

## Using the PPM1 Trace Moisture Transmitter

The Model PPM1 Trace Moisture analyzer is a compact, cost effective, analyzer specifically designed to continuously measure low levels of moisture in a sampled gas. It displays the concentration in Parts Per Million (PPM) by volume or as a dew point (temperature). Its full range of measurement is 0.1 to 1250 PPMv moisture.

The PPM1 utilizes an electro-chemical ( $P_2O_5$ ) sensor in combination with a proprietary semi-permeable diffusion membrane. Unlike other  $P_2O_5$  Sensors, the Edgetech Instruments' special diffusion membrane is very unique in that it enhances the performance of the sensor such that **measurement is independent of sample flow!**



The  $P_2O_5$  sensor principal of operation applies the Faraday's Law of Electrolysis. As a **fundamental measurement** of the moisture present, the PPM1 is ideally suited to applications requiring precise, dependable measurement of trace water vapor. The PPM1 is typically used in relatively clean, dry, inert gas applications. Some applications may require particulate filtering or pressure regulation. The standard model is provided in a wall-mount configuration but may be configured as a battery powered portable instrument in the Model PPM2.

### The PPM1 offers many standard features including:

- FUNDAMENTAL MEASUREMENT: Electrolysis of water
- Two selectable Analog Outputs (4-20 mA)
- RS-232 Serial Interface
- Two programmable electrically isolated alarm relays
- 18-30VDC Power Input
- Wall Mount: IP65 Plastic enclosure

### Sensor/ Sampling Configuration Options

- All versions feature the remote flow through head  $P_2O_5$  Sensor
- A 6 foot long signal cable connects the sensor to the control unit via Plug & play connectors
- The standard sensor assembly is configured for flow through sampling where the sample flows through the sensor via ¼ inch tube Swagelok fittings (input / Output).
- The flow through head portion of the standard sensor assembly may be removed and the remaining portion used as a diffusion sensor assembly. In this case, we recommend the optional mounting bracket to suspend the diffusion sensor for free air movement.
- The flow through head should be retained for use when calibrating.

### Flexible Design enables diffusion or flow sampling

- Diffusion sensing for Glove Boxes, Glove Bags, Environmental Chambers, Sealed Chambers
- Flow Through sensing for gas purity, process lines, SemiCon, and Transformer Gas purity.
- Can be used in pressurized or ambient pressure systems

## Basic Specifications

<b>Operating Pressure:</b>	0-5 PSIG regulated pressure with Flow Membrane in place 0-200 PSIG with Flow Membrane removed
<b>Operating Flow:</b>	Flow independent when Flow Membrane is in place Regulate to 0.5 to 3 LPM when Flow Membrane is removed
<b>Range:</b>	0.1 to 1250 PPMv, may be exposed to ambient for periods not exceeding 2 minutes
<b>Sensor:</b>	P2O5 on ceramic substrate, flow through head (1/4 inch Swagelok fittings) may be converted to diffusion head. Shipped with capped ports and purged. Spare SS ferrules supplied with kit. Sensor shipped with 6 foot (2m) signal cable.
<b>Power:</b>	Standard is 24 VDC, optional 110/220 VAC adapter
<b>Interface:</b>	Standard (2) analog outputs, configurable, 4-20 mA or Voltage RS-232 Serial Bi-Directional (2) adjustable relay alarms Form C
<b>Display:</b>	2 line Alpha Numeric LCD

## TO ORDER:

1. Determine type of measurement: Flow Through or Diffusion or both.
2. Determine if you need the Mounting Bracket (for diffusion sensing- yes).
3. If you decide that you need flow through sampling, is the gas pressurized? If not, you may need to choose the Optional SMU sample pump for sample extraction.
4. Also decide if you need to filter the gas in a flow through application. If yes, then you may need to choose the SS filter.
5. [Select PPM1 for 24 VDC powered or PPM1-AC for 110 VAC powered](#)
6. [Order as a spare part the Mounting bracket for Diffusion Sampling](#) if needed. The Flow Through sensor is always standard.
7. [List as separate line items additional choices such as MB, SMU, Filter Kit, and Extended Warranty.](#)

