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Find the *GE / Panametrics Moisture Monitor Series 3* at our website: *Click HERE*

PANAMETRICS

MOISTURE SERIES Analyzers

Moisture Monitor™ Series 3



- **Measures moisture, pressure and temperature in liquids & gases; Measures oxygen concentration in gases.**
- **TF-Series & M-Series moisture probes with NIST-traceable calibration.**
- **Real-time display of any two parameters simultaneously.**
- **Computer-Enhanced Response for abrupt dry-down applications available.**
- **Single- or dual-channel; Portable versions available.**
- **Measures other parameters via auxiliary inputs.**
- **Built-in data logging.**

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Introducing the New Moisture Monitor™ Series 3: *state of the art, redefined.*

Multifunction.

The Moisture Monitor™ Series 3 is a single-channel analyzer in the new Moisture Series family of analyzers from Panametrics. It features a two-line backlit liquid crystal display (LCD) for real-time simultaneous display of any two parameters. The Moisture Monitor Series 3 measures moisture and temperature in gases and liquids. There is also an option for measuring oxygen concentration in gases. In addition, the auxiliary inputs can accept readings from any sensor with 0/4- to 20-mA or 0- to 4-volts output, including a variety of process control instruments available from Panametrics. This feature makes the Moisture Monitor Series 3 a true multifunction analyzer, providing cost savings through system integration.

Optional second channel.

An optional dual-channel version of the Moisture Monitor Series 3 can significantly reduce the cost-per-measurement point while providing a variety of configurations to meet the needs of specific applications.

Portable.

The Moisture Monitor Series 3 is also available in a battery-powered portable configuration. This combined with built-in data logging, makes it ideal for making spot measurements at remote sites and then bringing the data back to a central location for analysis.

Built-in data logging.

The Moisture Monitor Series 3 also features a built-in data logger. Up to 12 items can be simultaneously logged at user-selected time intervals and can be safely stored internally in battery-backed RAM (64 kB). Logged data, as well as memory usage statistics, are conveniently viewed on the two-line display.

PC interface.

To make full use of the analyzer's RS232 serial communications port, Panametrics offers a PC interface software package. Together they provide remote access to virtually all analyzer functions from your PC—with the added power, convenience and flexibility of a mouse-driven, graphical user interface. (All functions are also keyboard-accessible.) Pop-up menus and dialog boxes make it easy to upload set-up or probe calibration data from the analyzer for verification, back-up storage, or modification and subsequent down-loading to the analyzer. Real-time measurement data may be displayed on the PC monitor in a variety of formats, data logged into PC memory, or formatted for use with other software for subsequent analysis or reporting.

Isolated outputs.

To further reduce the installed cost, two analog outputs per channel, with built-in optical isolation, are provided to ensure the integrity of signals to recorders, computers and other remote devices.

Intrinsic safety and hermetically sealed alarms.

Every Moisture Monitor Series 3 features galvanic isolation to provide intrinsic safety on all inputs except auxiliary inputs (BAS No. Ex 95D2432/2 and Ex 96D2246). In addition, two alarms are available in either standard or hermetically sealed designs for applications in Division 2 hazardous areas.

Why Buy Panametrics?

It was Panametrics that pioneered the development of aluminum oxide moisture sensors, and it is Panametrics that remains the world leader of this technology today. More than 60,000 Panametrics hygrometers and 150,000 probes have been sold worldwide in the 39 years since the company was founded. Our sales and applications engineers are dedicated to helping you discover the solution to your specific moisture measurement problems.

Our applications engineering staff has acquired vast experience in specifying, installing and supporting our entire line of products, and can be counted on to give you the best overall service available—from instrument specification to on-site troubleshooting. The network of Panametrics offices and agents spans the globe, and every representative has been factory trained in order to meet our commitment to after-sales support.

Uses TF-Series or M-Series Probes.

The Moisture Monitor Series 3 is compatible with all Panametrics TF-Series and M-Series moisture probes. These probes have CENELEC-approved intrinsically safe circuitry without the use of external zener barriers (BAS No. Ex 95C2002X). Both probes feature moisture and optional temperature sensors on a single mount. The

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TF-Series also offers the additional option of a pressure sensor. Superior sensitivity, speed of response, calibration stability and wide dynamic range have made these probes the standard of performance and value in industrial moisture measurement. They are suitable for laboratory and industrial measurement applications in gas and nonaqueous liquids over a wide range of process conditions.

All moisture probe calibrations are National Institute of Standards and Technology (NIST) traceable.

Optional Computer-Enhanced Response.

In addition, the Moisture Monitor Series 3 features Computer-Enhanced Response as an option to provide fast results in abrupt dry-down applications.

Specifications:

Electronics.

Inputs:

Moisture: 1 or 2 channels.

Temperature: 1 or 2 channels.

Pressure: 1 or 2 channels.

Oxygen: 1 or 2 channels.

