

Cost-effective equipment protection

SITRANS WM100 motion sensor



Accurate monitoring in harsh conditions

SITRANS WM100 is a heavy-duty zero-speed alarm switch. This non-contacting unit provides cost-effective equipment protection even in the harshest conditions. It is suitable for heavy industries such as mining, aggregates or cement. The WM100 monitors the absence of motion on moving or rotating equipment. Key applications include tail pulleys, driven pulleys, motor shaft sensing, screw conveyor flights, and bucket elevators.

Design

Lightweight yet rugged, SITRANS WM100 is compact and easy to install. With its rugged cast aluminum housing, it is suitable for outdoor installation.

Mode of operation

Process protection devices act as early warning systems to avoid costly process interruptions and equipment breakdowns. Located outside of the process, Sitrans WM100 accurately detects operating conditions without wear on the sensor. Sitrans WM100 can be mounted up to 100 mm (4") from the ferrous target. The robust motion sensor provides the contacts to shutdown machinery whenever zero speed is detected. On belt, drag, and screw conveyors, or on bucket elevators, fans and pumps, the zero speed alarm option can warn instantly of equipment malfunctions. It alarms to minimize spillage, prevent extensive damage or even fire caused by belt slippage at the head pulley and warn against conveyor malfunction.

Siemens probes work on the principle of Faraday's Law of Electromagnetic Induction. When a ferromagnetic object enters the probe's permanent magnetic field, it distorts the flux, causing its coil windings to generate a voltage. This voltage is proportional to the strength of the magnet and the number of wire turns in the coil (constant in the probes) and the speed at which the ferrous target passes through the flux. The generated voltage is also inversely proportional to the square of the distance between the target and the probe.

Process protection

www.siemens.com/processprotection

Answers for industry.

SIEMENS



SITRANS WM100

Non-contacting motion sensors detect changes in motion and speed of conveying, reciprocating and rotating machinery. The sensors are located outside of the process, accurately detecting conditions without wear on the sensor. Motion sensors can warn of equipment malfunction and shut down machinery in case of slowdown or failure. They are rugged and perform even in harsh conditions. On belt, drag, and screw conveyors, or on bucket elevators, fans, and pumps, the speed alarm option can warn instantly of equipment problems.

- Up to 100 mm (4") gap between SITRANS WM100 and targets
- Non-contacting design eliminates the need for lubricating, cleaning, and part replacement
- Visual indication of target triggered pulse
- Rugged, low maintenance suitable for tough environments
- 1 SPDT Form C relay contact
- Provides cost-effective protection

| SITRANS WM100 | |
|--|--|
| Mode of operation | |
| Measuring principle | Disruption of a magnetic field by ferrous target |
| Typical applications | Monitors absence or presence of motion in harsh conditions |
| Output | |
| Contact | 1 SPDT Form C dry relay contact, rated 5A at 250 V AC, fail-safe operation |
| Time delay | Start up: 10 to 14 seconds (5 to 7 seconds with 12 ppm jumper installed) |
| Zero Speed (selected via a common jumper) | <ul style="list-style-type: none"> • 5 seconds \pm1 (minimum speed 10 to 15 ppm) or • 10 seconds \pm2 (minimum speed 5 to 7.5 ppm) |
| Rated operating conditions | |
| Operating temperature | • -40 to 60 °C (-40 to 140 °F) |
| Design | |
| 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 ²) wire size |
| Gasketing | Neoprene |
| Display | Red LED for verification of pulses |
| Enclosure rating | Type NEMA 4X, 6, IP67 |
| Dynamic range | |
| | <ul style="list-style-type: none"> • Minimum 6 or 12 pulses per minute • Maximum 3000 pulses per minute |
| Shipping weight | |
| | 2 kg (4 lbs) |
| Power supply | |
| | <ul style="list-style-type: none"> • 115 V AC/50 to 60 Hz, 7 VA • 230 V AC/50 to 60 Hz, 7 VA • \pm10 % of rated voltages |
| Certificates and approvals | |
| | • CSA _{US/IC} , CE, C-TICK |

Siemens AG
Industry Sector
Sensors and Communication
76181 KARLSRUHE
GERMANY

Subject to change without prior notice
Available as pdf only
Order No. 7ML1996-5LJ03
© Siemens AG 2010

www.siemens.com/weighing

The information provided contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of the contract.

All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes violate the rights of the owners.