

# MCT460 Series



## On-line NIR Smart Sensor

a KPM ANALYTICS brand



*Continuous Monitoring of Moisture, Oil, and Other Parameters for Process and Quality Control*

### OVERVIEW

The MCT460 Series offers rapid, continuous analysis for manufacturing operators to continuously monitor incoming raw materials or process control on the production line. The on-line, non-contact sensors accurately measure moisture, oil, coat weight, temperature and other parameters. With this analysis, operators can maintain consistent product quality, increase yield, and minimize waste.

The applications of the MCT460 Series range from snack food production to tortillas and cereals, to tobacco, wood, and bio fuels. The sensors are capable of a closed loop control of dryers, belt speed, re-moisturizers, and other monitoring. The MCT460 Series can also be easily integrated into existing control systems, adding data to maximize efficiency.

Thousands of MCT sensors have been installed at many of the largest food and industrial manufacturing plants in the world. They help operators control moisture to within one tenth of a percent to meet product specs every time. The MCT460 is built using NIR technology that is widely used and accepted in a wide range of industries for moisture, oil, or other on-line measurements.

### FEATURES

- Simple to operate, integrate and standardize across multiple lines and locations
- Rugged enclosure withstands harsh conditions
- Proprietary temperature-controlled detector ensures measurement stability
- Fully modular with all components easily replaceable in the field
- Easy to troubleshoot with advanced on board diagnostics

#### Food:

- Potato Chips
- Corn Chips
- Tortillas
- Cookies
- Crackers
- Pretzels
- Breakfast Cereals
- Milk Powders
- Popcorn
- Oil Base Flavorings
- Pork Rinds
- Extruded Snacks

#### Industrial:

- Hot Melts
- Extruded Plastics
- PVB Films
- Textiles
- Crumb Rubber
- PVC Powders
- Ceramics
- Fertilizers
- Paper
- Detergents
- Soaps
- Ore
- Biofuels
- Tobacco
- Wood
- Pressure Sensitive Adhesives

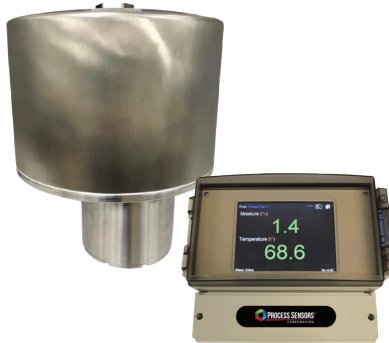
## MCT460 SERIES

Proven to perform in harsh conditions for industrial applications, the MCT460 Series is built to last, simple to install and virtually maintenance free for years of reliable, consistent results.



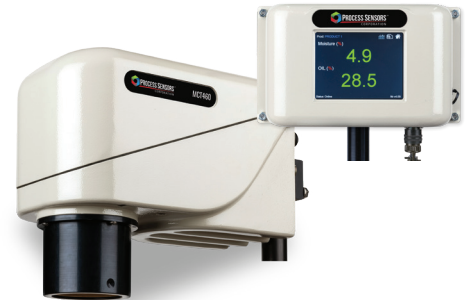
### MCT466-SF

- Stainless steel housing
- IP67 rated
- Designed for demanding conditions in food and snack food manufacturing



### MCT469-SF

- Stainless steel housing
- IP69 rated
- Full washdown capability for food and snack food manufacturing

