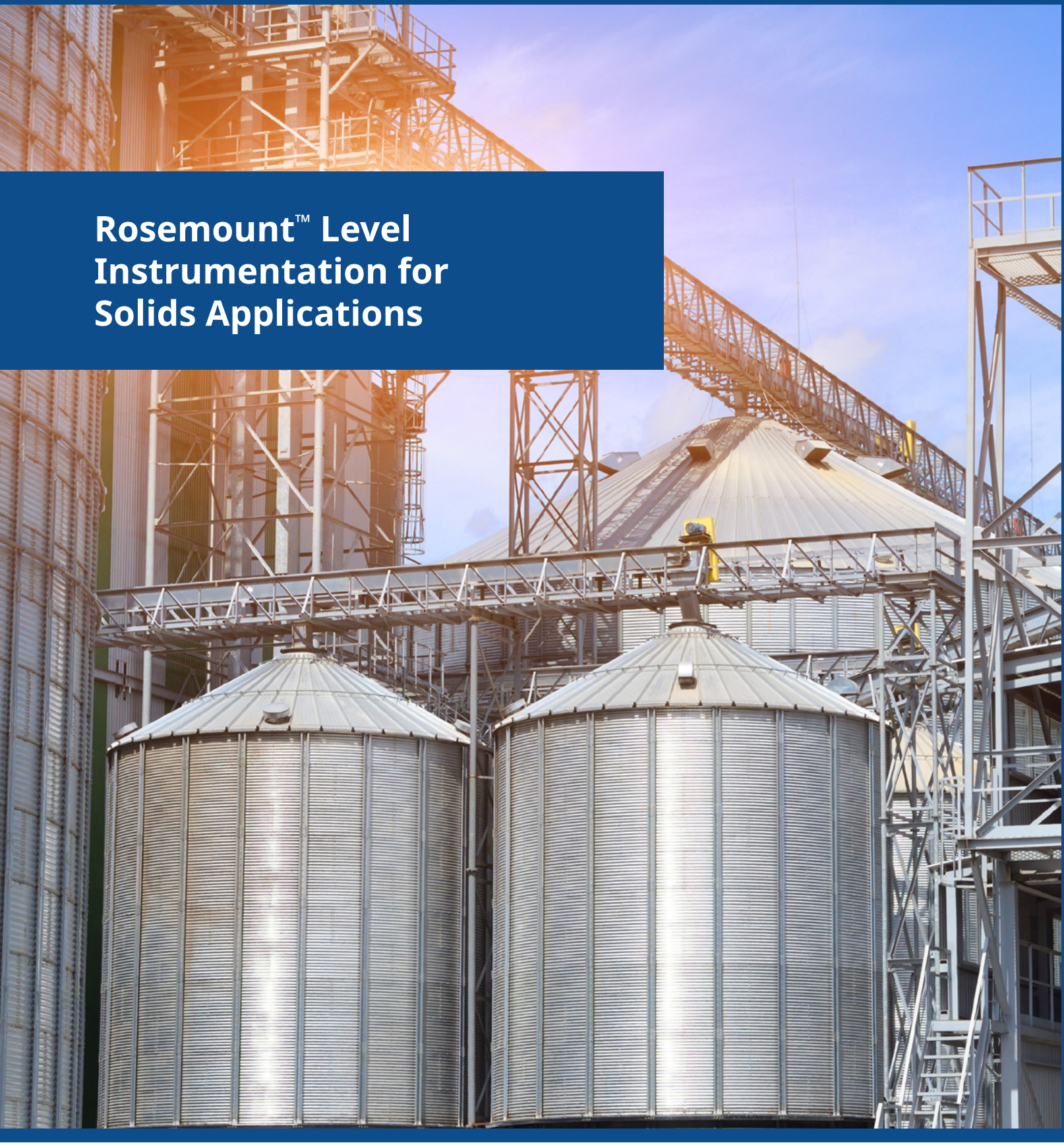


Rosemount™ Level Instrumentation for Solids Applications

Achieve accurate, efficient and safe operations with continuous and point level measurement

EMERSON.

