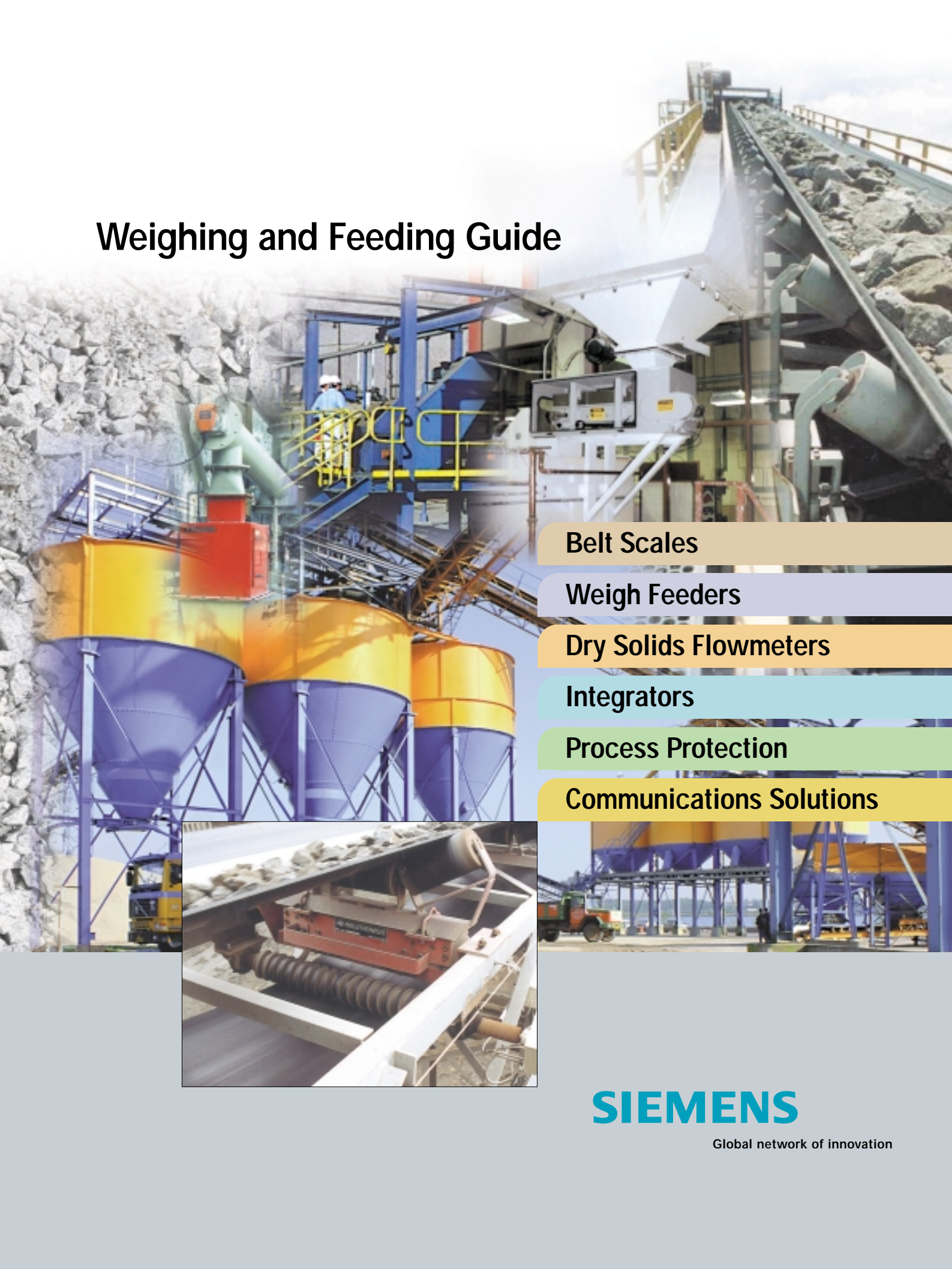


Weighing and Feeding Guide



Belt Scales

Weigh Feeders

Dry Solids Flowmeters

Integrators

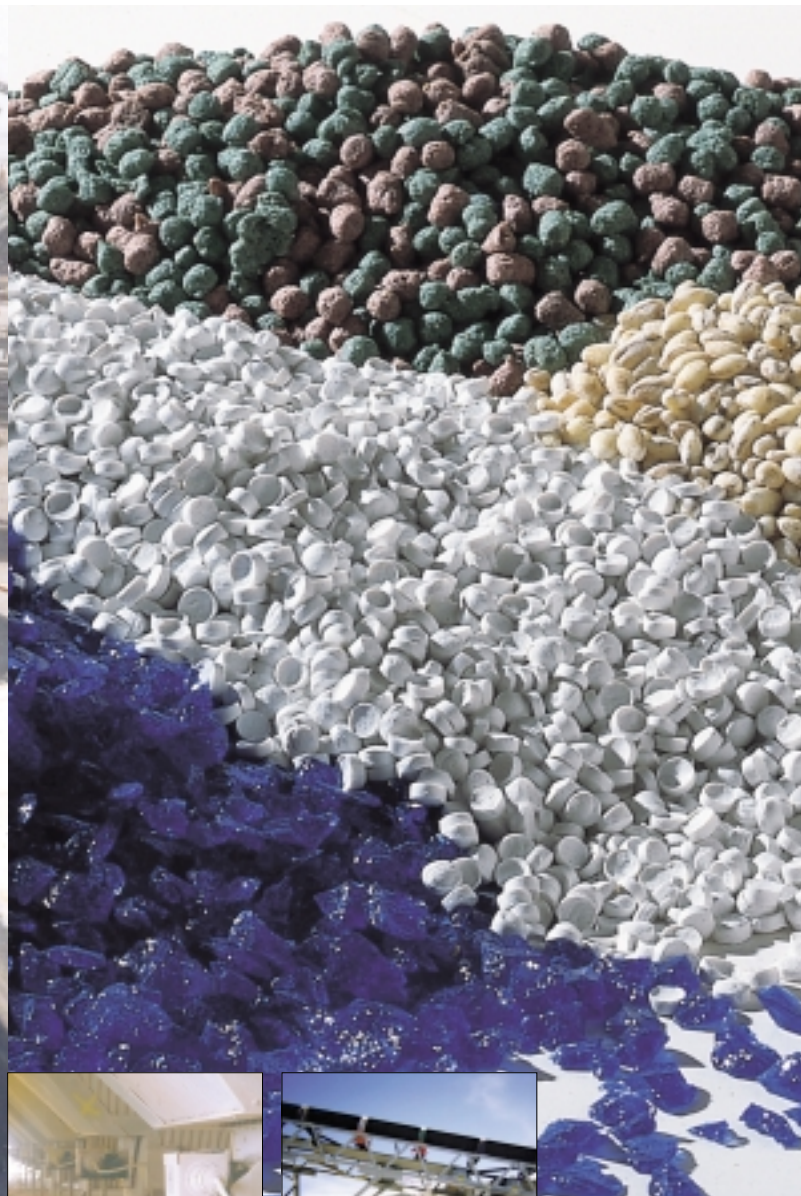
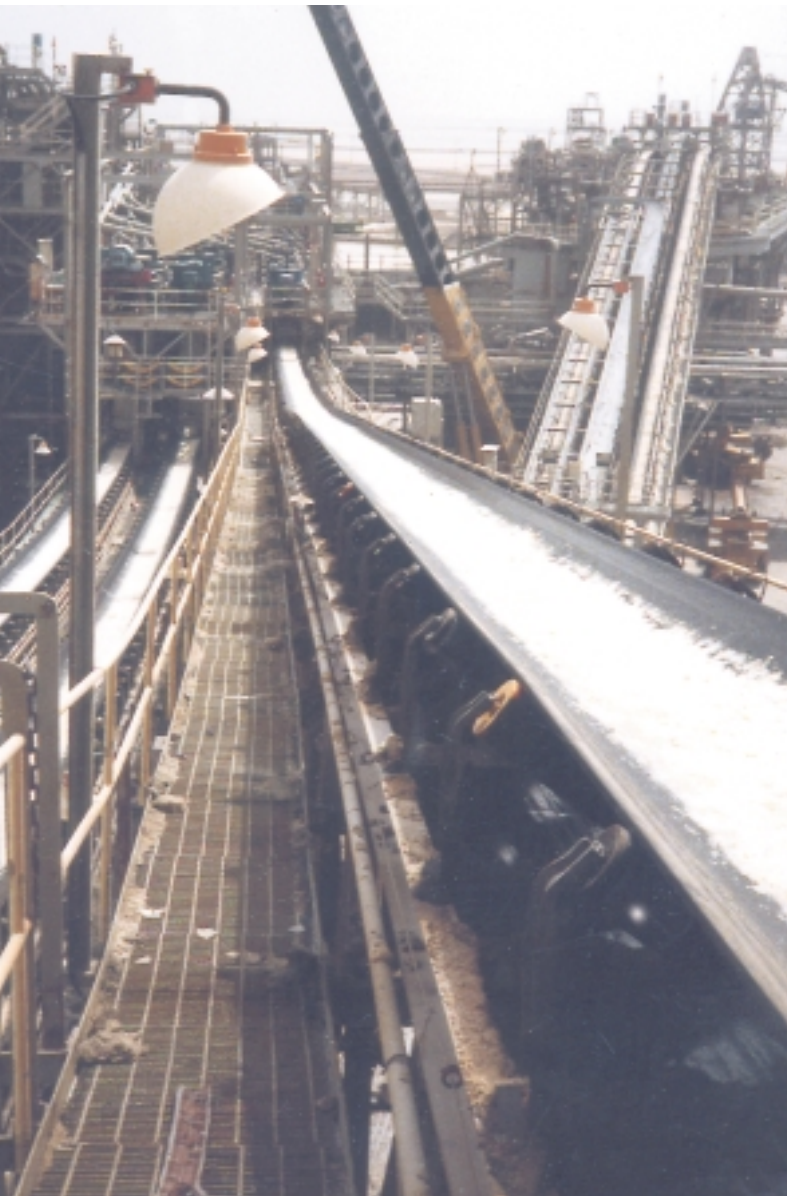
Process Protection

Communications Solutions



SIEMENS

Global network of innovation



You will find reliable Milltronics weighing and feeding equipment from Siemens in almost any industry that involves handling of bulk materials. With a wide range of models and features available, these instruments are effective in applications such as cement, coal, minerals, gravel, bulk chemicals, plastic pellets, pet food, cereal, fruits and vegetables, wood chips, and many more.



In today's competitive environment, accurate, low-maintenance equipment helps your profitability. You can improve your results with reliable Milltronics® technologies from Siemens.

Whether your application is crushed stone, ore, cement, coal, food processing or chemicals, you can profit from our field-proven conveyor belt scales, level measurement systems, weigh feeders, solids flowmeters, integrators, and motion and acoustic sensors. Standard and custom models are available to suit your requirements. Our products are rugged – built for tough operating conditions in the aggregate, cement and mining industries. They are easy to install and maintain, and expert technical support is there when you need it.

This guide helps you determine the equipment and solutions that meet your needs. It provides an overview of standard models, options, and specifications.

