

[See page 7 for selection details.](#)



# TD70 Anti-Rotation Level Switch

## Principle of operation

TD series anti-rotation material level controller uses micro-motor to drive the detection blade to rotate at the speed of 5-6 rpm after deceleration. When the material level of the measured material rises, the rotation of the blade is hindered, and the detection mechanism rotates around the spindle. This displacement makes one of the microswitches act to send out a material signal, and then the other microswitch acts to cut off the power supply of the motor and stop it. As long as the material level remains unchanged, this state will remain. When the material level drops and the detection blade loses its block, the detection mechanism relies on the spring tension to restore the original state. First, a microswitch turns on the power supply of the motor to make it rotate, and then another microswitch signals that there is no material. As long as there is no material to stop the rotation of the detection blade, this state will remain.

## Product description

The anti-rotation material level controller, also referred to as "material level meter", "material level meter", "material level switch", "material level meter" and "material level sensor", is mainly used for automatic detection and control of various materials (such as powder, granule, colloid or block) silos and limited material levels.

Anti-rotation fully sealed material level controller adopts swing transmission system. The motor base is pulled by a spring. When the system is not blocked, the motor rotates to drive the detection blade to detect materials. When the detection plate is blocked, the spindle is blocked and stopped, and the motor continues to run, so that the motor base pulls the spring, presses the microswitch, sends out a material signal, and cuts off the power supply of the motor at the same time, and the motor stops working. When the object level drops, the resistance of the inspection plate disappears, the system is reset under the tension of the spring, and the microswitch returns to the original state, which makes the motor rotate and sends out a signal that there is no material.

Different types of material level devices can meet the requirements of different working conditions, and are widely used in the process of material transportation and control in metallurgy, grain, flour, building materials, cement, electricity, coal, chemical industry, casting, rubber, environmental protection and dust removal and other industries.

## Functional performance

Supported by three bearings, the operation is more reliable.

The original sealing design can prevent dust from infiltrating along the bearing and can also be used outside the house.

The torque is stable and reliable, and the torque can be adjusted. The blades bear excessive load, and the clutch automatically slips to protect the motor from damage.

Lightweight, easy to install, easy to check and repair internal parts without removing from the through groove as a whole.

The junction box IP66 is designed with good sealing performance.

Small switch series is suitable for detecting materials with small specific gravity in small barrels with small torsion.

## Product application

It is mainly used for automatic detection and control of various silos and limited material levels. Electricity, coal, chemical industry

Environmental protection, dust removal and other materials from all walks of life



### Technical parameter

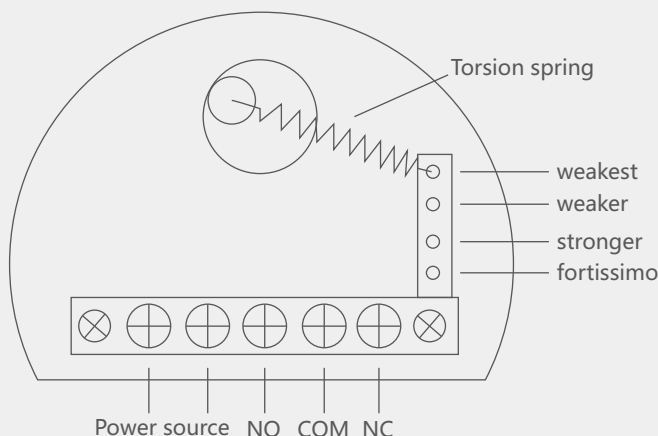
Specification	
Supply voltage	AC220V/ DC24 V
Operating temperature	10°C-80°C(can accept high temperature 400°C custom)
Blade speed	1RPM(RPM)
Medium specific gravity	>0.5g/ cm <sup>3</sup>
Shock capacity	5A/ 250VAC; 10A/24VDC SPDT (Single pole double throw)
power	<4W
Moment of force	Kg * 1.0 cm
Insulation resistance	P 100 m Ω
Class of protection	IP66
Blade material	Connecting to the blades is SUS 304
Connection mode	Various standard threads, flanges, can be customized

### Structure chart

#### Torque adjustment

Torsion spring is used to adjust the output torsion of the rotating shaft, when the object to be measured is heavy, the spring torsion can be adjusted to the strongest position, and the sensitivity of the blade is poor at this time. On the contrary, the smaller the specific gravity of the measured object, the weaker the spring can be adjusted, and the blade sensitivity is better.