Reliable and maintenance-free solutions for solids applications

In production plants, uncertainties in solids measurement can lead to inefficiencies, increased expenses, extended downtime, and potential safety hazards for personnel, machinery, and the environment. By utilizing reliable level measurement technologies, you can efficiently manage bulk solids inventory, eliminate ambiguities, and enhance operational efficiency.

One of the challenges that production plants face is the achievement of the accurate and reliable measurements, which in turn reduce needs.

- Instrument technicians, Södra Cell

Having reliable measuring devices with advanced capabilities helped us reduce operational costs, minimize maintenance time and enhance personnel safety.

- Automation Manager, Holcim

Protecting processes from overfill or run-dry with measurement devices helped to eliminate costly stoppage of machines.

- Instrumentation Manager, Cereal Plant

Rosemount level measurement product offering includes a complete line of transmitters and switches for solids applications that will help you reduce maintenance work, optimize operations and enhance safety at your plants.

Continuous Level Measurement for Solids Applications

Rosemount 5408 Non-Contacting Radar Level Transmitter

Durable metal housing

Advanced surface tracking and less sensitivity to internal obstructions with Smart Echo Supervision™

Signal Quality Metrics, Historian and Smart Meter Verification enable proactive maintenance and reduce downtime

Air purging connection to prevent clogging in parabolic antenna

APPLICATIONS

- Tall silos, extreme conditions, large particles, granules and pellets
- Measures bulk solids up to 295ft (90m)

Rosemount 3408 Non-Contacting Radar Level Transmitter

Optional wireless Bluetooth® technology or WirelessHART® technology for level measurement automation in remote locations

Signal Quality Metrics and Smart Meter Verification enable proactive maintenance and reduce downtime

Increased reliability thanks to Smart Echo Supervision

Air purging connection available in process seal antenna

Also available with Native WirelessHART technology!

APPLICATIONS

- Medium to small silos and piles with granules, heavy and fine powders
- Measures bulk solids up to 98ft (30m)
- Remote or hard-to-reach locations

Rosemount 1208 Non-Contacting Level and Flow Transmitter

Simple installation and cable/ sensor replacement with M12 connector

Increased reliability thanks to Smart Echo Supervision

Easy integration to new or existing systems thanks to Bluetooth® wireless technology, HART® and IO-Link

1.5" G and NPT process connections are compatible with a range of flanges and adapters

APPLICATIONS

- Small vessels, tight spaces and outdoor installations
- Suitable for applications with powders and granules
- Measures bulk solids up to 33ft (10m)

Rosemount 1408 Non-Contacting Radar Level Transmitter

Hygienic certifications and sealed polished stainless-steel housing

M12 electrical connector allows for simple installation and start-up

Increased reliability thanks to Smart Echo Supervision

Modular adapter system

APPLICATIONS

- Small tanks and tight spaces
- Hygienic applications with powders and granules
- Measures bulk solids up to 33ft (10m)

Rosemount 5300 Guided Wave Radar Level Transmitter

Direct Switch Technology for better signal strength

Signal quality Metrics for preventive maintenance

Probe anchoring for stability

Probe End Projection for reliable measurement over long ranges and low DC

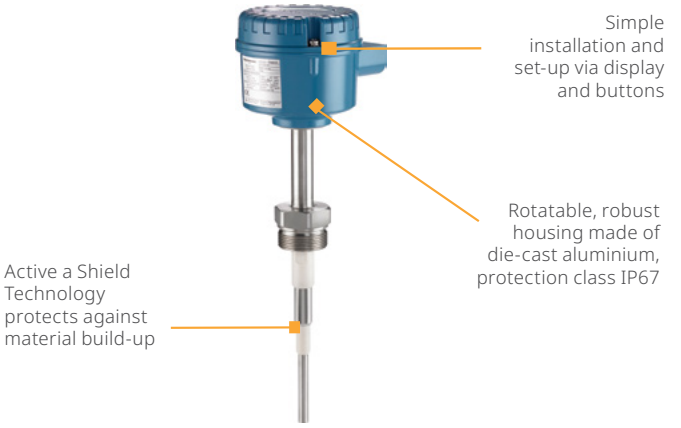
APPLICATIONS

- Small vessels and long distances.
- Fast changing levels and restricted installation areas.
- Material with low dielectric constant.

