MCT 360-T
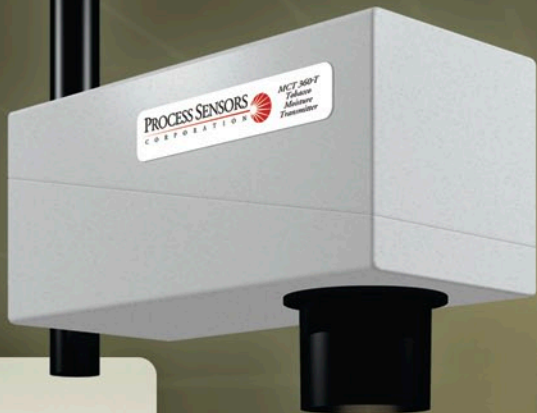
Tobacco Moisture Transmitter

ON-LINE NIR Transmitter for Continuous, Real-time Measurement and Control in Tobacco Processing

PROCESS SENSORS

C O R P O R A T I O N

The Next Generation

TOBACCO MOISTURE TRANSMITTER

MCT**360-T** Tobacco **Moisture** Transmitter

Accurate, Reliable and Stable Moisture and Temperature Measurement for All Tobacco Processing Applications

The **MCT360-T** measures moisture… the most critical variable in tobacco processing… providing the world's most accurate, reliable and stable moisture measurement for the tobacco industry. It can also be configured to measure product temperature. Delivered pre-calibrated and with a comprehensive 2-year warranty, the **MCT360-T** is simple to install and may be used at any stage of tobacco processing, with all types of tobacco applications, including:

- Whole Leaf   • Expanded
- Whole Stems   • Cigar Filler
- Cut Stems   • Chewing
- Lamina Strips   • Pipe Tobacco
- Cut Lamina   • Cased Burley
- Reconstituted   • DIET
- CRS   • Snuff

InnovativeCostEffectiveDesign

Utilizing Advanced Near Infrared (NIR) Technology Provides an Extensive Range of Features

Smart Sensor Technology - The MCT**360-T** is a true stand-alone NIR transmitter. A single, proprietary circuit board drives the measurement along with all analog and digital communication. Includes 4-20 mA, 0-10 volts, RS-232/485 or network interfaces such as Ethernet, Profibus, etc. There is no requirement for any intermediary electronics.

Optical Path Compensation - The MCT**360-T's** dual beam, single detector configuration monitors the source lamp and all other optical elements, ensuring that the calibration is unaffected by long term component age.

Wide Spectrum Referencing - The MCT**360-T** incorporates a unique reference filter to monitor the tobacco reflectance properties across the complete near infrared (NIR) spectrum. The filter minimizes the influence of tobacco color, blend or type on the Transmitter's reading.

Measurement Speed - A proven, reliable high speed filter wheel assembly is combined with a state-of-the-art proprietary single detector optical system. This fast sampling technique reduces measurement noise and produces an accurate and repeatable on-line signal.

Product Temperature Monitor - The MCT**360-T** can be configured to monitor and display tobacco temperature in Fahrenheit or Centigrade. The temperature sensor is contained in the **MCT360-T** housing. No additional hardware or wiring is required.

MCT360-T Features

- Single board, full surface mount electronics
- On-board temperature control circuit for PbS detector
- Profibus, Ethernet, Devicenet, Profinet, Modbus TCP-IP, Modbus RTU, Wireless
- Dual Micro Technology
- Dual Gain Filter Processing
- Product Temperature Measurement
- Improved A/D converters for improved measurement signal to noise ratio
- Air purge assembly included as standard
- Cooling panel included as standard

Computer Software

Process Sensors Corporation (PSC) Viewer Software is a proprietary Windows-based package. It monitors all MCT**360-T** functions and allows an operator to insert set-up parameters, perform or adjust calibrations, select product codes, examine internal diagnostic values and view trends of moisture and temperature.
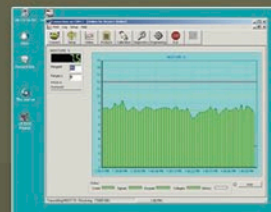
Frequently Asked Questions

Q: How is the **MCT360-T** different from its predecessor, the **MCT101-T**?

