

## Belt Weighing

### Belt scales

#### Milltronics MUS

##### Overview



Milltronics MUS is a modular designed, medium- to heavy-duty belt scale for process indication.

##### Benefits

- Unique modular design
- Simple installation
- Low cost
- Easy retrofit

##### Application

Milltronics MUS operates with products like aggregates, sand, or minerals, providing continuous in-line weighing at a minimal cost. With no cross bridge, this versatile unit will fit most conveyor widths and standard idlers, and product build-up is reduced. The construction and easy assembly of the MUS ensures quick delivery to meet even the tightest of schedules. Where scales are moved from conveyor to conveyor, the MUS also provides unmatched flexibility.

Operating with Milltronics BW500, SIWAREX WT241, WP241, or FTC microprocessor-based integrators, the MUS provides indication of flow rate, total weight, belt load, and speed of bulk solids materials on a belt conveyor. A speed sensor monitors conveyor belt speed for input to the integrator.

##### Selection and ordering data

	Article No.					
<b>Milltronics MUS Belt scale</b>	7MH7123-	•	•	•	•	0
<b>Accuracy is <math>\pm 2\%</math> of totalization over 25 ... 100 % operating range with capacity up to 5 000 t/h (5 512 STPH).</b>						
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.						
<b>Scale construction</b>						
Standard for belt width up to 1 000 mm (42 inch), nickel plated steel load cells		1				
Heavy-duty for belt width up to 1 524 mm (60 inch), nickel plated steel load cells		2				
<b>Load cell capacity</b>						
<u>Standard Duty Scale Load Cell</u>						
20 kg (44.1 lb) <sup>1)</sup>			A	A		
30 kg (66.1 lb) <sup>1)</sup>			A	B		
50 kg (110.2 lb) <sup>1)</sup>			A	C		
75 kg (165.3 lb) <sup>1)</sup>			A	D		
100 kg (220.4 lb) <sup>1)</sup>			A	E		
Not specified <sup>2)</sup>			X	X		
<u>Heavy-Duty Scale Load Cell</u>						
50 kg (110.2 lb) <sup>3)</sup>			B	A		
100 kg (220.4 lb) <sup>3)</sup>			B	B		
150 kg (330.7 lb) <sup>3)</sup>			B	C		
200 kg (440.9 lb) <sup>3)</sup>			B	D		
300 kg (661.4 lb) <sup>3)</sup>			B	E		
500 kg (1 102.3 lb) <sup>3)</sup>			B	F		
<b>Fabrication</b>						
C5-M rated polyester painted mild steel						1

## Selection and ordering data (Continued)

Selection and ordering data	Order code
<b>Further designs</b>	
Please add "-Z" to article no. and specify order code(s).	
Stainless steel tag [69 x 38 mm (2.7 x 1.5 inch)], Measuring-point number / identification (max. 27 characters), specify in plain text.	Y15
Application Eng. reference number (max. 15 characters), specify in plain text.	Y31
Manufacturer's test certificate: According to EN 10204-2.2	C11
<b>Operating instructions</b>	
All literature is available to download for free, in a range of languages, at <a href="http://www.siemens.com/weighing/documentation">http://www.siemens.com/weighing/documentation</a>	
<b>Spare parts</b>	
<u>Standard Duty Scale Load Cell</u>	
20 kg (44.1 lb)	A5E00826934
30 kg (66.1 lb)	A5E00826935
50 kg (110.2 lb)	A5E00826936
75 kg (165.3 lb)	A5E00826938
100 kg (220.5 lb)	A5E00826939
<u>Standard Duty Scale Load Cell, includes mounting hardware</u>	
20 kg (44.1 lb)	7MH7725-1CP
30 kg (66.1 lb)	7MH7725-1CQ
50 kg (110.2 lb)	7MH7725-1CR
75 kg (165.3 lb)	7MH7725-1CS
100 kg (220.5 lb)	7MH7725-1CT
<u>Heavy-Duty Scale Load Cell</u>	
50 kg (110.2 lb)	A5E00826941
100 kg (220.5 lb)	A5E00826942
150 kg (330.7 lb)	A5E00826943
200 kg (440.9 lb)	A5E00826944
300 kg (661.4 lb)	A5E00826945
500 kg (1 120.3 lb)	A5E00826946
<u>Heavy-Duty Scale Load Cell, includes mounting hardware</u>	
50 kg (110.2 lb)	7MH7725-1CU
100 kg (220.5 lb)	7MH7725-1CV
150 kg (330.7 lb)	7MH7725-1CW
200 kg (440.9 lb)	7MH7725-1CX
300 kg (661.4 lb)	7MH7725-1CY
500 kg (1 120.3 lb)	7MH7725-1DA
Rock Guard, MUS Standard Duty Scale, spare	7MH7723-1DM
Conduit replacement kit	7MH7723-1NA
<b>Calibration weights</b>	
See Milltronics flat bar calibration weights catalog page: <a href="https://support.industry.siemens.com/cs/document/109813400">https://support.industry.siemens.com/cs/document/109813400</a>	
Note: calibration accessories should be ordered as a separate item on the order.	

