ISEN-SP2000

Levelmeter RF admittance level switch

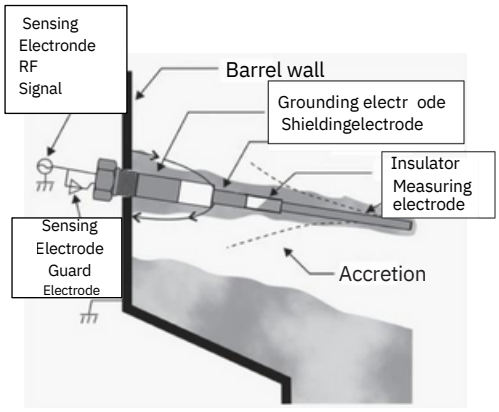
The SP2000 series RF admittance level controller was successfully developed by our company's researchers based on a large number of level instruments at home and abroad. Its technicality and measurement reliability have been fully reflected in a large number of applications. It is widely used in various types of silos, containers, and pipelines for empty and full material measurement, and automatic alarm or detection of upper and lower limits. When the alarm is triggered, the relay switch signal can be output, which can be linked to the starting device through the intermediate relay or directly to realize the automatic control of loading and unloading.

Product Features

1. Easy installation and debugging: fully sealed integrated installation structure, all using digital integrated circuits, without any mechanical moving parts. Once installed, zero calibration does not require multiple debugging.
2. Low temperature drift: using digital electrical appliances, compared with existing products, greatly reducing the impact of ambient temperature and humidity on the instrument, no need for zero adjustment during season change. Advanced circuit design can avoid false signals caused by material adhesion to the probe, and can resist the impact of various fluctuations.
3. Strong on-site adaptability: solid and liquid materials can be detected in high temperature, high pressure, large dust, and high viscosity.
4. One-time zero calibration: due to the use of digital circuits, users can complete zero calibration once in an empty warehouse state.

Working Principles

The electronic circuit generates a high-frequency signal and sends it to the measuring electrode and the protective electrode. When the material position changes, this change is fed back to the electronic circuit. The electronic circuit compares the comprehensive change signal of capacitive reactance and impedance with the reference signal. When the difference between the two signals reaches a certain size, the output state of the relay is changed, thereby indicating the change in material level.



Application Field

Application Fie ld(Continued)

a) Power industry: coal transportation system, ash removal system (ash hopper, silo pump, ash storage)
b) Construction industry: cement plant
c) Food industry: flour tank, packaging hopper
d) Pharmaceutical industry: raw material storage silo, ingredient mixing tank
e) Paper industry: wood chip silo, liquid tank

Product Line


1 Standard thread type


2 Standard flange type


3 PTFE rod type anti-corrosion type


4 PTFE lined anti-corrosion type


5 Division type


6 Flat


7 Cable Type


8 High temperature threaded type

Product Line (Continued)

9 Multi-point measurement type

10 All stainlesssteel type

Technical Specification

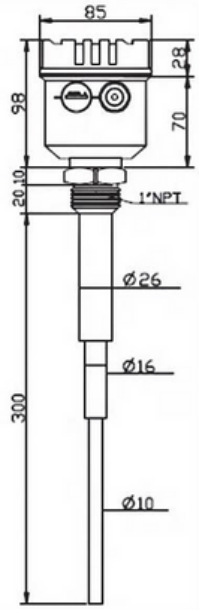
a) Control part

Power supply	220VAC±10%，50/60HZ；/24VDC±10%	
Contact capacity	250V AC 5A	
Power consumption	Maximum 2.5W Sensitivity	≤0.3PF
Output relay	SPDT	
Ambient temperature	-40～65℃ Temperature effect	0.3PF/30℃
Calibration	Press zero calibration Sensitivity setting	Setting range is 1-9 levels
Switch delay setting	Delay value range is 0-59 seconds	
Alarm form	Optional upper or lower limit	
Enclosure protection standard	Complies with NEMAI-5.4X and 12&13 (IP65) protection standards	

