

IN-PROCESS MEASUREMENT



A NEW ERA IN GAUGING FOR CONVERTING APPLICATIONS



Intelligence that transforms the world.

NDC Technologies – Maximizing Process Performance and KPIs

Series 9 for Moisture and Coat Weight Measurements

For more than 50 years, NDC Technologies has designed and built measurement solutions specifically developed to meet the manufacturing challenges faced by the converting industry.

Our latest solution, the Series 9 gauge, is your next-generation process optimization system for the real-time, on-line measurement of moisture and coat weight. There is no other comparable gauging solution on the market today. The Series 9 gauge provides unparalleled performance to not only meet your process needs, but to uncover new efficiencies, ensure quality and maximize KPIs.



Unparalleled Performance Across All Applications

NIR measurement technology for the coating and converting industries

The Series 9 gauge delivers dependable, stable and accurate on-line measurements which allow converting processes to be tightly controlled, either manually or automatically, with confidence.

Mounted above the web, the Series 9 gauge delivers the level of control demanded by the converting industry – achieving enduring return on investment and on-going contribution to the bottom line.

With an option to incorporate into a NDC Technologies' scanning system in the future, we offer users the flexibility to adapt to changing demands.

Pre-calibrated delivery

The Series 9 gauge is delivered pre-calibrated for each application and is highly tolerant to the changing conditions found in the coating and converting industries. This gauge combines low cost of ownership with long-term stability without the need for re-calibration, systematic monitoring or correction for drift.

Coating Measurement Capabilities

- ▶ Water or solvent-based
- ▶ Solvent-less
- ▶ Wax dip
- ▶ Impregnation
- ▶ Polymer extrusions
- ▶ Barrier coatings
- ▶ Resin coatings
- ▶ Hot melt

Key Applications	Moisture	Coating	Notes
Paper, Board & Textiles	✓	✓	
PSA Labelstock	✓	✓	Including re-moisturing
Silicone Release Liners		✓	
Tape		✓	Adhesive coating
Flexible Packaging		✓	Including extrusion
Metals		✓	Water/solvent based (such as Passivation) and extrusion

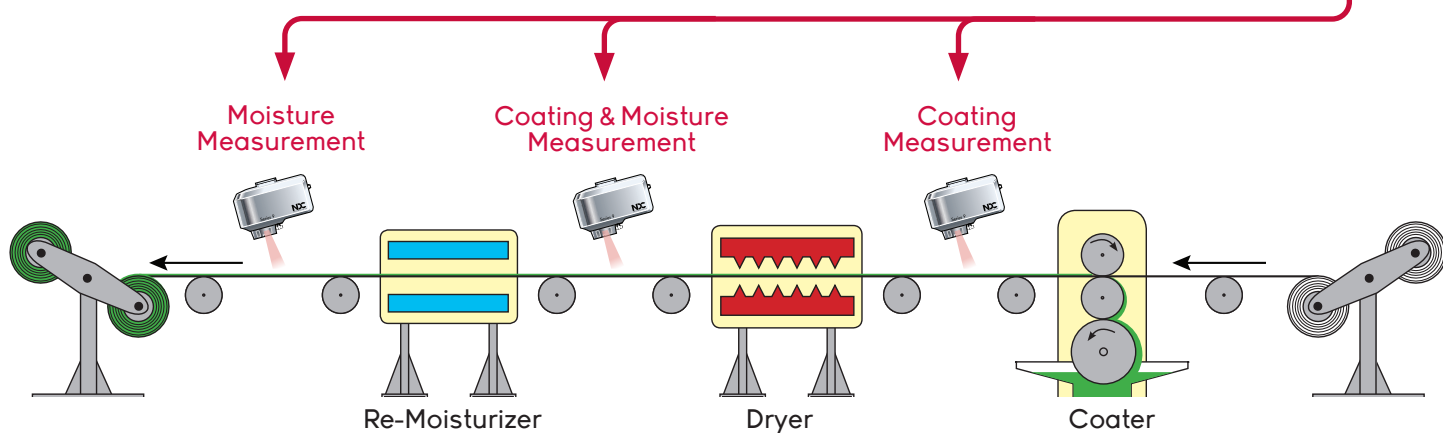
If you do not see your application listed, please contact an NDC Technologies' Sales Representative.

