

HumiCore™ Ultra Moisture Measurement System

FEATURES & ADVANTAGES

- ▶ **Automate drying or moisturizing processes** to minimize energy costs and maximize profit.
- ▶ **Ensure product quality** through moisture control...Provide optimal moisture content for finished product.
- ▶ **Continuous in-line system providing real-time data** eliminates need for frequent laboratory samples.
- ▶ **High frequency field technology** for fast, reliable measurements.
- ▶ **Measures moisture inside the material core...Not just the surface** to provide precision measurements of typically 0.1% to 0.3%.
- ▶ **Compact design** for easy installation that allows for different mounting positions to fit existing processes.
- ▶ **Simple calibration and integrated temperature compensation** to accommodate specific material characteristics.
- ▶ **Output through a controller** to provide local operator interface, data logging function, temperature readings, alarm outputs and more.

Sensor



Desktop Controller Shown

Practical Tip

Use HumiCore to limit dusty areas by monitoring & controlling material moisture levels to reduce cleaning and/or filtering costs.

PRINCIPLE OF OPERATION

The **HumiCore™ Ultra** in-line moisture measuring system for process monitoring guarantees trouble-free measurement of the internal product moisture of solids and emulsions. The **HumiCore™ Ultra** moisture sensor circuitry principle is centered around an electrical high frequency field. The **HumiCore Ultra** is based on technology that has been developed and proven by **miitec** over several years. With no material present, the ambient air is the dielectric component of the electrical high frequency field. The dielectric constant of air is one. When the process is active, bulk material passing in front of the sensor face displaces the ambient air and becomes the dielectric for the electrical high frequency field. As the dielectric constant increases, it also causes a change in the electrical high frequency field. That change is processed by the electronics, is compensated for temperature, and is sent to the controller. Given the sensor output, the controller can now quantify and display the moisture content of the material passing by the sensor face. The area of material influence is typically up to 7.75 inches (200mm) from the sensor surface. Calibration is a short and simple procedure. The **HumiCore Ultra** sensor can provide a high precision measurement (0.1% to 0.3% typical).

A complete **HumiCore Ultra** system consists of the controller and the moisture sensor. The controller provides graphic user interface with softkeys and a clearly arranged display of the measured, alarm and MIN/MAX values, combined with easy editing and parameterization for simple operation. In addition, up to 24 different product parameters can be stored in the controller to accommodate product or process changes.

PRACTICAL APPLICATIONS

- ▶ Installation locations include: conveyor belts, screw conveyors, silos, funnels, etc.
- ▶ Suitable for grain, feed, seed, cereal, flour, sugar, coal, sand, wood shavings, dried food, fertilizer, tobacco, powder, pigments, plastic granules, sand, cement & more.

OPTIONS

- ▶ 115 VAC / 24 VAC/DC -or- 230 VAC / 24 VAC/DC
- ▶ Select from polyacetal or ceramic process face.
- ▶ Variety of sled plates to fit specific application needs.
- ▶ Controller style options include:
 - ▶ Controller, 19" Rack Mount
 - ▶ Controller, Desktop
 - ▶ Controller, Field Enclosure
 - ▶ Mini Controller, 19" Rack Mount

For more detailed information, please contact a Monitor representative or visit Monitor's website at <http://www.monitortech.com/moisture-measure.shtml>



Scan this with a smartphone QR-Code app for more product details.



SPECIFICATIONS

Process Data	Pressure: Up to 6 bar Process temperature: +14 to +194F (-10 to +90C) +284F (140C) with cooling
Sensor Data	Measuring surface: POM or Ceramic Housing material: 304 SS (1.4307) Protection class: IP67 Sensor dimensions: 4.57" dia. x 2.02" H (116mm dia. x 51.5mm) Accuracy: 0.1 to 0.3% typical Power: Via controller Interconnection: 4 wires, shielded, 3280 ft (1000m) max
Controller	Moisture Range: 0.0 – 0.1% min, 0 – 90% max); RH non-condensing Response time: Approximately 1 second Averaging time: 0 – 999 seconds Power supply: 115 VAC / 24 VAC/DC or 230 VAC / 24 VAC/DC Outputs: ¼ VGA-LC Display, relay, analog, RS-485 Controller dimensions: 9.3" x 5.2" x 13" (236 x 132 x 330mm) Dependent on model selected

ORDERING INFORMATION

HumiCore™ Ultra Moisture Measurement System	
Select	Base System
2	HumiCore™ Ultra Moisture Measurement System
Select	Operating Voltage
1	115 VAC / 24 VAC/DC
2	230 VAC / 24 VAC/DC
Select	Approvals
1	Ordinary Location
2	Hazardous Location, North America (Pending)
3	Hazardous Location, ATEX for Dust
Select	Sensor Process Construction
1	Polycetal
2	Ceramic
Select	Output Configuration
3	Controller, 19" Rack Mount
4	Controller, Desktop
5	Controller, Field Enclosure
8	Mini Controller, 19" Rack Mt.
19 - 8	2 X X - X X
Order Number	

