Dräger Polytron® 8100 EC
Detector for toxic gases and oxygen

The Polytron® 8100 EC is Dräger's top of the line explosion-proof transmitter for the detection of toxic gases or oxygen. It uses a high performance plug and play electrochemical DrägerSensor to detect a specific gas. Besides having a 3-wire 4 to 20 mA analog output with relays, it also offers HART®, Modbus and Fieldbus protocol, making it compatible with most control systems.

Menu control

Backlit display

LED status display

D-52604-2012

DrägerSensor® EC

Dräger. Technology for Life®

Benefits

Durable, intelligent and sensitive – the DrägerSensor®

With unique electrochemical DrägerSensors, Polytron 8100 can detect over 100 toxic gases and oxygen. These long life sensors provide continuous detection even under the harshest conditions. DrägerSensors offer the industry's widest temperature and humidity range between -40 ℃ to +65 ℃ (-40 ℉ to +150 ℉). The built-in memory contains all calibration and configuration information: therefore the sensor ships pre calibrated and is ready for immediate operation. An intelligent sensor self-test function allows for predictive maintenance. The intrinsically safe connection of the sensor eliminates the need for a flame arrestor, giving you faster response times and higher sensitivity.

Easy device management via digital communication

The Dräger Polytron 8100 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 with PROFIBUS® PA, FOUNDATION fieldbus™ H1, and Modbus RTU are also available.

Same design, same operating principle

The Dräger Polytron 8100 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 8100 is operated by means of a magnetic wand over contact surfaces.

Three relays for controlling external equipment

Upon request, the Dräger Polytron 8100 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 8100 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

Remote sensor option does not require conduit

The remote sensor enclosure allows you to install the sensor separately from the transmitter. This 'external' installation makes it easier to use if the sensor has to be installed in a difficult to access or unfavourable position.

More functions through dongles

With different software dongles, additional functions can be added to the Polytron 8100. The data logger dongle comes as standard and continuously records gas readings and events. A sensor test dongle is available for additional sensor self-test functionality. A third dongle is available for advanced sensor diagnosis. These dongles indicate the sensor's vitality, giving you an estimate of the sensor's remaining service life.

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®.

System Components

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

D-0188-2020

Remote sensor

With the EC Sensing Head Remote, the sensor can be installed up to 30 metres away from the Polytron in a separate compact housing. The separate sensor housing with included field cable is intrinsically safe, which makes installation considerably easier and more flexible. This means that it is not necessary to search for a suitable cable and the sensor's position can even be adjusted within an Ex zone later on.

D-85369-2013

Splash guard

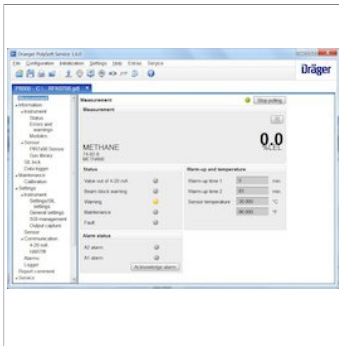The Splash guard protects the sensor against splash water and dirt.

Accessories

Duct mount kit

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

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® 8100 EC

Type	Explosion proof / flameproof enclosed transmitter ("d") or combined with increased safety ("d/e")		
Gases	Toxic gases and oxygen, dependent on the sensor used		
Measuring ranges	Customized adjustment, see sensor data sheet		
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)		
Performance Characteristics	see sensor datasheet		
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, SPDT 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	Polyamide	
	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	6.6 lbs / 3.0 kg
		w/o docking station SS316 L	11.0 lbs / 5.0 kg
		w/ docking station Aluminium	10.0 lbs / 4.5 kg
		w/ docking station SS316 L	14.3 lbs / 6.5 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 II, Div 1, Groups E, F, G;
			Class I, Zone 1, Group IIC;
			T-Code T6/T4
	IECEx	4-20-mA HART® & Modbus	Ex db [ia] IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70°C; "d" version
			Ex db eb [ia] IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70°C; "e" version; Ex tb [ia] IIIC T135°C Db
		PROFIBUS® & FF	Ex db ia [ia] IIC T6/T4 Gb,

