

# piD-TECH™ Plug-In Photoionization Sensor

Baseline - MOCON, Inc.™

## SENSOR

The "piD-TECH™" Plug-In Photoionization Sensor is designed to be installed in portable and stationary gas monitors that accept City Technology™ - 4P cells. It provides complete photoionization detection capability in a package that has the same dimensional and electrical profile as these cells.

This gives many gas monitors new and powerful detection capability that was previously unavailable. It opens up an incredible variety of environmental and safety applications in industrial, commercial and residential markets.

The piD-TECH™ sensor is offered in two models. They are virtually insensitive to humidity changes, providing unparalleled performance in a variety of applications.

The piD-TECH™ Black Label has a linear dynamic range of 0.1ppm to 2,000ppm.

The piD-TECH™ Silver Label has a linear dynamic range of <0.01ppm to 20ppm.

The sensor is based on a photoionization detector (PID). The sample gas is exposed to an ultraviolet light from a lamp. The light emitted by the lamp ionizes the targeted gases in the sample so they can be detected by the instrument and reported as a concentration. Chemicals such as VOCs with an ionization potential <10.6 eV will be detected by photoionization. Contact Baseline for a comprehensive ionization potential list.

**Baseline, the reference point  
from which all things are measured.**



## Applications

- Industrial hygiene & safety monitoring
- Soil contamination and remediation
- Hazmat sites and spills
- Low concentration leak detection
- EPA Method 21 and emissions monitoring
- Arson investigation

## Features

- City Technology™ - 4P cell platform compatible
- Complete Sensor including:
  - Detector Cell
  - Photoionization Detector Lamp
  - Lamp Driver
  - Amplifier
  - Sample Filter
- Lamp energy = 10.6 eV
- Intrinsically Safe

Information in Baseline - MOCON, Inc. Product Literature is accurate at the time of release. However, product specifications and availability, promotions, prices, relationships, contact numbers and other specific information may change over time. Visit <http://www.baselineindustries.com> for additional information and the latest product literature.

# piD-TECH® *plus* Photoionization Sensor

## Data Sheet

### Performance Characteristics

**Target Gases:** VOCs and other gases with Ionization Potential  $\leq 10.6$  eV

**Lamp Energy:** 10.6 eV

**Linear Range:** 0 - 2000 ppm Isobutylene, Accuracy at 2000ppm is %20 with calibration point at 100ppm.

**Minimum Detectable Quantity:** 0.1 ppm Isobutylene

**T<sub>90</sub> Response Time:**  $\leq 20$  seconds (diffusion mode)

**Temperature Range:** -20 °C to 40 °C (Maximum temperature is 60 °C).

**Temperature Dependence:** Maximum deviation from the average temperature dependence curve is less than %20.

**Relative Humidity Range:** 0 to 90% non-condensing

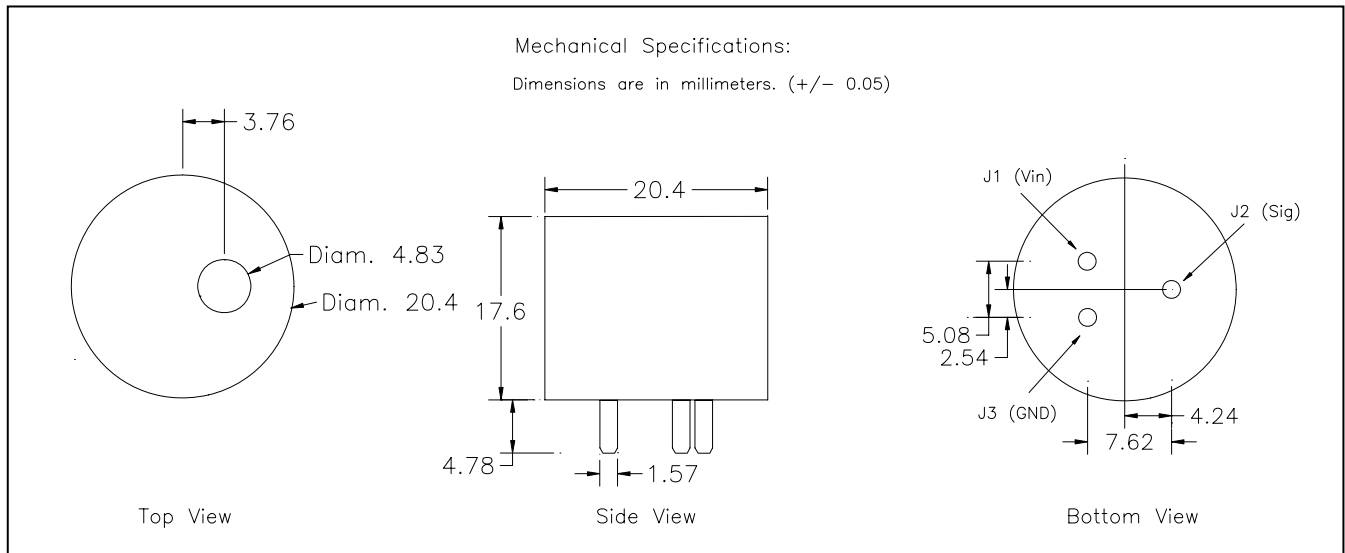
**Humidity Response:** < 1ppm @ 90% r.h., 25 °C, with zero gas applied.