ACCESSORIES:

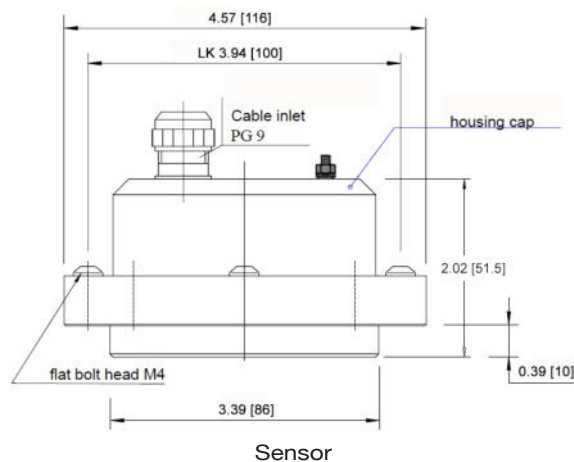
Part #	Description
19-3402	Welding Flange, Direct Sensor Mount
19-3410	Heat Sink, For Cooling, Direct Sensor Mount
19-8001	Heating Ring
R0514-18001	Cable, 4-Wire, Shielded, 18 AWG 1
19-3424	Sled, Plate Over Belt, 2 pt, Light Duty, 400 mm
19-3434	Sled, Plate Over Belt, 4 pt, Light Duty, 400 mm
19-3445	Sled, Ship Adaption Plate Over Belt, Heavy Duty

Note:

1 Cable is not included. Must be ordered separately.

MECHANICALS

DIMENSIONS ARE SHOWN IN INCHES WITH MILLIMETER EQUIVALENT IN BRACKETS UNLESS OTHERWISE STATED



Measuring moisture of coal after the mill



Measuring moisture of gypsum



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HumiCore™ PRO Moisture Measurement System

FEATURES & ADVANTAGES

- ▼ **Automate drying or moisturizing processes** to minimize energy costs and maximize profit.
- ▼ **Ensure product quality** through moisture control...Provide optimal moisture content for finished product.
- ▼ **Continuous in-line system providing real-time data** eliminates need for frequent laboratory samples.
- ▼ **High frequency field technology** for fast, reliable measurements.
- ▼ **Measures moisture inside the material core...Not just the surface** to provide precision measurements of typically 0.1% to 0.3%.
- ▼ **Compact design** for easy installation that allows for different mounting positions to fit existing processes.
- ▼ **Simple calibration and integrated temperature compensation** to accommodate specific material characteristics.
- ▼ **Output via a DIN-Rail Mounted transmitter** to provide communication with an existing control system.



Sensor



DIN-Rail Transmitter

Practical Tip

Use HumiCore to limit dusty areas by monitoring & controlling material moisture levels to reduce cleaning and/or filtering costs.

PRINCIPLE OF OPERATION

The **HumiCore™ PRO** in-line moisture measuring system for process monitoring guarantees trouble-free measurement of the internal product moisture of solids and emulsions. The **HumiCore™ PRO** moisture sensor circuitry principle is centered around an electrical high frequency field. The **HumiCore PRO** is based on technology that has been developed and proven over several years. With no material present, the ambient air is the dielectric component of the electrical high frequency field. The dielectric constant of air is one. When the process is active, bulk material passing in front of the sensor face displaces the ambient air and becomes the dielectric for the electrical high frequency field. As the dielectric constant increases, it also causes a change in the electrical high frequency field. That change is processed by the electronics, is compensated for temperature, and is sent to the transmitter. Given the sensor output, a control system can now quantify and display the moisture content of the material passing by the sensor face. The area of material influence is typically up to 7.75 inches (200mm) from the sensor surface. Calibration is a short and simple procedure. The **HumiCore PRO** sensor can provide a high precision measurement (0.1% to 0.3% typical).

A complete **HumiCore PRO** system consists of the DIN-Rail Mounted transmitter and the moisture sensor. The DIN-Rail transmitter allows for easy integration into an existing control system. Calibration software is provided. In addition, up to 24 different product parameters can be recorded to accommodate product or process changes.

PRACTICAL APPLICATIONS

- ▼ Installation locations include: conveyor belts, screw conveyors, silos, funnels, etc.
- ▼ Suitable for grain, feed, seed, cereal, flour, sugar, coal, sand, wood shavings, dried food, fertilizer, tobacco, powder, pigments, plastic granules, sand, cement & more.

