

## General Information

# HE-Series

Electrode Type  
Liquid Level Sensor



**HITROL CO., LTD.**

## General

The HITROL 's electrode type level switch(HE series)is used for limit detection in tanks containing electrically conductive liquids.

Limit levels can be determined by using one instrument with multi-probe rods.

The rod length depends on the position of the level to be monitored and/or on

whether a filling/empty function is required. Pumps can be protected against dry running by installing this level switch in the piping. Also for use in the food processing industry.

It is not recommended for applications with liquids containing oil or fat which can form an insulating film on the probe rods.

## Operating Principle

This technique is based on the conductivity difference between various materials. Air, for example, has very low conductivity, water in general has a very high conductivity. A low alternating voltage is applied between the electrodes

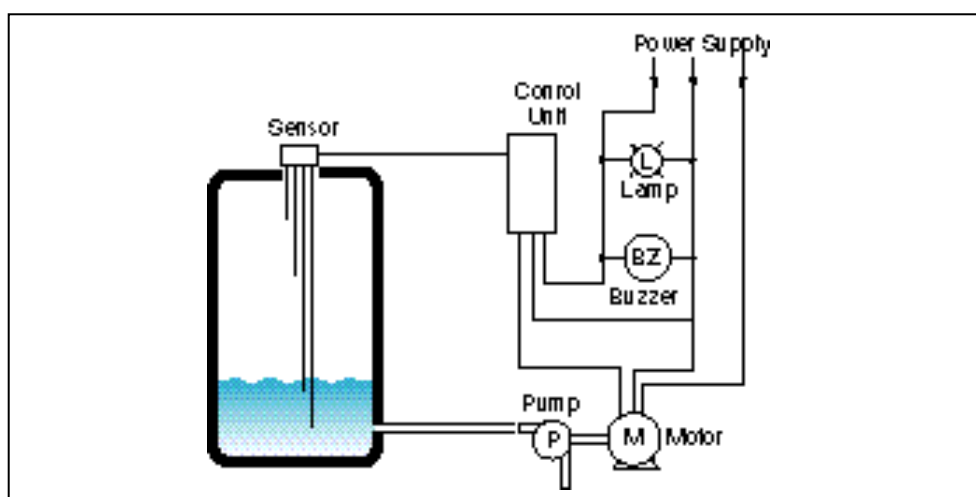
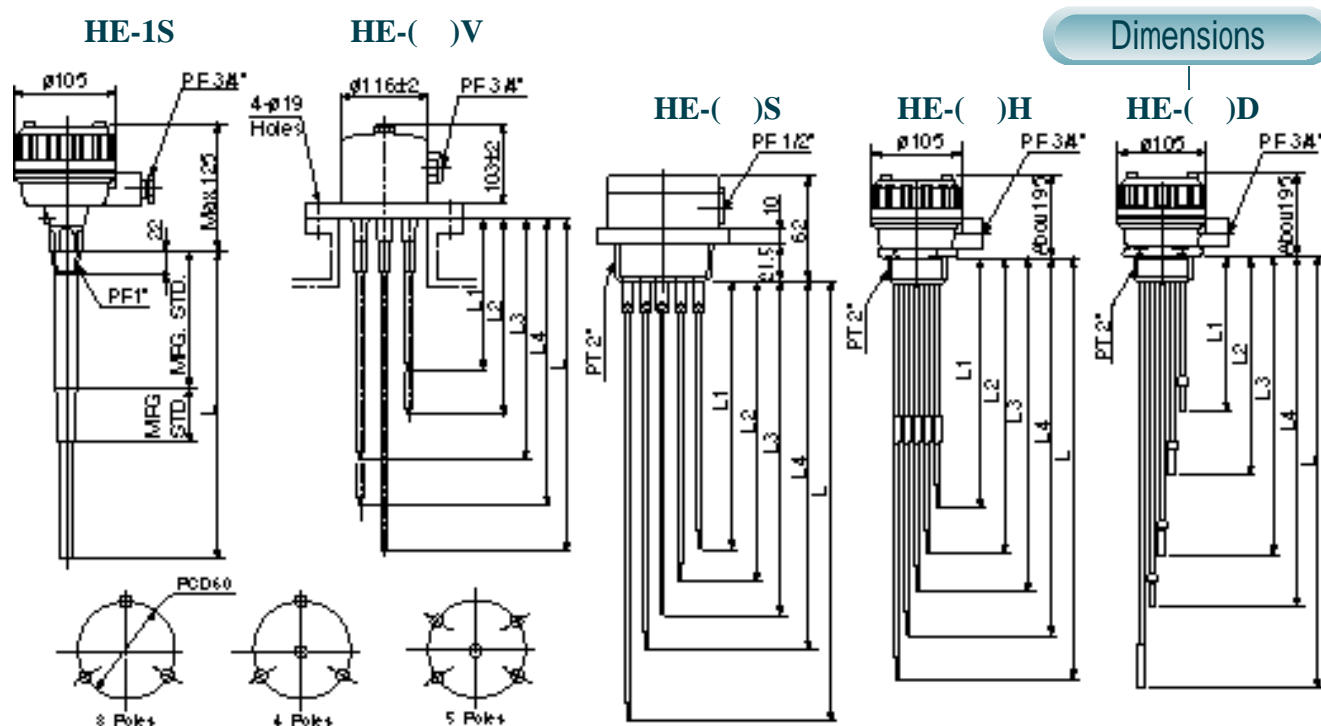
and the conductive container wall. When the filling material reaches the electrode, a small alternating current flows, which is amplified in the measuring devices and which signals the limit level by a changeover relay.

