

HITROL CO., LTD.

HEAD OFFICE.FACTORY.R&D INSTITUTE
HITROL CO.,LTD 141, Palhakgol-road, Jori-eup
Paju-si, Gyeonggi-do, Korea
TEL. : (00)-82-31-950-9700
FAX. : (00)-82-31-943-5600
www.hitrol.com



CATALOGUE

CAPACITANCE TYPE LEVEL SWITCH

HCC-95R Series

HPC-95R Series



Overview

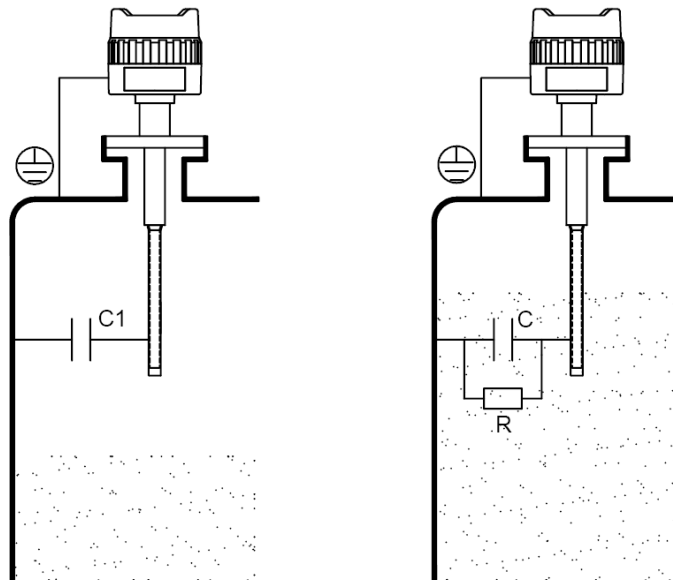
The HCC(HPC)-95R Series is a level switch to detect an object to be measured in a tank using its dielectric constant. It can be installed on the top or side of a tank, and it is easy to adjust and use with corrosive fluid, making it applicable to different industries.

Features

- The level of different types of liquid and power can be detected.
- It has a solid structure and is semi-permanent, because it does not have any mechanically moving part.
- Different shapes of probes are offered for different purposes.
- It can be used with a corrosive liquid (aqueous solution).
- Operation state can be checked.
- Output delay can be set.
- It has the pressure-resistant and ex-proof structure (ex. d IIC) (HPC-95R Series)

Mechanism

When the level between the electrode probe and wall increases, the air around electrode probe is replaced with another dielectric substance (object to be measured) to change the capacitance value. Initially, the electrode probe has a low capacitance value in the air, but the value increases when the object to be measured rises and covers the electrode probe. This change is sensed to detect the object to be measured.



C: Capacitance of object to be measured

C1: Initial capacitance

R: Conductivity of object to be measured

Specifications

Weather-Proof Version

Model	HCC-95R	HCC-95RH	HCC-95RW	HCC-95RWH
Probe Type	Rod		Rope	
Mounting	Screw & Flange			
Ambient emperature	-20°C ~ +60°C			
Process Temperature	-40°C~+80°C	-40°C~+150°C	-40°C~+80°C	-40°C~+150°C
Process Pressure	Vacuum~ 20kg/cm2(300#)			
Enclosure	Weather-Proof (IP65)			
Wetted Parts Material	316L with TEFLON			
Process Connection	PT 1"(M) Screw			
Housing;Cable Entry	AL;PF3/4"(F),IP65			

Ex-Proof Version

Model	HPC-95R	HPC-95RH	HPC-95RW	HPC-95RWH
Probe Type	Rod		Rope	
Mounting	Screw & Flange			
Ambient Temperature	-20°C ~ +60°C			
Process Temperature	-40°C~+80°C	-40°C~+150°C	-40°C~+80°C	-40°C~+150°C
Process Pressure	Vacuum~ 20kg/cm2(300#)			
Enclosure	Ex-Proof (Ex d IIC T6, IP65)	Ex-Proof (Ex d IIC T4, IP65)	Ex-Proof (Ex d IIC T6, IP65)	Ex-Proof (Ex d IIC T4, IP65)
Wetted Parts Material	316L with TEFLON			
Process Connection	PT 1"(M) Screw			
Housing ; Cable Entry	AL. ; PF 3/4"(F), IP65			

