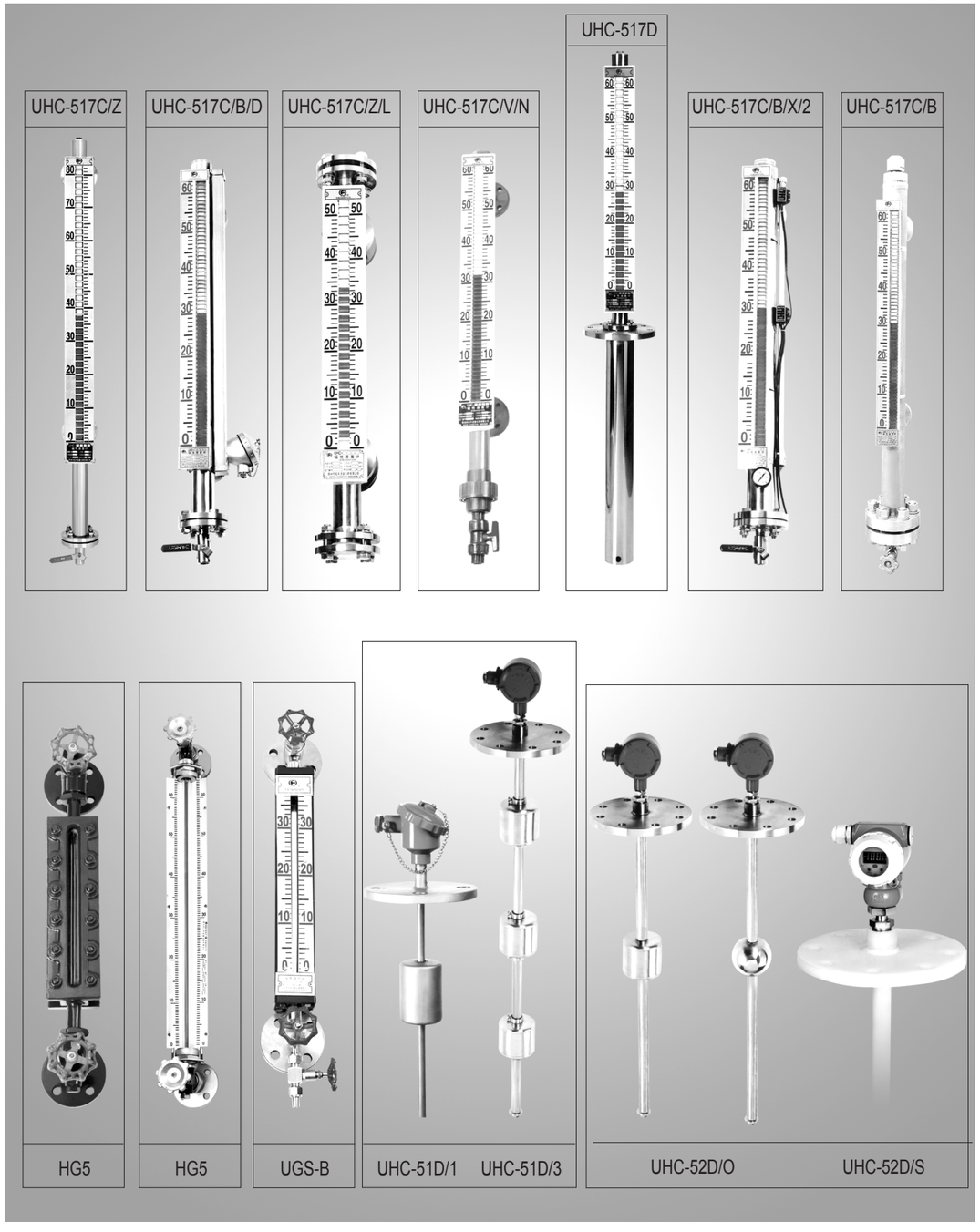
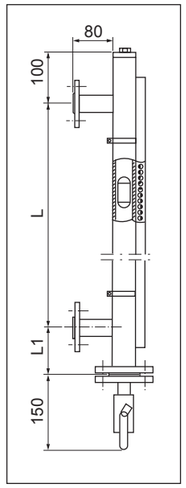
Confluence drawing of level meter products



Summary

UHC-517 Series magnetical float level meters are suitable for measuring the liquid in open vessel or pressure vessel. With the features of tight sealing and leak proof, the meters can measure safely and reliablly the liquid level in the severe conditions, such as: high temperature, high pressure, high viscosity, strong corrosion. The meters are featured also without blind zone, distinct indication, easy reading and wide measuring range.

