

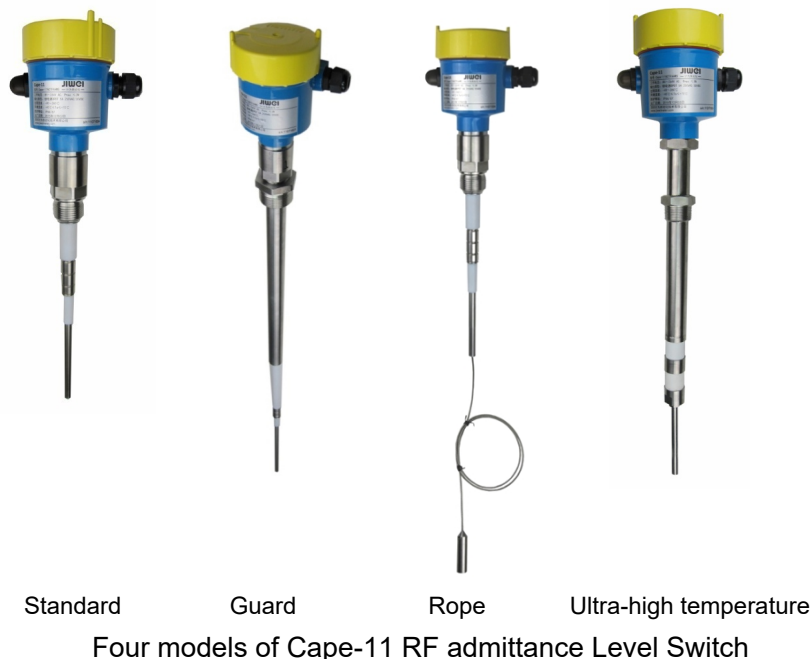
# Cape-11R Rope RF Admittance Level Switch



## Cape-11 RF Admittance Level Switch

Cape-11 RF Admittance Level Switch is a level measurement instrument mainly designed for powdery coal ashes, solid granules and adhesive materials. It possesses merits and benefits of other similar products in the market. Besides that, Jiwei has developed innovative techniques and manufacturing technologies to make Cape-11 very competitive. Cape-11 has high reliability and strong flexibility.

In Cape-11 RF Admittance Level Switch series products, a probe is designed to detect the change of the capacitance and impedance between the probe and the vessel wall to fulfill the material level measurement and control. The internal electronic unit, the reactance between the measurement electrode and the wall of an empty vessel constitute a balanced bridge circuit which outputs a stable oscillation signal. As the medium level rises, the measured medium covers the measurement electrode, the reactance between the electrode and the wall of the vessel changes. It causes imbalance of the bridge circuit and stops the oscillation as a result. A post-circuit is designed to detect the change of the output signal from the bridge circuit and generate an alarm signal. In addition, the oscillation signal at radio frequency is not only applied to the measurement electrode but also applied to a shield pole through a 1: 1 voltage-follower. So the measurement electrode and the shield pole have the same electric potential, phase, and frequency, but these two electrodes are insulated from each other. Even if there is medium buildup on the probe, because there is no electric potential difference between the measurement electrode and the shield pole, and the reactance change on the shield pole has no effect on the detection of the post-circuit. Therefore, only the reactance change on the measurement electrode induced by the filled medium between measurement electrode and the wall of the vessel will be detected by the post-circuit. It eliminates the effect of medium buildup on the level measurement.



Jiwei Cape-11 Admittance Level Switch series products possess merits and benefits of other similar products in the market. On top of that, we have developed innovative techniques, focused on details of manufacturing process, introduced strict product process management and quality inspection to ensure Cape-11 works in super high reliability. Compared with other similar products in the market, Cape-11 series products have the following advantages:

- Strong flexibility, widely used for the level measurement of fly ash, solid granules and adhesive materials.
- With dual color LED indicator, the housing with electronics can be rotated during installation to make the orientation of the LED easy for long distance observation.
- Modular design for high reliability, easy installation and maintenance.
- Strong impact resistance with a stainless steel protective sleeve assembled.
- Industry leading design for high temperature endurance, process temperature can be up to 450°C.