Delivers Industry-Leading Accuracy with Unrivalled Long-Term Stability

The Series 9 gauge can be setup in a wide range of configurations based on your process application. As standard, it measures over a 25 mm diameter beam patch, with 10 mm or 60 mm available optionally. The Series 9 is suspended over the process line at a distance of 200 mm from the mean product height, and tolerates product height fluctuations of ± 50 mm.

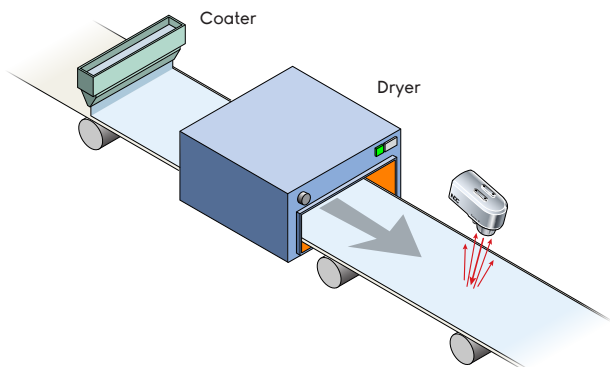


Paper Coating Line

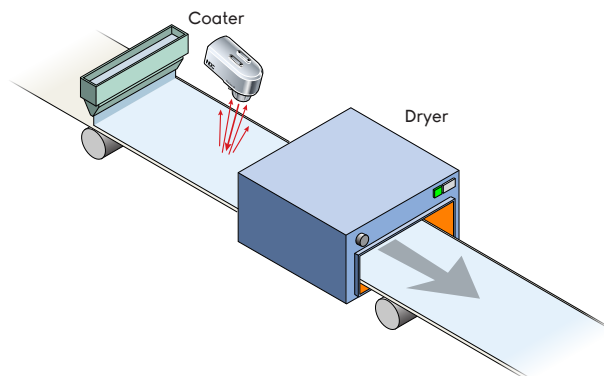


Example Configurations

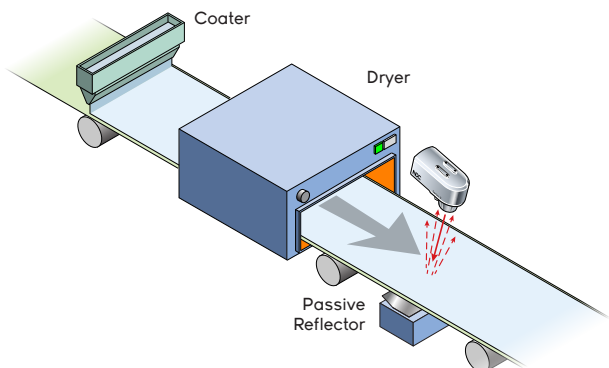
Coatings on Paper (Dry End)



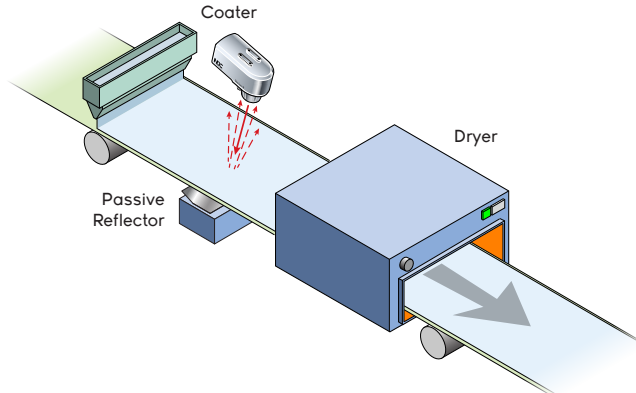
Coatings on Paper (Wet End)



