See page 5 for selection details

WD70

Standard Tuning Fork Level Switch

Principle of operation

The tuning fork rod is driven by the piezoelectric crystal and the natural frequency of the tuning fork, and the signal is fed back, so that the tuning fork rod resonates. When the material level touches the tuning fork rod, the tuning fork rod feeds back the frequency signal, and when the circuit detects that the frequency of this signal decreases, it is converted into the output of a contact signal. The vibration frequency of the tuning fork rod is reduced due to the damping effect when the measured object is coated with the tuning fork rod, and a switching signal is output, so there is no signal amplification circuit inside, which can avoid the trouble that the sensitivity must be adjusted frequently due to the change of material properties.

When the tuning fork switch is used for low alarm (or low position control), the medium in the container is discharged downward and flows through the tuning fork. When it is lower than the specific position of the tuning fork, the natural frequency changes, which are detected by electronic components, thus switching the output state; When it is used for high-level alarm (or high-level control), the medium in the container rises and contacts with the fork body of the tuning fork, causing the natural frequency to change and switching to the output state.

Product description

Tuning fork level switch is a general level switch, which is also often called tuning fork level gauge, tuning fork level limit switch and electric floating tuning fork level gauge. Because of the appearance of tuning fork switch in different links in industrial production, it actually plays different key roles.
Because the tuning fork liquid level switch has no moving parts, compared with the floating ball liquid level switch, it can avoid the influence of interference factors such as structure, turbulence, agitation, bubbles, vibration, etc. It is an upgraded product of the floating ball liquid level switch and has wider applicability.
Using short tuning fork technology, it can be used in all liquid application places and non-sticky powder with good fluidity.
Widely used in petroleum, light industry, food, water treatment, building materials, environmental protection and other industries, the level of the upper and lower limit alarm and automatic control of the upper and lower limit.

functional performance

Strong adaptability: the different parameters and density of the measured material have no influence on the measurement.
Maintenance-free: Because the detection process of the tuning fork liquid level switch is completed by electronic circuit and there are no moving parts, it does not need maintenance once it is installed and put into operation.
No need to adjust: because the detection of the tuning fork liquid level switch is not affected by the dielectric constant and density of the medium to be measured, no matter what kind of liquid is measured, it does not need to be adjusted on site.
Explosion-proof place: the products have been certified for explosion-proof and can be used in petrochemical industry.

Product application

Petroleum and chemical industry
Food and water treatment
Material transportation in all walks of life such as building materials, environmental protection and dust removal.

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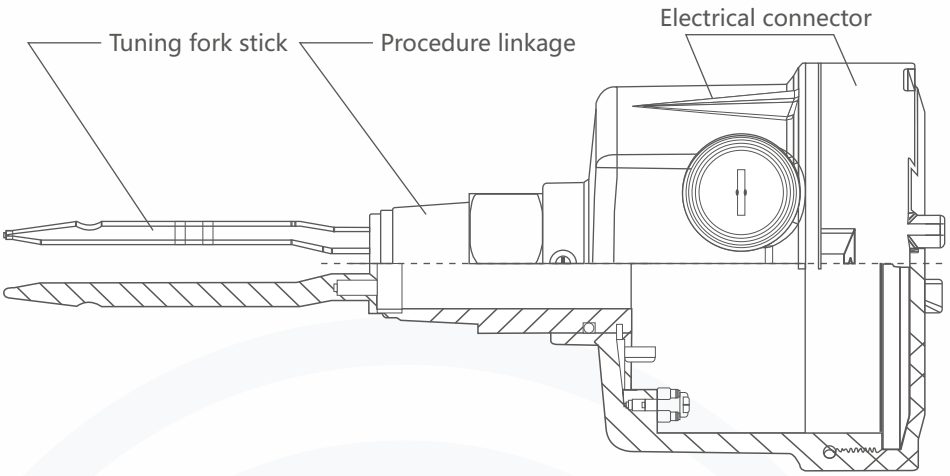
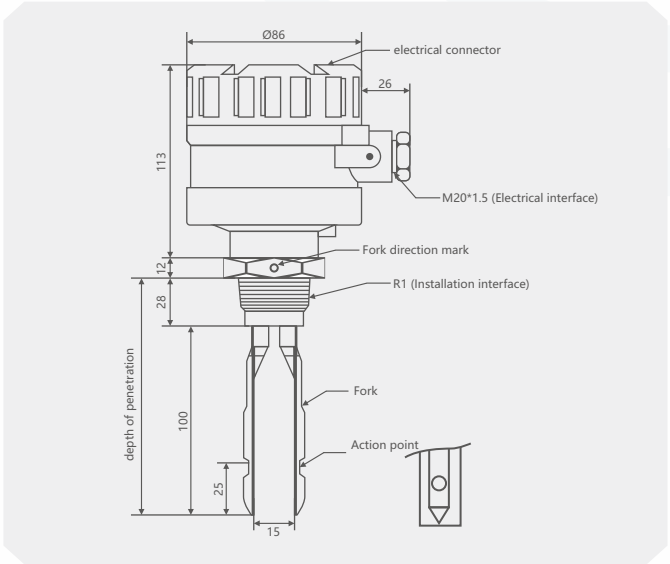
Structure chart