Electronic modular



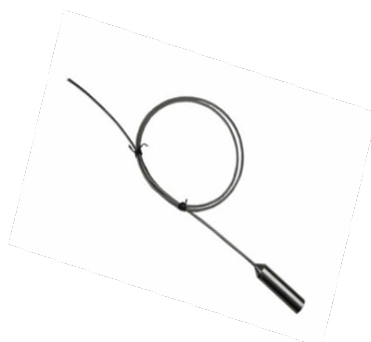
Housing with electronics & LED cover



Hexagon bolt process fitting



High temperature ceramic probe



cable probe



Rolling groove

Cape-11 RF Admittance Level Switch series include four models: Standard, Guard, Rope and Ultra-high Temperature:

**Cape-11A Standard:** Suitable for level measurement of dust and coal ash etc., flexible and easy for installation and maintenance.

**Cape-11P Guard:** A stainless steel protective sleeve assembled on standard Cape-11 to enhance the impact resistance of the instrument for heavy materials.

**Cape-11R Rope:** Suitable for large silos or bunkers, install vertically to effectively avoid the material impact from side.

**Cape-11H Ultra-high Temperature:** A leading product in the field. The probe is made of high temperature ceramic, can tolerate high process temperature up to 450°C.

## Cape-11R Rope RF Admittance Level Switch

### Overview

Cape-11R Rope RF Admittance Level Switch is specially designed for top-mounting applications in which the probe length has to be longer than two meters. A cable component is employed to extend the probe length. This model of Cape-11 is suitable for larger tanks and silos. It is installed vertically to effectively avoid the impact from the filling material.

### Features

- Suitable for larger tanks and silos level measurement.
- With an external dual color LED indicator and the housing with electronics can be rotated during installation to make orientation of the LED convenient for long distance observation.
- Modular design for high reliability, easy installation and maintenance.
- Passed third party reliability test and received certifications from the third party, extremely high reliability guaranteed.



