

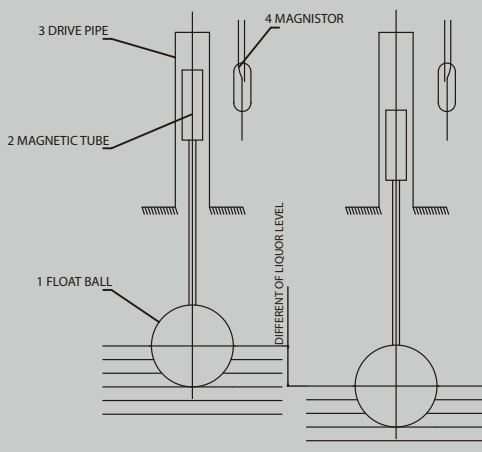
UTK DISPLACER LEVEL SWITCH

Summary

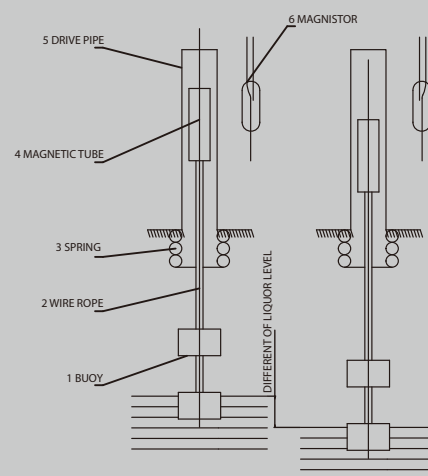
UTK Displacer Level Switch uses float or displacer as the measurement element which connected to a magnetic tube. When the level rises, the magnetic tube will move up and enter into the external magnetic field. through magnetic induction or magnetic coupling, the magnet controlling switch or offset magnet steel is pulled and makes switch contact on or off. When the level drops, the magnetic tube will move down and separate from the external magnetic field. Then the magnetic controlling switch returns to its original state or, the offset magnet under the action of deadweight returns to a new balance position and make switch contact on or off to realize the level that can be controlled and given an alarm.

Technical Parameters

- **Nominal Pressure:** $\leq 16.0\text{MPa}$
- **Accuracy:** Level control: $\pm 4\text{mm}$
Interface control: $\pm 6\text{mm}$
- **Flange standard:** HG/T20592-2009, HG/T20615-2009 or on request
- **Ambient temperature:** $-50 \sim +450\text{ }^{\circ}\text{C}$
- **Fluid temperature:** $-40\text{ }^{\circ}\text{C} \leq T \leq +150\text{ }^{\circ}\text{C}$ (High temperature type: $T \leq 300\text{ }^{\circ}\text{C}$)
- **Fluid density:** Level control: $\rho \geq 0.5\text{g/cm}^3$
Interface control: $\rho_1 - \rho_2 \geq 0.25\text{g/cm}^3$
- **Fluid viscosity:** $\leq 1\text{St}$ ($10^{-4}\text{m}^2/\text{S}$)
- **Wetted material:** 20, 304, 316L or on request
- **Electrical connection:** G1/2" (Female thread) or on request
- **Explosion-proof:** Exd II CT1 ~ T5/T6 Gb
Exia II CT1 ~ T5/T6 Ga
- **Functional safety level:** SIL II
- **IP Rating:** IP66
- **Related equipment:** Safety barrier (Please see the safety recommendation forensics form)



Picture 1:UTK Displacer Level Switch float type schematic diagram



Picture 2:UTK Displacer Level Switch displacer type schematic diagram

Contact Capacity

Switch Mode	Max Voltage(V)	Max current (A)	Contact Mode	Contact Resistance ($\geq \Omega$)	Switching Speed (\geq ms)	Lifetime (\leq Ten thousand times)
Reed Switch	250	1	SPDT	0.03	3	50
Inches Switch	250	5	SPDT	0.03	3	50

Note: Intrinsic safety type is only suitable for 24V DC.