Technical Data

ATEX	4-20-mA HART® & Modbus	-40 ≤ Ta ≤ +40/+70°C; "d" version
		Ex db eb ia [ia] IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70°C; "e" version; Ex tb [ia] IIIC T135°C Db
		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 [ia] IIIC T135°C Db
	PROFIBUS® & FF	II 2G Ex db ia [ia] IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70°C; "d" version
		II 2G Ex db eb ia [ia] IIC T6/T4 Gb, -40 ≤Ta ≤ +40/+70°C; "e" version
		II 2D Ex tb [ia] 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 oxygen sensors only)		DNV GL, ABS, LR, CSS, RMRS
MED approval (for oxygen sensors only)		Certificate no. MEDB0000411
Performance approval (for oxygen sensors only)		Certificate no. BVS 13 ATEX G 001 X
		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® 8100 EC	Approval Code	Order Number
Dräger Polytron® 8100 EC d A 4-20/HART®	ETR 0400	83 44 403
Dräger Polytron® 8100 EC d A 4-20/HART® relay	ETR 0401	83 44 404
Dräger Polytron® 8100 EC d S 4-20/HART®	ETR 0500	83 44 412
Dräger Polytron® 8100 EC d S 4-20/HART® relay	ETR 0501	83 44 413
Dräger Polytron® 8100 EC e A 4-20/HART® (incl. Docking Station)	ETR 040I	83 44 421
Dräger Polytron® 8100 EC e A 4-20/HART® relay (incl. Docking Station)	ETR 040J	83 44 422

Ordering Information

Dräger Polytron® 8100 EC e S 4-20/HART® (incl. Docking Station)	ETR 050I	83 44 430
Dräger Polytron® 8100 EC e S 4-20/HART® relay (incl. Docking Station)	ETR 050J	83 44 431
Dräger Polytron® 8xx0 Kit (Custom configuration e. g. stainless steel housing)		83 44 800

Electrochemical DrägerSensors	Order Number
DrägerSensor® AC	68 10 595
DrägerSensor® Cl_2	68 09 665
DrägerSensor® $COCl_2$	68 09 930
DrägerSensor® CO	68 09 605
DrägerSensor® CO LS	68 09 620
DrägerSensor® CO LH	68 12 570
DrägerSensor® H_2	68 09 685
DrägerSensor® H_2O_2 HC	68 09 675
DrägerSensor® H_2O_2 LC	68 09 705
DrägerSensor® H_2S LC	68 09 610
DrägerSensor® H_2S HC	68 09 710
DrägerSensor® H_2S	68 10 435
DrägerSensor® HCl	68 09 640
DrägerSensor® HCN	68 09 650
DrägerSensor® HCN LC	68 13 200
DrägerSensor® Hydrides	68 09 635
DrägerSensor® Hydrides SC	68 09 980
DrägerSensor® PH_3/AsH_3	68 09 695
DrägerSensor® Hydrazine	68 10 180
DrägerSensor® NH_3 LC	68 09 680
DrägerSensor® NH_3 HC	68 09 645
DrägerSensor® NH_3 TL	68 13 095
DrägerSensor® NH_3 FL	68 13 260
DrägerSensor® NO LC	68 09 625
DrägerSensor® NO_2	68 09 655
DrägerSensor® NO_2 LC	68 13 205
DrägerSensor® O_3	68 14 005
DrägerSensor® O_2 LS	68 09 630
DrägerSensor® OV1	68 10 740
DrägerSensor® OV2	68 10 745
DrägerSensor® SO_2	68 09 660