The elasticity of the torsion spring, do not replace it at will, so as not to cause misoperation.

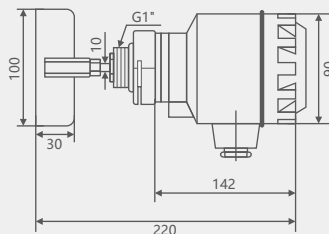


### Size mm

#### Resistance rotary level switch standard type

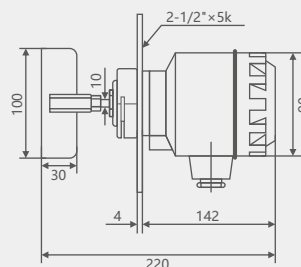
##### Model number: TD70-1

- Suitable for horizontal installation
- Operating temperature: -10°C~60°C
- Junction box protection grade: IP66
- Weight: 1.2kg



##### Model number: TD70-2

- Suitable for horizontal installation
- Operating temperature: -10°C~60°C
- Junction box protection grade: IP66
- Weight: 1.7kg

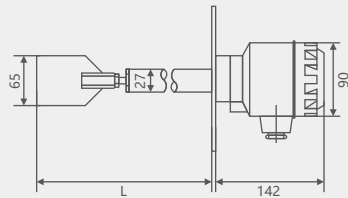


Size mm

Resistance rotary level switch standard type

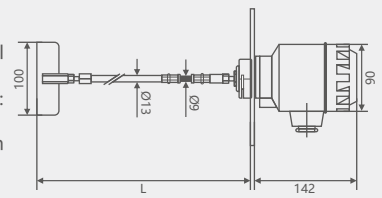
**Model number: TD70-3**

- Standard Specifications
- L=250mm (2.2kg)
- L=500mm (2.5kg)
- L=750mm (2.8kg)
- Suitable for horizontal and vertical installation
- Operating temperature: -10°C~80°C
- Junction box protection grade: IP66
- Flange to blade all for SUS304 material
- Other specifications can be customized



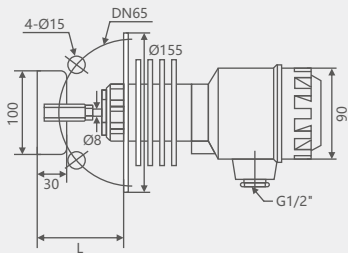
**Model number: TD70-4**

- Standard Specifications
- L=450-650mm (2.2kg)
- L=650-1000mm (2.8kg)
- L=750-1200mm (3.0kg)
- Suitable for horizontal and vertical installation
- Operating temperature: -10°C~60°C
- Junction box protection grade: IP66
- Flange to blade all for SUS304 material
- Other specifications can be customized



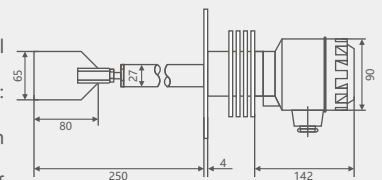
**Model number: TD70-5**

- Suitable for horizontal installation
- Operating temperature: up to 200°C
- Junction box protection grade: IP66
- Weight: 2.1kg



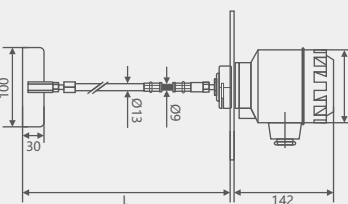
**Model number: TD70-6**

- Standard specification
- L=250mm (2.6kg)
  - L=500mm (2.96kg)
  - L=750mm (3.2kg)
  - Suitable for horizontal and vertical installation
  - Operating temperature: up to 200°C
  - Junction box protection grade: IP65
  - All blades are made of SUS304 material



