

# Process Protection

## Motion sensors

### SITRANS WM100

#### Overview



SITRANS WM100 is a heavy-duty zero-speed alarm switch. This non-contacting unit provides cost-effective equipment protection even in the harshest conditions.

#### Benefits

- Up to 100 mm (4 inch) gap between SITRANS WM100 and targets
- Rugged, low maintenance suitable for tough environments
- 1 SPDT Form C relay contact
- Provides cost-effective protection
- Visual indication of target triggered pulse

#### Application

This rugged unit is impervious to dust, dirt, build-up and moisture and is ideal for such primary industries as mining, aggregate, and cement. Operating where other systems are prone to failure, the non-contacting design eliminates the need for lubricating, cleaning and part replacement. Downtime and clean-up expenses associated with conveying equipment failure are reduced by the SITRANS WM100. It alarms to minimize spillage, prevent extensive damage or even fire caused by belt slippage at the head pulley and warn against conveyor malfunction.

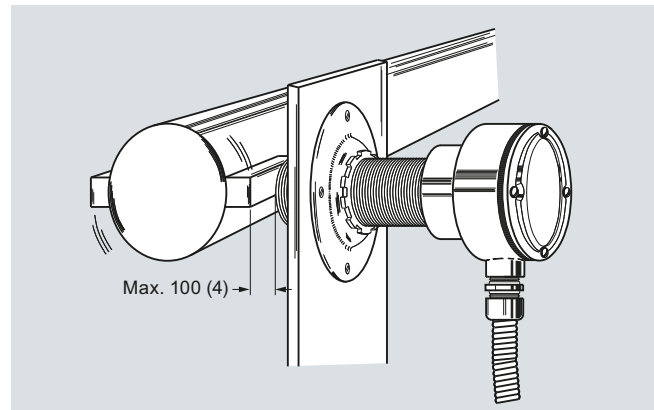
The SITRANS WM100 has built-in selectable start delays and 1 Form C relay contact. With an aluminum body, it operates from -40 to +60 °C (-40 to +140 °F).

- Key Applications: tail pulleys, driven pulleys, motor shaft sensing, screw conveyor flights, bucket elevators

#### Design

##### Mounting

The WM100 probe should be mounted, using the supplied mounting flange, onto a vibration-free structure. The gap between the probe and the target should be sufficient such that there is no danger of the target damaging the probe. The maximum allowable gap is 100 mm (4 inch) from the face of the target to the face of the probe for 4.5 x 4.5 mm (3/16 x 3/16 inch) keyway. The WM100 is sensitive to lateral disturbances to its magnetic field. If the WM100 is responding to motion from an interfering target, move the WM100 or install a ferrous plate (steel) as a shield between the WM100 and the interfering target. Where possible, the probe should be mounted such that the cable inlet is pointing downward to avoid accumulation of condensation in the casing. Connection of the probe should be made via flexible conduit for easier removal or adjustment of the probe.



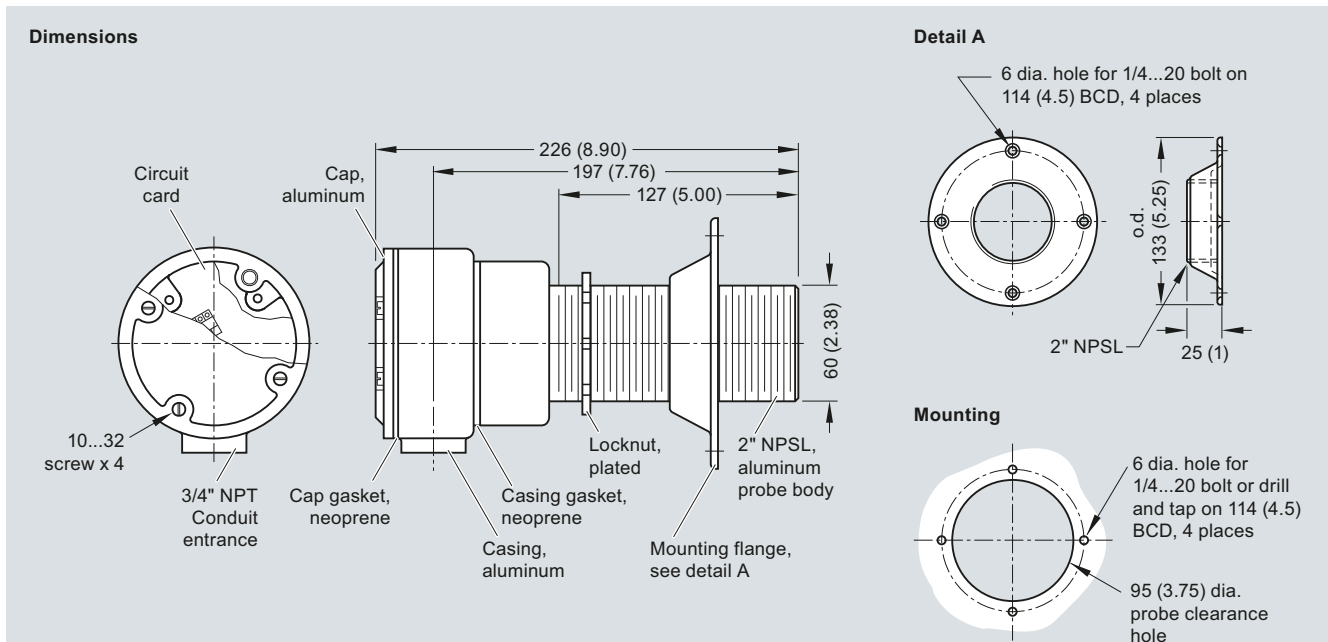
SITRANS WM100 mounting, dimensions in mm (inch)