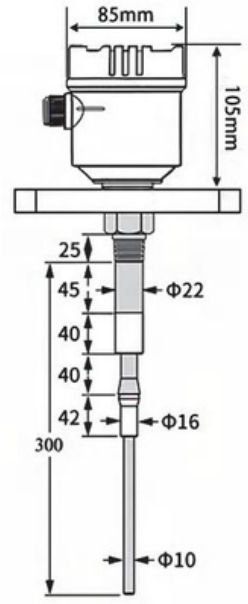
b） Probe part

Dimension	see the instrument dimensions
Installation interface	1"NPT 3/4"NPT
Probe material	Stainless steel
Probe pressure resistance	2.5MPa

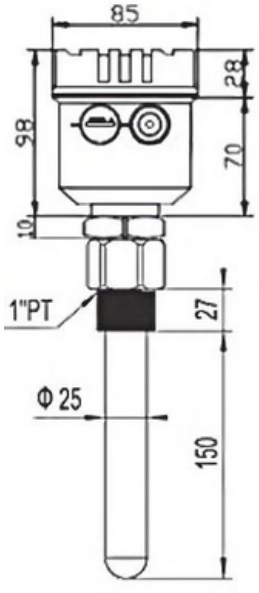
Outline Dimension Drawing (Reference)



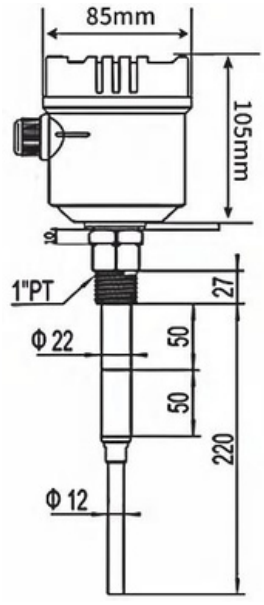
1 Standard thread type



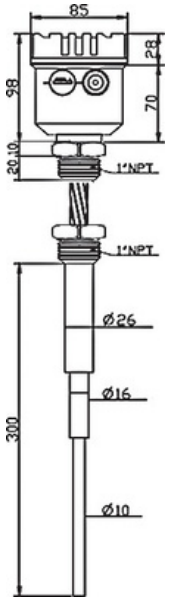
2 Standard flange type



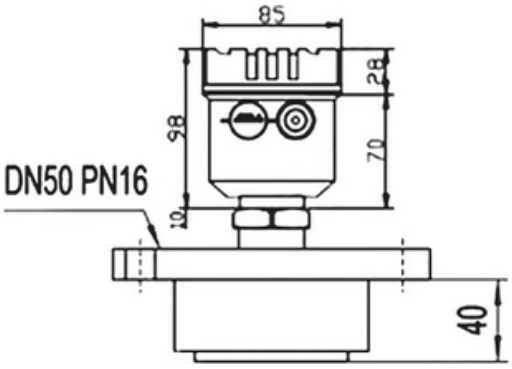
3 PTFE rod type anti-corrosion type



4 PTFE anti-corrosion type

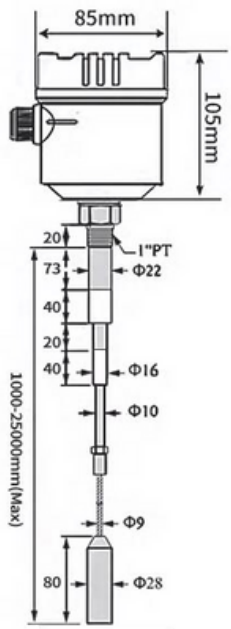


5 Division type

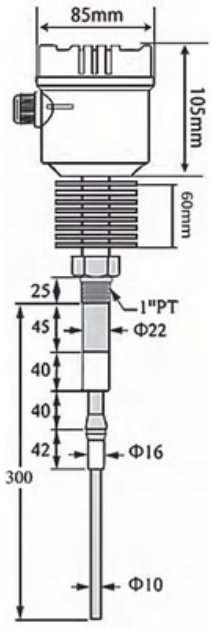


6 Flat

Outline Dimension Drawing (Cont'd, For Reference)