Accessories	Order Number
Magnetic wand	45 44 101
Sensor Test Dongle	83 17 619
Diagnostic Dongle	83 17 860
Pipe mount bracket	45 44 198
Duct mount kit	68 12 725
Duct mount adapter for remote EC sensing head	83 17 617
Remote adapter RS stainless steel	83 23 404
EC Sensing Head Remote w/ mount kit	68 12 684
IR Connection Kit Polytron® 5000/8000	45 44 197
PolySoft licence (1 year)	83 28 600

Ordering Information

PolySoft licence (subscription)			83 28 601
Connection cable w/ plug for Remote EC Sensing Head		16 ft / 5 m	83 23 305
		49 ft / 15 m	83 23 315
		98 ft / 30 m	83 23 330
Splash guard			68 12 510
Weather protection kit Dräger Polytron® 5/6/8xxx			37 02 198
Gassing adapter		PE, Europe	68 06 978
		PE incl. tubing	46 09 314
Dust filter			68 09 595
Dust filter			68 12 224
Selective filter A2F (CO, CO LS, H_2)			68 09 684
Selective filter K2F ($COCl_2$)			68 09 933
Selective filter NF (HCl)			68 09 643
Selective filter HSF (Hydrides)			68 09 862
Selective filter MF (PH_3, AsH_3)			68 09 638
Selective filter K1F (SO_2)			68 09 663
Calibration adapter Viton®			68 10 536

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.

Viton® is a registered trademark of the DuPont company.

Windows® is a registered trademark of Microsoft Corporation.

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**Locate your Regional Sales
Representative at:
www.draeger.com/contact**

Dräger Polytron® 8200 CAT
Detector for flammable gases and vapours

The Dräger Polytron® 8200 CAT is an advanced explosion-proof transmitter for the detection of flammable gases in the lower explosion limit (LEL). It uses a catalytic bead DrägerSensor® Ex that will detect most flammable gases and vapours. In addition to 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

LED status display

Backlit display

DrägerSensor® EX ... DD

D-797-2016

Benefits

Fast and stable – the DrägerSensor® Ex

The built-in DrägerSensor® Ex is based on the proven catalytic bead measuring principle. It has excellent long-term stability with outstanding poison resistance. And this is the reason for its durability. Due to the novel gas inlet opening, the sensor responds to gas in only a few seconds. This allows you to react immediately with countermeasures and prevent the development of a flammable atmosphere.

Easy device management via digital communication

The Dräger Polytron 8200 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 8200 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 8200 is operated by means of a magnetic wand over contact surfaces.

Three relays for controlling external equipment

Upon request, the Dräger Polytron 8200 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 8200 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

Benefits

visible at eye level. Since the sensor is connected via an intrinsically safe connection, no conduit cabling is required. The connection also allows 'hot replacement' of the sensor in the hazardous area.

Data logger

The Polytron 8200 has a data logger, which records measuring and event data from prior years.

System Components

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®.

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

D-24487-2020

Remote Calibration Adapter DQ

The Remote Calibration Adapter DQ comes with inner thread to connect the sensor...DQ for calibration or bump-test to check the current sensor's sensitivity in areas of poor access.

D-85372-2013

Remote Calibration Adapter LC

The Remote Calibration Adapter LC comes with inner thread to connect the sensor...LC for calibration or bump-test to check the current sensor's sensitivity in areas of poor access.

D-85369-2013

Splash guard

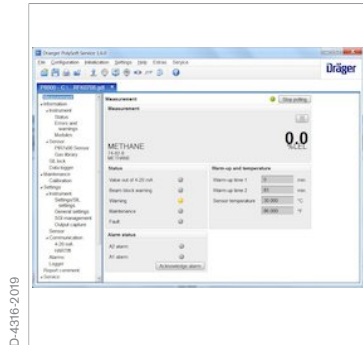The Splash guard protects the sensor against splash water and dirt.

D-85345-2013

Duct mount kit

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

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 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.

