



NOVA SERIES

# MT56

**NIR MOISTURE GAUGE**

Simple to Operate • Easy to Install • Affordable & Dependable



# NOVA SERIES MT56

NEAR INFRARED (NIR) TRANSMITTER

## MT56-SA Stand Alone Configuration

- Connects directly to host computers
- No Operator Interface required
- Powered at the MT56 Transmitter
- All Analog Outputs, Digital and Ethernet interfaces directly from the Transmitter
- 5.7" Operator Interface/Display (optional)



## Stand Alone Configuration



## MT56-SC System Configuration

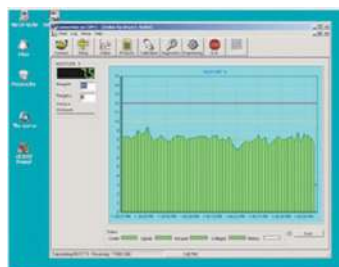
- Transmitter connects to Operator Interface
- Transmitter powered from Operator Interface
- All Analog Outputs, Digital and Ethernet interfaces from Operator Interface
- Large 5.7" high resolution Touchscreen



## System Configuration



## Computer



Process Sensors Corporation (PSC) Viewer Software is a proprietary Windows-based package. It monitors all MT56 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 MT56 measurement produces analog and digital outputs for control. An Ethernet interface is available as an option. The MT56 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 MT56 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.

## MT56 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
- Filter wheel speed adjustment through software
- Temperature controlled PbS detector for enhanced stability
- Built in cooling panel and Air Purge Assembly
- Ergonomically sound IP67 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
- Fiberboard
- Hardboard
- Hog Fuels
- Medium Density Fiberboard
- Oriented Strandboard

#### Food Products

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

#### Tobacco Products

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

#### Paper Converting

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

#### Chemicals & Minerals

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

### FEATURES & MEASUREMENTS

The MT56 can be configured to perform up to two NIR measurements or one NIR measurement and one product temperature measurement.

The **MT56-SC** Moisture Gauge is comprised of 3 basic pieces: NIR Moisture Sensor, single proprietary cable, Fibox NEMA rated Operator Interface.

Power, analog and digital outputs, proprietary cable connection available at bottom of the Operator Interface. Touch Screen Display for product code selections, diagnostics, calibration and set-up parameters.

The **MT56-SA** is a stand-alone sensor with all user I/O cables coming from the sensor. An optional operator interface is available.

#### Specifications: NIR

Moisture Range:	0–80%
Accuracy:	+/- 0.15% of calibrated range
Repeatability:	+/- 0.15%
Stability:	One calibration per year
Operating Temperature:	0–50°C / up to 120°F
Sensor to Product Distance:	6–14", 15 cm–36 cm
Dimensions:	L: 26 cm W: 19.5 cm H: 16.5 cm
Weight:	18 lbs. / 8.2 kg
Construction:	Powder coated pressed steel
Environmental:	NEMA 4, IP 66
Mounting:	1 1/2.54 cm vertical post

#### Specifications: Operator Interface

Display:	5.7" / 14.5 cm Bright Touch Screen
Enclosure:	Fibox IP 67
	L: 21.3 cm W: 18.5 cm H: 11.7 cm
Power:	90–260 VAC 50/60 H3
Outputs:	4–20mA, 0-10v, RS 232/485
Calibration Codes:	50
Weight:	8 lbs. / 3.6 kg

#### Options:

- 2<sup>nd</sup> NIR Constituent for fats or coatings
- Ethernet Interface
- Product Temperature Sensor (Range 0 - 100°C)

#### Dimensions: NIR



Proprietary cable connection to Operator Interface

#### Dimensions: Operator Interface



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