



"Setting The Standard For Supplier Excellence"

Tilt Switch Level Monitors

- ▼ Low Cost, High Level Detection
- ▼ No Calibration
- ▼ Minimal Maintenance



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 (240-960 kg/m³), while the TC-1 can be used with materials >45 lb/ft³ (>720 kg/m³).

FEATURES

- ▼ Passive switch for activating loads up to 250VAC
- ▼ Cast iron or cast aluminum construction
- ▼ Easy installation
- ▼ Adjustable measurement height
- ▼ Ball-float and paddle-type actuators available



TYPICAL APPLICATIONS INCLUDE, BUT ARE NOT LIMITED TO:

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



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. 15-60lb/ft³; 240-960kg/m³ or particle sizes less than 2in; 50mm). 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.

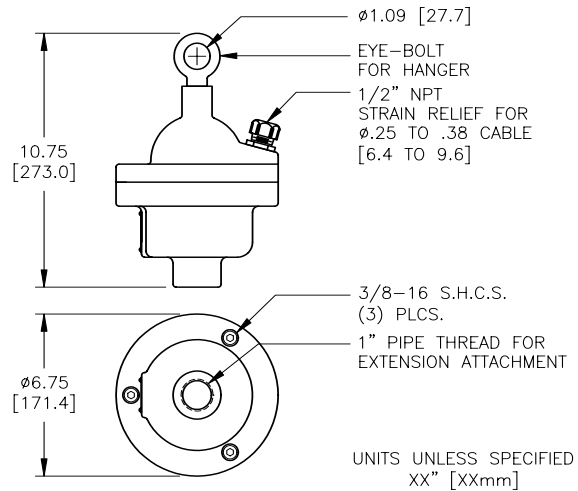
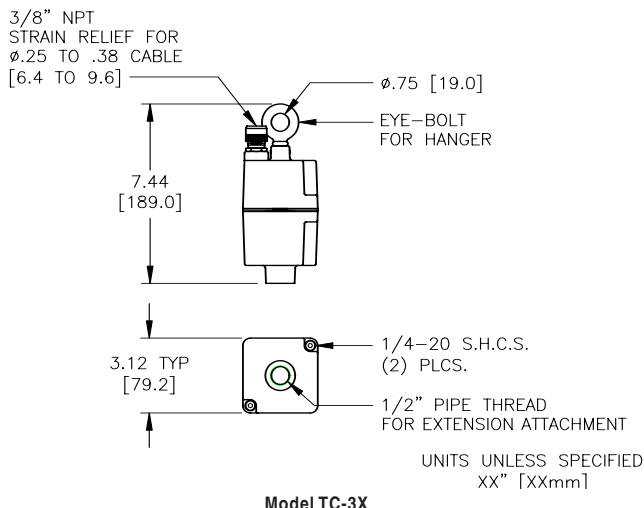
TC-1 - Monitor's model TC-1 is a heavy-duty, weather-proof tilt switch constructed from cast iron. It is ideally suited for applications where heavy coarse materials are handled (i.e. >45lb/ft³; >720kg/m³ or particle sizes exceeding 2in; 50mm). Typical application materials include coal, ore, rock, aggregate, and sand.

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
4-8001	SS extension actuator with 8" ball float
4-8002	Galvanized extension actuator with 8" polypropylene ball float

MECHANICALS

DIMENSIONS ARE SHOWN IN INCHES WITH MILLIMETER EQUIVALENT IN BRACKETS



SPECIFICATIONS

Model TC-3X

Power Requirements:	none
Output:	SPDT, 10A @ 250 VAC max
Sensitivity:	17° from vertical axis
Enclosure:	cast aluminum, unpainted
Enclosure Protection:	NEMA 4, IP56
Mounting Connection:	eyebolt (3/4in (19mm) inner diameter)
Wire Entry:	3/8" NPT cord connector Cord dia. 0.25 to 0.38in (16.4 to 9.6mm)
Operating Temp:	-40° to 175° F (-40° to 79° C)
Weight:	3 lbs. (1.35 kg)
Approvals:	FM Class II, Div. 1,2 Groups E,F,G CE marking (Ordinary Locations Only)

Model TC-1

Power Requirements:	none
Output:	SPDT, 20A @ 250 VAC max
Sensitivity:	17° from vertical axis
Enclosure:	cast iron, powder coated beige
Enclosure Protection:	NEMA 4, IP56
Mounting Connection:	eyebolt (1-3/32in (27.7mm) inner dia.)
Wire Entry:	1/2" NPT cord connector Cord dia. 0.25 to 0.38in (16.4 to 9.6mm)
Operating Temp:	-40° to 250° F (-40° to 121° C)
Weight:	24 lbs. (11.25 kg)

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. 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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