



## FRFI

### RF admittance/ capacitance level transmitter

RF Admittance Level sensor FRFI series adopts advanced RF admittance technology and overcomes the defects that the capacitor level sensor could not eliminate the effect by conductive hanging material. The instrument operates reliably and various technical indexes have archived the international level, which is widely used in control and alarm of liquid, pulp, powder, material level. It is not affected by water vapor, dust or the influence of condensation, with the long-term stable operation, high sensitivity, Good linearity, high temperature resistance, resistance to high pressure, etc.

#### Product series



## Structure Principle

RF Admittance Level Sensor FRFI series consists of sensor unit and electronic unit. Making the medium among in electrode and metal barrels of wall be a capacitor then put a high frequency signal in the electrode, there will be a small current through the medium back to the barrel wall at the electrode. As the change of material level within the tank, Capacitance between electrodes and the tank wall changed, too. Solid state electronic circuit capacitance level meter will continuously monitor the change, And this change compares with a very stable reference circuit. And then output a signal which is proportional to the level of precision of 4-20 ma current.

## Technical Parameters

**Power supply :** 18V-30VDC

**Output:** 4-20mA (two wire)

**Output mode:** level mode or distance mode

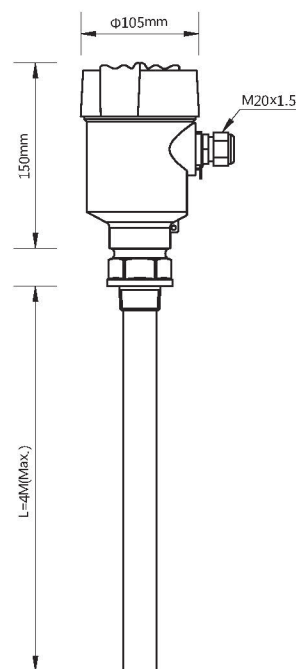
**Ambient Temperature:** -40°C ~70°C

**Maximum load :** 24VDC 350Ω

**Response Time:** Standard: 1s, 1-30s adjustable

**Precision :** ±1%

**Measuring range:** Maximum 15000 pf, maximum distance of 100 m (different sensor for different maximum range)



Product outline

## Electrode Model Selection

Electrode No.	Electrode form & Typical Application	Operating Temperature & Operating Pressure	Length Inserted	Electrode Material
01	Standard Type Used in liquid, light pulp, particles	121°C /1.38MPa	150 ~ 10000mm	316SS and PTFE
11	Heavy Hanging Type Used in stirred liquid, thick pulp, particles	121°C /1.38MPa	150 ~ 1000mm	316SS and PTFE
21	High Temperature Type Used in liquid, light pulp, particles	180°C /1.38MPa	150 ~ 10000mm	316SS and PTFE
31	Anticorrosion Type Used in liquid, light pulp, particles	121°C /1.38MPa	150 ~ 5000mm	PTFE

## Model Selection Table



**Model :** FRFI-XXXX-S21-X-X  
**Application:** Conductive liquid, pulp, particles  
**Temperature/pressure :** 230°C /3MPa  
**Process connection :** 3/4"NPT  
**Sensor type :** SUS304/TFE



**Model :** FRFI-XXXX-S23-X-X  
**Application :** Large-range of isolated powder  
**Temperature/pressure :** 120°C /3.5MPa  
**Process connection :** 3/4"NPT  
**Sensor type :** SUS304/PVDF



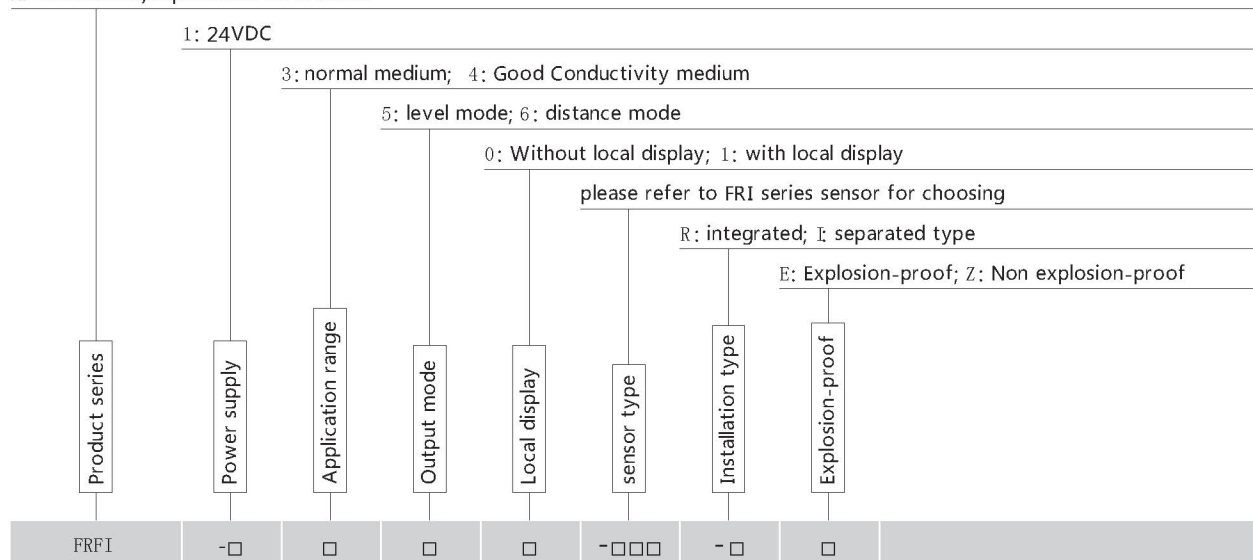
**Model :** FRFI-XXXX-S22-X-X  
**Application :** large-range of conductive liquid and interface  
**Temperature/pressure :** 200°C /3MPa  
**Process connection :** 3/4"NPT  
**Sensor type :** SUS304/FEP



