

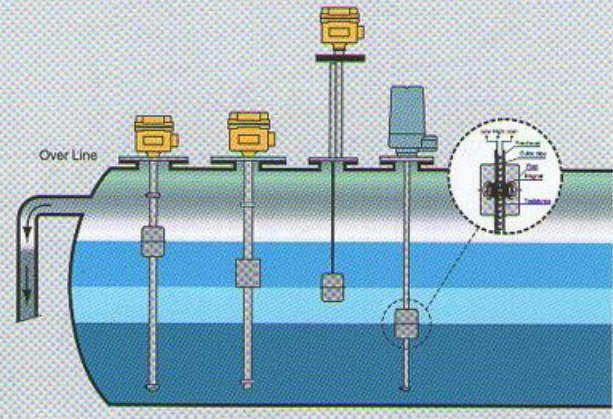


# Float Type Level Transmitter

# DT Series

## Applications

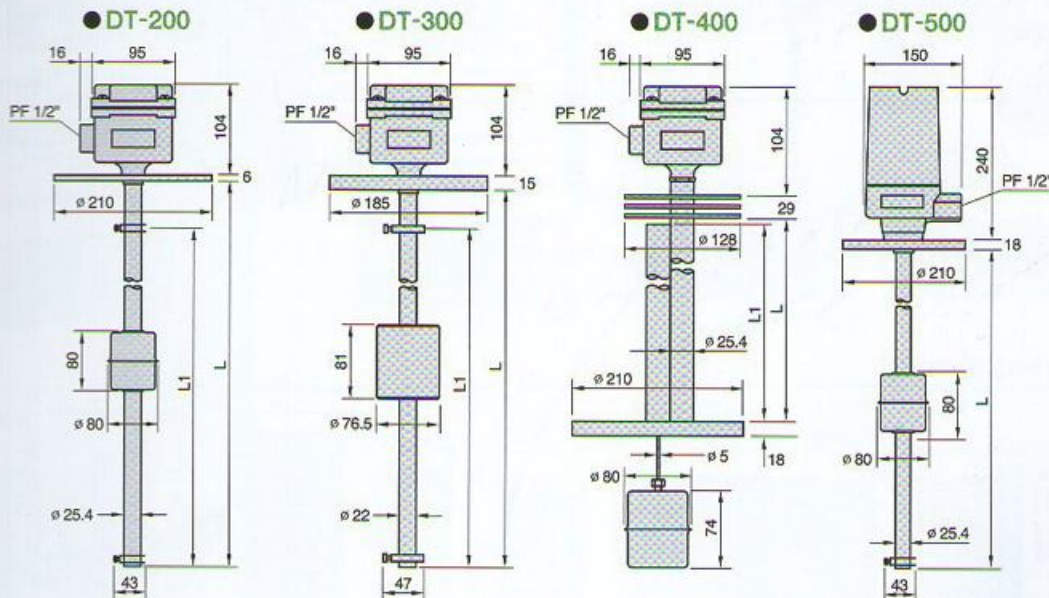
- It is widely used for ordering, controlling and alarming the liquid level.
- The installation is quick and easy and is the most widely used water level measuring device.
- By coating the sensor with P.V.C or PTFE, it is possible to use in the chemical tanks used for special purposes.
- It is possible to consecutively control the motors as many as wanted
- It is a widely used water level measuring device for sewage and waste water.



## Operating principle

By conveying the voltage of DC24V to the sensor and receiving the converted resistance signal, output 4~20mA of electric current to deliver the change of electric current to the unit through the upward and downward movements of float.

## Dimensions[mm]



## Technical Data

Model	Application	Max (°C) Temperature	Max (kg/cm <sup>2</sup> ) Pressure	Switch Contact rating	Min SP.GR	Connection	Material		
							Float	Stem	Housing
DT-200	Liquid	80°C	10	220V/AC 1A	1.0	Screw 2" PT or Jis 10K 100A FF	SUS 304/316	SUS 304/316	Nylon+Glass Fiber
DT-300	Chemical Liquid	40°C 0   5	ATM	220V/AC 1A	1.0		P.V.C	P.V.C	Nylon+Glass Fiber
DT-400	High Temp Liquid	120°C	10	220V/AC 1A	1.0	or Jis 10K 80A FF	SUS 304/316	SUS 304/316	Nylon+Glass Fiber
DT-500	Explosion Proof Type	100°C	10	220V/AC 1A	1.0		SUS 304/316	SUS 304/316	A.L

# DLIC Series

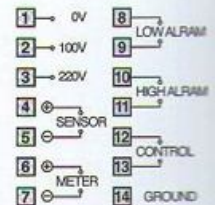
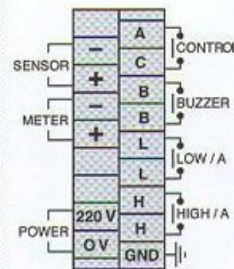
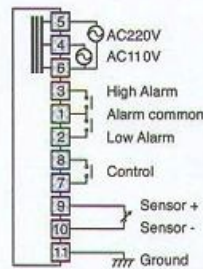
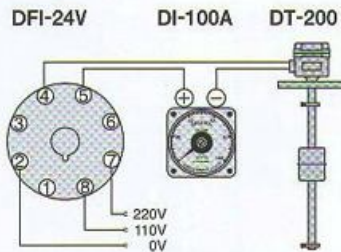
## Applications

- It is possible to be used in the liquid level of degree of fixation.
- The installation is simple and is possible to adjust the on-off switch freely on site.
- Its durability is strong and its wiring work is easy.
- It is possible to see the ordered situations without using the meter directly on site.
- The multiple outputs are possible through special order.

## Power unit / Control unit

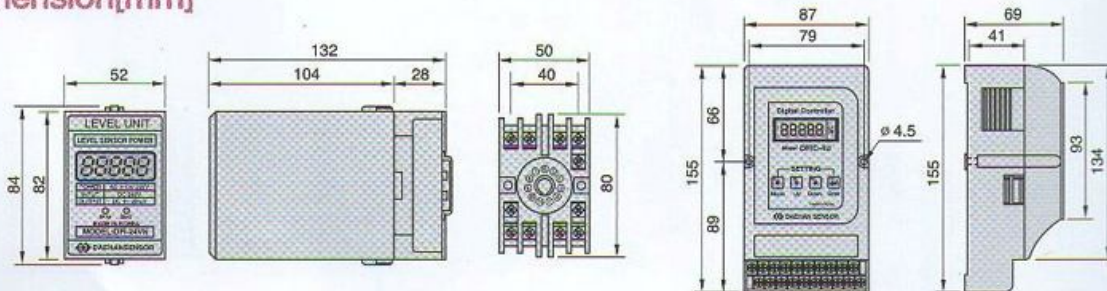


## Wiring



⚠ The HH, H, L, and LL are determined by the setting of the unit.