D-4316-2019

Technical Data

Dräger Polytron® 8200 CAT

Type	Explosion proof / flameproof enclosed transmitter ("d") or combined with increased safety ("d/e")		
Gases	Flammable gases and vapours		
Measuring ranges	DQ	0 to 100 % LEL	
	LC	0 to 10 % LEL	
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)		
Performance Characteristics	Accuracy/repeatability	Zero	≤ 1 % LEL
		Span	≤ 1 % LEL
		Long-term drift	≤ 3 % LEL after 6 months
	Response time	T50	< 7 seconds (methane)
		T90	< 13 seconds (methane)
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 80 °C (-40 to 176 °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 303	
	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
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/+70 °C; 'd' version
			Ex db eb IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 °C;

Technical Data

			'e' version; Ex tb IIIC T135 °C Db
		PROFIBUS® & FF	Ex db ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 °C; '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 (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® 8200 CAT	Approval Code	Order Number
Dräger Polytron® 8200 CAT DQ d A 4-20/HART®	XTR 0410	83 44 439
Dräger Polytron® 8200 CAT DQ d A 4-20/HART® relay	XTR 0411	83 44 440
Dräger Polytron® 8200 CAT DQ d S 4-20/HART®	XTR 0510	83 44 448
Dräger Polytron® 8200 CAT DQ d S 4-20/HART® relay	XTR 0511	83 44 449
Dräger Polytron® 8200 CAT DQ e A 4-20/HART® (incl. Docking Station)	XTR 041I	83 44 457
Dräger Polytron® 8200 CAT DQ e A 4-20/HART® relay (incl. Docking Station)	XTR 041J	83 44 458

Ordering Information

Dräger Polytron® 8200 CAT DQ e S 4-20/HART® (incl. Docking Station)	XTR 051I		83 44 466
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
Splash guard			68 12 510
Weather protection kit Dräger Polytron® 5/6/8xxx			37 02 198
Gassing adapter		PE, Europe	68 06 978
		PE incl. tubing	46 09 314
Calibration adapter Viton®			68 10 536
Process adapter (Stainless steel) for DQ			68 12 470
Process adapter (Stainless steel) for LC			68 12 465

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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.

Viton® is a registered trademark of the DuPont company.

Windows® is a registered trademark of Microsoft Corporation.