**Humidity Effect:** Reduction of response to Isobutylene @ 90% r.h. < 15% of response @ 0% r.h.

**Onboard Filter:** To remove liquids/ particles

**Operating Life:** > 1 year

**Storage Life:** > 2 year



Baseline-MOCON, Inc.

19661 HWY 36  
Lyons, CO 80540  
PH 303-823-6661

piD-TECH® *plus*  
- Data Sheet

DWG No. 7400-0105-011

Rev. C

Part No. ZPP6018001

Sheet 1 of 2

## Electrical Characteristics

**Supply Voltage(J1):** 3.2V – 10V

**Current:** 20mA - 30mA

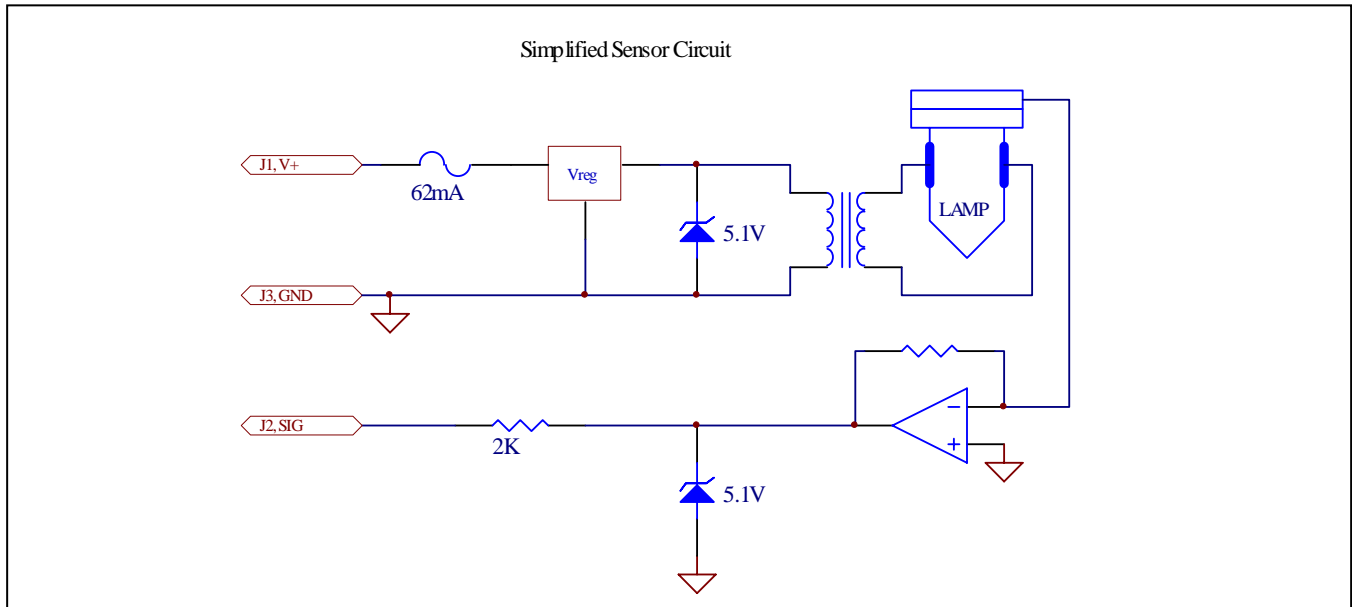
**Power Consumption:** 64mW - 300mW, Dependent on supply voltage.

