

Tilt Switch  
**TC-1**  
**TC-3**

Leak Type  
Level Switch  
**KEL-2**



**Level measurement with  
reliable operation !**



## Tilt Switch TC-1

Use for bulk solids in 50mm or over such as coal, ore, broken stone and so on.

## Tilt Switch TC-3

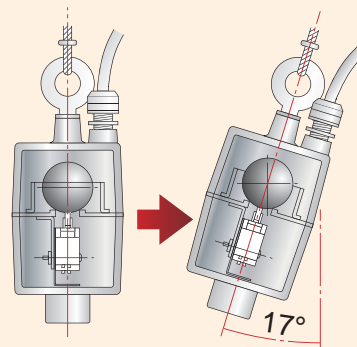
Suitable for Detecting Coarse Grains and Lumps. (small pieces)



Level switch to detect the presence of the material by sensing the tilt of the level switch unit.

### ■ Principle of Operation

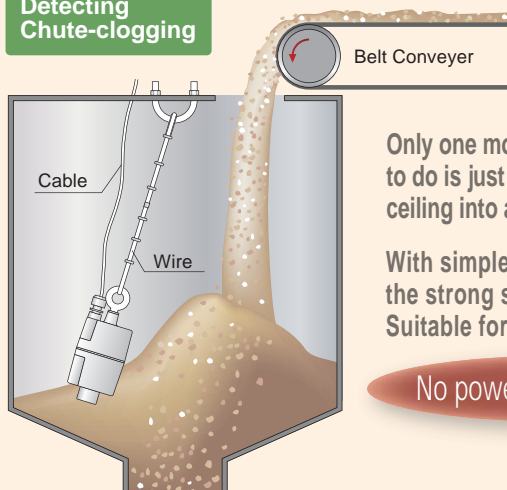
When the unit suspended from the ceiling of a tank tilts due to the repose angle of the measured material, the switch detects its tilt, by which the contact is switched. When there is no material, the output contact gets back to the original state.



It houses steel ball inside and when the body gets upright, the steel ball centers itself on a microswitch.

When the body is tilted at 17° or more, the steel ball rolls off to deactivate the microswitch and switch the contact.

### Detecting Chute-clogging



Belt Conveyer

Cable

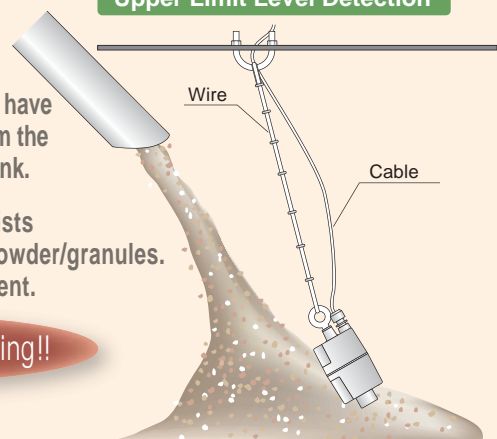
Wire

Only one moving part, all you have to do is just to suspend it from the ceiling into an inside of the tank.

With simple structure, it resists the strong shock from the powder/granules. Suitable for harsh environment.

No power, low-cost wiring!!

