

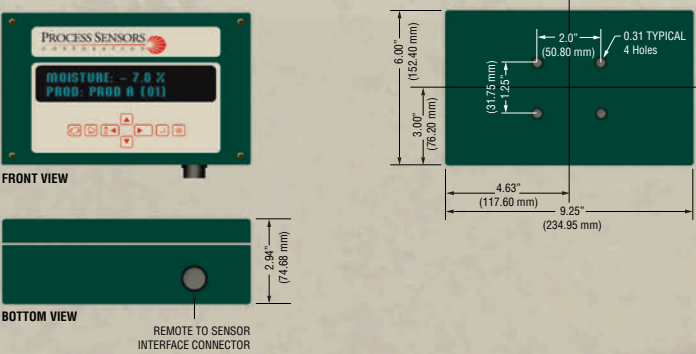
SPECIFICATIONS: MCT 300 TRANSMITTER

Measured Constituents: 1, 2 or 3 simultaneously
Moisture Range: Min. 0.1%, Max. 95%
Coatings Range: Min. 0.1gr/m, Max. 200 gr/m
Fats/Oils: Min. 0.1%, Max. 50%
Accuracy: (subject to application and product type)
Moisture Range: +/- 0.1%
Coatings Range: +/- 0.1 gr/m
Fats/Oils: +/- 0.2%
Repeatability: +/- 0.2%
Transmitter/Product Distance: 6-16 inches (150-400mm)
Calibration Codes: 10 standard, up to 50 on request
Response Time: 1-999 seconds. Three modes available
Damping, Integration and Gated.
Power: 90-260VAC 50/60 Hz, 40 watts
24VDC optional
Outputs: Triple 4-20 mA & 0-10 V (isolated), RS232 & RS485
Weight: 20 lbs. (9 Kg)
Ambient Temperature: 0-50° C (32-120°F), to 80°C (160°F) with water or air cooling panel.
Enclosure: Cast Aluminum, IP-65 NEMA 4
Window Purge: Airpurge Diffuser requires 5 psi and 2 l/m

Operator Interface: Wall or Post Mounting

Display: Alphanumeric Vacuum Fluorescent, readout in % moisture and temperature
Languages: English, plus one local, user selectable (Spanish, French German, Portuguese, Italian, Polish, Russian, Chinese, etc.)
Power: From MCT 300 Transmitter
Cable: 10 ft (3 meters) standard, maximum 100 ft (30 meters)
Keypad: Keypad for user access to MCT 300 settings, including calibrations, product codes and diagnostics.
Enclosure: Cast Aluminum

DIMENSIONS: Operator Interface/Display



Options and Accessories:

Enclosure Construction: Kynar Coated Food Grade Sensors with Sapphire or Polymeric Windows.
Cooling Panels: Air or Water Cooling Panels for installations above 50°C (120°F)
Product Loss Sensors: Detection of product presence/absence
Samplers: Stainless Auto Sampler for gravity or pneumatically conveyed products.

Maintenance:

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

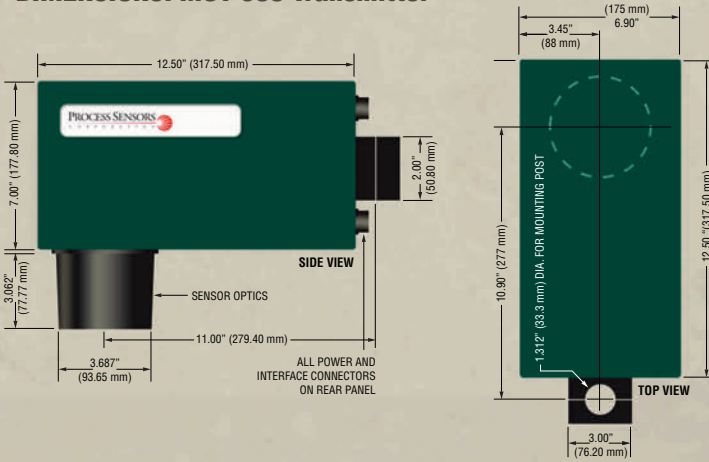
CE Compliance:

