AMETEK®
PROCESS INSTRUMENTS

MEASURES: H_2O

PRODUCT DATA SHEET

5910 UHP Moisture Analyzer

Parts per trillion analysis of UHP gases

The 5910 UHP moisture analyzer achieves exceptional baseline stability and sensitivity to sub-parts per billion by volume (ppbv) changes in moisture concentration, while providing one of the fastest response speeds available. The analyzer is sensitive to changes in moisture concentration of less than 500 parts per trillion by volume (pptv), resulting in accuracy of better than ±100 pptv or ±10% of the reading.

Speed of response

At parts per billion (ppb) levels of moisture, a carefully designed and heat-traced analyzer is required to achieve a response speed measurable in minutes instead of hours. The 5910 UHP is manufactured to produce an unmatched speed of response to changing moisture, typically reaching 80% of a 25 ppbv step change in either direction in less than ten minutes.

Easy-to-use, multi-gas compatibility

The 5910 UHP is compatible with virtually all non-corrosive gases including inert gases – helium (He), argon (Ar), neon (Ne), xenon (Xe), krypton (Kr) – oxygen (O_2), hydrogen (H_2), and nitrogen (N_2). Unlike some moisture analyzers that require special sensors for certain gases, the 5910 UHP uses a sensor that is not affected by the background gas. Even H_2 and O_2 are simple gas streams to monitor, since quartz-crystal microbalance (QCM) sensors, unlike electrolytic sensors, do not suffer from recombination errors. Changing gases involves a simple selection from a software menu. There are no flow or pressure regulators to adjust.

Internal verification

The 5910 can quickly and accurately verify its zero baseline. An internal dryer creates a zero gas from the sample gas, thereby allowing verification of the analyzer's baseline.

KEY BENEFITS

- Quartz-crystal technology provides accuracy, speed, and calibration stability
- Online zero gas verification confirms analytical stability
- Intuitive, easy-to-use interface
- Rack-mount design makes the analyzer ideal for analytical carts
- Menu-driven gas selection eliminates manual adjustments

APPLICATIONS

- Continuous monitoring
- Analytical carts

KEY MARKETS

- Semiconductor manufacturing
- LCD/OLED display manufacturing
- Air separation

PERFORMANCE SPECIFICATIONS

Compatible gases	Inerts (He, Ar, Ne, Xe, Kr), O_2, H_2, N_2, (contact the factory to confirm compatibility with other gases)
Range	Calibrated from 0 to 150 ppbv. Trend indication to 1000 ppbv
Limit of detection	150 pptv nominal
Accuracy	±100 pptv or ±10% of the reading, whichever is greater
RMS noise	50 pptv
Response time	Typically 80% of a 25 ppbv step change in either direction in 10 minutes or less
Inlet pressure	138 to 345 kPa (20 to 50 psig). Specified performance is obtained when the inlet gas pressure is maintained within ±17 kPa (±2.5 psi)
Exhaust pressure	Atmospheric
Sample flow requirement	Less than 1 standard L/min
Inlet gas temperature	0 to 100°C (32 to 212°F). Optimal results are obtained when the inlet gas temperature is maintained at 60°C (140°F)
Outputs	Four-line by 20-character LCD display One self-powered 4-20 mA, into 100 to 500 ohm load analog output; can be configured for loop-powered operation RS485 and RS232 serial ports
Alarms	System alarm, concentration alarm, and data valid 30 VAC or 60 VDC max, 10 VA or 1A max, resistive
Environmental conditions	Ambient temperature range 10 to 30°C (50 to 86°F). Optimal results are obtained when ambient is maintained within ±5°C (±9°F). Relative humidity 90%, noncondensing; Pollution Degree 2 Maximum altitude 2000 meters (6560 feet); Installation Category II Indoor use only
Utility requirements	100-132 VAC or 230 VAC ±10%, 47-63 Hz, 185W Instrument Air: 550-690 kPa (80-100 psi), -40°C (-40°F) dew point temperature
Mounting configuration	19-inch rack
Dimensions (W x H x D)	480 x 177 x 509 mm (19 x 7 x 20 in.)
Net weight	15.9 kg (35 lb.)
Approvals and certifications	UL/CSA General Safety Requirements UL/CSA Class I, Division 2, Groups A, B, C, D T4 Complies with all Relevant European Directives

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