With liquid level switch as optional part, the meter can realize liquid level upper and lower limit alarm and control. With liquid level transmission sensor as optional part, the meter can convert the liquid level signal into two-wire system (4-20)mA standard signal, realizes long distance detection, indication, recording and controling.This series meters are widely used in the liquid level measurement and control of electricity, petroleum, chemical industry, metallurgy, environment protection, ship building, civil construction, food and other industries.



Working Principle

Level meter structure bases on the principle of bypass, the liquid lever in the main pipe is as same as that in the vessel device.According to Archimedes Theorem,the buoyancy force of magnetic float in the liquid is equal to the floater weight ,floater floats on the surface of liquid,the floater in the main pipe of level meter will move up and down with the movement of level in the vessel measured.The permanent steel magnet in the floater will turn 180¡ã through the red-white turn post in the magnetic coupling drive indicator.When liquid lever rises, the turn post turns white side to red one,when the lever lowers,turn post turns red side to white one.The red and white interface of indicator is the actual height of media level in the vessel.Thus the level indication is realized.

Technical parameters and requirement

Main technical parameters	Technical requirement
Measuring range(300 ~ 15000)mm	1.The heating jacket level meter is proper for the media with large viscosity or easy crystallization in low temperature. .
Measuring accuracy: ± 10mm	
Media density: ⩾ 0.45g/cm^3	2. When the side mounted level meter length in the order is⩾ 4000mm, the support flange shall be added in the center.
Working pressure:0.6、1.6、2.5、6.3、32MPa	
Working temperature:-90℃ ~ 480℃	3. The connection flange of bottom mounted or top mounted level meter shall be⩾80mm.
Connection flange:HG20592-20635-97	
The user shall give clear indication of other standards.	Note: The special requirement can be indicated separately when placing an order.

Main technical parameters of transmitter

Power supply:

24V DC

Output signal:

(4 ~ 20)mA

Working temperature:

-20℃ ~ 65℃

Explosion-proof sign:

Intrinsic safety :ib Ⅱ CT5

Flameproof enclosure :d Ⅱ BT5

Maximum load resistance: 270

BK-1 Cam magnetic - driven level switch

Summary

BK-1 cam magnetic - driven level switch(called level switch hereinafter) is used together with UHZ-517 series magnetic turn post level meter, it's installed on the indication panel of magnetic turn post level meter to control or alarm the liquid level in the vessel.When the liquid lever reaches the control or alarm position,the level switch movement issues onoff signals.The level switch works reliably and doesn't contact with process media ,won't be influenced by technics situation,it's featured with functions of high temperature resistance¡¢antiexplosion and shockproof protection so that can be widely used in various industry occasions.

Working Principle

The level switch installed on the panel of magnetic turn post level meter and level meter are at the same magnetic coupling system.Floater in the main pipe of level meter moves from bottom to top with the changed level.When floater flows near the level switch,magnetic field generated by alnico in the floater repels magnetic field generated by alnico in the level switch to drive movement of switch through alnico in the level switch and the connected cam sway .Floater goes on rising and the switch maintains the state.When floater moves near the level switch from top to bottom, the magnetic repulsion promotes convertion of level switch and keeps it.Therefore,the switch features with bistable memory function.Special switch used in magnetic turn post level meter is the most practical and most reliable additional control or alarm device which has large contact capacity and can drive high-power equipment directly.

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Main technical parameters

◆BK-1 level switch

BK-1 level switch Switch type:Cam magnetic - driven switch,SPDT,with shockproof protection function 250V AC 16A

Switch contact capacity:Resistive load: 30V DC 10A
125V DC 0.6A
Inductive load: 250V AC 10A
30V DC 10A
125V DC 0.6A