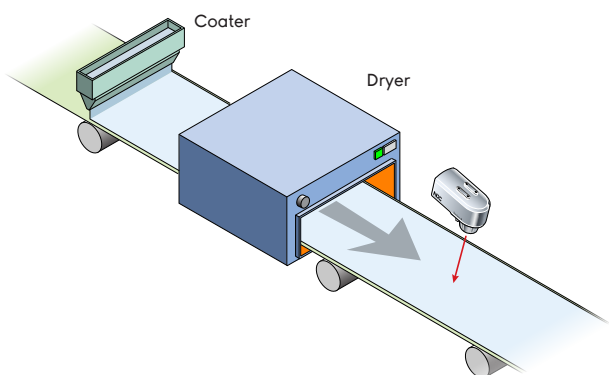
Coatings on Polymer Film (Dry End)



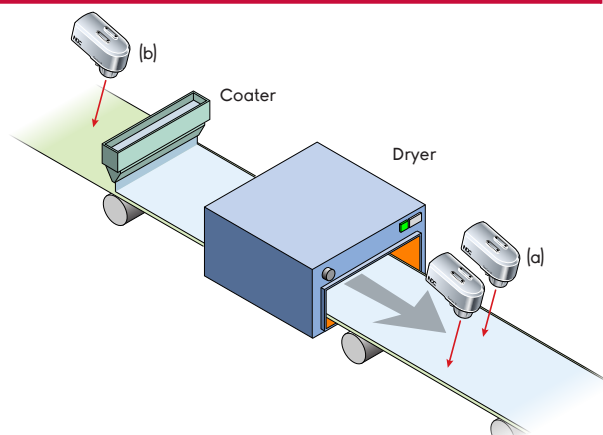
Coatings on Polymer Film (Wet End)



Single-Point Gauge Setup



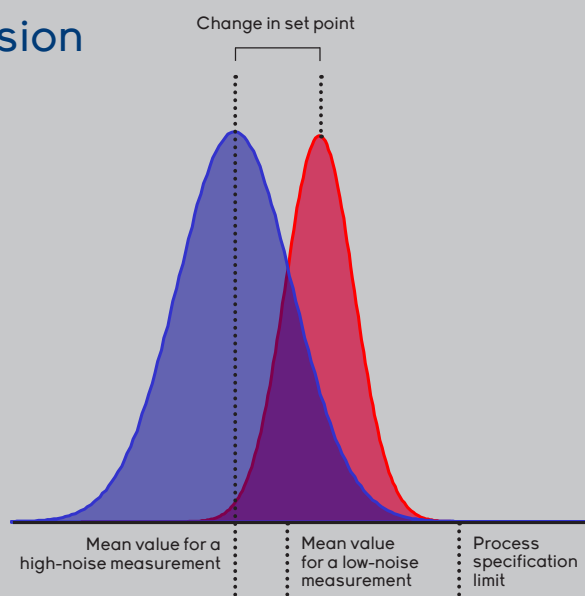
Left and Right (a) or Differential Multi-Point (b) Setup



The Benefit of Improved Precision

Series 9 gauge has been optimized to provide the fastest, highest resolution and most precise measurements available.

The statistical plot shows how the Series 9 gauge delivers a low standard deviation, allowing tight control over the lower and upper limits for increased yields, reduced energy consumption and a faster ROI.



Providing Peace-of-Mind Through Low Cost of Ownership, Ease-of Use and Long-Term Stability

Greater processing power to perform more advanced measurements and gauge operations

- ▶ Powerful, dual-core processor with large on-board storage

Deeper process vision

- ▶ 12 hours of measurement trending and embedded product calibration adjustment tools

