

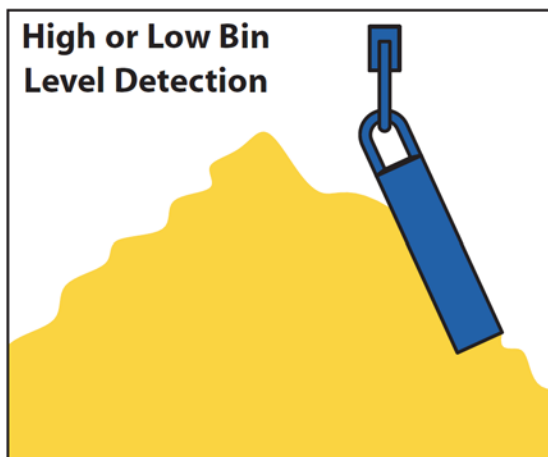
Features

- Easy to Install - requires little maintenance
- Control Unit will interface with any tilt switch probe
- Control Unit provides at-a-glance circuit status
- Adjustable time delay prevents false indication
- Rugged and reliable welded steel probes
- NEMA 12 or optional NEMA 4 enclosure
- Optional intrinsically safe unit
- Optional stainless steel probes available



Description

The Electro Sensors' Tilt Switch is a simple system consisting of a control unit and a sensing probe. It is widely used in the process industry to sense the presence or absence of any bulk material. Typical applications include: high or low bin level alarms, detection of transfer chute plug-up, control of material depth in crusher bowls and the sensing of alarm conditions in rock box, screen classifiers and more. Normal or safe condition may be vertical, as in a screen classifier properly loaded — an excessive level tilts the probe to indicate an alarm. Normally tilted condition is typified by material flowing on a conveyor belt — loss of material drops the probe to the vertical position to indicate alarm.



Principle of Operation

Tilt Switch Probes feature rugged welded steel construction. They are airtight, waterproof, dust and dirt-proof, and have a stress relieved cable. The mercury switch inside the probe is epoxy encapsulated to seal it from even the most severe environmental conditions. The probe mounted in a vertical position has closed contacts. As it is tilted to approximately 15 degrees, contacts will open. The contacts have a maximum capacity rating of 230 Vac, 1.7 Amps. The probe is supplied with a flexible 8-foot Neoprene jacketed 18-gauge, two-wire conductor cable suitable for conduit or stand-alone wiring.

The **SCU-200 Control Unit** provides a safe low voltage power source for any probe. Input from the probe is switch selectable so that either tilted or vertical position may be selected as "safe." The opposite position results in alarm, following an adjustable 1-99 second relay output delay. The delay ensures that only sustained change in the probe position will initiate an alarm. Lamps are mounted on the face of the enclosure to indicate the SAFE/ALARM status of the output relay (5 amp DPDT). The control is "fail-safe," relay failure or power loss causes an immediate alarm.

WARNING
CONTAINS MERCURY
DISPOSE ACCORDING TO LOCAL, STATE AND FEDERAL LAWS

Specifications

Input Power	
Input Power	115 Vac \pm 10% 50/60 Hz. Opt. 230 Vac, 12/24 Vdc
Sensor Inputs	
Probe Signal Voltage	+12 Vdc (10 k Ω pull-up to +12 Vdc)
Auxiliary Sensor Supply Voltage	+12 Vdc @ 17 mA max
External Control I/O	
Relay Output	DPDT Form C relay, rated 5 Amp @ 250 Vac resistive load.
Relay Status	Switch Selectable
Relay Status Lamps	2 replaceable lamps, 28 Vac
Operational	
Wiring Connections	Screw barrier terminal 14 AWG max
Enclosure	NEMA 12, 6 x 4 x 3 inch NEMA 4 optional
Operating Temperature	32°F to +158°F (0°C to +70°C)
Storage Temperature	20°C to +70°C
Option	Intrinsically safe available

Ordering

Models	Part Number
MTS200 Standard Tilt Switch	775-003600
MTS20H Standard Tilt Switch w/Hanger	775-003800
MTS300 HD Tilt Switch	775-002000
MTS30H HD Tilt Switch with w/Hanger	775-003900
MTSS20H Stainless Steel Tilt Switch w/Hanger	775-003700
MTSS300 HD Stainless Steel Tilt Switch	775-002100
MTSS30H HD Stainless Steel Tilt Switch w/Hanger	775-003500
SCU200 Model Options	
SCU200 NEMA 12, 115 VAC	800-006000
SCU200 NEMA 4, 115 VAC	800-006001
SCU200 NEMA 12, 230 VAC	800-006002
SCU200 NEMA 4, 230 VAC	800-006003
SCU200 NEMA 4, 115 VAC Intrinsically Safe	800-006004
SCU200 NEMA 4 Stainless Steel 115 VAC	800-006005

Specifications subject to change without notice.

ES160 Rev D © 2023 Electro-Sensors, Inc. All rights reserved.

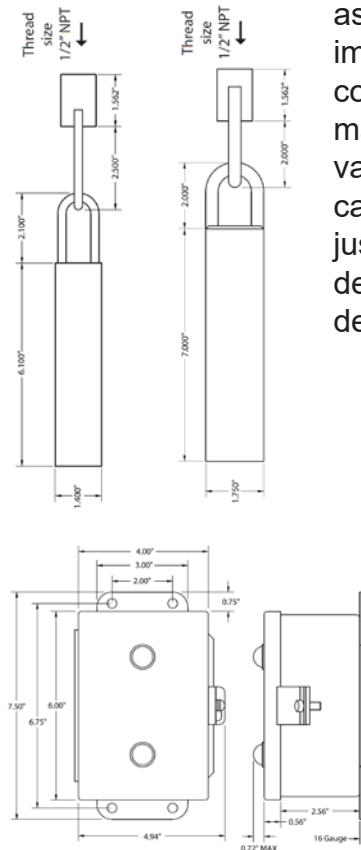
Installation Instructions

Probe may be suspended from the threaded conduit adapter hanger. Cable length should be adjusted so it won't affect tilting of the probe body. Control unit may be remotely located in any convenient place. See wiring diagram for terminal block layout. Tilt switch hangers (supplied as standard) are all welded steel to match the probe body and are threaded to screw directly onto 1/2-inch NPT conduit. Optional stainless steel hangers and probes are also available.

Auxiliary Sensor Power

The SCU-200 Control Unit has a sensor input feature that adds to its versatility. Terminal TB2-1 is a 12 Vdc sensor supply terminal that enables the use of open collector sensors such

as Hall-effect and proximity sensors with the control unit. This feature may be used in a wide variety of sensing applications where an adjustable relay output is desired when the sensor detects a target.



Additional Information

See the MTS200 Installation and Operating Manual for complete details, specifications, and programming instructions.