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mechatronics

The PMD300PA-000U Online Moisture Analyzer

Moisture Analysis

- Analyzer for online moisture measurement
- Measuring time < 1 second
- Non-destructive measurement
- Ports for connection to PC and PLC
- Monitors, logs, and optimizes industrial processes and supports the IFS V.5 standard
- Moisture is analyzed independently of color, density and surface texture

Product Profile
The moisture analysis systems of the Sartorius PMD300 series have been designed for online, in-process analysis.

Through the use of microwave resonance technology, the moisture content can be measured in less than one second (50 measurements per second). The individual measurements are averaged over a userdefinable time, then transmitted over the appropriate interface to a PC, control panel, switch cabinet or to a PLC controller for analysis.

The measurement takes the core as well as the surface moisture into account. The analysis is non-destructive and is not affected by the color, density or surface properties of the sample material.

Online moisture analysis by Sartorius makes your processes efficient and transparent.

Sensors
A wide variety of sensors is available for the PMD300 series. This way, the analysis method can be adapted perfectly to the sample and process as each situation as dictates. Depending on sensor type, the measuring range is between 0.1% and 60% moisture content.

Highly sensitive planar sensors, featuring a special ceramic surface, are especially suited for use on assembly lines or in hoppers. Thanks to their compact construction and their high protection rating, all sensors can be used in the food, chemical and pharmaceutical industries.

Bypass sensors are suitable for pourable or granulated products that are conducted through pipes. Optional functions also allow density to be determined in parallel with moisture.

Application Areas
Monitoring and traceability: The moisture analyses systems can be set up at a diverse number of locations – versatility that allows, for example, raw materials analysis to be carried out seamlessly during incoming goods inspection and the results logged to ensure 100% traceability. Instead of random sampling, the entire batch is monitored continuously. (The system supports IFS V.5 requirements).

Optimized Energy Consumption
In drying processes, in particular, accurate and instantly available data on the moisture content of the product is indispensable. Online-moisture measurement optimizes drying temperature and time. These functions also save valuable energy resources and enhance the efficiency of the process.

Technical Specifications

Evaluation unit

Dimensions	410 × 460 × 210 mm
Weight	19 kg
Material	Edelstahl
Protection rating	IP 54

Mains connection (line voltage)

(110 – 230) V AC / (50 – 60) Hz / 70 VA

Interface ports

Data	One RS-422 port (for PC, PLC, online computer); two RS-232 ports; optional Profibus and Ethernet ports
Analog output	2 × (0/4 – 20) mA (active, potential-free)
Analog input	1 × (0/4 – 20) mA
Control inputs	4 × optocoupler inputs, 24 V, e.g. for start, stop and product selection
Control outputs	5 potential-free (24 V, 0.25 A DC)

Ambient conditions

Temperatures

Sample temperature	0°C to +70°C autom. temperature compensation
Ambient temperature	0°C to +40 °C

Measuring range
(0.1 – 60) % in selectable sub-ranges

Reproducibility
0.08 % (standard deviation with 10-fold measurement)

Measuring time
Up to 50 measurements per second

Memory for number of products
20 products

Data storage
CMOS battery-backed for non-volatile storage

Equipped with
Evaluation unit, planar sensor, (see accessories), temperature sensor und KEA!- MW bridge software (optional)

Options (on request)
Density determination, explosion protection, separate operator terminal

Accessories

Planar sensors
For different moisture ranges (e.g. for installing on conveyor belts or hoppers)

Bypass sensors
For different moisture ranges (e.g. as conductivity cell for pourable and granulated products in pipes)

Display and control unit
With touch display for the PMD300PA processor unit

Technical Specifications – Planar Sensors

PMD310SR Type
Protection rating: IP 65
Height of microwave field over the sensor: up to 50 mm
Sensor material: ceramic
Sensor diameter: 110 mm
Sensor height: 188 mm
Sensor height: 53 mm
Weight: 3 kg

PMD311SR Type
Protection rating: IP 65
Height of the microwave field over the sensor: up to 70 mm
Sensor material: ceramic
Diameter of the measuring field: 120 mm
Sensor diameter of the: 188 mm
Sensor height: 53 mm
Weight: 3 kg

PMD312SR Type
Protection rating: IP 65
Height of microwave field over the sensor: up to 80 mm
Sensor material: ceramic
Sensor diameter: 130 mm
Sensor height: 188 mm
Sensor height: 53 mm
Weight: 3 kg

PMD313SR Type
Protection rating: IP 65
Height of microwave field over the sensor: up to 30 mm
Sensor material: ceramic
Diameter of the measuring field: 50 mm
Sensor diameter: 80 mm
Sensor height: 112

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