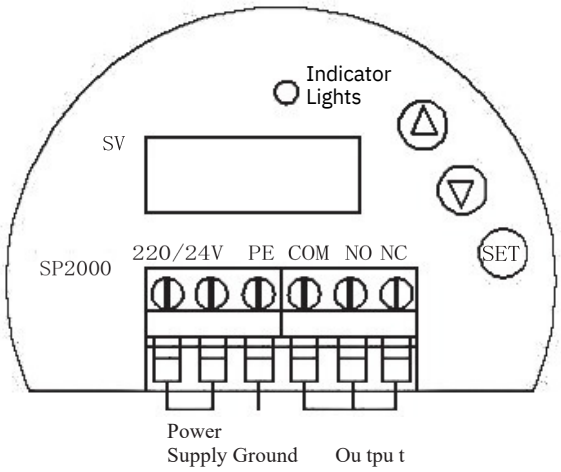
7 Cable Type

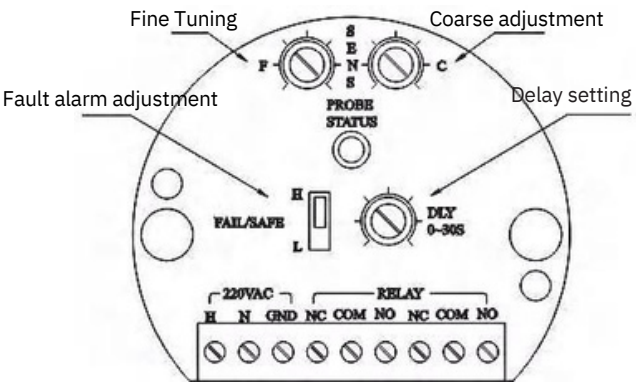


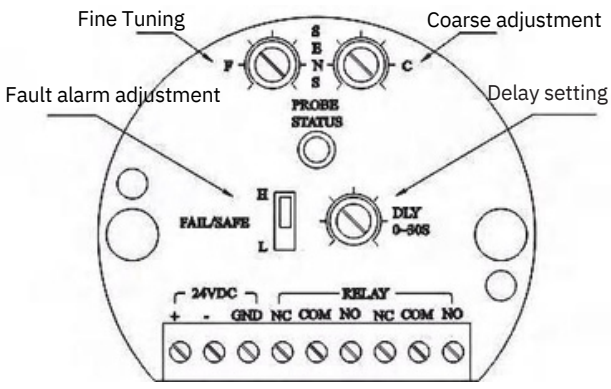
8 High temperature threaded type

Wiring Diagram

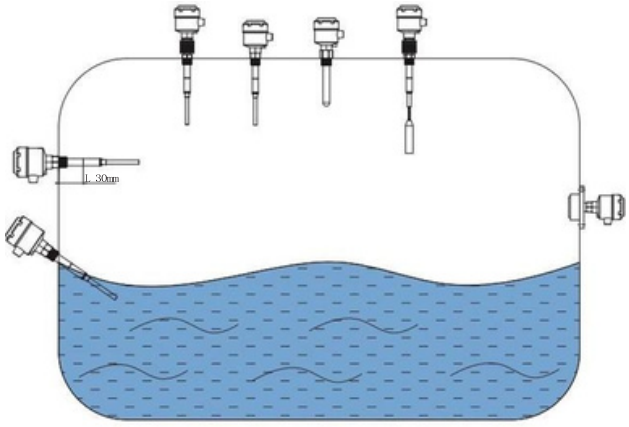
Technical requirements for electrical connection:
1) Electrical connection and field wiringshould comply with national standards.
2) The instrument powersupplyand relayoutput signal must be wired strictly accordingto the terminal wiring diagram.
3) The groundingof the entire instrument must be ensured to be good, and it is recommended to use an independent groundingwire.
4) The instrument working power supply must be selected according to the instrument nameplate. Wrong power supply will damage the instrument.
5) The outlet of the junction box must face downward. After the wiring of the junction box is completed, the box cover and cable fixing head must be locked to prevent rainwater from seepinginto the junction box when it rains and damaging the internal structure and circuit. This inspection is very important and must be carried out in earnest, otherwise it will affect the normal operation of the instrument.