Technology. Innovation. Support.

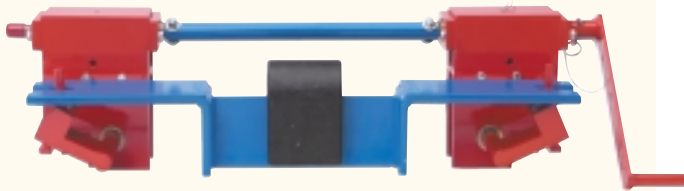
Belt scales help maximize the use of raw materials, control inventories, and aid in the manufacturing of a consistent product. With a track record for consistent performance in harsh environments, our Milltronics conveyor belt scales are your best choice for reliable, continuous in-line weighing of dry bulk granular solids. These belt scales combine simple, drop-in installation, low maintenance (no moving parts) and repeatable accuracy for productive operation. They show minimal hysteresis and superior linearity, and ignore side loading. All load cells feature overload protection. With use of approved intrinsically safe barrier strips, all belt scales can be used in hazardous locations.

Belt Scale Selection Criteria

- Accuracy required
- System cost
- Reliability of equipment
- Ease of installation
- Maintenance requirements
- Integrator electronics capabilities
- Service and technical support



Keep Your System Calibrated with MWL Weight Lifter



A MWL Weight Lifter helps you safely store and easily apply static test weights for belt scale calibration. This mechanism securely holds weights above the belt scale calibration weight arms, and enables you to lower them onto the belt scale weigh bridge for calibration purposes, then raise them again easily, all with a simple cranking motion. No more stretching, lugging or exposure to the potential dangers between the belt strands. The crank handle is easily stored for safety when not in use.

