

Magnetic Level Indicator Catalog



Magnetic Level Indicator

Flap-11 Magnetic Level Indicator series products are designed based on communicating tube and the principles of magnetic coupling function to achieve real-time level measurements. When the measured liquid's level in the vessel changes, the magnetic float in communicating tube will go up and down, and the permanent magnet steel inside the magnetic float makes the magnetic flaps of the indicator outside the communicating tube turn by 180° which is driven by the magnetic coupling function. Usually the front and back surface of flaps are coated with two different colors respectively (normally red and white) to indicate the actual liquid level inside the vessel. When the level of vessel rises, the flaps turn from white to red, and when the level of vessel drops, the flaps turn from red to white, at the red and white junction, the actual level of vessel is indicated. According to different chemical properties of the measured medium, appropriate materials for the communicating tube should be applied. In order to achieve to the best accuracy of measurement, the magnetic float's weight, volume and structure have to be satisfied with the density of measured liquid.

Flap-11 Magnetic Level Indicator series products absorb the advantages of similar products of other rival brands combining with Jiwei's independent innovative technology and processes, meanwhile we have been focusing on process details; strictly control the production processes and quality inspections to ensure our products have extremely high quality and reliability. Compared to the similar products of other brands, Flap-11 Magnetic Level Indicator series products have the following advantages:

- Indicator panel and magnetic flaps uses widened design, make visual distance and viewing angle increase greatly, the ruler and its figures are bolder and clearer.
- Unique design of end cap of the indicator panels and glass adhesive sealing technology, ensure the level of ingress protection reach to IP66.
- Accessory magnetic switches and transmitters have got double certifications of Explosion Proof and Intrinsically Safety.
- Can be equipped with additional steam jacket, electric heating, thermal insulation and anti frost devices for applying to a variety of complex conditions.



In order to adapt to measured liquids' different density and chemical properties, Flap-11 series are divided into the following specific application models:

Flap-11S Economical Type:

Uses 304 stainless steel material, which is economical and practical, meets most industrial conditions and can be used in mildly corrosive liquid measurement.

Flap-11A Standard Type:

Made of strong anti-corrosive materials, such as 316L, is suitable for most corrosive medium.

Flap-11P Lined Type:

Uses 304 stainless steel with PTFE-lined, can be applied to highly corrosive liquid.

Flap-11C Plastic Type:

Made of PP/PVC, suitable for low pressure and strong corrosive liquid.

Meanwhile, JIWEI also developed SW-11 Magnetic Switch and Reed-11 Remote Transmitter which are externally mounted on the Magnetic Level Indicator to achieve automatic control and remote control.

SW-11 Magnetic Switch:

Using the power reed of international famous brands as its core components, and certificated with Flameproof Enclosures and Intrinsic Safety. Explosion-proof rating: Ex d IIC T6 Gb and Exia IIC T6 Ga, this is the highest level of similar products in peer industry. Also, its ingress protection grade reaches to IP66/67.

Reed-11 Remote Transmitter:

Core components employ the processing chips and reed of international famous brands. The guiding tube uses 316L, improves the level of corrosion resistance and its reliability. It also got certifications of Flameproof Enclosures and Intrinsic Safety. Explosion-proof rating: Ex d IIC T6 Gb and Exia IIC T6 Ga. Also, its ingress protection grade reaches to IP66/67.

Flap-11S Economical Type Magnetic Level Indicator

Overview

Flap-11S Economical Type Magnetic Level Indicator, its most prominent features are economic and practical. This indicator uses 304 stainless steel, which is particularly suitable for measuring slightly corrosive liquids. The floating tube's diameter is 51mm, and is made of high quality 304 seamless stainless steel tube, can effectively avoid the common defects, such as leakage, low pressure, unsightly appearance, and short life, etc. Also, Flap-11S has introduced innovative production and test processes to improve its reliability and quality.

Features

- Indicator panel and magnetic flaps use widened design, make visual distance and viewing angle increase greatly, the ruler and its figures are bolder and clearer.
- Unique design of end cap of the indicator panels and glass adhesive sealing technology, ensure the level of ingress protection reach to IP66.
- Accessory magnetic switches and remote transmitters have got double certifications of Explosion-proof and Intrinsically Safety.
- Made of 304 seamless stainless steel tubes, which is cost-effective.