Control Range

Level Control

Controller Mode	Measurement Element	Control Point	Max Pressure (MPa)	Nominal Diameter	Alarm Setting Point B(mm)	Measuring Range H(mm)	Remark
UTK100	Float type	Upper or lower limits	6.3	DN20~DN80	On request		Controlling point can't be adjusted
UTK300	Displacer type	Upper or lower limits	4.0	DN80, DN100	On request	On request	Controlling point can be adjusted
		Upper and lower limits					The upper and lower limits can be adjusted
UTK400	Displacer type	Upper or lower limits	16.0	DN20~DN80	On request		Controlling point can not be adjusted

Interface Control

Measurement Element	Controlling Point	Max Pressure (MPa)	Min density	Min density difference	Alarm setting value B(mm)
			(g/cm ³)		
Float type	Upper or lower limits	4.0	0.5	0.25	On request

Model Selection Table

Model	Code							Contents
UTK-								Displacer Level Switch
	100							Flange facing type
		A						Standard type
		B						Side and bottom type
		C						Side and side I type
		D						Side and side II type
			1					Reed Switch
			3					Inches Switch
				X				Upper or Lower limits
					*			Fluid Density (g/cm ³)
						-		
							*	Alarm setting point(distance from top flange mm)
							i	Intrinsic safety type
							d	Explosion proof type
							-611	Compliance with PED certification
UTK-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>

Example

UTK-100D3X0.8-178i is UTK Displacer Level Switch, flange facing, side and side II type, inches switch, upper or lower limits alarming, fluid density is 0.8 g/cm³, the alarm setting value is 178mm from the upper flange, the explosion proof is intrinsic safety type.

Model Selection Table

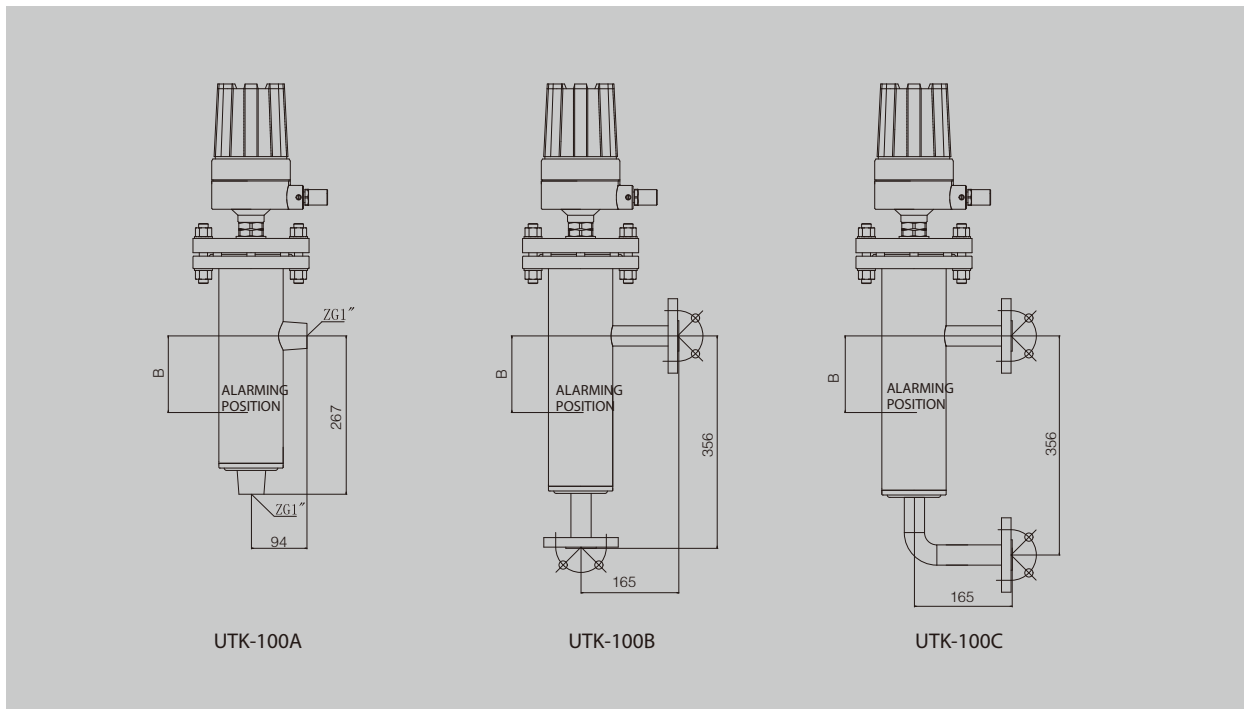
Model	Code						Content
UTK-							Displacer Level Switch
	300						Top mount type
	400						High pressure type(side and side installation)
		1					Reed Switch
		3					Inches Switch
			X				Upper or lower limits
			Y				Upper and lower limits (only for UTK300 type)
				*			Fluid density (g/cm3)
					-		
						*	Alarming setting value(distance from upper flange mm)
						i	Intrinsic safety type
						d	Explosion-proof type
						-611	Compliance with PED certification
UTK-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>