## Dimension [mm]



## Standard Model and Specifications

Classification	DFI-24V	DFI-24VN	DFIC-4D	DFIC-4U	DFIC-4DN
Type	Digital preset type level indicating controller				
Power	AC220V / 60Hz				
Output	DC4~20mA			DC 4~20mA Control, High/Low Alarm	
Indication	Lamp ON		Digital LED 0~99.5%		

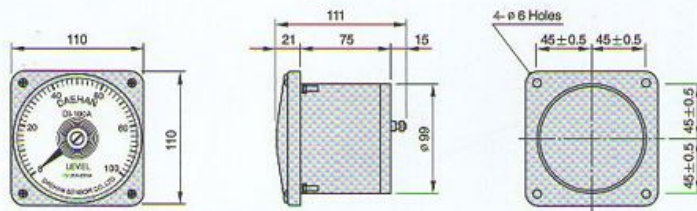
# DI Series

## Applications

- It is a measuring device which receives 4~20mA signal on the level sensor to notify the value of site order.
- It orders with excellent linearity.
- This measuring device is often used in the measuring of gauges for various industries.
- For the qualitative improvement of the product, stated items can be modified.

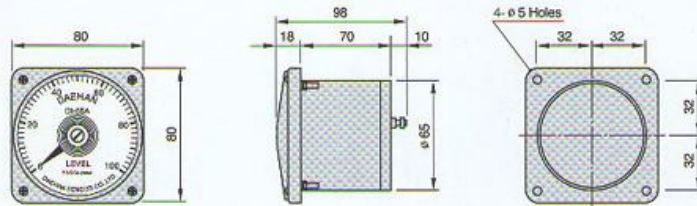
## Level Indicator Dimensions

### • Analog Type DI-100A



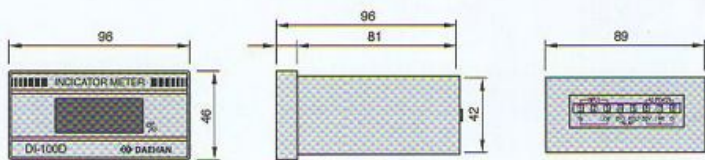
• Unit: mm

### • Analog Type DI-65A



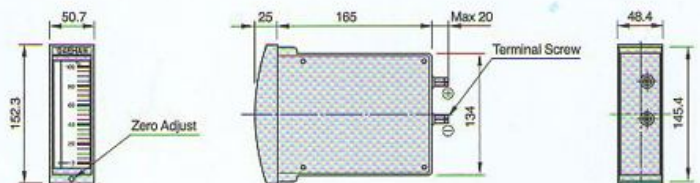
• Unit: mm

### • Digital Type DI-100D



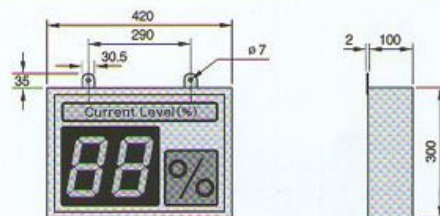
• Unit: mm

### • Ribbon Type DI-152



• Unit: mm

### • Digital Type DI-200D



• Unit: mm



Model:  
DF-300



Model:  
DF-4P



Model:  
DF-4S

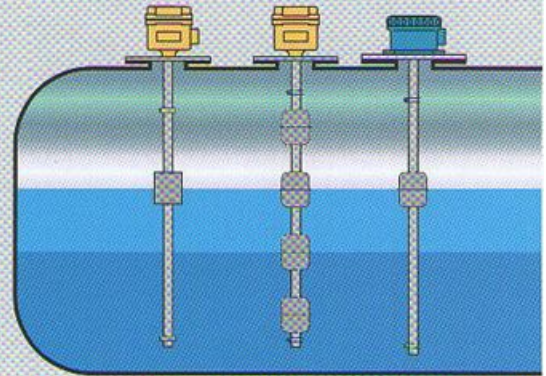
# Float Type Level Sensor



## DF Series

### Applications

- The reed switch type float level sensor is widely used for the seawater, oil, and general liquid.
- It is used in the food storage tanks.
- It is simple to install the machinery and its durability is strong.
- It is applied to the oil and liquid and can be used readily.
- It is widely used in the rooftop high tanks in the apartments.
- It is widely used as condensing water tank and underground tanks.
- It is possible to have multiple output as customized type.

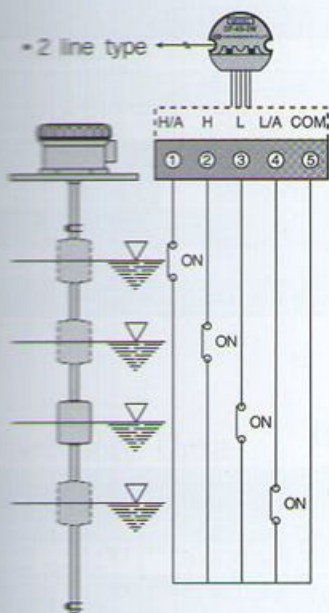


### Operating principle

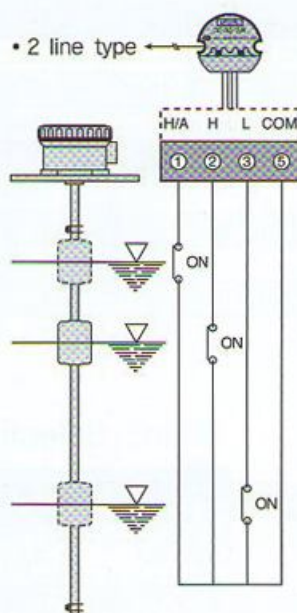
When the liquid level increases or decreases as the power supplied to the unit is connected to a sensor; a relay installed to the unit allows the water supply and piping to operate automatically. It is also possible to check the low water level or high water level warnings. It is equipped with an ability to have consecutive control of 3 motors as a connected control.