Applications

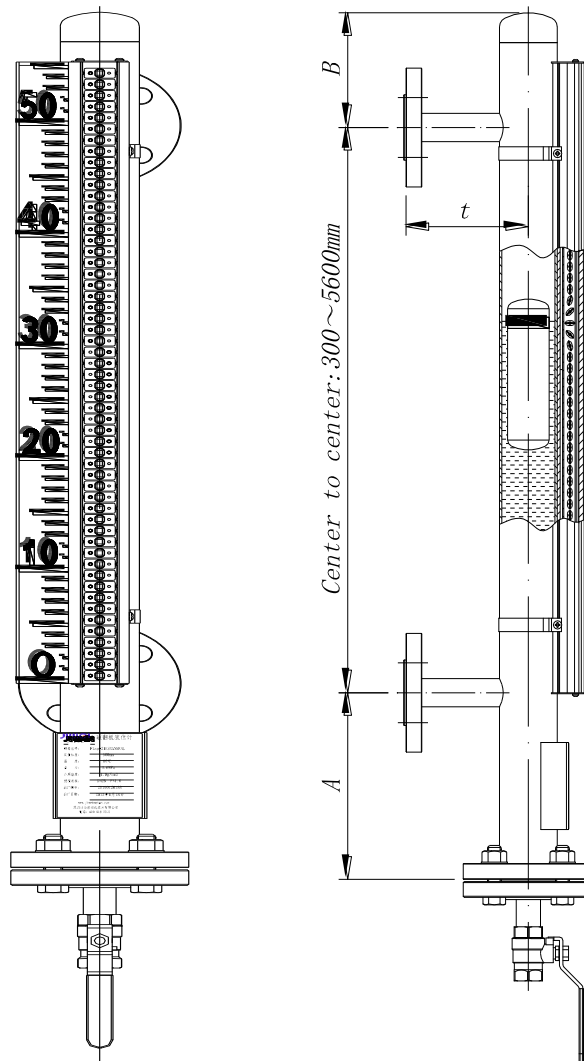
- Mounted in Salt water tanks, lye recycling, dechlorination tower, chlorate decomposition, high purity hydrochloric acid storage tank of ionic membrane electrolyzer.
- Applied in Ammonia tank
- Monitoring the liquid level of monomer tank at PVC production plant.

Technical data

Fluid	Density	0.45~2g/cm ³
	Viscosity	≤0.05Pa.s
Measurement parameters	Measuring range	300~5600mm
	Accuracy	±5mm or ±10mm
Material specifications	Measuring tube	304, Φ51, The thickness depending on the process condition
	Float	304, 316L
	Indicator panel	Aluminum, Max.400℃
Operating conditions	Process pressure	-1~10MPa
	Process temperature	-40℃~400℃
	Ambient temperature	-40℃~80℃

Signal output	Switch	220VAC 3A, SPDT
	Transmitter	4~20mA
Process connection	Connection type	Flange, customization
	Materials	304
End fittings	Upper vent	flat welding cap, also can be configured flange, cocks, 1 / 2" NPT ball
	Lower drain	1 / 2" NPT ball, also can be configured flange and cocks
Additional devices	steam jacket	customization
	electric heating	customization
	cryogenic insulation / heat insulation	Synthetic rubber, asbestos, polyolefin
	Anti-frost	Used in a occasion that temperature less than -5 °C
Safety certification	Protection rating	IP66
	Explosion-proof	Exd IIC T6, Exia IIC T6 (switch and transmitter)

Dimensional drawings



Order information

	Flap-11	S								
Execution	K Side to side B Top/Bottom installation									
Process fitting	A Flange DN20 B Flange DN25 C Flange DN32 D Flange DN40 E Flange DN50 F Flange DN80 X Customized design									
Process pressure	1 1.0 MPa 2 1.6 MPa 3 2.5 MPa 4 4.0 MPa 5 6.4 MPa									
Additional devices	N Without T Steam jacker J Electric heating K Cryogenic insulation/heat insulation S Anti-frost									
Transmitters	N Without R 4~20mA Reed switch transmitter H 4~20mA+HRAT Reed switch transmitter									
Switch	0 Without N N represents the number of magnetic switches									
Approvals	N For Ex-free area I Intrinsically Safe (Exia IIC T6) D Flame-proof (Exd IIC T6)									
Measurement range (mm)	L Has to explain the range. e.g; Range 100mm, express L-100									

Flap-11A Standard Type Magnetic Level Indicator

Overview

Flap-11A Standard Type Magnetic Level Indicator, is made of 316L stainless steel, and is particularly suitable for measuring most corrosive liquids. The floating tube is with diameter of 51mm, which is made of high quality seamless stainless steel tube, and can effectively avoid common defects, such as leakage, low pressure, unsightly appearance, and short life, etc. Also, Flap-11S has introduced innovative production and test processes to improve its reliability and quality.

