

PREDIKTIR II

ON-LINE MOISTURE
GAUGE FOR
BULK INDUSTRIAL
APPLICATIONS



Simple, Moisture-Only Measurement That Delivers Value

Introducing PrediktIR II

PrediktIR II is the next-generation, near-infrared gauging solution uniquely designed for the important process measurement of moisture in bulk industrial applications.

From biomass to minerals to chemical powders, PrediktIR II continues to deliver the NDC Technologies' pedigree of best-in-value performance. It provides long-term stability and accurate moisture measurement of powders, flakes and granules independent of changes in ambient conditions (such as lighting, temperature or humidity) and is tolerant to process physical changes (such as pass height). This allows you to tightly and consistently control processes with the highest degree of confidence.

This degree of flexibility and simplicity allows you to lower your operating costs and maximize your profitability, so you can realize a long-term return on value.



How PrediktIR II Measures Moisture

Proven technology for proven results

PrediktIR II is based on NDC Technologies' proven optical filter technology. Light at a specific wavelength is absorbed by moisture. The rotating filter wheel in the gauge projects pulses of light at this wavelength, and other reference wavelengths not absorbed by moisture, onto the product. Some of this light is absorbed and the rest is scattered/ reflected. The "gauge light collecting optics" focus the reflected intensities onto a detection system which compares the amount of moisture absorption with the reference wavelengths, providing a measurement independent of pass height variations, changes in source lamp intensity and atmospheric dust.

Algorithms convert the infrared signals into an output that is proportional to moisture content, and calibration is carried out using the normal slope and intercept (Span and Trim) controls to achieve agreement with the customer's primary reference method. The measurement speed is exceptionally fast and delivers a continuous moisture measurement that can be output by 4-20 mA analog devices, a serial bus or Ethernet protocols to the process computer.

Key benefits of on-line measurement:

- ▶ Reduce waste or scrap
- ▶ Improve product quality and consistency to gain a competitive advantage
- ▶ Realize faster start-up and product change times
- ▶ Increase product yield through closer operation to the product specification
- ▶ Prevent overdying
- ▶ Comply with legislative requirements and safety standards



Advance Your Process. Realize Immediate and Long-Term Value.

We understand your process challenges



Automated process control

Automated process control using real-time, on-line moisture measurement is a primary objective for many processes in order to achieve consistently optimal product quality, meet required product flow or compression characteristics, and ensure the product can be correctly stored or transported prior to end use.



Tighter control of moisture

In addition to product quality, moisture content greatly impacts process efficiency and yield. Whether you're achieving the correct end-point moisture prior to forming a product, monitoring moisture in a slurry before the spray dryer or using feedback control at the dryer exit to optimize moisture levels, these and many other processes can benefit from tighter control of moisture levels within your product.



Accurate, robust measurements

Measurements must be robust enough for the process environment and accurate and reliable enough to be trusted for control. The process may also demand specifically engineered solutions to make effective measurements.

While many products are transported on conveyors that provide convenient measurement access, pneumatic transport systems require automatic samplers, discontinuous product flows require product presence/absence detection and a measurement may also be required through a sight glass.



We offer a range of well-engineered solutions

We offer a wide range of well-engineered solutions to ensure that the measurement can be made where and when you need it. NDC Technologies' bulk industrial moisture gauges have been installed and are in daily use around the world in demanding processes, helping manufacturers to optimize product quality and process performance.