For more detailed information, please contact a Monitor representative or visit Monitor's website at <http://www.monitortech.com/moisture-measure.shtml>



OPTIONS

- ▼ Select from polyacetal or ceramic process face.
- ▼ Variety of sled plates to fit specific application needs.
- ▼ DIN-Rail Mounted transmitter style options include:
 - ▼ DIN-Rail transmitter with enclosure
 - ▼ DIN-Rail transmitter without enclosure
- ▼ BCD Product Characteristics Switching (up to 15 product char.)

Scan this with a smartphone QR-Code app for more product details.





SPECIFICATIONS

Process Data	
Pressure:	Up to 6 bar
Process temperature:	+14 to +194F (-10 to +90C) +284F (140C) with cooling
Sensor Data	
Measuring surface:	POM or Ceramic
Housing material:	304 SS (1.4307)
Protection class:	IP67
Sensor dimensions:	4.57" dia. x 2.02" H (116mm dia. x 51.5mm)
Accuracy:	0.1 to 0.3% typical
Power:	Via transmitter
Interconnection:	4 wires, shielded, 3280 ft (1000m) max
Transmitter Data	
Construction:	Housing for 35mm DIN-Rail (EN 50022)
Input power:	24 VAC/DC (Power supply ordered separately)
Ambient temperature:	+14 to +140°F (-10 to +60°C)
Protection class:	IP 30
Output signal:	0/4-20 mA (max. 750 Ohm); 0/2-10 Volt
Interfaces:	RS-232, RS-485
Transmitter dimensions:	4.53"L x 0.89"W x 3.94"H (115 x 22.5 x 100mm)
Transmitter weight (approx.):	0.33 lbs. (0.15 kg)

ORDERING INFORMATION

HumiCore™ Pro Moisture Measurement System						
Select	Base System					
1	HumiCore™ Pro Moisture Measurement System					
Select	Operating Voltage					
3	24 VAC/DC					
Select	Approvals					
1	Ordinary Location					
2	Hazardous Location, North America (Pending)					
3	Hazardous Location, ATEX for Dust					
Select	Sensor Process Construction					
1	Polyacetal					
2	Ceramic					
Select	Output Configuration					
1	Transmitter, DIN					
2	Transmitter, DIN w Encl.					
19	-	8	1	X	X	- X X
						Order Number

ACCESSORIES:

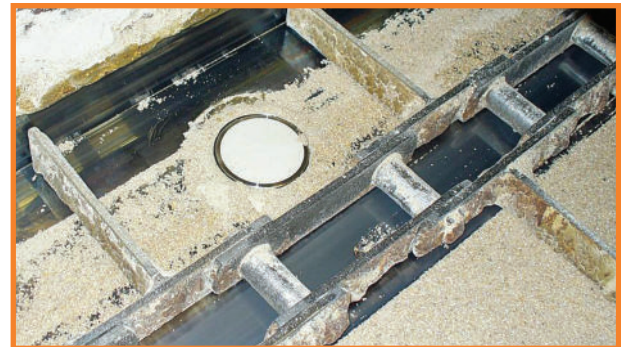
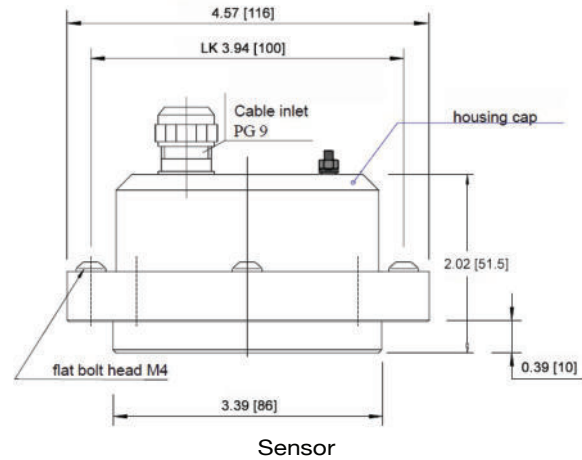
Part #	Description
19-3402	Welding Flange, Direct Sensor Mount
19-3410	Heat Sink, For Cooling, Direct Sensor Mount
19-1121	Heating Ring
R0514-18001	Cable, 4-Wire, Shielded, 18 AWG ¹
19-3453	Sled, Plate Over Belt, 2 pt, Light Duty, 400 mm
19-3454	Sled, Plate Over Belt, 4 pt, Light Duty, 400 mm
19-3455	Sled, Ship Adaption Plate Over Belt, Heavy Duty
17-8021	Power Supply, Universal AC to 24VDC ¹
17-8061	BCD Product Characteristics Switching

Note:

¹ Cable or power supply are not included. Must be ordered separately.

MECHANICALS

DIMENSIONS ARE SHOWN IN INCHES WITH MILLIMETER EQUIVALENT IN BRACKETS UNLESS OTHERWISE STATED



Measuring moisture of animal feed in conveyor



Measuring moisture of sand



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