Belt Scale Selection Guide



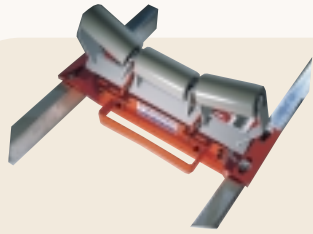
Product

MUS Belt Scale

Medium-duty universal scale for process indication

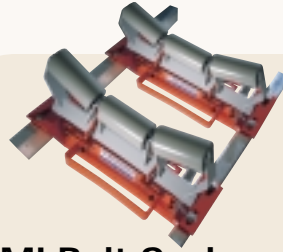
| | | | | | |
|--------------------------------|---|----------------|-------------------------|----------------|---------------------------|
| Typical Applications | <ul style="list-style-type: none"> ■ Monitor fractionated stone on secondary surge belts and recirculating loads ■ Retrofits ■ Track daily production totals ■ Control feed rates in various industries (with integrator with PID controller) | | | | |
| Typical Industries | <ul style="list-style-type: none"> ■ Aggregate ■ Agricultural ■ Mining | | | | |
| Maximum Capacity | 5000 t/h (5500 stph) at max. belt speed | | | | |
| Loading | <table border="0"> <tr> <td>Minimum</td> <td>15 kg / m (10 lbs / ft)</td> </tr> <tr> <td>Maximum</td> <td>250 kg / m (170 lbs / ft)</td> </tr> </table> | Minimum | 15 kg / m (10 lbs / ft) | Maximum | 250 kg / m (170 lbs / ft) |
| Minimum | 15 kg / m (10 lbs / ft) | | | | |
| Maximum | 250 kg / m (170 lbs / ft) | | | | |
| Max. Belt Speed | 3.0 m/s (600 fpm) | | | | |
| Particle Size (Maximum) | <100 mm (4") | | | | |
| Maximum Belt Width | Fits most conveyor widths Standard-duty ≤ 1000 mm (42") Heavy-duty ≥ 1200 mm (48") | | | | |
| Idler Diameter | 50 - 180 mm (2 - 7")* | | | | |
| Minimum Weighspan | 450 mm (18") | | | | |
| Accuracy | ±1% to 0.5% | | | | |
| Turn Down | 3:1 | | | | |
| Construction | Painted mild steel Modular design | | | | |
| Load Cells | <ul style="list-style-type: none"> ■ Two parallelogram-style aluminum ■ Temperature compensated ■ Dimensions vary for standard and heavy-duty versions | | | | |
| Standard Components | | | | | |
| Features | <ul style="list-style-type: none"> ■ Easily adapted to all types of conveyors ■ Simple installation — no modification to existing equipment ■ Reduction of build-up areas | | | | |
| Options | <ul style="list-style-type: none"> ■ Test weights ■ MWL Milltronics Weight Lifter for calibration | | | | |
| Approvals | CE | | | | |

*Idler not included.



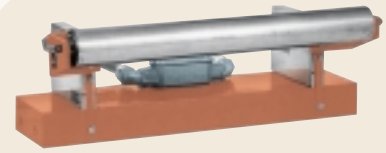
MSI Belt Scale

Heavy-duty, high-accuracy single idler scale for process control



MMI Belt Scale

Heavy-duty, high-accuracy multiple idler scale for critical process and load-out control



MLC Belt Scale

Low-capacity scale for high-accuracy and light belt loading

| | | |
|--|---|--|
| <ul style="list-style-type: none"> Control in fractionated stone blending tunnels Monitor specific grinding mill feed rates Retrofits Track daily production rates and totals Run of mine/coarse and fine ore or aggregates | <ul style="list-style-type: none"> Custody transfer Track mine-to-mill transfer rates Material load-outs on truck, barge, ship, or rail Monitor and track inventories Fast-moving belts, short idler spacing, light or uneven belt loading | <ul style="list-style-type: none"> Monitoring fertilizer, tobacco, animal feed pellets, sugar, cereal Existing flat belt conveyors and belt feeders Pre-feed control system for extruders, cookers and de-hydrators |
| <ul style="list-style-type: none"> Cement Chemicals Coal | <ul style="list-style-type: none"> Cement Chemicals Coal | <ul style="list-style-type: none"> Animal feed Fertilizers |
| <ul style="list-style-type: none"> Food processing Minerals processing Mining | <ul style="list-style-type: none"> Food processing Minerals processing Mining | <ul style="list-style-type: none"> Food processing Tobacco |
| 5000 t/h (5500 stph) at max. belt speed | 5000 t/h (5500 stph) at max. belt speed | 50 t/h (55 stph) |
| 15 kg/m (10 lbs/ft) 415 kg/m (280 lbs/ft) | 10 kg/m (6.7 lbs/ft) 415 kg/m (280 lbs/ft) | 1.5 kg/m (1 lbs/ft) 30 kg/m (20 lbs/ft) |
| 4.0 m/s (800 fpm) | 4.0 m/s (800 fpm) | 3.5 m/s (700 fpm) |
| >150 mm (6") | >150 mm (6") | <25 mm (1") |
| 500 - 2000 mm (18 - 96") (CEMA or standard metric conveyors) Other sizes available upon request | 500 - 2000 mm (18 - 96") (CEMA or standard metric conveyor) Other sizes available upon request | 500 - 1200 mm (18 - 48") |
| 50 - 180 mm (2 - 7")* | 50 - 180 mm (2 - 7")* | 50, 60, 80, or 100 mm (2, 2½, 3½, 4") included |
| 300 mm (12") | 300 mm (12") 2 per scale | 300 mm (12") |
| ±0.5% or better | ±0.25% or better | ±0.5% |
| 5:1 | 5:1 | 5:1 |
| Painted mild steel or stainless steel | Two or more MSI units installed in a series | Painted mild steel or stainless steel |
| <ul style="list-style-type: none"> Two stainless steel triple beam parallelogram Temperature compensated | <ul style="list-style-type: none"> Stainless steel triple beam parallelogram Temperature compensated | <ul style="list-style-type: none"> Two parallelogram-style stainless steel Temperature compensated |
| <ul style="list-style-type: none"> Built to CEMA or metric standards | <ul style="list-style-type: none"> Built to CEMA or metric standards | <ul style="list-style-type: none"> Weighing idler Test weight |
| <ul style="list-style-type: none"> Fast reaction compared to pivoted scales for more accurate weighing with fewer idlers | <ul style="list-style-type: none"> Can be legal for trade (see approvals) Increased material time on the scale results in more accurate weighing All of the MSI features | <ul style="list-style-type: none"> Compact and easy to install Fast reaction to vertical forces, ensuring instant response to product loading |
| <ul style="list-style-type: none"> MWL Milltronics Weight Lifter for calibration Test weights Test chains | <ul style="list-style-type: none"> MWL Milltronics Weight Lifter for calibration Test weights Test chains | <ul style="list-style-type: none"> Weighing idler included |
| SABS, Industry Canada, CE | NTEP, Industry Canada, CE | CE |



