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.

Dräger. Technology for Life®

Benefits

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.

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.

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.

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. 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, 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-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 gases, oxygen levels, and Ex hazards. 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-15035-2010

Docking station

The docking station is included with all transmitters in the Polytron® 5000 and Polytron® 8000 series for protection type “e”, increased safety. This also facilitates pre-assembly.

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.

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, dependent on the sensor used		
Measuring ranges	Customized adjustment, see sensor data sheet		
Display	Backlit (3-wire) graphic LCD; 3 Status LEDs (green/yellow/red) (3-wire)		
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, 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 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	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	
	ATEX	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	
	CE markings	ATEX (Directive 2014/34/EU)	

Technical Data

	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	
Dräger Polytron® 5100 EC d A	83 44 860
Dräger Polytron® 5100 EC d A relay	83 44 121
Dräger Polytron® 5100 EC e A (incl. Docking Station)	83 44 124
Dräger Polytron® 5100 EC e A relay (incl. Docking Station)	83 44 125
Dräger Polytron® 5xx0 Kit (Custom configuration e. g. stainless steel housing)	83 44 500

Accessories		
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
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
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
Gassing adapter	PE incl. tubing	45 09 314
Calibration adapter Viton®		68 10 536

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