

## **PPM1 - Trace Moisture Analyzer**

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**APPLICATION:** The Model PPM1 is a trace moisture analyzer based on the P2O5 (Phosphorus Pentoxide) sensor. Following Faraday's Law of electrolysis, a voltage potential is applied across two electrodes on a sensing wafer. The P2O5 coating on the electrodes acts as a super desiccant to pull in all available moisture in the gas stream to the electrodes' surfaces. Water molecules are split into hydrogen and oxygen (Disassociated) and the resultant electrical current is measured. According to Faraday's law, the electrical current produced is directly proportional to the amount of moisture in the gas stream. The PPM1 is used in applications where trace amounts of moisture need to be accurately monitored. Applications include Air Separation facilities, Lithium Ion Battery manufacture, aerospace welding, heat treating atmospheres, glove boxes/ isolation chambers, Low Moisture Storage chambers, semiconductor processes (including monitoring the purity of oxygen used in steam generation or oxidation reactions, scientific testing, and Modified atmospheric packaging.



**DESCRIPTION: Model PPM1** A Diffusion Cell Trace Moisture Analyzer, complete with Phosphorous Pentoxide (P2O5), Electrolytic Sensor with an operating range from 0.1 to 1250 PPMv, (dew point range -20°C to -95°C). Standard sensor assembly is mounted remote from analyzer module and features a flow through 316SS sample chamber with ¼" compression fittings and 6 feet of interconnecting sensor cable. The Control Module features a 2-line display for both PPM and Dew Point, 2 analog outputs (4-20mA or 0-10VDC voltage), RS232, two relay alarms and is housed in an IP65 enclosure. Includes an instruction manual and one year warranty. Unit may be modified in the field to remove the flow through head for diffusion sampling (isolation chambers, glove box, glove bags,...)

**Options and Accessories:** There are several options and accessories available for the PPM1. These include:

- **MB** Mounting bracket: The standard PPM1 SS body includes 2 mounting holes (threaded) for surface mounting. However, if you want to mount the sensor on a 90° degree angle or use the sensor in diffusion sensing mode (removal of the flow through head), the mounting bracket is provided. Constructed of aluminum, the mounting bracket provides access holes to mount the sensor at a right angle to a surface, and also provides installation holes to support the sensor body.
- **SMU** Sample module: a vacuum pump is mounted within a plastic enclosure and includes a power pack to convert VAC power to VDC, an orifice to regulate sample flow to 2 scfh, and an ON-OFF Switch. The SMU is used to extract a gas sample from a process and direct past the sensor. ¼ inch tubing ports are provided for sample inlet and outlet.
- **PIV** Purge Isolation Valve Kit: To help prevent the PPM1 from being exposed to room air moisture, the PIV kit isolates the sensor in non-use situations using ball valves at each of the sensor. To help purge out entrained moisture from the sample tubing before entering the PPM1 during normal use, the leading valve to the sensor is a purging ball valve. This allows the User to purge out the sample tubing leading to the PPM1 while still maintaining isolation of the sensor.

- **VCRM or VCRF:** Replaces the standard ¼ T Swagelok compression fittings with stainless steel tubing stubs terminated with either VCR- Male metal gasket or VCR- Female metal gasket fittings. The stainless steel tubing stubs are welded to the PPM1 SS body. For measuring moisture concentrations below 10 PPMv.
- **VCR Isolation Valves:** for isolation of the sensor when the VCRM or VCRF option is ordered
- **O2 SRVC:** provides oxygen cleaning of the sensor and assembly to remove any traces of combustible oils or particulates from the sample train. It also includes the application of non-combustible o-ring lubricant and the entire assembly sealed, packaged and tagged denoting oxygen cleaned. (Standard cell must be calibrated for Oxygen use.
- **CASE 1550:** Rugged foam-in-place plastic transportation case for shipping the PPM1 (for annual certifications, transport to customer location, storage, return for service,....