## Features

- 1) No calibration required:  
When normally calibrated, the electrode type level switch operates in almost all electrically conductive liquids : Cost-effective start-up
- 2) No moving parts in tank : Long operating life
- 3) Reliable operation with no wear or blockages
- 4) Multi-point levels detected with only one instrument:  
Direct multi-point control with no complex circuits
- 5) Complete unit consisting of probe with plug-in electrode
  - Simple Mounting
  - Low installation costs
  - For automation and control systems

## Specifications

Model	HE-1S	HE-( )V	HE-( )S	HE-( )H	HE-( )D
Mounting Size	Screw PT1 "	Flange JIS 100A 10K	Screw PT 2 "	Screw PT 2 "	Screw PT 2 "
Electrode Q'ty	1	3. 4. 5	3. 4. 5	3. 4. 5	3. 4. 5
Max. Temperature	80	60	60	250	60
Max. Pressure	10 kg/cm <sup>2</sup>	2 kg/cm <sup>2</sup>	ATM	30 kg/cm <sup>2</sup>	ATM
Insulation	Teflon	PP	PP	Teflon	NBR
Electrode Material	SUS 304 / SUS 316				PVC & SUS 304
Mounting Material	SUS 304	PVC	Bakelite	SUS 304 / SUS 316	
STD.(mm) Electrode Length	200	1000	1000	1000	Option
Use for	High level and one point detection	Sulphuric acid hydrochloric acid tank	General water tank	High pressure and high tem- perature tank	Deep well use