Features

- Indicator panel and magnetic flaps use widened design, make visual distance and viewing angle increase greatly, the ruler and its figures are bolder and clearer.
- Unique design of end cap of the indicator panels and glass adhesive sealing technology, ensure the level of ingress protection reach to IP66.
- Accessory magnetic switches and remote transmitters have got double certifications of Explosion Proof and Intrinsically Safety.
- Made of 316L seamless stainless steel tube, it is suitable for most corrosive liquid.



Applications

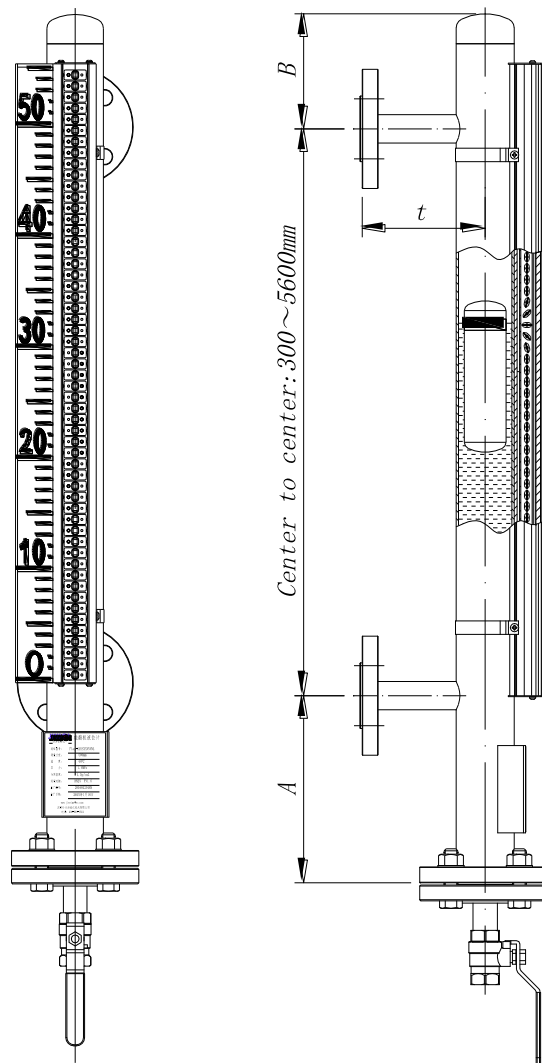
- The level measurement of wash tank and waste water tank of Ion-exchange membrane electrolysis apparatus.
- The level measurement of Make-up tank of compound phosphate at hydrogen peroxide plant.
- Applied in industrial waste water, lye tank.

Technical data

Fluid	Density	0.45~2g/cm ³
	Viscosity	≤0.05Pa.s
Measurement parameters	Measuring range	300~5600mm
	Accuracy	±5mm or ±10mm
Material specifications	Measuring tube	316L ,Φ51, The thickness depending on the process condition
	Float	316L
	Indicator panel	Aluminum, Max.400℃
Operating conditions	Process pressure	-1~10MPa
	Process temperature	-40℃~400℃
	Ambient temperature	-40℃~80℃

Signal output	Switch	220VAC 3A, SPDT
	Transmitter	4~20mA
Process connection	Connection type	Flange, customization
	Materials	316L
End fittings	Upper vent	flat welding cap, also can be configured flange, cocks, 1 / 2" NPT ball
	Lower drain	1 / 2" NPT ball, also can be configured flange and cocks
Additional devices	steam jacket	customization
	electric heating	customization
	cryogenic insulation / heat insulation	Synthetic rubber, asbestos, polyolefin
	Anti-frost	Used in a occasion that temperature less than -5 °C
Safety certification	Protection rating	IP66
	Explosion-proof	Exd IIC T6, Exia IIC T6(switch and transmitter)

