

TILT SWITCH LEVEL MONITORS

- ▼ *Low Cost, High Level Detection*
- ▼ *No Calibration*
- ▼ *Light-Duty and Heavy-Duty Models*
- ▼ *Minimal Maintenance*
- ▼ *Dust-Ignition Proof Model*

Monitor's line of tilt switches are economical, trouble-free point level controls available for detection of dry bulk materials. The units can be used as high level indicators to eliminate bin overflow or to control levels in open piles. In addition, the tilt switches are useful in determining over or under-load on conveyor belts. The simple yet efficient internal construction (one moving part) provides indication when unit is tilted at a 17° angle throughout the complete 360° of axial arc. Each tilt switch includes a threaded bore for attaching extension actuators which can increase sensing repeatability and protect the tilt switch from direct contact with coarse material. Monitor offers two different models of tilt switches, each suited to satisfy different application requirements.

PRINCIPLE OF OPERATION

A tilt switch provides indication by detecting the angular position of the tilt switch enclosure. Typically the unit is suspended above the material to be sensed. Internally, a steel ball centers itself over a switch resulting in switch actuation. As rising material contacts the tilt switch (or the extension actuator) the enclosure begins to tilt. When the enclosure body is tilted at 17°, the steel ball rolls off center, deactivating the switch. As material falls away from the switch enclosure body (or the extension actuator) and the unit becomes upright, the ball returns to its original centered position, once again causing switch actuation. The change in the internal switch status is user accessible for signaling alarms, lights, or interfacing with a PLC.

APPLICATIONS

Monitor's tilt switches can be used in a variety of applications and with many different types of materials. The TC-3X can be used with materials 15-60 lb/ft³, while the TC-1 can be used with materials 45+ lb/ft³.



MODELS TC-3X & TC-1

TYPICAL APPLICATIONS INCLUDE, BUT ARE NOT LIMITED TO:

- | | | |
|----------------|---------------|----------------|
| ▼ Feed | ▼ Silica Sand | ▼ Rocks |
| ▼ Pellets | ▼ Wood | ▼ Calcium Dust |
| ▼ Rubber | ▼ Metals | ▼ Regrind |
| ▼ Coal | ▼ Malt | ▼ Clays |
| ▼ Resin | ▼ Limestone | ▼ Grain |
| ▼ Foundry Sand | ▼ Pre-Mix | ▼ Foundry Slag |



"SETTING THE STANDARD FOR SUPPLIER EXCELLENCE"

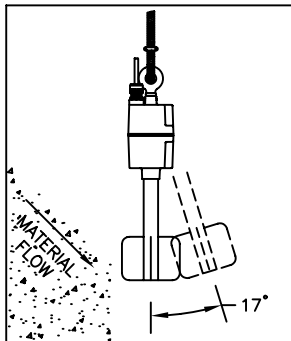
BULLETIN 633 MODELS TC-3X & TC-1

FEATURES

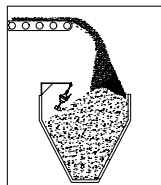
- ▼ Passive switch for activating loads up to 480 VAC
- ▼ Switch is triggered when tilted 17°
- ▼ Cast iron or cast aluminum construction
- ▼ Easy installation
- ▼ Adjustable measurement height
- ▼ Ball-float and paddle-type actuators available

AVAILABLE CONFIGURATIONS

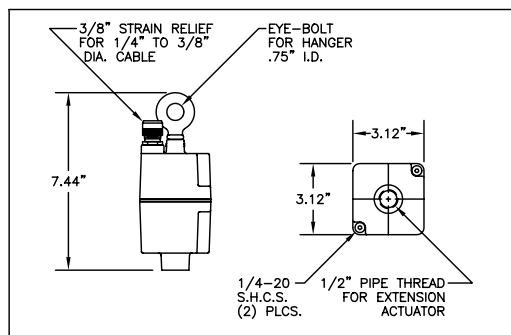
TC-3X - Monitor's model TC-3X is a light-duty tilt switch constructed from cast aluminum. It is ideally suited for applications where relatively light weight, moderately sized materials are handled (i.e. 15-60 lb/ft³ or particle sizes less than 2"). Typical application materials include grain, feed, plastic pellets, and pet food. The TC-3X has a dust-ignition proof approval rating and therefore can be used in applicable hazardous location environments.



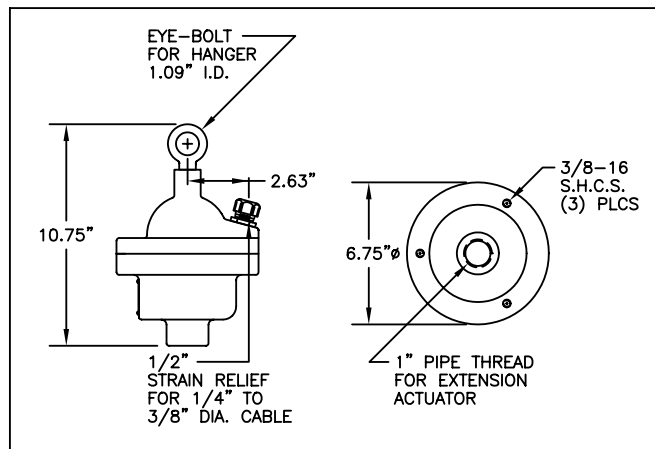
TC-1 - Monitor's model TC-1 is a heavy-duty, weather-proof tilt switch constructed from cast iron. It is ideally suited for applications where heavy coarse materials are handled (i.e. >45 lb/ft³ or particle sizes exceeding 2"). Typical application materials include coal, ore, rock, aggregate, and sand.



TC-3X MECHANICALS



TC-1 MECHANICALS



ORDERING INFORMATION

- 4-8130 TC-3X dust-ignition proof, light duty, cast alum. housing
4-3103 TC-1 standard unit with heavy duty cast iron housing

SPECIFICATIONS

Model TC-3X

Power Requirements:	none
Output:	SPDT, 10A @ 480 VAC max
Sensitivity:	17° from vertical axis
Enclosure:	cast aluminum, unpainted
Enclosure Protection:	NEMA 4, IP56
Mounting Connection:	eyebolt (3/4" inner diameter)
Wire Entry:	3/8" NPT cord connector (cord diameter 0.25" to 0.37")
Operating Temperature:	-40° to 175° F
Weight:	3 lbs.
Approvals:	FM Class II, Div. 1,2 Groups E,F,G CE marking

Model TC-1

Power Requirements:	none
Output:	SPDT, 20A @ 480 VAC max
Sensitivity:	17° from vertical axis
Enclosure:	cast iron, powder coated beige
Enclosure Protection:	NEMA 4, IP56
Mounting Connection:	eyebolt (1-3/32" inner diameter)
Wire Entry:	1/2" NPT cord connector (cord diameter 0.25" to 0.37")
Operating Temperature:	-40° to 250° F
Weight:	24 lbs.

WARRANTY

Monitor Technologies warrants each tilt switch it manufactures to be free from defects in material and workmanship under normal use and service within two (2) years from the date of purchase within North America, and within one (1) year from date of purchase outside of North America. The purchaser must give notify Monitor of any defects within the warranty period, return the product intact, and prepay transportation charges. The obligation of Monitor Technologies LLC under this warranty is limited to repair or replacement at its factory. This warranty does not apply to any product which is repaired or altered outside of Monitor Technologies' factory, or which has been subject to misuse, negligence, accident, incorrect wiring by others, or improper installation.

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