CAPACITANCE TYPE LEVEL SWITCH

HCC-95T Series

ISO 14001 ISO 9001 ASME

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Overview

HCC-95T Series is a remote type, capacitance type level switch and it detects the level of medium by sensing of capacitance value change caused by dielectric constant of each medium and makes a signal ascurrent output through 2-wire loop. It can be used with I-CONTROL UNT connecting as 2-wire loop.

Characteristics

Current output type having 2-wire loop powered.

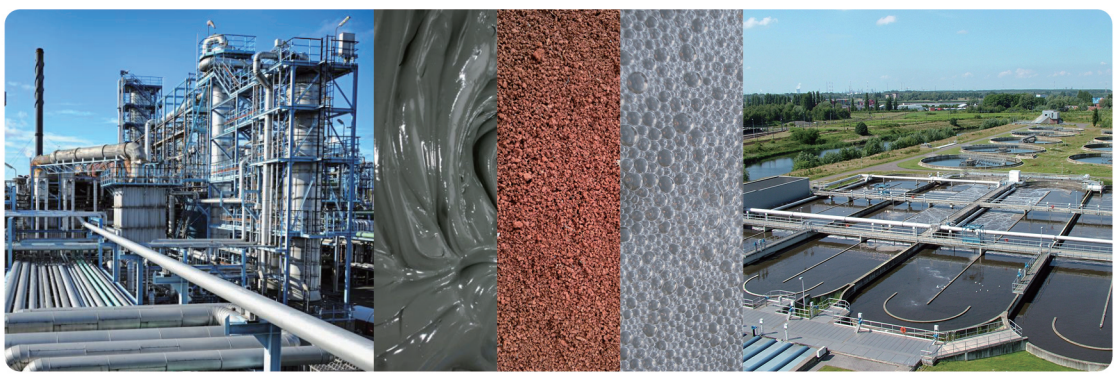
- Digital operating system based on Microprocessor.
- Detecting of various kinds of liquid, powder and solid level.
- Applicable to the medium which has low dielectric constant.
- Easy setting, stable operating and improved maintenance by dial adjustment.
- Adjustment function with Delay and Return Time of Relay.
- Switching function between Relay Contact type. (NO, NC)
- Semi-permanent life cycle due to movelessparts.
- Easy operating check through LED indicator.
- Available to the tank which has an agitator.
- Applicable to corrosive and acidic liquids with anti-corrosive material for the sensor (Teflon)
- Various sensor types can be applied according to installation condition at the site.
- Monitoring function through laptop and/or mobile phone connecting using USB port.

Operation Principle

When an air surrounding the electrode probe is replaced by other medium, the capacitance value is changed according to the dielectric constant of the medium. Once the electrode probe is touched by the medium, the capacitance value is increased.At this moment, changed current signal is detected by the I-Control Unit (or PLC) and relay is activated, producing a contact output signal.

Applications

- Liquid
  Various fuels, Solvent, Acids, Alkali, Liquefied gas and Pure water, etc.
- Mixes Liquid
  Industrial sewage, Urban sewage, Agricultural chemicals, Various sludge and aqueous solutions, etc.
- Interface
  Oil and water, Mercury in the water, Alcohol and acid, Sediment in liquid, Liquid and foam, etc.
- Material
  Clay, Sludge, Varnish, Paint, Grease, Adhesive, Paraffin, Cheese and Honey, etc.
- Powder
  Plastic powder, Rock powder, Carbon, Iron chloride powder, Silt, Sugar and Flour, etc.
- Granule
  Plastic pellet, Metallic pellet, Chemical fertilizer, Medicine, Grain and Food, etc.
- Lump
  Coal, Lime stone, Ore and Aggregate, etc.



CAPACITANCE TYPE LEVEL SWITCH
HCC-95T Series

Specification

▶ HCC-95T Series (Weather Proof Version)

Model	HCC-95T	HCC-95TW	HCC-95TH	HCC-95TWH
Mounting	Screw, Flange			
Process Temperature	Max. 80°C		Max. 150°C (opt. 400°C)	Max. 150°C
Process Pressure	10 Kg/cm^2 (std.), Max. 20Kg/cm^2			
Probe Type	Rod	Rope	Rod	Rope
Enclosure	Weather Proof (PBT: IP65, Aluminum: IP66)		Weather Proof (IP66)	
Housing Cable Entry	PBT ; PF 1/2"(F) AL. ; PF 1/2"(F)		AL. ; PF 1/2"(F)	
Sensor Material	SUS 316L + Teflon			
Length	Rod : 300mm (std.), Max. 2.5m Wire : 1,000mm (std.), Max. 10m			
Power Source	+DC 24V			
Ambient Temperature	-20°C ~ +60°C			
Combination Unit	I-Control Unit or PLC			
Combination Cable	A.W.G 16~26 (+ DC Power, - Current Out)			

