



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.

Dräger Polytron 8100 EC



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 °C to +65 °C (-40 °F to +150 °F). 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 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

Making the impossible possible with remote sensors

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 function 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-1501-2022



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-3967-2025



Dräger REGARD 3000 plus

The Dräger REGARD 3000 plus is a flexible control system that reliably monitors hazardous areas in your gas detection system and triggers alarms. Its modular design adapts to different system sizes and can be configured centrally or locally. A user-friendly dashboard and clear alarms provide transparency and safety.

Accessories

D-15035-2010



Docking station

A docking station is available for the increased-safety protection type "e" version. This also makes pre-assembly easier. The docking station is included with all transmitters in the Polytron 5000 and Polytron 8000 series with increased safety.

D-0188-2020



Remote Sensor EC

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.

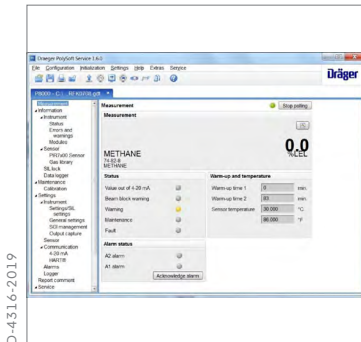
D-85345-2013



Duct mount kit

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

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 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 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	Powder coated copper-free aluminium or stainless steel 316 L		
	Sensor housing	Polyamide		
	Enclosure protection type	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 stainless steel 316 L	11.0 lbs / 5.0 kg	
w/ docking station Aluminium		10.0 lbs / 4.5 kg		
w/ docking station stainless steel 316 L		14.3 lbs / 6.5 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® & Modbus	Ex db [ia Ga] IIC T6/T4 Gb, $-40 \leq Ta \leq +40/+70$ °C; 'd' version
		Ex db eb [ia Ga] IIC T6/T4 Gb, $-40 \leq Ta \leq +40/+70$ °C; 'e' version;
		Ex tb [ia Da] IIIC T135 °C Db
	PROFIBUS®	Ex db ia [ia Ga] IIC T6/T4 Gb, $-40 \leq Ta \leq +40/+70$ °C; 'd' version
		Ex db eb ia [ia Ga] IIC T6/T4 Gb, $-40 \leq Ta \leq +40/+70$ °C; 'e' version;
		Ex tb [ia Da] IIIC T135 °C Db
ATEX	4-20-mA HART® & Modbus	II 2G Ex db [ia Ga]
		IIC T6/T4 Gb, $-40 \leq Ta \leq +40/+70$ °C; 'd' version
		II 2G Ex db eb [ia Ga]
		IIC T6/T4 Gb, $-40 \leq Ta \leq +40/+70$ °C; 'e' version;
		II 2D Ex tb [ia Da]
		IIIC T135 °C Db
	PROFIBUS®	II 2G Ex db ia [ia Ga]
		IIC T6/T4 Gb, $-40 \leq Ta \leq +40/+70$ °C; 'd' version
		II 2G Ex db eb ia [ia Ga]
		IIC T6/T4 Gb, $-40 \leq Ta \leq +40/+70$ °C; 'e' version;
		II 2D Ex tb [ia Da]
		IIIC T135 °C Db
INMETRO	4-20-mA HART®	Ex db [ia Ga] IIC T6/T4 Gb, $-40 \leq Ta \leq +40/+70$ °C; 'd' version
		Ex db eb [ia Ga] IIC T6/T4 Gb, $-40 \leq Ta \leq +40/+70$ °C; 'e' version
		Ex tb [ia Da] IIIC T135 °C Db
	PROFIBUS® & Modbus	Ex db ia [ia Ga] IIC T6/T4 Gb, $-40 \leq Ta \leq +40/+70$ °C; 'd' version
		Ex db eb ia [ia Ga] IIC T6/T4 Gb, $-40 \leq Ta \leq +40/+70$ °C; 'e' version;
		Ex tb [ia Da] IIIC T135 °C Db
KCs	4-20-mA HART®	Ex db [ia Ga] IIC T6/T4 Gb
		Ex db eb [ia] IIC T6/T4 Gb
		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	DNV GL, ABS, LR, CCS	
MED approval	Certificate no. MEDB0000411	