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 300 Transmitter



Remote Display Unit:

Display: Numeric LED
Pushbutton: Grab Sample Average.
Enclosure: Cast Aluminum



MCT 300 Multi-Constituent NIR Transmitter

Proven Accuracy and Stability in a Wide Range of Applications

Used in a wide variety of industrial processes, the MCT 300 Multi-Constituent NIR Transmitter, a True *Stand-Alone* Transmitter, provides *off-line* accuracy under *on-line* operating conditions. Simultaneous information on important product constituents is instantly available to plant operators and control systems, all from a single MCT 300 sensor.

Typical constituents include:

O-H for Moisture and Alcohol

C-H for Oils, Fats, Adhesives and Plastics

N-H or Proteins, Ammonia and Amines

Typical applications include:

Wood Products

Particle board • Fiberboard • Hardboard

Medium Density Fiberboard • Hog Fuels

Oriented Strand Board

Food Products

Snack Foods • Pet Foods • Coffee • Starches

Soy Bean & Corn Meals • Cereals • Milk powders

Cookies & Crackers

Tobacco Products

Whole Leaf • Lamina Strips • Stems • Cut

Reconstituted • Expanded • Chewing Tobacco

Paper Converting

Moisture & Coatweights • Re-moisturizing

Pressure Sensitive Adhesives • Hot Melts

Extruded Plastics • Carbonless Coatings

Chemicals & Minerals

Crumb Rubber • PVC Powders • Ceramics

Fertilizers • PVB Films • Plastic Chips

Detergents • Soaps • Ores

Increased Production Efficiency.

A Versatile, High Performance *Stand-Alone* Transmitter.

The MCT300 NIR Transmitter was designed by Process Sensors in response to industry’s need for a high quality sensor at an economical price. Its versatile design permits the Transmitter to operate on its own or in a multi-point network.

The Transmitter’s stand alone design eliminates the need for a central processor, along with associated interconnecting cables and conduit. Installation and maintenance costs are virtually eliminated.

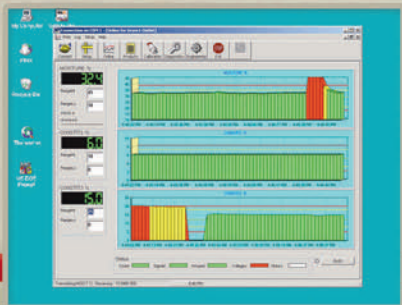
The Transmitter contains all the optics and electronic components to perform the measurements, plus provide analog and digital signals for communication to computers, controllers and PLCs.



Near Infrared (NIR) Operating Principle

Several molecular bonds absorb near infrared light at well defined wavelengths. The common bonds are O-H in water, C-H in organics & oils and N-H in proteins. The absorbance level at these specific wavelengths is proportional to the quantity of that constituent in the material.

