

Dräger Polytron® 8100 EC Detection of toxic gases and vapors

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 a 3 wire 4 to 20 mA analog output with relays, it also offers Modbus and Fieldbus protocol making it compatible with most control systems.



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 are 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 arrester, giving you faster response times and higher sensitivity.

In addition to the common HART® communication system, the fieldbus interfaces with PROFIBUS® PA, FOUNDATION fieldbus™ H1, and Modbus RTU are also available.

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 Dräger Polytron 8100 can be supplied with three integrated relays. This enables you to use it as an independent gas detection system with two user adjustable concentration alarms and one fault alarm.

Polytron 8100 features a Class I, Div. 1 rated explosion proof enclosure made from aluminum or stainless steel.

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.

Benefits

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. Audio 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 aluminum 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).

Remote sensor option does not require conduit

The optional remote sensor enclosure enables the sensor to be installed away from the transmitter. This makes it easy to place the sensor close to a potential gas cloud in an inaccessible location while keeping the display at eye level. Because the sensor is connected to the transmitter through an intrinsically safe port, this eliminates the need to run conduit for mounting a remote sensor. And to make things even easier, Dräger includes cabling up to 100 feet (30 meters) long. The intrinsically safe connection also allows ‘hot swaps’ of the sensor in a hazardous atmosphere without removing power or declassifying the area.

More functions through dongles

With different software dongles, additional functions can be added to the Polytron 8100. The data logger dongle comes 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-27777-2009

Dräger REGARD® 3900

The Dräger REGARD® 3900 is a standalone control system for the detection of toxic gases, oxygen levels, and Ex hazards. The control system is fully configurable between 1 and 16 channels, depending upon the type and quantity of input/output boards installed.



ST-335-2004

Dräger REGARD®-1

The Dräger REGARD®-1 is a standalone single-channel control system for the detection of toxic and Ex hazards and oxygen levels. The control system is fully configurable for a single input from either a 4 to 20 mA transmitter or a Dräger Polytron® SE Ex measuring head.

Accessories



D-85389-2013

Splash guard

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

Accessories



D-85345-2013

Duct mount kit

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



D-85363-2013

Magnetic Wand

The magnetic wand is used to access and navigate the menu on the Polytron explosion proof detectors.



D-85362-2013

Pipe Mount Kit

The pipe mount kit is used to mount the Polytron explosion proof transmitters on pipes if there is no room to mount them elsewhere or if the pipes are going to be the source of gas leaks.

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)			
Electrical data	Signal output analog	Normal operation	4 to 20 mA	
		Maintenance	Constant 3.4 mA or 4 mA ±1 mA 1 Hz modulation; (adjustable)	
		Fault	< 1.2 mA	
	Signal output digital	HART®, PROFIBUS® PA, FOUNDATION fieldbus™ H1 and Modbus RTU		
	Power supply	10 to 30 V DC, 3-wire		
	Power consumption	w/o relay, non-remote	80 mA at 24 V	
w/ relay, remote		100 mA at 24 V		
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 aluminum 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 Aluminum	6.6 lbs / 3.0 kg		
	w/o docking station SS316 L	11.0 lbs / 5.0 kg		
	w/ docking station Aluminum	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®	Ex db [ia] IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70°C; "d" version Ex db e [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, -40 ≤ Ta ≤ +40/+70°C; "d" version Ex db e ia [ia] IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70°C; "e" version;

Technical Data

ATEX	4-20-mA HART®	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 e [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 e 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
MED approval B (for oxygen sensors only)		Certificate no. 61549/ 50 – 13 HH
MED approval D (for oxygen sensors only)		Certificate no. 12031 – 10 HH
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 1207 53474 013
* All docking station versions are only ATEX/IECEX approved		