Point Level Measurement for Solids Applications

Rosemount 2555 Capacitance Switches

- Universal sensor for most bulk materials, independent of particle size
- Measurement of low dielectric values (from 1.5)
- Continuous self-diagnostic probe function
- Suitable for high mechanical loads and high temperature/pressure applications

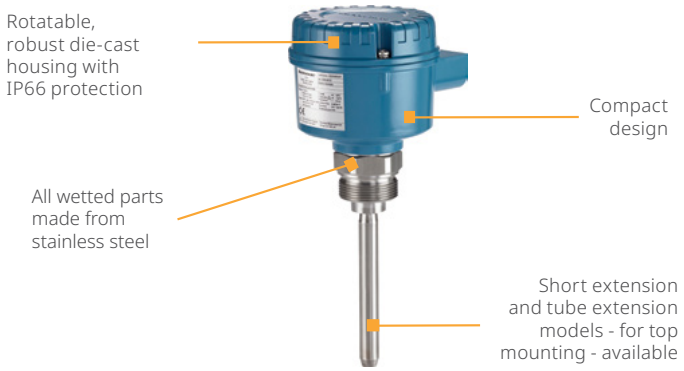


APPLICATIONS

- Bulk solids in all applications, particularly suitable where there is risk of coating or if high vibration is present.
- Ideal for sand, cement, and mining applications.

Rosemount 2535 Vibrating Rod Switches

- Ideal for use in fine-grained and powdered materials
- Reliable, simple, and maintenance-free measurement principle
- Compact design - ideal for installation in tanks with limited space
- Easy installation - no orientation adjustment

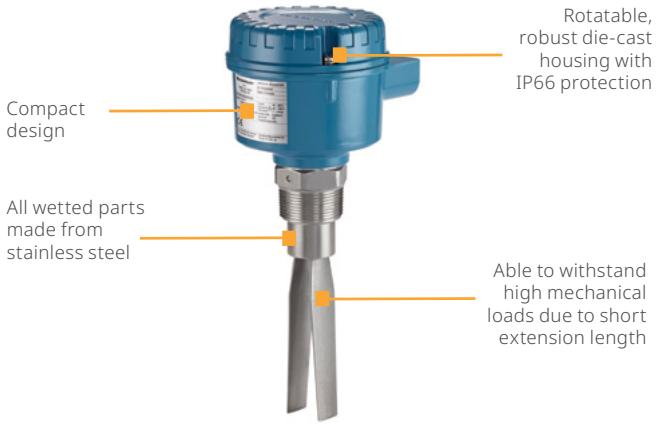


APPLICATIONS

- Storage silos and process vessels/containers with limited space.
- Materials with light product density, fine-grained and powdered products. Applications requiring pneumatic filling.

Rosemount 2511/2521 Vibrating Fork Switches

- Ideal for use in bulk and powdered materials
- Reliable, simple and maintenance-free measurement principle
- Designed for point level detection and interface measurement
- Robust sensor ideal for media demanding high mechanical resistance

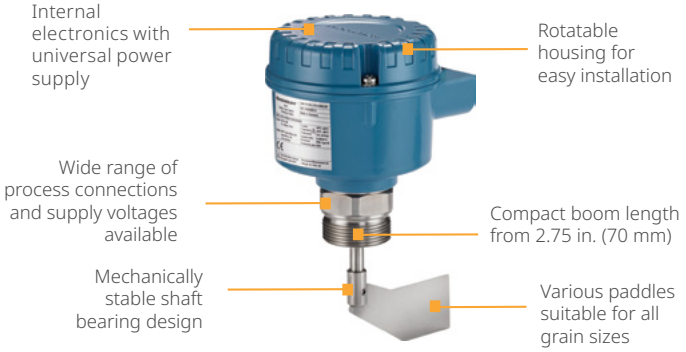


APPLICATIONS

- Storage silos and process vessels/containers with limited space.
- Materials with light product density, fine-grained, and powdered products. Applications requiring pneumatic filling.

