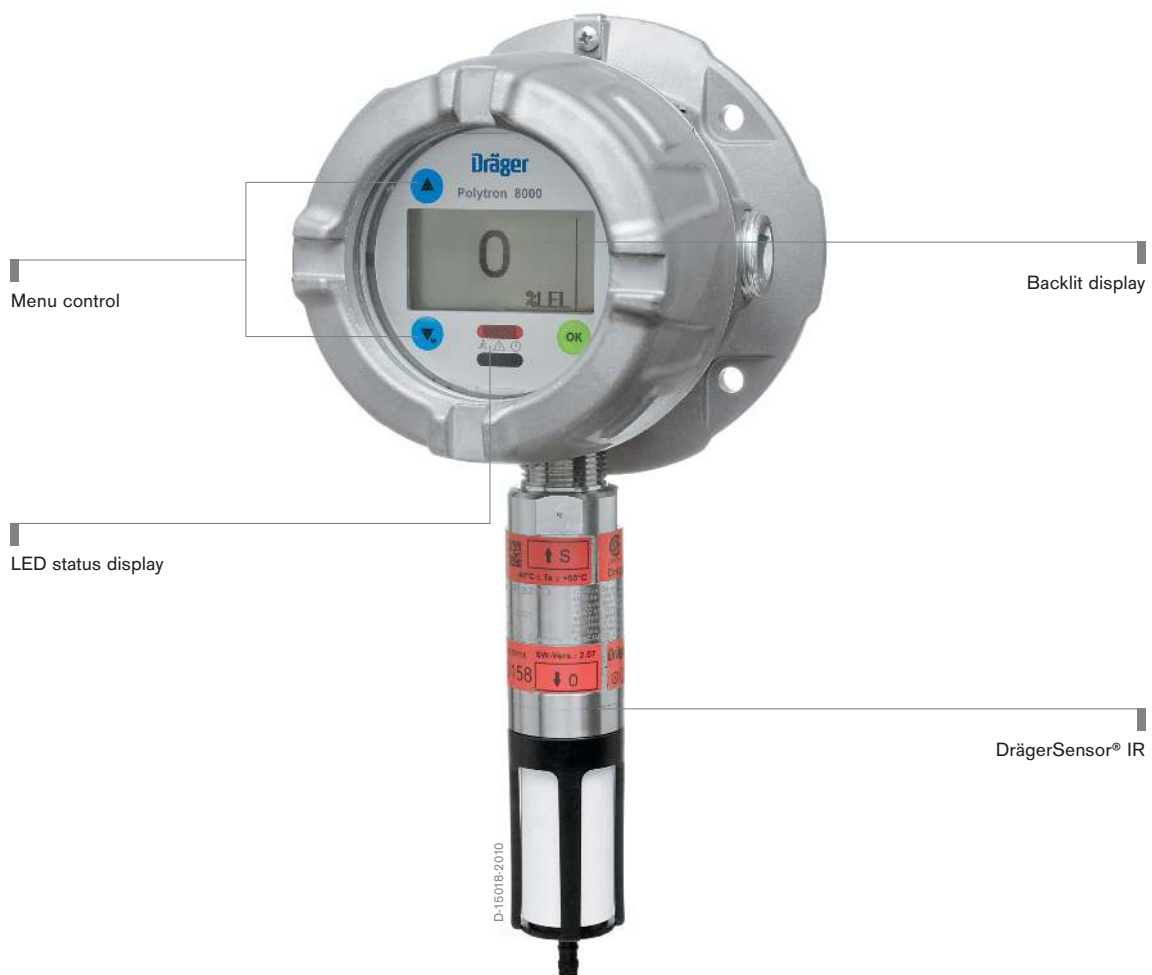# Dräger Polytron® 8310 IR
Detector for flammable gases and vapours

The Dräger Polytron® 8310 IR is an advanced explosion proof transmitter for the detection of combustible gases in the lower explosion limit (LEL). It uses an infrared DrägerSensor® IR that can be configured for methane, propane or ethylene. Besides a 3 wire 4 to 20 mA analogue output with relays, it also offers HART®, Modbus and Fieldbus protocols making it compatible with most control systems.