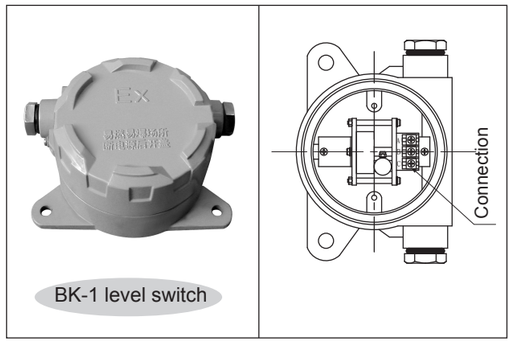
Working temperature:-50 ~ 180℃

Electrical interface:Two M20*1.5 internal threads

Explosion-proof class:Flameproof enclosureExdIIBT4 ~ T6
Intrinsic safety ExiaIIBT1 ~ T6

Protection class:IP65

Drawing of profile and connection



Dry reed level switch

Summary

Dry reed level switch(CK-1 type,EK-1 type) is used together with UHZ-517 series turn post level meters and installed on the indication panel. It's used to control or alarm the liquid level.

Working principle

The level switch installed on the indication panel of magnetic turn post level meter and level meter are at the same magnetic coupling system. Floater in the main pipe of level meter moves up and down with the changed level.When floater flows near the level switch from bottom to top, alnico in the floater acts on dry reed pipe in the guide rod,issues on-off switch signal. Normally open reed switch is in the state of connection.when in a magnetic field and in the state of disconnect when outside the magnetic field.While normally closed reed switch contraries to the normally open reed switch in the same state.

Main technical parameters

◆ CK-1 level switch

Switch type: dry reed switch,SPST or SPDT

Contact capacity: SPST : 220V AC 0.1A or 100V DC 0.5A
SPDT:220V AC 0.1A or 30V DC 0.2A

Working temperature: Electrical interface: M20*1.5 internal thread
Explosion-proof class: Flameproof enclosure
Intrinsic safety

Protection class: IP65

◆ EK-1 level switch

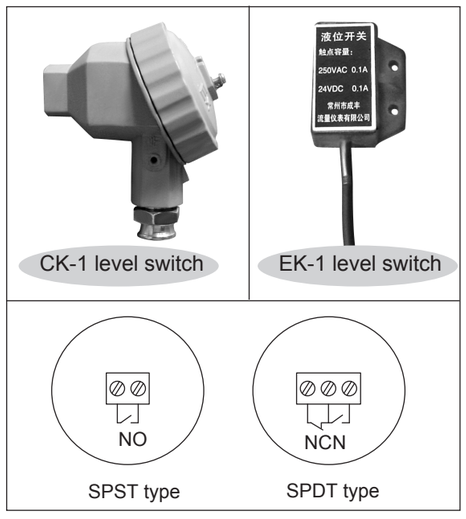
Switch type: Dry reed switch,SPST or SPDT

Contact capacity: SPST : 220V AC 0.1A or 100V DC 0.5A
SPDT: 220V AC 0.1A or 30V DC 0.2A

