MODEL 452

# Process Ozone Sensor

*- Ideal for semiconductor process applications -*


## Features

- Standard one year warranty
- Compact design (12.3 $in^2$ footprint)
- Ranges from 0 - 5% to 0 - 25% w/w
- Temperature and Pressure Compensation
- Units in % w/w or $g/Nm^3$
- Narrow bandwidth detector eliminates need for UV filters
- Analog and RS232/485 outputs
- Status outputs to monitor operation
- Designed for high purity and inline applications

The Model 452 is a microprocessor-based gas sensor for measuring high concentrations of ozone in oxygen or air with accuracy and dependability. The measurement principle is based on the absorption of UV light at 254nm. Readings are available in % by weight, or grams/Normal cubic meter. Temperature and pressure compensation up to 3 Bar Absolute is a standard feature.

Its compact size allows for easy installation in process applications. The flow pattern is a straight through design (eliminating turns and elbows), reducing exposed surface area. The 452 uses detectors that have a narrow band of spectral sensitivity, eliminating the need for UV band pass filters that are subject to deterioration by UV or humidity.

Two detectors are used: one for the ozone measurement, and the other to compensate for changes in UV lamp intensity. This unique design provides a sensor that will operate for extended periods without calibration or maintenance. The sensor offers both analog and RS485/RS232 outputs as well as 4 opto-isolated status outputs to indicate sensor operation or failure modes.

Input/output and power input connections are made through the 15-pin D-sub connector. For high purity applications, the 452 manifold is available in 316L, 10Ra finish, and 1/4" VCR fittings.

## Applications

- Semiconductor (CVD, ALD, etc.)
- Pharmaceutical industry
- Water treatment applications
- Food and beverage

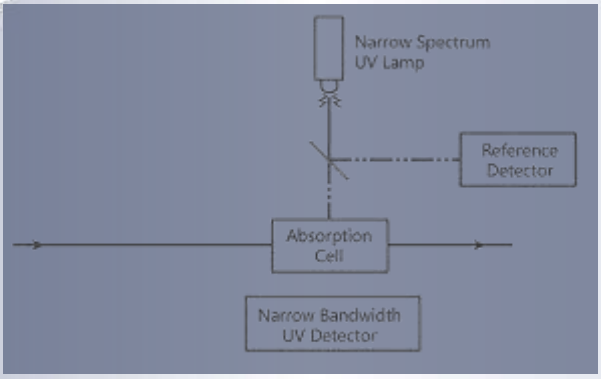
MODEL 452

# Process Ozone Sensor

## Specifications

| | |
|---|---|
| Ranges | 0-5, 0-10, 0-15, 0-20, 0-25% w/w, 0-100, 0-200, 0-300, 0-400, 0-500 g/Nm$^3$ |
| Pressure Compensation | up to 3 Bar absolute |
| Proof Pressure | 115 psia |
| Repeatability | 1% of full scale |
| Response Time | 2 seconds to 95% |
| Zero Drift | 1% full scale/month (non-cumulative) |
| Temperature Range | 5-45°C |
| Wetted Materials | 316 Stainless Steel, PTFE, Sapphire |
| Fittings | 1/4" stainless steel compression |
| Flow | 0.5 to 25.0 LPM |
| Power | +15 volts @ 1.5A max |
| Indicators | 4 status LEDs |
| Analog Output | 0-5V full scale |

| | |
|---|---|
| Zero Calibration | Contact closure input |
| Digital Outputs | Sensor OK, Lamp Low, Cell Dirty, Invalid Reading (Opto-isolated) |
| Serial Data Interface | RS232 or RS485 |
| Dimensions (H x W x D) | 5.13" x 2.13" x 6.69" (130.3 mm x 54.1 mm x 169.9 mm) including fittings |
| Weight | 2.8 lbs (1.27 kg) |
| Options | High Purity (VCR fittings, 316L, 10 Ra finish)<br>External Ozone Destructor<br>External Particulate Filter |
| Compliance | CE and RoHS |
| Warranty | 1 year |




*452 schematic*

— OzOne inStrumentatiOn fOr every appliCatiOn —

| Model | Generator Output | Off Gas Detection | Safety / Leak Detection | Dissolved Ozone | Spot Checking |
|---|---|---|---|---|---|
| **465L** | | ■ | ■ | | |
| **465M** | | ■ | ■ | | |
| **465H** | ■ | | | | |
| **454** | ■ | ■ | | | |
| **452** | ■ | | | | |
| **430** | | | ■ | | ■ |
| **W1 + 465L** | | | | ■ | |
| **470** | | | | ■ | |

Specifications subject to change without notice. All specifications are based on constant conditions.

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