

# MCT Series

ONLINE NIR SENSORS



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

### OVERVIEW

The MCT Series offers rapid, continuous analysis for manufacturing operators to monitor incoming raw materials or process control on the production line. The online, 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 MCT 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 MCT Series can also be easily integrated into existing control systems, adding data to maximize efficiency.

Tens of 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. Each MCT sensor is built using NIR technology that is widely used and accepted in a wide range of industries for moisture, oil, or other online measurements.

### APPLICATIONS

#### General Food & Feed:

- Potato Chips
- Corn Chips
- Tortillas
- Cookies
- Crackers
- Pretzels
- Extruded Snacks
- Bread Crumbs
- Oil Based Flavorings
- Doughs/Dough Sheets
- Breakfast Cereals
- Popcorn
- Pork Rinds
- Sausage Skins
- Ground Meat
- Rendering Products
- Animal Feed Ingredients
- Flours and Starch
- Milk Powders
- Potato Flakes
- Sugar and Sugar Beets
- Salts
- Coffee, Tea, and Cocoa Powders
- And Many More

#### Industrial:

- Chemicals and Chemical Powders
- Hot Melts
- Pressure Sensitive Adhesives
- Extruded Plastics
- Gypsum Powder
- Bricks
- PVB Films
- Textiles
- Crumb Rubber
- Polymer Pellets
- Glass Cullet
- Sands and Aggregates
- PVC Powders
- Ceramics
- Fertilizers
- Pulp Sheets
- Paper
- Detergents and Soaps
- Mineral or Metallic Ore
- Gun Powder
- Biofuels
- Tobacco
- Wood
- Corrugated Materials
- Food Packaging and Containers
- Panel and Particle Board
- Roof Shingles



### MCT SERIES FEATURES

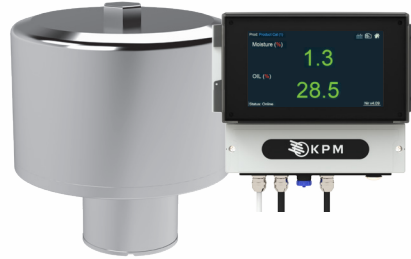
- High-speed measurement allows capturing up to 99 readings per second for MCT560 series models
- Simple to operate, integrate and standardize across multiple lines and locations
- Rugged enclosure withstands harsh conditions
- Proprietary temperature-controlled detector ensures measurement stability
- IP67-rated 178 mm (7 in) user interface for protection in challenging operating environments
- Fully modular with all components easily replaceable in the field
- Easy to troubleshoot with advanced on board diagnostics

Proven to perform in harsh conditions for industrial applications, the MCT560 Series, our latest generation of MCT Series products, is built to last, simple to install and virtually maintenance free for years of reliable, consistent results.



### MCT566

- IP67 rated stainless steel housing and user interface enclosure
- Kel-F food-grade sensor window
- Designed for demanding conditions in food and snack food manufacturing



### MCT569

- IP69 rated stainless steel housing
- IP67 rated user interface enclosure
- Sapphire food-grade sensor window
- Full washdown capability for food and snack food manufacturing



