

Dräger Polytron® 8700 IR

Detection of flammable gases and vapors

The Dräger Polytron® 8700 IR is an advanced explosion proof transmitter for the detection of combustible gases in the lower explosion limit (LEL). It uses a high performance infrared Dräger PIR 7000 sensor, which will quickly detect most common hydrocarbon gases. Besides a 3 wire 4 to 20 mA analog output with relays, it also offers Modbus and Fieldbus making it compatible with most control systems.



Benefits

Efficient, stable and robust—the Dräger PIR 7000

With its stainless steel 316L enclosure and drift free optics, the Dräger PIR 7000 is built for the harshest industrial environments such as offshore installations. The unique 4 beam signal stabilizing system makes the sensor resistant to dust or dirt deposits on the optical surfaces. Environmental and aging effects are compensated ensuring long term, drift free operation. The integrated gas library with up to 100 gases provides a high degree of application flexibility. Each of the gases listed there can be picked from the menu and automatically cross-calibrated with a standard calibration gas such as methane or propane. No need to consult the factory when applications change.

Easy device management via digital communication

The Dräger Polytron 8700 is equipped with digital interfaces allowing for quick and easy remote interrogation of the transmitter's state. Integration with existing asset management systems such as PactWare is possible via DTM.

In addition to the common HART® communication system, the fieldbus interfaces PROFIBUS PA, FOUNDATION Fieldbus H1, and Modbus RTU are also available.

Same design, same operating principle

The Dräger Polytron 8700 belongs to the Polytron 8000 series. All transmitters in this series have the same design and user interface. This allows for uniform operation with reduced training and maintenance requirements.

The large graphic backlit display shows status information clearly and in an easy to use format. The measured gas concentration, selected gas type, and measuring unit are displayed during normal operation. Colored LEDs (green, yellow and red) provide additional alarm and status information.

The Polytron 8700 is operated by means of a magnetic wand over contact surfaces.

Three relays for controlling external equipment

Upon request, the Dräger Polytron 8700 can also be supplied with three integrated relays. This enables you to use it as an independent gas detection system with two arbitrarily adjustable concentration alarms and one fault alarm. Audio alarms, signal lights, or similar devices can thus be controlled locally without an additional cable between the transmitter and central controller.

Safe, robust housing for every application

Polytron 8700 features a Class I, Div. 1 rated explosion proof enclosure made from aluminum or stainless steel, making it suitable for a wide range of environmental conditions. A protection type "e" version includes a

Benefits

convenient docking station which allows installation in hazardous atmospheres without running conduit (where approved).

Make the impossible possible with the remote sensor

An available remote sensor conduit housing allows the PIR sensor to be installed up to 30 meters (100 feet) away from the Polytron transmitter. A special calibration flow cell accessory permits one person to perform a full calibration of a remote mounted sensor from the transmitter.

Data logger

The Polytron 8700 has a data logger, which records measuring and event data from the past years.

System Components



D-27777-2009

Dräger REGARD® 3900

The Dräger REGARD® 3900 is a standalone control system for the detection of toxic gases, oxygen levels, and Ex hazards. The control system is fully configurable between 1 and 16 channels, depending upon the type and quantity of input/output boards installed.

System Components



Dräger REGARD®-1

The Dräger REGARD®-1 is a standalone single-channel control system for the detection of toxic and Ex hazards and oxygen levels. The control system is fully configurable for a single input from either a 4 to 20 mA transmitter or a Dräger Polytron® SE Ex measuring head.

Accessories



Splash guard

The Splash guard protects the sensor against splash water and dirt.



Duct mount kit

The duct mount kit enables gas monitoring inside ventilation ducts while keeping the transmitter outside.

Accessories



D-B5363-2013

Magnetic Wand

The magnetic wand is used to access and navigate the menu on the Polytron explosion proof detectors.