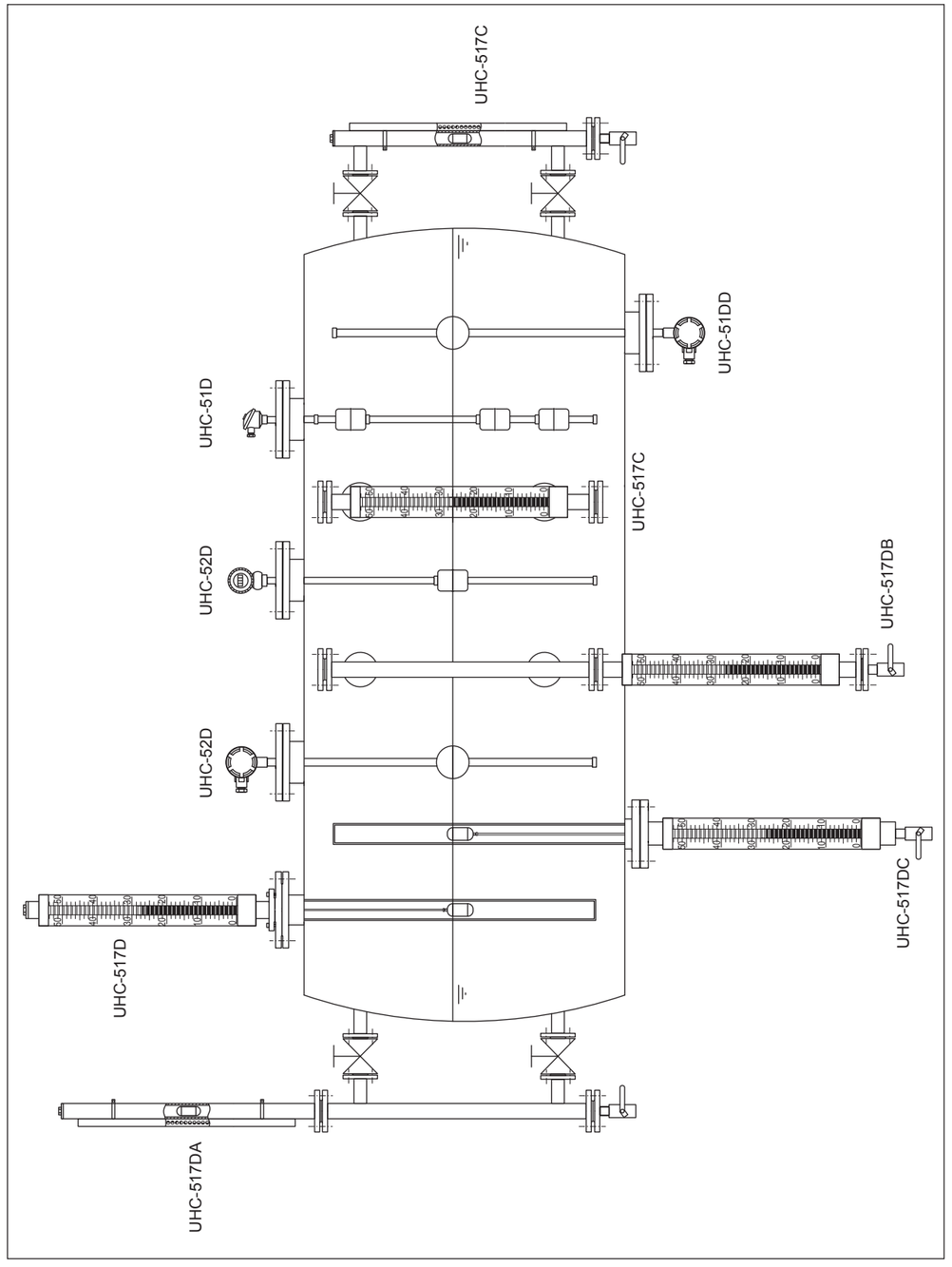
Working temperature: Electrical interface:M20*1.5 internal thread
Explosion-proof class: Only applicable to non-flammable、non-explosive common occasions

Protection class: IP65

Profile and connection diagram



The installation schematic diagram



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Type selection chart

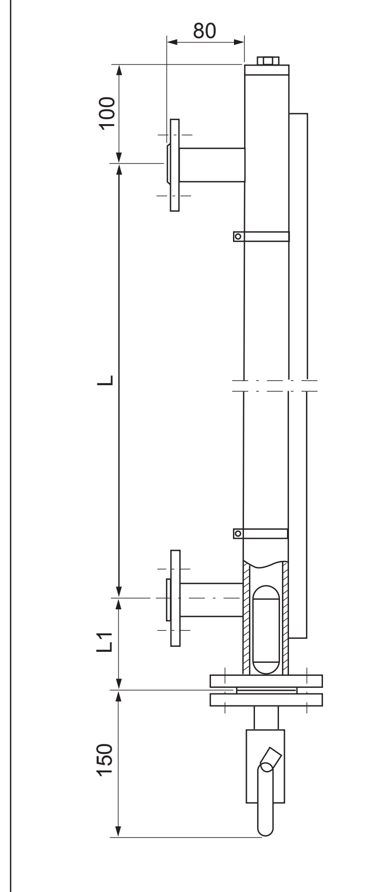
Model / Code	Code	Description	Category
UHC-517C	V	Plastic turn plate indication	Indication type
UHC-517D	Z	Plastic turn post indication	Indication type
UHC-517DA	G	Fluorescene turn post indication	Indication type
UHC-517DC	B	Aluminium alloy turn plate indication	Indication type
UHC-517DB	O	Nil	Electric transmission device
	D	Output (4-20)mA DC	Electric transmission device
	O	Nil	Switch type
	C	BK-1 Cam-driven level switch	Switch type
	E	CK-1 Dry reed level Switch	Switch type
	F	EK-1 Dry reed level Switch	Switch type
	□	Switching points(digital indication)	Switching points
	Q	Intrinsic safety ibIICT5	Explosion-proof type
	B	Flameproof enclosure dIIBT5	Explosion-proof type
	T	With isolation safety barrier	Explosion-proof type
	P	1Cr18Ni9Tistainless steel	The material touching the fluid
	R	316Lstainless steel	The material touching the fluid
	L	Stainless steel with inner lining of PTFE	The material touching the fluid
	N	Polyvinyl chloride PVC	The material touching the fluid
	Z	Polypropylene PP	The material touching the fluid
	M	Electric heat tracing device	Attachments
	W	heating/interface DN20 or G1/2 external thread	Attachments
	X	Vacuum jacket	Attachments
	A	With fluorescene post display adjusting alarm(vertical type)	
	B	With fluorescene post display adjusting alarm(horizontal type)	
	C	With other digital indicating meters	
	□	(-90 ~ 480)℃	Working temperature
	□	≤32MPa	Working pressure
	□	Unit:g/cm³	Media density
	□	Unit:L=mm	Flange center distance
	□		Flange specification

