

# Dräger Polytron Pulsar Open Path Gas Detector

The Dräger Polytron Pulsar is the latest infrared technology in open path gas detection, capable of detecting a wide range of gaseous hydrocarbons. These include the alkane series from methane to hexane, propylene, methanol, ethanol and ethylene.



ST-4652-2003

## SIMPLE TO ALIGN AND COMMISSION

One person can easily align and commission the system without the need for special training or skills. No telescope or alignment mirrors are needed for the installation over any distance. After an initial coarse adjustment by eye, a hand held terminal provides separate “radar” displays of the Transmitter and Receiver alignments. This makes it easy to optimise the adjustment for maximum signal strength.

The built-in calibration of the Dräger Polytron Pulsar does not need any manual adjustment or standard test gas. After the alignment procedure is finished a self-zeroing sequence is started to complete the commissioning of the system. The parameters about alignment and signal strength are logged and will be used to determine any future misalignment or build up of deposits on the optical lenses.

## INCREASED PERFORMANCE

Continuous communication between Receiver and Transmitter across a signal line allows the system to adapt to difficult environmental conditions and ensure highest availability. The high power xenon lamps combined with a sophisticated

algorithm which varies their intensity and frequency makes the Dräger Polytron Pulsar immune to influences from solar radiation, stack flares, arc-welding or resonance effects associated with the vibration from rotating machinery, as well as environmental changes along the beam like fog, mist, and snow. A higher flash rate is also triggered by the first indication of gas, allowing a fully validated gas reading along with a reduced response time.

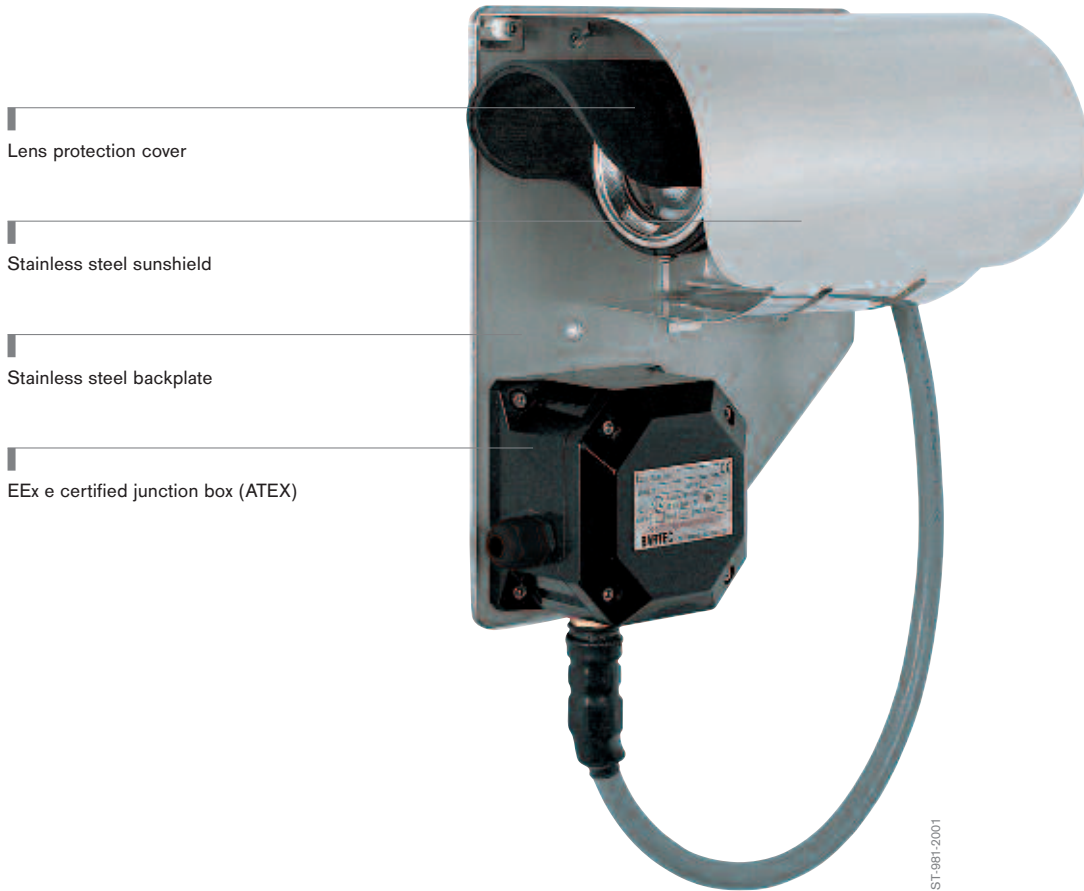
## FAILSAFE

The detector is designed so that no fault can go undetected. In normal operation the output signal is 4 to 20 mA, depending on the gas concentration measured. Whereas a signal of < 1 mA indicates a fault and a signal of 2 mA indicates a beam blockage. In addition a continuous self-test of the Dräger Polytron Pulsar will issue a pre-warning signal of 3.5 mA where the detector is still operational but requires some attention – for example when there is a build up of deposits on the optics, or misalignment of the transmitter or receiver. This way maintenance can be scheduled without downtime. The Dräger Polytron Pulsar carries a Safety Integrity Level rating of 2 (SIL 2).



ST-981-2001

**Dräger Polytron Pulsar**  
Open Path Gas Detector for  
gaseous hydrocarbons.



#### HEATED OPTICS

Controlled internal heating of the optical lenses prevent the formation of ice and build up of snow on the optics even under severe weather conditions. It also eliminates condensation build up on the lenses.