▶ AMPLIFIER Specification (M-95T)

Microprocessor	16Bit Microprocessor	
Current Out	Current Control - N.C	Non Detection : 8mA Detection : 16mA
	Current Control - N.O	Non Detection : 16mA Detection : 8mA
Oscillation Frequency	1MHz	
Dielectric Constant	2 @ Min. (Powder/Liquid)	
Sensitivity Resolution	0.1pF	
Current Delay Time Range	0.5Sec. @Min./1Sec. ~ 10Sec. @ 0.1Sec. Resolution	
Current Return Time Range	0.5Sec. @Min./1Sec. ~ 10Sec. @ 0.1Sec. Resolution	
Ambient Temperature	-20°C ~ +60°C	
Current Control	Normal Close @ Default 8mA	
Status Indicator	Bi-Color LED [Green / Red / Orange]	
Detection Indicator	RED LED	
Current Out Indicator	GREEN LED	

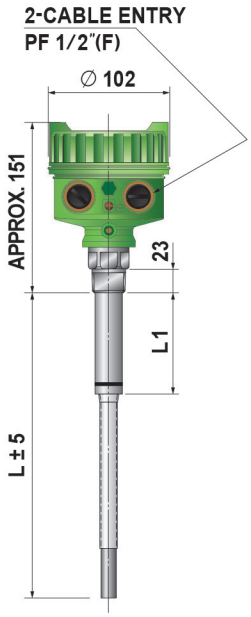
▶ Combination Unit (I-CONTROL UNIT)

Model	I-Control Unit	
Installation	Local	Panel Inside
Ambient Temperature	-20°C ~ +60°C	
Power Source	AC Free (AC 85~264V) (std.), DC 24V (opt.)	
Contact Form	DPDT	SPDT
Contact Rating	AC 250V 5A, DC 30V 5A	
Sensor To Unit Distance	Max. 500M	
Enclosure	Weather Proof (IP65)	-
Housing Material	Aluminum	-
Cable Entry	PF3/4"(F) (std.)	Terminal Block
Appearance		

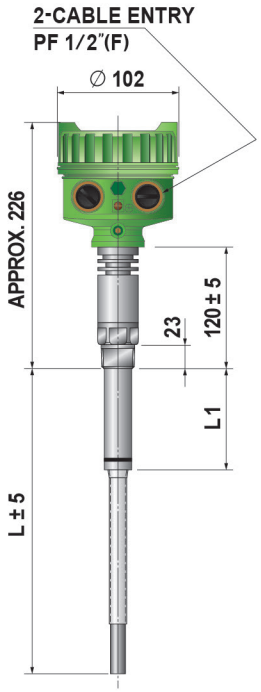
▶ **Order Code** can be printed at our website (www.hitrol.com)