UHC-517()- □ □ □ □ □ □ □ □ □ □ □ □ □

UHC-517C magnetical float level meter

Sphere of application

UHC-517C is the most common used magnetical float level meter with side mount. It's used to measure the level of liquid media when the working pressure ≤6.4MPa,working temperature ≤480℃.

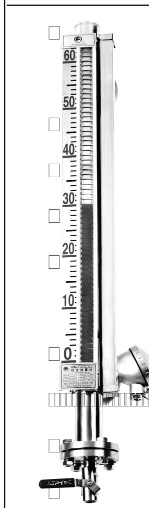


Technical parameters

Measuring range: (300 ~ 15000)mm						
(Center distance between the two flanges)						
Working pressure: ≤6.4MPa						
Working temperature: ≤480℃						
Media density: (0.45 ~ 2.0)g/cm³						
Flange standard: HG20592-20635-97						
If other flange standard is required,users should note it.						
Material: Conventional type: stainless steel 304 316L						
Floater:304 316L						
If other material is required,users should note it.						
Connection mode: Bypass side mounted flange						
DN	20					
PN	0.6	1.0	1.6	2.5	4.0	6.4

Options

UHC-517C-



- D Output (4 ~ 20)mA two-wire system transmitter
- □ Level switch:C、E、F can be choosed any one as options
- Q Intrinsic safety:ibIICT5
- B Flameproof enclosure:dIIBT5
- T With isolation safety barrier
- M Electric heat tracing device
- A With fluorescene post display instrument(vertical type)
- B With fluorescene post display instrument(horizontal type)
- □ Working pressure MPa
- □ Media density g/cm³
- □ Measuring range L=mm

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UHC-517C Corrosion resistant magnetical float level meter

Sphere of application

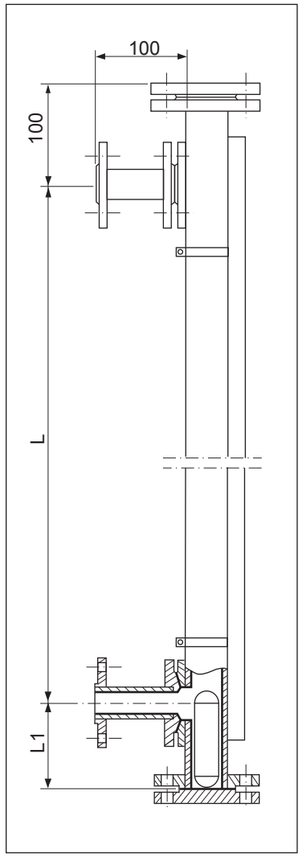
UHC-517C corrosion resistant magnetical float level meter without blind zone is used to measure the level in such occasion: larger corrosive media and higher working temperature.It adopts stainless steel with inner lining of polytetrafluorothylene push flanging advanced new technology.It's featured with reliable structure and long life.Corrosion resistant type adopts UPVC、PP tubes combination to be suitable for common acid、alkaline solution in low working temperature,but it isn't suitable for aromatics、hydrocarbon、ketone¡¢esters etc.

