Industrial Grade RF Moisture Analyzer

ST-3300

Stability & Repeatability
Precision Measurement
Fastest Sample Rate
Truly Smart Transmitter

Sensortech Systems, Inc.
Sensortech.com
The ST-3300 series of on-line Moisture Transmitters continues the Sensortech tradition of World-leading radio frequency measurement technology. Sensortech Systems’ patented radio frequency measurement principle enhanced with an all-digital phase lock loop achieves significantly improved resolution and stability.

TRULY SMART SENSOR
All processing capabilities are integrated into the transmitter electronics. The dedicated processor/display unit traditionally associated with moisture sensors has been eliminated. The sensor interfaces directly to PC, PLC, HMI, or other platforms. Dual isolated analog outputs drive local displays, recorders, etc...

• Standard I/O capabilities include RS-485 Full Duplex, single isolated 4-20mA output, Product Temp In, and one Digital Input.
• Up to 50 calibrations (product codes) stored on non-volatile flash memory.
• Sophisticated, yet user-friendly configuration, data logging and diagnostics software included with system.
• Fast sampling rate (100 samples per second).
• Temperature compensation option.
• Two-term ratio measurement eliminates density influence in many applications.

LATEST SENSOR TECHNOLOGY
Sensortech Systems’ patented phase lock loop dielectric measurement technique has been further enhanced featuring:

• Internally switched standards for long-term stability.
• Sensor frequency relates to product dielectric.
• Resonant signal amplitude relates to dielectric loss.
• Unaffected by product pH and salinity.
• Accurately measures moisture levels less than -.01% to more than 50%.

Multiple sensors may be connected throughout your plant. The ST-3300 series transmitters support all major proprietary networks.
**5 Classifications of Sensors:**

1. **Planar Open Frame Sensor**
   The product passes over the sensor where the moisture measurement is taken. The open-frame minimizes buildup of debris by allowing product to fall through it and is commonly used for applications having extreme temperatures, excessive vibration, or other harsh environments. Typically used between conveying belts or rollers and In-Kiln locations.

2. **Sealed Flange-Mount Sensor**
   The product glides on the sealed Teflon or ceramic surface of the sensor where the moisture measurement is taken. The sensor is fixed in place using the flange-mount and is placed in critical points throughout your production process. Performs well in high vibration environments and is ideally suited for granular or powdered products. Typically used in bins, hoppers, planar (sloping/horizontal) surfaces and conveyor drop-off points.

3. **Planar Sled Sensor**
   The product passes underneath the sensor where the moisture measurement is taken. The sled hangs from hinged arms allowing it to maintain a parallel position to the conveyor and to level the product for consistent measurement. Other varieties of Sled Sensors include the Skid-Plate Sensor that has a smooth abrasion-proof surface designed to have a gentle impact on sensitive products. Typically used on conveyors (sloping/horizontal).

4. **Pipeline Sensor**
   The product flows through the pipeline where the moisture measurement is taken. The Application Interface is made up of a pipe with an attached sensor that is integrated into the pipeline framework of the production process. A variation of the pipeline sensor is the coaxial pipeline sensor which features a center electrode providing a uniform radial field through the product to the pipe wall. An optional heater jacket ensures that the product does not solidify. Typically used with production processes manufacturing fluids, pastes, and confectionery applications.

5. **Sampling Sensor**
   The product enters a sampling tray or chamber where the moisture measurement is taken. A digital output of the Processor Unit is used to control the fill and purge method of sampling. Common types of Sampling Sensors include a Piston-Purge and Air-Purge Sensor that uses different techniques of sampling the product. Sampling Sensors can be found in production processes where a small sample is taken from a large flow of product or where it is not possible to maintain a reasonably constant flow of product over the sensor.
**Specifications**

**Accuracy:**
- ±0.05% 0 - 1% Range
- ±0.10% 0 - 10% Range
- ±0.25% 10 - 30% Range
- ±1.00% 30 - 60% Range

**Resolution:**
±0.01%

**Measurement Modes:**
- Real Dielectric
- Dielectric Loss
- Ratio Mode

**Power Requirements:**
- 110/240VAC 50/60Hz
- 30W

**Communications:**
- I/O Isolated & Self Powered
- 1 x 4-20mA
- 1 x RS-485 Full Duplex
- 1 x Digital Input
- 1 x Product Temp Input

**Materials:**
- According to Sensor Style
- 316 Stainless Steel
- Electroless Nickel Plated Aluminum
- Teflon or Ceramic Insulators

**Operating Temperature:**
- Electronics: 0 - 70°C (32 - 160°F)
- Sensor: Up to 260°C (500°F)

**Options**

**Operator Interface:**
- Flat Panel PC with 6” LCD Display & Operator Touch-Screen
- NEMA-4 Rated Enclosure

**4-20mA Remote Display**

**Explosion-Proof Enclosures:**
- Consult Factory

**Optional Interfaces:**
- PROFIBUS, PROFINET, DeviceNet, & EtherNet/IP

**Calibration Standards**

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**Applications Include:**

**Board Manufacture**
- Gypsum Board
- Hardboard
- Particle Board
- Gypsum/Fiber Board
- Cement/Fiber Board

**Wood Manufacture**
- Hardwood Veneers
- Plywood Veneers
- Dimensional Lumber

**Food Manufacture**
- Whole Grains
- Nuts
- Puffed and Flaked Cereals
- Confectionery Fillings
- Fudge
- Caramel
- Molasses

**Textile Manufacture**
- Synthetic Wovens
- Natural Wovens
- Felts
- Tows
- Yarns

**Paper Manufacture**
- Cardboard
- Laminates
- Pulp Bales
- Sheets

**Textile Manufacture**
- Granulars
- Powders
- Minerals
- Fertilizers
- Plastics
- Resins

**General Manufacture**
- Granulars
- Powders
- Minerals
- Fertilizers
- Plastics
- Resins

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**Sensortech Guarantee**

All products manufactured by Sensortech Systems, Inc. are warranted against defects in material and workmanship for a period of one year from date of shipment. In the event any product manufactured by Sensortech Systems, Inc. proves to be defective during the warranty period, it will be repaired free of charge.

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**On-Line Moisture Measurement and Control System**

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**Sensortech Systems, Inc.**

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