

## Dräger Polytron® 5100 EC Detection of toxic gases and vapors

The Dräger Polytron® 5100 EC is a cost-effective 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. A 2 or 3 wire 4-to-20 mA output with relays make it compatible with most control systems.



## Benefits

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### **Durable, intelligent and sensitive – the DrägerSensor®**

With unique electrochemical DrägerSensors, Polytron 5100 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 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, ready for immediate operation. The intrinsically safe connection of the sensor eliminates the need for a flame arrestor giving you faster response times and higher sensitivity.

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### **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. Colored LEDs (green, yellow and red) provide additional alarm and status information.

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### **Three relays for controlling external equipment**

Upon request, the Dräger Polytron 5100 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.

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### **Safe, robust housing for every application**

Polytron 5100 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.

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### **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, you don't 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.

## System Components



D-68006-2016

### Dräger REGARD® 7000

The Dräger REGARD® 7000 is a modular and highly expandable control system for monitoring various gases and vapors. Ideal for gas warning systems with various levels of complexity and numbers of transmitters, the Dräger REGARD® 7000 delivers exceptionally reliability and efficiency. An additional benefit is the controller's 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 customize the control units to the demands of your plant. You can also embed further features to existing alarms.



D-66006-2011

### Electrochemical (EC) DrägerSensors®

When you need to selectively measure the smallest concentrations of airborne toxic gases and oxygen under ambient conditions, Electrochemical DrägerSensors are your answer. These long-life EC sensors for Dräger transmitters offer fast response times, high accuracy, and unmatched stability.

## 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

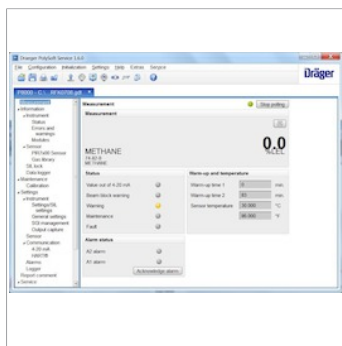
The Splash guard protects the sensor against splash water and dirt.



D-85345-2013

### Duct mount kit

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



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 rides on top of the analog 4 to 20 mA signal. Out in the field, an available non-intrusive IR dongle easily connects Polytron® to Polysoft.

## Related Products



D-2947-2018

### 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.



ST-3819-2003

### Dräger Polytron® 7000

The Dräger Polytron® 7000 gas detector can satisfy all toxic gas and oxygen measurement applications on a single platform. It meets compliance requirements, as well as the high specification requirements of customized solutions.



D-4653-2019

### Dräger Polytron® 6100 EC WL

The Dräger Polytron 6100 EC WL is a wireless transmitter for continuous monitoring of toxic gases and oxygen. The intrinsically safe, SIL2-rated transmitter features completely wireless signal transmission and a power supply. The internal battery pack continuously powers the transmitter for up to 24 months. This makes the Polytron 6100 a flexible and cost efficient solution for plant expansions, upgrades, and new installations.

## Technical Data

### Dräger Polytron® 5100 EC

Type	Explosion proof / flameproof enclosed transmitter ("d")			
Gases	Toxic gases and oxygen, dependent on the sensor used			
Measuring ranges	Customized adjustment, see sensor data sheet			
Display	Backlit (3-wire) LCD; 3 Status LEDs (green/yellow/red) (3-wire)			
Performance Characteristics	see DrägerSensor EC datasheets			
Electrical data	Signal output analog	Normal operation	4 to 20 mA	
		Maintenance	Constant 3.4 mA or 4 mA	
		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		
	Power consumption (max.)	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 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.		11.0" x 5.9" x 5.1" /	
			280 x 150 x 130 mm	
	Weight, approx.	Aluminium	6.6 lbs / 3.0 kg	
SS316 L		11.0 lbs / 5.0 kg		
Approvals	UL & 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;		
	ATEX	II 2G Ex db [ia] IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 °C;		
CE marking	ATEX (Directive 2014/34/EU)			
	Electromagnetic Compatibility (Directive 2014/30/EU)			
	Low Voltage (Directive 2014/35/EU)			