Auxiliary (optional): 2 per installed channel; May be used for 0/4 to 20 mA and 0 to 4 V devices such as oxygen analyzers, thermal conductivity analyzers, flowmeters, pressure transmitters, temperature transmitters, etc.

Intrinsic safety:

Galvanic isolation and energy-limiting circuitry provide intrinsic safety for all inputs (except auxiliary).

Analog outputs:

2 per channel; Internally optically isolated; 10 bit (0.1%) resolution.

Standard switch-selectable outputs:

0 to 2 V, 10 kΩ min. load resistance.

0 to 20 mA, 400 Ω max. series resistance.

4 to 20 mA, 400 Ω max. series resistance.

Each output can correspond to any one parameter on that channel; Zero and span are user-programmable within the range of the instrument and the corresponding sensor.

Digital outputs:

RS232 serial communications port; Information is transmitted as ASCII characters at 300, 1200, 2400 or 9600 baud.

A/D resolution:

12 bit (0.025%).

Output update:

0.5 seconds minimum update time depending on instrument configuration and measurement modes; Channels are updated sequentially.

Computer-enhanced response:

Optional.

Data logging:

Up to 12 parameters simultaneously; Stored in battery-backed RAM (64 kB); Log length depends on number of items and time interval.

PC interface software:

Optional.

Alarm relays:

2 optional Form C relays per channel SPDT; Rated for 2 A at 28 VAC/28 VDC.

Standard and hermetically sealed designs available for high and low limits on each channel; Set to any level within the range of the instrument.

Alarm set point accuracy:

±0.1°C dew point.

Display:

2-line, 20-character LCD with backlight.

Display functions:

1-channel unit: Any 2 parameters.

2-channel unit: 1 parameter from each channel or 2 parameters from 1 channel.

Power requirements:

Universal power supply adjusts automatically for 90 to 260 VAC, 50/60 Hz.

Rechargeable battery pack (optional) lasts 8 hours under normal use and fully recharges in 16 hours.

Temperature:

Operating: 0° to 60°C.

Storage: –30° to 70°C.

Data retention:

Moisture, temperature, and pressure calibration data stored in battery-backed RAM.

Autocalibration:

Occurs on power-up and at user-selected time intervals.

Warm-up time:

Meets specified accuracy within 5 minutes.

Configurations:

Rack, bench, panel, NEMA-4 weatherproof, and NEMA-7 explosionproof.

Dimensions (h x w x d):

Rack mount:
5.22 x 19.00 x 17.03 in.
(13.26 x 48.26 x 43.26 cm).

Bench mount:
5.22 x 8.25 x 17.03 in.
(13.26 x 20.96 x 43.26 cm).

Panel mount:
8.25 x 10.85 x 17.03 in.
(20.96 x 27.56 x 43.26 cm).

Moisture measurement.

Sensor type:

Thin-film aluminum oxide moisture sensor probe.

Moisture probe compatibility:

Compatible with all Panametrics TF-Series and M-Series aluminum oxide moisture probes.

Traceability:

All moisture probe calibrations are NIST traceable.

Dew/frost point temperature:

Overall calibration range capability:
60° to –110°C.

Available calibration range options:

Standard:
20° to –80°C with data to –110°C.

Ultralow:
–50° to –110°C.

Extended high:
60° to –80°C with data to –110°C.

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Moisture measurement (continued).

Dew/frost point temperature:

Accuracy:
± 2°C from 60° to –65°C.
± 3°C from –66° to –110°C.

Repeatability:
± 0.5°C from 60° to –65°C.
± 1.0°C from –66° to –110°C.

Operating pressure:

5 µ of Hg to 5000 psig (limited by optional pressure sensor—see pressure sensor ranges).

Other moisture parameters:

Relative humidity (RH).

Parts per million by volume (ppm_v).

Parts per million by weight (ppm_w).

Parts per billion by volume (ppb_v).

Pounds per million standard cubic feet (#/MMSCF).

Temperature measurement.

Type:

Optional thermistor built into moisture probe.

Range:

–30° to 70°C.

Accuracy:

± 0.5°C at –30°C.

Pressure measurement.

Type:

Optional transducer built into moisture probe.

Variety of standard external transmitters available from Panametrics.

Any user-supplied pressure transmitter, 24-V powered, 4 to 20 mA.

Range:

0 to 5000 psig (34.6 Mpa); Specify type and pressure range.

Accuracy:

±1% of full scale.

Pressure rating:

3 times the span of the available range to a maximum of 7500 psig.

Oxygen measurement.

Type:

Optional non-depleting electrolytic oxygen sensor.

Range:

0 to 500 ppb_v.

0 to 10,000 ppm_v in 4 ranges.

0 to 25% in 3 ranges.

Accuracy:

± 1% full scale (ranges > 0 to 2.5 ppm_v).

± 5% full scale (ranges < 0 to 2.5 ppm_v).

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