Ultra-sensitive load cells provide precision weighing accuracies, improving blend consistencies, accountability and record keeping. They are indispensable when automated production processes require continuous in-line weighing and feeding. Depend on these heavy-duty weigh feeders to deliver fast, reliable, and uninterrupted service. The virtually maintenance-free construction promises unmatched performance. Milltronics Autoweigh Feeders come standard with belt weigh bridge, speed sensor and integrator. Flanged belting is available on all models. The height of the flange depends on model and application. Belt sizes and widths are made to measure for the required application.



Weigh Feeder Selection Guide



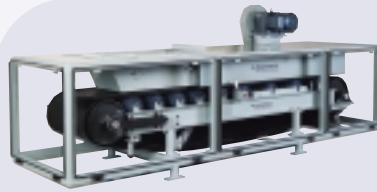
| Product | Autoweigh Feeder 400 Series High-accuracy, low-capacity for minor ingredient additives | Autoweigh Feeder 600 Series Low- to medium-capacity for minor ingredient additives |
|-----------------------------|---|---|
| Typical Applications | Control and monitor feed rates and blending: <ul style="list-style-type: none"> Extruders in pet foods, breakfast cereals or snack foods Fruits and nuts for processing or packaging Cereals, seeds or minerals Pebble lime into a slaker in water treatment Add pigments to plastic pellets | Control and monitor feed rates and blending: <ul style="list-style-type: none"> Wet food processing of carrots, tomatoes, onions and potatoes Extruders in pet foods, breakfast cereals or snack foods Minerals or powdered additives into a process Fruits, seeds and grains along with additives Fertilizer and salt |
| Typical Industries | <ul style="list-style-type: none"> Bulk chemicals Food Tobacco | <ul style="list-style-type: none"> Bulk chemicals Food Grain Vegetable produce |
| Design Rate Range | 45 - 9000 kg/hr (100 - 20,000 lbs/hr) | 0.45 - 18 t/hr (1000 lbs/hr - 20 stph) |
| Belt Speed | 0.005 - 0.20 m/s (1 - 40 fpm) | 0.005 - 0.20 m/s. (1 - 40 fpm) |
| Drive | 0.19 kW (0.25 HP) | 0.25 kW (0.33 HP) or larger |
| Belt Width | 230 or 300 mm (9 or 12") | 305 - 1000 mm (12 - 36") |
| Inlet to Discharge | 838 mm (33") | 1321 mm (52") or more |
| Pulley Diameter | 100 mm (4") | 150 mm (6") |
| Accuracy | ±0.5 - 0.25% | ±0.5% |
| Turn Down | 10:1 based on load Up to 30:1 based on speed | 10:1 based on load up to 30:1 based on speed |
| Construction | <ul style="list-style-type: none"> Mild or stainless steel Open or enclosed | <ul style="list-style-type: none"> Mild or stainless steel Open or enclosed |
| Sensing Element | Long length platform weigh bridge Single load cell | Platform weigh bridge Dual load cells |
| Features | <ul style="list-style-type: none"> Quick belt removal without tools Allows for high-pressure washdowns No material build-up | <ul style="list-style-type: none"> Cantilevered frame for quick belt removal Allows for high-pressure washdowns No material build-up |
| Options | <ul style="list-style-type: none"> Belts for specific applications Sanitary version | <ul style="list-style-type: none"> Custom units for exact application needs |
| Approvals | Meets USDA and FDA requirements for food processing, CE | Meets USDA and FDA requirements for food processing, CE |





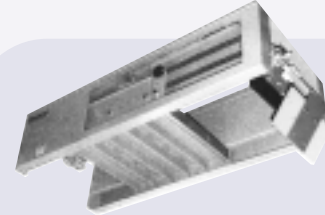
Aweigh Feeder 800 Series

Medium-to high-capacity for
macro ingredient additives



Aweigh Feeder 1200/3600 Series

High-capacity, heavy-duty for
macro ingredient additives



VG Volumetric Control Gate

Precise control in blending,
batching or loading operations

Industrial and process applications in feeding,
blending or rationing:

- Cement manufacturing
- Gypsum manufacturing
- Wallboard manufacturing
- Fertilizer plants
- Feed slag, coke, ground limestone and alloys at direct reduction iron processing or hot briquetted iron facilities
- Dried pet food

Control feed rate or blending:

- Cement manufacturing
- Clinker
- Process minerals such as kaolin clays
- Aggregates or heavy bulk minerals
- Steel manufacturing
- Wood chip digesters
- Pressed board pallets
- Low feed rates sheering from large bins

- Blending control of fractionated stone
- Blending control of grains
- Slide gates for load-out bins
- Eliminate vibratory feeders

- Cement
- Coal
- Mining
- Mineral processing
- Pulp and paper

- Aggregates
- Cement
- Coal
- Mining
- Mineral processing

- Aggregates
- Coal
- Grains

4.5 - 72 t/hr (5 - 80 stph)

1200-Series: 9 - 270 t/hr (10 - 300 stph)
3600-Series: 290 - 725 t/hr (320 - 800 stph)

545 - 1590 t/h (600 - 1750 stph)

0.005 - 0.20 m/s (1 - 40 fpm)

0.05 - 0.36 m/s (10 - 70 fpm)

NA

0.37 kW (0.5 HP) or larger

0.75 kW (1 HP) or larger

0.5 kW (0.75 HP)

450 - 1100 mm (18 - 42")

450 - 1800 mm (18 - 72")

Gate sizes: 305 mm x 406 mm (12" x 16")
406 mm x 558 mm (16" x 22")
508 mm x 711 mm (20" x 28")
Custom sizes optional

