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 analogue output with relays, it also offers Modbus and Fieldbus making it compatible with most control systems.

Dräger. Technology for Life®

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 ageing 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 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 condulet 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 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, 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-11679-2007

Splash guard

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

D-85345-2013

Duct mount kit

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

Technical Data

Dräger Polytron® 8700 IR

Type	Explosion proof / flameproof enclosed transmitter (“d”) or combined with increased safety (“d/e”)		
Gases	Flammable gases and vapours		
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 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 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

	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		

Ordering Information

Dräger Polytron® 8700 IR	
Dräger Polytron® 8700 IR 334 d A 4-20/HART®	83 44 601
Dräger Polytron® 8700 IR 334 d A 4-20/HART® relay	83 44 602
Dräger Polytron® 8700 IR 334 e A 4-20/HART® (incl. Docking Station)	83 44 619
Dräger Polytron® 8700 IR 334 e A 4-20/HART® relay (incl. Docking Station)	83 44 620
Dräger Polytron® 8700 IR 340 d A 4-20/HART®	83 44 637
Dräger Polytron® 8700 IR 340 d A 4-20/HART® relay	83 44 638
Dräger Polytron® 8700 IR 340 e A 4-20/HART® (incl. Docking Station)	83 44 655
Dräger Polytron® 8700 IR 340 e A 4-20/HART® relay (incl. Docking Station)	83 44 656
Dräger Polytron® 8xx0 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

Ordering Information

Status indicator for PIR 7000	68 11 625
Splash guard for PIR 7000	68 11 911
Flow Cell for PIR 7000	83 23 405
Bump Test Adapter for PIR 7000	68 11 630
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
Dräger PIR 7000 334 for remote sensor ‘e’ variant	68 11 825
Dräger PIR 7000 340 for remote sensor ‘e’ variant	68 11 819