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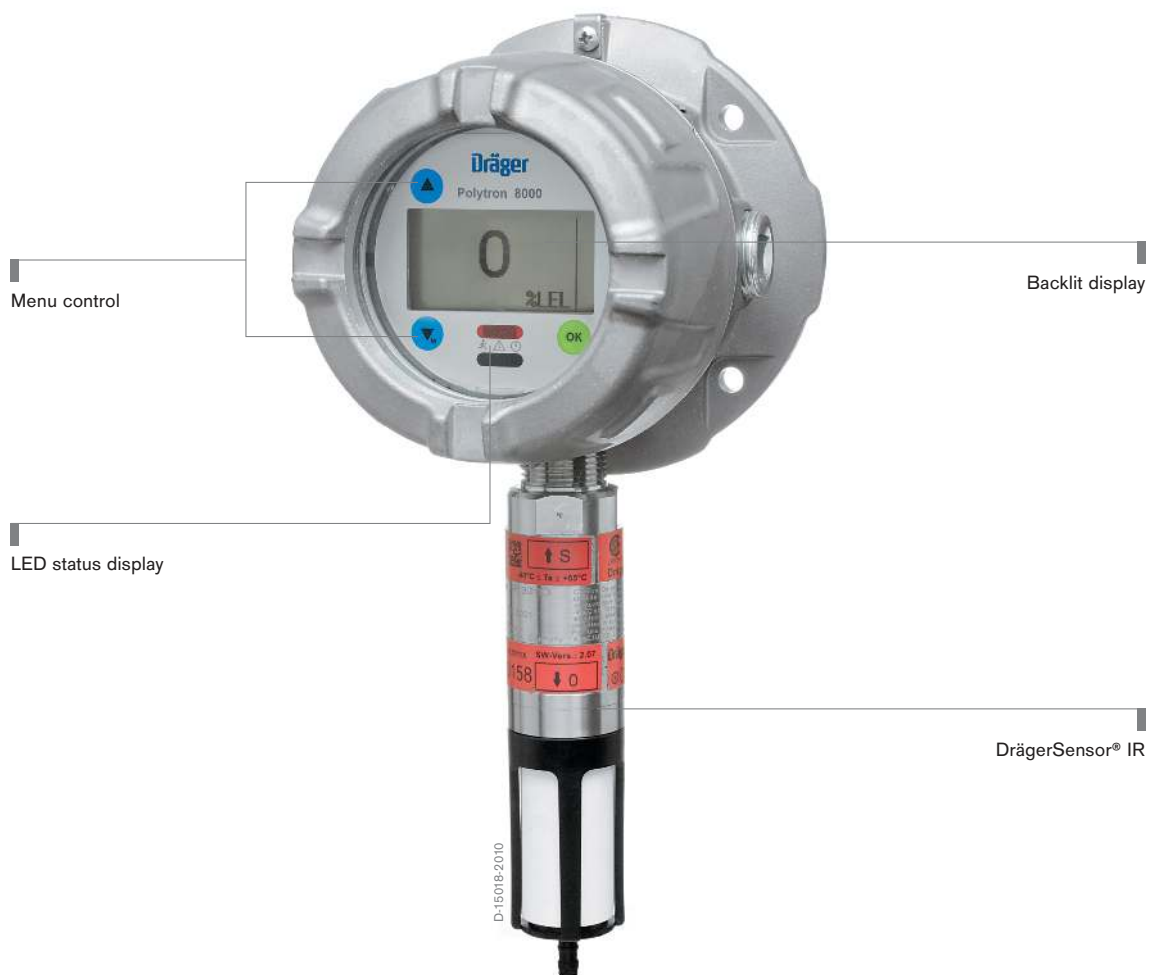asia.pacific@draeger.com

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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

Dräger. Technology for Life®

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.
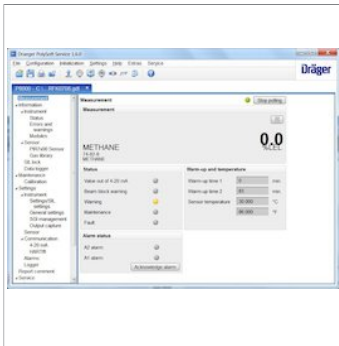
Accessories

Process adapter

Sampling or process applications with gas inlet and outlet.

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 ℃; 'e' version; Ex tb IIIC T135 ℃ Db
ATEX	4-20-mA HART®	II 2G Ex db IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 ℃; 'd' version
		II 2G Ex db eb IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 ℃; 'e' version
		II 2D Ex tb IIIC T135 ℃ Db
	PROFIBUS® & FF	II 2G Ex db ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 ℃; 'd' version
		II 2G Ex db eb ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 ℃; 'e' version
		II 2D Ex tb IIIC T135 ℃ 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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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.

Backlit display

Dräger PIR 7000

Menu control

D-14983-2010

LED status display

Dräger. Technology for Life®

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. Since the sensor is connected via an intrinsically safe connection, no conduit cabling is required. The connection also allows 'hot replacement' of the sensor in the hazardous area.

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-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-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.

D-16965-2014

Process cuvette SGR

Sampling or process applications, fast response behavior through minimum inner volume, material: Stainless steel.
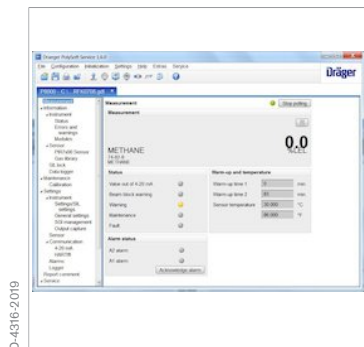

ST-11695-2007

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

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.