1575 mm (62")
or more



1200-Series: 2362 mm (93") or more
3600-Series: 2438 mm (96") or more

NA

200 mm (8")

1200-Series: 300 mm (12")
3600-Series: 900 mm (36")

NA

±0.5%

±0.5%

±3 - 5%

10:1 based on load
up to 30:1 based on speed

10:1 based on load
up to 30:1 based on speed

10:1 volumetrically

- Mild steel
- Open or enclosed

- Mild steel
- Open or enclosed

- Hot dipped galvanized 7-gauge plate steel

Single idler scale
Dual load cells

Dual idler scale torque shaft or MSI belt scale

- Flow detector paddle or acoustic flow sensor

- Cantilevered frame for quick belt removal

- Cantilevered frame for quick belt removal

- Less space required than belt or vibratory pan feeders
- Motor and speed reducer mounted for easy access
- Mechanical overload prevention

- Inlet configurations
- Materials of construction
- Stainless steel contact parts

- Inlet configurations
- Materials of construction

- Custom gate sizes
- Limit switch
- Position sensor (potentiometer)

CE

CE

CE



Dry Solids Flowmeters Selection Guide

Milltronics solid flowmeters enhance process control, contributing to improved quality of your end product. These heavy-duty, low-maintenance solids flowmeters provide continuous in-line weighing of dry bulk solids, free-flowing powders, or granular material. All models produce accurate, repeatable results and may be used for critical functions such as batch load-out and blending. Safe overload protection is a standard feature. They are easy and quick to install. All models are of a totally enclosed and dust-tight construction of painted mild steel. Stainless steel and hazardous area classification are also available. Each model is compatible with Milltronics Accumass® SF500 integrator for basic process control.



Product

Millflo

Low- to medium-capacity flowmeter for various product sizes, densities and fluidity in restricted spaces



E-40

Low- to medium-capacity flowmeters for various product sizes, densities and fluidity, particularly fine powders

| Specialized Models | | |
|------------------------------------|---|--|
| Aerated Gravity Conveyor | | A-40 |
| Vertical Flow Compact Construction | | V-40 |
| Pulverized Coal | | C-40 |
| Typical Applications | <ul style="list-style-type: none"> ■ Grains, seeds or nuts ■ Plastic pellet production ■ Pet food blending operations ■ Silica sand in glass making | <ul style="list-style-type: none"> ■ Fly ash ■ Lime dosing in gold ore processing ■ Cement in an aerated gravity conveyor (A-Series) ■ Add sugar in dessert food manufacturing ■ Gypsum flow for board forming line ■ Pulverized coal in boiler and kiln feed (C-40) |
| Typical Industries | <ul style="list-style-type: none"> ■ Food ■ Grain <ul style="list-style-type: none"> ■ Milling ■ Animal feed | <ul style="list-style-type: none"> ■ Chemicals ■ Grain <ul style="list-style-type: none"> ■ Minerals ■ Cement |
| Typical Capacity* | 1 - 230 t/h (1 - 250 stph) | 0.2 - 40 t/h (0.2 - 44 stph) |
| Maximum Particle Size | 6 - 13 mm (0.25 - 0.5") depending on inlet size | 13 mm (0.5") |
| Maximum Product Temperature | 65° C (150° F) | 232° C (450° F) 65° C (150° F) C-Series Optional: 400° C (750° F) |
| Accuracy (% of Design Rate) | ±1% | ±1% |
| Turn Down** | 3:1 | 3:1 |
| Sensing Plate Construction | 304 stainless steel | 304 stainless steel |
| Options | 316 stainless steel | <ul style="list-style-type: none"> ■ 316 stainless steel ■ Mirror finish |
| Coatings | <ul style="list-style-type: none"> ■ Plasma A/R ■ Teflon® <ul style="list-style-type: none"> ■ Urethane | <ul style="list-style-type: none"> ■ Plasma A/R ■ Teflon® <ul style="list-style-type: none"> ■ Polyurethane ■ Alumina ceramic |
| Sensing Heads | | ILE-37 |
| Sensing Element | Nickel plated or stainless steel parallelogram load cell | Linear Variable Differential Transformer (LVDT) External to process |
| Options | | Explosion-proof steel housing (NFPA Code 8503) contains internal explosion of 50 psi (C-40) |
| Inlet Sizes | 100 to 300 mm (4 to 12") In ANSI or DIN flanges | 50 to 250 mm (2 to 10") In ANSI or DIN flanges |
| Feature | | Viscous fluid damper |
| Approvals | CE | CE Optional: CSA Class I Gr C & D, Class II GR E,F,G |



*These flowrates are based on a bulk density of 1.6.

**Turn down of 5:1 with use of integrator with linearizer function.

Teflon® is a registered trademark of E.I. DuPont de Nemours and Company.



E-300

Low- to medium-capacity flowmeters for various product sizes, densities and fluidity, particularly fine powders



L-300

Medium-capacity flowmeter for various product sizes, densities and fluidity



M-500/M-900

High-capacity flowmeter for various product sizes, densities and fluidity



A-300

V-300

MA-500, MA-900

- Fly ash
- Lime dosing in gold ore processing
- Cement in an aerated gravity conveyor (A-Series)
- Add sugar in dessert food manufacturing
- Gypsum flow for board forming line

- Truck load-out on grains
- Fly ash load-out

- Load-out on grains or seeds
- Cement in an aerated gravity conveyor system (MA-Series)
- Grinding mill rejects in cement industry

- Aggregates
- Grain
- Cement
- Minerals

- Cement
- Grain
- Animal feed
- Fine aggregates

- Fine aggregates
- Grain
- Cement

20 - 300 t/h
(22 - 330 stph)

100 - 300 t/h
(110 - 330 stph)

M-500: 200 - 500 t/h
(220 - 550 stph) M-900: 400 - 900 t/h
(440 - 990 stph)

25 mm (1")

25 mm (1")

25 mm (1")

232° C (450° F)
Optional: 400° C (750° F)

85° C (185° F)

150° C (300° F)

±1%

±1%

±1%

3:1

3:1

3:1

304 stainless steel

304 stainless steel

304 stainless steel

- 316 stainless steel
- Mirror finish

- 316 stainless steel
- Mirror finish

- Plasma A/R
- Teflon®
- Polyurethane
- Alumina ceramic

- Polyurethane
- Alumina ceramic

- Polyurethane
- Alumina ceramic

ILE-61

Linear Variable Differential Transformer (LVDT)
External to process

Parallelogram weighing with dual
stainless steel load cells

Parallelogram weighing with dual
stainless steel load cells
External to process

150 to 400 mm (6 to 16")
In ANSI or DIN flanges

300 x 500 mm (12 x 20")

