

E-TILT

E-TILT mercury-free sensor technology is an electromechanical safety switch designed to provide level and blockage control in bulk material handling systems. Unlike traditional mercury switches, it offers an environmentally friendly and highly stable operating mechanism. The sensing section is fully isolated against moisture, dust, and corrosion.

- **Vertical Axis Operation:** Under normal conditions, the sensor hangs freely on the vertical axis (at a 90° upright position).
- **Angular Change Detection:** When the probe is tilted to the right, left, forward, or backward due to contact with bulk materials (such as grain, powder, coal, etc.), the internal sensor is activated once the tilt exceeds a predefined threshold angle from the vertical position.
- **Sensitivity and Stability:** Mercury-free sensors are designed to provide high sensitivity and operational stability. The triggering angle is typically 15° (±3°) depending on the model, but can also be configured as 25°, 35°, or 45° (±10°) according to application requirements.
- **Signal Output:** As a result of the detected tilt change, the switch opens or closes the electrical circuit. This contact signal can be processed by an electronic control unit to monitor conveyor belt conditions, perform level control in silos, or detect chute blockages.
- **Environmental Protection:** The internal housing of the sensor is filled with epoxy resin. This encapsulation material protects sensitive electronic components from adverse environmental effects such as moisture, dust, and vibration, ensuring improved stability and reliability.
- **Fault Prevention:** To prevent false triggering caused by sudden material fluctuations or wind effects, a time relay can be integrated into the system to enable delayed operation.

E-TILT, with its mercury-free design, complies with EU environmental regulations and enhances industrial system safety by converting physical tilt into an electronic signal. It is manufactured from non-toxic and durable materials such as metal or plastic.

Technical Specifications

Tilt Angle (Perpendicular to the right and left)	Maximum Contact Current/Voltage
15° ± 3° (Std.)	1,5 A / 120 VAC NC 0.6 A / 240 VAC
25° ± 10°	Opt. 1,5 A / 120 VAC 0.6 A / 240 VAC
35° ± 10°	Opt. 12,5 A / 120 VAC 7 A / 240 VAC
45° ± 10°	Opt. 1 A / 120 VAC 0.4 A / 240 VAC
Max. Switching Capacity	100 - 200 VA
Housing Material	304 St. St; Opt: 316 St. St ; PVC
Operating Temperature	(-) 40 °C / (+) 100 °C
Cable Length	2 m. (Std.) Additional length can be provided upon request.
Cable Material	PVC (Max. 60 °C) Opt: Silicone, Rubber
Protection Class	IP 67
Note: Hanging chains are not included. 	



Model

- **E-TILT 02** - Compact model
- **E-TILT 05** - Standard Model
- **E-TILT 06** - Heavy-Duty Model

Advantages

- High operational stability
- Easy installation
- Cost-efficient design
- High wear resistance
- Eco-friendly



Applications

It is primarily used to monitor the presence or absence of bulk materials, material levels, and the safe positioning of equipment.

A. Industrial Bulk Solid Material Processing and Storage (Powder, Grain, etc.)

- Silo and Hopper Monitoring: Used to provide high-level or low-level alarms in silos and bunkers..
- Chute Blockage Detection: Detects material accumulation and blockages in transfer chutes.
- Stockpile Monitoring: Used to monitor the height of bulk material piles beneath conveyor belts or in open storage areas.
- Crushers: Used to control the material level inside crusher chambers.

B. Ensuring Safe Operation of Conveyor Systems

- Material Flow Monitoring: Detects the presence or absence of material flow on conveyor belts.
- Belt Slippage Detection: Used to monitor conveyor belt alignment and slippage conditions.
- Tripper Discharge: Monitors the discharge status and high-level control of tripper cars.

C. Safety and Additional Applications

- Ship Loading Systems: Used to monitor the position of telescopic loading arms in ship loading operations.
- Industrial Equipment Safety Monitoring: By monitoring the safe operating angles of cranes or platforms, the system can stop equipment to prevent accidents.
- Liquid Level Monitoring: Certain specialized models can also be used in water or liquid level control applications.