**Output Signal(J2):** 0.05V - 2V (Maximum Voltage = 2.85V)

0ppm: 0.05V – 0.06V

100ppm (Isobutylene): 0.09V – 0.167V (.4mV/ppm - 1.07mV/ppm)

2000ppm (Isobutylene): 0.68V – 2V, (Based on non-linearity of -10% @ 2000ppm)



### Conditions for safe use:

- The sensor shall be installed inside of a suitable enclosure in accordance with the end product standards.
- The sensor is to be powered from an intrinsically safe circuit in the end product.
- Refer to control drawing (7400-0108-011) for entity parameters and additional information.

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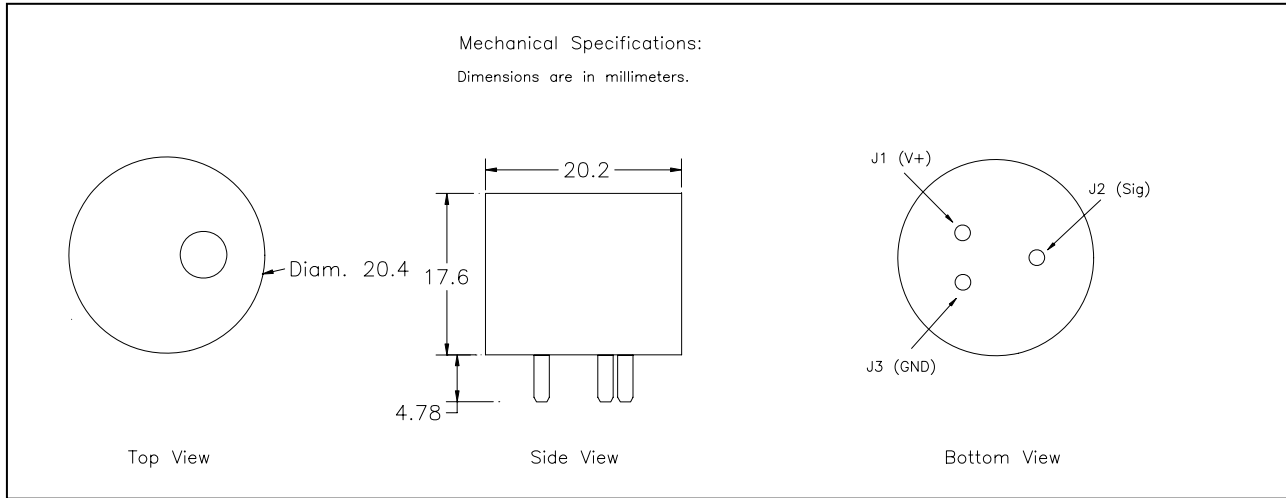
DWG No. 7400-0105-011

Rev. C

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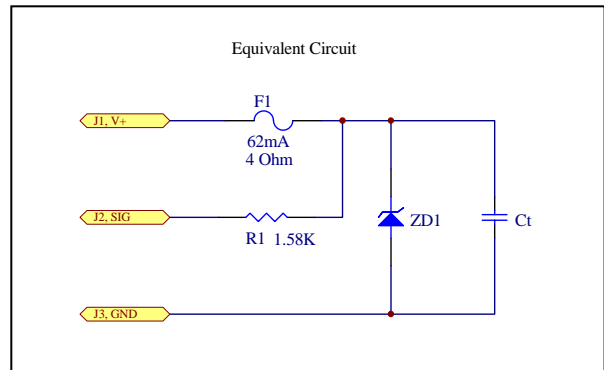
Sheet 2 of 2

**Mechanical Details:**



**Entity Parameters:**

	Pins J1,J2,J3	Comments
Vmax, Ui	10V	
I <sub>max</sub> , I <sub>i</sub>	-	The current is limited by an internal fuse.
P <sub>i</sub>	-	Power is limited to .581W by an internal fuse, resistor and zener diodes.
C <sub>i</sub>	0uF	
L <sub>i</sub>	0H	



**Manufacturer and Applicant:** Baseline-MOCON, Inc., Lyons, Colorado 80540, USA

**Label Information:**

0539 II 2 G EEx ia IIC  
 DEMKO 06 ATEX 0547796U  
 Ex ia IIC IECEX UL 06.0011U  
 Class I, Division 1, Groups A,B,C,D  
 Tamb = -20°C to +60°C

Note 1:  
No changes permitted without reference to notified body.

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PiD-TECH  
- Control Drawing

DWG No. 7400-0108-011

Rev. B

BMI No. ZPP60180 \*\*

Date: 07/15/06

Sheet 1 of 1