### Operating Sequence

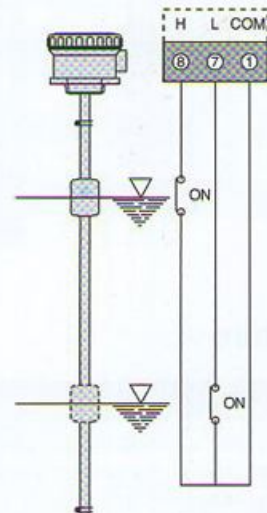
DF-4S or DF-4S-2W



DF-3S or DF-3S-2W



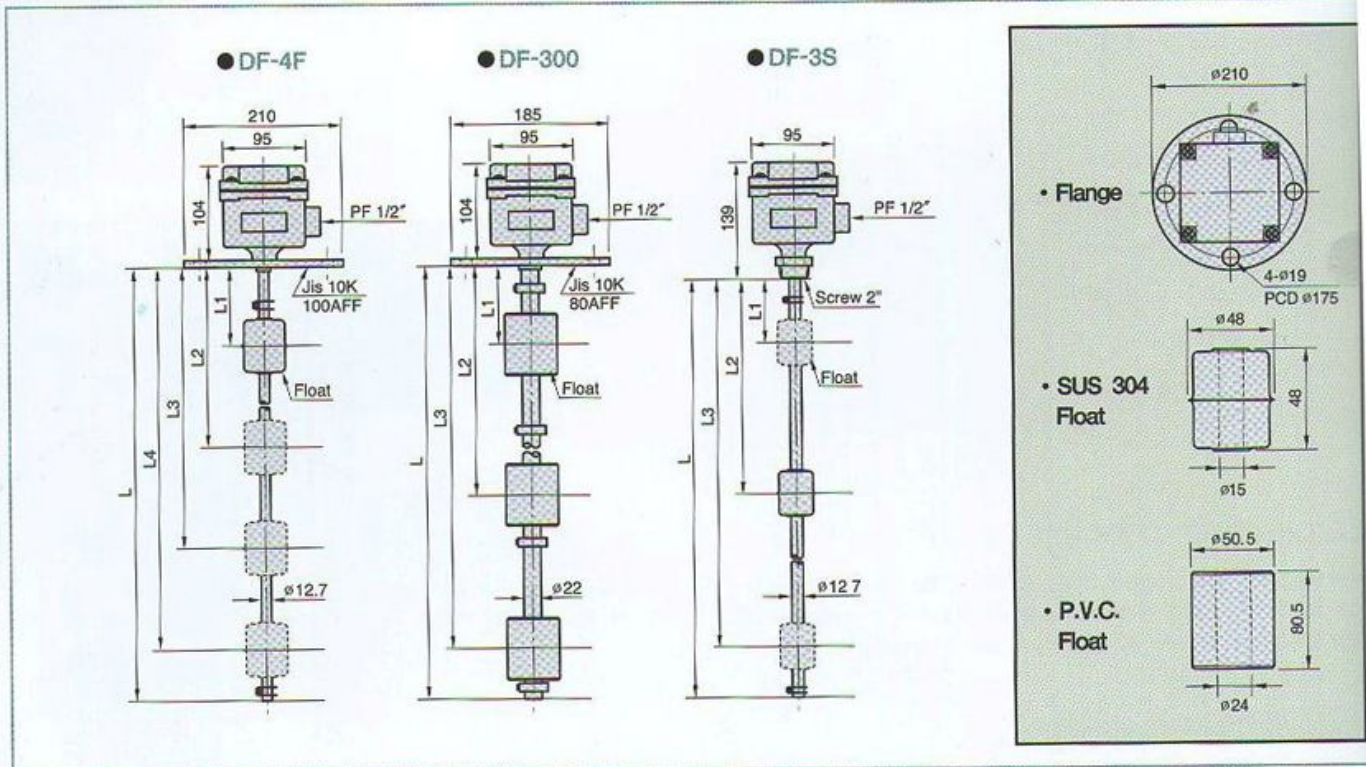
DF-2S



# Float Type Level Sensor

## DF Series

### Dimension [mm]



### Technical Data

Classification	Standard Specification					Special Specification
	Model	DF-2S (H,L)	DF-3S (H,L H/A or L/A)	DF-4S (H,L H/A,L/A)	DF-3S-2W (H,L H/A or L/A)	
Mounting	Screw 2" PT or JIS 10K 100AFF or JIS 10K 80AFF					Customized
Connection	STD PF 1/2"	STD PF 1/2"	STD PF 1/2"	STD PF 1/2"	STD PF 1/2"	
Using pressure	10kg/cm <sup>2</sup>	10kg/cm <sup>2</sup>	10kg/cm <sup>2</sup>	10kg/cm <sup>2</sup>	10kg/cm <sup>2</sup>	Under 30kg/cm <sup>2</sup>
Using Temp.	-10°C~80°C	-10°C~80°C	-10°C~80°C	-10°C~80°C	-10°C~80°C	120°C
Length of Stem	under 4M	under 4M	under 4M	under 4M	under 4M	
Float	SUS 304, 316. P.V.C. PTFE					
Stem	SUS 304, 316. P.V.C. PTFE					
Housing	Nylon + Glass Fiber					

### Feature

- It is possible to be used in the liquid level of degree of fixation.
- The installation is simple
- It is widely used in the sewage plants and the wastewater tanks.
- The corrosiveness is strong
- Since it is possible to have 2line type, the wiring work is simple and the construction cost can be saved.
- It is possible to consecutively control the motors as many as wanted

### Unit Selection Chart

Unit	Operation	Combination
DFC-2U	Relay Contact on,off	DF-2S
DFC-3U	Relay Contact on,off H/A or L/A	DF-3S
DFC-4U	Relay Contact on,off H/A, L/A	DF-4S
DFC-3U-2W	Relay Contact on,off H/A or L/A	DF-3S-2W
DFC-4U-2W	Relay Contact on,off H/A, L/A	DF-4S-2W

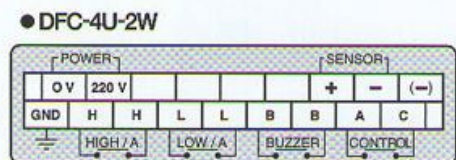
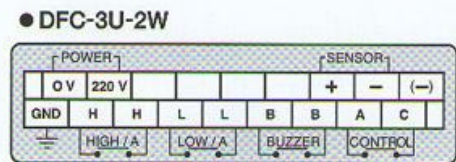
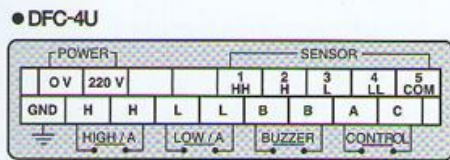
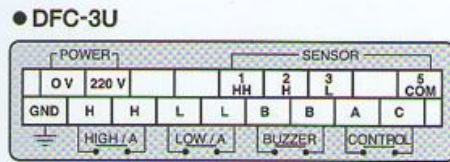
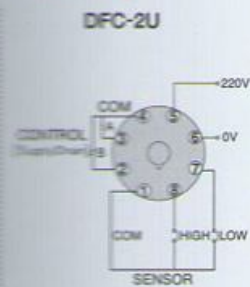
▶ You may find the manual in detail at [www.dh34.com](http://www.dh34.com)

# DFC Series

## Power unit

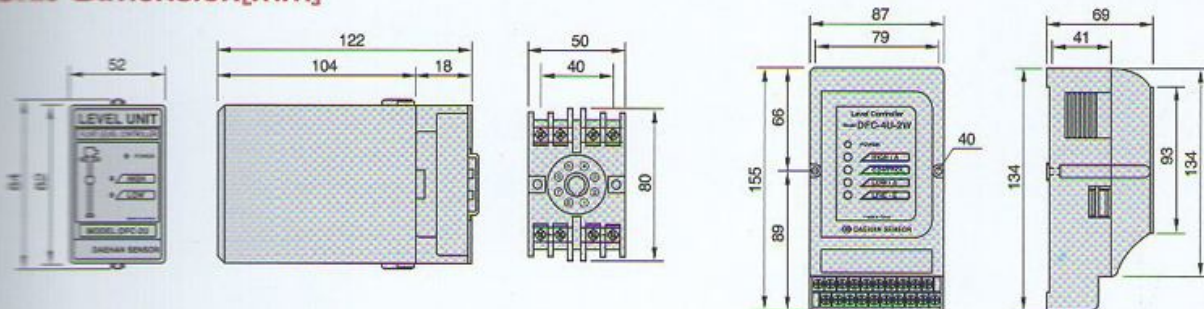


## Wiring



The HH, H, L, and LL is determined by the customer's choice.

## Unit Dimension [mm]



## Technical Data

구분	DFC-2U	DFC-3U	DFC-4U	DFC-3U-2W	DFC-4U-2W
Power Supply	AC220V	AC220V	AC220V	AC220V	AC220V
Contact Rating	AC220V/5A	AC220V/5A	AC220V/5A	AC220V/5A	AC220V/5A
Out put Contact	1SPDT	1SPST, 1DPST	1SPST, 2DPST	1SPST, 1DPST	1SPST, 2DPST
Ambient Temp	Max 60°C	Max 60°C	Max 60°C	Max 60°C	Max 60°C
Weight	320g	540g	540g	540g	540g

> The power supply can be used as AC100V or 24V according to the user's choice.

