### Technical Specifications PMD<sup>®</sup> 2500

Measuring Principle	microwave-transmission measurement: the measured material is transmitted with microwaves.	both, attenuation and phase shift, caused by the material, are measured and evaluated.		
Set-up	seperate units for:	microwave transmitter microwave receiver evaluation unit		
Cabinets	microwave transmitter:	stainless steel, IP 66 / NEMA 4x, weight: 2.5 kg dimension: 150*300*80 mm ( H * W * D )		
	microwave receiver:	stainless steel, IP 66 / NEMA 4x, weight: 3.5 kg dimension: 200*300*80 mm ( H * W * D )		
	evaluation unit:	stainless steel, IP 66 / Nema 4x, weight: 9.0 kg dimension: 380*380*210 cm ( H * W * D )		
Microwave Transmitter and Receiver	frequency range: max. transmitted power: Dynamic @ max. transmitted power: precision of the system:	1.2 - 4.5 GHz 0.1 mW ( -10 dBm ) 110 dB < 0.1 dB, < 0.5 °/GHz		
Evaluation Unit	graphical display: touch screen:	114 mm x 64 mm, 128 x 256 Pixel 6 x 16 Matrics backlight with automatic shutdown.		
	Ι/Ο	synchronisation with the signal measured at different positions.		
	counter: - area weight compensation - tachometer	max. 6 counters, 16 bit opto-decoupled, pulse width > 0.5 µs voltage: 4.5 V - 30 V		
	digital input signals: - measurement (start/stop) - sampling (start/stop) - batch (start/stop) - belt signal (start/stop) - type selection up to 16 types	8 digital inputs, opto-decoupled required input signal: potential free contact		
	digital output signals: - alarm outputs - collective failure - sampling indication	4 digital outputs relays contacts: active (24V) or passive (contact)		
	analog input signals: - area weight compensation - temperature	2 x 0/4 - 20 mA, or PT 100, 12 bit, in potential free with common ground for all I/Os optional potential free separate for each channel optional 0-10V inputs		
	analog output signals	4 x 0/4 - 20 mA, 12 bit, in common potential-free optional potential free for each channel		
	serial interface	1 serial interface, RS 232 or RS 485, potential free		
	power requirement	90 - 260 Volt AC, 45 - 65 Hz, 2A		
Operating Temperature	0 - 50°C	no condensation		
Storage Temperature	-40 - 70°C	no condensation		
Sensors		diverse antennas or flowcells-sensors		
Certificate: ETSI, FCC, RSS, CE, optional ATEX for Zone 22 on request.				



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#### representative:



# Sensation!!

The new patented PMD® 2500 allows highest accuracy and reliability for material layers between **10 - 2000 mm** thickness.







New! [patented]



## High-tech product online / inline moisture measurement technology the quantum leap for a big step into the future.

### New!

The patented PMD<sup>®</sup> 2500 Precision Microwave Device is precede to the PMD<sup>®</sup> 2450, the leading microwave moisture meter since 2001 and substitutes it Accuracy till to 0.1 wt.-%.

#### Typical Applications:

coal | minerals | Iron ore | magnesite | wood ships | pulp | pressed wood board | gypsum board | ceramic plate

#### e.g. in following industries:

steel | cement | concrete | building | mining | coal power station | chemistry | wood | food

#### Measurements categories:

Moisture content in solids | powder and bulk solids | (optional: area weight compensation) | density of aqueous solutions / brix | concentration of aqueous solutions, solid content in slurries (optional: compensation of air bubbles) | carbon in flyash







### Advantages of the PMD® 2500 compared to the PMD® 2450

	PMD <sup>®</sup> 2500	PMD <sup>®</sup> 2450	Improved
Frequency range:	1.2 - 4.5 GHz	2.4 - 3.0 GHz	factor 5
Long-term accuracy:	phase shift: 0.5 °/ GHz attenuation: 0.1 dB	2°/ GHz 0.3 dB	factor 4 factor 3
Dynamic @ -10 dBm transmitting power:	110 dB	80 dB	factor 1000

• The extremly high long-term stability of the unit enables the measurement on thin material layer with an area weight of 2g / cm<sup>2</sup>.

E.g.: gypsum board, pressed wood board, ceramic plates.

- The ultra-wide frequency range reduce disturbances caused by multiple reflections and improves hereby the accuracy especially for thin material layers.
- The ultra-wide band technique demands a very low transmitting power. The extreme low noise floor enables a high dynamic range even at such low power levels.
- Accurate moisture measurement on extreme thick material layers are also possible through the enlarged Dynamic range. E.g. high belt load by: woodchips, iron ore, etc. ..., slurry in pipes with big pipe diameter.

### PMD<sup>®</sup> 2500

Precision Microwave Device new patented!



#### Advantages that only the PMD® 2500 System can offer:

- Distance from the sensors to the evaluation unit up to 500 m is possible, which enables flexible and ergonomic Independent Installation of the evaluation unit.
- The system offers a wide range of sensors for different applications on the belt, in a chute, in pipes, and in silos.
- Ideal also for outdoor installation, protection cabinet IP66 (PMD® 2450 IP65).
- Easy calibration with PC or laptop using the LDU Acquisition PC-Software.
- Remote Control of the system for easy and comfortable sevice.
- Modular system to integrate further measurements as: - Density of the materials on the belt
- Ash content of coal
- Purity of Gypsum



Diverse complete microwave transmitter / receiver units at pipes with flange of divers diameter - for easy installation.



Customer specific measurement chute with Microwave transmitter / receiver unit, optional with radiometric area weight compensation.



High temperature sensor up to 250°C. Moisturemeasurement in dryers, e.g. gypsum board, etc.



Portable Microwave transmitter / receiver unit for rapid moisture determination of bulk material e.g.: concrete in 2 min.



Moisture sensors for conveyor belts.