Technical parameter

Specifications	
Power supply voltage	AC220V/ DC24 V
Working temperature	Fork -30~150℃ (high temperature type can be customized) and instrument -20~70℃
working pressure	≤2MPa
Specific gravity of medium	>0.7g/ cm3
Output mode	A set of relay contact outputs (AC220V/3A, DC30V/ 3A)
power	<1W
Action point	Inserted vertically into the water for about 25mm.
Starting time of vibration	About 3 seconds
Response time	About 1 second
Output delay	1-50 seconds adjustable
attended mode	Various standard threads, flanges and sanitary chucks can be customized.

Size mm



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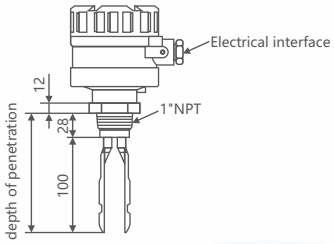
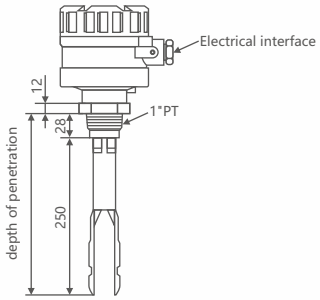
For more product information, please visit www.ludwig-schneider.com.cn

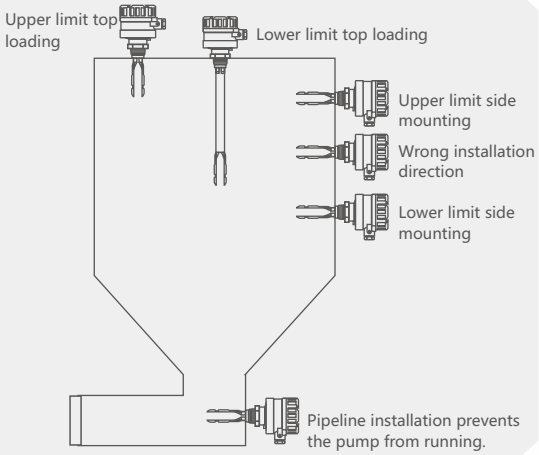
LUDWIG
INSTRUMENT

Standard type of tuning fork level switch

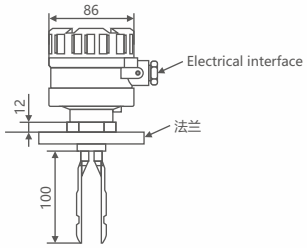
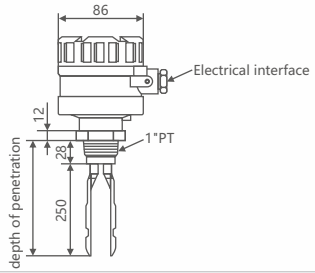
Specifications	normalized form	Extended type
Size mm		
electrical connector	Aluminum alloy paint, IP65	
Fork material	304SS/316L	
Connection specification	1"NPT	
Working temperature	Fork -30~150℃ (high temperature type can be customized)	
Specific gravity of medium	> 0.7g/cm³	
working pressure	≤2MPa	
High-low failure protection device	High/low	

Tuning fork level switch is commonly usedInstallation mode

The tuning fork liquid level switch is usually installed laterally (on the side of the silo wall) to detect the upper and lower limit positions of the material level in the silo; When it is inconvenient to open holes on the side of the silo, top loading (installed at the top of the silo) can be adopted, and the position should be chosen to avoid the impact of materials when entering, or it can be installed on the pipeline to place the pump at the material-free inlet. (as shown on the right)