Dimension

HCC-95T

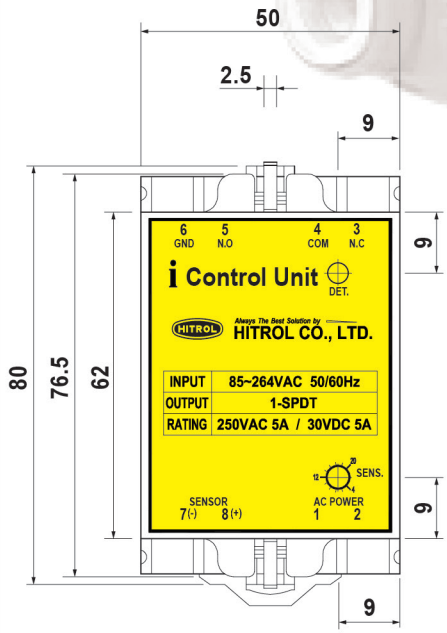


HCC-95TH

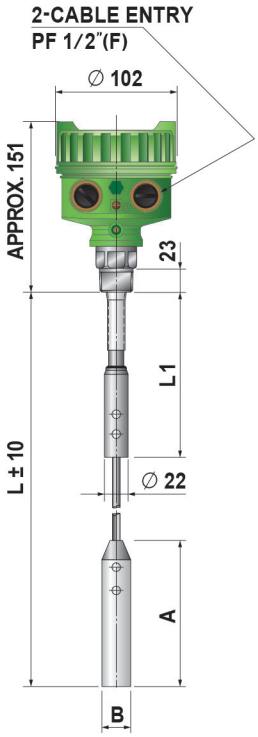


▶ *Conbination Unit*

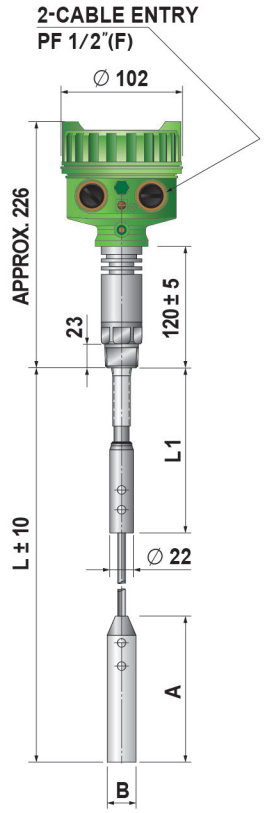
I-CONTROL UNIT (Panel Type)



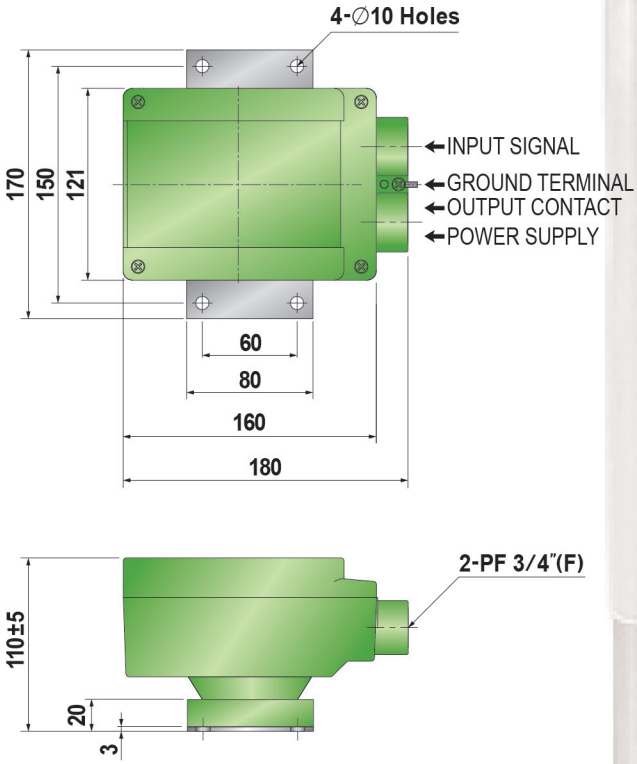
HCC-95TW



HCC-95TWH



I-CONTROL UNIT (Local Type)



■ Actual product may have a tolerance slightly.

Installation

- Below recommendation should be considered when installation.

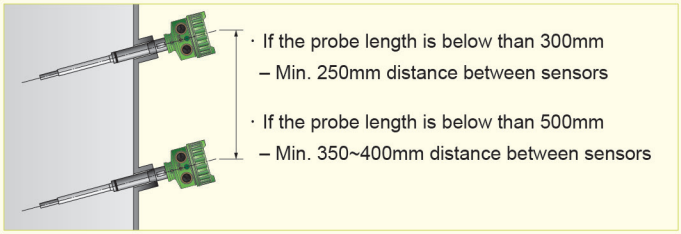
HCC-95P(HPC-95P) Series is generally used for high or low alarm with the installation on the side or top of the tank and can be also applied to metallic or synthetic resin tank because the ground electrode is installed in the level switch and measurement is not affected by tank material.

1. Top Mounting Installation

This installation is not much affected by build-up of the medium on the probe but the sensitivity is lower than side mounting because it measures the level by the end of probe only, and it is not suitable to detect a level of the medium which has a low dielectric constant.

