



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 (<30V, 2A) 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	
Temperature	-20°C to +55°C (-4°F to 131°F)
Humidity	0 to 95% relative humidity, non-condensing
Pressure	90 to 110kPa
Display	
Display	128 x 64 matrix backlit LCD, supports graphic display
Physical parameters	
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

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:	<ul style="list-style-type: none"> • Explosion-proof stainless steel enclosure with LCD display, integrated sampling pump and relays, digital connector for external sensors • Magnetic key
DigiPID Sensor Module Includes:	<ul style="list-style-type: none"> • 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:	<ul style="list-style-type: none"> • All RAEGuard 2 Fixed Sensor Head contents and all DigiPID contents as stated above



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www.honeywellanalytics.com

Contact Honeywell Analytics:

Americas

Honeywell Analytics, Inc.
405 Barclay Blvd.
Lincolnshire, IL 60069
USA

Tel: 847.955.8200
Toll-free: 800.538.0363
Fax: 847.955.8210
detectgas@honeywell.com

Technical Services

ha.service@honeywell.com

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Europe, Middle East, Africa

Life Safety Distribution AG
Javastrasse 2
8604 Hegnau
Switzerland
Tel: +41 (0)44.943.4300
Fax: +41 (0)44.943.4398
gasdetection@honeywell.com

Asia Pacific

Honeywell Analytics, Asia Pacific
#508, Kolon Science Valley (1)
187-10 Guro-Dong, Guro-Gu
Seoul, 152-050
Korea
Tel: +82 (0)2.2025.0307
Fax: +82 (0)2.2025.0329
analytics.ap@honeywell.com

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