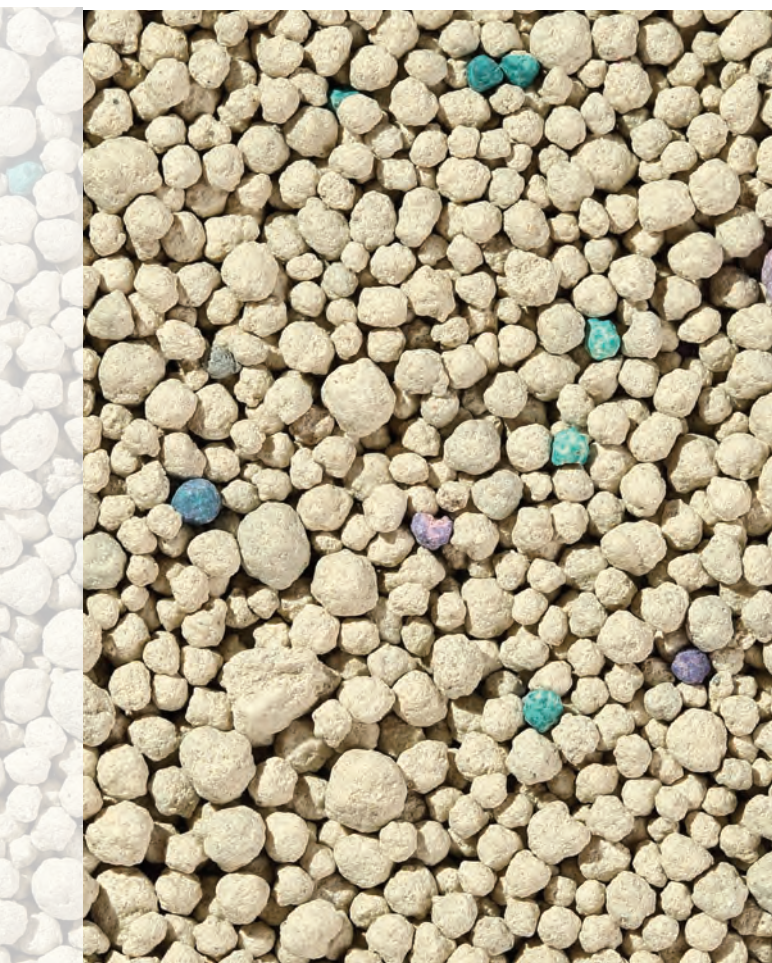
Operate your process at peak performance in applications such as:

Bulk Materials

- ▶ Biomass
- ▶ Bagasse
- ▶ Wood Chips

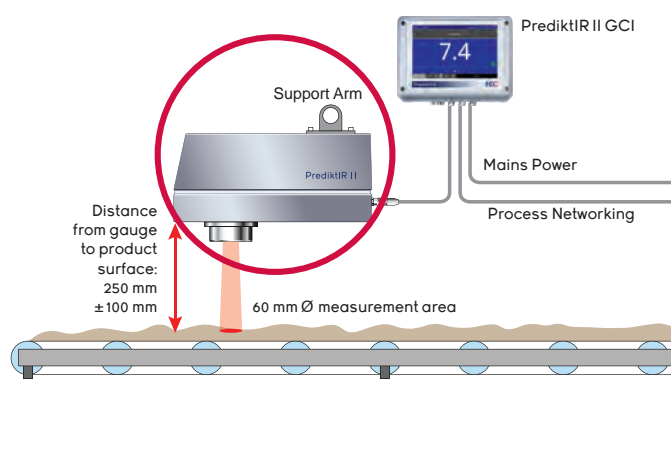
Chemicals, Minerals and Building Materials

- ▶ Ceramic powders
- ▶ Sinter mix
- ▶ Bauxite
- ▶ Dolomite
- ▶ Phosphates
- ▶ Nitrates
- ▶ Limestone
- ▶ Clay
- ▶ Sand
- ▶ Concrete mixes
- ▶ Ash, Power station and Fly
- ▶ Sodium carbonate
- ▶ Fluorspar



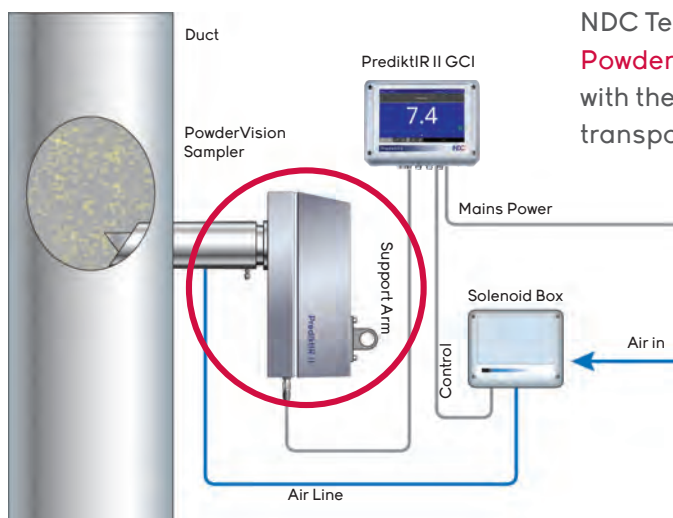
Fully Engineered for the Process to Deliver Accurate, Reliable Measurements