#### BUILT-IN DATA LOGGER

An internal data-logger keeps a detailed record for the previous 7 days of operation, and consolidated records for the previous 32 weeks. These logs include such essential information as actual readings, events like “beam block” and gas alarms, warning flags, signal strength, alignment, supply voltage and internal temperature.

#### GAS LIBRARY

The detector can be pre-calibrated for up to four gases. Each detector is supplied with methane and propane calibration as standard which are field selectable by the user.

#### WORLDWIDE APPROVALS

The Dräger Polytron Pulsar can be used worldwide with the following approvals: ATEX, IECEx, UL, CSA, FM, DNV and GOST.

**TECHNICAL DATA**

Type	Explosion proof Open Path gas detector utilizing dual wavelength infrared absorption technique		
Gases	Wide range of hydrocarbons including the alkane series from methane to hexane, propylene, ethanol and methanol.		
Range	From 0 to 4 up to 0 to 8 LEL*m		
Factory calibration	Methane or propane, selectable. Other hydrocarbon gases on request		
Operating distance	4 to 60 m, 30 to 120 m or 100 to 200 m, 13 to 197 ft, 98 to 394 ft or 328 to 656 ft separation of transmitter and receiver		
Signal output	Analog	Measuring	4 to 20 mA
		Pre-warning	3.5 mA, dirty optics or misalignment
		Beam block	2 mA
		Fault	< 1 mA
		Digital	HART
Supply Voltage	ATEX	18 to 30 VDC	
	UL, CSA	18 to 27 VDC	
Power Consumption	Max. 0.95 A @ 24 V, with full heating and all source lamps operating		
Response time $t_{95}$	< 2 s		
Ambient conditions	Temperature	- 40 to + 60 °C, - 40 to + 140 °F	
	Pressure	800 to 1100 hPa, 23.6 to 32.5 inch Hg	
	Humidity	0 to 100 %RH, non-condensing	
Enclosure	IP 66, stainless steel		
Size (W x H x D, approx.)	350 x 300 x 170 mm, 13.8" x 11.8" x 6.7", each		
Weight (approx.)	9 kg, 19,8 lbs, each, including back plate		
Approvals	ATEX	II 2GD Ex d [ia] IIC T6/T5, - 40 to + 40 / + 60 °C	
	IECEX	Ex d [ia] IIC T6/T5, - 40 to + 40 / + 60 °C	
	FM/ANSI	FM ANSI/FM 6325, ANSI/ISA-12. 13-04	
	DNV	A-12526	
	IEC 60079-29-4	Tested to by FM Approvals	
	UL	Class I, Div 1, Group C, D	
CSA, NRTL/C	Class I, Div 1, Group C, D		

**THE HAND HELD TERMINAL**

The hand held terminal (HHT) is a robust weatherproof unit, certified for use in a hazardous, classified area. The terminal is used to align and zero the Dräger Polytron Pulsar transmitter and receiver, and to provide configuration and diagnostic functions. More comprehensive diagnostics are provided in conjunction with the Dräger Polytron Pulsar PC software and a personal computer located in the non-hazardous area, when using the AI500 digital interface.



ST-976-2001

**Gas Check Kit**  
Test sheets and gas cells.



ST-977-2001

**Hand Held Terminal (HHT)**  
For easy alignment.



ST-3531-2003

**AI500 and Adapter Cable**  
Digital interface to HHT or a PC.

## ORDER INFORMATION

Dräger Polytron Pulsar variations by max. operating range and approval – transmitter and receiver, each mounted on a back-plate with junction box and heat shield.

Dräger Polytron Pulsar Accessories	Part number
Sun Shield (stainless steel)	23 50 297
Junction Box Dräger Polytron Pulsar ATEX (Ex e)	23 50 298
Mounting Plate Dräger Polytron Pulsar	23 50 299
Set of 4 U Bolt pipe fixings for 150mm diameter pipe (standard Dräger Polytron Pulsar)	23 50 302
AI500 Digital interface unit for Dräger Polytron Pulsar	23 50 306
Dräger Polytron Pulsar Remote Junction Box/HHT Kit	23 50 322
Dräger Polytron Pulsar Alignment Kit, ATEX/CSA	23 50 325
Adapter AI500 to HHT or PC	23 50 326
Dräger Polytron Pulsar PC Software with cable (supports Dräger Polytron Pulsar, AI500 and HHT)	23 50 327
Attenuator plate AP800	23 50 339
Set of 6 U Bolt fixings (CSA & UL Dräger Polytron Pulsar)	23 50 405
Dräger Polytron Pulsar Alignment Kit, ATEX/CSA (Ethylene Dräger Polytron Pulsar only)	23 50 519
Gas test sheets (Ethylene)	23 50 520
Dräger Polytron Pulsar	Part number
Dräger Polytron Pulsar ATEX 4-60m (TX only)	23 50 309
Dräger Polytron Pulsar ATEX 30-120m (TX only)	23 50 310
Dräger Polytron Pulsar ATEX 100-200m (TX only)	23 50 311
Dräger Polytron Pulsar ATEX 4-120m (RX only)	23 50 312
Dräger Polytron Pulsar ATEX 100-200m (RX only)	23 50 313
Dräger Polytron Pulsar ATEX 4-120m (RX only Ethylene)	23 50 393
Dräger Polytron Pulsar ATEX 100-200m (RX only Ethylene)	23 50 394

### HEADQUARTERS

Dräger Safety AG & Co. KGaA  
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### SYSTEM CENTERS

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