General Applications



Conveyor Belt Systems



Grain and Cement Storage Silos

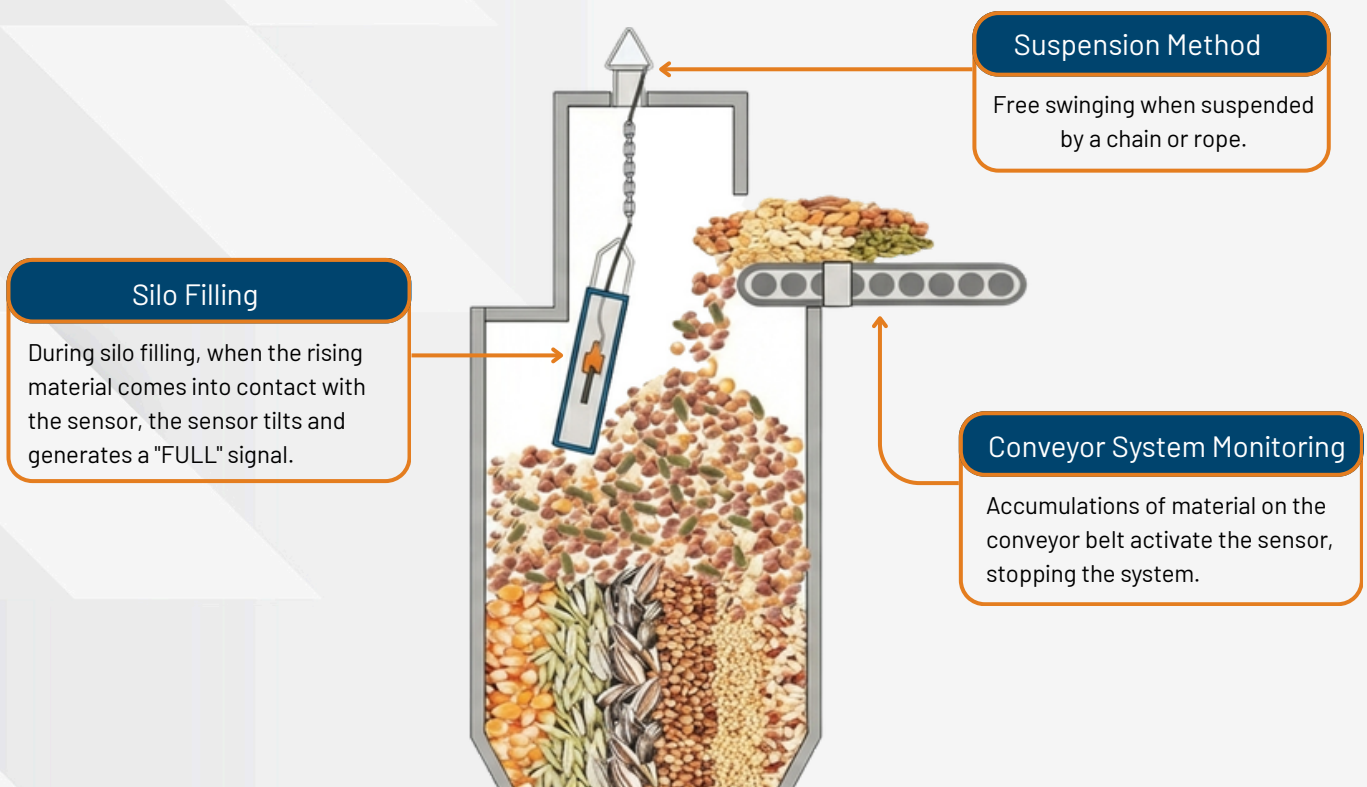


Vessel Loading



Grain and Cement Storage Silos

Application Example: Silo and Conveyor Belt Monitoring



Optional Accessories

- **Corrosion-resistant suspension chains** that allow the switch to hang freely in a vertical position and remain securely suspended.
- **Mounting brackets** that enable the probe to be firmly affixed to a stable support.
- **Electronic control unit** that processes the signal from the switch and helps prevent false alarms.
- **E-GSM Alarm Device** that enables remote notifications or message transmission in case of an alarm condition.
- **Protective shield** mounted above the probe to protect it from sudden material impacts and high-flow material discharge.
- Cable protection accessories, such as **steel braided sleeves**, to prevent cable damage.