Dimensional drawings



Order information

	Flap-11	A								
Execution	K	Side to side								
	B	Top/Bottom installation								
Process fitting	A	Flange DN20								
	B	Flange DN25								
	C	Flange DN32								
	D	Flange DN40								
	E	Flange DN50								
	F	Flange DN80								
	X	Customized design								
Process pressure	1	1.0 MPa								
	2	1.6 MPa								
	3	2.5 MPa								
	4	4.0 MPa								
	5	6.4 MPa								
Additional advices	N	Without								
	T	Steam jacker								
	J	Electric jacket								
	K	Cryogenic insulation/heat insulation								
	S	Anti-frost								
Transmitters	N	Without								
	R	4~20mA Reed switch transmitter								
	H	4~20mA+HRAT Reed switch transmitter								
Switch	0	Without								
	N	N represents the number of magnetic switches								
Approvals	N	For-EX-free area								
	I	Intrinsically Safe (Exia IIC T6)								
	D	Flame-proof (Exd IIC T6)								
Measurement range (mm)	L	Has to explain the range. e.g: Range 100mm, express L-100								

Flap-11P Lined Type Magnetic Level Indicator

Overview

Flap-11P Lined Type Magnetic Level Indicator uses unique lining technical design, makes lining junction of the floating tube and process connect flange achieve to the best-match condition, effectively avoids corrosion damage made by accidental medium leakage, which is usually caused by extrusion fracture when assembling. Also, Flap-11S has introduced innovative production and test processes to improve its reliability and quality. Flap-11P is mainly used to measure strong corrosive liquid, and, is widely applied to chemical industry, oil refining, storage and transportation, water treatment and other industries.

Features

- The lining junction between floating tube and process connection flange uses unique lining technology effectively avoids corrosion damage made by accidental medium leakage, which is caused by extrusion fracture when assembling.
- Indicator panel and magnetic flaps uses widened design, make visual distance and viewing angle increase greatly, the ruler and its figures are bolder and clearer.
- Unique design of end cap of the indicator panels and glass adhesive sealing technology, ensure the level of ingress protection reach to IP66.
- Accessory magnetic switches and remote transmitters have got double certifications of Explosion Proof and Intrinsically Safety.
- The lowest measurable density can reach 0.5g/cm^3 .

Applications

- Mounted in Salt water tanks, lye recycling, dechlorination tower, chlorate decomposition, high purity hydrochloric acid storage tank of ionic membrane electrolyze.
- Applied in Ammonia tank.
- Monitoring the liquid level of monomer tank at PVC production plant.

