Belt Scales

IN-MOTION BELT SCALE SOLUTION

RICE LAKE®
WEIGHING SYSTEMS

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Belt Scales

Keep Production Moving with In-Motion Belt Scale Systems

Belt scales are the most accurate and efficient way to measure material flow on a conveyer belt and can also be used for product dosing. A belt scale consists of a weigh frame with one or more load cells, a speed sensor and a weigh processor. The weigh processor converts signals received from the load cell and speed sensor into a total and weight per hour.

The selection of a weigh frame and speed sensor is determined by the required accuracy, as well as capacity, belt speed, inclination and structure of the transport belt.

Rice Lake Weighing Systems offers a broad selection of durable and accurate belt scales. With five different models to choose from, Rice Lake belt scales provide a solution for nearly every application, including food, recycling, chemical, steel, animal feed and compost production, sand and gravel quarries, and harbor logistics industries.

BS221DB

The 221DB Master™ belt scale weigh frame consists of two arms equipped with a pivot and a load cell mounted to the side supports of the conveyer belt. The idler, or weighing roller, is mounted on top of the frame arms. The 221DB provides simple assembly and accessibility for service. Suitable for most belt widths and capacities, the 221DB is a versatile solution for many applications.

STANDARD FEATURES

- Weigh frame is mounted on outside of conveyor
- Minimum modifications to conveyor are required
- Service friendly
- Friction-free pivot supports
- Two support beams
- Fits standard conveyors
- Mounts with four bolts per assembly

OPTIONS

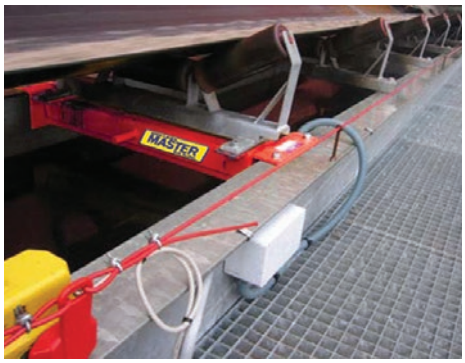
- Galvanized or stainless construction

APPLICATIONS

- Medium to heavy capacity

SPECIFICATIONS

CONVEYOR WIDTH:	500 mm-2.400 mm
CAPACITY:	3.300 tons per hour
MAXIMUM BELT SPEED:	4 m/s
INCLINATION:	Maximum 25 degrees
MATERIAL:	Powder coated mild steel
SYSTEM ACCURACY	0,5-1%
LOAD CELL:	RLHBB: 50 kg, 100 kg, 200 kg
JUNCTION BOX:	JB4SS
WARRANTY:	One-year limited



BS311M

Consisting of an idler or weighing roller placed on a simple load cell beam, the 311M Master belt scale weigh frame is a cost effective solution. Suitable for belt widths up to 1.500 mm and belt speeds up to 2 meters per second, the BS311 frame is often used for belts that can regulate the capacity of a bulk flow using the measured value and a controlled belt speed.

STANDARD FEATURES

- Semi-modular weigh frame design
- Weigh frame without moving parts
- Fits standard conveyors
- Mounts with four bolts
- Requires weigh frame cutting for proper fit
- Minimum modifications to conveyor required

OPTIONS

- Galvanized or stainless construction
- Custom widths available

APPLICATIONS

- Mining, quarries, bulk material blending, process control and retrofit

SPECIFICATIONS

CONVEYOR WIDTH:	1.500 mm max
CAPACITY:	1.500 tons per hour
BELT SPEED:	Maximum 2 m/s
INCLINATION:	Maximum 12 degrees
MATERIAL:	Powder coated mild steel
SYSTEM ACCURACY:	1%
LOAD CELL:	RL1250: 50 kg, 100 kg, 250 kg
WARRANTY:	One-year limited

BS211

The 211 Master belt scale weigh frame consists of an inner frame mounted with two friction-free pivots to one end of the scale. The load cell is located on the opposite end with the idler mounted on the inner frame. The friction-free pivots absorb tensile stress in a horizontal direction, creating a very solid weigh frame well-suited for heavy-duty applications.

STANDARD FEATURES

- Friction-free pivot points
- One load cell carrier beam
- Fits standard conveyors
- Custom built for each application

OPTIONS

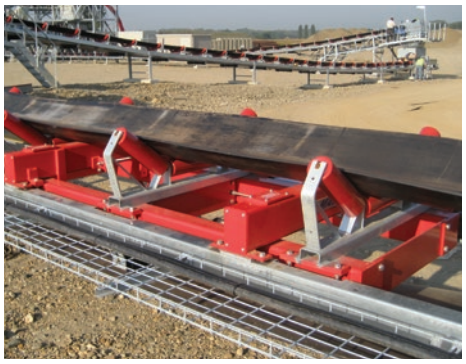
- 304/316 stainless steel
- Dual load cells

APPLICATIONS

- Medium to heavy capacity, mining and agriculture

SPECIFICATIONS

CONVEYOR WIDTH:	500 mm to 2.000 mm
CAPACITY:	3.000 tons per hour
MAXIMUM BELT SPEED:	4 m/s
MAXIMUM INCLINATION:	25 degrees
MATERIAL:	Powder coated mild steel
SYSTEM ACCURACY:	0,5 %
LOAD CELL:	RL20001 alloy steel, s-beam (capacity selected from application)
WARRANTY:	One-year limited



BS14X

Weigh three idlers on an inner frame, supported by four load cells with the 14X Master belt scale weigh frame. This creates an incredibly accurate belt scale qualified for high capacities and belt speeds. The 14X is often used in mining and aggregate applications. The frame is custom made using the specifications of the conveyor belt, making it suitable for different belt conveyor models.