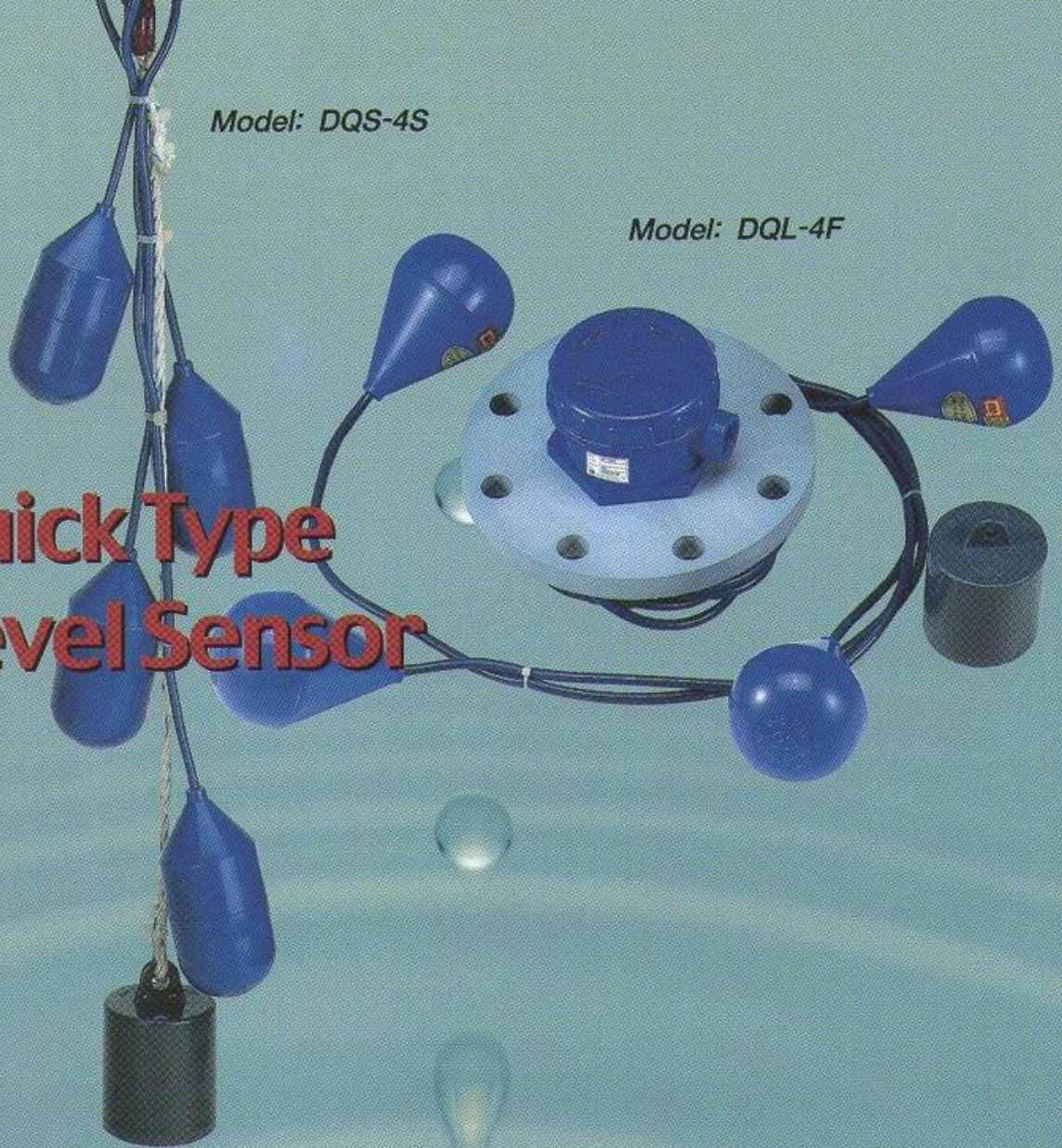
Quick Type Level Sensor



Model: DQS-4S

Model: DQL-4F

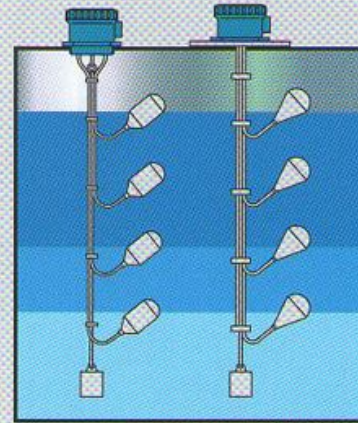
**Quick Type  
Level Sensor**



# DQ Series

## Applications

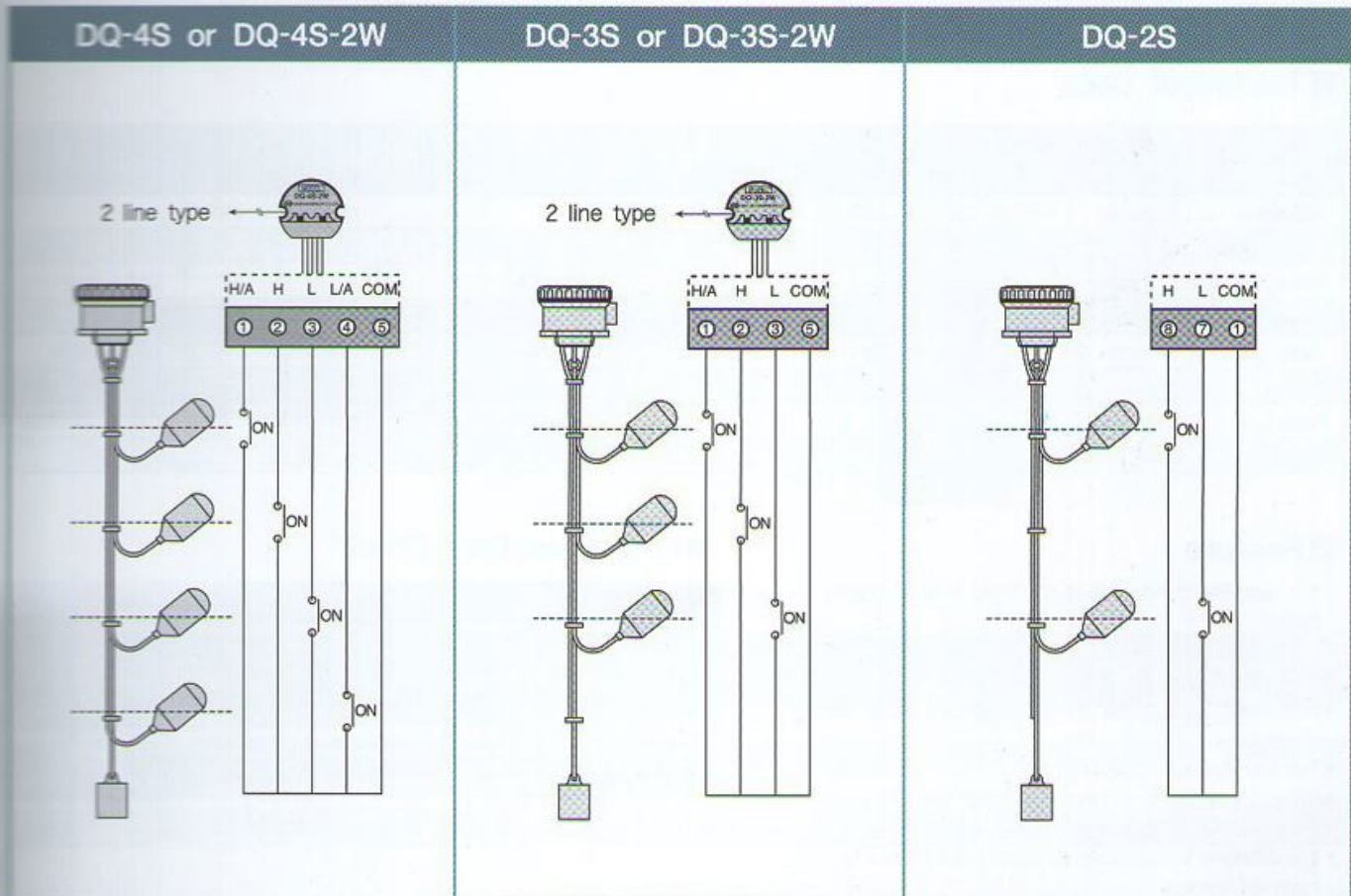
- It is widely used for water tanks and tanks with high corrosiveness
- It is widely used for tanks for drainage.
- It is widely used for wastewater tanks
- It is used in diverse water tanks



