Radio Frequency Capacitance Level Meter

Working principle

The working principle of the radio frequency capacitance level meter is based on radio frequency (RF) capacitance technology. A radio frequency is applied to the probe, and through continuous analysis, the influence of the surrounding environment is determined. Since all materials have a dielectric constant and their conductivity is different from that of air, when the probe is in contact with the material, the total impedance reflected by the small capacitance shift changes. Because the energized probe and the container wall constitute the two polar plates of the capacitor, the insulator of the probe and the surrounding air become the dielectric material. When the air (dielectric constant is 1.0) is replaced by any other material (dielectric constant > 1.0), changes in capacitance cause changes in impedance. This effect is measured by the circuit and compared to the reference established by the sensitivity setting (circuit).

Design features

◎ The modular converter and sensor are integrated, no moving parts, high reliability and strong anti-interference ability;

◎ Wider applicability, there are various probe forms, various process connection forms, various production materials, and can be customized design;

◎ Installation, debugging, and maintenance are extremely convenient.

Technical parameter

Typical application	Liquid, corrosive liquid, etc.
Product model	NYDR-3051
Antenna form	Line type, rod type
Antenna material	PTFE、304、316
Measuring range	6m, 20m
Power supply	24VDC
Signal output	4. . . 20mA/HART/RS485/Modbus. . .
Process temperature	-40～+130℃, -184～+260℃
Circuit temperature resistance	−40～+80℃
Process pressure	-0.1～1.6MPa
Process connection	Thread, flange (optional)
Time delay	Continuous adjustable 0 ~ 30 s
Power loss protection	High and low mode, adjustable on site
Electrical Interface	M20×1. 5, ½ ″NPT
Protection class	IP 65、IP 67、IP 68
Explosion-proof grade	Exia II CT6 Ga, Exd II CT6 Gb (see the certificate for details)