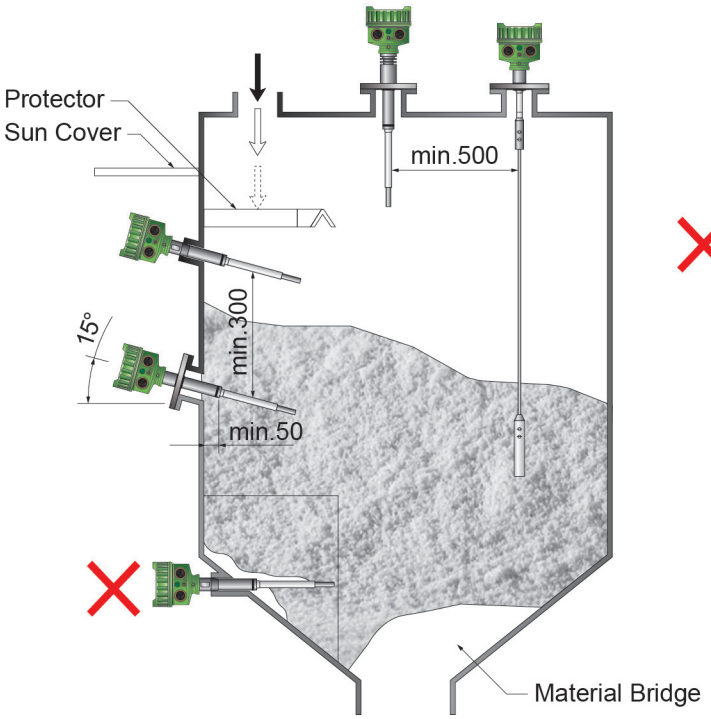
2. Side Mounting Installation

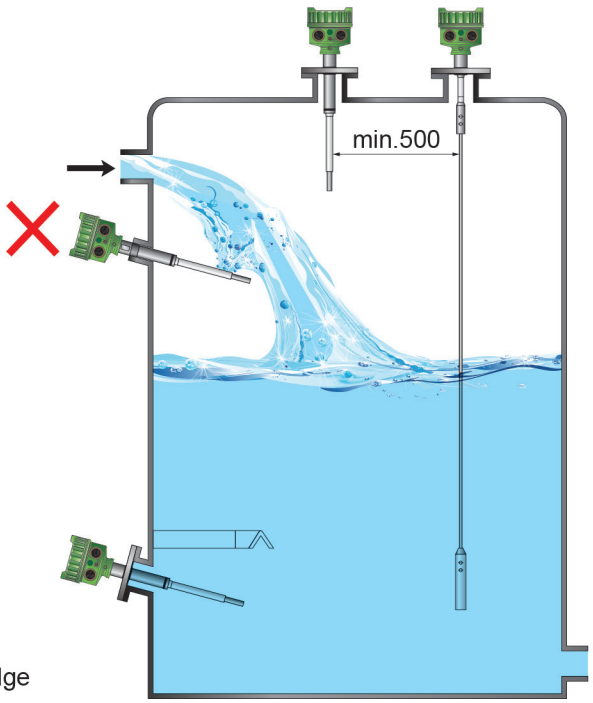
Highly sensitive measurement is available because it measures the level by whole of probe but it should be installed slopingly, forwarding of sensor to the bottom in order to avoid a malfunction caused by build-up of the medium on the sensing probe.



· If the probe length is below than 300mm
– Min. 250mm distance between sensors

· If the probe length is below than 500mm
– Min. 350~400mm distance between sensors

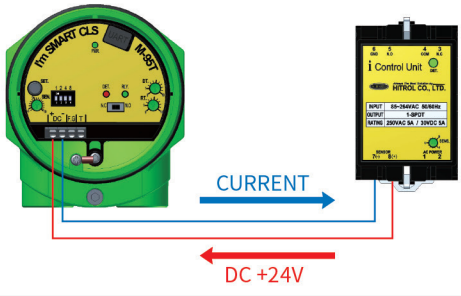




▶ *Wiring*

- Power, AC (85~264V) or DC 24V should be supplied for I-CONTROL UNIT.
- The recommended cable between Level switch and I-Control Unit is A.W.G 16~26.
- When wiring of power supply, + - should be wired correctly.
- Wiring should not be carried when the power is on.
- The external ground mush be completelyconnecte.

HCC-95T with I-Control Unit



CAPACITANCE TYPE LEVEL SWITCH

HCC-95T Series

01 Current output version.
(2-wire loop connection)

02 Applicable to various medium
(Solid, Powder and Liquid)

03 Digital Operating System
based on Microprocessor

04 Easy Auto Setting

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* Design of product can be changed for upgrade without notice.