D-4316-2019

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 range	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 × 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/+80 °C; ›d‹ version
			Ex db eb IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+80 °C; ›e‹ version;

Technical Data

			Ex tb IIIC T80/130 ℃ Db
		PROFIBUS® & FF	Ex db ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+80 ℃; ›d‹ version
			Ex db eb ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+80 ℃; ›e‹ version; Ex tb IIIC T80/130 ℃ Db
	ATEX	4-20-mA HART®	II 2G Ex db IIC T6/T4 Gb, -40 ≤ a ≤ +40/+70 ℃; 'd' version
			II 2G Ex db eb IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 ℃; 'e' version
			II 2D Ex tb IIIC T135 ℃ Db
		PROFIBUS® & FF	II 2G Ex db ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 ℃; 'd' version
			II 2G Ex db eb ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 ℃; 'e' version
			II 2D Ex tb IIIC T135 ℃ 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
	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

Ordering Information

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
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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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.

Notes

Notes

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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.

Backlit display

Dräger PIR 7200

Menu control

LED status display

D-46490-2012

Dräger. Technology for Life®

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

Benefits

visible at eye level. Since the sensor is connected via an intrinsically safe connection, no conduit cabling is required. The connection also allows 'hot replacement' of the sensor in the hazardous area.

Data logger

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

System Components

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®.

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-11680-2007

Splash guard

The Splash guard protects the sensor against water splashes 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.
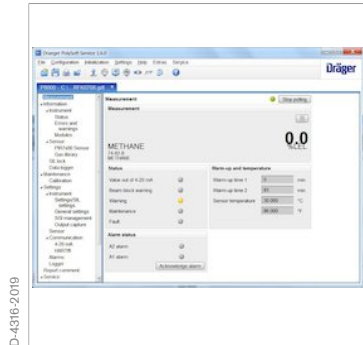

ST-11699-2007

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 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® 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 × 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	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 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

Technical Data

	PROFIBUS® & FF	Ex db ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+80℃; "d" version
		Ex db e ia IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+80℃; "e" version; Ex tb IIIC T80/130℃ 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

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

Ordering Information

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™.

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.

Dräger Polytron® 8900 UGLD
Ultrasonic-Gas-Leak-Detector

The Dräger Polytron® 8900 UGLD transmitter is an early warning area monitor for detecting high-pressure gas leaks in outdoor industrial process environments. Thanks to an ultrasonic acoustic sensor, it responds earlier than conventional gas detectors because it registers the sound of leaking gas instead of measuring the concentration of accumulated gas clouds. As gas escapes, leaks are immediately detected in the surrounding area, regardless of the wind direction.

Menu control

Backlit display

LED status display

Ultrasound sensor

D-5541-2018

Benefits

Ultrasonic sensor technology – the early warning system for gas leaks

Typical gas detection systems used to monitor pressurised gas pipes or containers in industrial environments only detect a gas leak if the gas is in the immediate vicinity of the gas sensor. Environmental influences such as wind can delay or prevent a gas cloud from being detected by gas sensors. However, the Dräger Polytron® 8900 UGLD is not affected by these environmental factors and detects a high-pressure gas leak as soon as gas escapes. Effective early gas leak warnings can prevent unnecessary shutdowns, saving time and money.

A perfect complement to your gas detection system

The Dräger Polytron 8900 extends the Polytron 8000 series family with acoustic gas leak detection. All transmitters in this series have the same design and an identical user interface. A common user interface ensures that little training or maintenance is required for existing users. The Polytron 8900 UGLD perfectly complements existing flame and gas detection systems with reliable early gas leak warnings.

Delivers results that are easy to understand

For an easy interpretation of results, the measured values on the display of the Polytron 8900 UGLD are shown from 0 to 100 percent of the full scale decibel sensitivity range. The ultrasound level is immediately displayed and transmitted and allows for an easy interpretation. Alarms are configured at a specific level above a predetermined background noise level. Additionally, a time delay of up to 30 seconds can be set in the control system.