## Ordering Information

### Dräger Polytron® 5100 EC

Dräger Polytron® 5100 EC d A	83 44 860
Dräger Polytron® 5100 EC d A relay	83 44 121
Dräger Polytron® 5100 EC d S	83 44 862
Dräger Polytron® 5100 EC d S Relay	83 44 123

## Ordering Information

<b>Accessories</b>	<b>Order Number</b>	
Magnetic wand	45 44 101	
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	
IR Connection Kit Polytron® 5000/8000	45 44 197	
PolySoft licence (1 year)	83 28 639	
PolySoft licence (subscription)	83 28 640	
EC Sensing Head Remote w/ mount kit	68 12 684	
Connection cable w/ plug for	16 ft / 5 m	83 23 305
Remote EC Sensing Head	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	
Calibration adapter FKM Viton®	68 10 536	
Gassing adapter	PE incl. tubing	45 09 314
Dust filter (not for Cl <sub>2</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , O <sub>3</sub> , N <sub>2</sub> H <sub>4</sub> )	68 09 595	
Dust filter (SO <sub>2</sub> )	68 12 224	
Selective filter A2F (CO, CO LS, H <sub>2</sub> )	68 09 684	
Selective filter K2F (COCl <sub>2</sub> )	68 09 933	
Selective filter NF (HCl)	68 09 643	
Selective filter HSF (Hydrides)	68 09 862	
Selective filter D3F (CO)	68 12 435	
Selective filter MF (PH <sub>3</sub> , AsH <sub>3</sub> )	68 09 638	
Selective filter K1F (SO <sub>2</sub> )	68 09 663	
<b>EC Sensors (Maximum Range, Field Adjustable)</b>		
DrägerSensor® AC Acidic Compounds 0–30 ppm	68 10 595	
Initial Operation Set for DrägerSensor AC	68 09 381	
DrägerSensor® Cl <sub>2</sub> 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 <sub>2</sub> Phosgene 0–20 ppm	68 09 930	
DrägerSensor® H <sub>2</sub> Hydrogen 0–3,000 ppm	68 09 685	
DrägerSensor® H <sub>2</sub> O <sub>2</sub> HC Hydrogen Peroxide 0–7,000 ppm	68 09 675	
DrägerSensor® H <sub>2</sub> O <sub>2</sub> LC Hydrogen Peroxide 0–300 ppm	68 09 705	
DrägerSensor® H <sub>2</sub> S Hydrogen Sulfide 0–100 ppm	68 10 435	
DrägerSensor® H <sub>2</sub> S HC Hydrogen Sulfide 0–1,000 ppm	68 09 710	
DrägerSensor® H <sub>2</sub> S LC Hydrogen Sulfide 0–100 ppm	68 09 610	
DrägerSensor® HCN LC Hydrogen Cyanide 0–50 ppm	68 13 200	
DrägerSensor® Hydride 0–20 ppm	68 09 635	
DrägerSensor® N <sub>2</sub> H <sub>4</sub> Hydrazine 0–5 ppm	68 10 180	
DrägerSensor® NH <sub>3</sub> HC Ammonia 0–1,000 ppm	68 09 645	
DrägerSensor® NH <sub>3</sub> TH Ammonia 0-10,000 ppm	68 00 055	
DrägerSensor® NH <sub>3</sub> LC Ammonia 0–300 ppm	68 09 680	
DrägerSensor® NH <sub>3</sub> TL Ammonia 0–300 ppm	68 13 095	

## Ordering Information

DrägerSensor® NO Nitric Oxide 0–200 ppm	68 09 625
DrägerSensor® NO <sub>2</sub> Nitrogen Dioxide 0–100 ppm	68 09 655
DrägerSensor® NO <sub>2</sub> LC Nitrogen Dioxide 0–20 ppm	68 13 205
DrägerSensor® O <sub>2</sub> Oxygen 0–100% Vol.	68 09 720
DrägerSensor® O <sub>2</sub> LS Oxygen 0–25% Vol.	68 09 630
DrägerSensor® OV <sub>1</sub> Organic Vapors 0–200 ppm	68 10 740
DrägerSensor® OV <sub>2</sub> Organic Vapors 0–100 ppm	68 10 745
DrägerSensor® SO <sub>2</sub> Sulfur Dioxide 0–100 ppm	68 09 660

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