<sup>1)</sup> For use with scale construction option 1 only.

<sup>2)</sup> Only for quotation purposes, not a valid ordering option.

<sup>3)</sup> For use with scale construction option 2 only.

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#### Technical specifications

Milltronics MCS	
Technical specifications	
<b>Mode of operation</b>	
Measuring principle	Heavy duty strain gauge load cells measuring load on belt conveyor idlers
Typical applications	<ul style="list-style-type: none"> <li>Monitor fractionated stone on secondary surge belts and recirculating loads</li> <li>Track daily production totals</li> </ul>
<b>Measurement accuracy</b>	
Accuracy <sup>1)</sup>	± 0.5 ... 1 % of totalization over 25 ... 100 % operating range, application dependent
Repeatability	± 0.1 %
<b>Medium conditions</b>	
Max. material temperature	65 °C (150 °F)
<b>Belt design</b>	
Belt width	<ul style="list-style-type: none"> <li>Standard duty up to 1 000 mm (CEMA width up to 42 inch)</li> <li>Heavy-duty up to 1 524 mm (CEMA width up to 60 inch)</li> <li>Refer to dimensional drawing</li> </ul>
Belt speed	Up to 3.0 m/s (600 fpm) <sup>2)</sup>
Capacity	Up to 5 000 t/h at maximum belt speed <sup>2)</sup>
Conveyor incline	<ul style="list-style-type: none"> <li>± 20° from horizontal, fixed incline</li> <li>Up to ± 30° with reduced accuracy<sup>3)</sup></li> </ul>
<b>Idlers</b>	
Idler profile	<ul style="list-style-type: none"> <li>Flat to 35°</li> <li>To 45° with reduced accuracy<sup>3)</sup></li> </ul>
Idler diameter	50 ... 180 mm (2 ... 7 inch)
Idler spacing	0.6 ... 1.5 m (2.0 ... 5.0 ft)
<b>Load cell</b>	
Construction	Nickel plated alloy steel Strain gauge protection: silicon
Degree of protection	IP66
Cable length	3 m (10 ft)
Excitation	10 V DC nominal, 15 V DC max.
Output	2 mV/V excitation at rated load cell capacity
Non-linearity and hysteresis	0.02 % of rated output
Non-repeatability	0.01 % of rated output
Capacity	<ul style="list-style-type: none"> <li>Standard duty ranges</li> <li>20, 30, 50, 75, 100 kg (44, 66, 110, 165, 220 lb)</li> <li>Heavy-duty ranges</li> <li>50, 100, 150, 200, 500 kg (110, 220, 330, 440, 1 100 lb)</li> </ul>
Overload	150 % of rated capacity, ultimate 200 % of rated capacity
Temperature	<ul style="list-style-type: none"> <li>-40 ... +65 °C (-40 ... +150 °F) operating range</li> <li>-10 ... +40 °C (15 ... 105 °F) compensated</li> </ul>
Weight	Standard duty up to 44 lb (20 kg), 22 lb (10 kg) per side Heavy-duty up to 64 lb (30 kg), 32 lb (15 kg) per side
Interconnection wiring (to integrator)	<ul style="list-style-type: none"> <li>&lt; 150 m (500 ft) 18 AWG (0.75 mm<sup>2</sup>) 6 conductor shielded cable</li> <li>&gt; 150 m ... 300 m (500 ... 1 000 ft) 18 ... 22 AWG (0.75 ... 0.34 mm<sup>2</sup>) 8 conductor shielded cable</li> </ul>
Hazardous locations	Consult the factory
Approvals	CE, UKCA, RCM, EAC, CMC, KC