A: The primary difference is the implementation of improved circuitry, including full surface mount electronics, superior A/D converters to increase signal to noise ratios, and dual micro technology on the operating board for increased memory and processing speeds.

Q: Is the fundamental measurement produced by the **MCT360-T** different from the **MCT101-T**?

A: NO! The measurement technology is the same. Moisture measurement with NIR filter technology is very well understood and documented. The **MCT360-T** employs the same measurement and reference filters as the **MCT101-T**. The measurement algorithms and math treatments are the same for both Transmitters.

Q: Do I need to calibrate the **MCT360-T**?

A: NO, the **MCT360-T** is delivered from PSC with the calibration stored in the Transmitter's memory. An offset adjustment can be made on the processing line if necessary.

Q: Does a single calibration cover all types & 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 **MCT360-T** affected by changes in the processing environment?

A: NO, the **MCT360-T** is not affected by ambient light, changes in humidity or temperature fluctuations.

Q: Can I install the **MCT360-T** at any stage of tobacco processing?

A: YES, the **MCT360-T** measures linearly up to 50% moisture making it suitable for all leaf and primary processing applications.

Q: How often do I need to re-calibrate the **MCT360-T**?

A: Due to the exceptional long-term stability of the **MCT360-T**, no re-calibration is required. Calibration Check Standards allow a rapid check of the Transmitter's stability whenever needed.

Q: Are all **MCT360-T** Transmitters identical?

A: YES, all **MCT360-T** transmitters are matched to have the same sensitivity to moisture in tobacco.

Q: Can the **MCT360-T** be serviced by a user's maintenance staff?

A: YES, the **MCT360-T** is totally modular and any component can be changed in 5 minutes with no effect on the measurement calibration.

Q: Is the Transmitter available in languages other than English?

A: Yes, indeed. For example: Spanish, French, German, Portuguese, Italian, Polish, Russian, Chinese and more.

For Multi-Component Capability: Moisture • Nicotine • Sugars

MCT360-TX
- True Stand-Alone Transmitter
- Multiple Constituent Transmitter
- Moisture
- Temperature
- Nicotine (upon request)
- Sugars (upon request)
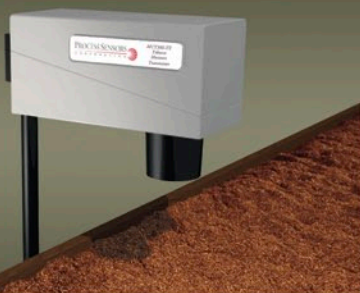
MCT600-TX
- Bench-top Off-Line Tester
- Simple, Push Button Operation
- 10-Second Analysis Time
- Rotating Sample Bowl Minimizes Sampling Error
- Moisture
- Nicotine (upon request)
- Sugars (upon request)

MCT**360-T** Tobacco**Moisture**Transmitter

MCT 360-T Tobacco Moisture Transmitter

SPECIFICATIONS: MCT 360-T Transmitter

Measurement Range:	0-60%
Measurement Accuracy:	+/- 0.1% to 0.5% depending on tobacco type
Repeatability:	+/- 0.15%
Transmitter/Product Distance:	8-18 inches (200-450mm)
Calibration Codes:	100
Response Time:	1-999 seconds. Three modes available Damping, Integration and Gated.
Power:	90-260VAC 50/60 Hz, 40 watts 24VDC optional
Outputs:	4-20 mA, 0-10 V (isolated), RS232 & RS485
Weight:	21 lbs. (10 Kg)
Ambient Temperature:	0-50° C (32-120° F) with water or air cooling up to 80° C (160° F).
Enclosure:	IP65, Cast Aluminum
Window Purge:	Airpurge Diffuser requires 5 psi and 2 l/m
Options:	Alarm relay output; relay closure for alarm condition

