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FLOAT TYPE LEVEL SWITCH

HR-30 Series

HSB ISO 14001 HSB ISO 9001 ASME Kepic CE KC

Always The Best Solution

HITROL CO., LTD.

MODERN HERO TECHNOLOGIES LIMITED 0755-26738591 13392863941

Overview

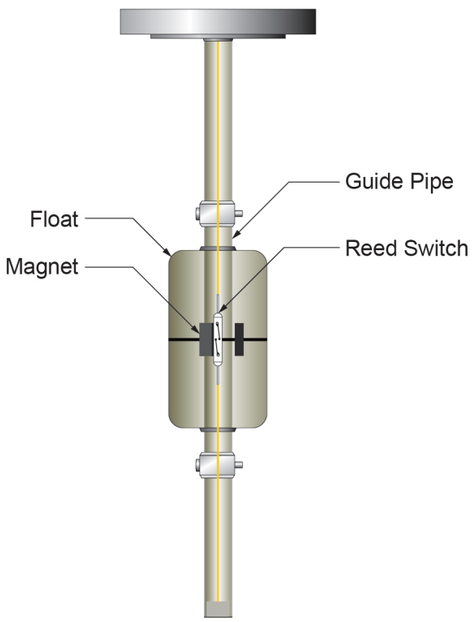
HR-30 Series is a Float Type Level Switch which is basically operated with the usage of reed switch and magnet. It can be applied to various storage tanks as well as highly corrosive liquids, and can be widely used in general industries with high reliability and long life cycle.

Characteristics

- Widely used to measure various liquid
- Applicable to corrosive and acidic liquids with anti-corrosive material for the sensor (PVC and Teflon)
- Applicable to explosion area (Ex-Proof version)
- Strong structure and high reliability
- Long life cycle

Operation Principle

As liquid level is changed in the tank, the float which is manufactured in accordance with the specific gravity of liquid moves upward or downward along the guide pipe with the same liquid level by buoyancy. The built-in magnet in the float activates reed switch which is located in the guide pipe and contact signal is out. Each alarm or H/L control with multiple setting points is available.



FLOAT TYPE LEVEL SWITCH
HR-30 Series

Specification

▶ STAINLESS STEEL

Model	HR-30S	HR-30SH	HR-30S-Ex	HR-30SH-Ex	HR-30C	HR-30CH	HR-30C-Ex	HR-30CH-Ex
Mounting	Flange (std.)				Screw (std.)			
Process Temperature	Max. 80°C	Max. 150°C	T6 (Max. 70°C) T5 (Max. 80°C)	T4 (Max.130°C) T3 (Max.150°C)	Max. 80°C	Max. 150°C	T6 (Max. 70°C) T5 (Max. 80°C)	T4 (Max.130°C) T3 (Max.150°C)
Process Pressure	Up to 20kg/cm² (300#)							
Switch Type	Reed Switch							
Switch Form	SPST, SPDT							
Enclosure	Weather-Proof		Ex-proof (Ex d IIC T6/T5)	Ex-proof (Ex d IIC T4/T3)	Weather-Proof		Ex-proof (Ex d IIC T6/T5)	Ex-proof (Ex d IIC T4/T3)
Wetted Part Material	SUS316L							
Process Connection	80A JIS 10K FF (6t) (std.)				PT 2 ″(M) (std.)			
Housing Material	ABS (std.)	Aluminum			ABS (std.)	Aluminum		
Cable Entry	PF 3/4”(F), IP65		PF 1/2”(F), IP66		PF 3/4”(F), IP65		PF 1/2”(F), IP66	
Accuracy	±5mm							

▶ PVC

Model	HR-30V	HR-30V-Ex
Mounting	Flange (std.)	
Process Temperature	Max. 60°C	
Process Pressure	Up to 0.5kg/cm²	
Switch Type	Reed Switch	
Switch Form	SPST, SPDT	
Enclosure	Weather-Proof	Ex-Proof(Ex d IIC T6)
Wetted Part Material	PVC	
Process Connection	80A JIS 10K FF (20t) (std.)	
Housing Material	ABS (std.)	Aluminum
Cable Entry	PF 3/4”(F), IP65	PF 1/2”(F), IP66
Accuracy	±5mm	