<sup>1)</sup> Accuracy subject to: on factory approved installations the belt scale 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.

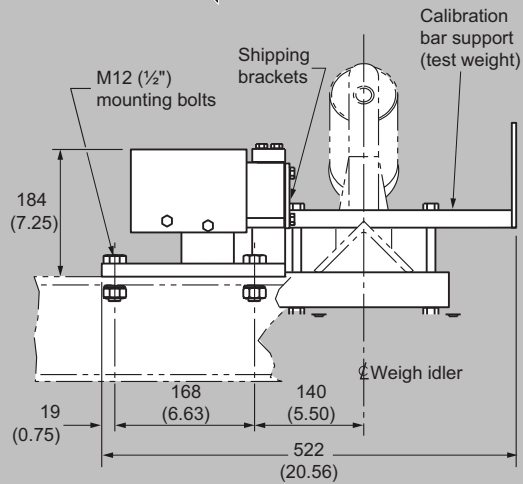
#### Technical specifications (Continued)

- <sup>2)</sup> Contact Siemens () for consideration of higher values.[http://www.automation.siemens.com/aspa\\_app](http://www.automation.siemens.com/aspa_app)  
<sup>3)</sup> Review by Siemens required ().[http://www.automation.siemens.com/aspa\\_app](http://www.automation.siemens.com/aspa_app)

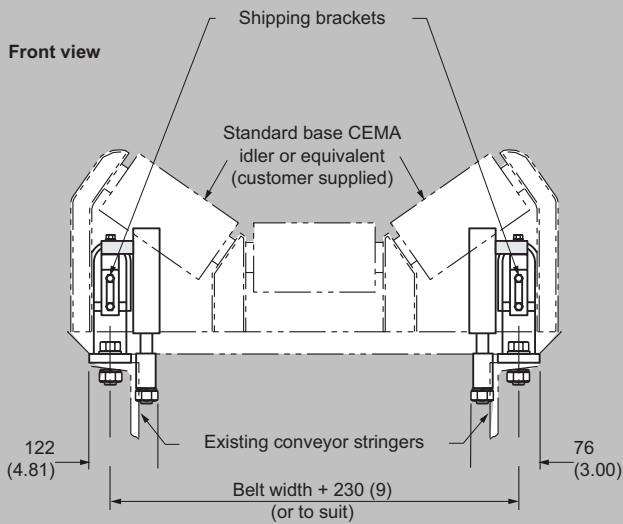
## Dimensional drawings

**Standard duty**

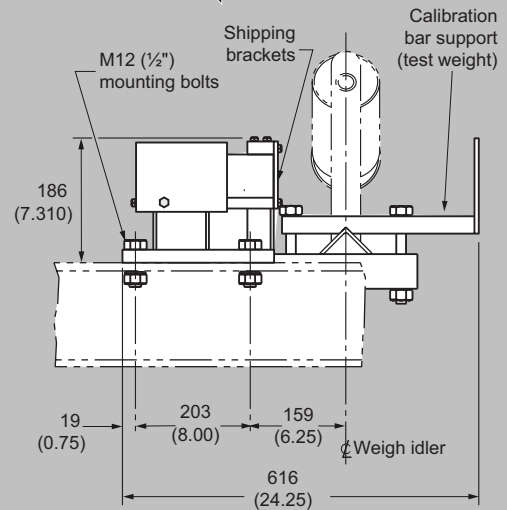
Belt direction for all flat or inclined conveyors