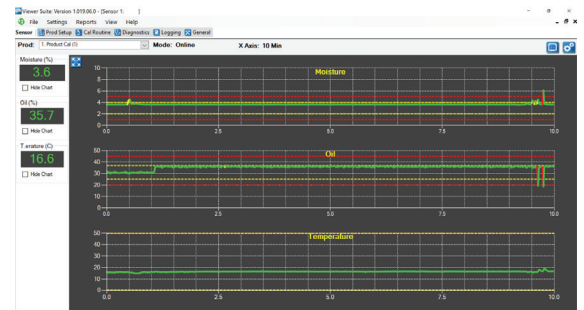


### MCT460

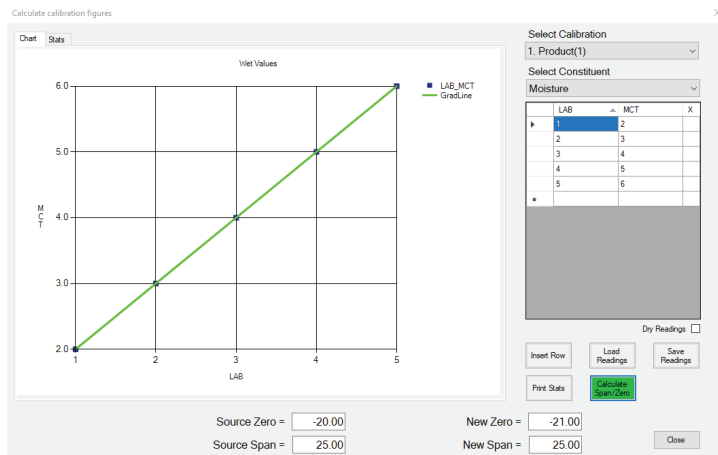
- Designed for use in industrial applications
- Powder coated cast aluminum housing
- In-process monitoring of moisture, coat weight, or other parameters

## VIEW SUITE SOFTWARE

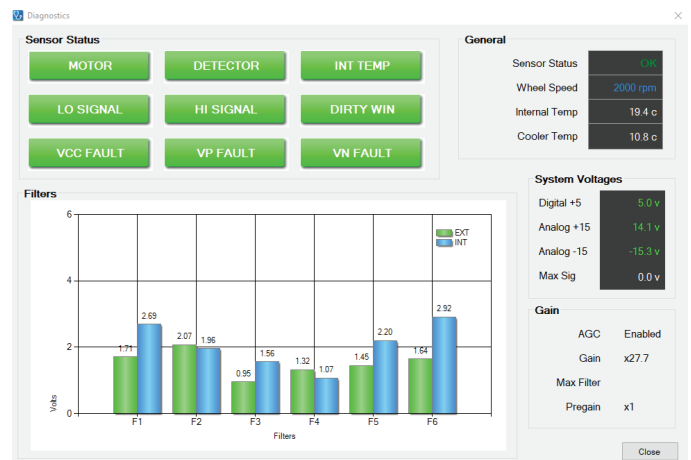
The MCT460 Series uses proprietary ViewerSuite Windows® - based PC software, allowing operators to insert set-up parameters, perform or adjust calibrations, select product codes, examine internal diagnostic values and remotely view moisture and temperature trends.



*Trend screen with logging capability displays process reading changes in real time.*



*Simple, graphical calibration routine for quick setup of new products.*



*Easy diagnostics page for troubleshooting the MCT460 Series.*



## ACCESSORIES



### IR Temp Sensor

Enables simultaneous product temperature measurement. No additional hardware or wiring is required.



### Fieldbus Module

Allows the sensor to communicate directly with control systems via Ethernet TCP/IP, Ethernet IP, ProfiNet, ProfiBus, Modbus TCP, DeviceNet, OPC-DDE Server.



### Product Loss Sensor

Enables measurements when the product flow is discontinuous or there are frequent lulls in the production stream.



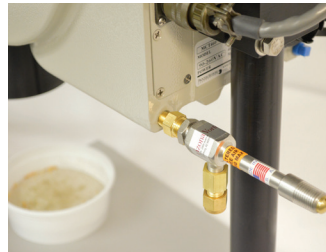
### Cal Check Standard

Used to verify sensor stability over time and transfer calibrations between sensors.



### Snorkel Sampler

The snorkel sampler is designed to measure free falling powders/granules in chutes.



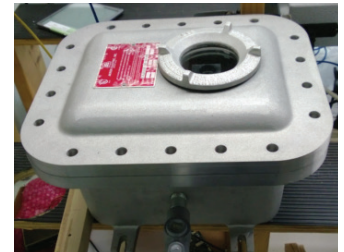
### Air Cooling

An air vortex cooler attached to the sensor for elevated ambient temperatures.



### Air Purge

To minimize dust buildup on the final window, all the MCT460 Series are fitted with an air purge attachment.



### Explosion Proof Enclosure

For hazardous Class II Div 1 or Class II Div 2 environments, Operator Interface installed in non-hazardous area.

## INSTALLATIONS

**Belt Conveyor Installations:** MCT460 Series sensors are mounted 8-18 inches above the conveyor, ideally with continuous product.