▶ TEFLON

Model	HR-30T	HR-30TH	HR-30T-Ex	HR-30TH-Ex
Mounting	Flange (std.)			
Process Temperature	Max. 80°C	Max. 150°C	T6 (Max. 70°C) T5 (Max. 80°C)	T4 (Max.130°C) T3 (Max.150°C)
Process Pressure	Up to 0.5~3kg/cm²			
Switch Type	Reed Switch			
Switch Form	SPST, SPDT			
Enclosure	Weather-Proof		Ex-proof(Ex d IIC T6/T5)	Ex-proof(Ex d IIC T4/T3)
Wetted Part Material	SUS316L + Teflon			
Process Connection	80A JIS 10K FF (6t) (std.)			
Housing Material	ABS (std.)	Aluminum		
Cable Entry	PF 3/4”(F), IP65		PF 1/2”(F), IP66	
Accuracy	±5mm			

▶ **Order Code** can be printed at our website (www.hitrol.com)

NOTICE The warranty period for PTFE(Teflon) float and tube is one year from the date of shipment.

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Float Application

Float Material	Environment						
	Temperature	Pressure	Acid	Alkaline	Oil	Solvent	Liquid gas
SUS 316L	-20°C~150°C	Up to 20kg/cm²	△	○	○	◎	△
PVC	-10°C~60°C	0.5kg/cm²	○	○	X	△	X
TEFLON	-20°C~150°C	Up to 0.5~3kg/cm²	◎	◎	X	○	△
NBR	-48°C~60°C	Up to 20kg/cm²	X	△	◎	△	○
TITANIUM	-20°C~150°C	Up to 10kg/cm²	X	△	◎	△	○

Note : ◎ = Excellent ○ = Good △ = Acceptable X = Not good

* Above application can be different according to the specific gravity and the special medium.

Contact Rating

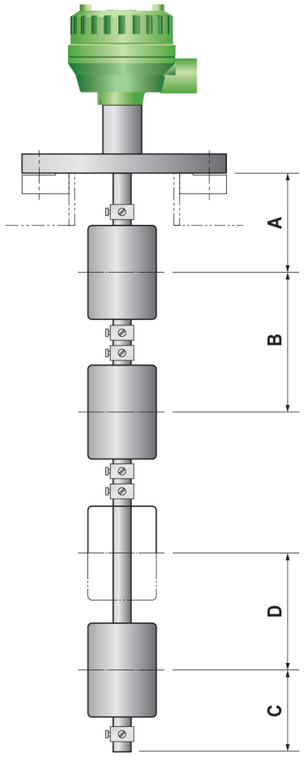
Float Size	Enclosure	Max. Switching Voltage	Max. Switching Current
SPST			
1″	Weather-Proof	DC 24V	0.5A
	Ex-proof		
2″, 3″ and 4″	Weather-Proof	AC 250V / DC 24V	1A / 0.5A
	Ex-proof		
SPDT			
1″, 2″	Weather-Proof	DC 24V	0.25A
	Ex-proof		0.2A
3″, 4″	Weather-Proof	AC 250V / DC 24V	1A / 0.5A
	Ex-proof		
Latching Switch SPST			
1″, 2″	Weather-Proof	DC 24V	0.25A
	Ex-proof		
3″, 4″	Weather-Proof	AC 250V / DC 24V	1A / 0.5A
	Ex-proof		

Contact Form

Float	SPST / SPDT	
1″	4-SPST	2-SPDT
2″	6-SPST	3-SPDT
3″	6-SPST	4-SPDT
4″	6-SPST	4-SPDT

* Caution : It is recommended to use our control unit together with the product and malfunction or damage of parts may caused by outside this condition.

Measuring Length



▶ STAINLESS STEEL

STANDARD TYPE				
Section	Float Size			
	1″	2″	3″	4″
A (mm)	40	50	100	100
B (mm)	55	80	160	170
C (mm)	40(100)	50(100)	100	100
LATCHING TYPE				
D (mm)	20			

▶ TEFLON

STANDARD TYPE				
Section	Float Size			
	1″	2″	3″	4″
A (mm)	40	50	100	100
B (mm)	55(120)	80(120)	180	180
C (mm)	40(100)	50(100)	100	100
LATCHING TYPE				
D (mm)	20			