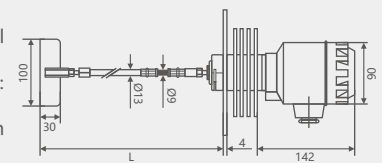
**Model number: TD70-7**

- Standard Specifications
- L=450mm (2.5kg)
- L=650mm (2.8kg)
- L=750mm (3.0kg)
- Suitable for vertical installation
- Operating temperature: -10°C~60°C
- Other specifications can be customized



**Model number: TD70-8**

- Standard Specifications
- L=450-650mm (3.0kg)
- L=650-1000mm (3.3kg)
- L=750-1200mm (3.5kg)
- Suitable for vertical installation
- Operating temperature: up to 200°C
- Other specifications can be customized



Technical parameter

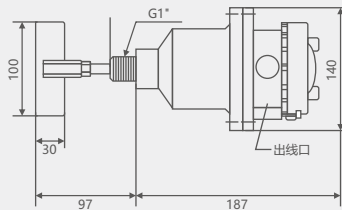
Specification	
Supply voltage	AC220V/ DC24 V
Operating temperature	10°C-80°C (can be customized at high temperature 400°C)
Blade speed	1RPM(RPM)
Medium specific gravity	> 0.5 g/cm <sup>3</sup>
Shock capacity	5A/ 250VAC; 10A/24VDC SPDT (Single pole double throw)
power	4W
Moment of force	Kg * 1.0 cm
Insulation resistance	P 100 m Ω
Junction box protection grade/material	IP65/ die cast aluminum alloy
Inlet protection grade/material	1/2", 3/4" PT/ aluminum alloy
Blade material	Connecting to the blades is SUS 304
Connection mode	Various standard threads, flanges, can be customized

Size mm

Anti-spinning level switch explosion-proof type

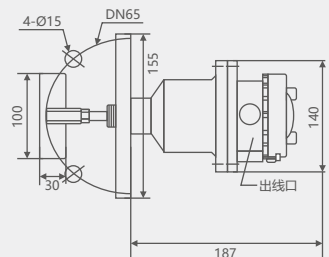
Model number: TD70-E1

- Suitable for horizontal installation
- Operating temperature: -10°C~60°C
- Explosion-proof grade of junction box: Exd IIC T6
- Material: die-cast aluminum alloy



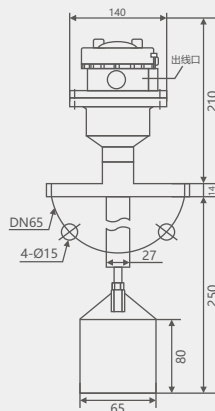
Model number: TD70-E2

- Suitable for horizontal installation
- Operating temperature: -10°C~60°C
- Explosion-proof grade of junction box: Exd IIC T6
- Material: die-cast aluminum alloy



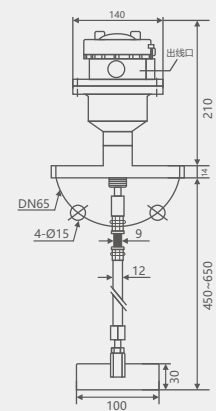
Model number: TD70-E3

- Suitable for horizontal or vertical installation
- Operating temperature: -10°C~80°C
- Explosion-proof grade of junction box: Exd IIC T6
- Material: die-cast aluminum alloy
- Other specifications can be customized



Model number: TD70-E4

- Suitable for vertical installation
- Operating temperature: -10°C~60°C
- Explosion-proof grade of junction box: Exd IIC T6
- Material: die-cast aluminum alloy
- Other specifications can be customized

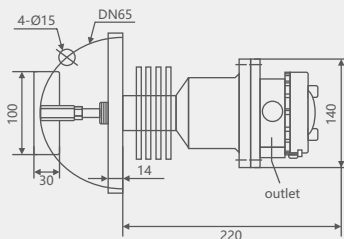


Size mm

Anti-spinning level switch explosion-proof type

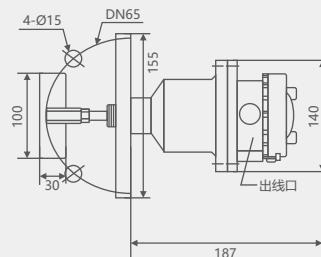
Model number: TD70-E5

- Suitable for horizontal installation
- Operating temperature: up to 200°C
- Explosion-proof grade of junction box :Exd IIC T6
- Material: die-cast aluminum alloy



