TELEDYNE DETCON
Everywhereyoulook™

Model PI-700

Universal VOC Gas Sensor

Scrolling Full Message/Text Display

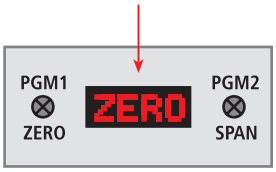

Photo Ionization Detector (PID)
(shown as PN 967-PB4520-010 in SS junction box)

Description

Model PI-700 is a non-intrusive "Smart" sensor that use photo-ionization detector technology to monitor VOC gases over ranges from 0-10 ppm to 0-5,000 ppm. In the PI-700 sensor design, Detcon has successfully converted the sensitive laboratory style PID technology into a rugged, environmentally insensitive, and long-life industrial gas sensor. The plug-in, field replaceable detector features over-sized gold-plated connections that help prevent corrosion. The PI-700's rugged framework includes an electro-polished 316 stainless steel housing with fully encapsulated electronics and dual layer surge protection. This innovative design virtually eliminates sensor failure due to water ingress, corrosion, vibration, and transient spikes. A primary feature of the Model PI-700 is embedded intuitive software that simplifies operator interface by guiding the user through routine calibration, configuration, and fault diagnostic functions using a built-in alpha/numeric display. The Model PI-700 is equipped with standard analog 4-20mA, and Modbus™ RS-485 outputs. Among its unique features is a wireless option that can be used with Detcon's SmartWireless® product line. Additional integration options include a Remote Alarm Module (RAM) and HART. Detcon's PID sensors have a long shelf life and are supported by an industry leading warranty.

Applications

- Pharmaceutical industry
- Power plants
- Chemical industry
- Air quality
- Refineries and petrochemical plants
- Solvent recovery systems
- Waste water treatment plants
- Marine and off-shore oil wells
- Pulp and paper industry
- Painting and coating operations

Features

Failsafe User-Friendly Interface

- LED Display (With Antiglare Cover)
- Full Text Display Method
- Non-intrusive Interface
- Auto Zero/Auto Span
- Pre-emptive Fault Diagnostics

Environmentally Bulletproof

- Electropolished 316SS Construction
- 100% Epoxy Encapsulated Circuitry
- Bulletproof I/O Protection
- Water-Proof, Corrosion-Proof, Vibration-Proof

Modular and Serviceable

- Modular Design
- Plug and Play Components
- Quick Thread Release (For Sensor Replacement)
- Integral Calibration Port

Model PI-700

Universal VOC Gas Sensor

System Specifications

Sensor Type
Continuous diffusion/adsorption
Photo Ionization Detector (PID)
Plug-in replaceable intelligent type (with replacement lamp)
Sensor Life
2 years typical
Measurement Range
Gas Dependent, ranges as low as 0-10 ppm
or as high as 0-5,000ppm (consult Detcon)
Accuracy/Repeatability
±10% of reading or ±2% of range (greater of)
Response Time
T50 <30 seconds; T90 <60 seconds
Outputs
Linear 4-20 mA DC
RS-485 MODBUS-RTU
Electrical Classification
Explosion proof
cCSAus
Class I, Division 1, Groups B, C, D (Tamb = -20°C to +50°C)
Class I, Zone 1, Group IIB+H2
ATEX
II 2 G Ex d ib IIB + H2 T4 Gb (Tamb = -20°C to +50°C)
Ingress Protection
NEMA 4X, IP66
Safety Approvals
cCSAus
ATEX
CE Marking
Warranty
PLUG-IN DETECTOR - 1 YEAR
TRANSMITTER - 2 YEARS

Environmental Specifications

Operating Temperature Range
-4°F to +122°F; -20°C to +50°C
Storage Temperature Range
-4°F to +122°F; -20°C to +50°C
Operating Humidity Range
0-100% RH non-condensing
Specifications subject to change without notice

Mechanical Specifications

Dimensions
7"H x 2.2" Dia.; 178mmH x 65mm Dia. (sensor assembly only)
11"H x 6.1"W x 3.75"D; 280mmH x 155mmW x 96mmD (with junction box)
Mounting holes (J-box) 5.5"; 140mm center to center
Weight
2 lbs; 0.907kg (sensor only)
6 lbs; 2.72kg (w/aluminum j-box)
9 lbs; 4.08kg (w/stainless steel j-box)

Electrical Specifications

Power Input
11-30 VDC
Power Consumption
Maximum = 65mA (1.6 watts)
Inrush Current
1.67A @ 24V
RFI/EMI Protection
Complies with EN50270
Analog Output
Linear 4-20mA DC (1,000 ohms max loop load @ 24VDC)

0mA	All Fault Diagnostics
2mA	In-Calibration
4-20mA	0-100% full-scale
22mA	Over-range condition

Serial RS-485 Output
RS-485 Modbus™ RTU
Baud Rate
9600 BPS (9600,N,8,1 Half Duplex)
Status Indicators
4-digit LED display with gas concentration
Full-script menu prompts for AutoSpan,
Set-up Options, and Fault Reporting
Faults Monitored
Loop, Input Voltage,
Zero, Missing Sensor,
Processor, Memory, Calibration
Cable Requirements
Power/Analog
3-wire shielded cable
Maximum distance is 13,300 feet with 14 AWG
Serial Output
2-wire twisted-pair shielded cable specifically for use with RS-485 installations
Maximum distance is 4,000 feet to last sensor
I/O Protection
Over-voltage, Miswiring, EMI/RFI Immunity

Order Guide

Specify junction box options (below)

PN 967-PB5520-010	PI-700-VOC Sensor Assembly (no junction box)
PN 967-PB1520-010	PI-700-VOC Sensor Assembly with Aluminum Junction Box
PN 967-PB4520-010	PI-700-VOC Sensor Assembly with 316 SS Junction Box
PN 967-PM5520-01K	PI-701-VOC Sensor Assembly (no junction box)
PN 967-PM1520-01K	PI-701-VOC Sensor Assembly with Aluminum Junction Box
PN 967-PM4520-01K	PI-701-VOC Sensor Assembly with 316 SS Junction Box
PN 967-PB5520-0X5	PI-700-VOC Special Low Range Sensor Assembly with 316 SS Junction Box

Integration Options

Remote Alarm Module (Remote Operation and 2 Alarm Relays plus Fault)
Hart Integration Module (Hart Communication Protocol version 7.0, HART Registered)

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