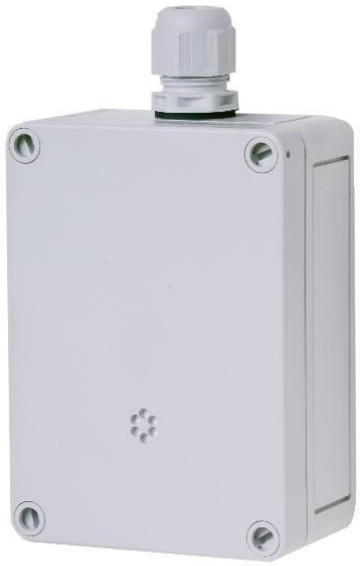
PolyGard® Sulphur Hexafluoride SF_6 Transmitter ADT-D3 1184 with Infrared Sensor

DESCRIPTION

SF6 transmitter with two-beam infrared sensor for the continuous monitoring of the ambient air to detect sulphur hexafluoride concentrations. The infrared measuring method with integrated temperature and drift compensation stands for highest accuracy, selectivity and reliability despite of the calibration interval of 3 years. The ADT-D3 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 detecting leakages in plants producing high voltage devices as well as in the semi-conductor technology and also within a wide range of commercial and industrial applications. Due to the standard analog signal and the RS-485 serial interface the SF6 transmitter is compatible to the PolyGard gas controller series by MSR-E as well as to any other controllers or automation systems.

FEATURES

- Two-beam infrared gas sensor (NDIR)
- High accuracy, selectivity and reliability
- Automatic drift and temperature compensation
- Good resistance to poisoning
- Life expectancy > 10 years
- Maintenance period 3 years
- 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
- Modular plug-in technology
- Housing fire-resistant according to UL 94V2
- Manual addressing for RS-485 mode (optional)
- 4 – 20 mA 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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SPECIFICATIONS

General sensor performance	
Detected gas	Sulphur hexafluoride SF_6
Sensor element	Two-beam infrared (NDIR)
Measuring range	0 - 1000 ppm
Accuracy	< 2 % of measuring range
Repeatability	< 2 % of measuring range
Response time	t_{90} < 30 sec.
Resolution	1 ppm
Temperature range	-10 °C to + 40 °C (14 °F to 104 °F) w/o heating
Long-term zero-point drift	< 1 % of measuring range /year
Long-term output drift	< 2 % of measuring range /year
Pressure range	800 - 1100 hPa
Humidity range	0 – 95 % RH non-condensing
Life expectancy	> 10 years
Recommended calibration interval	3 years
Storage temperature	0 °C to 50 °C (32 °F to 122 °F)
Storage time	Max. 6 months
Electrical	
Power supply	18 - 28 VDC/AC, (reverse polarity protected)
Power consumption (without options)	45 mA, max. (1,1 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)

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

*For further enclosure types see datasheet ADT Enclosure

ORDERING INFORMATION

ADT-D3-1184–X–XXXXXXXX2

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 & tool addressing
XXXXX4XXX	Manual calibration & addressing
XXXXXX1XX	LCD display[3]
XXXXXX2XX	LED status display[2,3]
XXXXXXX1X	4 - 20 mA analog input
XXXXXXXX2	Factory calibration 0 – 1000 ppm

Enclosure[1]	
A	Plastic enclosure
B	Duct mounting
5	Stainless steel (only available for >100 pcs/lot)

[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

Example: SF_6 transmitter, stainless steel housing, manual calibration & tool addressing, factory calibration 0- 1000 ppm

Ordering number: ADT-D3-1184-5–XXXXX2XX2

CONNECTION DIAGRAM