Technical parameters

Measuring range:(300 ~ 6000)mm
(Center distance between the two flanges)
Working pressure: ⩽2.5MPa
Working temperature: ⩽200℃
Media density: (0.45 ~ 2.0)g/cm^3
Flange standard: HG20592-20635-97
If other flange standard is required,users should note it.
Material: Stainless steel with inner lining of polytetrafluoroethylene、PP、PVC
Floater: Polytetrafluoroethylene、PP、PVC
If other material is required,users should note it.

Options

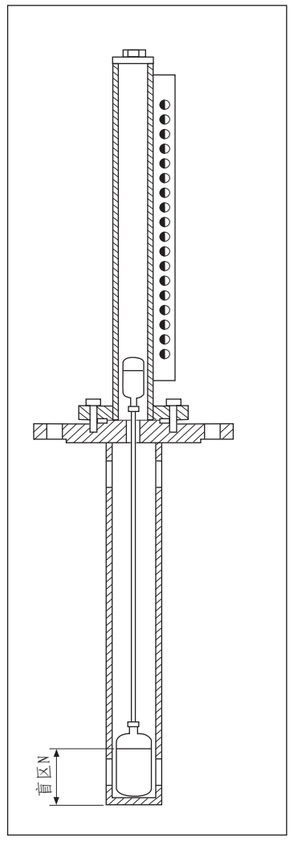
UHC-517C −		
	D□	Output (4 ~ 20)mA two-wire system transducer
	□□	Level switch: C、E、F can be choosed as options
	Q□	Intrinsic safety: ibIICT5
	B□	Flameproof enclosure: dIIBT5
	T□	With isolation safety barrier
	M□	Electric heat tracing device
	A□	With fluorescene post display instrument(vertical type)
	B□	With fluorescene post display instrument(horizontal type)
	□□	Working pressure MPa
	□□	Media density g/cm^3
	□□	Measuring range L=mm



UHC-517D Magnetical float level meter

Sphere of application

UHC-517D magnetical float level meter is mainly used to measure the level of various underground storage tanks and vessels with side sealed .In respect of structure,there exists blind zone when measures whose value will be different corresponding to different media density.The zero position of the scale calibration has been moved to the actual value when our products can be sold.



Technical parameters

Measuring range: ⩽5000mm
Working pressure: ⩽2.5MPa
Working temperature: (-20 ~ 200)℃
Media density: (0.5 ~ 2.0)g/cm^3
Note: When media density ⩽0.8g/cm^{3}choosing flange ⩾DN100
Flange standard: HG20592-20635-97
If other flange standard is required,users should note it.
Material:Top catheter: 304L or 316L
Floater: stainless steel

Options

UHC-517D-		
	D□	Output (4~20)mA two-wire system transmitter
	□□	Level switch:C、E、F can be choosed any one as options
	Q□	Intrinsic safety: ibIICT5
	B□	Flameproof enclosure: dIIBT5
	T□	With isolation safety barrier
	W□	Steam jacket、water circulation heating jacket
	X□	Vacuum jacket
	M□	Electric heat tracing device
	A□	With fluorescene post display instrument(vertical type)
	B□	With fluorescene post display instrument(horizontal type)
	□□	Working pressure MPa
	□□	Media density g/cm^3
	□□	Measuring range L= mm

UHC-517DA/DB/DC magnetical float level meter(Other installations)

Sphere of application

UHC-517DA/DB/DC magnetical float level meters include several other installations for users to choose. When choosing,please refer to the front "The installation schematic diagram"and "Type selection chart".

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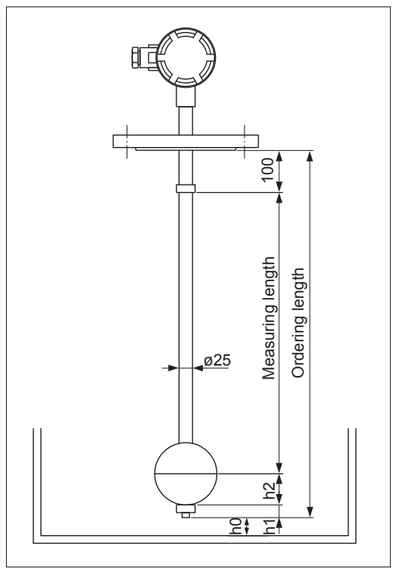
UHC-52D Series magnetical float ball level meters

Technical parameters

Measuring range: (300 ~ 6000)mm
Power supply: ± 24V DC ± 5%
（24V power supply can be provided by display instrument）
Working pressure: 0.6MPa、1.6MPa、2.5MPa
Working temperature: ⩽ 80℃
Measuring accuracy: ± 1.5%
Output signal: (4 ~ 20)mA two-wire system
Media density: (0.5 ~ 2.0)g/cm^3
Explosion-proof sign:Intrinsic safety: ibIICT5
Flameproof enclosure: dIIBT5
Connection flange standard: HG20593-97 DN100 PN1.0
If other standard is required,users should note it.