### Upper Limit Level Detection



Wire

Cable

### ■ TC-1 Specifications

**Weight** : About 11 kg (Cast-iron)

**Output Contact** : SPDT x1

**Contact Capacity** : 250VAC 10A

**Allowable Temperature** : -10 to +120°C (No Condensation or Freez required)

**Enclosure Rating** : IP56

**Conduit Connection** : 1/4 – 3/8 inch cable, 1/2 inch screw

### ■ TC-3 Specifications

**Weight** : About 1.3 kg (Aluminum casting)

**Output Contact** : SPDT x1

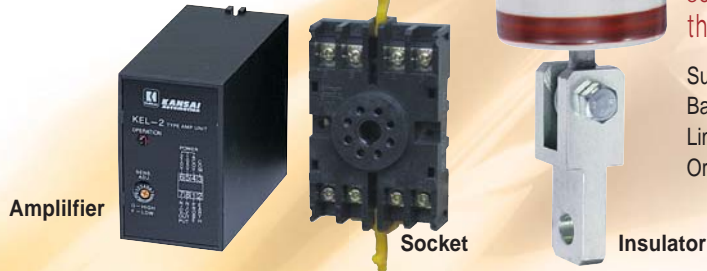
**Contact Capacity** : 250VAC 10A

**Allowable Temperature** : -10 to +80°C (No Condensation or Freez required)

**Enclosure Rating** : IP56

**Conduit Connection** : 1/4 – 3/8 inch cable, 1/2 inch screw

# Leak Type Level Switch **KEL-2**



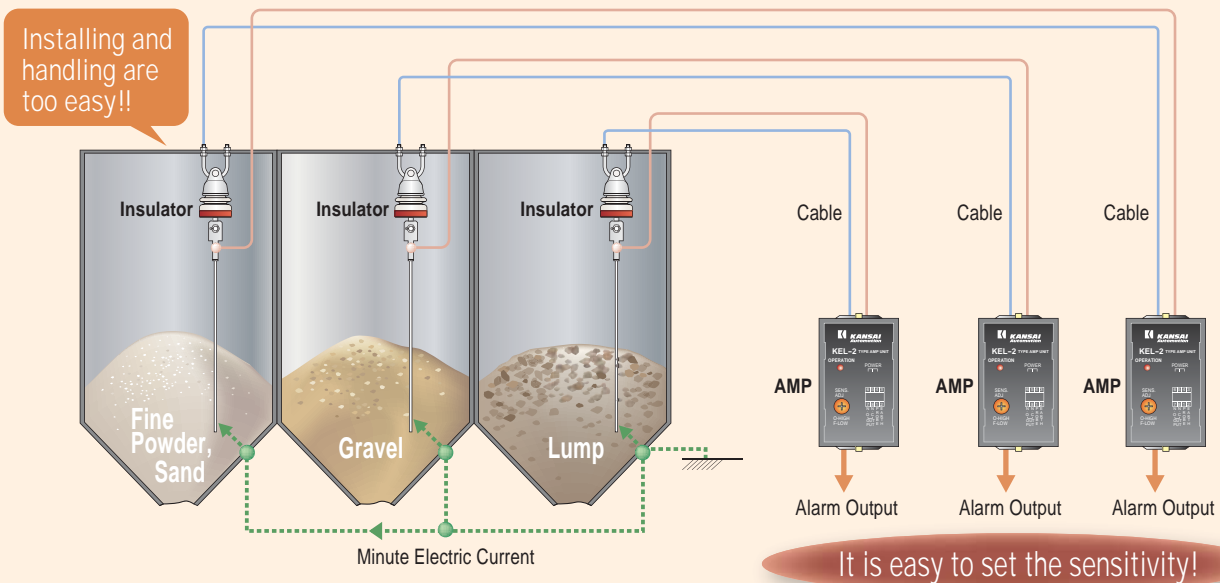
It can be used for all products including sand as building materials, gravel, crushed rocks and so on as long as they contain some moisture.

Suited for measuring Aggregate for Batcher Plant & Asphalt Plant, Crushed Rock, Limestone, Coal, Charcoal Dust, Coke, Ore, Clay and so on.

Level switch to detect the presence of materials by sensing the changes of the resistance between the electrode and metal tank wall.

## ■ Principle of Operation

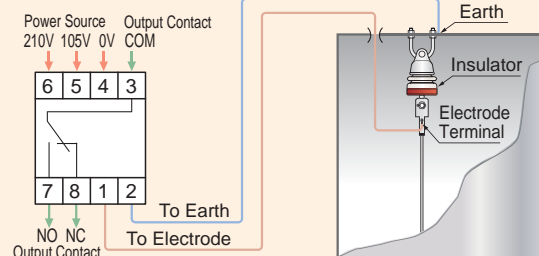
When the material, which always contains some moisture, touches the electrode, then the resistance decreases between the electrode and wall of the metal tank. It detects the change of resistance and provide the output. When there is no material, the output contact gets back to the original state.



## ■ KEL-2 Specifications

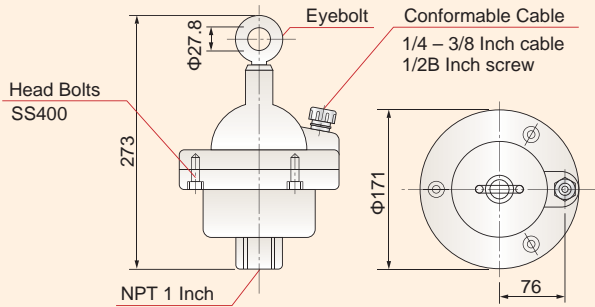
- Power Source** : 105/210VAC±10% 50/60Hz
- Output Contact** : SPDT x1
- Contact Capacity** : AC250V 5A, DC30V 5A (Resistance load)
- Allowable Temperature** : 0 to +50°C (No Condensation or Freez required)
- Sensitivity** : Max.about 10MΩ – Min.about 30kΩ
- Sensitivity Setting** : 16 Steps adjustable between Max. & Min.
- Indication Light** : Operation Indicating Light (Light on detection)

