



## FRFS

### RF Admittance Level Switch

RF Admittance Level Switch FRFS series adopts advanced RF admittance technology and overcomes the defects that the capacitor level switch 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 and two different liquid levels. In addition, this product have status indication at site, it is a high cost performance and stable level sensor.

#### Product Series



## Structure Principle

RF Admittance Level Sensor FRFS series consists of sensor unit and electronic unit. The sensor unit mainly includes three parts: measurement probe, shaded pole and ground terminal. The material level is reflected through the change of admittance between the probe and vessel wall. When the level reaches to the switch working point, the electronic unit makes response and driver replay acts, thus output switch signal. The shaded pole can prevent fault signal generated due to the handing on the electrode from occurring. Only when the level actually archives the set point can the switch control signal be output.

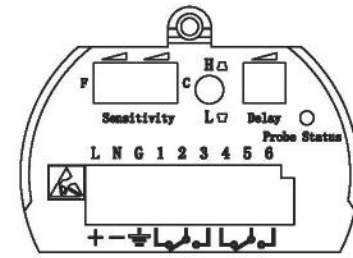


Diagram of terminal connections

## Specifications

Power Supply : 220VAC , 50/60Hz / 24VDC , 100mA

Sensitivity 0.3pF or smaller

Operating Temperature : -20~180°C

Ambient Temperature : -40~80°C

Working pressure : -0.1~2.5MPa

Output : DPDT Relay

Contact rating: 220VAC , 5A non-inductive , 3A inductive

Response Time : Standard : 0.2 S

Delay Time : 0.2 ~ 90 S adjustable

Electric Interface: M20×1.5

Explosion-proof Grade : Explosion-proof: ExdIIBT4~T6 ,  
Intrinsic Safety : ExiaIICT4~T6

Protection Grade : IP65

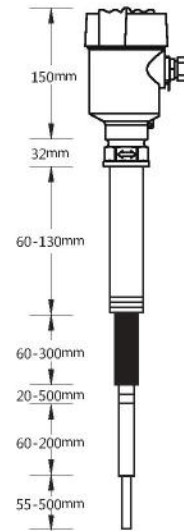
Process Connection : standard : 3/4"NPT thread/1"NPT thread

HG20592 ~ 20635-97 DN25 above, other flange standard (Like GB、JB/T、HGJ、ANSI、DIN etc.) The user must clearly specify when ordering.

Cable Length : The maximum distance from Split type sensor to electronic unit is 45m. If not specified by the user, the length when leaving factory is 3m.

Material Contacts Liquid: 304/316SS and PTFE

Junction Box Material : Aluminum Alloy



Dimensional Drawing

## Electrode Model Selection

Electrode No	Electrode form & Typical Application	Operating Temperature & Operating Pressure	Insertion depth	Material of electrode
01	Used in liquid, light pulp, particles Heavy hanging type	121°C /1.38MPa	150 ~ 10000mm	316SS and PTFE
11	Used in stirred liquid, thick pulp, particles, high temperature type	121°C /1.38MPa	150 ~ 1000mm	316SS and PTFE
21	Used in liquid, light pulp, particles Anticorrosion type	180°C /1.38MPa	150 ~ 10000mm	316SS and PTFE
31	Used in liquid, light pulp, particles	121°C /1.38MPa	150 ~ 5000mm	PTFE

## Selection Tables

RF Admittance Level Sensor, heavy hanging resistant, with switch status indication, independent terminal box

	1 : 24VDC ; 2 : 220VAC ; 3 : Universal power supply 24VDC/220VAC									
		0 : Standard Sensitivity (for conductive medium) ; 2 : High Sensitivity (for isolated medium, $\Sigma > 3.0$ )								
			0 : Without Time Delay (standard circuit unit) ; 1 : With Time Delay (0.2~90 s adjustable)							
				9 : Integral Type ; 0 : Split Type						
					1 : Thread Connection ; 2 : Flange Connection					
						0 : Common Type ; D : Explosion-proof Type ; E : Intrinsically Safe Type				
							01 : Standard Type (<121°C) 11 : Heavy Hanging Type 21 : Moderate Temp. Type (<180°C) 31 : Anticorrosion Type 41 : Flat type			
								Unit (mm)		
Products series	Power supply	Sensitivity	Time Delay	Instrument Type	Process Connection	Explosion-proof Option	Electrode Form	Insertion depth		
FRFS	-□	□	□	□	□	□	□	-□□□□		

## Product Features

**Hanging Resistant** : Unique circuit design and sensor structure make the measurement not be affected by the sensor hanging material. Periodic cleaning is not required to avoid wrong measurement.

**Free Maintenance** : No movable parts during measurement and no maintenance is required.

**Strong Adaptability** : It can measure both liquid level and material level, process temperature ranges from -100° C to 800° C, pressure from vacuum to 5MPa. It can be used in locations where corrosion and impact exist.

**Stability & Reliability**: Not subject to the change of measuring environment, with high stability and long service life.

## Products Application

Conductive and isolated liquid----Oil field and chemical industry

Conductive and isolated pulp---Paper making and metallurgy

Particles and Power----Food, feedstuffs, power plant, cement, environment protection industry etc.