50 years of experience backed by industry-leading measurements

- ▶ Every NDC application is fully documented

Hygienic, seamless stainless-steel enclosure with sapphire window

- ▶ 316L stainless steel

Integrated Air Purge Window shield to keep window clean from process environment

- ▶ Automated window contamination monitor eliminates routine cleaning



Simple slide-on sensor mounting



Integrated Air Purge Window



Removable service backplate

Innovative removable backplate for easy service and maintenance

- Removeable gauge internals ensure fast, convenient access when needed

Versatile connectivity for flexible integration into production networks

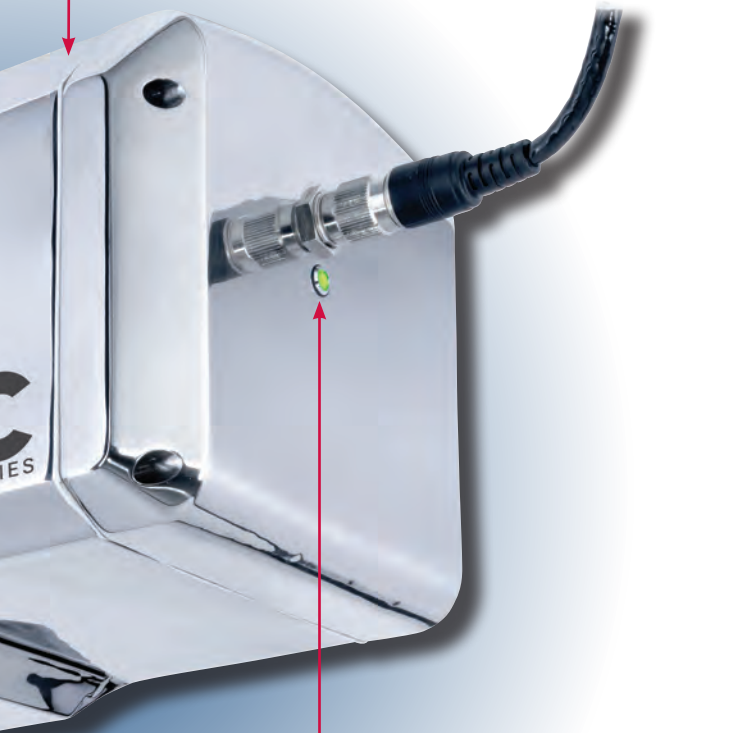
- Ethernet and fieldbus networking with digital and analog connectivity

Remote communication option to remotely connect to networked gauges

- Remotely view gauge, process and sampling information

Advanced diagnostics for maximum uptime

- Includes Status indicator light for at-a-glance confirmation with integrated Auto-Check feature for total piece of mind



Status indicator light

**EASY TO INSTALL,
INTEGRATE AND OPERATE**

Intelligence that transforms the world.

