



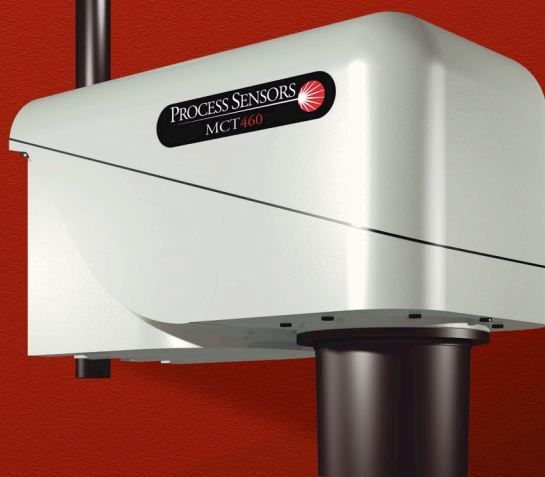
NOVA SERIES

MCT460

NEAR INFRARED (NIR) TRANSMITTER

The First and Best Choice for Near Infrared (NIR) Measurement

PROCESS SENSORS
C O R P O R A T I O N 



NOVA SERIES MCT460

Near Infrared (NIR) Transmitter

MCT460

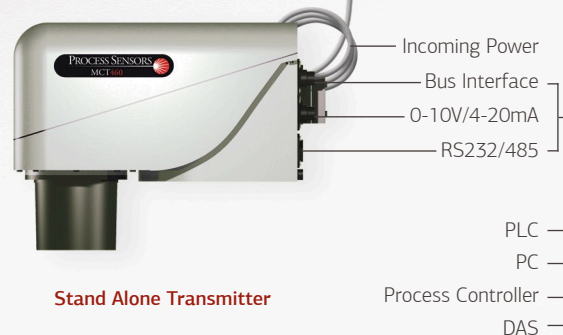
Stand Alone Configuration

- Connects directly to PLC
- No Operator Interface required
- Powered at the MCT460 Transmitter
- All Analog Outputs, Digital and Bus interfaces directly from the Transmitter
- 5.7" Operator Interface/Display (optional)



Operator Interface

Color Touch Screen
(Optional)



MCT460

System Configuration

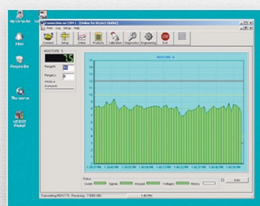
- Transmitter connects to Operator Interface
- Transmitter powered from Operator Interface
- All Analog Outputs, Digital and Bus interfaces from Operator Interface
- Large 5.7" high resolution Touchscreen

Operator Interface

Color Touch Screen



Computer Software



Process Sensors Corporation (PSC) Viewer Software is a proprietary Windows-based package. It monitors all MCT460 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.

Nova Series

A Reliable, Rugged and Accurate Transmitter

Each **MCT460** measurement produces analog and digital outputs for control. Bus Interfaces, such as Ethernet, Modbus, Profibus, etc are also available.

The MCT460 is made up of 5 basic components: a quartz halogen lamp, a filter wheel motor, multiple NIR interference filters in a rotating filter wheel assembly, a Lead Sulfide detector and a single "smart" circuit board. The MCT460 is fully modular – each of these components can be replaced in the field within minutes.

The Near Infrared (NIR) Operating Principle

Light from the lamp is directed through the rotating, narrow band-pass NIR filters. The filters separate the light into NIR wavelengths, selected specifically by PSC for the measurement and application being performed. The NIR light is then directed onto the product being measured, normally on a conveyor belt or moving web.

Subsequently, the light reflected off of the product is captured by a mirror and focused onto a Lead sulfide detector. The detector's microvolt output is then taken by the on-board "smart" circuit board and converted into percent moisture or other engineering units.

MCT460 Features & Improvements

- New micro controller, high performance, dual core architecture. One core dedicated to NIR signal acquisition, the other programmed to manage computations and communications options
- Samples entire NIR signal train for increased measurement accuracy
- Embedded bootloader allows sensor firmware to be upgraded through USB or serial interface
- Filter wheel speed adjustment through software
- Temperature controlled PbS detector for enhanced stability
- Built in cooling panel and Air Purge Assembly
- Ergonomically sound IP67 cast aluminum enclosure

Typical constituents include:

O-H for Moisture & Alcohol

C-H for Oils, Fats, Adhesives & Plastics

N-H for Proteins, Ammonia & Amines

Typical applications include:

Wood Products

- | | |
|------------------|------------------|
| • Particle board | • Medium Density |
| • Fiberboard | Fiberboard |
| • Hardboard | • Oriented |
| • Hog Fuels | Strandboard |