STANDARD FEATURES

- Custom built for each application
- Fits standard conveyors
- Multiple idler design
- Inner frame has free-floating platform

OPTIONS

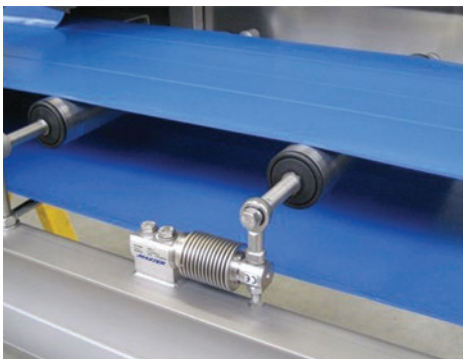
- 304 stainless steel
- Two, three or four weigh idlers

APPLICATIONS

- Medium to heavy capacity, mining and aggregate

SPECIFICATIONS

CONVEYOR WIDTH:	500 mm to 3.000 mm
CAPACITY:	20 tons per hour
BELT SPEED:	7 m/s
INCLINATION:	25 degrees
MATERIAL:	Powder coated mild steel
SYSTEM ACCURACY:	0,25 %
LOAD CELL:	RL20001 alloy steel s-beam (capacity selected from application)
WARRANTY:	One-year limited



BS421

The 421 Master belt scale weigh frame is specifically designed for high volume, low density applications where belt load and belt speed are moderate. Ideal for flat belt conveyors, the 421 features two BM11 bending beams and hermetically sealed load cells mounted to adjusting plates on the outside of the conveyor stringers to create a stable base. The 421 master belt scale is also available for hazardous and explosive areas.

STANDARD FEATURES

- Ideal for flat belt conveyors
- Roller supported on both sides by load cells
- Open design for easy cleaning

APPLICATIONS

- Light capacity, food production and light granular materials

SPECIFICATIONS

CONVEYOR WIDTH:	300 mm to 1.600 mm
CAPACITY:	30 tons per hour
BELT SPEED:	2 m/s
INCLINATION:	10 degrees
MATERIAL:	Powder coated mild steel or 304 / 316 stainless steel
SYSTEM ACCURACY:	0,5 %
LOAD CELL:	RLHBB single ended beam in 10, 20 or 50 kg capacities
WARRANTY:	One-year limited

Belt Scales

IN-MOTION BELT SCALE SOLUTIONS

SCT-4XD
Belt Scale Integrator

The SCT-4XD is a high-speed belt scale integrator designed to withstand extreme environments. It can manage a belt scale with up to four load cells and, with up to 100 conv/sec updates, is a perfect solution for bulk material weighing. Highly serviceable, the SCT-4XD features removable terminal blocks to simplify wiring. The SCT-4XD performs seamlessly with self-contained DIN rail integration when an operator HMI is not required.

SPECIFICATIONS

POWER:	12 to 24 VDC
A/D:	5 VDC, 120 mA (up to 16 × 350 ohm cells)
COMMUNICATION:	RS-485 half duplex, RS-232 full duplex, USB Micro B connector (device) for PC configuration
I/O:	Two inputs: 12/24 VDC Two outputs: 150 mA 48 VAC/150 mA 60 VDC

SCT-4XD Digitizer with 1280 HMI

Built tough to withstand even the harshest environments the unparalleled capabilities of the digitizer paired with the 1280 are designed for modularity.

Web server access from both instruments gives a new dimension of remote access with handheld devices, printers, PLCs, or PCs to support the growth of any enterprise.

SPECIFICATIONS

POWER:	AC or DC
A/D:	5 VDC Singular Channel with up to 4 individual load cell monitoring
COMMUNICATION:	RS-232, RS-485
FLEXIBLE INTERFACE:	Web server accessible over TCP network
I/O:	Supports Dual Encoders and Outputs for automatic test weight application
MODULAR:	Remote digitizer reporting back to 1280 Enterprise HMI

OPTIONAL

- Analog Output
- Fieldbus: EtherNet/IP, PROFINET, Modbus TCP/IP

WE503D
Integrator

The model WE503 is a weigh processor, which can be used in most applications for dynamic weighers, like belt scales, screw weighers, Bulkslide flowmeters and impact flowmeters.

It provides a readout of the actual flow of material in kg per hour (or ton/hour) or the total in kg (or tons) and has two totalizers.

In addition to the basic functions of dynamic weighers, the WE503D also has batch functionality and a PID control function, which can be used to control the capacity in function of a setpoint.

SPECIFICATIONS

POWER:	AC or DC
A/D:	5 VDC Single Channel
COMMUNICATION:	5V RS-232, RS-485, Ethernet TCP/IP, Wi-Fi
I/O:	Supports Dual Encoders

OPTIONAL

- Analog Output
- Fieldbus: PROFIBUS DP, PROFINET, Modbus TCP/IP, EtherNet/IP, DeviceNet, EtherCAT, CanOpen

SALES AND TECHNICAL ASSISTANCE

RICE LAKE WEIGHING SYSTEMS

HEADQUARTERS
230 West Coleman Street
Rice Lake, Wisconsin 54868 - USA
Tel: (715) 234 9171 | Fax: (715) 234 6967

RICE LAKE WEIGHING SYSTEMS EUROPE B.V.
Weiland 11
NL-6666 MH Heteren - The Netherlands
Tel: +31 (0) 26 472 1319 | Email: europe@ricelake.com
www.ricelake.com

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