

Dräger Polytron® 8720 IR Detection of carbon dioxide

The Dräger Polytron® 8720 IR is an advanced explosion proof transmitter for the detection of carbon dioxide in percent volume or ppm. It uses a high performance infrared Dräger PIR 7200 sensor, which can be submerged in water without damage. Besides a 3 wire 4 to 20 mA analogue output with relays, it also offers Modbus and Fieldbus making it compatible with most control systems.



Benefits

Efficient, stable and robust – the Dräger PIR 7200

With its stainless steel 316L enclosure and drift free optics, the Dräger PIR 7200 is built for the harshest industrial and commercial outdoor environments. The unique 4 beam signal stabilizing system makes the sensor resistant to dust or dirt deposits on the optical surfaces. Environmental and ageing effects are compensated ensuring long term, drift free operation. The measuring range can be freely adjusted between 0 – 2,000 ppm and 0 – 30% volume enabling a wide variety of applications.

Detection of carbon dioxide

The Dräger Polytron 8720 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 8720 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 8720 is operated by means of a magnetic wand over contact surfaces.

Three relays for controlling external equipment

Upon request, the Dräger Polytron 8720 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 8720 features a Class I, Div. 1 rated explosion proof enclosure made from aluminium or stainless steel, making it suitable for a wide range of environmental conditions. A protection type "e" version includes a convenient docking station which allows installation in hazardous atmospheres without running conduit (where approved).

Benefits

Make the impossible possible with the remote sensor

An available remote sensor conduit housing allows the PIR sensor to be installed up to 30 metres (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 8720 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, 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.



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.

Accessories



D-15035-2010

Docking station

The docking station is included with all transmitters in the Polytron® 5000 and Polytron® 8000 series for protection type “e”, increased safety. This also facilitates pre-assembly.



ST-11680-2007

Splash guard

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



D-85345-2013

Duct mounting kit

The duct mounting kit enables gas monitoring inside ventilation ducts while the transmitter remains outside.

Technical Data

Dräger Polytron® 8720 IR

Type	Explosion proof / flameproof enclosed transmitter ("d") or combined with increased safety ("d/e")			
Gases	Carbon dioxide			
Measuring ranges	0 to 10 vol. % (Standard) 0 to 2,000 ppm to 30 vol. % (configurable)			
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)			
Electrical data	Signal output analogue	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 aluminium 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 Aluminium	8.6 lbs / 3.9 kg	
w/o docking station SS316 L		12.6lbs / 5.7 kg		
w/ docking station Aluminium		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
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
	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 ≤

Technical Data

ATEX	4-20-mA HART®	Ta ≤ +40/+80°C; "e" version; Ex tb IIIC T80/130°C Db II 2G Ex db IIC T6/T4 Gb, -40 ≤ Ta ≤ 40/+80°C; "d" version II 2G Ex db e 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 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
SIL 2 certified by TUEV Sued		Certificate no. Z10 1207 53474 013
* All docking station versions are only ATEX/IECEx approved		

Ordering Information

Dräger Polytron® 8720 IR

Dräger Polytron® 8720 IR d A 4-20/HART®	83 44 709
Dräger Polytron® 8720 IR d A 4-20/HART® relay	83 44 710
Dräger Polytron® 8720 IR e A 4-20/HART® (incl. Docking Station)	83 44 727
Dräger Polytron® 8720 IR e A 4-20/HART® relay (incl. Docking Station)	83 44 728
Dräger Polytron® 8x0 Kit (Custom configuration e. g. stainless steel housing)	83 44 800

Accessories

Magnetic wand	45 44 101
Pipe mount bracket	45 44 198
Duct mount kit	68 12 300
Duct mount kit Flow Cell for PIR 7x00	68 11 945
Duct mount kit Bump Test Adapter for PIR 7x00	68 11 990
Status indicator for PIR 7200	68 11 920
Splash guard for PIR 7200	68 11 912
Flow Cell for PIR 7200	68 11 910
Bump Test Adapter for PIR 7200	68 11 930
Insect guard for PIR 7x00	68 11 609
Hydrophobic filter for PIR 7x00	68 11 890
Calibration adapter for PIR 7x00	68 11 610
Process adapter for PIR 7x00, POM (Polyoxymethylene)	68 11 915
Process adapter for PIR 7x00, stainless steel	68 11 415
Aluminium junction box for remote sensor "d"	45 44 099
Stainless steel junction box for remote sensor "d"	45 44 098
Spacer	68 12 617

Ordering Information

Dräger PIR 7200 for remote sensor "e" variant 68 12 290

HART® is a registered trademark of the HART Communication Foundation.

FOUNDATION fieldbus™ is a registered trademark of the Fieldbus Foundation™.

PROFIBUS® is a registered trademark of PROFIBUS and PROFINET International (PI).

PACTware™ is a registered trademark of Pepperl+Fuchs GmbH.

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