## Operating principle

- By installing the micro S/W inside the quick float, it is possible to operate it to the wanted location, operate the pump, or have the alarm sound by having the float to emerge due to buoyancy to become on (point A) or off (point B).
- It is equipped with a function to step control (have connection control) 3 motors.

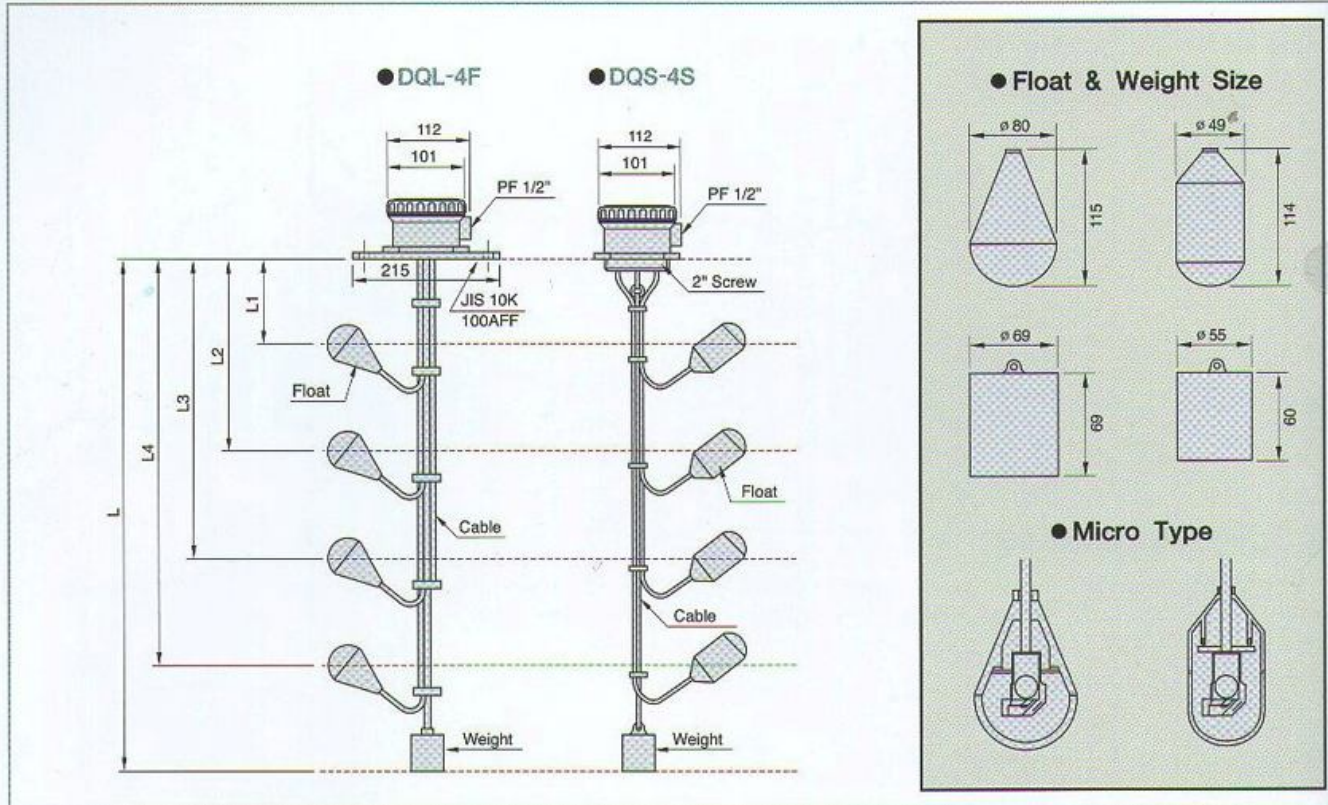
## Operating Sequence



## Quick Type Level Sensor

**DQ Series**

## ■ Dimension [mm]



## ■ Technical Data

Classification	Standard Specification					Special Specification
	DQ-2S	DQ-3S	DQ-4S	DQ-3S-2W	DQ-4S-2W	
Mounting	Screw 2" PF or	JIS 10k 100A FF or	JIS 10k 80A FF			possible to order
Connection	STD PF 1/2"	STD PF 1/2"	STD PF 1/2"	STD PF 1/2"	STD PF 1/2"	
Using Pressure	A.T.M	A.T.M	A.T.M	A.T.M	A.T.M	below 5kg/cm <sup>2</sup>
Using Temp.	None	None	None	None	None	
Stem Length	under 4M	under 4M	under 4M	under 4M	under 4M	under 100M
Float	A.B.S.	A.B.S.	A.B.S.	A.B.S.	A.B.S.	possible to order
Cable	soft PVC	soft PVC	soft PVC	soft PVC	soft PVC	possible to order
Weight	SS+P.V.C	SS+P.V.C	SS+P.V.C	SS+P.V.C	SS+P.V.C	possible to order

## ■ Feature

- It is possible to be used in the liquid level of degree of fixation.
- The installation is simple and is possible to adjust the on-off switch freely on site.
- It is widely used in the sewage treatment plants and water tanks
- The corrosiveness is strong
- Since it is possible to have 2line type, the wiring work is simple and the construction cost can be saved.
- It is possible to consecutively control the motors as many as wanted.