Menu control

Backlit display

LED status display

DrägerSensor® IR

D-15018-2010

Benefits

Poison-resistant and fail-safe – the DrägerSensor® IR

DrägerSensor IR is a cost-effective alternative to catalytic bead sensors while offering several benefits: it is poison-resistant against chemicals that can shorten a catalytic bead pellistor's life. Long life optics result in lower maintenance costs compared to pellistors. IR technology is inherently fail-safe, meaning no unrevealed failures. Improved performance with excellent long-term stability and fast response times.

Easy device management via digital communication

The Dräger Polytron 8310 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 8310 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 8310 is operated by means of a magnetic wand over contact surfaces.

Three relays for controlling external equipment

Upon request, the Dräger Polytron 8310 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 8310 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 device electronics. This 'external' installation makes it easier to use if the sensor has to be installed in a difficult to access or unfavourable position.

Benefits

Data logger

The Polytron 8310 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-1130-2010

Dräger REGARD® 3900 Series

The devices of the Dräger REGARD® 3900 series can be used as standalone controllers. You can configure up to 16 measuring channels. In addition, the modular setup enables you to customise the control units to the demands of your plant. You can also embed further features to existing alarms.

Accessories

ST-5665-2006

Weather Guard

The double-walled Weather Guard enclosure is recommended to be used whenever a contanimantion by salt crust, oil films, resins or similar substances is expected.
Use always in combination with the Splash Guard, suitable for wind speeds up to 27 m/s (10 Beaufort).

ST-5685-2006

Splash guard

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

ST-5683-2006

Calibration adapter

Transmitter calibration (with mounted splash guard), up to wind force 10 Bft, fitted as standard.

D-85345-2013

Duct mount kit

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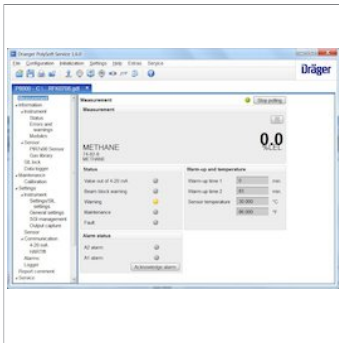
Accessories

ST-5666-2006

Process adapter

Sampling or process applications with gas inlet and outlet.

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 rides 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® 8310 IR

Type	Explosion proof / flameproof enclosed transmitter ("d") or combined with increased safety ("d/e")		
Gases	Flammable gases and vapours		
Measuring range	0 to 100 % LEL		
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)		
Performance Characteristics	Accuracy/repeatability	Sensitivity	≤± 2 % LEL
	Response time	T90	30 seconds (with 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 ℃ (-40 to 149 ℉) without relay	
		-40 to 65 ℃ (-40 to 149 ℉) 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 × 150 × 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	11.0 lbs / 5.4 kg
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/+65 ℃; ›d‹ version
			Ex db eb IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+65 ℃; ›e‹ version; Ex tb IIIC T135 ℃ Db
		PROFIBUS® & FF	Ex db ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 ℃;

Technical Data

		'd' version
		Ex db eb ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 °C; 'e' version; Ex tb IIIC T135 °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	Certificate No. BVS 13 ATEX G 001 X	

* All docking station versions are only ATEX/IECEx approved

Ordering Information

Dräger Polytron® 8310 IR	Approval Codes	Order Number
Dräger Polytron® 8310 IR d A 4-20/HART®	XTR 0400	83 44 807
Dräger Polytron® 8310 IR d A 4-20/HART® relay	XTR 0401	83 44 808
Dräger Polytron® 8310 IR e A 4-20/HART® (incl. Docking Station)	XTR 040I	83 44 825
Dräger Polytron® 8310 IR e A 4-20/HART® relay (incl. Docking Station)	XTR 040J	83 44 826
Dräger Polytron® 8xx0 Kit(Custom configuration e. g. stainless steel housing)		83 44 800

Accessories	Order Number
Magnetic wand	45 44 101
Pipe mount bracket	45 44 198
Duct mount kit	68 12 725
IR Connection Kit Polytron® 5000/8000	45 44 197
PolySoft licence (1 year)	83 28 600
PolySoft licence (subscription)	83 28 601
Process adapter	68 11 330
Weather protection kit Dräger Polytron® 5/6/8xxx	37 02 198
Weather guard	68 11 135

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

Ordering Information

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.

Windows® is a registered trademark of Microsoft Corporation.

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