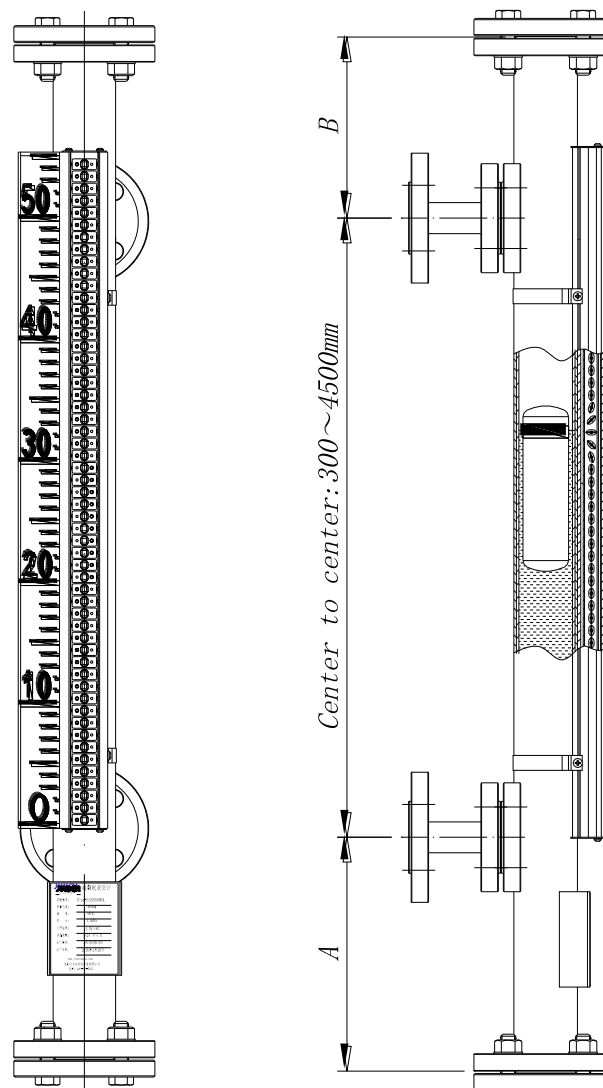
Technical data

Fluid	Density	$0.5\sim 2\text{g/cm}^3$
	Viscosity	$\leq 0.05\text{Pa}\cdot\text{s}$
Measurement parameters	Measuring range	300~4500mm
	Accuracy	$\pm 5\text{mm}$ or $\pm 10\text{mm}$
Material specifications	Measuring tube	304Φ57, PTFE lined, The thickness depending on the process condition
	Float	316L
	Indicator panel	Aluminum, Max.400°C



Operating conditions	Process pressure	-1~2.5MPa
	Process temperature	Max.150℃
	Ambient temperature	-40℃~80℃
Signal output	Switch	220VAC 3A, SPDT
	Transmitter	4~20mA
Process connection	Connection type	Flange, customization
	Materials	304, PTFE lined
End fittings	Upper vent	flange
	Lower drain	Flange, also can be configured lined
Additional devices	cryogenic insulation / heat insulation	Synthetic rubber, asbestos, polyolefin
	Anti-frost	Used in a occasion that temperature less than -5 ℃
Safety certification	Protection rating	IP66
	Explosion-proof	Exd IIC T6, Exia IIC T6(switch and transmitter)

Dimensional drawings



Order information

Flap-11		P	□	□	□	□	□	□	□	□
Execution	K	Side to side								
	B	Top/Bottom installation								
Process fitting	A	Flange DN20								
	B	Flange DN25								
	C	Flange DN32								
	D	Flange DN40								
	E	Flange DN50								
	F	Flange DN80								
	X	Customized design								
Process pressure	1	1.0 MPa								
	2	1.6 MPa								
	3	2.5 MPa								
Additional advices	N	Without								
	K	Cryogenic insulation/heat insulation								
	S	Anti-frost								
Transmitters	N	Without								
	R	4~20mA Reed switch transmitter								
	H	4~20mA+HRAT Reed switch transmitter								
Switch	0	Without								
	N	N represents the number of magnetic switches								
Approvals	N	For-EX-free area								
	I	Intrinsically Safe (Exia IIC T6)								
	D	Flame-proof (Exd IIC T6)								
Measurement range (mm)	L	Has to explain the range. e.g: Range 100mm, express L-100								

Flap-11C Plastic Type Magnetic Level Indicator

Overview

Flap-11C Plastic Type Magnetic Level Indicator is a commonly used anti-corrosion level meter. With the same measured range, its weight is only about 1/5 of the Standard Type, which greatly facilitates the installation. Also, Flap-11S has introduced innovative production and test processes to improve its reliability and quality. Flap-11C is particularly suitable for chemical water treatment at power station, sewage treatment, printing and dyeing industry, as well as other acidic medium, which are not miscible with PVC/PP.

Features

- Lightweight, the weight is about only 1/5 of stainless steel product, and easy installation.
- Be made of strong anti-corrosive materials, such as PP/PVC.
- Indicator panel and magnetic flaps use widened design, make visual distance and viewing angle increase greatly, the ruler and its figures are bolder and clearer.
- Unique design of end cap of the indicator panels and glass adhesive sealing technology, ensure the level of ingress protection reach to IP66.
- Accessory magnetic switches and remote transmitters have got double certifications of Explosion Proof and Intrinsically Safety.