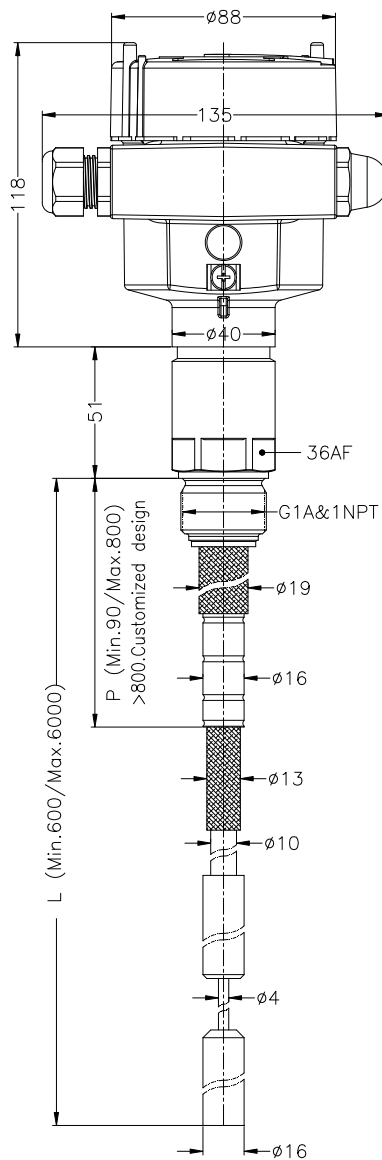
### Technical data

Medium	Medium type	Solid powder or granules
	Dielectric constant	≥1.6
Probe data	Probe length	600~6000mm
	Shield length	90~800mm, depends on probe length and customer's requirement.
	Cable diameter	Φ6mm
Materials	External housing	Aluminum alloy
	Inner housing	Plastic
	Metallic parts	SUS304, 316L
	Insulation	PTFE
Power supply	Cable	SUS304
	AC	85~264V AC
	DC	18~30V DC
Switch delay	Power consumption	≤3W
	When immersed	1s
Signal output	When laid bare	1s
	Relay	DPDT, 8A/250V AC/30V DC
Operating conditions	Delay	0~30s continuous adjustable
	Process temperature	-40℃~250℃
	Ambient temperature	-40℃~70℃
Approvals	Storage and transport temperature	-40℃~80℃
	Protection rating	IP66

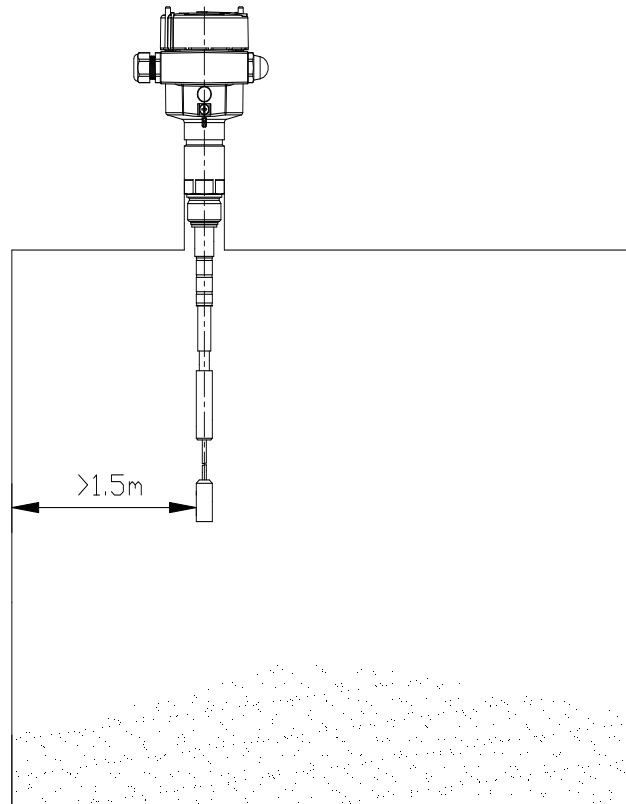
**Typical Applications**

- Level measurement that requires long measuring range for larger coal bunkers at a coal-fired power plant.
- Level measurement that requires long measuring range for larger cement silo or bunker at a cement plant.

**Dimensional drawings**



Installation diagrams



Notes:

- Rope Admittance Level Switch shall be mounted vertically.
- Probe must be mounted at least 1.5m apart from the vessel wall as above picture shows.
- Please mount the instrument away from the inlet point to prevent the instrument from filling impact damage or generating false signals.

**Order information**

<b>Cape-11</b>		<b>R</b>										
<b>Power supply</b>	A	220 V AC										
	D	24 V DC										
<b>Cable entry</b>	M	M20 x 1.5										
	N	1/2" NPT										
<b>Process fitting</b>	TC	Thread G 3/4"A										
	TD	Thread 3/4" NPT										
	TH	Thread G 1"A										
	TM	Thread 1" NPT										
	TE	Thread G 1 1/4"A										
	TF	Thread 1 1/4" NPT										
	TG	Thread G 1 1/2"A										
	TN	Thread 1 1/2" NPT										
	FC	Flange DN50 PN16										
	FD	Flange DN80 PN16										
	XX	Customized design										
<b>Shield length</b>	Customized, selectable between 90~800mm.											
<b>Intruding depth</b>	Customized, selectable between 600~6000mm.											

Note: Shield length and Intruding depth are in three and four digits respectively in mm. For example: The shield length is 90mm, expressed as "090"; the intruding depth of 750mm, expressed as "0750".