305 x 533 mm M-500 (12 x 21")
406 x 635 mm MA-500 (16 x 25")
305 x 660 mm M-900 (12 x 26")
508 x 940 mm MA-900 (20 x 37")

Viscous fluid damper

CE Optional:
CSA
Class I Gr C & D, Class II GR E,FG

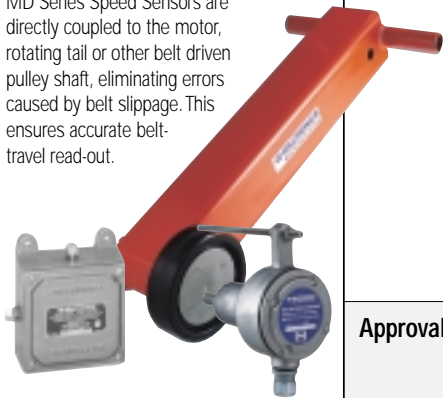
CE

CE

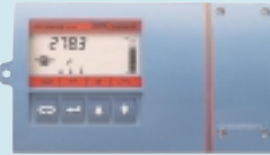

Integrators process sensor signals into operating data for continuous in-line weighing. They can take over basic control functions traditionally handled by other devices, like PID and batch control. Milltronics integrators provide connection to a wide variety of industry standard plant control systems. Our communications solutions enable you to communicate quickly and easily with these integrators from any remote location. Milltronics integrators are reliable, economical and easy to program and operate.

Milltronics Speed Sensors

Speed sensors operate in conjunction with a conveyor belt scale. The speed sensor provides a belt speed signal to an integrator which is used to compute the rate of material being conveyed. The easy-to-install RBSS Return Belt Speed Sensor is a cost-effective instrument for a wide variety of applications. The MD Series Speed Sensors are directly coupled to the motor, rotating tail or other belt driven pulley shaft, eliminating errors caused by belt slippage. This ensures accurate belt-travel read-out.



Integrator Selection Guide

| Product |  Accumass BW100 Economical integrator for use with belt scales |  Accumass BW500 Powerful integrator for use with both belt scales and weigh feeders |
|---------------------------------------|---|--|
| Applications and Compatibility | <ul style="list-style-type: none"> ■ MLC, MUS and MSI belt scales ■ Retrofit with other installed belt scale systems (max. 2 load cells) | <ul style="list-style-type: none"> ■ 400, 600, 800, 1200/3600 Series Autoweigh Feeders ■ MLC, MUS, MSI, MMI, MTS belt scales ■ Retrofit of most other belt scale or weighfeeder systems. |
| Display Output | <ul style="list-style-type: none"> <li style="width: 50%;">■ Rate <li style="width: 50%;">■ Belt loading <li style="width: 50%;">■ Totalized weight <li style="width: 50%;">■ Belt speed | <ul style="list-style-type: none"> <li style="width: 50%;">■ Rate <li style="width: 50%;">■ Belt speed <li style="width: 50%;">■ Totalized weight <li style="width: 50%;">■ PID <li style="width: 50%;">■ Belt loading <li style="width: 50%;">■ Batching |
| Analog Output | <ul style="list-style-type: none"> ■ Optically isolated 4-20 mA, scalable ■ Selectable for rate, load, or speed | <ul style="list-style-type: none"> ■ Optically isolated 4-20 mA, scalable. ■ Option: 2 additional analog inputs and 2 outputs programmable for PID control |
| Remote Totalizer | Two adjustable pulsed outputs | Two adjustable pulsed outputs |
| Alarm Relay | One programmable form "C" (SPDT) contact rated 5A at 250 Vac non-inductive | Five programmable form "A" (SPST) contacts rated 5A at 250 Vac non-inductive, reversible |
| Display | 38 x 100 mm (1.5 x 4") Graphics LCD | 16 x 150 mm (0.65 x 6") Dual line 40 character backlit 5 x 7 dot matrix LCD |
| Enclosure | Kynar Flex® | Polycarbonate |
| Dimensions | 270 x 138 x 74 mm (10.6 x 5.4 x 2.9") | 209 x 285 x 92 mm (8.23 x 11.23 x 3.6") |
| Certification | Type 4X/NEMA 4X/IP65 | Type 4X/NEMA 4X/IP65 |
| Ambient Temperature | -20° to 50° C (-5° to 122° F) | -20° to 50° C (-5° to 122° F) |
| Power Requirements | 100/115/200/230 Vac ±15% 50/60 Hz, 15 VA. Optional 12 Vdc and 24 Vdc. | 100/115/200/230 Vac ±15% 50/60 Hz, 31VA |
| Communications | Dolphin Plus interface Bi-polar serial current loop | 2 RS-232 ports, 1 RS-422/RS-485 port, Modbus RTU or ASCII Optional: • SmartLinX® • Dolphin Plus -Allen Bradley®RIO -Profibus-DP -DeviceNet |
| Features | <ul style="list-style-type: none"> ■ Non-volatile memory safeguards against data loss ■ Alarms for either rate, load, speed or diagnostic error ■ Multi-point linearizer function ■ Displays error messages and diagnostics | <ul style="list-style-type: none"> ■ Battery-backed memory safeguards against data loss ■ Multiple alarms for rate, load, speed or diagnostic error ■ Step-by-step programming ■ PID control with optional analog I/O card ■ Multi-point linearizer function ■ Displays error messages and diagnostics ■ Automatic zero ■ Electronic span calibration available (reduces need for test weights or chains) ■ Up to 8 multi-spans for application of more than one feed condition and/or material |
| Approvals | <ul style="list-style-type: none"> ■ CSA (NRTL/C), FM ■ CE | <ul style="list-style-type: none"> ■ CSA (NRTL/C), FM ■ CE |





