

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 reading
Repeatability	< 2 % of reading
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 reading/year
Long-term output drift	< 3 % of reading/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)
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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 Directive 2004 / 108 / EEC
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Warranty

	CE
	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)