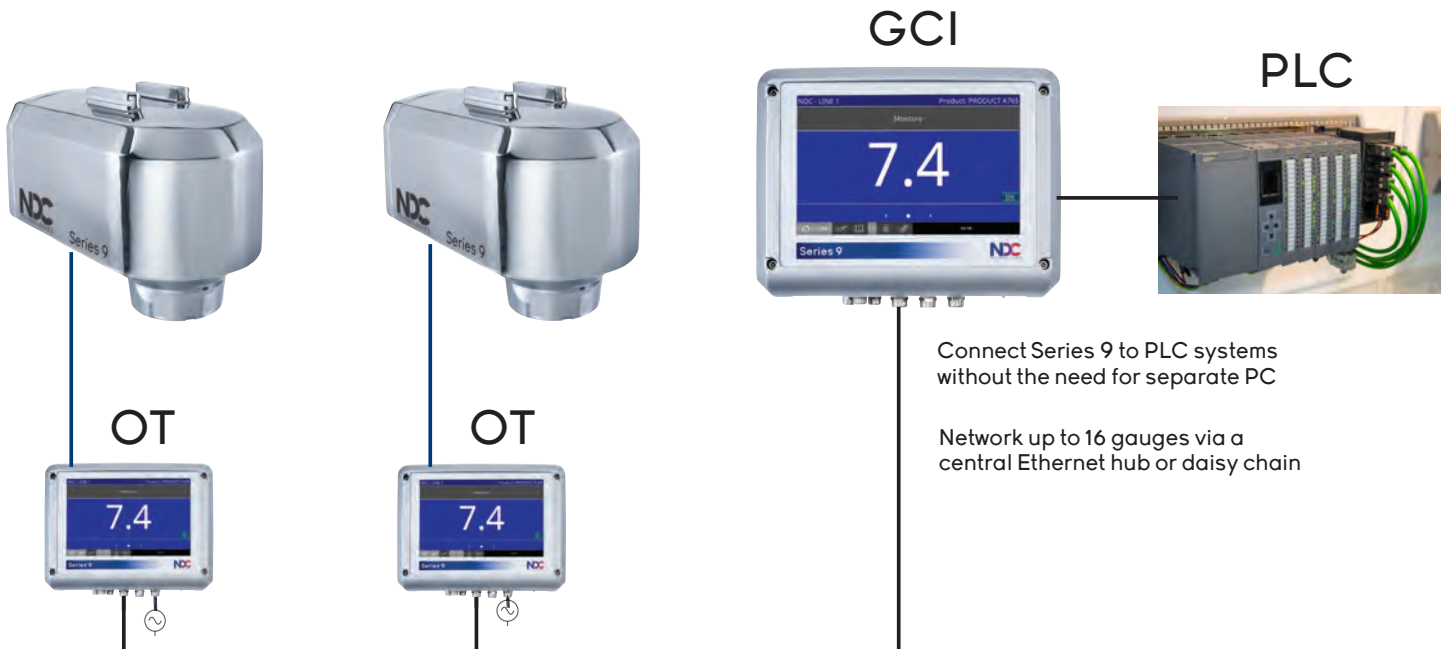
Connectivity and Interfacing to Enhance Process Insight and Control



Gauge Control Interface (GCI)

Series 9 gauge control interface

- ▶ 10-inch, touch-screen GCI
- ▶ Three Ethernet ports and RJ45 external port
- ▶ Interfaces up to 16 gauges
- ▶ Real-time trending up to 12 hours
- ▶ Multi-lingual interface



Series 9 devices

Series 9 peripheral devices all run on 24V DC power and include:

OT



Operator Terminal

The OT provides 24V DC to a single gauge and operator-level interaction access to its measurement, data trending, sampling and diagnostic functions. Three (3) Ethernet ports are available for convenient networking configurations.

GCI



Gauge Control Interface

The GCI provides 24V DC power to a single gauge. It enables you to perform multi-gauge setup (up to 16 gauges), calibration adjustments and product management. Both the GCI and OT feature high-definition, multi-lingual, color touch-screen displays.

PH



Power Hub

The PH provides 24V DC power to a single gauge. It also enables convenient networked arrangements of multiple Series 9 gauges and devices via three (3) Ethernet ports.