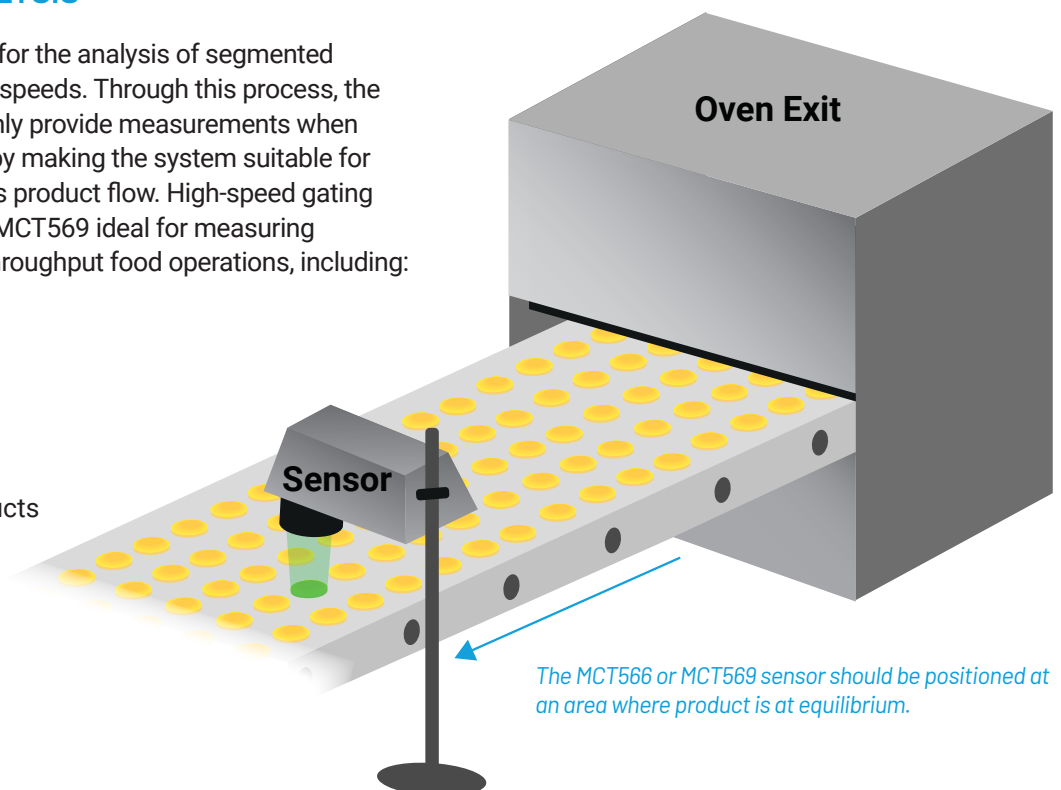
### MCT560

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

## HIGH-SPEED GATING ANALYSIS

The MCT566 and MCT569 allows for the analysis of segmented products on a conveyor at full-line speeds. Through this process, the MCT566 or MCT569 sensor will only provide measurements when product is under the sensor, thereby making the system suitable for applications with a non-continuous product flow. High-speed gating capabilities make the MCT566 or MCT569 ideal for measuring moisture and fat content in high-throughput food operations, including:

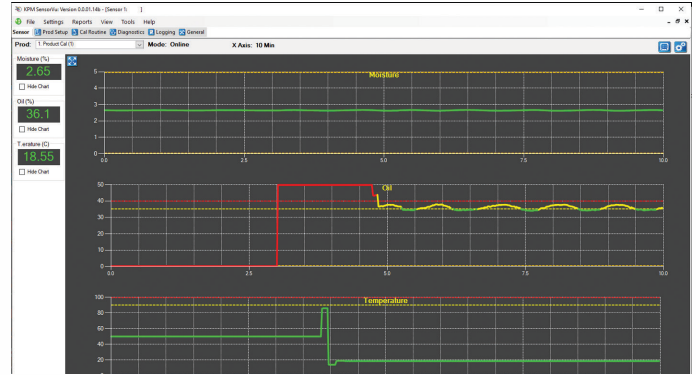
- Cookies/Biscuits
- Snack Cakes
- Candy Bars/Granola Bars
- Individually-Packed Noodles
- Freeze-Dried Portioned Products



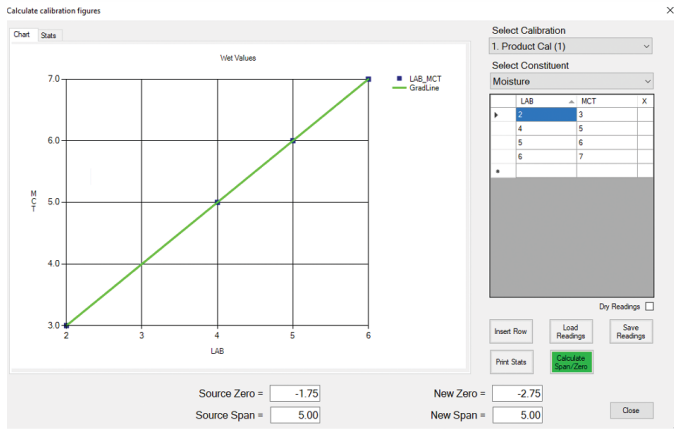
## SensorVu™

### PROPRIETARY SOFTWARE PLATFORM

The MCT Series uses SensorVu™ 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 MCT Series.

