

## Dräger Polytron Pulsar 2 Open Path Gas Detector

The Dräger Polytron Pulsar 2 is the latest infrared technology in open path gas detection. Equipped with all the same functions as the standard Dräger Pulsar, Dräger Pulsar 2 is fitted with an ABS moulded cover and is supplied with either a junction box or certified connector to provide complete flexibility during installation.



Dräger Pulsar 2 is capable of detecting a wide range of gaseous hydrocarbons. These include the alkane series from methane to hexane, propylene, methanol, ethanol and ethylene.

### SIMPLE TO ALIGN AND COMMISSION

One person can easily align and commission the system without the need for special training or skills. 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).



Dräger Polytron Pulsar  
Open Path Gas Detector for  
gaseous hydrocarbons.



Lens protection cover

ABS moulded cover

EEx e certified junction box (ATEX)

#### 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.

#### DRÄGER POLYTRON PULSAR WITH HART

HART capabilities within the Dräger Polytron Pulsar can provide digital communications between the field and the safe area. This can provide real time information on the status of an individual detector as well as configuration and historical data of each device, without the need for extra cable cores.

## TECHNICAL DATA

Type	Explosion proof Open Path gas detector utilizing dual wavelength infrared absorption technic	
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 32 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.)	260 x 340 x 220 mm, 10.25" x 13.3" x 8.5", each	
Weight (approx.)	6 kg, 12.2 lbs, each	
Approvals	ATEX	II 2GD EEx d [ia] IIC T6/T5, - 40 to + 40 / + 60 °C
	IECEX	Ex d [ia] IIC T6/T5, - 40 to + 40 / + 60 °C
	UL	Class I, Div 1, Group C, D
	CSA, NRTL/C	Class I, Div 1, Group C, D

### COMPLETE ACCESS FROM THE SAFE AREA

Installing an AI500 digital interface provides digital data on the status of the detector and also allows configurations such as gas calibration and 4 to 20mA span to be altered without physically connecting to the Receiver in the hazardous area. For larger installations a maximum of 32 AI500 units may be connected via an RS485 multidrop allowing up to 128 Dräger Polytron Pulsars to be monitored – valuable for scheduling service and maintenance.

### 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 and GOST.

### 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

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Dräger Polytron Pulsar 2 – variations by max. operating range and approval – transmitter and receiver, each fitted with an ABS moulded cover.  
Supplied with EEx e junction box or EEx d certified plug and socket.

Dräger Polytron Pulsar, 60m / 197 ft ATEX certified with JB	23 50 493
Dräger Polytron Pulsar, 120m / 394 ft ATEX certified with JB	23 50 494
Dräger Polytron Pulsar, 200m / 656 ft ATEX certified with JB	23 50 495
Dräger Polytron Pulsar, 60m / 197 ft ATEX certified with EEx d plug and socket	23 50 496
Dräger Polytron Pulsar, 120m / 394 ft ATEX certified with EEx d plug and socket	23 50 497
Dräger Polytron Pulsar, 200m / 656 ft ATEX certified with EEx d plug and socket	23 50 498

### Accessories

AI500 digital interface	23 50 306
Alignment kit with HHT, test cards and ball driver with case	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



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



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Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.