**PPM1            PPM1 STANDARD ANALYZER- 24 VDC POWERED**

**OR**

**PPM1-AC    PPM1 analyzer- 110/ 60Hz powered, with power cord**

## Accessories/ Options Available:

- DIFF Diffusion Mount, Flow Through is still included
- SMU Vacuum Pump Package
- MB Mounting Bracket – always order this item when you select Diffusion
- SMU Sample Module Universal 115/230 VAC operation
- SSFIL SS Filter Kit

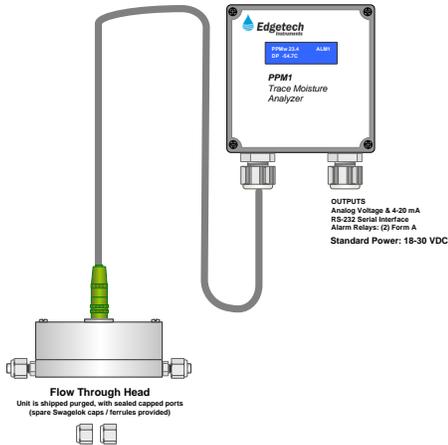
**Edgetech Instruments Inc.**

**An ISO 9001 Certified Company**

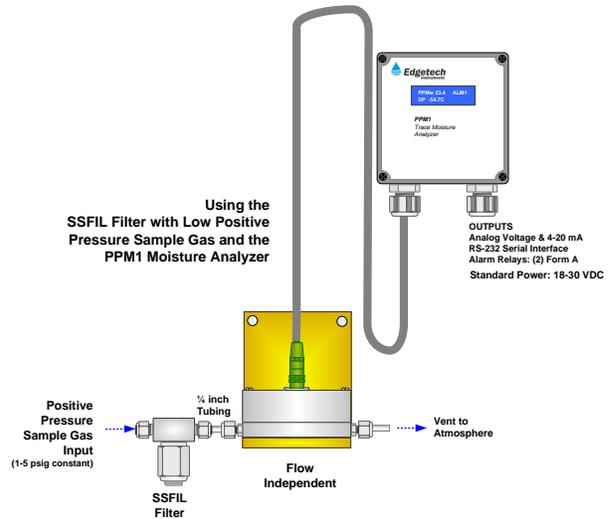
399 River Road . Hudson . MA . 01749

Main: +1 (508) 263-5900 . Fax:+1 (508) 486-9348 . [www.edgetechinstruments.com](http://www.edgetechinstruments.com)

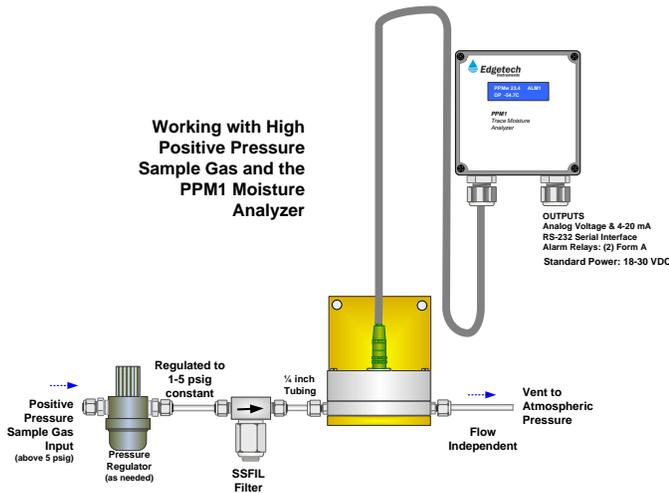
## PPM1 Trace Moisture Analyzer with Flow Through Head