Can even detect gas leaks in loud industrial environments

Loud process areas generate noise which is mostly in the audible spectrum. Gas leaks from pressurized vessels above 10 bar generate both audible sound and inaudible ultrasound. Since Polytron 8900 is tuned to measure in the ultrasound spectrum, it can easily identify gas leaks with a leak rate of 100 g/sec in a 20 meter radius circle.

Robust design and fully-sealed sensor

The Polytron 8900 UGLD is an explosion-proof transmitter with a sensor housed in a galvanically-isolated, intrinsically-safe enclosure. The sensor is an ultrasonic microphone that is completely sealed in PVCC, making it impervious to water and dirt. It provides reliable readings without the need for an additional environmental protection baffle. Regular calibration is not necessary, but unlike some other UGLDs on the market, calibration is possible and easy with the offered calibration kits. The expected lifespan of the ultrasonic sensor is more than 10 years.

System Components

D-6806-2016

Dräger REGARD® 7000

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

Accessories

D-5554-2018

Calibration and bump test kit

Even though the UGLD's sensor does not need to be replaced and does not need regular calibrations, they are still possible. Unlike some other UGLDs on the market, a calibration can be performed using a system similar to that of traditional gas detectors. The kit has room for a standard compressed air cylinder and generates a certified sound level using a sensor adapter. There is an additional adapter for zeroing the sensor. A directional sonic generator uses compressed air to generate sound, which can be used to bump test a specific UGLD from up to five meters away.
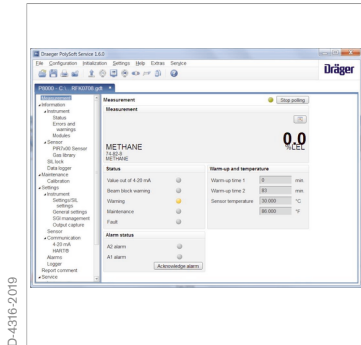

D-13019-2018

Remote sensor

With the EC Sensing Head Remote, the UGLD's sensor can be installed up to 30 metres away from the Polytron 8900 in a separate compact housing. The separate sensor housing with included field cable is intrinsically safe, which makes installation considerably easier and more flexible. This means that it is not necessary to search for a suitable cable and the sensor's position can even be adjusted within an Ex zone later on.

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 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.

Related Products

Dräger Polytron® 8100 EC

The Polytron® 8100 EC is Dräger's top of the line explosion-proof transmitter for the detection of toxic gases or oxygen. It uses a high performance plug and play electrochemical DrägerSensor to detect a specific gas. Besides having a 3-wire 4 to 20 mA analogue output with relays, it also offers Modbus and Fieldbus protocol making it compatible with most control systems.

Dräger Polytron® 8700 IR

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.

Related Products

D-5570-2018

Dräger Pulsar 7000 Series

The Dräger Pulsar 7000 Series are stationary open path gas detectors for the detection of explosive hydrocarbons in gases and vapours. The robust design and the extremely rapid response time make the Dräger Pulsar 7000 Series a dependable solution for your requirements in the oil and gas industry, as well as the chemical industry.

D-49077-2012

Dräger Flame 5000

The Dräger Flame 5000 is an imaging based explosion proof flame detector. This visual flame detection system uses digital image processing and advanced algorithms to process and interpret flame characteristics. This principle offers an extended field of view and fewer false alarms. Each detector is equipped with a colour CCTV camera.