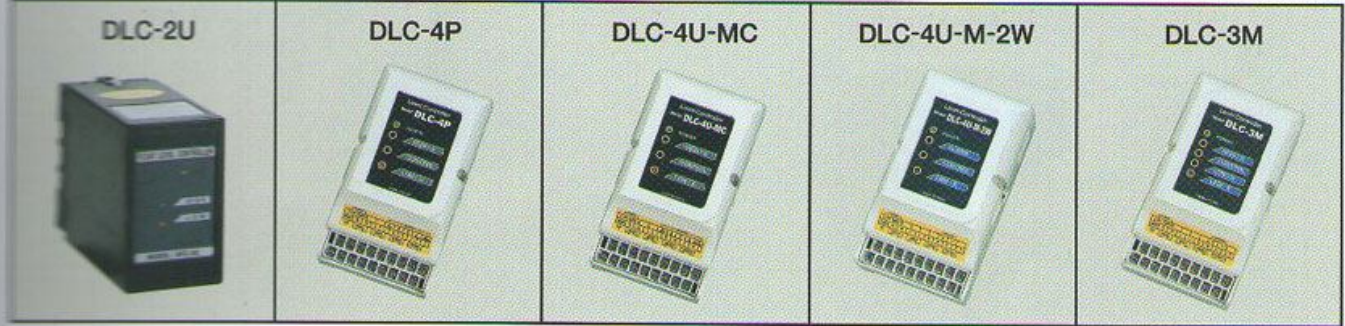
## ■ Unit Selection Chart

UNIT	Operation	Sensor
DLC-2U	Start, stop	DQ-2S
DLC-3U	Start, stop Hi/Alarm or Low/Alarm	DQ-3S
DLC-4U	Start, stop Hi/Alarm, Low/Alarm	DQ-4S
DLC-3U-2W	Start, stop Hi/Alarm or Low/Alarm	DQ-3S-2W
DLC-4U-2W	Start, stop Hi/Alarm, Low/Alarm	DQ-4S-2W

▷ You may find the manual in detail at [www.dh34.com](http://www.dh34.com)

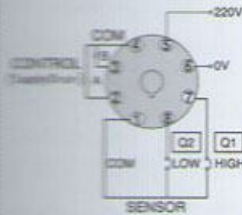
# DLC Series

## Power unit

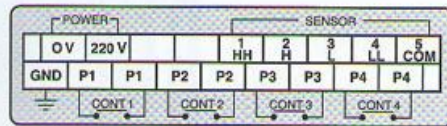


## Wiring

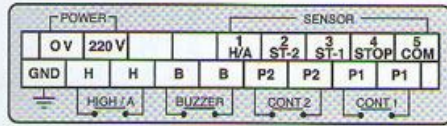
### ● DLC-2U



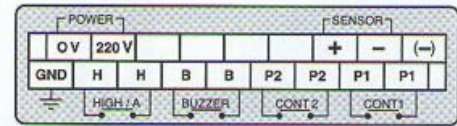
### ● DLC-4P



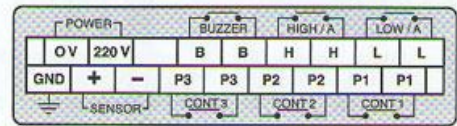
### ● DLC-4U-MC



### ● DLC-4U-M-2W

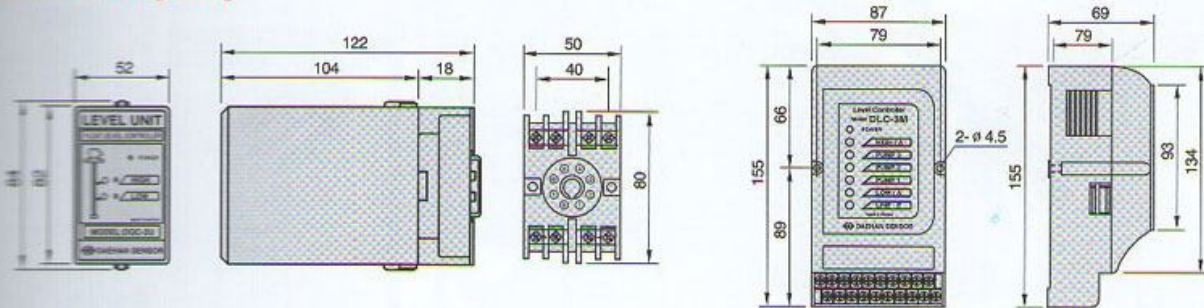


### ● DLC-3M



The power supply can be AC110V according to the user's choice.

## Dimension [mm]



## Technical Data

Classification	DLC-2U	DLC-4P	DLC-4U-MC	DLC-4U-M-2W	DLC-3M
Power Supply	AC220V	AC220V	AC220V	AC220V	AC220V
Contact Rating	AC220V/5A	AC220V/5A	AC220V/5A	AC220V/5A	AC220V/5A
Out put Contact	1SPDT	4SPST	2SPST, 1DPST	2SPST, 1DPST	3SPST, 2DPST
Ambient Temp	None	None	None	None	None
Weight	320g	540g	540g	540g	540g



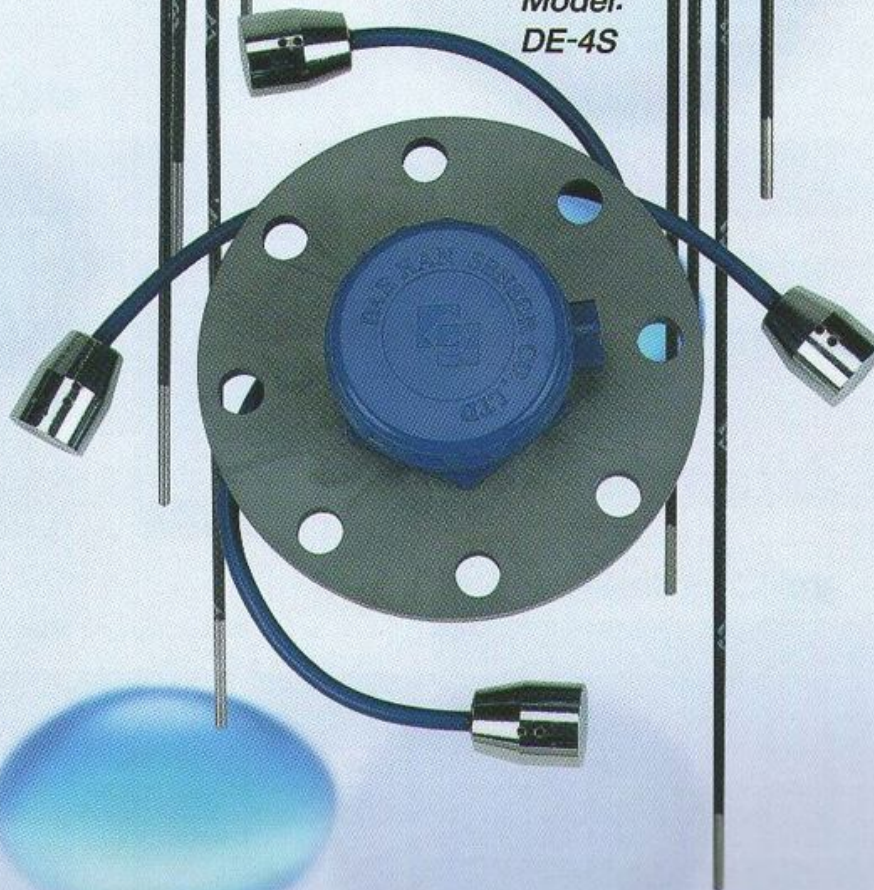
Model:  
DE-5H-2W



Model:  
DE-5P

# Electrode Type Level Sensor

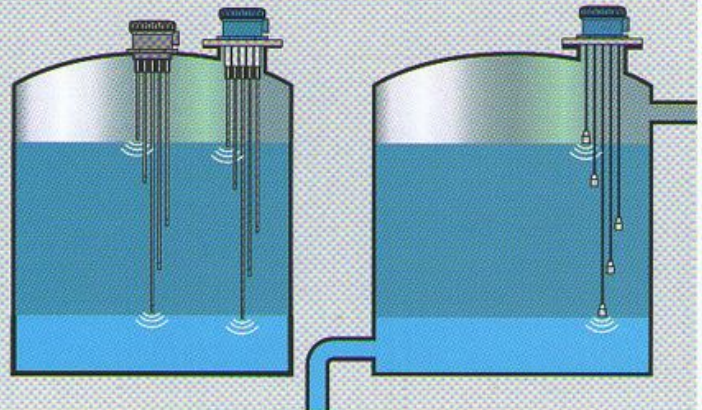
Model:  
DE-4S



# DE Series

## Applications

- It is used in the wastewater and water-purifying tanks.
- It is widely used in deep tubular well pumps.
- It is used in food and beverage tanks.
- It is used in underground water tanks and high water tanks.
- It is used in drainage tanks
- It is used in various water tanks.
- The installation is quick and simple.

