Milltronics MLC is a low-capacity scale for light belt loading.

**Benefits**
- Unique parallelogram style load cell design
- Designed for light product loading
- Compact and easy to install
- System includes weighing idler
- Stainless steel option
- Low cost of ownership

**Application**

The MLC is suitable for monitoring such products as fertilizer, tobacco, animal feed pellets, or sugar.

The MLC’s proven use of parallelogram style load cells results in fast reaction to vertical forces, ensuring instant response to product loading. This enables it to provide outstanding accuracy and repeatability even with very light loading. The MLC may be easily installed in existing flat belt conveyors or belt feeders.

Operating with Milltronics BW500, or SIWAREX FTC microprocessor-based integrators, the MLC provides indication of flow rate, total weight, belt load and belt speed of bulk solids materials on a belt conveyor. A speed sensor monitors conveyor belt speed for input to the integrator. When used in conjunction with Milltronics BW500 integrator with PID controller, the MLC may also be used in the food industry as part of a pre-feed control system for extruders, cookers and de-hydrators.
# Belt Scales

**Milltronics belt scales**

## Milltronics MLC

### Technical specifications

<table>
<thead>
<tr>
<th><strong>Milltronics MLC</strong></th>
<th><strong>Mode of operation</strong></th>
</tr>
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<tbody>
<tr>
<td>Measuring principle</td>
<td>Strain gauge load cell measuring load on flat belt conveyor idler</td>
</tr>
<tr>
<td>Typical application</td>
<td>Monitor fertilizer, tobacco, animal feeds, pellets, sugar, cereal</td>
</tr>
</tbody>
</table>

### Performance

| **Accuracy**<sup>1)</sup> | ± 0.5 … 1.0 % of totalization over 25 … 100 % operating range |
| **Repeatability** | ± 0.1 % |

### Medium conditions

| **Max. material temperature** | 85 °C (185 °F) |

### Belt design

| **Belt width** | • 450 … 1 200 mm |
| • 18 … 48 inch |
| **Belt speed** | 2.0 m/s (400 fpm) maximum<sup>2)</sup> |

### Capacity

| **Conveyor incline** | • ± 20° from horizontal, fixed incline |
| • Up to ± 30° with reduced accuracy |

### Idlers

| **Conveyor idler** | Horizontal |
| **Idler diameter** | 50 or 60 mm (1.90 or 2.30 inch) |
| **Idler spacing** | 0.5 … 1.5 m (1.6 … 5.0 ft) |

### Milltronics MLC

| **Load cell** |
| **Construction** | 17-4 PH (1.4568) stainless steel construction with 304 (1.4301) stainless steel cover |
| **Degree of protection** | IP67 |
| **Cable length** | 3 m (10 ft) |
| **Excitation** | 10 V DC nominal, 15 V DC maximum |
| **Output** | 2 mV/V excitation at rated load cell capacity |
| **Non-linearity** | 0.03 % of rated output |
| **Hysteresis** | 0.05 % of rated output |
| **Non-repeatability** | 0.03 % of rated output |
| **Capacity** | 10 or 20 lb |
| **Overload** | 150 % of rated capacity, ultimate 300 % of rated capacity |
| **Temperature** | • -40 … +85 °C (-40 ... +185 °F) operating range |
| • -10 … +60 °C (14 … 140 °F) compensated |

### Mounting dimensions

| **Identical for all capacities** |

### Hazardous locations

| **Consult the factory** |

### Approvals

| **CE, RCM, GOST-R** |

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1) 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.

2) Contact Siemens application engineering (factorysupport.smpl@siemens.com) for consideration of higher belt speeds.
Selection and ordering data

Milltronics MLC belt scale
Low-capacity scale for light belt loading that comes complete with a weighing idler.

Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

Belt width/Scale construction

Polyester painted mild steel

18 inch (457 mm) 1A
24 inch (610 mm) 1B
30 inch (762 mm) 1C
36 inch (914 mm) 1D
42 inch (1067 mm) 1E
48 inch (1219 mm) 1F
500 mm (20 inch) 1G
650 mm (26 inch) 1H
800 mm (32 inch) 1J
1000 mm (39 inch) 1K
1200 mm (47 inch) 1L
450 mm (18 inch) 1M

Stainless steel 304 (1.4301), bead blast finish

18 inch (457 mm) 2A
24 inch (610 mm) 2B
30 inch (762 mm) 2C
36 inch (914 mm) 2D
42 inch (1067 mm) 2E
48 inch (1219 mm) 2F
500 mm (20 inch) 2G
650 mm (26 inch) 2H
800 mm (32 inch) 2J
1000 mm (39 inch) 2K
1200 mm (47 inch) 2L
450 mm (18 inch) 2M

Load cell capacity

10 lb (4.55 kg) A
20 lb (9.09 kg) B
Not specified1) X

Weighing idler dimensions

50 mm (1.96 inch)2) 1
60 mm (2.40 inch)2) 2
1.90 inch (48.2 mm)3) 5

Further designs

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.

Application Eng. reference number (max. 15 characters), specify in plain text.

Manufacturer’s test certificate: According to EN 10204-2.2

FDA compliant version. Conduit and fittings designed for food applications conforming to FDA/USDA standards

Operating instructions

• English
• German

Belt Scale Application Guidelines

• English
• French
• German
• Spanish

Note: The operating instructions should be ordered as a separate item on the order. This device is shipped with the Siemens Milltronics manual DVD containing the complete operating instructions library.

Spare parts

Load cell, 10 lb (4.55 kg), 17-4 PH (1.4568) stainless steel construction with 304 (1.4301) stainless steel cover, includes hardware

Load cell, 20 lb (9.09 kg), 17-4 PH (1.4568) stainless steel construction with 304 (1.4301) stainless steel cover, includes hardware

Conduit replacement kit

FDA conduit replacement kit

Milltronics MLC calibration weight

[Stainless Steel 304 (1.4301)]

For scales with belt width of 18 inch or 500 mm or 450 mm:

1.05 lb (0.47 kg) 7MH7725-1AA
1.63 lb (0.73 kg) 7MH7725-1AB
2.35 lb (1.06 kg) 7MH7725-1AC
3.21 lb (1.45 kg) 7MH7725-1AD

For scales with belt width of 24 inch or 650 mm:

1.38 lb (0.62 kg) 7MH7724-1AL
2.15 lb (0.97 kg) 7MH7724-1AM
3.11 lb (1.41 kg) 7MH7724-1AN
4.24 lb (1.91 kg) 7MH7724-1AO

For scales with belt width of 30 inch or 800 mm:

1.72 lb (0.77 kg) 7MH7724-1AU
2.67 lb (1.21 kg) 7MH7724-1AV
3.85 lb (1.73 kg) 7MH7724-1AW
5.26 lb (2.37 kg) 7MH7724-1AX

For scales with belt width of 36 inch or 1 000 mm:

2.05 lb (0.92 kg) 7MH7724-1AY
3.19 lb (1.44 kg) 7MH7724-1AY
4.56 lb (2.07 kg) 7MH7724-1BB
6.29 lb (2.83 kg) 7MH7724-1BC

For scales with belt width of 42 inch or 1 000 mm:

2.38 lb (1.07 kg) 7MH7724-1BD
3.71 lb (1.67 kg) 7MH7724-1BE
5.35 lb (2.41 kg) 7MH7724-1BF
7.31 lb (3.29 kg) 7MH7724-1BG

For scales with belt width of 48 inch or 1 200 mm:

2.72 lb (1.22 kg) 7MH7724-1BH
4.23 lb (1.92 kg) 7MH7724-1BJ
6.06 lb (2.75 kg) 7MH7724-1BK
8.34 lb (3.75 kg) 7MH7724-1BL

Note: Calibration accessories should be ordered as a separate item on the order.