Amplifier Specification



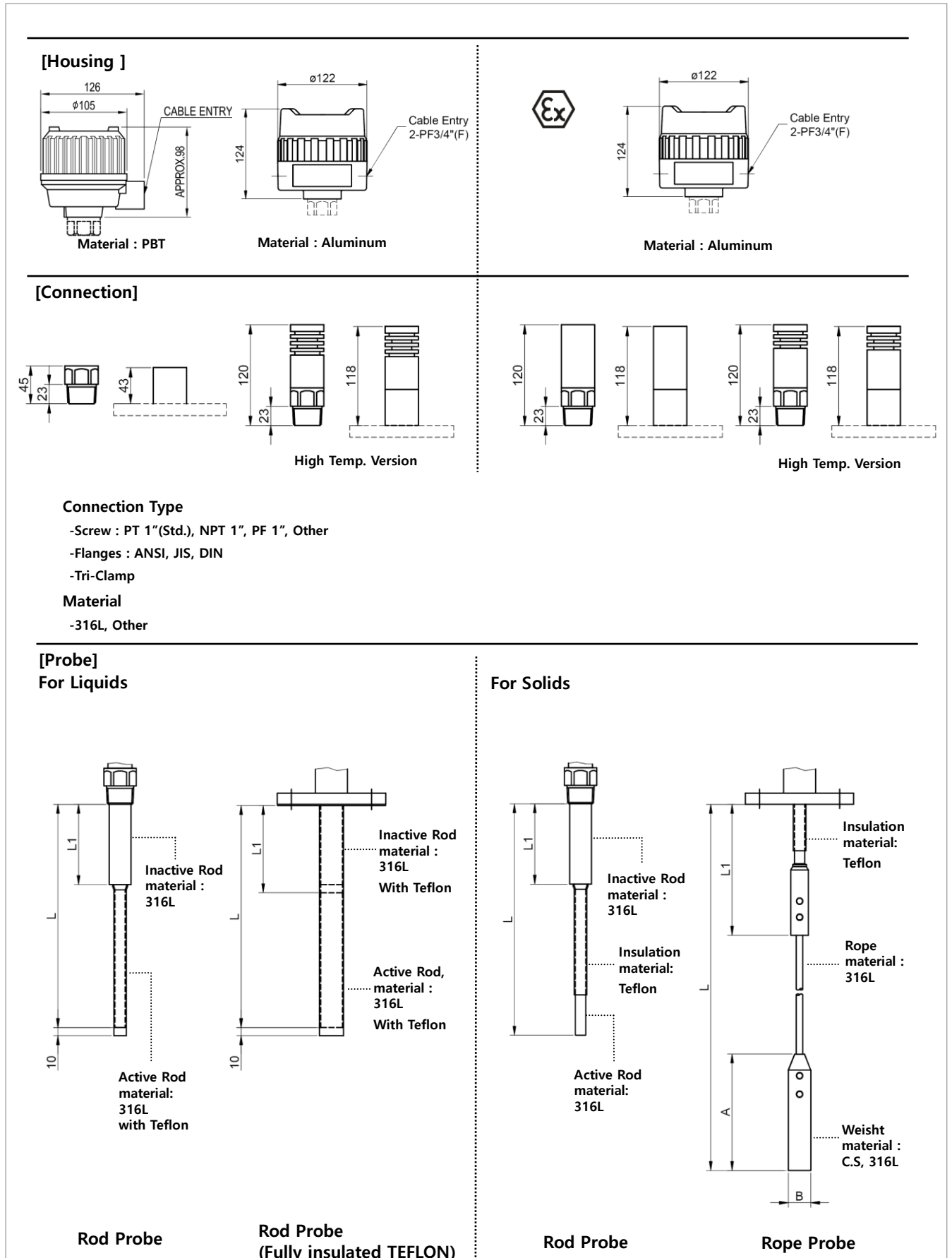
No.	Item	Specification
1	Combination Unit	<ul style="list-style-type: none"> ■ HLC-95R-L ■ HLC-95R-P
2	Combination Cable (A.W.G : 16~26)	<ul style="list-style-type: none"> ■ + : DC Power ■ - : GND ■ OUT : DC Data
3	Power Consumption	DC+18V @ 22mA / HLC-95R
4	Oscillating Frequency	520KHz
5	Output Data Range	DC +2V ~ +12V
6	Power State	LED @ Green
7	Operating Temperature	-20°C ~ +70°C
8	Dimension	80mm x 65mm x 20mm
9	Weight	50g

Combination Unit

Model	HLC-95R-L	HLC-95R-P
Installation	Local	Panel inside
Ambient Temperature	-20°C ~ +60°C	
Power Source	AC 110/220V, 60Hz (SPDT) AC 110 or 220V, 60Hz (DPDT) DC 24V	AC 110/220V DC 24V
Output	SPDT, DPDT	SPDT
Contact Rating	AC 250V 10A, DC30V 10A (SPDT) AC 250V 5A, DC30V 5A (DPDT)	AC 250V 10A, DC30V 10A
Enclosure	Weather-Proof (IP54)	
Housing ; Cable Entry	AL. ; 2-PF 3/4"(F), IP54	

Component and Technical Data

The dimensions on the following pages are indicated in mm



Installation

A capacitive level switch can be attached using screws (PT, NPT, PF), flanges (ANSI, JIS, DIN), or Tri-Clamp.

Pay attention to the following for installation.

Installation on the side of a tank (horizontal)

As level is detected with an entire electrode, very sensitive measurement is available. However, build-up causes malfunction. As such, the electrode needs to be installed at a slant with its tip horizontally at the bottom.

Installation on top of a tank (vertical)

This installation reduces the effect of build-up, but level is detected only with the tip of an electrode. As such, it has relatively lower sensitivity and may thus be inadequate for an object to be measured with low dielectric constant.

- To install 2 or more level switches in one container, keep 300mm or more between probes. (If the gap is smaller between probes, they may interfere each other causing instability.)
- For the side installation, the inactive road must be exposed by 50mm or more in the tank with the probe slanted by 15° to the horizontal plane. (Foreign substance between a nozzle and probe may cause malfunction.)
- Keep the probe away from the inlet of measure object, and install a protector to protect the probe.
- Keep the wire inlet facing the ground to maintain its rainproof feature.
- When installing it in low level, be careful with dead stock and material bridge.
- If the measure object is fluid in the tank, set adequate time delay for the output relay.
- Install a sun cover for outdoor installation so as to avoid the influence of temperature rise.
- If there is an agitator, keep safety distance between the agitator and probe.

