

MW-T



**ARE YOU LOOKING FOR MORE CONTROL OVER YOUR
PRODUCTION QUALITY? WE'LL SEND IT TO YOU!**

WHICH PRODUCT WOULD YOU LIKE TO MEASURE?

Numerous kinds of bulk products - e.g. fibres, whole or cut leaves, strands etc. - are packed and shipped in bales or boxes. Other products are manufactured as sheets or boards and are stacked for transport. The moisture content of these products often is crucial for quality, for the product's value, for the storage life or for further processing.

BALES

- Green leaf tobacco bales (farmer bales)
- Rubber bales
- Filtertow bales
- Cellulose bales and stacks
- Hop bales
- Tea bales
- Cotton bales
- Wool bales
- Viscose fibers
- Paper bales

BOXES

- C48 boxes
- C96 boxes
- Cut tobacco
- Leaf tobacco
- Stems
- Dried herbs and spices
- Dried Fruits

BOARDS

- Wood fiberboard
- Panelboard

BALES



BOXES



BOARDS

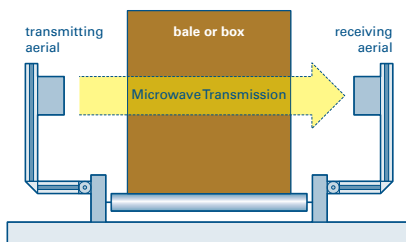




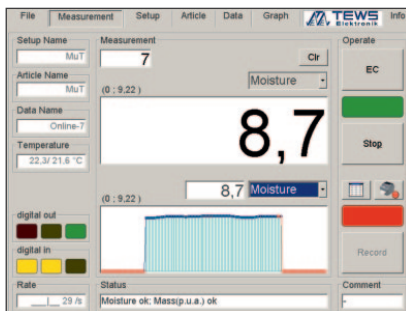
CHECK OUT THE FAST AND EASY OPERATION OF THE MICROWAVE TRANSMISSION MEASUREMENT!

Measurement is fully automatic and requires no activity or interference of an operator. No unpacking, no sampling, no weighing, no waiting.

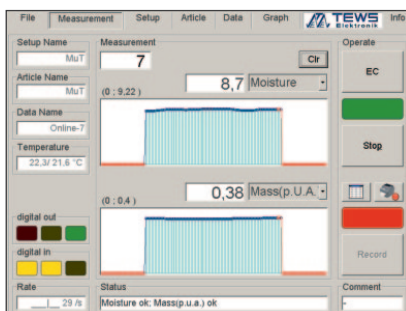
1. A box or a bale is moving on a conveyor which is fitted with a pair of antennas. No stopping, no unpacking and no taking of samples is required for measurement.
2. As soon as the bale or box enters the space between the antennas, measuring is triggered. A low-power microwave field is generated and penetrates a significant volume of the package. The MW-T instrument analyzes the interaction between the microwave field and the water molecules in the product.
3. Approx. 60 – 100 measurements are performed while the package is passing the antennas. From the readings a mean moisture value is calculated as well as a moisture profile and a density profile along the package.
4. Measuring results are displayed on the instrument's screen and are available at the analog output (4-20mA) or digital output (Modbus TCP/IP). Moisture values also can be directed to a label printer, a signaling column indicates whether the total moisture is within the desired range. Measured data is stored on a hard disk in the instrument and can be exported on an USB memory stick.



Microwave transmission measurement



Measurement of average moisture in bales and boxes



Measurement of moisture profiles and density profiles

FEATURES OF THE MW-T

The MW-T system measures the moisture content of bulk products in boxes or bales while the package is moving on a conveyor system.

MICROWAVE TRANSMISSION MEASUREMENT

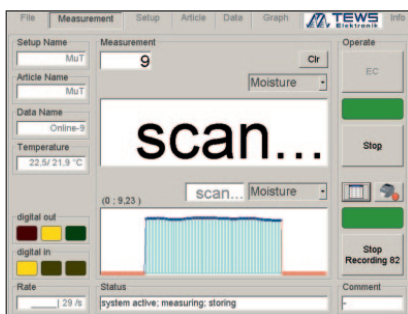
Measurement is performed automatically while the bale or box is moving on a conveyor system and passes between a pair of antennas that are fitted at both sides of the conveyer. A low-energy microwave signal is transmitted through the box or bale and interferes with the water molecules in the product. The MW-T analyzer continuously calculates moisture and density from the microwave readings. The measuring method has been developed by TEWS Elektronik and is protected by patents.

MEASUREMENT OF AVERAGE MOISTURE IN BALES AND BOXES

Transmission measurement scans much more volume of a bale or a box than conventional sampling can do. This results in reliable average values which are not falsified by single wet spots or by insufficient taking of samples.

MEASUREMENT OF MOISTURE PROFILES AND DENSITY PROFILES

While the box or bale is conveyed between the microwave antennas, it is scanned 30 times per second. This allows for measuring and displaying accurate profiles of moisture and density along the package. Anomalies like wet spots or hidden foreign objects can be detected by monitoring the profiles.