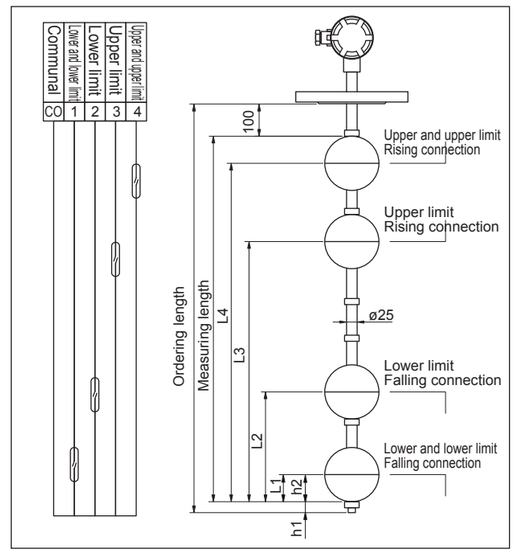
Type selection chart

UHC-52D-□	□□	Stainless steel 304、316、316L	The material touching the liquid
	□□	Corrosion resistant type UPVC、PP□	
	O□	(4 ~ 20)m Aoutput	Output mode
	S□	(4 ~ 20)mA output,spot LED digital display	
	P□	Spot LED digital display	
	Q□	Intrinsic safety:ibIICT5	Explosion-proof type
	B□	Flameproof enclosure:dIIBT5	
	T□	With isolation safety barrier	
	A□	With fluorescene post display adjusting alarm(vertical type)	When choosing instrument, please note the alarm height
	B□	With fluorescene post display adjusting alarm(horizontal type)	
	□□	0 ~ 80℃	Working temperature
	□□	0.6、1.6、2.5MPa	Working pressure
	□□	g/cm^3	Media density
	□□	Unit:mm	Ordering length
	□		Flange specification
UHC-52D-□	□□	□□ □□ □□ □□ □□ □□ □□ □	

UHC-51D Magnetical float ball level switch

Technical parameters

Measuring range:(300 ~ 6000)mm
Working temperature:(-30 ~ 120)℃
Working pressure:0.6MPa、1.0MPa、1.6MPa、2.5MPa
Media density: ⩾ (0.5 ~ 2.0)g/cm^3
Note: density<0.8 DN100
Contact capacity:220V AC/24V DC 0.5A
Joint life:5 × 10^{4}times
Explosion-proof sign:Intrinsic safety:ibIICT5
Flameproof enclosure:dIIBT5
Electrical interface:M20x1.5 internal thread
Process connection:Flange connection DN100
Flange standard:HG20593-20635-97
Note:If other flange standard or connection mode is required,users should note it.



Float ball level switch selection chart

UHC-51D□	□□	Stainless steel 304、316、316L	Tha material touching the liquid
	□□	Corrosion resistant type PP、PVC	
	Q□	Intrinsic safety:ibIICT5	Explosion-proof type
	B□	Flameproof enclosure:dIIBT5	
	T□	With isolation safety barrier	
	□□	(0 ~ 120)℃	Working temperature
	□□	0.6MPa、1.0MPa、2.5MPa	Working pressure
	□□	g/cm^3	Media density
	□□	Unit mm	Ordering length
	1□	One float ball multipoint control	Control points, which can carry memory function
	2□	Two float balls control	
	3□	Three float balls control	
	4□	Four float balls control	
	N□	N float balls control	
		L1= mm Lower and lower limit、falling connection	Note:According to control points to indicate separately the size of L1、L2、L3、L4,and to indicate rising connection or falling connection.
		L2= mmLower limit、falling connection	
		L3= mmUpper limit、rising connection	
		L4= mmUpper and upper limit、rising connection	
	□		Flange specification
UHC-51D□	□□	□□ □□ □□ □□ □□ □□ □□ □	

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