# Dräger Polytron® 8900 UGLD
# Ultrasonic-Gas-Leak-Detector

The Dräger Polytron® 8900 UGLD transmitter is an early warning area monitor for detecting high-pressure gas leaks in outdoor industrial process environments. Thanks to an ultrasonic acoustic sensor, it responds earlier than conventional gas detectors because it registers the sound of leaking gas instead of measuring the concentration of accumulated gas clouds. As gas escapes, leaks are immediately detected in the surrounding area, regardless of the wind direction.

Menu control

Backlit display

LED status display

Ultrasound sensor

D-5541-2018

# Benefits

### Ultrasonic sensor technology – the early warning system for gas leaks

Typical gas detection systems used to monitor pressurised gas pipes or containers in industrial environments only detect a gas leak if the gas is in the immediate vicinity of the gas sensor. Environmental influences such as wind can delay or prevent a gas cloud from being detected by gas sensors. However, the Dräger Polytron® 8900 UGLD is not affected by these environmental factors and detects a high-pressure gas leak as soon as gas escapes. Effective early gas leak warnings can prevent unnecessary shutdowns, saving time and money.

### A perfect complement to your gas detection system

The Dräger Polytron 8900 extends the Polytron 8000 series family with acoustic gas leak detection. All transmitters in this series have the same design and an identical user interface. A common user interface ensures that little training or maintenance is required for existing users. The Polytron 8900 UGLD perfectly complements existing flame and gas detection systems with reliable early gas leak warnings.

### Delivers results that are easy to understand

For an easy interpretation of results, the measured values on the display of the Polytron 8900 UGLD are shown from 0 to 100 percent of the full scale decibel sensitivity range. The ultrasound level is immediately displayed and transmitted and allows for an easy interpretation. Alarms are configured at a specific level above a predetermined background noise level. Additionally, a time delay of up to 30 seconds can be set in the control system.

### Can even detect gas leaks in loud industrial environments

Loud process areas generate noise which is mostly in the audible spectrum. Gas leaks from pressurized vessels above 10 bar generate both audible sound and inaudible ultrasound. Since Polytron 8900 is tuned to measure in the ultrasound spectrum, it can easily identify gas leaks with a leak rate of 100 g/sec in a 20 meter radius circle.

### Robust design and fully-sealed sensor

The Polytron 8900 UGLD is an explosion-proof transmitter with a sensor housed in a galvanically-isolated, intrinsically-safe enclosure. The sensor is an ultrasonic microphone that is completely sealed in PVCC, making it impervious to water and dirt. It provides reliable readings without the need for an additional environmental protection baffle. Regular calibration is not necessary, but unlike some other UGLDs on the market, calibration is possible and easy with the offered calibration kits. The expected lifespan of the ultrasonic sensor is more than 10 years.

# System Components



D-6806-2016

### Dräger REGARD® 7000

The Dräger REGARD® 7000 is a modular and therefore highly expandable analysis 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®.

# Accessories



D-5554-2018

### Calibration and bump test kit

Even though the UGLD's sensor does not need to be replaced and does not need regular calibrations, they are still possible. Unlike some other UGLDs on the market, a calibration can be performed using a system similar to that of traditional gas detectors. The kit has room for a standard compressed air cylinder and generates a certified sound level using a sensor adapter. There is an additional adapter for zeroing the sensor. A directional sonic generator uses compressed air to generate sound, which can be used to bump test a specific UGLD from up to five meters away.



D-13019-2018

### Remote sensor

With the EC Sensing Head Remote, the UGLD's sensor can be installed up to 30 metres away from the Polytron 8900 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
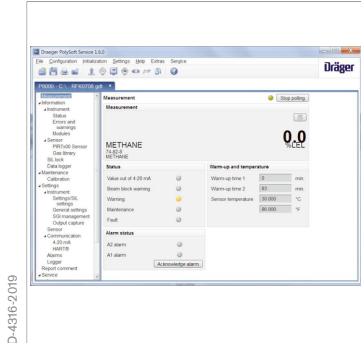


### Dräger PolySoft software

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 4-20 mA signal. Out in the field, an available non intrusive IR dongle easily connects Polytron® to PolySoft.

# Related Products



### 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 analogue output with relays, it also offers Modbus and Fieldbus protocol making it compatible with most control systems.



### Dräger Polytron® 8700 IR

The Dräger Polytron® 8700 IR is an advanced explosion proof transmitter for the detection of combustible gases in the lower explosion limit (LEL). It uses a high performance infrared Dräger PIR 7000 sensor, which will quickly detect most common hydrocarbon gases. Besides a 3 wire 4 to 20 mA analogue output with relays, it also offers Modbus and Fieldbus making it compatible with most control systems.

# Related Products



D-5570-2018

### Dräger Pulsar 7000 Series

The Dräger Pulsar 7000 Series are stationary open path gas detectors for the detection of explosive hydrocarbons in gases and vapours. The robust design and the extremely rapid response time make the Dräger Pulsar 7000 Series a dependable solution for your requirements in the oil and gas industry, as well as the chemical industry.