Applications

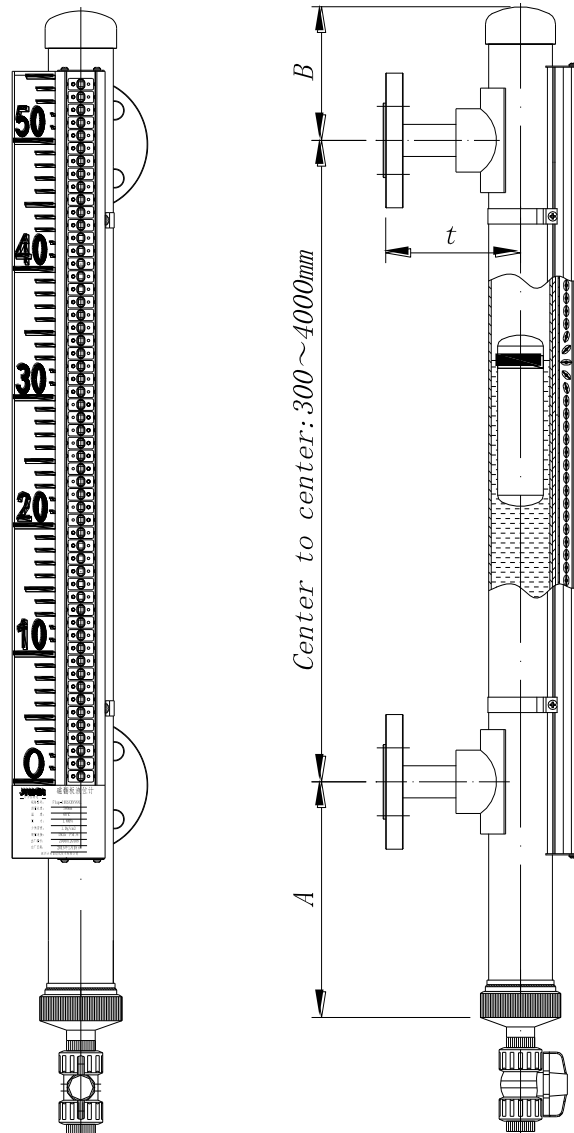
- Used to measure the level of regeneration tank, refrigerant tank, hydrochloric acid tank, alkali tank of membrane nitrate removal equipment at caustic soda plant.
- Used to measure the level of waste water tank at sewage treatment plant.
- Applied in raw materials tank at dyeing plant.

Technical data

Fluid	Density	0.45~2g/cm ³
	Viscosity	≤0.05Pa.s
Measurement parameters	Measuring range	Side to side :300~4000mm
		Top to bottom:300~4000mm
	Accuracy	±5mm or±10mm
Material specifications	Measuring tube	PP/PVC , Φ63*4.7
	Float	NBR, PP, PVC
	Indicator panel	Aluminum, Max.400°C

Operating conditions	Process pressure	-0.1 MPa~1.0Mpa, Recommended to work at under 0.6MPa
	Process temperature	PP: -20℃~80℃;PVC: -30℃~70℃
	Ambient temperature	-40℃~80℃
Signal output	Switch	220VAC 3A, SPDT
	Transmitter	4~20mA
Process connection	Connection type	Flange, customization
	Materials	PP, PVC
End fittings	Upper vent	flange
	Lower drain	Flange, also can be configured others
Safety certification	Protection rating	IP66
	Explosion-proof	Exd IIC T6, Exia IIC T6(switch and transmitter)

Dimensional drawings



Order information

Flap-11 C

Execution	K Side to side B Top/Bottom installation
Process fitting	A Flange DN20 B Flange DN25 C Flange DN32 D Flange DN40 E Flange DN50 F Flange DN80 X Customized design
Process pressure	1 0.6 MPa 2 1.0 MPa
Transmitters	N Without R 4~20mA Reed switch transmitter H 4~20mA+HRAT Reed switch transmitter
Switch	0 Without N N represents the number of magnetic switches
Approvals	N For-EX-free area I Intrinsically Safe (Exia II T6) D Flame-proof (Exd IIC T6)
Measurement range (mm)	L Has to explain the range. e.g: Range 100mm, express L-100

SW-11 Magnetic Switch

Overview

SW-11 Magnetic Switch uses the power reed of international famous brands as its core components and is designed with aluminum housing. It is certificated with Flameproof Enclosures and Intrinsic Safety (Explosion-proof grade Exd IIC T6, Intrinsically Safe rating Exia IIC T6), which is the highest level of similar products in peer industry. As the measured fluid level rises and drops, the magnetic float rises and drops as well, and when the permanent magnetic steel within the magnetic float moves close to the switch, it stimulates the attached switches, triggering reed switch's status to change, and providing a signal back to the control system to realize the liquid level control.