Rosemount 2501 Rotating Paddle Switches

- Particularly suitable for small process vessels and bulk solids
- Robust paddle design able to withstand heavy loads and extreme temperatures
- Unaffected by dust, electrostatic charging, and caking
- Long lifetime: mechanical hysteresis prevents frequent activation cycles



APPLICATIONS

- Most bulk solids applications, including high temperature and hazardous/explosive environments.
- Ideal for food and beverage, plastics, and chemical applications.

Level Technology for Solids Applications

Specification and selection guide: Continuous Level Measurement

		Rosemount 5300 Guided Wave Radar	Rosemount 5408 Non-Contacting Radar	Rosemount 3408 Non-Contacting Radar (wired and wireless models)	Rosemount 1208 Non-Contacting Radar	Rosemount 1408 Non-Contacting Radar
Measurements	**Unaffected by dust generation**	●	●	●	●	●
Particle Size	**Large Particles**	●	●	●	●	●
	Pellets and large granules	●	●	●	●	●
	Granules	●	●	●	●	●
	Heavy Powders	●	●	●	●	●
	Fine Powders	●	●	●	●	●
Output	**4-20 mA with HART®**	●	●	●	●	●
	FOUNDATION™ Fieldbus	●	●	●	●	●
	RS485/Modbus®	●	●	●	●	●
	Native WirelessHART®	●	●	●	●	●
	WirelessHART© with Emerson Wireless 775 THUM™ Adapter	●	●	● Wired 3408 model can be used with THUM Adapter	●	●
Bluetooth® Wireless Technology		●	●	● (Not available for WirelessHART model)	●	●
Performance	**Maximum measuring range**	164ft/50m	295 ft/90m	98 ft/30m	33ft/10m[1]	33ft/10m[1]
	Reference accuracy	±0.1in/3mm	0.04in/1mm	0.04in/1mm (wired model) 0.12in/3mm (wireless model)	0.08in/2mm	0.08in/2mm
Features	**Air-purging**	●	●	●	●	●
	Probe End Projection	●	NA	NA	NA	NA
Process Conditions	**Operating Temperature**	-320 to 752 °F (-196 to 400 °C)	-76 to 482 °F (-60 to 250 °C)	-76 to 392 °F (-60 to 200 °C)	-40 to 176 °F (-40 to 80 °C)	-40 to 302 °F (-40 to 150 °C)
	Operating Pressure	Full vacuum to 5000 psi (Full vacuum to 345 bar)	-15 (-1) to 1450 psig (100 bar)	-15 to 363 psig (-1 to 25 bar)	-15 to 43.5 psig (-1 to 3 bar)	-15 to 116 psig (-1 to 8 bar)
Diagnostics	**Advanced Software Diagnostics Tools**	Signal Quality Metrics, Probe End Projection	Smart Meter Verification, Signal Quality Metrics, Proof Test Wizards, Smart Echo Level Test	Smart Meter Verification, Signal Quality Metrics, Proof Test Wizards (only wired model), Smart Echo Level Test (only wired model)	NA	NA

[1] 49 ft. (15m) in applications with a dielectric constant>10 ● Recommended ● Not Recommended ● Application Dependant