1) Only for quotation purposes, not a valid ordering option.
2) Available with belt width/scale construction options 1G ... 1M, 2G ... 2M only.
3) Available with belt width/scale options 1G ... 1M only.
4) Available with belt width/scale construction options 1A ... 1F, 2A ... 2F only.
Belt Scales
Milltronics belt scales

Milltronics MLC

Dimensional drawings

Installation

Plan View

Front View

1) For pan supported belts, the belt should be cut out to allow the MLC and at least two (preferably four) other idlers to be installed.

<table>
<thead>
<tr>
<th>Scale size</th>
<th>'A' roller width</th>
<th>'B' dimension</th>
<th>'C' dimension</th>
<th>'D' dimension</th>
<th>'E' dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imperial designs [dimensions in inch (mm)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 (457)</td>
<td>18 (457)</td>
<td>19 (483)</td>
<td>1.90 (48.3)</td>
<td>6.19 (157)</td>
<td>3.5 (89)</td>
</tr>
<tr>
<td>24 (610)</td>
<td>24 (610)</td>
<td>25 (635)</td>
<td>1.90 (48.3)</td>
<td>6.19 (157)</td>
<td>3.5 (89)</td>
</tr>
<tr>
<td>30 (762)</td>
<td>30 (762)</td>
<td>31 (787)</td>
<td>1.90 (48.3)</td>
<td>6.19 (157)</td>
<td>3.5 (89)</td>
</tr>
<tr>
<td>36 (914)</td>
<td>36 (914)</td>
<td>37 (940)</td>
<td>1.90 (48.3)</td>
<td>6.19 (157)</td>
<td>3.5 (89)</td>
</tr>
<tr>
<td>42 (1 067)</td>
<td>42 (1 067)</td>
<td>43 (1 092)</td>
<td>1.90 (48.3)</td>
<td>6.19 (157)</td>
<td>3.5 (89)</td>
</tr>
<tr>
<td>48 (1 219)</td>
<td>48 (1 219)</td>
<td>49 (1 245)</td>
<td>1.90 (48.3)</td>
<td>6.19 (157)</td>
<td>3.5 (89)</td>
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<tr>
<td>Metric designs [dimensions in mm (inch)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>450 (17.72)</td>
<td>450 (17.72)</td>
<td>500 (19.69)</td>
<td>50 (1.97)</td>
<td>158 (6.22)</td>
<td>96 (3.78)</td>
</tr>
<tr>
<td>500 (19.69)</td>
<td>500 (19.69)</td>
<td>550 (21.65)</td>
<td>50 (1.97)</td>
<td>158 (6.22)</td>
<td>96 (3.78)</td>
</tr>
<tr>
<td>650 (25.59)</td>
<td>650 (25.59)</td>
<td>700 (27.56)</td>
<td>50 (1.97)</td>
<td>158 (6.22)</td>
<td>96 (3.78)</td>
</tr>
<tr>
<td>800 (31.50)</td>
<td>800 (31.50)</td>
<td>850 (33.46)</td>
<td>50 (1.97)</td>
<td>158 (6.22)</td>
<td>96 (3.78)</td>
</tr>
<tr>
<td>1 000 (39.37)</td>
<td>1 000 (39.37)</td>
<td>1 050 (41.34)</td>
<td>60 (2.36)</td>
<td>158 (6.22)</td>
<td>96 (3.78)</td>
</tr>
<tr>
<td>1 200 (47.24)</td>
<td>1 200 (47.24)</td>
<td>1 250 (49.21)</td>
<td>60 (2.36)</td>
<td>158 (6.22)</td>
<td>96 (3.78)</td>
</tr>
</tbody>
</table>

MLC, dimensions in mm (inch)
Schematics

Customer junction box

Load cell 'A'
Load cell 'B'

Conduit and box connector

Conduit and cable arrangement may differ from example shown.

MLC connections