Compuscale® III

Versatile integrator for wide range of belt scales



Accumass SF500

Powerful integrator for use with solids flowmeters

| | |
|---|---|
| MMI belt scales in legal-for-trade applications | <ul style="list-style-type: none"> Millflo, E, A, V, C Series, L-300, M and MA Series flowmeters Other 1 or 2 loadcell flowmeters LVDT equipped solids flowmeters, with use of optional interface board |
| <ul style="list-style-type: none"> Rate Totalized weight Belt loading Belt speed | <ul style="list-style-type: none"> Rate Totalized weight PID Batching |
| <ul style="list-style-type: none"> Optically isolated 4-20 mA, scalable | <ul style="list-style-type: none"> Optically isolated 4-20 mA, scalable Option: 2 additional analog inputs and 2 outputs programmable for PID control |
| One adjustable pulsed output | Two adjustable pulsed outputs |
| Two form "C" contact relays rated 5A @ 230Vac for alarming on rate, load or speed. | Five programmable form "A" (SPST) contacts rated 5A at 250 Vac non-inductive, reversable |
| Backlit 256 x 128 dot matrix graphics LCD | 16 x 150 mm (0.65 x 6") Dual line 40 character backlit 5 x 7 dot matrix LCD |
| Steel with polycarbonate window | Polycarbonate |
| 330 x 406 x 102 mm (13 x 16 x 4") | 209 x 285 x 92 mm (8.23 x 11.23 x 3.6") |
| NEMA 4 style | Type 4X / NEMA 4X / IP65 |
| -20° to 50° C (-5° to 122° F) | -20° to 50° C (-5° to 122° F) |
| 115/230 Vac ±10% 50/60 Hz, 65VA | 100/115/200/230 Vac ±15% 50/60 Hz, 31VA |
| 2 serial ports RS-232C Bipolar current loop | 2 RS-232 ports, 1 RS-422/RS-485 port, Modbus RTU or ASCII Optional: • SmartLinx® • Dolphin Plus -Allen Bradley®RIO -Profibus-DP -DeviceNet |
| <ul style="list-style-type: none"> Powerloss memory protection Parameter-based programming with text prompts Selectable certification mode and security levels Multi-span capability for weighing different materials Linearizer to compensate for material feed variations Simple, automatic calibration | <ul style="list-style-type: none"> Battery-backed memory safeguards against data loss Alarms for rate or diagnostic error Dual PID control with optional analog I/O card Multi-point linearizer function Displays error messages and diagnostics Automatic zero Electronic span calibration available (reduces need for test weights) Up to 8 multi-spans for application of more than one flow condition and/or material |
| <ul style="list-style-type: none"> CSA general purpose NTEP and Industry Canada when used with MMI-02 belt scale and MD-36A speed sensor Not CE compliant | <ul style="list-style-type: none"> CSA (NRTL/C), FM CE |



Process Protection Selection Guide

Process protection devices can be an early warning system to avoid costly process interruptions and break-downs of equipment. Non-contacting acoustic and motion sensors detect changes in motion and speed of conveying, reciprocating and rotating machinery. Acoustic sensors detect inaudible, high frequency acoustic emissions generated by friction and impact or materials in motion. Rugged construction makes them impervious to dust, dirt, build-up and moisture. They are low in maintenance, requiring no lubrication, cleaning or parts replacement. They are easy to install and provide superior cost-effective protection.



Product

MFA 4p

Motion Failure Alarm

Highly sensitive single set point motion sensor system, with matching probes

ME100

Motion sensor/ alarm probe

High-low or zero-speed alarm for the harshest conditions

General Application

Monitors loss of motion in rotating, reciprocating and conveying equipment
Alarms for loss of motion, underspeed or overspeed

Protect rotating or reciprocating equipment
Alarms for increase, decrease, or lack of motion

Typical Applications

- Tail pulleys
- Driven pulleys
- Motor shaft sensing
- Screw conveyor flights
- Bucket elevators

- Tail pulleys
- Driven pulleys
- Motor shaft sensing
- Screw conveyor flights
- Bucket elevators

Typical Industries

- Aggregates
- Mining
- Cement
- Waste water

- Aggregates
- Mining
- Cement
- Waste water

Enclosure

Type 4X/NEMA 4X/IP65 polycarbonate

316 Stainless steel, IP65

Sensor Mounting

Non-contacting, secured with supplied flange

Non-contacting, secured with clamp



Operating Temperature

-20° to 50° C (-4° to 122° F)

-20° to 65° C (-4° to 149° F)

Power Requirements

100/115/200/230 Vac ±10%
50/60 Hz, 15 VA.

24 Vdc

Features

- Probe/target separation up to 100 mm (4")
- Minimum velocity of moving ferrous target: 1 cm / sec. (2 fpm)
- 0 - 60 second adjustable time delay

- Up to 100 mm (4") gap distance between probe and ferrous targets
- Digital processing
- Minimum velocity of moving ferrous target: 1 cm/sec. (2 fpm)
- PLC compatible—3- or 4-wire connection

Options

- Probe versions:
- Standard: MSP-12
 - Explosion proof: XPP-5*
 - To 260° C (500° F): MSP-3 and MSP-9
 - Miniature (harsh conditions): MSP-1

- ME100 HL:
Self calibrating motion sensor alarming below or above calibration point
- ME100 ZS:
Alarming of machinery approaching zero speed

Approvals

CSA (US/C)
CE

CE

* Classification: Class I, Div. 1, Groups A, B, C & D; Class II, Div. 1, Group E, F & G; Class III



MillPulse 600

Motion sensor



Zero Speed Switch

Motion alarm switch for harsh conditions



Senaco® AS100

Acoustic sensor for flow detection



Senaco CU02 Control Unit

The Senaco CU02 operates with a Senaco AS100 Acoustic Sensor to provide reliable continuous protection for bulk solid flow. It processes signals from the sensor, providing relay and analog outputs for interface into a process. The two relays are fully programmable and independent of each other, and can be used to operate an alarm or control device.

Output

Isolated 4-20 mA, 750 Ω max.

