

Dräger Polytron 8700 IR
Detector for flammable gases and vapours

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

Dräger

Technology for Life

Dräger Polytron 8700 IR



Benefits

Efficient, stable and robust – the Dräger PIR 7000

The Dräger PIR 7000 is efficient, stable and robust. With its stainless steel SS 316L enclosure and drift-free optics, the Dräger PIR 7000 is built to withstand the harshest industrial environments, offshore installations for example. The unique double compensated 4 beam measuring system makes the sensor resistant to dust or dirt deposits on the optical surfaces, environmental or ageing effects and long term drift. In combination with the Polytron 8700 it offers a gas library with up to 100 gases providing a high degree of application flexibility. Each of the listed gases can be picked from a 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. 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 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) and this also facilitates pre-assembly.

Benefits

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

System Components



D-6806-2016

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-11679-2007

Splash guard

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



D-85345-2013

Duct mount kit

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



D-16965-2014

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.

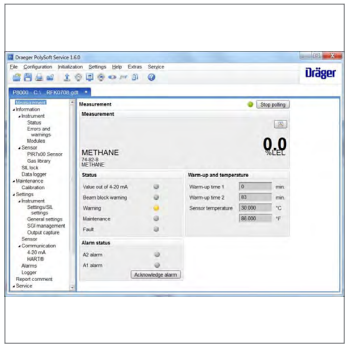


ST-11695-2007

Flow cell

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

Accessories



D-4316-2019

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 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.	
	Other substances and measuring ranges on request		
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)		
Performance Characteristics	Accuracy/repeatability	Sensitivity	≤ ± 1 % LEL
		Long term drift	≤ ± 1 % LEL 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 65 °C (-40 to 149 °F) without relay	
		-40 to 65 °C (-40 to 149 °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	4.9 lbs / 2.2 kg
		w/o docking station SS316 L	8.8 lbs / 4.0 kg
		w/ docking station Aluminium	7.7 lbs / 3.5 kg
		w/ docking station SS316 L	11.9 lbs / 5.4 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 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 eb 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 eb 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 (for DQ sensor only)	DNV GL, ABS, LR, CCS, RMRS	
	MED approval (for DQ sensor only)	Certificate No. MEDB0000411	
	Performance approval (for DQ sensor only)	Certificate No. BVS 13 ATEX G 001 X	
	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 8700 IR (incl. splash guard and status indicator)	**Approval Code**	**Order Number**
Dräger Polytron 8700 IR 334 d A 4-20/HART®	ITR 0410	83 44 601
Dräger Polytron 8700 IR 334 d A 4-20/HART® relay	ITR 0411	83 44 602
Dräger Polytron 8700 IR 334 d S 4-20/HART®	ITR 0510	83 44 610
Dräger Polytron 8700 IR 334 d S 4-20/HART® relay	ITR 0511	83 44 611
Dräger Polytron 8700 IR 334 e A 4-20/HART® (incl. Docking Station)	ITR 041I	83 44 619
Dräger Polytron 8700 IR 334 e A 4-20/HART® relay (incl. Docking Station)	ITR 041J	83 44 620
Dräger Polytron 8700 IR 334 e S 4-20/HART® (incl. Docking Station)	ITR 051I	83 44 628
Dräger Polytron 8700 IR 340 d A 4-20/HART®	ITR 0420	83 44 637
Dräger Polytron 8700 IR 340 d A 4-20/HART® relay	ITR 0421	83 44 638
Dräger Polytron 8700 IR 340 e A 4-20/HART® (incl. Docking Station)	ITR 042I	83 44 655
Dräger Polytron 8700 IR 340 e A 4-20/HART® relay (incl. Docking Station)	ITR 042J	83 44 656

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 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
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

Ordering Information

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

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