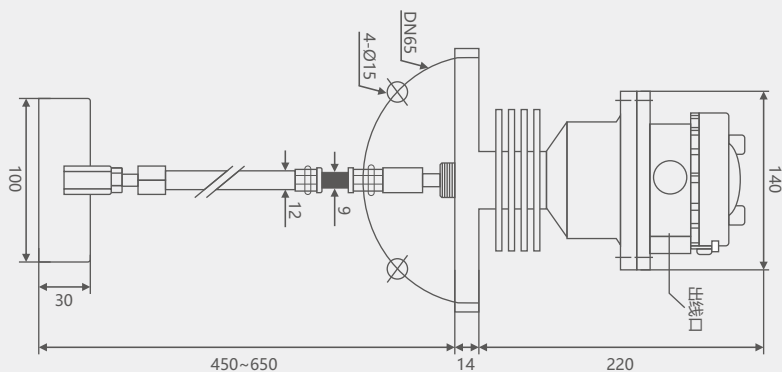
Model number: TD70-E7

- Suitable for horizontal installation
- Operating temperature: up to -10°C~60°C
- Explosion-proof grade of junction box :Exd IIC T6
- Material: die-cast aluminum alloy



Model number: TD70-E6

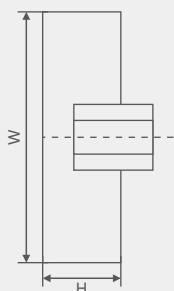
- Suitable for horizontal installation
- Operating temperature: up to -10°C~60°C
- Explosion-proof grade of junction box :Exd IIC T6
- Other specifications can be customized



Blade type

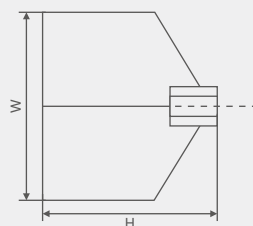
Single blade

- W\*H=100\*30
- Minimum mounting aperture Ø90mm



Shovel blade

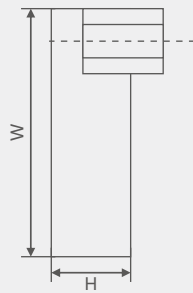
- W\*H=65\*80, can be directly inserted into the 2" pipe, generally used in shaft protection tube type
- W\*H=65\*120, can be directly inserted into the 2" pipe, generally used in shaft protection tube type



## Blade type

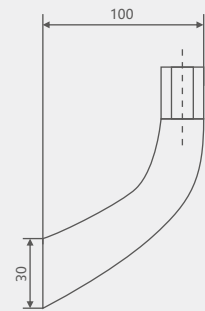
### Single blade

- W\*H=50\*30
- Use in a relatively large proportion of raw materials, such as minerals. Because the blade is small, it can be reduced raw material impact.