**Side view****Note:**

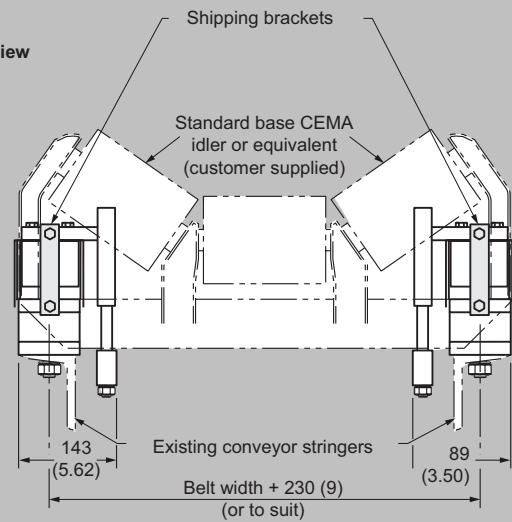
(2) approach and (2) retreat idlers should be aligned with the weigh idler to within 0.8 (+1/3) to 0 (0).

**Front view****Heavy duty**

Belt direction for all flat or inclined conveyors

**Side view****Note:**

(2) approach and (2) retreat idlers should be aligned with the weigh idler to within 0.8 (+1/3) to 0 (0).

**Front view**

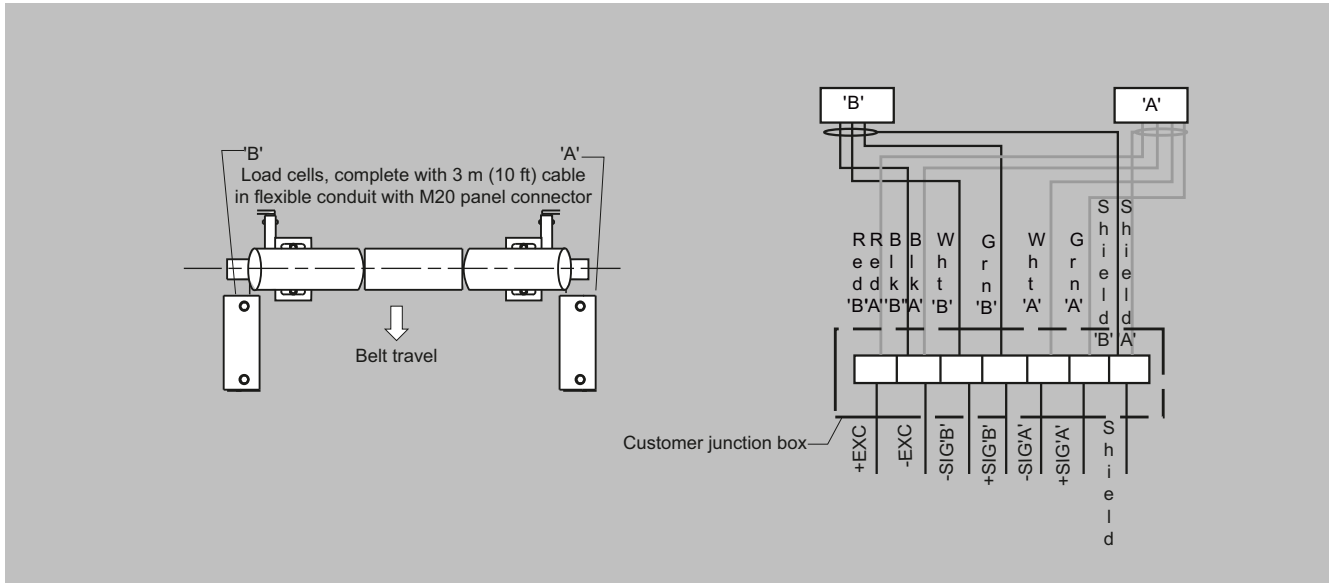
MUS, dimensions in mm (inch)

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#### Circuit diagrams



MUS connections