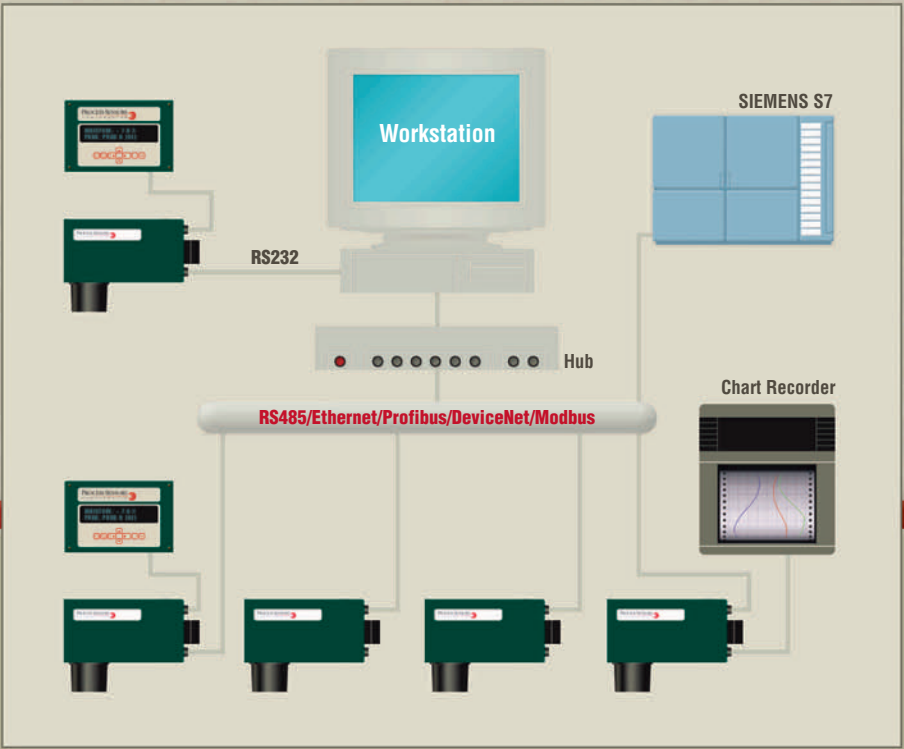
Narrow band pass filters within the Transmitter create a sequence of light pulses. At least one of these pulses is at the absorbance wavelength specific to the constituent to be measured. The other pulses are created at wavelengths not absorbed by the measured constituent. The pulses illuminate the product and the diffuse reflected light is collected and focused onto a single, temperature controlled detector. The electrical signals generated by the detector are then processed to provide a value that is proportional to the concentration of the measured constituent. The value is then displayed in % or other engineering units.



Supports Any Type Installation

The versatile design of the MCT 300 renders all conventional NIR transmitters/ gauges obsolete. The MCT 300 is a True *Stand-Alone* Transmitter or it can be configured to operate in single or multi-Transmitter/network interface configurations. With a single Transmitter configuration, the Transmitter may be permanently connected to the wall mounted operator interface. Desired output signals may be sent to remote displays and data logging systems. The RS232 and RS485 come standard with the MCT 300.

For multi-Transmitter configurations, PSC-developed or proprietary software packages are available to access each Transmitter and provide data trend information, and if desired each Transmitter may be fitted with a large, easy to read digital display. Network interface configurations require each Transmitter to be fitted with an optional network interface module. These modules allow the Transmitter to communicate directly to a plant’s data highway. Typical interfaces are Ethernet, Profibus, Modbus and Device Net.



System Configurations

Advanced Features:

Fully committed to technical innovation and product versatility, the MCT 300 offers the industry’s most useful and advanced features:

- True *Stand-Alone* Robust Transmitter Design
- Single High Quality PbS Detector
- Automatic Temperature Control Circuit
- Highest Quality NIR Interference Filters
- Dual Beam Wavelength Compensation
- 5-Year Lamp Warranty
- 2-Year Component Warranty
- Proven, Long-Life Motor
- Multi-Language Operator Interface (English, Spanish, Chinese, Russian, German, French, Portuguese, Italian, Polish, etc.)

Operator Interface/Display

The MCT 300 can be configured with an Operator Interface/Display. The bright vacuum fluorescent display can be seen clearly across the factory floor.



The Operator Interface/Display can be used to communicate with the MCT 300 and access product codes, set-up parameters, calibrations and diagnostics. Password and keypad *lock* protection are provided for security.

Computer Software

Process Sensors Corporation (PSC) Viewer Software is a proprietary Windows-based package, available for use with desktop or laptop computers. It monitors all MCT 300 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 multi-component sensors. This software may be used with RS232, RS485 or Ethernet forms of communication.