Specification and selection guide: Point Level Measurement

		Rosemount 2555 Capacitance Switches	Rosemount 2535 Vibrating Rod Switches	Rosemount 2511 Vibrating Fork Switches	Rosemount 2521 Vibrating Fork Switches (High Sensitivity Model)	Rosemount 2501 Rotating Paddle Switches
Output	**Relay DPDT**	●	●	●	●	●
	Relay SPDT	●	●	●	●	●
	3-wire PNP	●	●	●	●	●
Process Temperature	**-40 to 302 °F (-40 to 150 °C)**	●	●	●	●	●
	40 to 932 °F (-40 to 500 °C)	●	●	●	●	●
	40 to 2012 °F (-40 to 1100°C)	●	●	●	●	●

● Not Available ● Available

Level Technology for Solids Applications

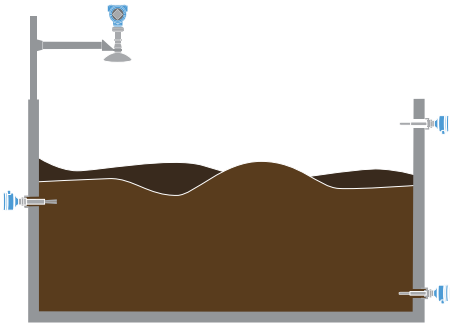
PVC Powder in Plastics and Rubber Processing

PVC powder is stored in large silos where inventory levels need monitoring. Non-contacting radar technology is ideal due to the dust generated, and level switches provide low and high-level alarms.

Grain Storage

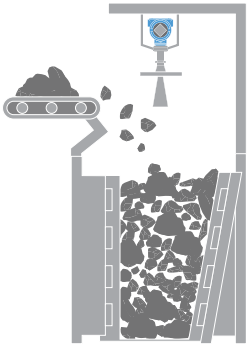
In corn, flour, seed oil, or sugar production plants, incoming material is stored in large bins or silos, often in remote locations. Monitoring surface levels ensures the right amount of material for processing, and WirelessHART technology makes this possible even in hard-to-reach areas.

Gypsum Bin



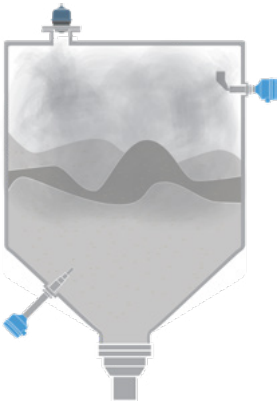
In coal fired power plants, gypsum is a by product of the flue gas desulfurization. Monitoring level in these bins is important for environmental compliance, cost management and operational efficiency.

Crusher



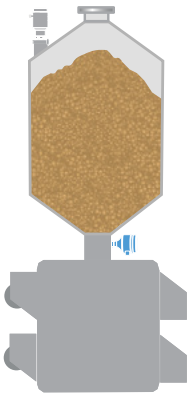
In mining facilities, raw material is brought into the crusher for grinding. The fast- moving level inside the crusher must be monitored to ensure process optimization, operational efficiency and avoid overloading.

Lime Silos and Fly Ash



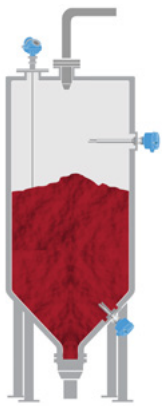
Limestone and fly ash are stored in silos, generating heavy dust during the process. Level monitoring is essential for efficient inventory management.

Malting Silo



Malt grains are stored in silos where level measurement is needed to monitor the level of malt so that so that the miller is replenished continuously.

Color Pigments



Finished pigment powders are stored in silos. Continuous level monitoring and level switches for overfill shutdown ensure control and safety during filling.

Rosemount level measurement instrumentation for solids applications will help you increase operational efficiency while enhacing safety.

For more information,visit
Emerson.com/RosemountSolidsLevel

Before using Emerson products, it is important that you review the health and safety information, and other information regarding the limitations of our products, contained in the applicable user manuals located at www.emerson.com.

The Emerson logo is a trademark and service mark of Emerson Electric Co.
Rosemount is a mark of one of the Emerson family of companies.
All other marks are the property of their respective owners.
©2026 Emerson Electric Co. All rights reserved.

00807-0200-2100 Rev AE

EMERSON