*No unpacking, no sampling, no weighing,
no waiting*

NON-CONTACT, NON-DESTRUCTIVE MEASUREMENT

TEWS Elektronik's transmission measuring system uses a low-energy microwave field that penetrates a bale or a carton while the package is conveyed between a pair of antennas. No part of the product is destroyed, heated or otherwise affected by the measurement.

NO UNPACKING, NO SAMPLING, NO WEIGHING, NO WAITING

The measurement is fully automatic and needs no activity or interference of an operator. It is triggered by light barriers that detect the package on a conveyer system. No opening of a package, no taking of samples is required. Measuring values are available immediately after the bale or box has passed the antennas.

INDEPENDENT OF VARYING PRODUCT DENSITY OR THICKNESS

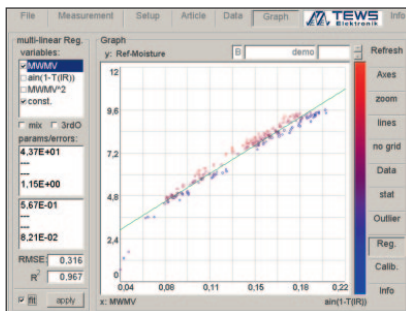
TEWS Elektronik's transmission system measures moisture independently of varying bulk density of a product or of varying compression or varying dimensions of bales. Many other systems which measure moisture in the core of a product cannot distinguish between varying moisture and varying sample mass. TEWS' measuring method is more sophisticated. Two independent microwave values are measured, analyzed and computed in a way that the moisture reading is compensated for varying sample mass, density or compression. Even more, the MW-T analyzer can be calibrated for density measurement.

NO SCALE OR OTHER WEIGHING SYSTEM REQUIRED FOR MASS / DENSITY COMPENSATION

TEWS' transmission measurement provides accurate moisture values without additional weighing. Simple transmission systems have to use an additional scale to compensate for the falsifying influence of varying sample mass on moisture measurement. However, this may result in deviations too, because a scale sees the whole package and transmission just sees a part of it. Since TEWS Elektronik's measuring method quantifies product density as well as moisture, it does not require a scale or weighing system for density compensation.



Measuring results within seconds and high throughput



Product-specific calibration

MEASURING RESULTS WITHIN SECONDS AND HIGH THROUGHPUT

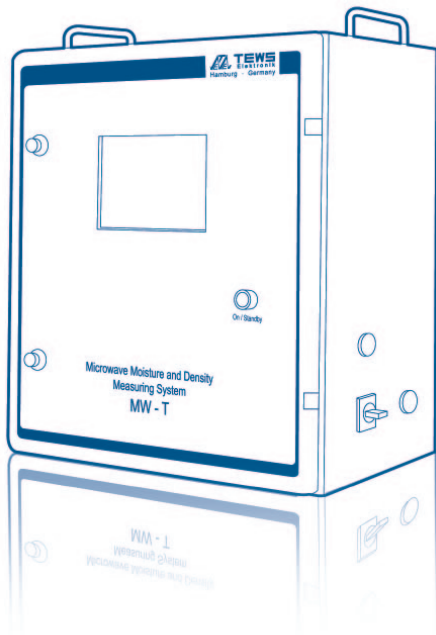
With a MW-T instrument moisture measurement in bales and boxes is a matter of seconds. No more waiting for measuring results. Fast and reliable 100%-control of incoming goods and finished product has become possible. Working at high speed, the measuring system provides approx. 30 readings per second. This allows for the displaying of moisture and density profiles as well as for providing readings which represent the average moisture of product in a whole bale or container.

PRODUCT-SPECIFIC CALIBRATION

Product specific calibrations can be set up by the user and are stored in the MW-T measuring system. If required by product changes, it will be easy to adjust a calibration.

DESIGNED FOR INDUSTRIAL ENVIRONMENTS

MW-T instruments are built for industrial environments. Operation doesn't require any consumables. Instruments are a low-maintenance piece of machinery. A built-in touch screen monitor and connection to the local network make operation easy.



TECHNICAL DATA MW-T

MICROWAVE TRANSMISSION ANALYZER

Display

- 10.4" Colour Touch Display for full operation of MW-T

Interfaces

- 2 x USB (memory stick, printer, mouse etc.)
- Digital input 4 bit (upgradeable)
- Digital output 4 bit (upgradeable)
- 4 * analog input, 4 * analog output (upgradeable)
- Modbus TCP/IP output

Power

- 230 VAC (115 VAC optional), 50 - 60Hz, 180 VA

Temperature

- 0°C - +40°C

Protection

- IP54

Size

- 600 x 550 x 370 mm (W x H x D analyzer instrument)

Weight

- approx. 50 kg (analyzer instrument)



ARE YOU LOOKING FOR MORE CONTROL OVER YOUR PRODUCTION QUALITY? WE'LL SEND IT TO YOU!

You will find development, production, and marketing, all in the same place. The quickest and most straightforward solution to every task and customer friendly service guaranteed.

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