



The RAEGuard 2 PID is a fixed photoionization detector (PID) that measures a broad range of volatile organic compounds (VOCs)

RAEGuard 2 PID



Key Features

- Class I, Division 1 (Zone 1) continuous VOC monitoring solution for hazardous locations
- Three wire 4-20mA analogue output and RS-485 digital communication in Modbus protocol
- Three dry contact relays (<math><30V, 2A</math>) normally open (or normally closed), one for high and low alarm, another for fault alarm
- Explosion-proof stainless-steel enclosure suitable for outdoor hazardous environment applications
- Magnetic-key interface eliminates the need to open the explosion-proof housing when adjusting parameters
- Continuous VOC monitoring in hazardous and non-hazardous area locations
- Reduced maintenance costs due to easily removable sensor module. Sensor and lamp can be removed without tools and serviced in hazardous locations
- Faster response time with sample flow-through design powered by internal diaphragm pump
- Humidity compensation ensures accurate readings even in humid environments

Applications

- Refineries and petrochemical plants
- Power plants
- Solvent recovery systems
- Painting and coating operations
- Waste water treatment plants
- Air quality

The RAEGuard 2 PID operates on 10 to 28 VDC and provides an analogue (4-20mA) three-wire signal output, and RS-485 Modbus digital signal output. Calibration and maintenance have been greatly simplified as the digital PID module can be easily removed in hazardous locations for calibration or maintenance.

The RAEGuard 2 PID has a graphic display and LED light status indicator for fault and alarm conditions. In addition, Low, High, and Fault relays¹ can be configured to trigger external alarms or process controls. Over 200 correction factors¹ are pre-programmed and allow users to display readings of a specific target gas. A magnetic key interface enables the detector to be calibrated and operational parameters adjusted with the explosion-proof enclosure in place.

¹Relays and Correction factors are disabled when using the 1 to 1000 ppm DigiPID.



General Specifications



RAEGuard 2 Fixed Sensor Head Specifications

| Basic parameters | |
|----------------------|--|
| Working current | DC 10 to 28V, 210mA at 24V |
| Power | <5W |
| Output | <ul style="list-style-type: none"> • 4-20mA • Three-level programmable alarm relays (30 VDC, 2A) • RS-485 (Supports Modbus) |
| Sampling | Internal diaphragm pump, up to 500cc/min |
| IP rating | IP-65 |
| Mechanical interface | 3/4" NPT Male |
| Installation | 50.8 mm (2") pipe-holding or wall mounting |
| User interface | Three-key magnetic bar adjustment |
| Calibration | Two points |
| Warranty | 1 year for the pump, 2 years for the housing and electronics |

Environmental parameters

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|-------------|--|
| Temperature | -20°C to +55°C (-4°F to 131°F) |
| Humidity | 0 to 95% relative humidity, non-condensing |
| Pressure | 90 to 110kPa |

Display

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|---------|---|
| Display | 128 x 64 matrix backlit LCD, supports graphic display |
|---------|---|

Physical parameters

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|----------|---|
| Size | 10.1" L x 7.9" W x 4.2"H (257 x 201 x 107 mm) |
| Weight | 3.5 kg (7.7 lbs) |
| Material | 316 stainless steel |

Certification

| | |
|--------|-------------------------------------|
| ATEX | Ex II 2(1)G, Ex d [Ia Ga] IIC T4 Gb |
| UL/CSA | Class 1, Div. 1, Groups ABCD T4 |
| IECEX | Ex d [Ia Ga] IIC T4, Gb |

DigiPID Sensor Module Specifications

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|-----------------------|---|
| Power supply | 5V ±0.25V DC |
| Current | 110mA max |
| Power consumption | < 0.6W |
| Measuring range | 0.01 to 100 ppm 0.1 to 1000 ppm 1 to 1000 ppm (No relays or correction factors) |
| Resolution | 10 ppb, 1 ppm (depends on model) |
| Response time | Pumped (T90): <30 s |
| Calibration | Two-point off-line and field calibration Optional three-point calibration |
| Accuracy | ±2% for calibration point |
| Analogue output | 0.5 - 2.5V (ro=1.0k) |
| Digital interface | Serial Interface (UART) Transmit (Tx): 3.3V TTL Receive (Rx): 3.3V TTL |
| Warranty | 2 years for the lamp, 1 year for the sensor, pump, electronics, and housing |
| Operating temperature | -20°C to +55°C (-4°F to +131°F) |
| Humidity | 0 to 95% RH non-condensing |
| EMI/RFI | Highly resistant to EMI/RFI Compliant with EMC Directive 2004/108/EC |
| Package | 316 stainless steel Spray watertight for IP-65 rating Dust membrane for sensor front protection |
| Size | 49mm x 150.8mm (1.92" D x 5.94" L) |
| Weight | < 550g (19.4 oz) |

Certification

| | |
|--------|-------------------------------------|
| ATEX | II 1 G EX ia IIC T4 and 1M1 Ex ia I |
| UL/CSA | Class I, Div. 1, Groups A B C D T4 |
| IECEX | Ex ia IIC T4 Ga and Ex ia I |

RAEGuard Ordering Options

RAEGuard 2 Fixed Sensor Head Includes:

- Explosion-proof stainless steel enclosure with LCD display, integrated sampling pump and relays, digital connector for external sensors
- Magnetic key

DigiPID Sensor Module Includes:

- Complete stainless steel PID sensor module with UV lamp and digital connector output for use with RAEGuard 2
- Choice of detection range 0.01 to 100 ppm, 0.1 to 1000 ppm, or 1 to 1000 ppm
- DigiPID maintenance kit

RAEGuard 2 PID Kits Includes:

- All RAEGuard 2 Fixed Sensor Head contents and all DigiPID contents as stated above





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.