

PolyGard® Nitrogen Dioxide NO₂ Transmitter ADT53 1130

DESCRIPTION

NO₂ transmitter including digital measurement value processing and temperature compensation for the continuous monitoring of the ambient air to detect nitrogen oxide concentrations. Integrated in the transmitter there is a comfortable calibration routine with selective access release. 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.

APPLICATION

For the detection of nitrogen dioxide within a wide range of industrial and commercial applications such as underground garages, engine repair shops, tunnels, engine test benches, shelters and loading bays with diesel-engined vehicles. Due to the standard output signal and the RS-485 interface the NO₂ transmitter is compatible to the PolyGard Gas Controller series MGC and DGC by MSR-E as well as to any other electronic control or automation system.



Standard enclosure

FEATURES

- Digital processing of the measurement values incl. temperature compensation
- Continuous monitoring
- Low zero point drift
- Good stability to poisoning
- 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 - 20 mA analog input for an external AT transmitter (optional)
- Relay output (optional)
- Integrated buzzer (optional)
- LCD display (optional)
- Heating (optional)
- Duct mounting (optional)

SPECIFICATIONS

General sensor performance

Detected gas	Nitrogen dioxide (NO ₂)	
Sensor element	Electrochemical, diffusion	
Measuring range	0 - 20 ppm (factory set) adjustable from 0 - 10 to 0 - 20 ppm	
Temperature range	-10 °C to + 45 °C (14 °F to 113 °F)	
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	0,6 to 0,8 m (2 to 2.5 ft.)	
Accuracy	0,1 ppm	
Repeatability	< 2 % of reading	
Long-term output drift	< 2% signal loss/month	
Response time	t ₉₀ < 60 sec.	
Sensor life expectancy	> 2 years/normal operating environment	
Cross sensitivity ¹	Concentration (ppm)	Reaction (ppm)
Carbon monoxide; CO	300	0
Ethylene, C ₂ H ₄	100	0
Hydrogen, H ₂	300	0
Nitrogen oxide, NO	35	0
Sulphur dioxide, SO ₂	5	0

Electrical

Power supply	18 - 28 VDC/AC, reverse polarity protected (for 2- wire mode only VDC)
Power consumption (without options)	
- Analog mode	22 mA, max. (0,6 VA)
- Bus mode	12 mA, max. (0,3 VA)

Output signal

Analog output signal	(0) 4 – 20 mA, load ≤ 500 Ω,
Selectable: Current / tension	(0) 2 - 10 V; load ≥ 50 k Ω
Starting point 0 / 20 %	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.)