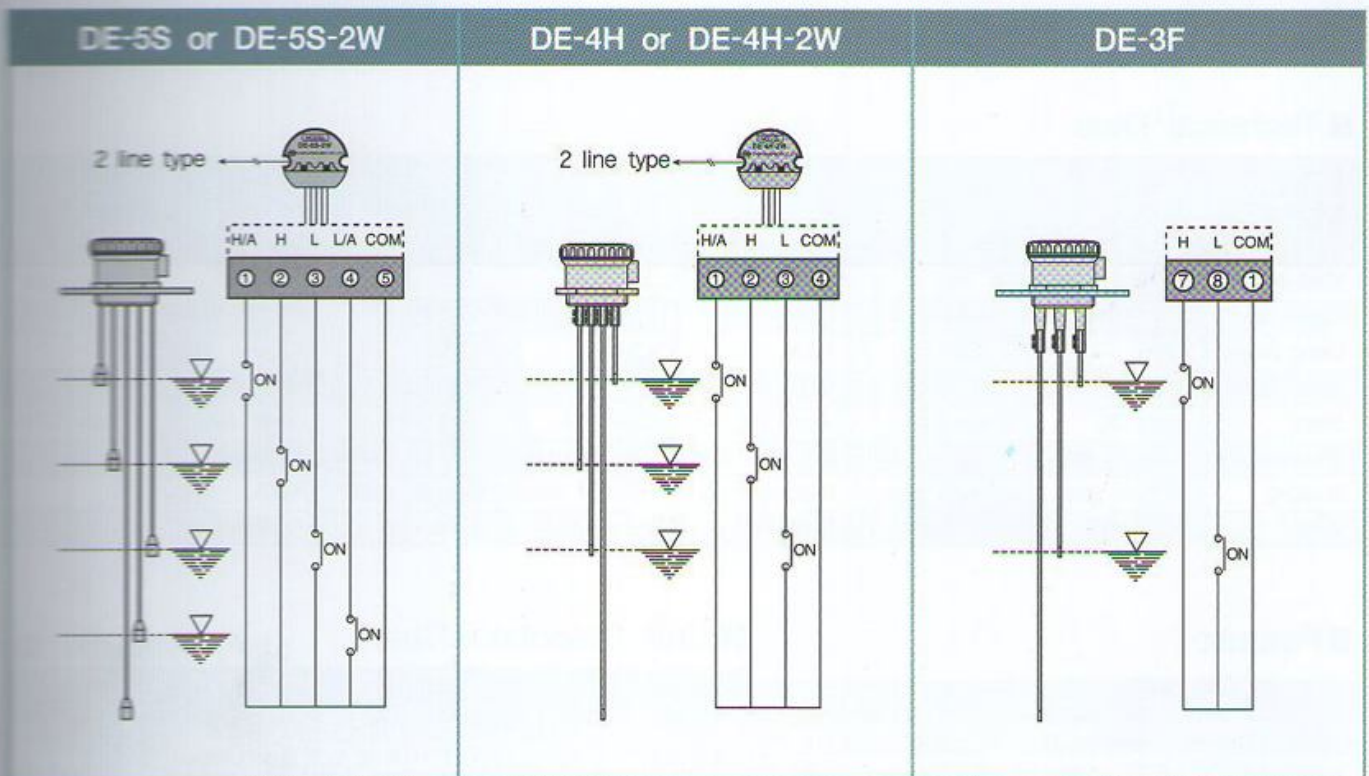


## Operating principle

- When the liquid level increases or decreases as the power supplied to the unit are connected to a sensor, a relay installed to the unit allows the water supply and piping to operate automatically.

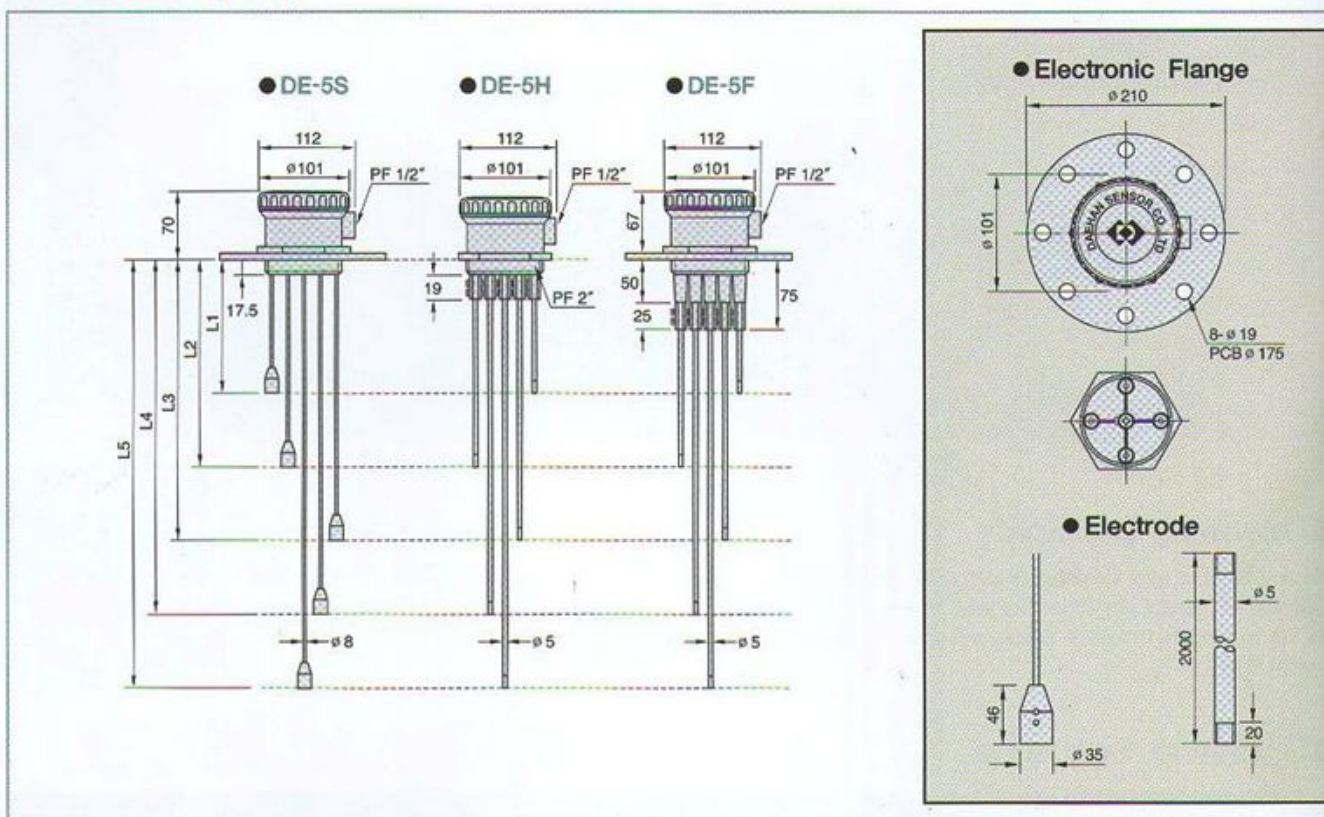
- It is also possible to check the low water level or high water level warnings. It is equipped with an ability to have set control (consecutive control of) 3 motors.