▶ PVC

STANDARD TYPE			
Section	Float Size		
	2″	3″	4″
A (mm)	60	100	100
B (mm)	110	150	150
C (mm)	60(100)	100	100
LATCHING TYPE			
D (mm)	20		

A = Upper Dead Band : Minimum length which cannot be measured from the bottom of flange

B = Minimum distance between two setting points

C = Lower Dead Band : Minimum length which cannot be measured from the end of guide pipe

D = Minimum distance between two setting points for detecting by one float

( ) = Lower Dead Band for latching type

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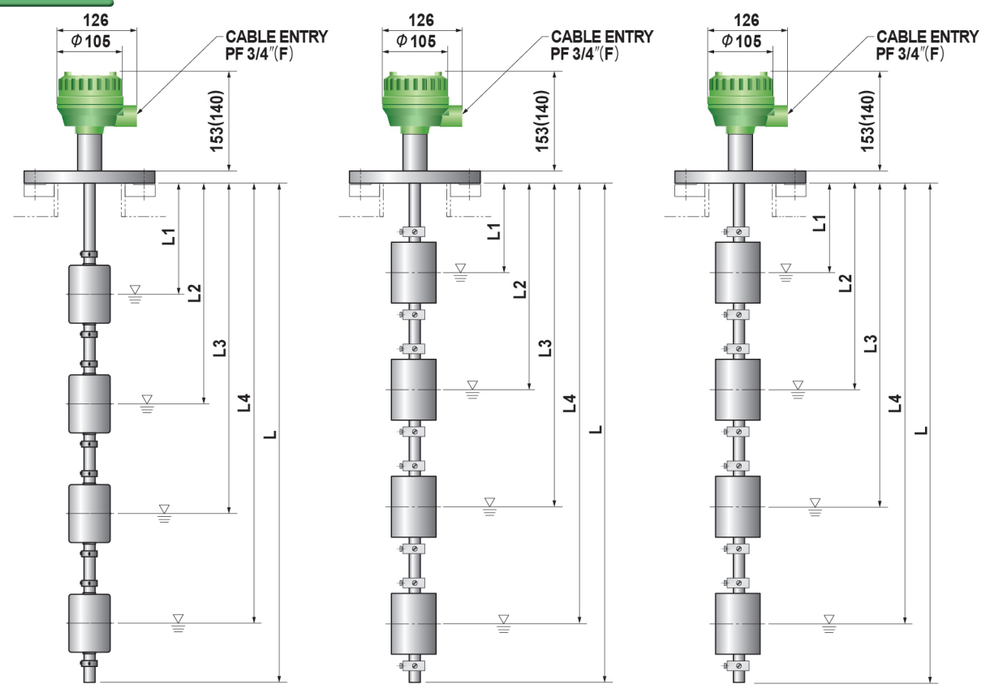
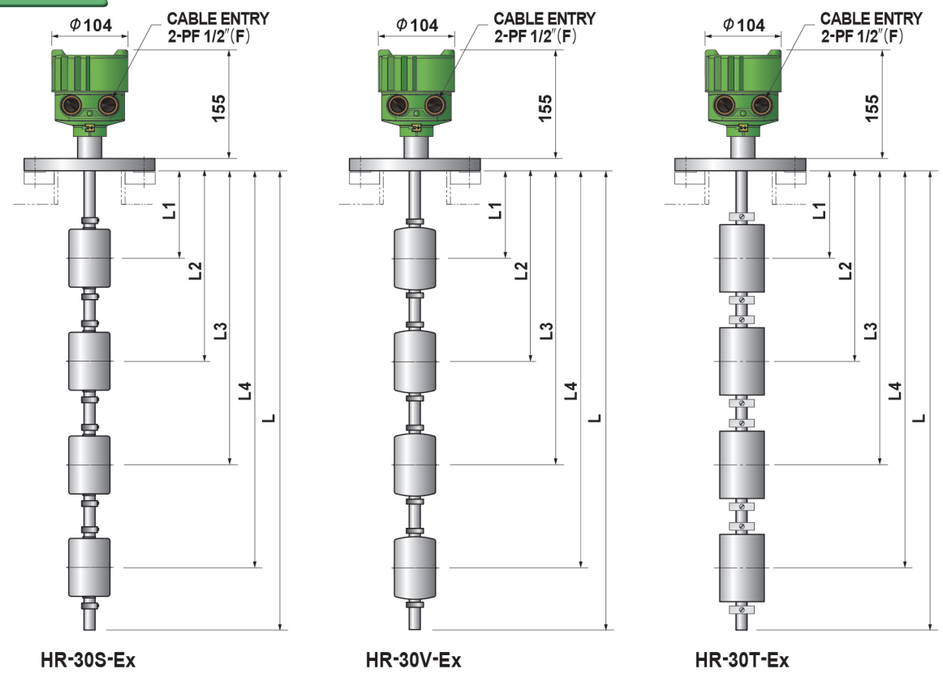
Dimension

