

## PolyGard® Transmitter for Combustible Gases ADT-D3 34XX with Infrared Sensor

### DESCRIPTION

PolyGard transmitter with two-beam infrared sensor for the continuous monitoring of the ambient air to detect combustible gases and vapours. 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.

### APPLICATION

The transmitter is used within a wide commercial range for detecting flammable gases and vapours. Due to the standard output signal and the RS-485 serial interface the transmitter is compatible to the PolyGard gas controller series by MSR-E as well as to any other controller or automation system.

### 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 periods 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
- Manual addressing for RS-485 mode (optional)
- 4 – 20 mA 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)



Standard enclosure



## SPECIFICATIONS

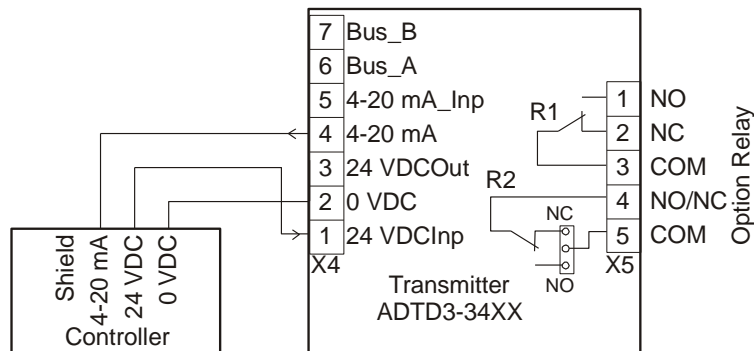
<b>General sensor performance</b>	
Detected gas	Combustible gases/ vapours (see Ordering Information)
Sensor element	Two-beam infrared (NDIR)
Measuring range	0 – 100% LEL
Accuracy	< 2 % of measuring range
Repeatability	< 2 % of measuring range
Response time	$t_{90} < 30 \text{ sec}$
Resolution	1%
Temperature range	-10 °C to + 40 °C (14 °F to 104 °F) w/o heating
Long-term zero-point drift	< 2 % of measuring range/year
Long-term output drift	< 3 % 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
<b>Electrical</b>	
Power supply	18 - 28 VDC/AC, (reverse polarity protected)
Power consumption (without options)	45 mA, max. (1.1 VA)
<b>Output signal</b>	
Analog output signal	(0) 4 – 20 mA, load $\leq 500 \Omega$ ,
Selectable: Current / tension	(0) 2 - 10 V, load $\geq 50 \text{ k} \Omega$
Starting point 0 / 20 %	proportional, overload and short-circuit proof
<b>Serial interface</b>	
Transceiver	RS 485 / 19200 Baud (9600 at Mod_Bus)
<b>Physical characteristics</b>	
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 <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.)
<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)

\*For further enclosure types see datasheet ADT Enclosure.

# GAS ALARM SYSTEMS

Options	
<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 Indicator</b>	
Green-yellow-red	Power supply, Low Alarm, High Alarm
Power consumption	10 mA, (max. 0.3 VA)
<b>Heating</b>	
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
<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. charge 50 mA

## CONNECTING DIAGRAM



## ORDERING INFORMATION

**ADT-D3-34XX-X-XXXXXXXX1**

### Options

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 customers' specification
XXXXX2XXX	Manual calibration & tool addressing
XXXXX4XXX	Manual calibration & addressing
XXXXXX1XX	LCD display <sup>3</sup>
XXXXXX2XX	LED status indicator <sup>2,3</sup>
XXXXXXX1X	4 – 20 mA analog input
XXXXXXXX1	Factory calibration 0 – 100% LEL

### Enclosures<sup>1</sup>

A	Plastic enclosure
B	Duct mounting
5	Stainless steel - only available for >100 pcs/lot

### Gas Types

00	Methane	CH <sub>4</sub>
05	Acetylene	C <sub>2</sub> H <sub>2</sub>
10	Ethylene	C <sub>2</sub> H <sub>4</sub>
60	n-Butane	C <sub>4</sub> H <sub>10</sub>
80	Propane (LPG)	C <sub>3</sub> H <sub>8</sub>

<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:** Methane IR transmitter, stainless steel housing, manual calibration & tool addressing, factory calibration 0 - 100% LEL

**Ordering No.:** ADT-D3-3400-5-XXXXX2XX1