OPERATOR INTERFACE: Wall or Post Mounting

Display:	Color Touch Screen LCD or Alphanumeric Vacuum Fluorescent with readout in % moisture and temperature
Languages:	User selectable (Spanish, French, German, Portuguese, Italian, Polish, Russian, Chinese, etc.)
Power:	From MCT 360-T Transmitter
Cable:	10 ft. (3 meters) standard, longer on request
Keypad:	Access to MCT 360-T settings, including calibrations, product codes and diagnostics
Enclosure:	Cast Aluminum

Maintenance:

|	
Warranty:	24 months for all parts and labor.
Routine:	None required.
Calibration:	Pre-calibrated, no recalibration needed.
Calibration Verification:	Calibration Check Standards

CE Compliance:

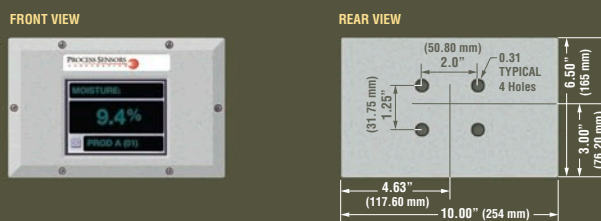EMC directives EN50081-1 & EN50082-2, EN61010-1 Low Voltage directive.

Data Bus & Software Interfaces:

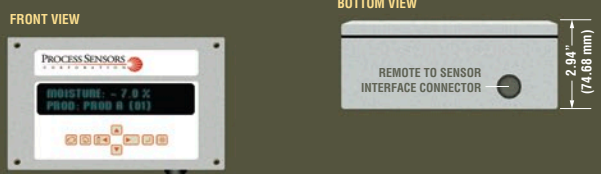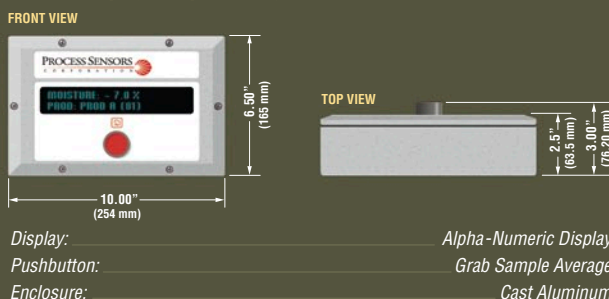|	
Optional Plug In Interfaces:	Ethernet TCP/IP, DeviceNet, Profibus, Modbus.
Software:	Windows-based stand-alone program or OPC-DDE server

DIMENSIONS: MCT 360-T Transmitter
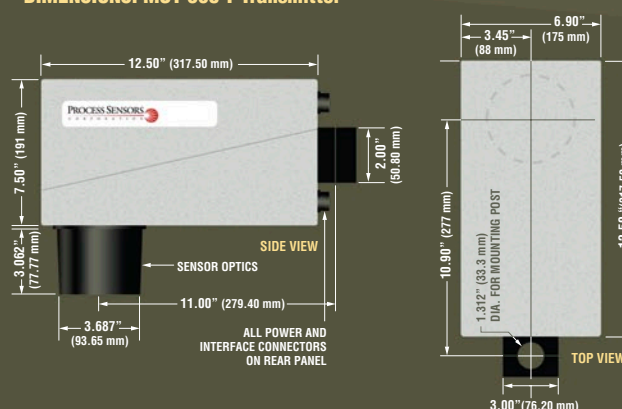
Operator Interface - Touch Screen

Vacuum Flourescent

Remote Display/Sample Average Unit

Display:	Alpha-Numeric Display
Pushbutton:	Grab Sample Average
Enclosure:	Cast Aluminum

PROCESS SENSORS
CORPORATION

For more information on Process Sensors instruments and accessories, visit our website at: **www.processsensors.com**

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