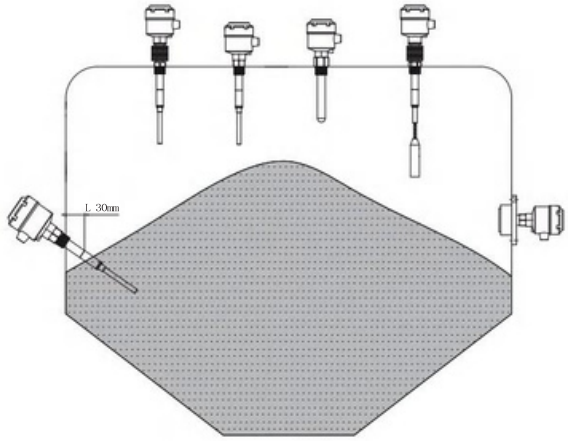




Installation Diagram



Liquid detection



Solids detection

a) Common installation methods
1. When installed horizontally, the length of the probe protective cover must extend into the container wall and be tilted horizontally downward by about 5°.
2. When installed vertically, the distance from the silo wall should be greater than 200mm, and the total length of the probe must be greater than or equal to the control point position.
3. The distance between the high and low level probes should be greater than 500mm.
4. When installed outdoors, a protective cover should be added.
5. Ensure that the instrument housing is reliably grounded. It is recommended to use an independent grounding wire.
6. Pay attention to the installation space above.

Technical requirements for probe installation
1. During instal lation, ensure that the insulated end of the product is inserted into the tank by at least 30mm;
2. When installing on the side wall, pay attention to the insertion depth. If it exceeds 500mm, the installation form should be specified;
3. The maximum length of the RF anticorrosion series threaded type is 200mm (excluding threads). If it exceeds this length, flange installation should be selected, and the pressure resistance level should be within 1bar;
4. RF steel cable type can only be installed on the top;
5. Pay attention to the size of the opening to ensure that the induction pole does not touch the pipe wall.

Selection Example

Example: ISEN-SP2000-1S13NDX4L300, RF admittance level switch, standard type, 1"NPT threaded connection, wiring material 304 stainless steel, working temperature -40~80, double-pole output DPDT, dual power supply, aluminum alloy junction box, standard range 300mm.

Selection Chart

Model	Product Name
ISEN-SP2000	RF Admittance Level Switch

Code	Structure
1	Standard Type
2	Flat Plate Type
3	High Temperature Type
4	Split Type
5	Cable Type
6	Anti-corrosion Type

	Code	Connection Mode
	S1	1"NPT Threaded Connection
	S2	3/4"NPT Threaded Connection
	F1	DN50 Flange Connection (Default)
	F2	DN80 Flange Connection
	T1	Clamp Connection (Default 50.5)
	T2	Clamp Connection (64mm)
	Y	Customizable

	Code	Wetted Material
	3	304 Stainless Steel
	6	316L Stainless Steel
	F	PTFE

	Code	Operating Temperature
	N	-40~80℃
	T	-40~200℃
	H	400~800℃

	Code	Output Contact
	S	Single Pole Output SPDT
	D	Double Pole Output DPDT

	Code	Power Supply
	A	220VAC
	D	24VDC
	X	Dual power supply (default)

	Code	Junction box material
	B	ABS
	L	Aluminum alloy
	4	304 stainless steel
	6	316 stainless steel

	Code	Measuring range
	xxxx	Standard 300mm (select the measuring range according to actual needs)

Website

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VALVE Link

All your process control needs

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