

Dräger Polytron® 5100 EC Detector for toxic gases and oxygen

The Dräger Polytron® 5100 EC is a cost-effective explosion-proof transmitter for the detection of toxic gases or oxygen in standard applications. It uses a high performance plug-and-play electrochemical DrägerSensor® to detect a specific gas. A 2- or 3-wire 4 to 20 mA output with relays makes it compatible with most control systems.



Benefits

Durable, intelligent and sensitive – the DrägerSensor®

With the unique electrochemical Dräger sensors, the Polytron 5100 covers a total of 15 typical gases in various measuring ranges. These long-life sensors provide continuous detection even under the harshest conditions. DrägerSensors offer the industry's widest temperature range between -40 °C to +65 °C (-40 °F to +150 °F). The built-in memory contains all the necessary calibration and configuration information. The sensors are calibrated ready for immediate operation. The sensor's intrinsically safe connection dispenses with the need for a flame arrestor giving you a faster response time and higher sensitivity.

Same design, same operating principle

Polytron 5100 belongs to the Dräger Polytron 5000 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 backlit display shows status information clearly with quick access to functions using a non-intrusive magnetic wand. The gas concentration and measurement unit are displayed during normal operation. Coloured LEDs (green, yellow and red) provide additional alarm and status information.

Three relays for controlling external equipment

The Dräger Polytron 5100 can also be supplied with three integrated relays upon request. This enables you to use it as an independent gas detection system with two adjustable gas 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

The Polytron 5100 features a Class I, Div. 1 rated explosion-proof enclosure made of aluminum or stainless steel, making it suitable for a wide range of environmental conditions. A protection type "e" version includes a convenient docking station enabling installation in hazardous atmospheres without running conduit (where approved) and this also facilitates pre-assembly.

Make the impossible possible with 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.

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



D-0186-2020

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.

Accessories



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.

Related Products



D-52604-2012

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 analog output with relays, it also offers HART®, Modbus and Fieldbus protocol, making it compatible with most control systems.

Related Products



ST-3811-20/03

Dräger Polytron® 3000

The Dräger Polytron® 3000 is an intrinsically safe gas detector for the continuous monitoring of more than 60 toxic gases and oxygen in ambient air. It is the part of a new generation of gas detectors developed on a modular platform. Communication to the central control system is done via a 4 to 20 mA signal.

Technical Data

Dräger Polytron® 5100 EC

Type	Explosion-proof / flameproof enclosed transmitter ("d") or combined with increased safety ("d/e")
Gases	Toxic gases and oxygen depending on the sensor used
Measuring ranges	For customised adjustment, see sensor data sheet
Display	Backlit 4 digit LCD; 3 Status LEDs (green/yellow/red)
Performance Characteristics	see sensor datasheet

Electrical data

Signal output analog	Normal operation	4 to 20 mA
	Maintenance	Constant 3.4 mA
		4 mA ±1 mA 1 Hz modulation; (adjustable)
	Fault	< 1.2 mA, 3-wire
		< 3 mA, 2-wire
Power supply	10 to 30 V DC, 3-wire	
	18 to 30 V DC, 2-wire	
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 inches Hg / 700 to 1,300 mbar
Humidity	0 to 100 % RH, 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	Two 3/4" NPT port 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
Approx. weight	Aluminium w/o docking station	6.6 lbs / 3.0 kg
	SS316 L w/o docking station	11.0 lbs / 5.0 kg
	Aluminium w/ docking station	9.9 lbs / 4.5 kg
	SS316 L w/ docking station	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	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
ATEX	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
CE markings	ATEX (Directive 2014/34/EU)
	Electromagnetic Compatibility (Directive 2014/30/EU)
	Low Voltage (Directive 2014/35/EU)

* All docking station versions are only ATEX/IECEX approved

Ordering Information

Dräger Polytron® 5100 EC	Approval Code	Order Number
Dräger Polytron® 5100 EC d A	ETR 0200	83 44 860
Dräger Polytron® 5100 EC d A relay	ETR 0201	83 44 121
Dräger Polytron® 5100 EC d S	ETR 0300	83 44 862
Dräger Polytron® 5100 EC d S relay	ETR 0301	83 44 123
Dräger Polytron® 5100 EC e A (incl. Docking Station)	ETR 020I	83 44 124
Dräger Polytron® 5100 EC e A relay (incl. Docking Station)	ETR 020J	83 44 125
Dräger Polytron® 5xx0 Kit (Custom configuration e.g. stainless steel housing)		83 44 500
Electrochemical DrägerSensors		Order Number
DrägerSensor® AC		68 10 595
DrägerSensor® Cl ₂		68 09 665
DrägerSensor® CO		68 09 605
DrägerSensor® CO LH		68 12 570
DrägerSensor® CO LS		68 09 620
DrägerSensor® COCl ₂		68 09 930
DrägerSensor® H ₂		68 09 685
DrägerSensor® HCN		68 13 200
DrägerSensor® H ₂ O ₂ LC		68 09 705
DrägerSensor® H ₂ S		68 10 435
DrägerSensor® H ₂ S HC		68 09 710
DrägerSensor® H ₂ S LC		68 09 610
DrägerSensor® Hydrides		68 09 635
DrägerSensor® NH ₃ HC		68 09 645
DrägerSensor® NH ₃ LC		68 09 680
DrägerSensor® NH ₃ TH		68 00 055
DrägerSensor® NH ₃ TL		68 13 095
DrägerSensor® NO		68 09 625
DrägerSensor® XS NO LC (Order MEC adapter separately)		68 12 785
DrägerSensor® NO ₂		68 09 655
DrägerSensor® NO ₂ LC		68 13 205
DrägerSensor® O ₂		68 09 720
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
Pipe mount bracket		45 44 198
Duct mount kit		68 12 725
Duct mount adaptor for remote EC sensing head		83 17 617
RS stainless steel remote adaptor		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
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 adaptor	PE , Europe	68 06 978
	PE incl. tubing	45 09 314
Calibration adaptor Viton®		68 10 536
MEC Adapter für DrägerSensor® XS		68 12 695
Viton® is a registered trademark of the DuPont company.		
HART® is a registered trademark of the HART Communication Foundation.		

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