D-49077-2012

### Dräger Flame 5000

The Dräger Flame 5000 is an imaging based explosion proof flame detector. This visual flame detection system uses digital image processing and advanced algorithms to process and interpret flame characteristics. This principle offers an extended field of view and fewer false alarms. Each detector is equipped with a colour CCTV camera.

# Technical Data

**Dräger Polytron® 8900 UGLD**

| | | | |
|---|---|---|---|
| Type | Explosion proof / flameproof enclosed transmitter ("d") or combined with increased safety ("d/e") | | |
| Gases | Flammable and toxic gases such as hydrogen, methane, ethylene, propane, $CO_2$, nitrogen and hydrogen sulphide | | |
| Measurement ranges | 0-100% equivalent to 55-110 dB; typical alarm setting 10% UGLD signal above background | | |
| Display | Back-lit graphic LCD display; 3 status LEDs (green/yellow/red) | | |
| Sensor Type | PVCC coated piezoelectric microphone with built-in automatic self-test sound generator | | |
| Sensor Performance | Response Time | < 3 sec. | |
| | Minimum Pressure | > 2 bar (29 psi) Methane | |
| | Coverage Radius | 6.5ft -65 ft depending on gas type, leak rate and background noise | |
| | Frequency Range | 18 kHz - 80 kHz | |
| Electrical data | Analogue signal output | Normal operation | 4 to 20 mA |
| | | Maintenance | Constant 3.4 mA or |
| | | | 4 mA ±1 mA |
| | | | 1 Hz modulation; (adjustable) |
| | | Fault | < 1,2 mA |
| | Digital signal output | HART® | |
| | Power supply | 10 to 30 V DC, 3-wire | |
| | Power consumption | w/ relay, remote | 100 mA at 24 V |
| | Relay specification | Two alarm relays and one error relay, SPDT 5 A @ 230 VAC, 5 A @ 30 VDC | |
| Environmental conditions (See sensor data sheet) | Temperature | -40 to +70°C (-40 to 158°F) with relays | |
| | Pressure | 700 to 1,300 mbar | |
| | Humidity | 0 to 100 % relative humidity | |
| Housing | Transmitter housing | Stainless steel SS316L | |
| | Sensor housing | Polyamide 6 | |
| | Housing protection type | NEMA 4X & 7, IP65/66/67 | |
| | Cable entry | Three ¾" NPT thread openings or M20 cable gland | |
| | Dimensions (H × W × D), | 280 x 150 x 130 mm | |
| | Weight, approx. | 5,0 kg | |
| Approvals | UL | Class I, Div 1, Groups A, B, C, D; | |
| | | Class I, Zone 1, Group IIC; | |
| | | T-Code T4 | |
| | CSA* | Class I, Div 1, Groups A, B, C, D; | |
| | | Class I, Zone 1, Group IIC; | |
| | | T-Code T4 | |
| | IECEx | Ex db [ia] IIC T4 Gb, | |
| | | -40 ≤ Ta ≤ +70 °C | |
| | | Ex db eb [ia] IIC T4 Gb, -40 ≤ Ta ≤ +70°C; "e" version; | |
| | ATEX | II 2G Ex db [ia] IIC T4 Gb, | |
| | | -40 ≤ Ta ≤ +70 °C | |
| | | II 2G Ex db eb [ia] IIC T4 Gb, -40 ≤ Ta ≤ +70°C; "e" version | |
| | CE Markings | ATEX (Directive 2014/34/EU) | |
| | | Electromagnetic compatibility (Directive 2014/30/EU) | |
| | | Low voltage (Directive 2014/35/EU) | |
| | Marine approval* | DNV-GL | |

# Technical Data

| | SIL 2 | Certificate TÜV Süd |
|---|---|---|
| * Pending | | |

# Ordering Information

| Dräger Polytron® 8900 UGLD | Approval Code | Bestellnummer |
|---|---|---|
| Dräger Polytron® 8900 UGLD d S 4-20/HART® Relais Stainless Steel Ex d housing with 4-20 mA HART® output and 3 Relays | ETR 0521 | 83 28 030 |
| Dräger Polytron® 8900 UGLD e S 4-20/HART® Relay Stainless Steel Ex e housing with 4-20 mA HART® output and 3 Relays, incl. Docking station | ETR 052J | 83 29 171 |
| **Accessories** | | |
| Magnetic Wand | | 45 44 101 |
| Remote Sensing Head with wall mount kit | | 83 28 021 |
| Connecting cable with plug for the Remote Sensing Head | 5 m | 83 23 305 |
| | 15 m | 83 23 315 |
| | 30 m | 83 23 330 |
| UGLD Calibration and Bump Test Kit w/o Air Cylinder | | 83 28 042 |
| Zero Air Gas Cylinder 112L for Calibration and Bump Test Kit | | 68 13 239 |
| Pole Mount Kit | | 45 44 198 |
| PolySoft Basic (one year license) | | 83 28 600 |
| PolySoft Basic (Subscription – yearly fee) | | 83 28 601 |
| IR Connection Kit (requires PolySoft) | | 45 44 197 |
| HART® is a registered trademark of the HART Communication Foundation. | | |
| Windows® is a registered trademark of Microsoft Corporation. | | |

Notes

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