E-GSM Alarm Device – Two Inputs

Battery-powered and/or externally powered operation.

Supplied with 2 lithium batteries and a 12 V adapter.

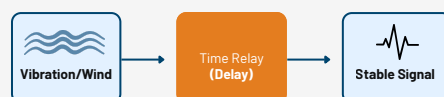
SIM card (postpaid or prepaid) not included.



Wireless surveillance and alert management

Dual-port system with instant notifications to mobile devices.

E-GSM Alarm System

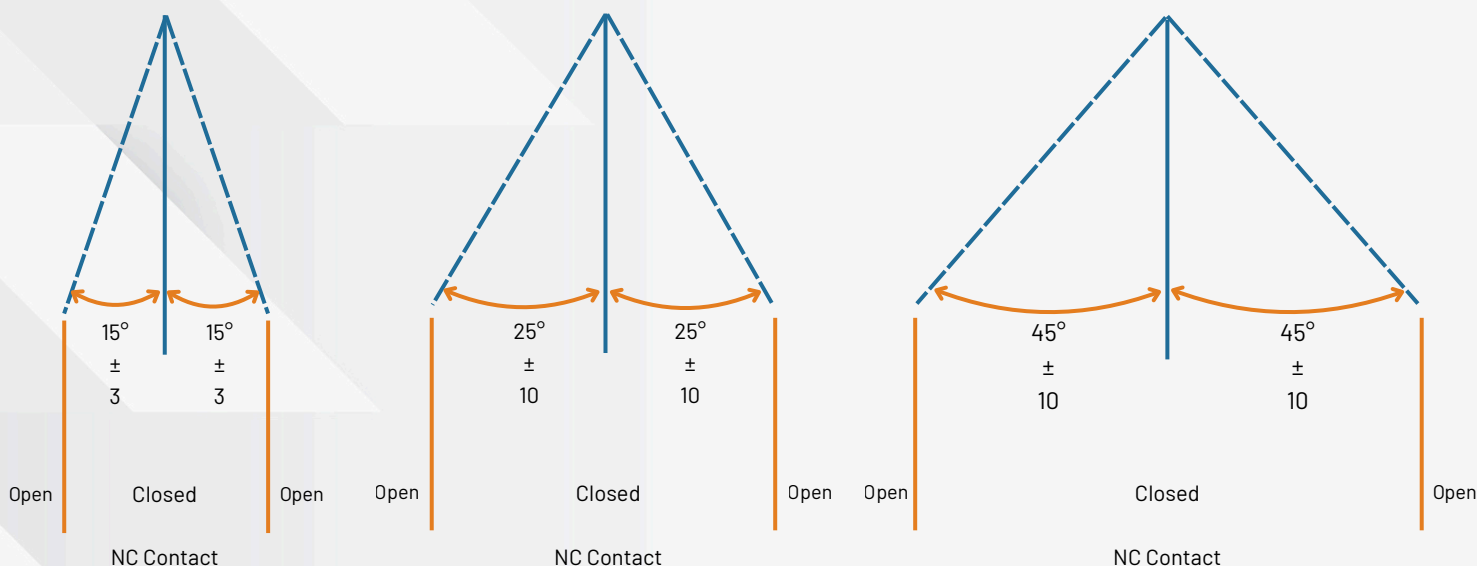


False Signal Mitigation:

It mitigates false alarms triggered by abrupt impacts or wind-induced vibrations.

