

# Measuring accuracy and reliability

## SITRANS WW200 weighfeeder



### Accurate in-motion weighing

SITRANS WW200 is a low- to medium-capacity weighfeeder used for minor ingredient additives. SITRANS WW200 can be customized to meet your exact application needs. Stainless or mild steel (MS) units are available in open or enclosed styles. Custom lengths, belt types, inlet configurations, drives, and other options are available to meet your requirements. The MS model is ideal for use with chemicals, powders, or any granular product in applications not requiring washdown.

### Components

Standard components include the belt weigh bridge, speed sensor, and test weights supported by Milltronics BW100, BW500, or SIWAREX FTC micro-processor-based integrators for easy blending, batching, and feed rate control.

### Designed with food in mind

SITRANS WW200 cantilevered mechanical design provides for quick belt removal and easy maintenance. It is designed to eliminate material build-up, ensuring high accuracy and reliability. The SD (sanitary duty) model is designed for the food industry where high pressure washdown is required. It meets all USDA and FDA requirements.

### Mode of operation

Weighfeeders weigh bulk material while it is conveyed. An accurate rate of flow and totalized weight measurement is received without interrupting the process. A weighfeeder can also control the product flow rate. An adjustable mechanical shear gate profiles the material and fixes the correct material bed depth for a given material particle size. The belt speed can be automatically adjusted to attain the correct feed rate. In-motion weighing requires accurate transmission of the product load to strain gauge load cell(s). The resulting voltage signal corresponding to weight is transmitted to the integrator and becomes one of two inputs required for integration. Unlike static weighing, in-motion weighing integration requires a second input: a pulse signal proportional to the speed of the conveyor belt. Each belt speed sensor pulse represents a fixed distance of travel. Since the force measured by the load cell is represented as weight per unit length, it can be multiplied by the distance of belt travel (one speed sensor pulse) to provide product weight for that segment of the belt.

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## SITRANS WW200

SITRANS WW200 offers a weigh-deck with flat bars for belt support minimizing moving parts and reducing maintenance. It can be modified for specific applications with different lengths, drives, and belt types. The sanitary duty version is designed for the food industry allowing easy cleaning and high pressure washdown.

A weighfeeder system controls the rate of material flow into or out of a process. A variable speed drive, motor, and gearbox allow material flow to be controlled by a setpoint chosen with a Siemens integrator such as Milltronics BW100, BW500 or SIWAREX FTC through SIMATIC S7 or SIMATIC PCS 7. This control allows the feeder to provide precision weighing accuracies, and to improve blend consistencies, accountability, and record keeping.

- High accuracy
- Fast installation, easy to clean and maintain
- Flexible, rugged design allows configurations to suit many applications
- Belt widths up to 1.2 m (48")
- Crowned pulleys and side guide rollers for positive belt tracking

SITRANS WW200	
<b>Mode of operation</b>	
<b>Measuring principle</b>	Strain gauge load cells and digital speed sensor
<b>Typical applications</b>	Control and monitor feed rates and blending in cereals, seeds, lime slaking, or minerals
<b>Performance</b>	
<b>Accuracy*</b>	±0.5% with 10:1 turndown based on load, up to 30:1 based on speed
<b>Design rate range</b>	0.45 to 36 t/h (1,000 lbs/h to 40 STPH)
<b>Process conditions</b>	
<b>Operating temperature</b>	-10 to 40 °C (14 to 104 °F)
<b>Max. material temp.</b>	-10 to 77 °C (14 to 170 °F)
<b>Design</b>	
<b>Construction</b>	Mild steel with stainless steel, abrasion resistant material contact parts optional
<b>Load cells</b>	Two corrosion resistant platform type with mechanical overload protection (nickel-plated or stainless steel) <ul style="list-style-type: none"> <li>• Non-linearity: ±0.03%</li> <li>• Non-repeatability: ±0.02%</li> </ul>
<b>Speed sensor</b>	<ul style="list-style-type: none"> <li>• Optical encoder</li> <li>• C-flange mounted magnetic pulse generator, adapted between motor flange and reducer input flange (optional)</li> </ul>
<b>Framework</b>	Cantilevered, precision-machined stainless steel or mild steel structural frame for quick and easy belt replacement
<b>Pulleys</b>	152 mm (6") diameter with 6 mm (¼") rubber lagging for maximum traction
<b>Belt support</b>	Edge of flatbars eliminates material buildup
<b>Belting</b>	<ul style="list-style-type: none"> <li>• Polyester carcass with polyurethane top cover and static control with vulcanized endless finger splice for maximum weighing consistency (standard)</li> <li>• Different belts for specific applications (optional)</li> </ul>
<b>Belt tension</b>	Screw type, telescoper module with 150 mm (6") travel (mild or stainless steel)
<b>Belt cleaning</b>	UHMW blade type with spring tensioning at head pulley, return plow
<b>Drive</b>	<ul style="list-style-type: none"> <li>• 0.19 kW (0.25 HP) min., TEFC, or TENV 208/230/380/460/575 V AC, three phase or 90/180 V DC permanent magnet - both with flange mounted gear reducer</li> <li>• Larger/other motor sizes and voltages available</li> </ul>
<b>Shipping weight</b>	• 280 kg (617 lbs) minimum
<b>Approvals</b>	<ul style="list-style-type: none"> <li>• Meets USDA and FDA requirements for food processing</li> <li>• For use in hazardous rated areas, consult with factory</li> </ul>

### Control and communications

	Electronic integrators process sensor signals into operating data for continuous in-line weighing and flow measurement
<b>Milltronics BW500</b>	<ul style="list-style-type: none"> <li>• Dolphin Plus configuration software and Modbus® RTU/ASCII (standard)</li> <li>• SmartLinx® communications modules for A-B® RIO, PROFIBUS DP, or DeviceNet™ (optional); analog I/O card for PID control (optional)</li> </ul>
<b>SIWAREX FTC</b>	Siemens PLC module connection via SIMATIC S7 and PCS 7

\*Accuracy subject to: on factory approved installations, the weighfeeder system's totalized weight will be within the specified accuracy when compared to a known weighed material test sample. The test rate must be within the specified range of the design capacity and held constant for the duration of the test. The minimum material test sample must be equivalent to a sample obtained at the test flow rate for three revolutions of the belt or at least ten minutes running time, whichever is greater.

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