### Sickle blade

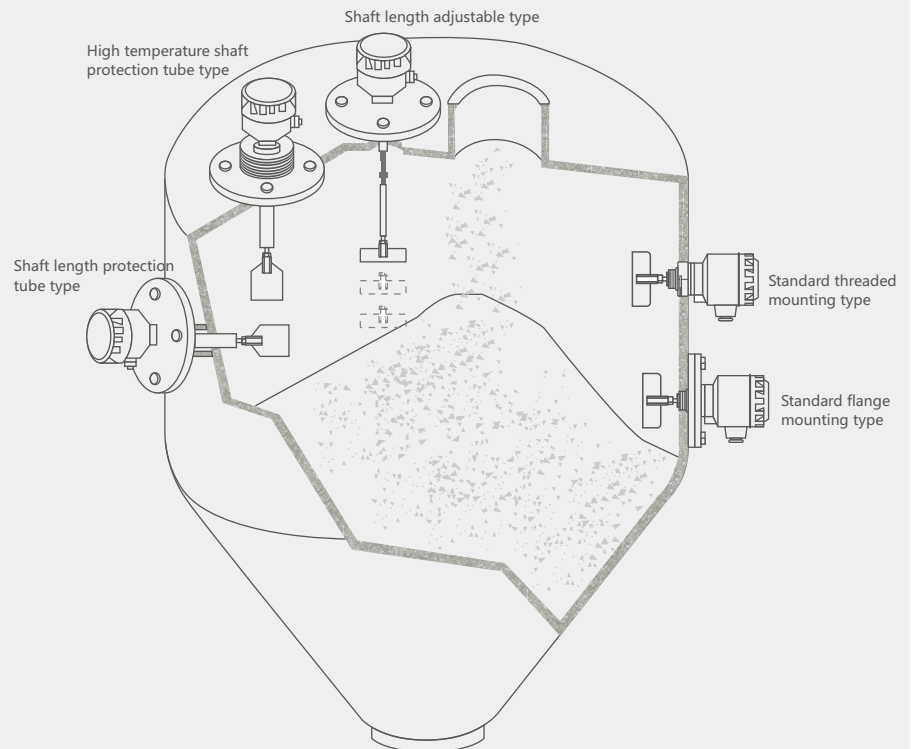
- The sickle blade can be installed directly in the 1" pipe tooth, eliminating the trouble of flange opening and locking thread.



## Installation precautions

### Matters needing attention

- When horizontally installed, the switch can be installed at a horizontal angle of 15°~20° to reduce the attack of materials.
- The temperature in the barrel exceeds 60°C, please choose high temperature series.
- When the connecting part is 1" pipe tooth, the blade can be directly locked into the pipe tooth with sickle shape.
- The shaft body can be wound and the shaft length can be adjusted, which can overcome the problem of repose angle in the barrel groove.
- The junction box entrance must face down, and the cable fixing nut must be locked.



## TD70-Selection composition

Selection example **TD70** **A** **J** **N** **S** **Z** **M** **3.15** **A** **M**

1 2 3 4 5 6 7 8 9

1.Installation type	<b>A</b>	Standard threaded mounting type
	<b>B</b>	Standard flange mounting type
	<b>C</b>	High temperature thread standard type
	<b>D</b>	High temperature flange standard type
	<b>E</b>	Explosion-proof thread type
	<b>F</b>	Explosion-proof flange type
	<b>G</b>	Explosion-proof high temperature type
2.Voltage	<b>H</b>	220V
	<b>J</b>	24VDC
	<b>T ( )</b>	Other voltage types
3.Output contact signal	<b>N</b>	Normally open
	<b>O</b>	Normal close
	<b>T ( )</b>	Other output contact signals
4.Blade type	<b>S</b>	Single blade
	<b>T</b>	Shovel blade
	<b>U</b>	Flag blade
	<b>V</b>	Sickle blade
	<b>T ( )</b>	Other types of blades
5.Material	<b>Z</b>	304
	<b>X</b>	316
	<b>T ( )</b>	Other material types
6.Installation mode	<b>M</b>	Side mount
	<b>N</b>	Top mounting
7.Dielectric density	<b>D ( )</b>	(Remark density)
8.Threaded mounting (Flange connection is not selected)	<b>A</b>	G1/2
	<b>B</b>	G1
	<b>C</b>	1"NPT
	<b>D</b>	1/2"NPT
	<b>T ( )</b>	Other types of thread
9.Flange mounting (Not selected for threaded connection)	<b>E</b>	DN15
	<b>F</b>	DN25
	<b>G</b>	DN32
	<b>H</b>	DN40
	<b>I</b>	DN50
	<b>J</b>	DN60
	<b>K</b>	DN80
	<b>T ( )</b>	Other connecting flanges