Technical Data

Performance approval for individual substances, e.g., oxygen, ammonia, carbon monoxide, hydrogen sulphide	Certificate no. BVS 13 ATEX G 001 X PFG 14 G 001X
FM Performance (hydrogen sulphide)	Certificate no. FM16NUS0015, FM 6340:2022, FM 3810:2018, ANSI/FM/UL 62990-1:2023
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	8344403
Dräger Polytron 8100 EC d A 4-20/HART® relay	ETR 0401	8344404
Dräger Polytron 8100 EC d S 4-20/HART®	ETR 0500	8344412
Dräger Polytron 8100 EC d S 4-20/HART® relay	ETR 0501	8344413
Dräger Polytron 8100 EC e A 4-20/HART® (incl. Docking Station)	ETR 040I	8344421
Dräger Polytron 8100 EC e A 4-20/HART® relay (incl. Docking Station)	ETR 040J	8344422
Dräger Polytron 8100 EC e S 4-20/HART® (incl. Docking Station)	ETR 050I	8344430
Dräger Polytron 8100 EC e S 4-20/HART® relay (incl. Docking Station)	ETR 050J	8344431
Dräger Polytron 8xx0 Kit (Custom configuration e. g. stainless steel housing)		8344800

Electrochemical DrägerSensors	Order Number
DrägerSensor AC	6810595
DrägerSensor Cl ₂	6809665
DrägerSensor COCl ₂	6809930
DrägerSensor CO	6809605
DrägerSensor CO LS	6809620
DrägerSensor CO LH	6812570
DrägerSensor H ₂	6809685
Dräger Sensor MEC H ₂ HC (order MEC adapter separately)	6800335
DrägerSensor H ₂ O ₂ HC	6809675
DrägerSensor H ₂ O ₂ LC	6809705
DrägerSensor H ₂ S LC	6809610
DrägerSensor H ₂ S HC	6809710
DrägerSensor H ₂ S	6810435
Dräger SensorAlive H ₂ S	6814014
DrägerSensor HCl	6809640
DrägerSensor HCN LC	6813200

Ordering Information

DrägerSensor Hydrides	6809635
DrägerSensor Hydrides SC	6809980
DrägerSensor PH ₃ /AsH ₃	6809695
DrägerSensor Hydrazine	6810180
DrägerSensor NH ₃ LC	6809680
DrägerSensor NH ₃ HC	6809645
DrägerSensor NH ₃ TL	6813095
DrägerSensor NH ₃ FL	6813260
DrägerSensor NO LC	6809625
DrägerSensor NO ₂ LC	6813205
DrägerSensor O ₃	6814005
DrägerSensor O ₂ LS	6809630
DrägerSensor OV1	6810740
DrägerSensor OV2	6810745
DrägerSensor SO ₂	6809660

Accessories		Order Number
Magnetic wand		4544101
Sensor Test Dongle		8317619
Diagnostic Dongle		8317860
Pipe mount bracket		4544198
Duct mount kit		6812725
Duct mount adapter for remote EC sensing head		8317617
Remote adapter RS stainless steel		8323404
EC Sensing Head Remote w/ mount kit		6812684
IR Connection Kit Polytron 5000/8000		4544197
PolySoft licence (1 year)		8328600
PolySoft licence (subscription)		8328601
Connection cable w/ plug for Remote EC Sensing Head	16 ft / 5 m	8323305
	49 ft / 15 m	8323315
	98 ft / 30 m	8323330
Splash guard		6812510
Weather protection kit Dräger Polytron 5/6/8xxx		3702198
Gassing adapter	PE, Europe	6806978
	PE incl. tubing	4609314
MEC Key Adapter		6812695
Dust filter		6809595
Dust filter		6812224
Selective filter A2F (CO, CO LS, H ₂)		6809684
Selective filter K2F (COCl ₂)		6809933
Selective filter NF (HCl)		6809643
Selective filter HSF (Hydrides)		6809862
Selective filter MF (PH ₃ , AsH ₃)		6809638

Ordering Information

Selective filter K1F (SO ₂)	6809663
Calibration adapter Viton®	6810536

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