

PolyGard® Refrigerant Gas Transmitter ADT-D3 20XX with Infrared Sensor

DESCRIPTION

Refrigerant gas transmitter with two-beam infrared sensor for the continuous monitoring of the ambient air to detect hydrochlorofluorocarbon (HCFC) and hydrofluorocarbon (HFC) refrigerants. The infrared measuring method with integrated temperature and drift compensation stands for highest accuracy, selectivity and reliability despite of the calibration interval of 5 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

For leak detection in cooling systems with refrigerant gases (HCFC and HFC) as cooling agents, and also within a wide range of commercial and industrial applications. Due to the standard analog output signal and the RS-485 serial interface the refrigerant transmitter is compatible to the PolyGard gas controller series by MSR-E as well as to any other controller or automation system.



Standard enclosure

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 > 5 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)
- Relay output (optional)
- Integrated buzzer (optional)
- LCD display (optional)
- Heating (optional)
- Duct mounting (optional)

SPECIFICATIONS

General sensor performance	
Detected gas	Refrigerant gases
Sensor element	Two-beam infrared (NDIR)
Measuring range	0 - 2000 ppm
Accuracy	< 2 % of measuring range
Repeatability	< 2 % of measuring range
Response time	$t_{90} < 30$ sec
Resolution	10 ppm
Temperature range	-10 °C to + 40 °C (14 °F to 104 °F)
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	> 5 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	(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
Serial interface	
Transceiver	RS 485 / 19200 Baud (9600 at Mod_Bus)
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 Directive 2004 / 108 / EEC
	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)

GAS ALARM SYSTEMS

LCD Display

LCD	Two lines, each 16 characters
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

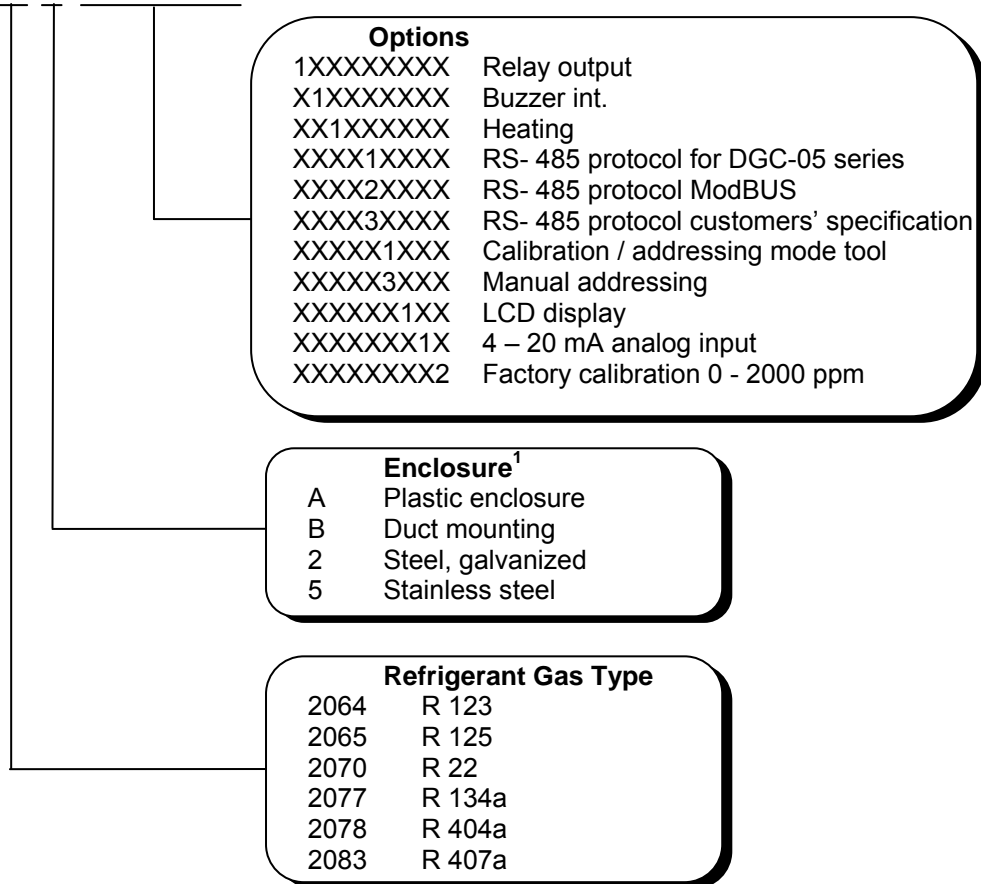
Analog Input

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 AT-DT Enclosure.

ORDERING INFORMATION

ADT-D3-20XX-X-XXXXXXXXX2



¹ See Data sheet "PolyGard AT/DT Enclosure"

Example: Refrigerant IR transmitter R 134a, stainless housing, tool mode, factory calibration 0 - 2000 ppm

Ordering No.: ADT-D3-2077-5-XXXXX1XX2

CONNECTING DIAGRAM