Technical Data

Dräger Polytron® 8700 IR

| | | | | |
|-----------------------------|---|--|---|--|
| Type | Explosion proof / flameproof enclosed transmitter ("d") or combined with increased safety ("d/e") | | | |
| Gases | Flammable gases and vapors | | | |
| Measuring ranges | Methane, propane, ethylene | 0 to 20 ... 100% LEL | | |
| | Methane | 0 to 100 vol. % | | |
| | Further substances and measuring ranges upon request | | | |
| Display | Backlit graphic LCD; 3 Status LEDs (green/yellow/red) | | | |
| Electrical data | Signal output analog | Normal operation | 4 to 20 mA | |
| | | Maintenance | Constant 3.4 mA or 4 mA ±1 mA 1 Hz modulation; (adjustable) | |
| | | Fault | < 1.2 mA | |
| | Signal output digital | HART®, PROFIBUS® PA, FOUNDATION fieldbus™ H1 and Modbus RTU | | |
| | Power supply | 10 to 30 V DC, 3-wire | | |
| | Power consumption (max.) | w/o relay, non-remote | 330 mA at 24 V | |
| | | w/ relay, remote | 350 mA at 24 V | |
| | Relay specification (option) | 2 alarm relays and 1 fault relay, single-pole two-way contact 5 A @ 230 VAC, 5 A @ 30 VDC, resistance-bound | | |
| | Environmental conditions (see sensor data sheet) | Temperature | -40 to 77°C (-40 to 170°F) without relay -40 to 70°C (-40 to 158°F) with relay | |
| | | Pressure | 20.7 to 38.4 inch Hg / 700 to 1,300 mbar | |
| Humidity | | 0 to 100% r. h., non-condensing | | |
| Housing | Transmitter housing | Epoxy coated copper-free aluminum or stainless steel SS316 L | | |
| | Sensor housing | Stainless steel SS316 L | | |
| | Enclosure protection type | NEMA 4X & 7, IP65/66/67 | | |
| | Cable entry point | 3/4" NPT threaded holes or M20 cable gland | | |
| | Dimensions (H x W x D), approx. | w/o docking station | 11.0" x 5.9" x 5.1" / 280 x 150 x 130 mm | |
| | | w/ docking station | 11.0" x 7.1" x 7.5" / 280 x 180 x 190 mm | |
| | Weight, approx. | w/o docking station Aluminum | 8.6 lbs / 3.9 kg | |
| | | w/o docking station SS316 L | 12.6lbs / 5.7 kg | |
| w/ docking station Aluminum | | 11.5 lbs / 5.2 kg | | |
| w/ docking station SS316 L | | 15.7 lbs / 7.1 kg | | |
| Approvals* | | | | |
| UL | | Class I, Div 1, Groups B, C, D; Class II, Div 1, Groups E, F, G; Class I, Zone 1, Group IIC; T-Code T6/T4 | | |
| CSA | | Class I, Div 1, Groups B, C, D; Class II, Div 1, Groups E, F, G; Class I, Zone 1, Group IIC; T-Code T6/T4 CSA C22.2 No. 152 | | |
| IECEX | 4-20-mA HART® | Ex db IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+80°C; "d" version Ex db e IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+80°C; "e" version; Ex tb IIIC T80/130°C Db | | |

Technical Data

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|---|----------------|--|
| | PROFIBUS® & FF | Ex db ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+80°C; "d" version Ex db e ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+80°C; "e" version; Ex tb IIIC T80/130°C Db |
| ATEX | 4-20-mA HART® | II 2G Ex db IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+80°C; "d" version II 2G Ex db e [ia] IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+80°C; "e" version II 2D Ex tb IIIC T80/130°C Db |
| | PROFIBUS® & FF | II 2G Ex db ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+80°C; "d" version II 2G Ex db e ia [ia] IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+80°C; "e" version II 2D Ex tb IIIC T80/130°C Db |
| CE markings | | ATEX (Directive 2014/34/EU) Electromagnetic Compatibility (Directive 2014/30/EU) Low Voltage (Directive 2014/35/EU) |
| Shipping approvals | | DNV GL, ABS |
| MED approval B | | Certificate no. 61549/ 50 – 13 HH |
| MED approval D | | Certificate no. 12031 – 10 HH |
| Performance approval | | Certificate no. BVS 13 ATEX G 001 X |
| SIL 2 certified by TUEV Sued | | Certificate no. Z10 1207 53474 013 |
| * All docking station versions are only ATEX/IECEX approved | | |

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