Continuous Product Flows



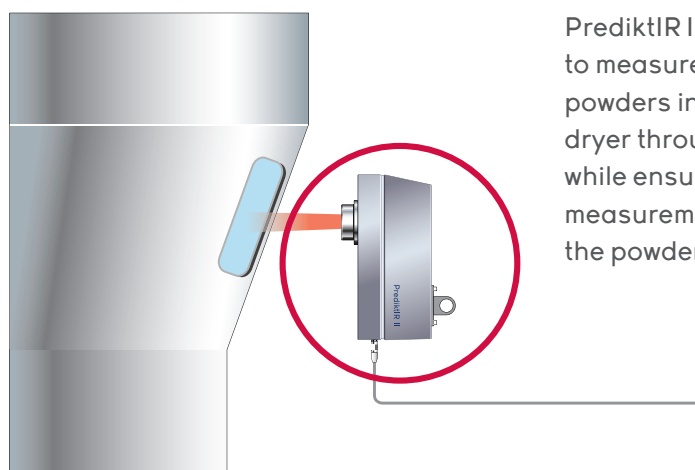
PrediktIR II measures over a 60 mm diameter standard beam patch size. It is suspended over the process line at a distance of 250 mm from the mean product height and tolerates product height fluctuations of ± 100 mm.

Gravity-Fed Product Flows



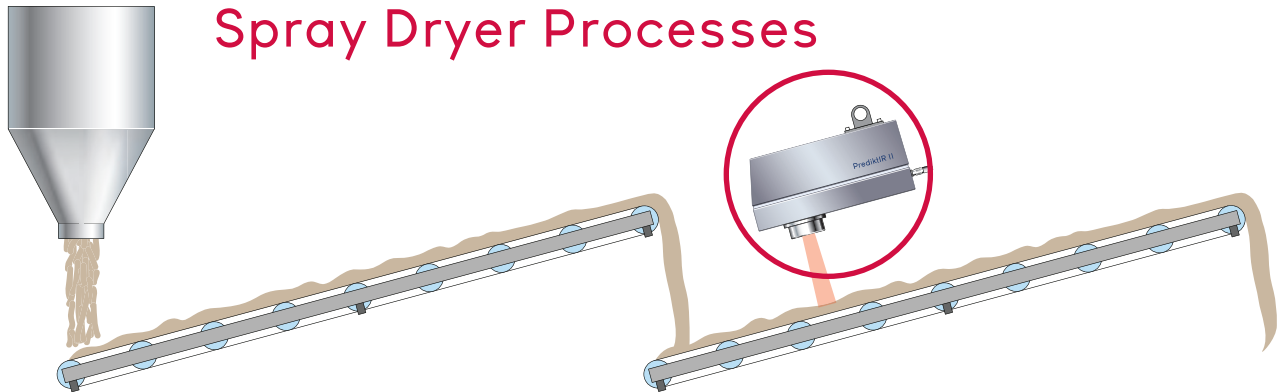
NDC Technologies' pneumatic **PowderVision** sampler can be used with the PrediktIR II gauge for powders transported in enclosed ducts.

Powders in Fluid Bed Dryers



PrediktIR II can be installed to measure moisture in powders in a fluid bed dryer through a sight glass, while ensuring that the measurement area is below the powder line.