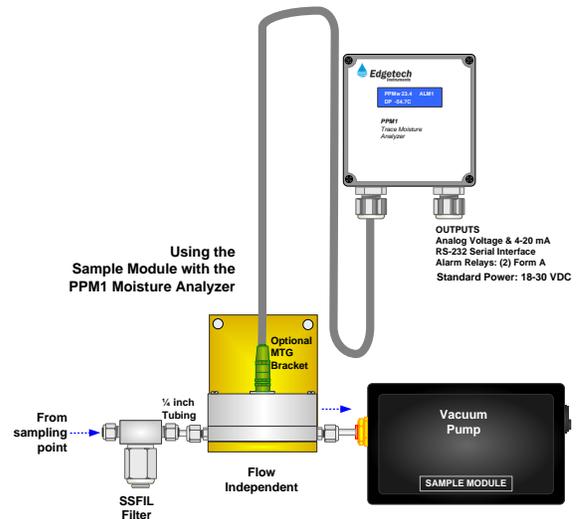
## PPM1 Trace Moisture Analyzer With SS Filter – Low Positive Pressure

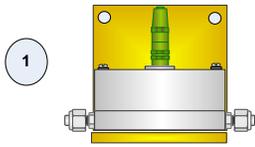


## PPM1 Trace Moisture Analyzer High Positive Pressure

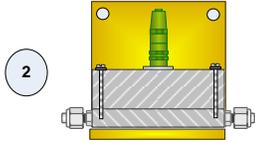


## PPM1 Trace Moisture Analyzer W/ SMU Vacuum Pump Module Atmospheric Pressure/ Slight Vacuum

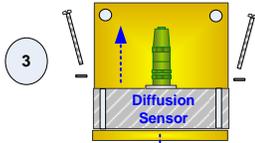




### Converting the Flow-Through Head to Diffusion Sensing Mode



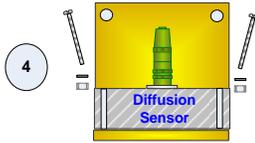
**Flow Through Head**  
With cut-away view of assembly screws



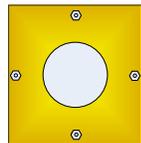
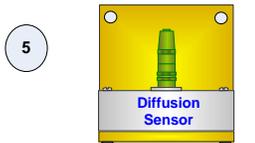
**Remove screws & Lockwashers**  
And separate the flow through head from the diffusion body



retain for calibration



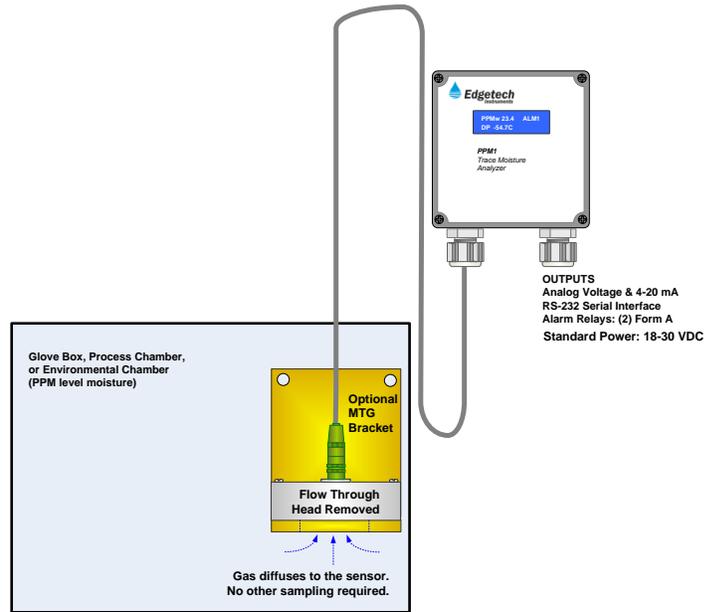
**Install screws and mounting hardware** to hold diffusion sensor in place on the mounting bracket



Diffusion Sensor (tilted up)

Sample Gas Diffuses to sensor

### Remote Sensor Diffusion Sampling



### Diffusion Sensor and PPM1 Control Unit mounted together in Trace Moisture Environment