The output of the switches can be configured with SPST or SPDT, and can be set as anti-overflow or anti-dry protection.



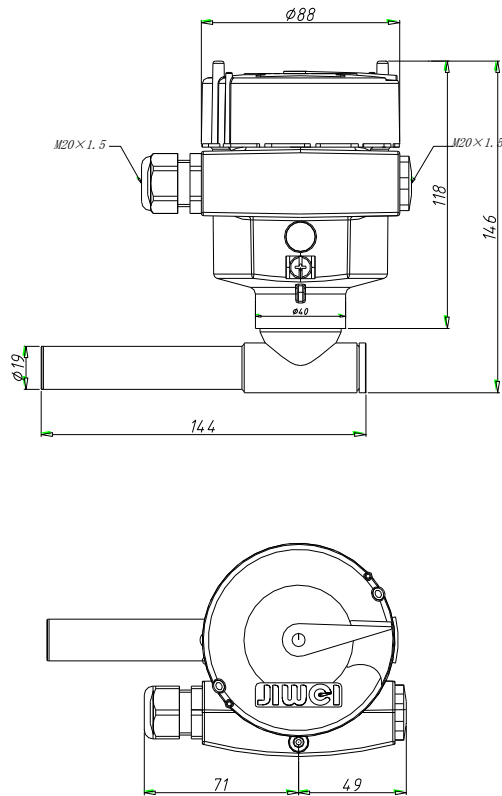
Features

- Use the power reed of international famous brands, which with capacity of heavy current and long service life.
- The guide tube is made of 316L material, with strong corrosion resistance.
- Has got double certifications of Explosion Proof and Intrinsically Safety.
- The ingress protection grade reaches to IP66/67.

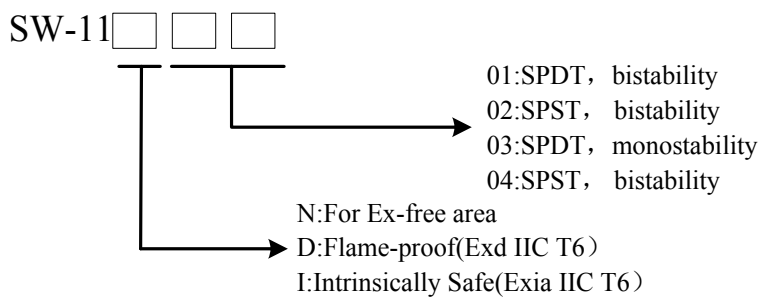
Technical data

Output Type	Switch signal
Switch contact capacity	220VAC, 1.0/2.0A
	24VDC, 1.5/2.5A
Process temperature	-50°C ~ 150°C
Ambient temperature	-20 ~ 70 °C
Explosion-proof	Ex d IIC T6
	Ex ia IIC T6
Protection rating	IP66/67
Cable entry	1/2" NPT / M20x1.5

Dimensional drawings



Order information



Reed-11 Remote Transmitters

Overview

The remote transmitter is designed to be used with Flap-11 Magnetic Level Indicator series products by mounted on float tube outside. It sends a 4-20mA signal from a remote location back to the operation and control center, to achieve real-time level measurement and monitoring.

Inside the floating tube the magnetic float, that rises and drops by following with the fluid level, triggers the same level close reed switch in guiding tube to change its status, this leads to the resistance change in the circuit. A two-wire transmitter chip converts the resistance into a 4-20mA current signal through the current-voltage convertor; the value of current signal output will reflect the corresponding fluid level. Usually its resolution is $\pm 5\text{mm}$ or $\pm 10\text{mm}$, and, the higher the accuracy is, the larger number of reed is needed.