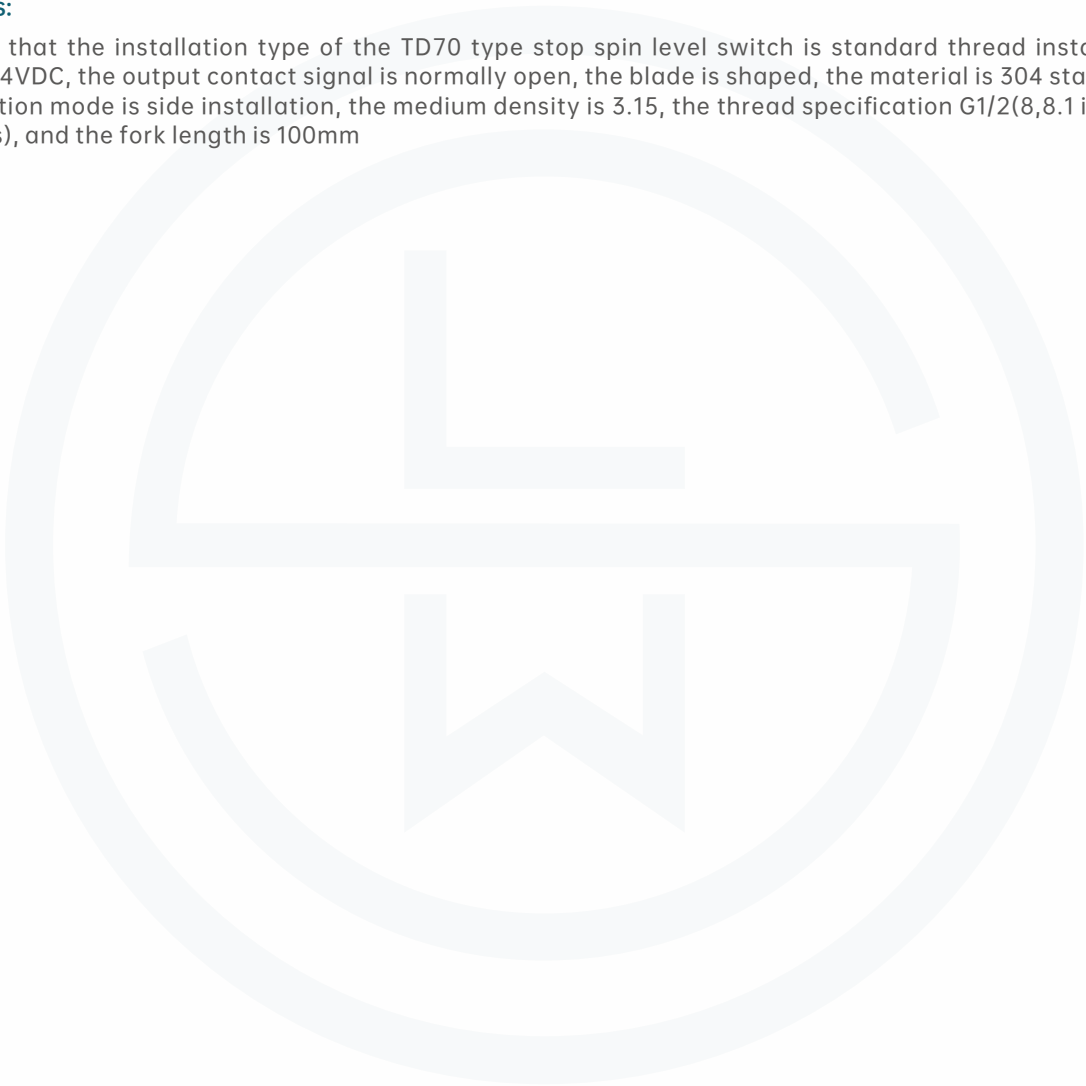
### TD70-Selection composition

Selection example **TD70** A J N S Z M 3.15 A M

9.Fork length mm	<b>M</b>	100
	<b>U</b>	150
	<b>V</b>	200
	<b>W</b>	250
	<b>T ( )</b>	Other length

#### Instructions:

It indicates that the installation type of the TD70 type stop spin level switch is standard thread installation, the voltage is 24VDC, the output contact signal is normally open, the blade is shaped, the material is 304 stainless steel, the installation mode is side installation, the medium density is 3.15, the thread specification G1/2(8,8.1 is one of the two options), and the fork length is 100mm



### Product Certification

Compliance and approval; Rodwig flow meters meet key standards and certifications for process measurement technology; To ensure the highest reliability in such settings;