### HLC-200



H/L Control Unit

### HLC-200A



H/L Control with  
sensitivity adjustable

### HLC-200FA



H/L Control Unit  
for Rail Mounting

### HLC-G1



H/L Control  
and LL Alarm

### HLC-G2



H/L Control  
and HH Alarm

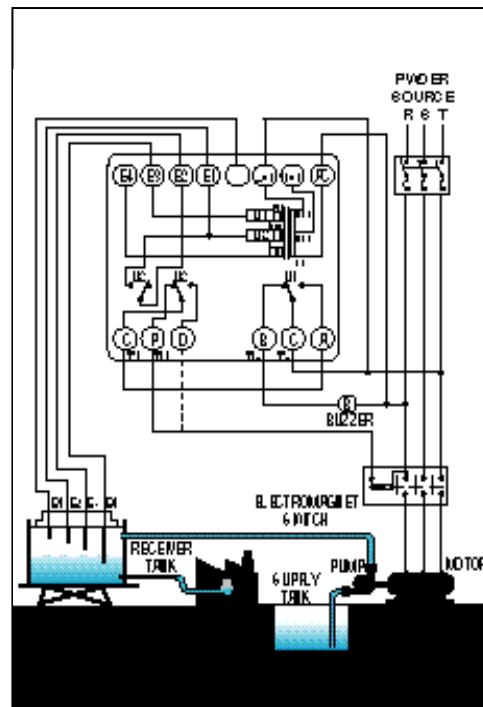
### HLC-300



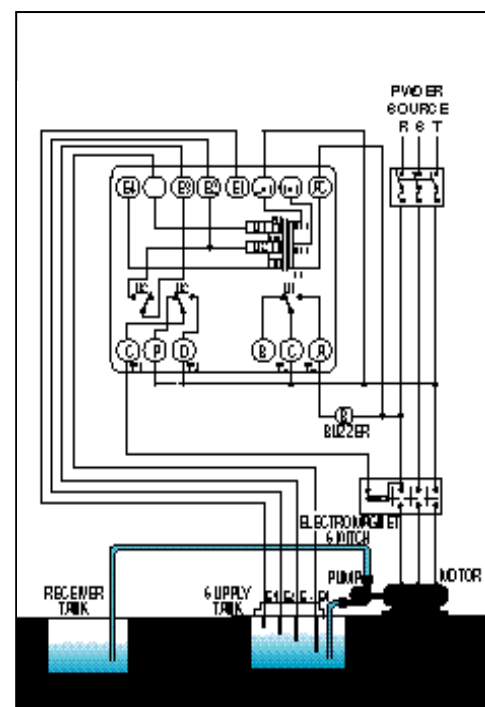
H/L Control  
and HH/LL Alarm

## Combination Unit

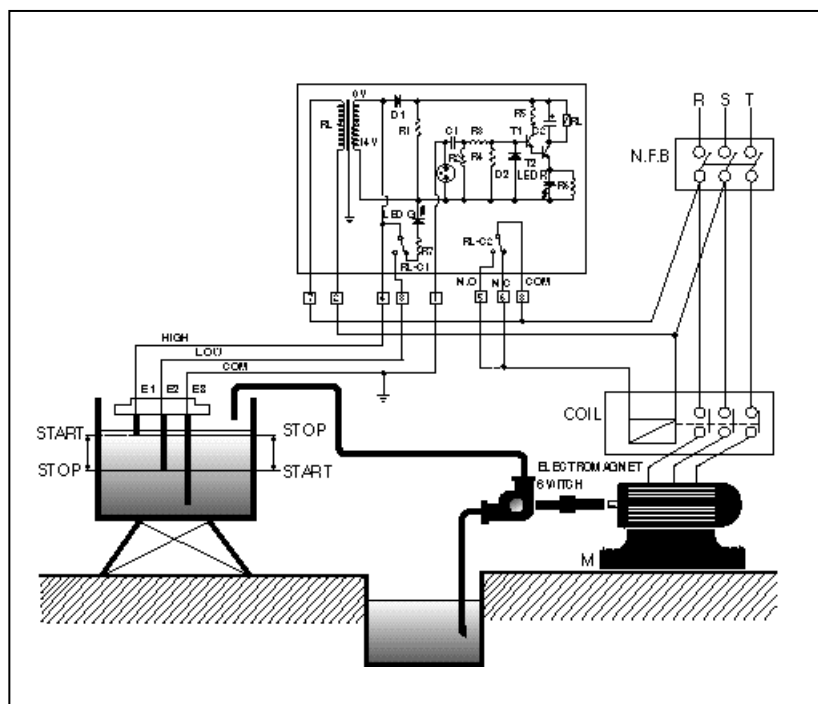
## Connection Diagram



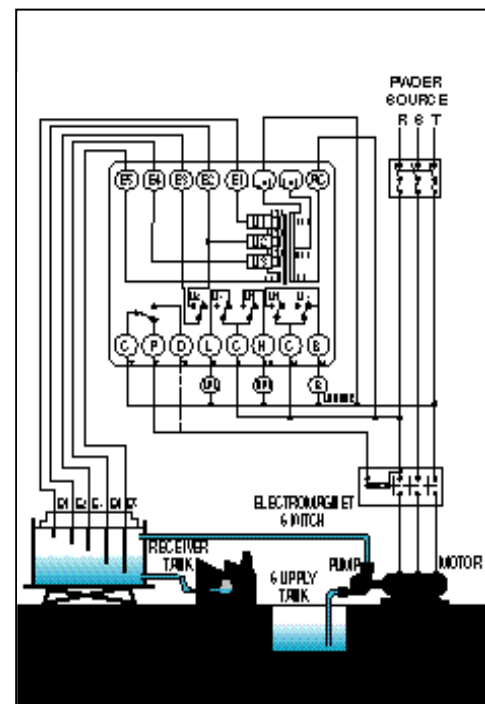
**HLC-G1 Connection Diagram**



**HLC-G2 Connection Diagram**



**HLC-200 Connection Diagram**



**HLC-300 Connection Diagram**

**HITROL** **HITROL CO., LTD.**

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