IMPS-4400

INSTANT MOISTURE PROFILING SYSTEM

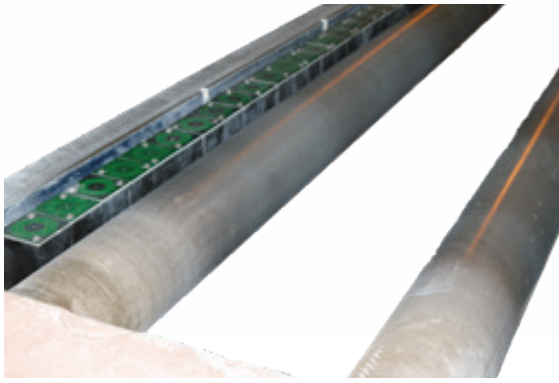
KPM

True Moisture Profiling for Paper & Board Products

OVERVIEW

The Instant Moisture Profiling System (IMPS-4400) is a non-contact radio frequency dielectric measurement (RF) system to measure moisture profiles of paper and board products. This helps manufacturers improve and optimize production processes and meet quality standards, reduce energy costs, increase productivity, and generate revenue.

As a board passes through a conveyor – either heading to or leaving a dryer or kiln – the IMPS-4400 sensors mounted between rollers or within the spanning width of the board line analyze board characteristics below the surface, capturing up to 30 moisture readings per second.



IMPS-4400 installed between rollers on a board processing line.

Each IMPS-4400 features an array of RF sensors that span the width of the entire board line.

APPLICATIONS

The IMPS-4400 is engineered specifically for board manufacturers in a wide range of industries.

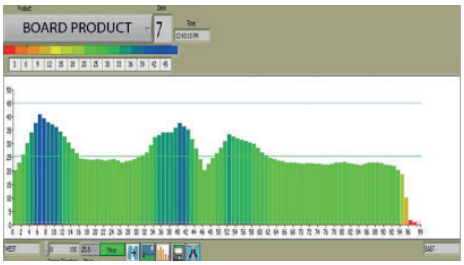
- **Construction/Building Materials:** Gypsum board, hardboard, particle board, gypsum/fiber board, cement/fiber board
- **Wood Manufacturing:** Hardwood veneers, plywood veneers, dimensional lumber
- **Paper Manufacturing:** Cardboard, laminates, pulp bales, sheets

IMPS-4400 FEATURES

- RF dielectric measurement provides a true moisture profile (accuracy range of ±0.05%)
- Non-contact multi-sensor profiling array
- Easy communication between profiler and an HMI system
- Proprietary software offering board product diagnostics
- Data-logging and trend time plot for statistical analysis

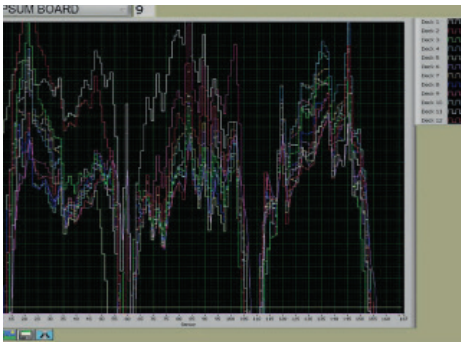
MEASURE MOISTURE ACROSS YOUR PROCESS LINE

For in-board manufacturing operations, having quantifiable data on moisture content before and after the drying process is essential to product quality. The proprietary software that comes with the IMPS-4400 provides multiple graphical representations of moisture distribution for individual boards, yielding extraordinary discoveries to help producers save time, reduce waste, and lower energy costs.



View graphic profiles in multi-deck displays, cross-direction moisture profiles, bar graphs, and more.

Dryer exit visualization shows the moisture profile of every board. As shown above, the wetter region indicated in blue on the right-lower mid decks could result in inconsistent board quality.



The above graphic illustrates the cross-board moisture profile of every deck in a 12-deck triple-wide dryer. The spread between different traces is an indication of dryer imbalance.

Optional I/O or OPC-UA Server for Seamless Integration

The I/O Option offers real-time (not latched) analog signals providing 0-10VDC and 4-20mA outputs to your processor or PLC, making it possible to integrate the IMPS-4400 into your process control system. Additionally, logic outputs to your processor or PLC provide alarm signals indicating user defined levels of moisture and board lengths. This helps board manufacturers simplify their quality control procedures by adding moisture profiling into their process.

The OPC-UA server allows users to access to historical, real-time, and alarm data, and organize product codes with ease.

SPECIFICATIONS

Name	Specification
Dimensions	Customizable array
Weight	Varies by configuration
Resolution	Moisture: 0.1%
Measurement Range	Moisture: 0-25%
Accuracy	Gypsum Board = ±0.02%; Wood Panel Board = ±0.10%, both subject to the application
Computer	OS: Windows 10 IoT Enterprise 2016 LTSB High End (i7, Xeon) - 64 Bit, Processor: 1 x Intel i7-6700TE (Skylake) 2.4 GHz Processor: LGA1151 - SR2LP, Memory: 1 x DDR4 2133 SO-DIMM Memory - 8 GB, Primary Storage Drive: 1 x Samsung 850 EVO mSATA SSD - 250 GB, AC Adapter: 1 x Power Adapter DC 12 V, 6.67A, 80 W Level 5, Mounting: 1 x Wall Mounting Brackets
Sensor Array	Maximum 128 Sensors, Each with Resolution of 50 mm (2 in Squared)
Calibrations	Up to 10 Calibrations Stored in Nob-Volatile Flash Memory
Maximum Sensor Array Width	6502.4 mm (256 in)
Outputs	4-20mA, 0-10VDC, 0-5VDC (Optional), OPC-UA Server (Optional)
Warranty	One year limited warranty

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