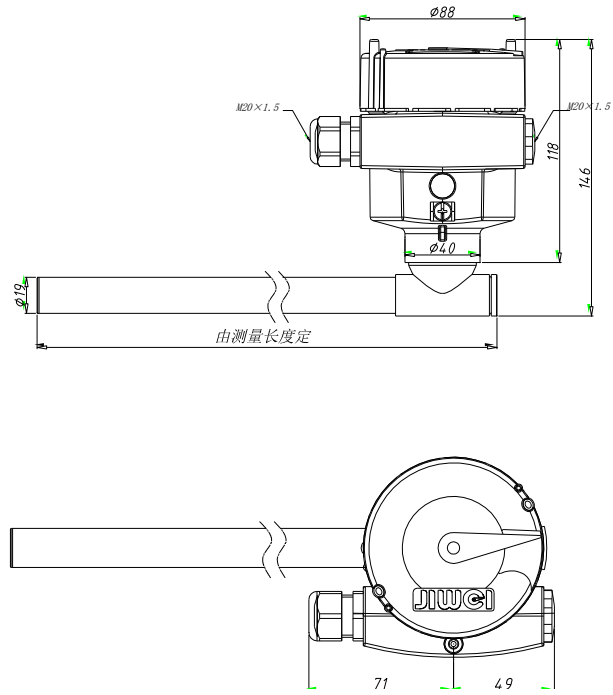
Features

- The plastic reed of international famous brands used, has long service life.
- Use the chips of international famous brands to complete voltage-current converting and to achieve 4~20mA output.
- Certificated with both Flameproof Enclosures and Intrinsic Safety.
- The protection rating reaches to IP66/67.
- The guide tube is made of 316L material with strong corrosion resistance.

Technical data

Accuracy	+5mm / +-10mm
Power supply	10~36VDC
Process temperature	-50℃~150℃
Ambient temperature	-20~50 °C
Explosion-proof	Ex d IIC T6
	Ex ia IIC T6
The protection rating	IP66/67
Cable entry	1/2"NPT / M20x1.5

Dimensional drawings



Order information

Reed-11 /

Four digits represent range (Unit: mm)
For example: (1) 340mm, written: 0340
(2) 1340mm, written; 1340

- N: For Ex-free area
- D: Flame-proof (Exd IIC T6)
- I: Intrinsically Safe (Exia IIC T6)

Float

Overview

Magnetic float is designed based on the Principle of Buoyancy (Archimedes' Principle) while combining with magnetic coupling system. The float type (size, weight and structure) is determined by specific process fluid's density, pressure and temperature. Also, the materials of construction of float must be compatible with the process fluid. Normally, according to different conditions, its materials can use 304, 316L stainless steel, 304 stainless steel cladding PTFE or plastic, etc. Each float is engineered for proper buoyancy for each particular application. In order to ensure product's measurement accuracy and working reliability, the size and weight of magnetic float need to be matched with measured fluid. Flap-11 Magnetic Level Indicator series products have a variety of magnetic floats. Flap-11 is suitable for medium density as low as 0.45g/cm^3 , which covers most mediums and conditions.



Features

- A variety of magnetic float for option, which achieving a perfect match between the magnetic float and measured liquid's attributions and density.
- Independent innovative design, ensure higher reliability.
- Including one type of 304 float out-lined with F46, better anticorrosive capability.

Technical data

Density	$0.45\sim 2\text{g/cm}^3$
Viscosity	$\leq 0.05\text{PaS}$
Float diameter	$\varphi 40$ 、 $\varphi 43$ 、 $\varphi 45$ 、 $\varphi 50$
Float materials	304、316L、304 with F46 out-lined、plastic, etc

Indicator

Overview

The indicator panel and magnetic flaps for Flap-11 Magnet level series products use widened design, which makes visual distance and viewing angle increase greatly, and the ruler and figures bolder and clearer. The shell adopts high temperature type aluminum alloy, and the protective plate is made of glass panel, which effectively avoids the defects of plastic panel that is easy to turn yellow and aging. Unique design of end cap of the indicator panels and glass sealing technology, ensure the protection rating reach to IP66. Also, the innovative design of flaps and the reliable magnetic coupling function greatly improve products' working reliability, and avoid indicating error caused by false rotation of flaps.



Features

- Greater visual distance and viewing angle, has an aesthetic appearance.
- The protection rating reaches to IP66.
- Using glass panel avoids the defects of plastic panel that is easy to turn yellow and aging.
- Innovative design of flaps and reliable magnetic coupling function greatly improve its working reliability, and avoid indicating error caused by false rotation of flaps.

Technical data

Panel size	73mm×22mm
Flaps size	20mm×9mm×0.9mm
Glass panel thickness	4mm
Flaps material	Aluminum
The protection rating	IP66