**Model :** FRFI-XXXX-S24-X-X  
**Application :** Isolated powder, ash  
**Temperature/pressure :** 230°C / normal pressure  
**Process connection :** 3/4"NPT  
**Sensor type :** SUS304

## Selection table

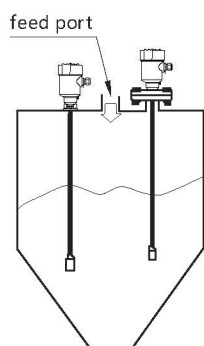
RF admittance/capacitance level sensor



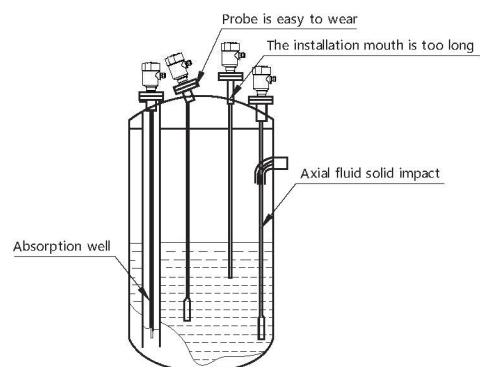
FRFI series RF admittance level sensor option

Sensor signal	Temp & pressure	Maximum length	Sensor material	Sensor outline	Installation size	Application
S21	230°C /3MPa	5m	304SS/PTFE	Φ: 18mm Two-level lever	3/4" NPT or 1" NPT	Temperature in medium voltage, general application of conductive liquid, slurry, particles
S22	200°C /3MPa	20m	304SS/FEP	Φ: 2.7mm Two-level lever	3/4" NPT	Big range, conductive, Liquid, the interface
S23	120°C /3MPa	30m	304SS/PVDF	Φ: 8mm Two-level lever	3/4" NPT	Big range, medium viscosity conductive liquid and powder
S24	200°C /normal pressure	Φ:4mm 15mm Φ:8mm 30mm	304SS/PTFE	Φ: 4mm/8mm Two-level lever	3/4" NPT	Big range, insulation powder
S25	200°C /2MPa	5mm	304SS/FEP	Φ: 12mm Two-level lever	3/4" NPT	Strong acid and alkali, corrosion of the flange
S26	230°C /3MPa	5mm	304SS/PTFE	Φ: 18mm Two-level lever or double lever	3/4" NPT Flange	Double sheath material with lever refer to the subgrade used in Strong corrosion, non-metallic containers

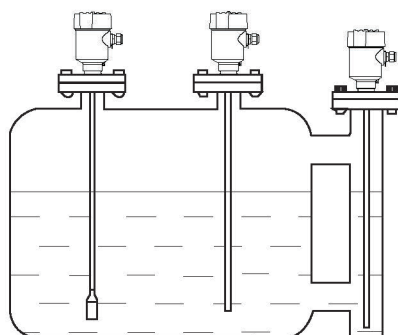
## FRFI series RF admittance level sensor option



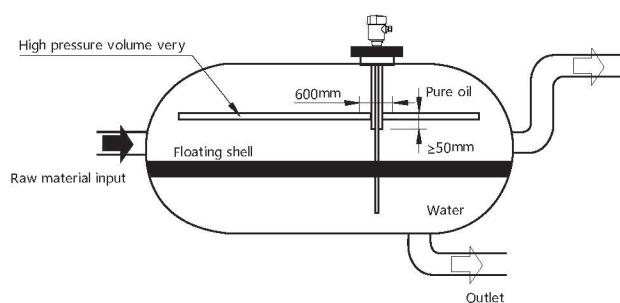
Solid warehouse installation schematic diagram



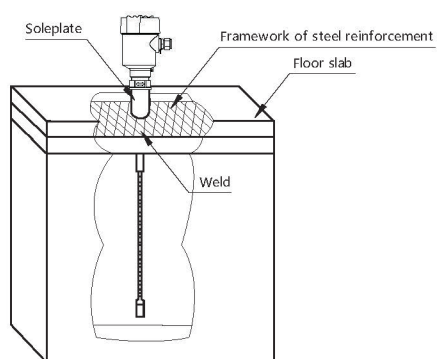
Wrong installation schematic diagram



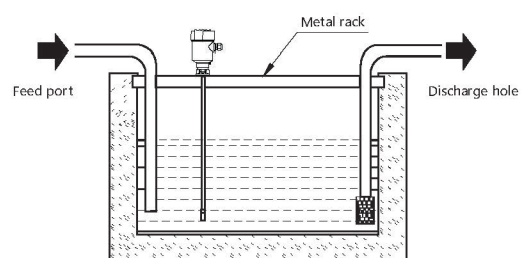
Liquid storage installation schematic diagram



Electrical schematic off



Non-metallic warehouse installation schematic diagram



Open pool installation schematic diagram