Alarm Relay

2 programmable form "C" (SPDT) contact rated 5A at 250 Vac non-inductive, adjustable independent time delay for each relay

Display

9 mm high LCD
3 digits
Multi-segment graphic symbols

Display Output

Voltage or % Rate

Enclosure Material

Polycarbonate

Enclosure Dimensions

55 x 75 x 110 mm (2.2 x 3 x 4.4")

Ambient Temperature

-20 to 50 °C (-4 to 122° F)

Power Requirements

100/115/200/230 Vac ±15%
50/60 Hz factory set, 10VA

Features

- DIN rail mount or wall mount
- Up to 500 m (1500') from sensor
- Adjustable start-up time delay
- Built-in password protection to parameters

Approvals

CSA (NRTL), CE



Provide pulse output to PLC input when monitoring speed of rotating, reciprocating or conveying equipment

- Tail pulleys
- Driven pulleys
- Motor shaft sensing
- Screw conveyor flights

- Aggregates
- Mining
- Cement

Type 4X/NEMA 4X/IP65 phenolic/aluminum

Non-contacting, secured with supplied flange

-40° to 60° C (-40° to 140° F)

Switches 18 48 Vac /dc
Or 60 - 135 Vac /dc

- Up to 30 mm (1.25") gap distance between probe and ferrous target
- Minimum velocity of moving ferrous target: 1 cm/sec. (2 fpm)
- PLC compatible — 2 - wire connection

- All aluminum body for increased RFI immunity

CSA general purpose
Not CE compliant

Detects absence or presence of motion of rotating or reciprocating or conveying equipment

- Tail pulleys
- Driven pulleys
- Motor shaft sensing
- Screw conveyor flights
- Bucket elevators

- Aggregates
- Mining
- Cement

Phenolic / aluminum

Non-contacting, secured with supplied flange

-40° to 60° C (-40° to 140° F)

115 or 230 Vac ±10%
50/60 Hz, 10 VA

- Up to 100 mm (4") gap distance
- Selectable start delays
- One form "C" relay contact (SPDT)
- Minimum velocity of moving ferrous target: 1 cm/sec. (2 fpm)

- All aluminum body for increased RFI immunity

CSA general purpose
Not CE compliant

High frequency acoustic emissions from friction or the impact of dust, powders, granules and solids in motion. Detects flow/no flow or high/low flow

- Pipes
- Chutes
- Vibratory feeders
- Pneumatic conveyors
- Areated gravity flow systems
- Burst filter bag detection

- Aggregates
- Grain
- Animal feed
- Mining
- Cement
- Power generation
- Food
- Steel processing

Compact 304 or 303 stainless steel IP68

- Sensor non-invasive:
- Glue or weld-on disc
- Bolt or weld-on tab
- Drill and tap

-20° to 80° C (-4° to 176° F)
Extended temperature model:
-40° to 125° C (-40° to 257° F)

20 - 30 Vdc
18 mA

- Stable high frequency broadband filter 75 - 175kHz, immune to plant vibrations
- Output: 0.08 to 10 Vdc
- High or low sensitive modes
- Compatible with most analog PLC input or use with CU02

- Extended temperature and hazardous areas

CE
FM/CSA Class II, Div 1,
Group E, F, G optional

Communications Solutions Guide

With digital communications technology, you can connect field instruments into a central control system. Milltronics Accumass BW500 and Accumass SF500 come standard with a built-in Modbus RTU slave or a Modbus ASCII slave via RS-232 or RS-485. A Modbus master has access to all data from the instrument, including the operation parameters. For connecting to other communications buses SmartLinX offers several

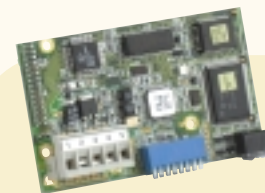
options. SmartLinX modules provide direct digital connection between the Accumass BW500 and Accumass SF500 integrators and popular industrial communications buses with true plug-and-play compatibility. The modules are fast and easy to install, and can be added at any time. SmartLinX provides all data from the instrument, including measurement and status. It allows you to change operation parameters over the bus.



Allen-Bradley Remote I/O



Profibus-DP



DeviceNet

SmartLinX Module

| | | | |
|---------------------------|---|---|---|
| Features | <p>Accessed via standard PLC data transfer techniques</p> <p>Using Block Transfer, the PLC can both read and write all appropriate data</p> | <p>Accessed via standard PLC programming techniques</p> <p>Supports read-and-write access to all Milltronics instrument data and parameters</p> | <p>Accessed via standard PLC data transfer techniques</p> <p>Using Block Transfer, the PLC can both read and write all appropriate data</p> |
| Interface | RIO interface | RS-485 (Profibus standard) | DeviceNet physical layer |
| Baud Rate | 57.6, 115.2 or 230.4 kb user selectable | All valid Profibus-DP rates from 9600 bps to 12 mbps, self-configured | 125, 250, 500 kbps user selectable |
| Address | 1 - 73 | 0 - 99 | 0 - 63 |
| Type of Connection | Slave | Slave | Slave (group 2) |

External Modem Kit

The External Modem Kit allows you to communicate quickly and easily with Accumass BW500 and Accumass SF500 integrators via Modbus RTU. The industrial dial-up modem is connected through an RS-232 port on the product. It contains an external industrial modem, power supply, connection cables, and a detailed instruction manual. The External Modem Kit allows quick and easy setup and communications. The instruction manual describes how to configure the modem, saving time and frustration in trying to determine the correct modem settings. The kit can be mounted using screws or a DIN rail. All components are industrial grade and can stand up to the industrial environment.

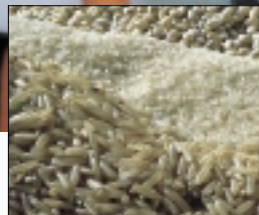


Dolphin Plus

Instrument Configuration Software for Accumass BW100, Accumass BW500 and Accumass SF500

Dolphin Plus software helps you to quickly and easily configure, monitor, tune and diagnose most Milltronics instruments either remotely from your desktop PC, or connected directly in the field using a laptop. Dolphin Plus is easy to install and easy to use. Just load the software from the CD. In minutes, you're ready to set up or modify complete parameter configurations for single or multiple instruments in the Windows® environment. After configuration, you can edit parameters on the fly, upload and download parameter sets to and from disk, and use parameter sets saved from other instruments. You can also work with echo profiles for fine-tuning without the need for special instruments.





Sanitary models are designed for industries where high pressure washdown is required. They are used in food processing, agriculture and the pharmaceutical industry. Sanitary versions of 400 and 600 Autoweigh Feeders meet USDA and FDA requirements for food processing.



Your Reliable Choice for Solids Measurement Instruments

- Conveyor belt scales
- Level measurement systems
- Weigh feeders
- Volumetric control gates
- Solids flowmeters
- Integrators
- Motion and acoustic sensors

And Much, Much More...

This publication offers only a sample of the many Milltronics products and solutions available.

Technology. Innovation. Support.

For more information or a representative near you, visit our web site at:

www.siemens-milltronics.com