Ordering Information

Dräger Polytron® 8100 EC

Dräger Polytron® 8100 EC d A 4-20/HART®	83 44 403
Dräger Polytron® 8100 EC d A 4-20/HART® relay	83 44 404
Dräger Polytron® 8100 EC e A 4-20/HART® (incl. Docking Station)	83 44 421
Dräger Polytron® 8100 EC e A 4-20/HART® relay (incl. Docking Station)	83 44 422
Dräger Polytron® 8100 EC d S 4-20/HART®	83 44 412
Dräger Polytron® 8100 EC d S 4-20/HART® Relay	83 44 413
Dräger Polytron® 8xx0 Kit (Custom configuration e. g. stainless steel housing)	83 44 800

Accessories

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	83 23 405
PolySoft premium	83 23 411

Ordering Information

Connection cable w/ plug for Remote EC	16 ft / 5 m	83 23 305
Sensing Head	49 ft / 15 m	83 23 315
	98 ft / 30 m	83 23 330
Splash guard		68 12 510
Gassing adapter	PE incl. tubing	45 09 314
Calibration adapter Viton®		68 10 536

EC Sensors (Maximum Range, Field Adjustable)

DrägerSensor® AC Acidic Compounds 0–30 ppm	68 10 595
DrägerSensor® Cl ₂ Chlorine 0-50 ppm	68 09 665
DrägerSensor® CO Carbon Monoxide 0-1,000 ppm	68 09 605
DrägerSensor® CO LS Carbon Monoxide 0–5,000 ppm	68 09 620
DrägerSensor® CO LH Carbon Monoxide 0–300 ppm	68 12 570
DrägerSensor® COCl ₂ Phosgene 0–20 ppm	68 09 930
DrägerSensor® H ₂ Hydrogen 0–3,000 ppm	68 09 685
DrägerSensor® H ₂ O ₂ HC Hydrogen Peroxide 0–7,000 ppm	68 09 675
DrägerSensor® H ₂ O ₂ LC Hydrogen Peroxide 0–300 ppm	68 09 705
DrägerSensor® H ₂ S Hydrogen Sulfide 0–100 ppm	68 10 435
DrägerSensor® H ₂ S HC Hydrogen Sulfide 0–1,000 ppm	68 09 710
DrägerSensor® H ₂ S LC Hydrogen Sulfide 0–100 ppm	68 09 610
DrägerSensor® HCl Hydrogen Chloride 0–100 ppm	68 09 640
DrägerSensor® HCN Hydrogen Cyanide 0-50 ppm	68 09 650
DrägerSensor® HCN LC Hydrogen Cyanide 0–50 ppm	68 13 200
DrägerSensor® PH ₃ /AsH ₃ Phosphine/Arsine 0–10 ppm	68 09 695
DrägerSensor® Hydride 0–20 ppm	68 09 635
DrägerSensor® Hydride SC 0–1 ppm	68 09 980
DrägerSensor® N ₂ H ₄ Hydrazine 0–5 ppm	68 10 180
DrägerSensor® NH ₃ HC Ammonia 0–1,000 ppm	68 09 645
DrägerSensor® NH ₃ LC Ammonia 0–300 ppm	68 09 680
DrägerSensor® NH ₃ TL Ammonia 0–300 ppm	68 13 095
DrägerSensor® NH ₃ FL Ammonia 0–300 ppm	68 13 260
DrägerSensor® NO Nitric Oxide 0–200 ppm	68 09 625
DrägerSensor® NO ₂ Nitrogen Dioxide 0–100 ppm	68 09 655
DrägerSensor® NO ₂ LC Nitrogen Dioxide 0–20 ppm	68 13 205
DrägerSensor® O ₂ Oxygen 0–100% Vol.	68 09 720
DrägerSensor® O ₂ LS Oxygen 0–25% Vol.	68 09 630
DrägerSensor® O ₃ Ozone 0–5 ppm	68 10 290
DrägerSensor® OV ₁ Organic Vapors 0–200 ppm	68 10 740
DrägerSensor® OV ₂ Organic Vapors 0–100 ppm	68 10 745
DrägerSensor® SO ₂ Sulfur Dioxide 0–100 ppm	68 09 660

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.

Notes

Notes

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