#### Technical specifications

<b>Mode of operation</b>	
Measuring principle	Disruption of magnetic field by ferrous target
Typical application	Monitors absence or presence of motion in harsh conditions
<b>Output</b>	
Contact	1 SPDT Form C dry relay contact, rated 5 A at 250 V AC, fail-safe operation
Time delay	Start up: 10 ... 14 seconds (5 ... 7 seconds with 12 ppm jumper installed)
Zero Speed (selected via a common jumper)	<ul style="list-style-type: none"> <li>• 5 seconds ± 1 (minimum speed 10 ... 15 ppm) or</li> <li>• 10 seconds ± 2 (minimum speed 5 ... 7.5 ppm)</li> </ul>
<b>Rated operating conditions</b>	
Operating temperature	-40 ... +60 °C (-40 ... +140 °F)
<b>Design</b>	
Probe body	Aluminum
Process mounting	2" NPSL
Connection box	Aluminum, 3/4" NPT conduit entrance, 5 screw terminals plus grounding terminal for electrical connection, max. 12 AWG (3.30 mm <sup>2</sup> ) wire size
Gasketing	Neoprene
Display	Red LED for verification of pulses
Enclosure rating	Type NEMA 4x, 6, IP67
<b>Dynamic range</b>	Minimum 6 or 12 pulses per minute Maximum 3 000 pulses per minute
<b>Shipping weight</b>	2 kg (4.4 lb)
<b>Power supply</b>	<ul style="list-style-type: none"> <li>• 115 V AC/50 ... 60 Hz, 7 VA</li> <li>• 230 V AC/50 ... 60 Hz, 7 VA</li> <li>• ± 10 % of rated voltage</li> </ul>
<b>Certificates and approvals</b>	CSA <sub>US/C</sub> , CE, C-TICK

Selection and Ordering data	Order No.	Selection and Ordering data	Order code
<b>SITRANS WM100</b> A heavy-duty zero-speed alarm switch that does not require a controller.	<b>7MH7158 -</b> <b>0 A 0 0</b>	<b>Further designs</b> Please add "-Z" to Order No. and specify Order code(s).	
<b>Model</b> 115 V AC 230 V AC	<b>A</b> <b>B</b>	Manufacturer's Test Certificate: According to EN 10204-2.2  Acrylic coated, stainless steel tag [13 x 45 mm (0.5 x 1.75 inch)]: Measuring-point number/identification (max. 16 characters), specify in plain text	<b>C11</b>  <b>Y17</b>
		<b>Operating Instructions</b> SITRANS WM100, English SITRANS WM100, German  Note: The operating instructions should be ordered as a separate item on the order. This device is shipped with the Siemens Milltronics manual CD containing the complete operating instructions library.	Order No. <b>7ML1998-5MW01</b> <b>7ML1998-5MW31</b>
		Locknut, for WM100 and Millpulse 600	<b>7MH7723-1CR</b>
		Mounting flange, for WM100 and Millpulse 600	<b>7MH7723-1CS</b>
		Motion cable gland adaptor kit	<b>7MH7723-1JN</b>

### Dimensional drawings



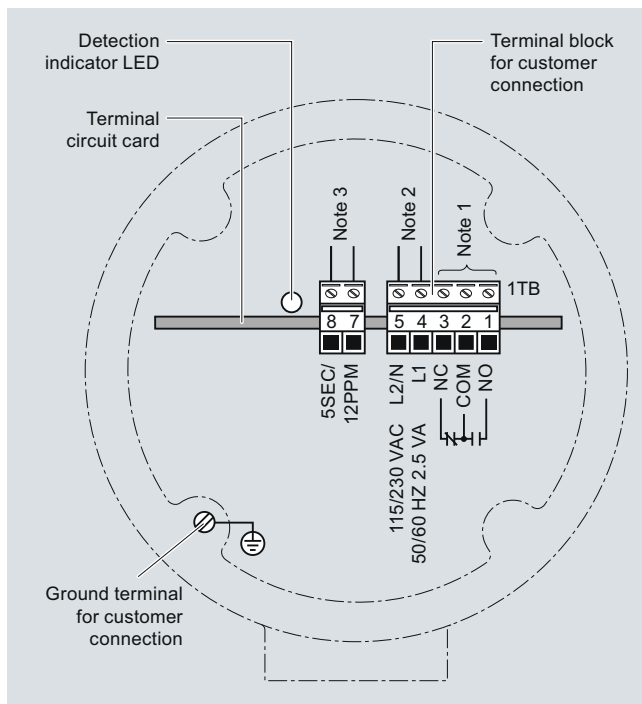
SITRANS WM100 mounting, dimensions in mm (inch)

# Process Protection

## Motion sensors

### SITRANS WM100

#### Schematics



SITRANS WM100 wiring

Notes:

1. Dry contacts shown in de-energized (alarm or shelf) state.
2. SITRANS WM100 is manufactured for either 115 or 230 V AC operation. Check WM100 nameplate for applicable voltage. Correct voltage must be supplied. Voltages lower than specified will result in an inoperative condition. Voltages higher than specified will severely damage unit.
3. For 5 second time delay and a minimum 12 ppm range, connect jumper across terminals 7 and 8. Without a jumper, the default is a 10 second time delay and a minimum 6 ppm range.