



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 HART®, Modbus and Fieldbus making it compatible with most control systems.

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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.

Easy device management via digital communication

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. Audible 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) and this also facilitates pre-assembly.

Make the impossible possible with the remote sensor

The remote sensor connection housing allows you to install the sensor separately from the transmitter. This allows you to simply place the sensor closer to the gas cloud in hard-to-reach locations. The display remains visible at eye level.

Data logger

The Polytron 8720 has a data logger, which records measuring and event data from the past years.

System Components

D-4806-2016



Dräger REGARD 7000

The Dräger REGARD 7000 is a modular and therefore highly expandable control 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.

D-39957-2021



Dräger REGARD 3000

Monitor various gases and vapours with the modular Dräger REGARD 3000 control system. Its multi-coloured status light signals the status of your gas detection system. The controller allows you to combine three different modules: Input, Relay and Gateway module. You can connect up to four analogue transmitters and eight relays in combination.

Accessories

ST-11680-2007



Splash Guard

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

D-85346-2013



Duct mount kit PIR 7000

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

D-14965-2014



Process cuvette SGR

For sampling and in-line applications – reduces the inner volume of the measuring cuvette, thus providing a faster speed of response under flow conditions – made of stainless steel.

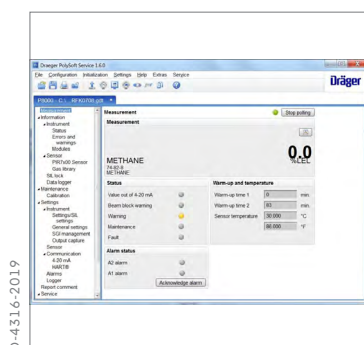
ST-11699-2007



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.

Accessories



Dräger PolySoft software

The optional Dräger PolySoft Windows® software is used for configuration, firmware upgrades, diagnostics, and downloading the Polytron's built in datalogger. All from the comfort of your control room using the digital HART® signal that is modulated on top of the analog 4 – 20 mA signal. Out in the field, an available non-intrusive IR dongle easily connects Polytron to PolySoft.

Technical Data

Dräger Polytron 8720 IR

Type	Explosion proof / flameproof enclosed transmitter (“d”) or combined with increased safety (“d/e”)			
Gases	Carbon dioxide			
Measuring range	0 to 10 vol. % (Standard)			
	0 to 2,000 ppm to 30 vol. % (configurable)			
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)			
Performance Characteristics	Accuracy/repeatability	Sensitivity	± ± 0.1 % vol.	
		Long term drift	± ± 0.3 % vol. after 12 month	
	Response time	T90	4 seconds (w/o splash guard)	
Electrical data	Signal output analogue	Normal operation	4 to 20 mA, 3- or 4-wire, sink or source	
		Maintenance	Constant 3.4 mA or 4 mA ±1 mA 1 Hz modulation; (adjustable)	
		Fault	< 1.2 mA	
	Signal output digital	HART® w/ 3- or 4-wire, PROFIBUS® PA, FOUNDATION fieldbus™ H1 and Modbus RTU w/ 4-wire		
	Power supply	10 to 30 V DC		
	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	

Technical Data

Approvals*	UL	Class I, Div 1, Groups A, 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 A, B, C, D;		
		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	
		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/+70 °C; 'd' version
				II 2G Ex db eb IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 °C; 'e' version II 2D Ex tb IIIC T135 °C Db
			PROFIBUS® & FF	II 2G Ex db ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 °C; 'd' version
				II 2G Ex db eb ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 °C; 'e' version II 2D Ex tb IIIC T135 °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, LR, CCS, RMRS			
MED approval	Certificate No. MEDB0000411			
Performance approval	PFG 14 G 001X			
SIL 2 certified by TUEV Sued	Certificate no. Z10 17 05 53474 023			
* All docking station versions are only ATEX/IECEX approved				

Ordering Information

Dräger Polytron 8720 IR (incl. splash guard and status indicator)	Approval Code	Order Number
Dräger Polytron 8720 IR d A 4-20/HART®	ITR 0450	83 44 709
Dräger Polytron 8720 IR d A 4-20/HART® relay	ITR 0451	83 44 710
Dräger Polytron 8720 IR e A 4-20/HART® (incl. Docking Station)	ITR 045I	83 44 727
Dräger Polytron 8720 IR e A 4-20/HART® relay (incl. Docking Station)	ITR 045J	83 44 728
Dräger Polytron 8xx0 Kit (Custom configuration e. g. stainless steel housing)		83 44 800

Ordering Information

Accessories	Order Number
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
PolySoft licence (1 year)	68 28 600
PolySoft licence (subscription)	68 28 601
PolySoft Premium licence (1 year)	83 28 639
PolySoft Premium licence (subscription)	83 28 640
Process cuvette for PIR 7x00, POM (Polyoxymethylene)	68 11 915
Process cuvette for PIR 7x00, stainless steel	68 11 415
Process cuvette for PIR 7x00, SGR	68 13 219
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
Dräger PIR 7200 for remote sensor "e" variant	68 12 290

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

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