

The Sentinel 4000 drop through system

Metal gets detected.
Food production stays protected.

Introduction

Food producers and pharmaceutical manufacturers need to be confident that the products they deliver are safe to consume and free of foreign contaminants, especially those made of metal. Agricultural raw materials like fruits, vegetables, or nuts need to be free of any foreign matter that might have originated in the field or farm. Foods that are sliced or shaped by metal equipment in the course of processing need to be carefully checked for any pieces of blades or metallic components that might have broken off and slipped into the production line.

The Thermo Scientific™ Sentinel™ 4000 Drop Through System addresses these issues by providing high-sensitivity detection to increase the probability of finding ferrous, non-ferrous, and stainless steel metal contaminants in food and other products. Designed to be reliable and easy to use, the Sentinel 4000 drop through system, or Thermo Scientific™ Sentinel™ 4000D, helps ensure compliance with industry safety standards.

The Sentinel 4000D metal detector features Multiscan technology with up to five user-selectable frequencies of detection. This provides improved sensitivity and detection of contaminants in drop through applications. Whether your facility is working with granular food products like spices, larger food items like fruits or vegetables, powdered goods like silica for cosmetics, or chemical components like polystyrene beads, the Sentinel 4000 drop through system provides the highest levels of food safety and brand protection while keeping your production line moving at a rapid pace.

Features

The Sentinel 4000 drop through system will help manufacturers increase customer safety, improve product quality, and drive production efficiency. Its Multiscan frequency flexibility enables optimized performance in any application, with up to five user-selectable frequencies that allow for improved sensitivity and detection of smaller contaminants. This technology generates a higher probability of metal contaminant detection, leading to increased food safety and improved brand protection.

- An easy-to-use 7" modern color touchscreen with set-up wizards reduces set-up time, and the controls allow simplified harmonized operation aligned with the Sentinel platform.
- Modbus serial or Ethernet communications connectivity permits easy reporting, diagnostics, and remote maintenance help to maximize uptime.
- The Sentinel 4000D metal detector complies with hazardous location regulation ATEX 22 (EU); Class II Division 2 (NA coming soon). It comes with IP ratings of IP69K for head/controller, and IP65 for the full system.
- Detailed graphical displays show phases, rejects, quality test results, and detection thresholds to enable seamless fine tuning and troubleshooting. All electronics are integral, so mounting is easy and flexible. All balance functions are implemented in the software, and thus there is no need for manual hardware rebalance in the field.
- HD model includes thermal shock protection.





Options

Versatility is vital to any production operation, and the Sentinel 4000 drop through system comes with options that operators can select to meet their needs.

- The Sentinel 4000D metal detector is an effective drop-in replacement for our earlier Thermo Scientific™ APEX™ model drop through metal detector; your system can be easily upgraded in the field.
- The system is available in heavy duty (HD) specifications. The HD model is available in 316 stainless-steel housing to provide better surface corrosion resistance and better resistance of temperature shock, suitable for cold product inspection applications.
- A number of test pieces, made of Fe, non-Fe or 316 SS materials, are included to fit specific applications.
- Field compression flanges are present to minimize the metal-free zone. These are used to create secure and sealed connections and can be crucial in situations with limited space, frequently in situations where traditional welding is not feasible or practical.
- Product flow rate (when passing through metal detector head) can range from 80 m/min (262 ft/min) to 300 m/min (984 ft/min).

Additionally, the Sentinel 4000 drop through system has the capacity to operate across a wide ambient temperature range, and all construction materials are FDA-approved. Isolation transformers added on to the power conditioner shield the metal detector from power line problems. These contribute to the systems reliability, making the Sentinel 4000 drop through system an ideal choice for finding and eliminating metal contaminants from your food or pharmaceutical manufacturing operations.

Specifications	
Aperture sizes	Standard: 100, 125, 150, 175, 225 HD model: 125, 150, 175, 225
Metal detector certification/compliance	cTUVus; CE; ATEX Zone 22; Class II Division 2 (coming soon), Group F & G Certified
Communications	Standard ModBus serial or Ethernet modules
Construction	Stainless steel 304 straightlined case and front panel; HD 316 stainless steel
Description	Sentinel 4000 Drop Through System
Electrical requirements	100-240 VAC, 50/60 Hz, 100W Max, single phase plus earth ground
For use with (application)	Metal detection: Food, chemicals, other products
Input allocation	8 total (reject verify and return, external alarm)
Input types	8 Inputs - Active low with auxiliary supply for input sensors, NPN or PNP
Output allocation	Reject 1, reject 2, shut down, alarm, warning, QA lamp
Output types	8 Mechanical relay outputs; 8 solid state/digital relay outputs: 250 volt ac 2 amp max. 50 Volt dc 1 amp max
IP rating	IP69K (head and control panel); IP65 full system
Languages	English, Spanish, French, German, Italian, Chinese, Dutch, Czech, Russian, Polish, Thai, Bulgarian, Finnish, Portuguese
Operating temperature	Metal detector head ambient temperature: -10° to +40°C (+14° to +104°F) Metal detector full system ambient temperature: -5° to +40°C (+23° to +104°F) Product temperature in aperture: -10° to +55°C (+14° to +131°F) ; HD model -10° to +40°C (+14° to +104°F) Maximum washdown temperature (head and control panel): +80°C (+176°F)
Relative humidity	20 to 80% non-condensing
Product flow rate	80 m/min (262 ft/min) to 300 m/min (984 ft/min)

The Sentinel 4000 drop through system is a robust metal detection system with rapid response that provides faster and more precise analysis to comply with safety standards. Like its namesake, this sentinel will protect the public and protect your brand, while also saving you money from costly recalls.