Food Products

- | | |
|---------------|----------------|
| • Snack Foods | • Soy Bean & |
| • Pet Foods | Corn Meals |
| • Coffee | • Milk powders |
| • Starches | • Cookies & |
| • Cereals | Crackers |

Tobacco Products

- | | |
|-----------------|-------------------|
| • Whole Leaf | • Reconstituted |
| • Lamina Strips | • Expanded |
| • Stems | • Chewing Tobacco |
| • Cut | |

Paper Converting

- | | |
|---------------------|----------------------|
| • Moisture & | • Pressure Sensitive |
| Coatweights | Adhesives |
| • Re-moisturizing | • Carbonless |
| • Hot Melts | Coatings |
| • Extruded Plastics | • PVB Films |

Chemicals & Minerals

- | | |
|----------------|-----------------|
| • Crumb Rubber | • Plastic Chips |
| • PVC Powders | • Detergents |
| • Ceramics | • Soaps |
| • Fertilizers | • Ores |

NOVA SERIES

MCT460

NEAR INFRARED (NIR) TRANSMITTER

The Innovative New NOVA Series

The **MCT460** can be configured to perform up to three NIR measurements. The MCT460 provides accurate, reliable and stable outputs for measurement and control. The MCT460 can also provide a product temperature measurement. Simple to install and virtually maintenance free.

Specifications: MCT460 NIR Transmitter

Measured NIR Constituents: _____ 1, 2 or 3 simultaneously
Moisture Range: _____ Min. 0.1%, Max. 95%
Coatings Range: _____ Min. 0.1 gr./m, Max. 200 gr./m
Fats/Oils: _____ Min. 0.1%, Max. 50%
Accuracy: (subject to application and product type)
Moisture _____ +/- 0.1%
Coatings _____ +/- 0.1 gr./m
Fats/Oils: _____ +/- 0.2%
Repeatability: _____ +/- 0.2%
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
Outputs: _____ 4-20mA, 0-10V (isolated), RS-232 & RS485
Weight/Enclosure: _____ 19 lbs. (8.6kg)/IP67, Cast Aluminum
Ambient Temperature: _____ 0-50 °C (32-120 °F) with water
or air cooling up to 80°C (160°F)
Window Purge: _____ Airpurge Diffuser

Specifications: Operator Interface

Display: _____ 5.7 inch Color Touchscreen LCD
Languages: _____ User Selectable
Power: _____ From MCT460 Sensor or Local
Cable: _____ 10 ft (3 meters) standard
Enclosure: _____ Cast Aluminum

Maintenance:

Warranty: _____ 24 months Parts/Labor
Routine Cleaning: _____ None Required
Calibration Verification: _____ Calibration Check Standard
Cooling: _____ Vortex Air Cooler (optional)

CE Compliance:

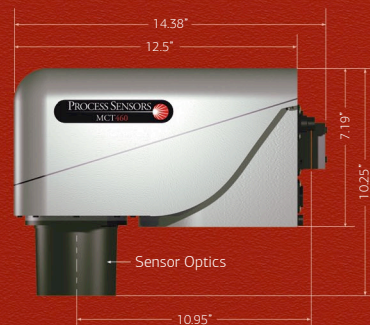
EMC Directives EN50081-1 & EN50082-2, EN61010-1
Low Voltage Directive

Databus & Software Interfaces:

Optional Bus Interfaces: _____ ProfiNet, ProfiBus, Ethernet IP
Modbus TCP, DeviceNet
Software: _____ Window-based Stand-alone Program
or OPC-DDE Server

Dimensions: MCT460

Front View



Bottom View



All Power and Interface
Connections on Rear Panel

Operator Interface

Front View



Bottom View



HEADQUARTERS

United States

Process Sensors Corporation
113 Cedar St.
Milford, MA 01757 USA
Tel: (508) 473-9901
Fax: (508) 473-0715
info@processsensors.com

Europe

Process Sensors Europe
Unit 4, Adelaide House
Corbygate Business Park
Corby, Northants NN17 5JG UK
Tel: 01536 408066
Fax: 01536 407813
info@processsensors.com

Eastern Europe

Process Sensors Polska
ul. Erasma z Zakrocymia 12 lokal 2
03-185 Warszawa
Tel: (48) 22 6739526
Fax: (48) 22 6739527
Gsm: (48) 509 202759
tomasz@processsensors.com

ASIA - Process Sensors Asia

PT 2328 Pinggiran Golf
Kemumin, Pengkalan Chepa
Kota Bharu, Kelantan 16100
Malaysia
T: 011 60 17620-2806
Fx: 011 60 6601 4588
hussin@processsensors.com

For more information on Process Sensors products,
visit our website at:

www.processsensors.com

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