**TO ORDER THE PPM1:**

<b>PPM1-DC</b>	PPM1 standard analyzer- 24 VDC powered	<b>\$ 3,700.00</b>
<b>PPM1-AC</b>	PPM1 analyzer- 110/ 60Hz powered, with power cord	<b>\$ 3,975.00</b>

**Accessories:**

<b>-MB</b>	Mounting bracket for sensor, right angle (for mounting or add for <b>diffusion sampling</b> )	<b>\$ 115.00</b>
<b>-SMU</b>	Sample Module Universal 115/230 VAC operation (Portable Vacuum Pump)	<b>\$ 770.00</b>
<b>-PIV</b>	Purge/ Isolation Valve Kit: Isolates Sensor & Purges Sample Line, Swagelok	<b>\$ 499.00</b>
<b>-VCRM</b>	VCR Male fittings as desired Main sensor body features welded stubs with VCR or VCO fittings- please specify male or female and VCR or VCO. This kit includes unit purged with nitrogen, and caps on each end for isolation, and standard gaskets supplied loose.	<b>\$ 499.00</b>
<b>VCRF</b>	Same as above but with Female VCR fittings	<b>\$ 499.00</b>
<b>-VCR-IV</b>	-VCR Isolation Valves	<b>\$ 725.00</b>
<b>-O2 SRVC</b>	Cleaned for Oxygen Service, Flouroelastomer O-rings, PTFE membrane, Krytox lubricant and nitrogen purged, capped and bagged. O2 Cleaned labeling	<b>\$ 350.00</b>





Female VCR



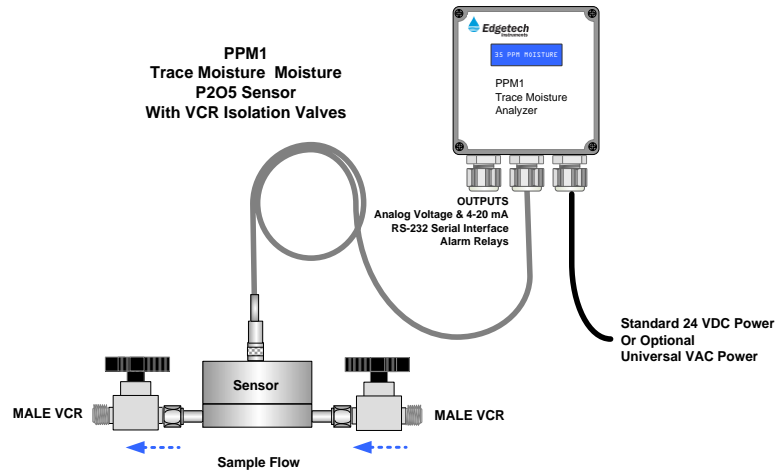
Male VCR



Male VCO



Female VCO


**Spare Parts:**

<b>SCBL</b>	Sensor cable with connectors (6ft.). Add \$4.00/ft. for lengths over 6ft. 500ft. MAX	<b>\$ 175.00</b>
<b>M</b>	Membrane Replacement, flow control and filter	<b>\$ 125.00</b>
<b>PPM/S</b>	Sensor complete with sample chamber	<b>\$2,345.00</b>
<b>SC</b>	Sample Chamber, flow through, 316 SS with 1/8" NPT inlet & outlet ports (included with each purchase of PPM1)	<b>\$ 740.00</b>
<b>W</b>	Wafer replacement only: this is the moisture sensor element (wafer) plus mounting parts	<b>\$ 375.00</b>
<b>WAFER</b>	Includes wafer replacement and membrane kit	<b>\$ 600.00</b>
<b>CASE1550</b>	Rugged Transport Case, foam padded	<b>\$ 300.00</b>

**Extended Warranty/Calibration Options: Please list as separate line items:**

<b>3EXTW</b>	3 Year Extended Warranty includes repairs covered in the warranty statement	<b>\$ 450.00</b>
<b>3YNIST1P</b>	3 NIST Traceable Calibrations for the price of 2 (1 Parameter)	<b>\$1,210.00</b>



**CASE1550**