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

DrägerSensor® EC

D-52604-2012

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

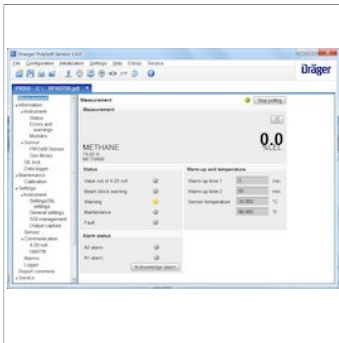The Splash guard protects the sensor against splash water and dirt.

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 ℃ (-40 to 149 °F) without relay	
		-40 to 65 ℃ (-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℃; "d" version
			Ex db eb [ia] IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70℃; "e" version; Ex tb [ia] IIIC T135℃ Db
		PROFIBUS® & FF	Ex db ia [ia] IIC T6/T4 Gb,

Technical Data

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

Notes

CORPORATE HEADQUARTERS
Drägerwerk AG & Co. KGaA
Moislinger Allee 53–55
23558 Lübeck, Germany
www.draeger.com

REGION EUROPE
Dräger Safety AG & Co. KGaA
Revalstraße 1
23560 Lübeck, Germany
Tel +49 451 882 0
Fax +49 451 882 2080
info@draeger.com

REGION MIDDLE EAST, AFRICA
Dräger Safety AG & Co. KGaA
Branch Office
P.O. Box 505108
Dubai, United Arab Emirates
Tel +971 4 4294 600
Fax +971 4 4294 699
contactuae@draeger.com

REGION ASIA PACIFIC
Draeger Singapore Pte. Ltd.
61 Science Park Road
The Galen #04-01
Singapore 117525
Tel: +65 6872 9288
Fax: +65 6259 0398
asia.pacific@draeger.com

**REGION CENTRAL
AND SOUTH AMERICA**
Dräger Indústria e Comércio Ltda.
Al. Pucurui - 51 - Tamboré
06406-100 - Barueri - SP
Tel. +55 (11) 4689-4900
relacionamento@draeger.com

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