Portable interface

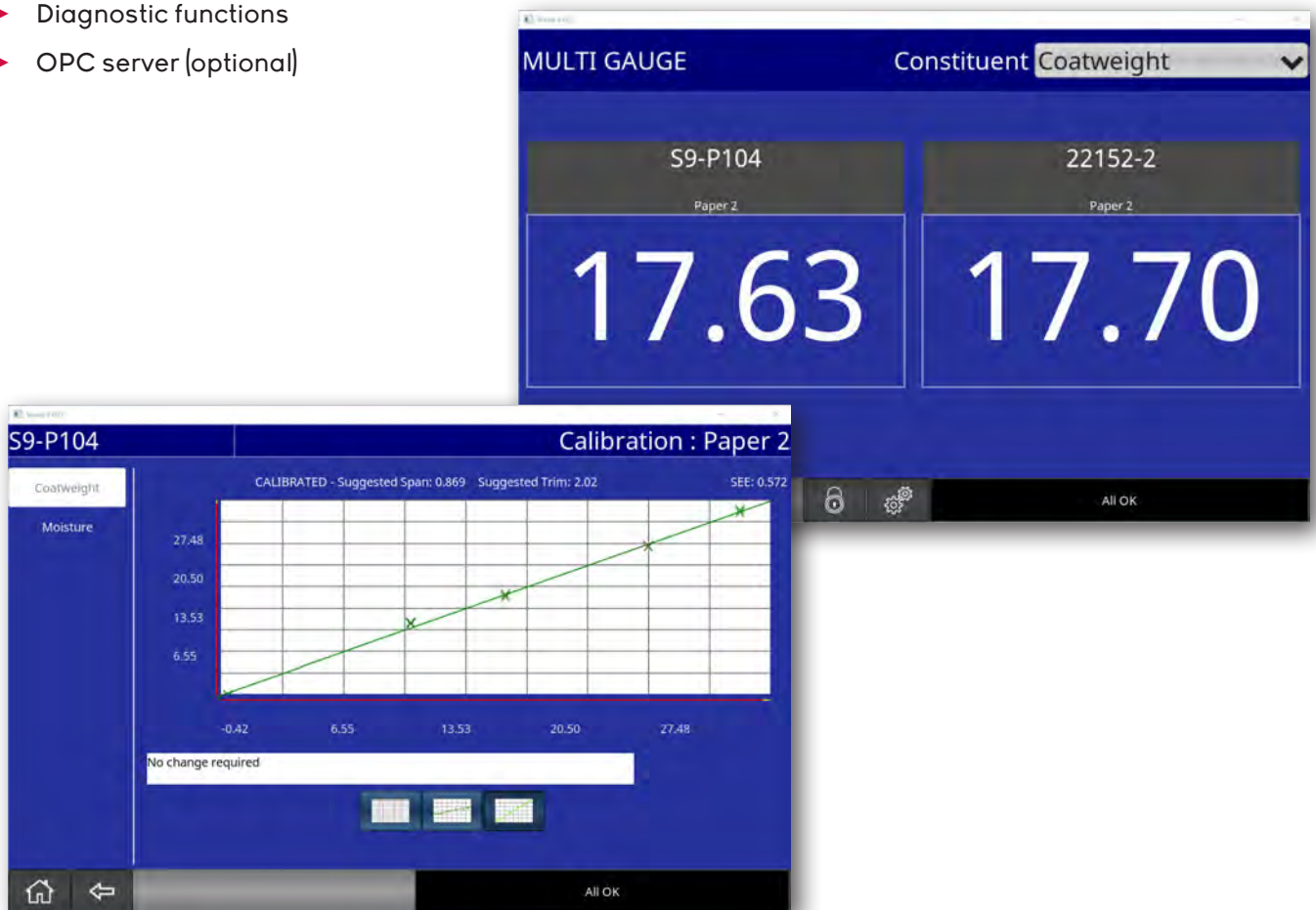
Accessing your Series 9 gauge is even easier with our portable operator terminal. It can be docked in the control room or operated near the gauge (wirelessly or via Ethernet cable) for sampling and configuration.



Calibration Software

The Series 9 gauge is delivered with NDC Technologies' unique factory calibrations that are ready for use for the specified measurements and ranges. On installation, they are adjusted to agree with the local reference method. The software provided simplifies this process by enabling a comparison of instrument values with laboratory results and feature the following tools and functionality:

- ▶ Instrument setup and calibration
- ▶ Product management (product settings)
- ▶ Displays of measurement and other key parameters
- ▶ Data logging, data trending and export
- ▶ Diagnostic functions
- ▶ OPC server (optional)



Notes

Optimizing Your Investment with World-Class Service and Support

NDC Technologies' technical expertise comes from deep experience supporting thousands of products at the world's leading manufacturers. Our portfolio of support offerings leverages this expertise to assist you through the service lifecycle. We offer a complete range of cost-effective support solutions including commissioning, training, technical assistance and service agreements. Customers rely on our 24-7 availability via myNDC – the industry's most progressive service cloud portal. Whether it's configuring new equipment, training your technical staff or solving a technical problem, you can count on our experienced team to help maintain the health and performance of your NDC Technologies product.

Visit myNDC service cloud at myndc.com.



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