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Dräger

Dräger PIR 7200
Detection of toxic gases and oxygen

The Dräger PIR 7200 is an explosion proof point infrared gas detector for continuous monitoring of carbon dioxide. Designed for the industrial use, the transmitter offers drift-free optics. And due to its robust product design the PIR 7200 can be operated even in harsh environments.

ST-11660-2007

ST-11664-2007

Enclosure made of stainless steel SS 316L

Various accessories to be installed

Sapphire window

Contact area for magnetic wand – no extra tool for calibration

Heated optics

Coated reflector

Dräger. Technology for Life®

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Benefits

Advanced signal stability

Almost two decades after launching the first fixed infrared gas detector – followed by a great market success with more than 100,000 units sold – Dräger now introduce the Dräger PIR 7200 which encompasses the latest in revolutionary technology.

Based on patented innovations, the Dräger PIR 7200 combines a maximum light collecting construction with a 4-beam signal stabilising system. The total optical system uses no light beam split, simply a set of various reflectors. This double-compensating optical system is very resistant towards known influences such as dust, fog or insects frequently found in the measuring cuvette or by dirt accumulation on the optical surfaces. Due to its non-imaging construction, the measuring signal is not affected by a partial beam block.

This innovative optical system ensures that the Dräger PIR 7200 fulfils the customer requirements in industrial applications of “no false alarms”, longer service intervals and a drift-free signal output.

Fast response

Equally important is being informed about a potential hazard as early as possible. An early and reliable gas alarm allows for safety measures to be initiated on site.

To support this, the Dräger PIR 7200 offers a configurable response mode which allows the end user to choose between “normal” or “high speed” response subject to the application. Using the “high speed” option, and combining it with the lowest feasible alarm threshold, the Dräger PIR 7200 shortens the reaction time in case of an alarm. Leakages can be detected at the earliest stage of their existence.

Multiple configuration capabilities

The Dräger PIR 7200 is delivered with the optimum default settings, but remains fully flexible to meet with the customers demands on an application-by-application basis. Whether it be reduced or increased measuring ranges or configurable special signals (fault, beam block warning, maintenance) – these features of the Dräger PIR 7200 offer the possibility to set up every device exactly to the customer’s needs and preferences.

Maximum reliability – SIL 2 certified

Years of experience in manufacturing gas detectors using infrared technology lead to a continuously enhanced product quality. Now, the Dräger PIR 7200 is further advanced as the total product has been developed inline with the Functional Safety standard EN 61508. This is applicable to both the devices hardware and software.

Furthermore, the excellent parameters as detailed in the SIL 2 (Safety Integrity Level) certificate, issued by the German TÜV, show that only 2 % from the entire SIL 2 budget is allocated to the field device, thus providing flexibility to choose control systems and actuators.

This is a new understanding of reliability – not only fulfilling but exceeding the SIL 2 requirements significantly.

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Benefits

Dräger PIR 7200 offers

- Linearised response characteristics for carbon dioxide
- Multiple mounting and configuration capabilities (signals acc. to NAMUR NE 43)
- Precise and stable measurement
- Fastest response of less than 1 second
- Beam block warning in case of dirty optics for preventive maintenance
- Long maintenance intervals
- Extended temperature range of up to +77 °C / + 170 °F
- Double-compensating, non-imaging optics (using 4-beam technology)
- Single cable multidrop capability using HART® communication
- Conventional 4 to 20 mA analogue signal output
- Hermetically sealed SS 316 L enclosure
- No moving parts
- Resistant towards shock and vibration up to 4 G
- Continuous self-testing in the context of the IEC/EN 61508 standard
- Developed and manufactured according to the SIL guidelines, SIL 2 certified by TÜV
- Ex approvals for worldwide application: ATEX, IECEx, UL, CSA
- Dust approval for zone 21 and 22
- Typical lifetime greater than 15 years

System Components

D-6806-2016

Dräger REGARD® 7000

The Dräger REGARD® 7000 is a modular and therefore highly expandable analysis system for monitoring various gases and vapours. Suitable for gas warning systems with various levels of complexity and numbers of transmitters, the Dräger REGARD® 7000 also features exceptional reliability and efficiency. An additional benefit is the backward compatibility with the REGARD®.

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System Components

ST-335-2004

Dräger REGARD®-1

The Dräger REGARD®-1 is a standalone, self contained single channel control system for the detection of Toxic, Oxygen and Ex hazards. 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.

D-27777-2009

Dräger REGARD® 3900

The Dräger REGARD® 3900 is a standalone, self contained control system for the detection of Toxic, Oxygen 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.