Standard Version



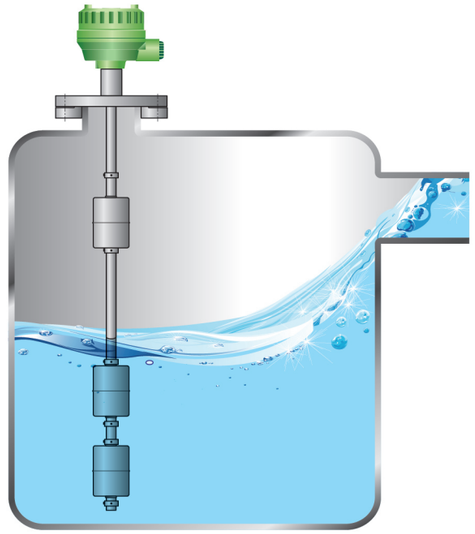
Ex-Proof Version



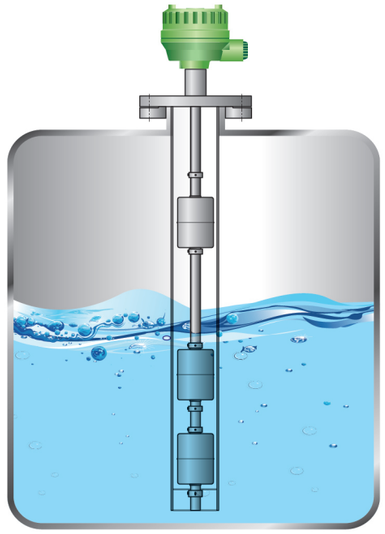
■ Actual product may have a tolerance slightly.

Installation

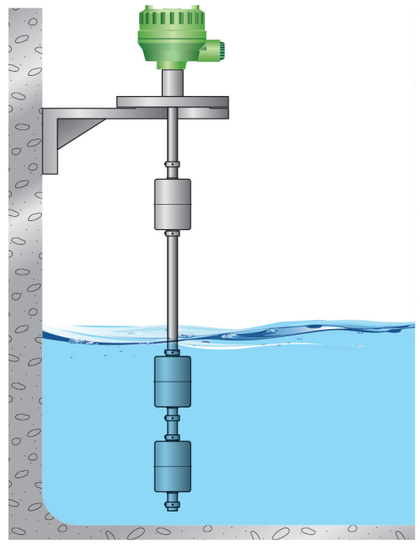
■ Below recommendation should be considered when installation.



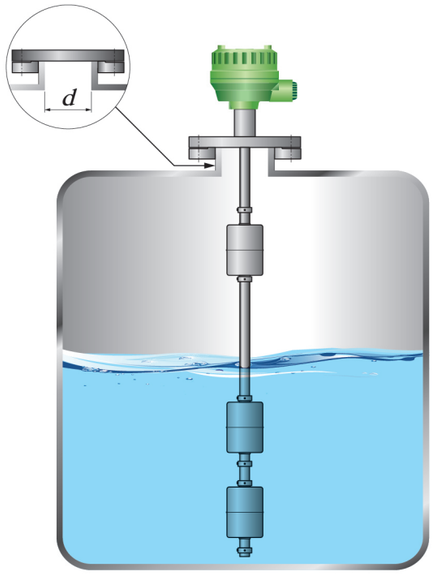
Product should be installed at the place far from inlet in order to avoid the malfunction.



Protection tube should be applied if there is a flow or slopping of the medium in the tank.



Bracket should be installed with the product when the installation on the concrete as per above figure.



Inner diameter (“d”) of tank nozzle should be larger than the outer diameter of float as per above figure.

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