## INSTALLATIONS

**Belt Conveyor Installations:** MCT Series sensors are mounted 200-450 mm (8-18 in) above the conveyor, ideally with continuous product.

**Augers & Screw Conveyors:** Installing the MCT 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 MCT 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) can be used for continuous flow of products against the window. To avoid specular reflection MCT Series sensors are angled relative to the window.



## ORDERING INFORMATION

Part Number	Description
566-100-SSA-FBX	MCT566 Sensor assembly with display. Stainless steel housing.
569-100-SSA-FBX	MCT569 Sensor assembly with display. Stainless steel housing.
560-100-PA-FBX	MCT560 sensor assembly with display.
460-100	MCT460 sensor assembly with display.

## ACCESSORIES



**IR Temp Sensor**  
Part# 240-021A-560

Enables simultaneous product temperature measurement.



**Snorkel Sampler**  
Part# 250-000A-SC4

Designed to measure free falling powders/granules in chutes.



**Air Cooling**  
Part# 240-010A

Vortex cooler attached to the sensor for high-temp applications.



**Cal Check Standard**  
Part# 230-000A-S

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

## SPECIFICATIONS

	MCT566	MCT569	MCT560	MCT460
<b>Target applications</b>	General food	General food	Industrial	
<b>Sensor enclosure</b>	IP67 rated stainless steel	IP69 rated stainless steel	Powder coated cast aluminum	
<b>Ambient operating temperature</b>	0-60°C (32-140°F) with water or air cooling up to 80°C (160°F)		0-50°C (32-120°F) with water or air cooling up to 80°C (160°F)	
<b>Reading speed</b>	Up to 99 readings/second			Up to 33 readings/second
<b>High speed gating</b>	Yes			No
<b>Advanced features</b>	Lamp life monitoring, motor life monitoring, vibration alarm			None
<b>Product calibrations</b>	200			100
<b>Operator interface</b>	178 mm (7 in) touch screen (IP67)			145 mm (5.7 in) touch screen
<b>Communication options</b>	USB, Ethernet TCP/IP, Ethernet IP, EtherCAT, ProfiNet, ProfiBus, Modbus TCP, DeviceNet, OPC-DDE Server			
<b>Measured NIR constituents</b>	1, 2 or 3 simultaneously			
<b>Moisture accuracy</b>	+/- 0.1%			
<b>Resins, fats/oils accuracy</b>	+/- 0.2%			
<b>Wet basis moisture range</b>	Min. 0.1% Max. 90%			
<b>Dry basis moisture range</b>	Min. 0.1% Max. 400%			
<b>Fats/oils range</b>	Min. 0.1% Max 50%			
<b>Transmitter/product distance</b>	200-450 mm (8-18 in)			
<b>Power inputs</b>	110 to 240V standard. 24VDC optional.			
<b>Outputs</b>	4-20mA, 0-10V (isolated), RS-232 & RS485			
<b>Languages</b>	13 selectable languages			
<b>Cable</b>	3 m (10 ft) standard			
<b>Compliance</b>	CE Certified (FCC CFR 47: Part 15: B: 2015, Industry Canada Interference-Causing Equipment Standard ICES-003: 2021)			
<b>Weight</b>	7.7 kg (17 lbs)	23.6 kg (52 lbs)	8.6 kg (19 lbs)	8.6 kg (19 lbs)
<b>Warranty</b>	Two years parts/labor; Five years lamp replacement			Two years parts/labor; Three years lamp replacement

### KPM Analytics

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