

# UBER M-I™

Versatile, Low-cost, Guaranteed Drift-free Mini-sensor for Multiple Applications

Industrial Gas

Electronic Gas

Natural Gas

Medical & Aviation

Aerospace & Military

Glove Box

Specialty Gases

**Reliable, Versatile, Easy-to-use, and Easy on Your Wallet:** With the advent of the **Uber M-I**, we offer the world's smallest and lowest cost absolute moisture analyzer in a single comprehensive package. After close to a decade of service, our original M-i mini-sensor achieved global acceptance, with its proven stability, precision, and repeatability. Drawing upon MEECO's legendary Electrolytic cell technology, the updated **Uber M-I** offers drift-free, calibration-free performance and a wide dynamic range -- from 0.5 to 1000ppmV -- over three orders of magnitude! Its freedom from consumables, recyclable sensor, and sustainable design makes it truly a product for our times.

Now, building upon *all* of the original features, the **Uber M-I** is as easy to specify and to operate as it is easy on your wallet. Consider these valuable new features:

- Analog 4-20 mA and RS-232 outputs
- Two field-adjustable LED alarms, with dedicated Relay Outputs
- Accessible terminal block, with ready connections (fully assembled cable available)
- Inlet Pressure: 3 to 100 psig (lower available)
- Enclosure redesign for easy internal access

**Service with a Big Smile:** The **Uber M-I** comes with a full two-year Certificate of Calibration. The cell can easily be replaced in the field, with no more need to disconnect the unit from the sample stream! Also, spare cells now have a two-year storage life if maintained inside their designated bags.

**We Get Around:** The **Uber M-I** is suitable for a wide array of applications, including:

- ✓ **Glove boxes:** Based on its small size and lack of internal flow restrictions, the **Uber M-I** is ideal for Glove Box applications, so long as the sample flow can be controlled to 100 cc per minute.  
**NOTE:** You may need a vacuum pump to pull the gas through the analyzer.
- ✓ **Semiconductor pre-purifier:** Avoid unnecessary degradation of your costly purifiers with a reliable, on-line **Uber M-I**. Have confidence that your delivery gas meets spec when the world's most ubiquitous contaminant is monitored and deemed in control.
- ✓ **Cylinder-fill:** With an **Uber M-I** at the front of your filling process, you can easily monitor the moisture level of the incoming gas to guarantee it is below the critical threshold.
- ✓ **Medical Gases:** Ensure your medical gases are European Pharmacopeia compliant. The **Uber M-I** electrolytic technology is the longstanding moisture measurement technique designated by the *Pharmacopoeia Europa*.
- ✓ **Welding:** Since shielding gases are most often inert (e.g., Argon and Helium), the **Uber M-I** is perfect for this application. Because the **Uber M-I** uses the absolute Electrolytic Principle, inert welding gas mixtures at any percentages can be accurately measured by simply adjusting the sample outlet gas flow to 100 cc per minute.
- ✓ **Fire suppression Systems:** For Oxygen reduction inert gas systems, using Nitrogen, Argon, CO<sub>2</sub>, or their mixtures, the **Uber M-I** can reliably measure the low levels required.

# Uber M-I Specifications:

## PERFORMANCE

Operating range:	0.5 - 1000 ppmV
Lower Detection Limit (LDL):	0.5 ppmV
Accuracy:	5% of reading or 0.4 ppmV, whichever is greater*
Operating Temperature:	-20°C to +60°C (-4°F to 140°F)
Display:	Five-digit LCD indicator (H <sub>2</sub> O in ppmV)
Unit of Measure:	ppmV

## GAS HANDLING SYSTEM and CONDITIONS\*\*

Gas Connections:	1/8" Compression
Inlet Pressure:	3 – 100 psig (lower available)
Flow Rate:	1100 sccm total (100 sccm for sample)

DIMENSIONS	4.94" H x 2.75" W x 2.28" D (12.55 x 6.99 x 5.79 cm)
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WEIGHT	1.1 lbs (0.5 kg)
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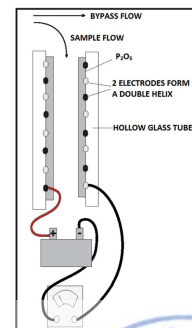
## ELECTRICAL

Alarm Indicators:	Equipped with two LED alarms adjustable via RS-232
Power: requirement:	24V DC input
Output Signal:	Analog 4-20mA; RS-232

\* In Pure O<sub>2</sub>: +/- 10% of reading or 3 ppmV, whichever is greater

\*\*Gas Compatibility: Please consult Factory

**Principle of Operation:** Based on Faraday's Law of Electrolysis, the **Uber M-I** sensor absorbs and electrolyzes moisture at fractional parts-per-million or parts-per-billion (ppmV or ppb). 100% of the sample moisture is absorbed by a phosphorus pentoxide (P<sub>2</sub>O<sub>5</sub>) film that covers two spirally-wound electrodes embedded in a hollow glass tube. When the sample gas enters the cell at a known flow rate, the film absorbs all the moisture molecules present. By applying an electrical potential (voltage) to the electrodes, each absorbed water molecule is electrolyzed, generating a finite current. This current is precise and proportional to the amount of absorbed water. It is a direct measurement of the water vapor present in the sample gas.



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