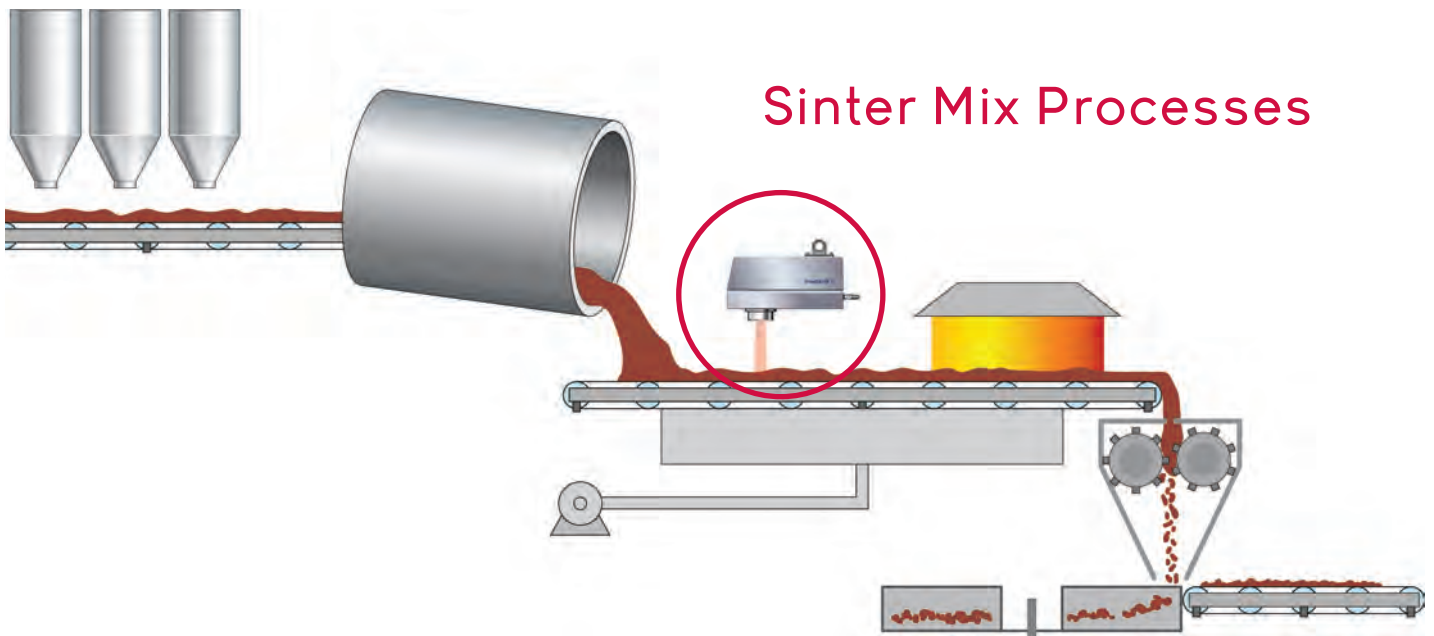
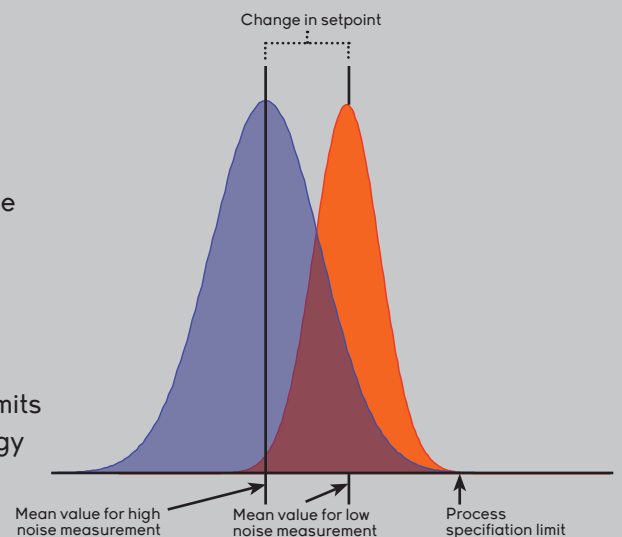
Spray Dryer Processes



The Benefit of Improved Precision

The PrediktIR II gauge has been optimized to provide the fastest, highest resolution and most precise measurements available.

The statistical plot shows how the PrediktIR II gauge delivers a low standard deviation, allowing tight control over the lower and upper limits for increased yields, reduced energy consumption and faster ROI.



Sinter Mix Processes

System Configurations

The PrediktIR II gauging system is designed to accommodate a wide range of possible configurations. Examples of single- and two-gauge configurations are shown below. PrediktIR II gauges with stainless-steel enclosures are connected to a PrediktIR II Gauge Control Interface (GCI) with a 10-inch color touchscreen and a PrediktIR II Power Hub (PH) delivering 24V DC.



PrediktIR II Specifications

Features	Description
Source L amp	Quartz halogen 20 W underrun, lifetime greater than 40,000 hrs
Filter Wheel Motor	24 V brushless DC
Operating Temperature Range	0-50°C (32-122°F)
Gauge and IO	10 m of interconnecting cable between gauge and PrediktIR II GCI
Power Consumption	35 W (Gauge and PrediktIR II GCI)
Head Construction	Stainless steel with Air Purge Window (optional in cast or stainless steel)
Response Time	2-1000 seconds configurable
Environment	Gauge & PrediktIR II GCI IP65/Nema 4
Optical Window	Sapphire
Moisture Range	0-95% depending on application
Process Connectivity (options)	4-20 mA standard, 8 Digital Inputs (Opto-Isolated), 8 Digital Outputs (FET Driven)
Optional	Ethernet IP, ProfiNet, Modbus TCP, Profibus and DeviceNet all from PrediktIR II GCI
CE compliant	Complies fully with the relevant European Standards including EN61326 relating to industrial and controlled electromagnetic environments and is CE marked and certified

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Document #: FB&T-BROC-SENS-PrediktIR II Bulk-EN-2021APR15
Date of Issue: April 2021
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