


An online sensor
dedicated to measuring
moisture in all forms of tobacco

MT101-T

Tobacco Moisture Transmitter



PROCESS SENSORS CORP. 

Superior Accuracy and Stability in all Tobacco Applications

The MT101-T measures MOISTURE — the component of most concern to every tobacco processor. The MT101-T is simple to install, comes pre-calibrated and operates on all types of tobacco. It is the most reliable, stable and accurate online moisture meter, specifically designed for critical tobacco moisture measurements.

Frequently asked questions:

- Q Can the MT101-T measure components other than moisture in tobacco, such as nicotine and sugar?
- A NO, the MT101-T is dedicated to measuring moisture. Optics and electronics have been optimized to achieve the best possible measurement accuracy and long term reliability.
- Q Do I need to calibrate the MT101-T?
- A NO, the MT101-T is delivered from PSC with the calibration stored in the sensor's memory. An 'offset' adjustment can be made on the processing line if necessary.
- Q Does a single calibration cover all types and blends of tobacco?
- A Similar types and blends will be measured with a single calibration. Widely different types and blends may need an offset adjustment.
- Q Is the MT101-T affected by changes in the processing environment?
- A NO, the MT101-T is not affected by ambient light, changes in humidity or temperature fluctuations.
- Q Can I install the MT101-T at any stage of tobacco processing?
- A YES, the MT101-T measures linearly over 5-50% moisture making it suitable for all leaf and primary processing applications.
- Q Are all MT101-T sensor identical?
- A YES, all MT101-T sensors are matched to have the same sensitivity to moisture in tobacco.
- Q How often do I need to re-calibrate the MT101-T?
- A Due to the exceptional long-term stability of the MT101-T, no re-calibration is required. Calibration Check Standards allow a rapid 'check' of the sensors stability whenever needed.
- Q Can the MT101-T be serviced by a user's maintenance staff?
- A YES, the MT101-T is totally modular and any component can be changed in 5 minutes with no affect on the measurement calibration.

Technical innovation and a Cost Effective Design gives a wide range of Features

Measurement Speed: The MT101-T employs a high-speed optical system. A miniature filter wheel assembly and a state of the art, proprietary single detector allows the MT101-T to 'sample' the tobacco several hundred times per minute. This high-speed sampling reduces measurement noise and produces the world's most accurate tobacco moisture measurement.

Wavelength Compensation: The MT101-T's dual beam, single detector configuration faithfully tracks the source lamp and all other optical components ensuring that the calibration is independent of sensor age.

Wide Spectrum Referencing: The MT101-T incorporates a unique reference filter to monitor the tobacco reflectance properties across the complete near infrared spectrum. The filter minimizes the influence of tobacco color, blend or type on the sensors reading.

Smart Sensor Technology:

The MT101-T is a true *stand-alone* transmitter. All intelligence and communications are in the MT101-T sensor, this includes, analog signals, RS232/485 and all diagnostics and calibration. There is no need for any terminal box or power supply port.

Ownership Economics:

The MT101-T single board modular design minimizes the ongoing cost of ownership.

- No routine maintenance
Intelligent Diagnostics continuously monitor sensor parameters and warn users of any failures
- Comprehensive 2 year warranty
- Field replaceable components
- No re-calibration



MT101-T Transmitter

Wall Mounted Interface

Hand-Held Interface

Versatile User Interfaces

By the selection of a suitable user interface, the MT101-T may be tailored to meet a wide variety of installation formats.

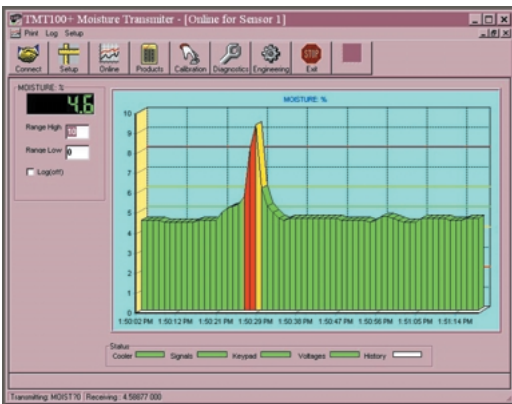
Wall Mounted Interface with Display — A NEMA 4, wall or post mountable interface may be used with a single MT101-T or as an interface to multiple MT101-T's connected in a network. This interface provides an easy to read display with keypad for operator access to all sensor settings, calibration and diagnostic values. Password and keypad 'lock' protection is provided for security.

Hand Held Interface — This hand held terminal may be used with an unlimited number of sensors. It uses the same keypad interface as the wall mountable version, but now enclosed in a convenient to hold hand terminal.

Local Display — For network installations and installations where no local access is required, an LED display complete with 'grab sample averaging' is available. Optionally this display may be fitted inside the sensor.



Local Display



Computer Software — A Windows based program is available for use with desktop or laptop computers to access the sensor's internal parameters.

Selection of Calibration, Parameter Adjustments, Diagnostics and Engineering Setup are available together with a digital display and trend graph for up to 32 sensors.

This software may be used with RS232, RS485 or Fieldbus forms of communication.

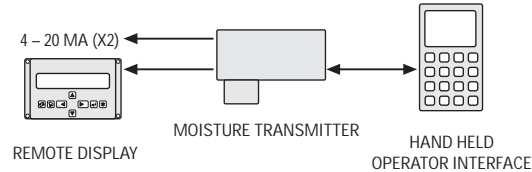
Supports any kind of installation

The versatile design of the MT101-T makes all conventional tobacco moisture gauges obsolete. The MT101-T may be configured to operate in a variety of formats.

Typical installation configurations are:

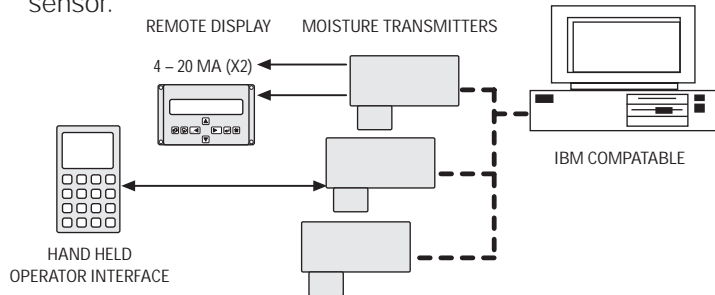
Single Sensor Configuration

This is the simplest configuration. The Transmitter is permanently connected to the wall mounted operator interface. Desired output signals may be sent to remote displays and data logging systems.



Multi-Drop Configuration

This format allows up to 32 sensors to be connected to a personal or industrial computer. PSC developed or proprietary software packages are available to access each sensor and provide data trend information. If desired, each sensor may be fitted with a local display and the hand held interface can be used as a maintenance tool to trouble shoot any individual sensor.



Network Interface Configuration

This format requires each sensor to be fitted with an optional network interface module. These modules allow the sensors to communicate directly to a plant's data highway. Typical interfaces are: Fieldbus, Ethernet, Profibus, & Device Net. Local displays and the hand held interface may also be used.