Accessories

st-11680-2007

Splash guard

Guards the measuring cuvette against dirt and dust, quick gas exchange through ""chimney effect"", reflecting fluorescent strips.

Order No.: 68 11 912

Accessories

st-11694-2007

Status indicator

The permanent display of the measuring mode or fault with a green or yellow light signal, can be combined with other accessory parts.

Order No.: 68 11 920

st-11699-2007

Flow cell

Function test/calibration of the transmitter during high wind forces and/ or high test gas concentration, including status display, suitable for process applications.

Order No.: 68 11 910

Related Products

ST-11659-2007

Dräger PIR 7000

The Dräger PIR 7000 is an explosion proof point infrared gas detector for continuous monitoring of flammable gases and vapours. With its stainless steel SS 316L enclosure and drift-free optics this detector is built for the harshest industrial environments, e.g. offshore installations.

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Related Products

ST-3812-2003

Dräger Polytron® 7000

The Dräger Polytron® 7000 is a gas detector that can satisfy many toxic and oxygen gas measurement applications on a single platform. It meets the requirements of the compliance market as well as the high specification requirements of customised solutions.

D-39563-2011

Dräger Polytron® 5720 IR

The Dräger Polytron® 5720 IR is a cost-effective explosion proof transmitter for the detection of carbon dioxide in volume percentage or ppm. It uses a high-performance infrared Dräger PIR 7200 sensor that can be submerged in water without damage. A 3-wire 4-to-20 mA analogue output with relays makes it compatible with most control systems.

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Technical Data

Dräger PIR 7200		
Type	Explosion proof gas transmitter with infrared sensor technology	
Principle of operation	Temperature-compensated infrared absorption, 4-beam technology	
Gases and ranges	Carbon dioxide (CO_2)	0 to 10 % vol. (default)
		0 to 2,000 ppm ... 30 % vol. (configurable)
Measuring performance (carbon dioxide, 0 to 10 % vol.)	Digital resolution	0.02 % vol.
	Repeatability	≤ ±0.1 % vol.
	Response time t0..90	≤ 4 seconds (“normal response”)
		< 1 second (“fast response”)
	Long-term drift	≤ ±0.03 % vol. after 12 months
Electrical data	Output signals	4 to 20 mA, HART®
	Fault signal	≤ 1.2 mA (configurable)
	Beam block warning signal	2 mA (configurable)
	Maintenance signal	3 mA (configurable)
	Power supply	13 to 30 V DC, 3-wire
	Power consumption	5.6 W (typical)
Ambient conditions	Temperature	-40 to +-77 °C / -40 to +170 °F (operating)
		-40 to +-85 °C / -40 to +180 °F (storage)
	Humidity	0 to 100 %RH
	Pressure	700 to 1,300 hPa / 23.6 to 32.5 inch Hg
Enclosure	Material	Stainless steel SS 316 L
	Connecting thread	M25 or ¾“ NPT
	Weight	2.2 kg (without accessories)
	Dimensions	160 mm × Ø 89 mm / 6.3 ,‘ × Ø 3.5 ,‘
	Ingress protection	IP66 and IP67, NEMA 4X
Approvals	ATEX	II 2G Ex d IIC T6 / T4 Gb (-40 to +40 °C / +80 °C) II 2D Ex tb IIIC T80 °C / T130 °C Db IP65 (-40 to +40 °C / +80 °C)
	IECEx	Ex d IIC T6 / T4 Gb (-40 to +40 °C / +80 °C)
		Ex tb IIIC T80 °C / T130 °C Db IP65 (-40 to +40 °C / +80 °C)
	UL (Classified)	Class I, Div. 1, Groups A, B, C, D / Class I, Zone 1, Group IIC
		Class II, Div. 1, Groups E, F, G
	CSA (C-US)	Class I, Div. 1, Groups B, C, D
		Class II, Div. 1, Groups E, F, G
	Safety Integrity Level	SIL2 certified by TÜV (EN 61508, EN 50402)
	CE mark: electromagnetic compatibility (directive 89 / 336 / EEC)	

Ordering Information

Dräger PIR 7200	
Dräger PIR 7200 (NPT) HART®	68 11 572
Dräger PIR 7200 (M25) HART®	68 11 570

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Ordering Information

Accessories	
Mounting set	68 11 648
Duct mount set	68 11 850
Ex e junction box	68 11 898
Splash guard	68 11 912
Insect guard	68 11 609
Hydrophobic filter	68 11 890
Calibration adapter	68 11 610
Status indicator	68 11 920
Flowcell	68 11 910
Bump test adapter	68 11 930
Process adapter	68 11 915
Process cuvette	68 11 415
Magnetic wand	45 43 428
USB PC adapter	68 11 663

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