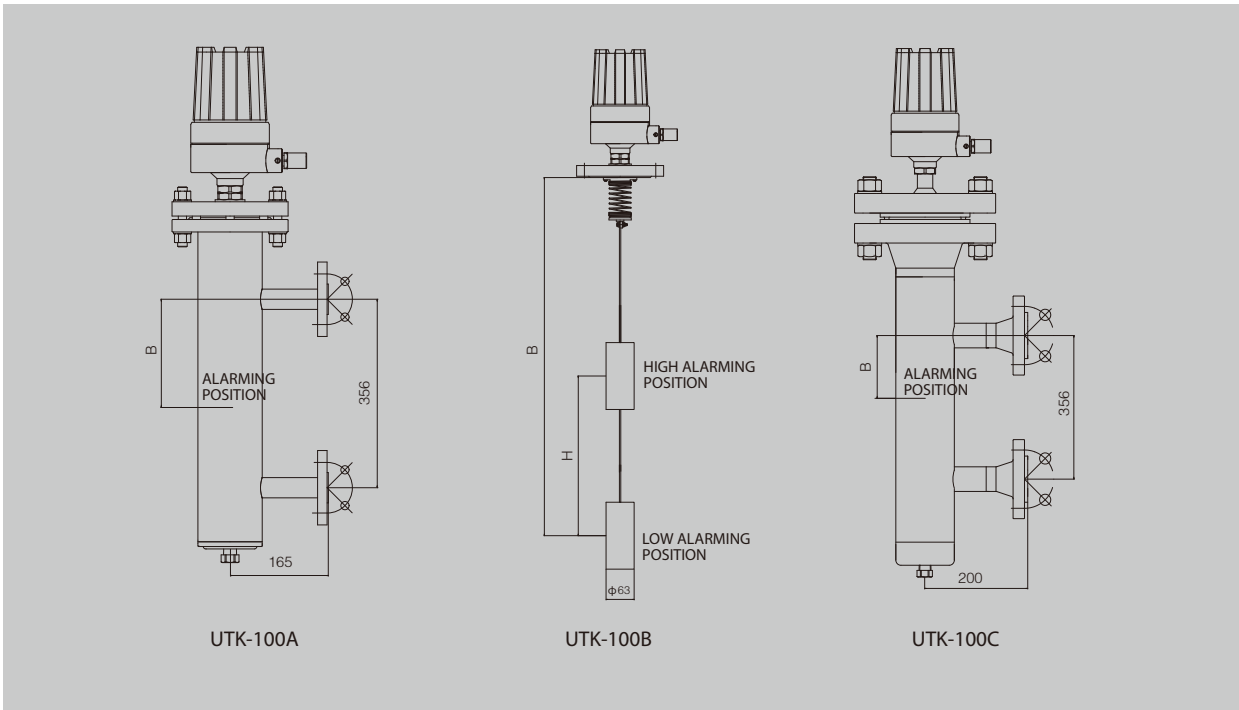
Example

UTK-400D3X0.8-178i is UTK Displacer Level Switch, high pressure type, inches switch, upper or lower limits alarming, fluid density is 0.8 g/cm3, the alarm setting point is 178mm from the upper flange, the explosion proof is intrinsic safety type.

Outline Drawing and Installation

1. Structure





Safety Barrier Recommendation Sheet

Dandong Top Electronics Instrument (Group) Co., Ltd	TP5041 – EX TP5045-EX
Shanghai Automation and Instrument Institute	CS8041-EX CS8045-EX

Order Information

- | | | | | |
|-------|-------------------|--------------|--------------------|-----------------------|
| Model | Installation type | Fluid medium | Operating pressure | Operating temperature |
|-------|-------------------|--------------|--------------------|-----------------------|
- | | | | | |
|-----------------|------------------|---------------|------------------------|----------------------------|
| Flange standard | Wetted materials | Fluid density | Alarming setting point | Other special requirements |
|-----------------|------------------|---------------|------------------------|----------------------------|