**Augers & Screw Conveyors:** Installing the MCT460 Series on top of Augers and Screw conveyors allows for a measurement of the flow of material being conveyed by the flights of a screw. The MCT460 Series is installed offset to the side of the central shaft while the influence of the flights passing the unit are eliminated by the instrument's software.

**Bins and Chutes:** Sight Glass Windows either Glass (Industrial applications) or Sapphire (Food applications) (pictures of windows attached and install pictures) can be used for continuous flow of products against the window. To avoid specular reflection MCT460 Series sensors are angled relative to the window.



## Ordering Information

Select the MCT460 Series for your application. The MCT460 is used mainly for industrial process control, while the MCT466-SF and MCT469-SF units are built for food quality and process control.

Part Number	Description
460-000-EN	MCT460 Sensor assembly. Electroless nickel (EN) housing. Stand-alone version.
460-100-EN	MCT460 Sensor assembly. Electroless nickel (EN) housing. System configuration version including EN connection/OI unit.
466-100-SSA	MCT466-SF stainless steel version. System config version including stainless steel connection/OI unit. IP66 rating. Kel-F sensor window standard.
466-100-SSA-FBX	MCT466-SF stainless steel version. System configuration version including connection/OI unit. IP66 rating. Kel-F sensor window standard.
469-100-SSA-FBX	MCT469-SF stainless steel version. System configuration version including connection/OI unit. IP69 rating. Sapphire sensor window standard.
460-000	MCT460 Sensor assembly. Painted housing. Stand-alone version.
460-100	MCT460 Sensor assembly. Painted housing. System configuration version.

## ACCESSORIES

### MCT 460 Series

Part Number	Description
240-199A	Ethernet TCP/IP, Ethernet IP, ProfiNet, ProfiBus, Modbus TCP, DeviceNet, OPC-DDE Server
240-021A-460	Internally mounted Product Temperature Kit (for MCT460 and MCT466-SF only)
240-807A	Externally mounted Product Loss Sensor Assy – 15V w/delay
210-700PA	5.7" Touchscreen O/I Painted incl 10' cable (for MCT460 only; standard with MCT466-SF and MCT469-SF)
240-060-3A	Heater enclosure kit – 24VDC (for MCT460 only)
240-000-4	Sensor View Software – Single Sensors
240-000-4M	View Suite Software – Multi Sensors
240-010A-1	Vortec tube assembly for sensor air cooling (if ambient is >50C for painted or EN versions; or >60C for stainless steel versions)

## SPECIFICATIONS

### MCT 460 Series

Measured NIR Constituents	1, 2, or 3 simultaneously
Moisture accuracy	+/- 0.1%
Resins, Fats/oils accuracy	+/- 0.2%
Wet basis moisture range	Min. 0.1% Max. 60%
Dry basis moisture range	Min. 0.1% Max. 400%
Transmitter/product distance	8-18 inches (200-450mm)
Calibration codes	100
Outputs	4-20mA, 0-10V (isolated), RS-232 & RS485
Weight	MCT460: 19 lbs. (8.6kg) MCT466-SF/MCT469-SF: 17 lbs (7.7 Kg)
Ambient temperature	MCT460: 0-50°C (32-120°F) with water or air cooling up to 80°C (160°F) MCT466-SF/469-SF: 0 - 60°C (32-140°F), up to 80°C with cooling
Optional operator interface	5.7 inch color touchscreen LCD, 13 user selectable languages
Power	From MCT460 sensor or local operator interface. MCT466-SF and MCT469-SF only have a local operator interface
Cable	10 ft (3 meters) standard
Enclosure	MCT460: Cast aluminum or electroless nickel MCT466-SF/MCT469-SF: Stainless steel
Moisture range	Min. 0.1% Max 90% (for MCT466-SF and MCT469-SF)
Fats/oils range	Min. 0.1% Max 50% (for MCT466-SF and MCT469-SF)
Response time	1-999 seconds. Three modes available: damping, integrated and gated (for MCT466-SF and MCT469-SF)
Compliance	CE Certified (FCC CFR 47: Part 15: B: 2015, Industry Canada Interference-Causing Equipment Standard ICES-003: 2021)
Warranty	24 months parts/labor



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