Time Relay

Switching Angles

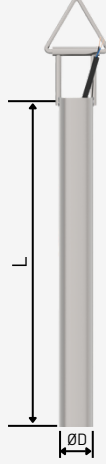


Technical Pictures

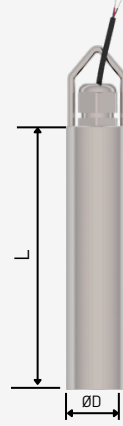
Model	Dimensions	
	L (mm)	D (mm)
E-TILT 02	100	21
E-TILT 05	200	21
E-TILT 06	175	40



E-TILT 02 (Compact Model)
For compact areas



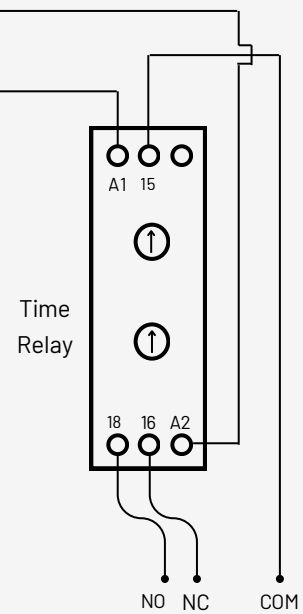
E-TILT 05 (Std. Model)
General Purpose



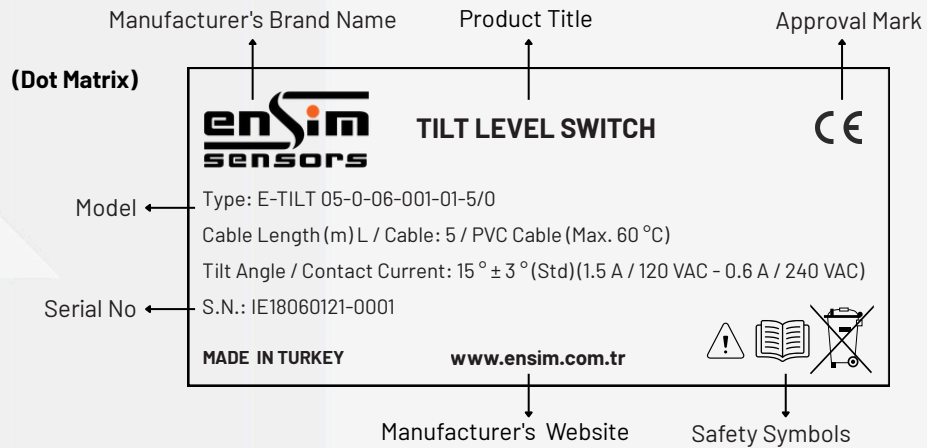
E-TILT 06 (Heavy-Duty Model)
For demanding circumstances

Electrical Connection

220 VAC
or
24 VAC/DC



Product Label



Ordering Method: You may refer to sample models in the coding.

1 MODEL E-TILT

Compact Type - **02**

Standard Mini Type - **05**

Heavy-Duty Type - **06**

2 CERTIFICATE

No - **0**

(EN10204-3-1) Material Certification - **1**

3 SWITCHING ANGLE (Contact Current)

15° ± 3° (Std) (1.5 A / 120 VAC - 0.6 A / 240 VAC) - **05**

45° ± 10° (1.5 A / 120 VAC - 0.6 A / 240 VAC) - **10**

25° ± 10° (1.5 A / 120 VAC - 0.6 A / 240 VAC) - **06**

45° ± 10° (1 A / 120 VAC - 0.4 A / 240 VAC) - **11**

35° ± 10° (12.5 A / 120 VAC - 0.7 A / 240 VAC) - **08**

Private - **x**

4 HOUSING MATERIAL

304 Stainless Steel - **001**

PVC - **061**

316 Stainless Steel - **002**

Private - **x**

5 CABLE MATERIAL

PVC Cable (Maximum 60 °C) - **01**

Silicone Cable (Maximum 200 °C) - **03**

PVC Cable (Maximum 105 °C) - **02**

Thick Silicone Cable - **M1**

Private - **x**

6 CABLE LENGTH (m) L

2 m. (Std) - **2**

Private - **x**

7 OPTIONAL

None / **0**

E-GSM Apparatus / **E-GSM**

Omron Timer Relay (0.1s-1200h/24-240 VAC/DC) / **R3**

Hanging Chain / **A**

Private / **x**

EXAMPLE