Technical Data

Dräger Polytron® 8900 UGLD

Type	Explosion proof / flameproof enclosed transmitter ("d") or combined with increased safety ("d/e")		
Gases	Flammable and toxic gases such as hydrogen, methane, ethylene, propane, CO_2, nitrogen and hydrogen sulphide		
Measurement ranges	0-100% equivalent to 55-110 dB; typical alarm setting 10% UGLD signal above background		
Display	Back-lit graphic LCD display; 3 status LEDs (green/yellow/red)		
Sensor Type	PVCC coated piezoelectric microphone with built-in automatic self-test sound generator		
Sensor Performance	Response Time	< 3 sec.	
	Minimum Pressure	> 2 bar (29 psi) Methane	
	Coverage Radius	6.5ft -65 ft depending on gas type, leak rate and background noise	
	Frequency Range	18 kHz - 80 kHz	
Electrical data	Analogue signal output	Normal operation	4 to 20 mA
		Maintenance	Constant 3.4 mA or
			4 mA ±1 mA
			1 Hz modulation; (adjustable)
		Fault	< 1,2 mA
	Digital signal output	HART®	
	Power supply	10 to 30 V DC, 3-wire	
	Power consumption	w/ relay, remote	100 mA at 24 V
	Relay specification	Two alarm relays and one error relay, SPDT 5 A @ 230 VAC, 5 A @ 30 VDC	
Environmental conditions (See sensor data sheet)	Temperature	-40 to +70°C (-40 to 158°F) with relays	
	Pressure	700 to 1,300 mbar	
	Humidity	0 to 100 % relative humidity	
Housing	Transmitter housing	Stainless steel SS316L	
	Sensor housing	Polyamide 6	
	Housing protection type	NEMA 4X & 7, IP65/66/67	
	Cable entry	Three ¾" NPT thread openings or M20 cable gland	
	Dimensions (H × W × D),	280 x 150 x 130 mm	
	Weight, approx.	5,0 kg	
Approvals	UL	Class I, Div 1, Groups A, B, C, D;	
		Class I, Zone 1, Group IIC;	
		T-Code T4	
	CSA*	Class I, Div 1, Groups A, B, C, D;	
		Class I, Zone 1, Group IIC;	
		T-Code T4	
	IECEx	Ex db [ia] IIC T4 Gb,	
		-40 ≤ Ta ≤ +70 °C	
		Ex db eb [ia] IIC T4 Gb, -40 ≤ Ta ≤ +70°C; "e" version;	
	ATEX	II 2G Ex db [ia] IIC T4 Gb,	
		-40 ≤ Ta ≤ +70 °C	
		II 2G Ex db eb [ia] IIC T4 Gb, -40 ≤ Ta ≤ +70°C; "e" version	
	CE Markings	ATEX (Directive 2014/34/EU)	
		Electromagnetic compatibility (Directive 2014/30/EU)	
		Low voltage (Directive 2014/35/EU)	
	Marine approval*	DNV-GL	

Technical Data

	SIL 2	Certificate TÜV Süd
* Pending		

Ordering Information

Dräger Polytron® 8900 UGLD	Approval Code	Bestellnummer
Dräger Polytron® 8900 UGLD d S 4-20/HART® Relais Stainless Steel Ex d housing with 4-20 mA HART® output and 3 Relays	ETR 0521	83 28 030
Dräger Polytron® 8900 UGLD e S 4-20/HART® Relay Stainless Steel Ex e housing with 4-20 mA HART® output and 3 Relays, incl. Docking station	ETR 052J	83 29 171
Accessories		
Magnetic Wand		45 44 101
Remote Sensing Head with wall mount kit		83 28 021
Connecting cable with plug for the Remote Sensing Head	5 m	83 23 305
	15 m	83 23 315
	30 m	83 23 330
UGLD Calibration and Bump Test Kit w/o Air Cylinder		83 28 042
Zero Air Gas Cylinder 112L for Calibration and Bump Test Kit		68 13 239
Pole Mount Kit		45 44 198
PolySoft Basic (one year license)		83 28 600
PolySoft Basic (Subscription – yearly fee)		83 28 601
IR Connection Kit (requires PolySoft)		45 44 197
HART® is a registered trademark of the HART Communication Foundation.		
Windows® is a registered trademark of Microsoft Corporation.		

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