## ■ Connection

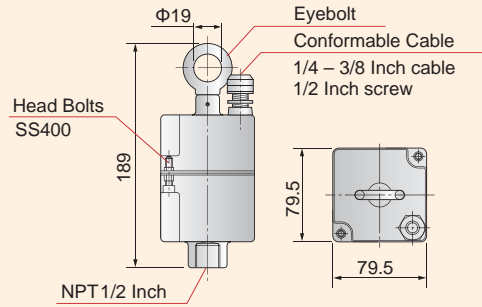


## Tilt Switch

### TC-1 Outline Drawing



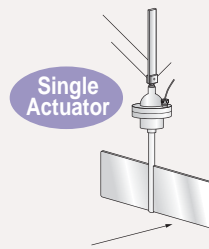
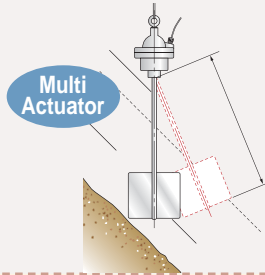
### TC-3 Outline Drawing



### Option

Sensitivity upgrade by actuator

You can upgrade the sensitivity of the tilt switch by mounting 2 or 4 paddle actuators.

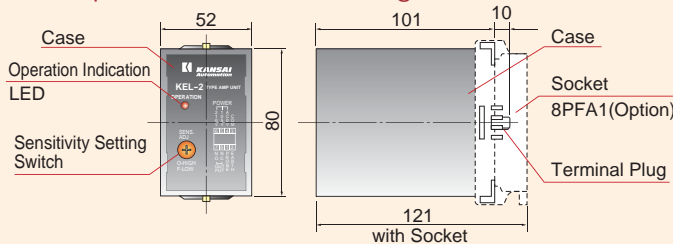


The actuators are fixed on the tilt switch body with by NPT1/2 or NPT1.

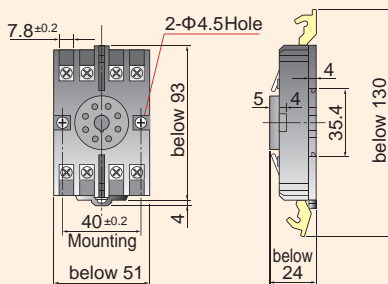
The dimensions of the actuators and the paddle forms are varied by the nature of materials, the mounting position and so on.

## Leak Type Level Switch

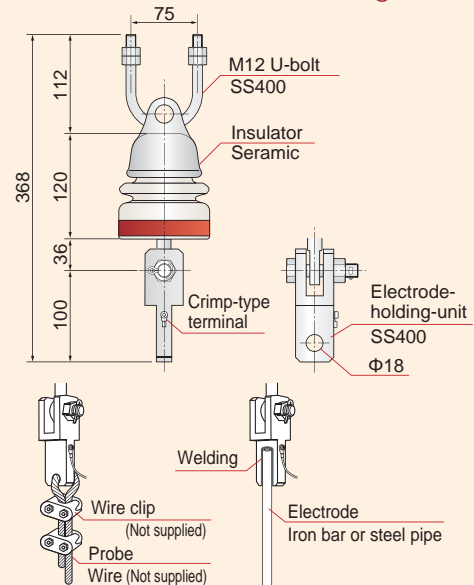
### Amplifier Outline Drawing



### Socket (8PFA1) Outline Drawing



### Electrode Outline Drawing



## Line of business

- Rotary Paddle Type Level Switch
- Vibration Type Level Switch
- Swing Type Level Switch
- Acoustic Level Switch
- Capacitance Type Level Switch
- Capacitive Proximity Sensor
- Capacitance Type Level Indicator
- Diaphragm Type Level Switch
- Tilt Switch
- Leak Type Level Switch
- Microwave Switch
- Sounding Bob Type Level Indicator
- Flow Switch
- Conductance Type Level Switch
- Float Switch
- Float Type Level Indicator
- Ultrasonic Type Level Indicator
- Equipments For Conveyor Lines
- Dust Monitor System
- Zirconia Oxygen Analyzer
- Laser Type Level Indicator
- RADAR Type Level Indicator
- Ultrasonic Flow meter

General Manufacturer of Level Controllers for Powder, Granules, and Liquid

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official site



\*Please be sure to read USER'S GUIDE, Installation & Operation Instructions before using the instrument.

\*The specifications herein may be subject to change without advance notice.

Agent