Description

Detcon 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. There is also a special 0-500 ppb version available. 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), HART, and Foundation Fieldbus. Detcon's PID sensors have a long shelf life and are supported by an industry leading warranty.

Photo Ionization Detector (PID)
(shown as PN 967-P14520-010 in SS junction box)

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

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

Scrolling Full Message/Text Display

PGM1 ZERO   **ZERO**   PGM2 SPAN

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)
Special Low Range 0-500 ppb

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
CSA and US (NRTL)
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 IIC T4 Gb (Tamb = -20°C to +50°C)

Ingress Protection
NEMA 4X, IP66

Safety Approvals
cCSAus Performance to ISA 12.13.01-2000 and CSA 22.2 #152
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

Order Guide — Specify junction box options (below)

PN 967-P15520-010   PI-700-VOC Sensor Assembly (no junction box)
PN 967-P11520-010   PI-700-VOC Sensor Assembly with Aluminum Junction Box
PN 967-P14520-010   PI-700-VOC Sensor Assembly with 316 SS Junction Box
PN 967-P25520-01K   PI-701-VOC Sensor Assembly (no junction box)
PN 967-P21520-01K   PI-701-VOC Sensor Assembly with Aluminum Junction Box
PN 967-P24520-01K   PI-701-VOC Sensor Assembly with 316 SS Junction Box
PN 967-P15520-0X5   PI-700-VOC Special Low Range Sensor Assembly with 316 SS Junction Box

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
Normal operation = 68mA (<1.7 watt)
Maximum = 85mA (2 watts)

Inrush Current
1.67A @ 24V

RFI/EMI Protection
Complies with EN61000

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

Integration Options

Remote Alarm Module (Remote Operation and 2 Alarm Relays plus Fault)
Hart Integration Module (Hart Communication Protocol version 7.0, HART Registered)
Foundation Fieldbus Integration Module (Foundation Fieldbus version 5.01)
Wireless Integration Module (Detcon Model RXT-320 SmartWireless® Transceivers)

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