BLUE DRAGON TECHNOLOGY

MOISTURE & DEW POINT MEASUREMENT SERIES

FAS-W

ONLINE WATER DEW POINT ANALYZER

Engineered and manufactured by Vympel

Supplied and supported by Blue Dragon Technology

Direct chilled-mirror water dew point measurement for natural gas, hydrogen-containing gases, and industrial process gas applications

The FAS-W is an automatic chilled-mirror hygrometer for continuous online water dew point monitoring in gas streams. Based on a first-principle measurement method with laser interferometric analysis, it provides highly stable results with no measurement drift. Designed for natural gas, hydrogen-containing gases, industrial gases, and aggressive process gas applications, the analyzer combines precise dew point measurement, moisture concentration reporting, industrial connectivity, and hazardous-area suitability for dependable plant operation.



Chilled-Mirror Measurement

First-principle water dew point measurement wtih ±0.5 °C accuracy and no measurement drift

Hydrogen-Ready Process Duty

Suitable for natural gas, hydrogen-containing gases, and aggressive industrial gas applications

Industrial Connectivity

4-20 mA, RS-485 Modbus/RTU, alarm outputs, IP67 enclosure, and ATEX protection

WHY CHOOSE THE FAS-W?

First-Principle Accuracy

Direct chilled-mirror method for stable, drift-free dew point measurement

Wide Measurement Range

Water dew point from -65 to +30 °C with ΔT ≤ 80 °C

Moisture Conversion

Reports moisture content in ppmV or mg/m3 when used with pressure input

Hydrogen-Ready Design

Suitable for H2-containing natural gas and process gas streams

Automatic Online Operation

4-12 measurement cycles per hour with smart mirror Cleaning

Hazardous-Area Ready

IP67 housing with II 2G Ex db IIC T5 Gb protection

INDUSTRIES & APPLICATIONS

Natural Gas Processing

- Gas dehydration optimization
- Pipeline gas quality monitoring
- Custody and process assurance

Hydrogen & Energy

- Hydrogen-containing gas service
- Blended-gas monitoring
- Process protection

Petrochemicals

- Process gas-moisture control
- Drying-system verification
- Protection of sensitive equipment

Industrial Gases

- Nitrogen and inert gas monitoring
- Dry gas quality assurance
- Utility gas systems

Chemical Industry

- Continuous low-moisture verification
- Aggressive gas applications
- Process gas preparation

Power & Utilities

- Instrument gas systems
- Process gas support
- Moisture control

HOW IT WORKS

1. **Sample Gas** — A representative gas sample enters the measurement chamber
2. **Mirror Cooling** — The chilled mirror is cooled under controlled conditions
3. **Condensate Detection** — Laser interferometric optics detect the onset of condensation
4. **Dew Point Determination** — The analyzer determines the stabilized water dew point temperature
5. **Moisture Conversion** — The system can calculate ppmV or mg/m3 with pressure input
6. **Online Output** — Dew point and status singals are sent to plant systems

TECHNICAL SPECIFICATIONS

Measurement Principle	Automatic chilled-mirror condensation hygrometer
Measured Parameter	Water dew point; calculated moisture concentration*
Dew Point Measurement Range	-30 to +65 °C / -80 to +20 °C** / -65 to +30 °C
Dew Point Accuracy	±1.5 / ±2.0 / ±3.0 °C***
Measurement Cycle	5–10 min
Sample Gas Flow Rate	0.2–2.0 Nl/min
Maximum Operating Pressure	≤10 MPa (100 bar)
Operating Temperature	-40 to +60 °C****
Interfaces	RS-485 Modbus RTU; 4–20 mA; 2 alarm outputs
Power Supply	20–27 VDC
Power Consumption	≤15 W
Ingress & Explosion Protection	IP67; II 2G Ex db IIC T5 Gb
Dimensions / Weight	≤185 × 120 × 135 mm / ≤4.0 kg

* Moisture concentration reporting depends on analyzer version/configuration and pressure input.
** With additional analyzer-body cooling.
*** Accuracy depends on measurement range.
**** ATEX-certified ambient/measured-medium temperature range.

INSTALLATION & INTEGRATION

Pipeline Module Installation

Can be mounted in an inline pipeline module for online sampling

Gas Preparation System

Available as part of a modular sample conditioning and analysis system

Plant System Integration

20-27 VDC supply, 4-20 mA RS-485 Modbus/RTU, and open-collector alarms

APPLICATION GUIDANCE

Best for online dew point monitoring

Ideal for continuous water dew point monitoring in natural gas and industrial gas service

Suitable gas streams

Use with natural gas, hydrogen-containing gases, inert gases, and aggressive process gases

Representative sample flow

Use a stable sample flow of 0.2-2.0 Nl/min for best performance

Moisture concentration reporting

Pressure input is recommended when reporting ppmV or mg/m3

Industrial-ready design

Factory-tested analyzer supplied for hazardous industrial environments

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