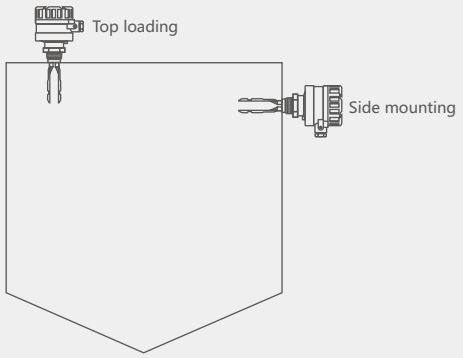


Standard type of tuning fork level switch

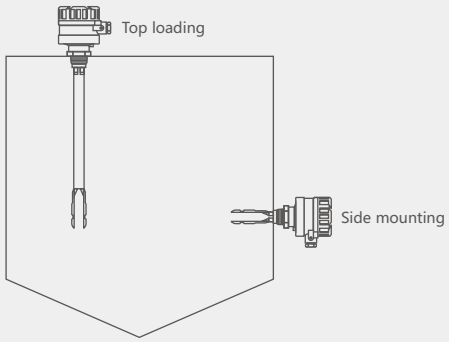
Specifications	Acid-base resistant type	explosion proof type
Size mm		
electrical connector	Aluminum alloy paint, IP65	Titanium alloy paint
Fork material	SUS316L+ PTFE lining material	SUS316L
Connection specification	flanged connection	1"PT
Working temperature	Fork -30~150℃ (high temperature type can be customized)	Fork -30~150℃ (high temperature type can be customized)
Specific gravity of medium	> 0.7g/cm³	> 0.7g/cm³
working pressure	≤2MPa	≤2MPa
High-low failure protection device	High/low	High/low

Schematic diagram of installation of upper and lower limit alarm

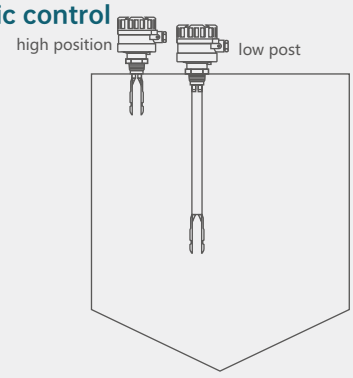
Upper limit alarm



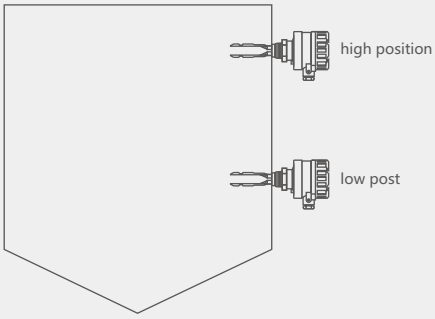
Lower limit alarm



Top-mounted upper and lower limit automatic control



Side-mounted upper and lower limit automatic control



Precautions for installation

Horizontal installation

· With viscous liquid or powder, it is not allowed to be installed where the material can impact.
· When installing, the inlet is facing down.
· The two tuning fork rods of the fork should not be placed one above the other, but should be placed in parallel.

Vertical installation

· The action point at the highest sensitivity is about 15mm away from the end of the rod.
· For the liquid flowing in the pipe, the middle space between the two tuning fork rods of the fork should be consistent with the liquid flow direction.
· Do not install in the position where the material can be impacted when feeding.

WD70-Selection and composition

Type selection example **WD70** | A | I | N | R | X | 3.15 | A | N | K |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

1.Fork type	A	Standard type
	B	Acid and alkali resistant type
	C	Explosion proof type
	D	Extended type
	E	Forked body
2.working power supply	G	110V
	H	220V
	I	24V
	T( )	Other voltage types
3.Output contact signal	N	Normally open
	O	Normal close
	U	Relay output
	T( )	Other output contact signals
4.Material quality	R	304 stainless steel
	S	316 stainless steel
	T( )	Other material types
5.Installation mode	X	Side mounting
	Y	Top loading
6.Dielectric density	D( )	(Remarks density)
7.Threaded connection installation(Flange connection is not selected)	A	G1/2
	B	G1
	C	1"NPT
	D	1/2"NPT
	E	3/4"NPT
	F	M20*1.5
	G	M27*2
	T( )	Other thread specifications
7.1.Flange mounting (Not selected for threaded connection)	H	DN15
	I	DN20
	J	DN25
	K	DN32
	L	DN40
	M	DN50
	U	DN65
	V	DN80
	W	DN100
	T( )	Other connecting flanges
7.2.Clamp connection	A	50.5mm
	B	64mm
	C	77.5mm

WD70-Selection and composition

Type selection example **WD70** A (1) / I (2) / N (3) / R (4) / X (5) / 3.15 (6) / A (7) / N (8) / K (9)

8.Fork length	N	100
	O	150
	P	200
	Q	250
	T( )	Other length
9.Explosion-proof class	H	Intrinsically safe explosion protection
	I	flameproof
	K	Non-explosion proof

Instructions:

The WD70 tuning fork level switch is a standard type with a voltage of 24VDC and an output contact signal that is normally open. It is made of 304 stainless steel and installed on the side with a medium density of 3.15. The threaded connection G1/2 (7,7.1,7.2) has one out of three options, and the fork body length is 100mm. It is not explosion-proof.

Product Certification

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