## Operating Sequence



# DE Series

## Dimension [mm]



## Technical Data

Classification	Standard Specification						Special
Model	DE-3H	DE-4H	DE-5H	DE-4H-2W	DE-5H-2W	DE-5S (DE-5S-2W)	Specification
Mounting	Screw 2" or JIS10K 100A FF or JIS10K 80A FF						Pos. to order
Connection	STD PF 1/2"	STD PF 1/2"	STD PF 1/2"	STD PF 1/2"	STD PF 1/2"	STD PF 1/2"	
Using Press.	A.T.M.	A.T.M.	A.T.M.	A.T.M.	A.T.M.	A.T.M.	
Using Tem.	-0°C~40°C	-0°C~40°C	-0°C~40°C	-0°C~40°C	-0°C~40°C	-0°C~40°C	
Stem	Under 2M	Under 2M	Under 2M	Under 2M	Under 2M	Under 4M	Under 100M
Electrode	SUS 316, 304	SUS 316, 304	SUS 316, 304	SUS 316, 304	SUS 316, 304	Brass + Plating	
Housing	Phenolic resin	Phenolic resin	Phenolic resin	Phenolic resin	Phenolic resin	A.B.S.	
Joint	Brass + Ni	Brass + Ni	Brass + Ni	Brass + Ni	Brass + Ni	Brass + Ni	

## Feature

- It is used in the conductive liquid level measurement.
- It is widely used in the sewage or wastewater tanks
- When using in a chemical plant, it is possible to be used by having a PTFE coating on the electrode (selection specification)
- Since it is possible to have 2line type, the wiring work is simple and the construction cost can be saved.
- The installation and handling are simple.
- It is possible to consecutively control the motors as many as wanted

## Unit Selection Chart

Unit	Operation	Sensor
DLC-2U	Relay Contact (High/Low) or Pump ON,OFF	DE-3H
DLC-3U	Pump ON,OFF H/A or L/A(4point,4wire)	DE-4H
DLC-4U	Pump ON,OFF H/A, L/A(5point,5wire)	DE-5H
DLC-3U-2W	Pump ON,OFF H/A or L/A(4point,2wire)	DE-4H-2W
DLC-4U-2W	Pump ON,OFF H/A, L/A(5point,2wire)	DE-5H-2W

▶ You may find the manual in detail at [www.dh34.com](http://www.dh34.com)

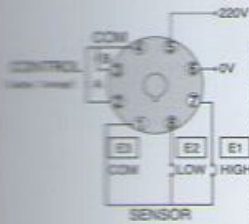
# DLC Series

## Power unit / Control unit

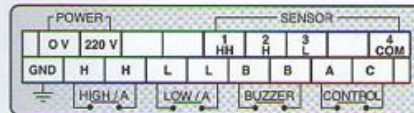


### Wiring

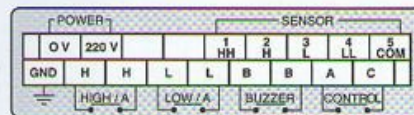
#### ● DLC-2U



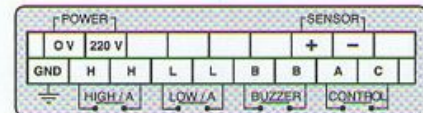
#### ● DLC-3U



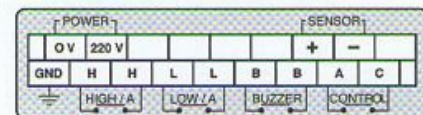
#### ● DLC-4U



#### ● DLC-3U-2W

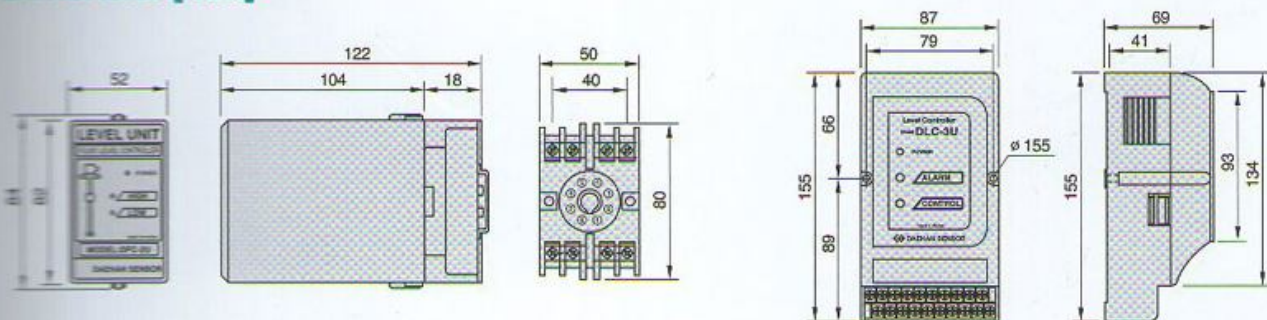


#### ● DLC-4U-2W



The HH, H, L, and LL are determined by the customer's choice.

### Dimension [mm]



### Technical Data

Classification	DLC-2U	DLC-3U	DLC-4U	DLC-3U-2W	DLC-4U-2W
Power Supply	AC220V	AC220V	AC220V	AC220V	AC220V
Contact Rating	AC220V/5A	AC220V/5A	AC220V/5A	AC220V/5A	AC220V/5A
Out put Contact	1SPDT	1SPST, 1DPST	1SPST, 2DPST	1SPST, 1DPST	1SPST, 2DPST
Ambient Temp	None	None	None	None	None
Weight	320g	540g	540g	540g	540g

The power supply can be AC110V or 24V according to the user's choice.

*Model:  
DGL-200  
DGL-200L*



*Model:  
DGS-100*



*Model:  
DGS-100A*



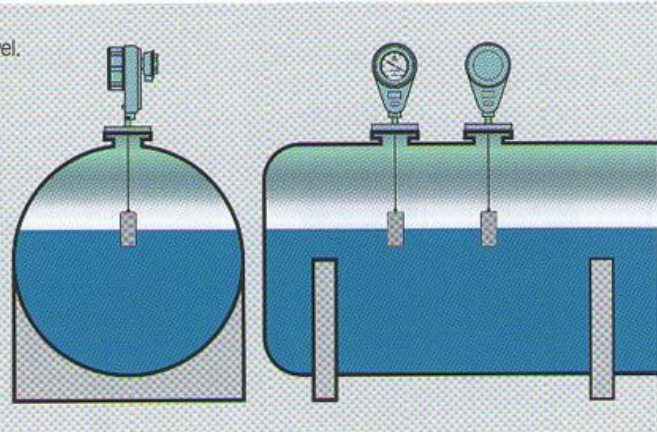
# **Gear Type Level Transmitter**



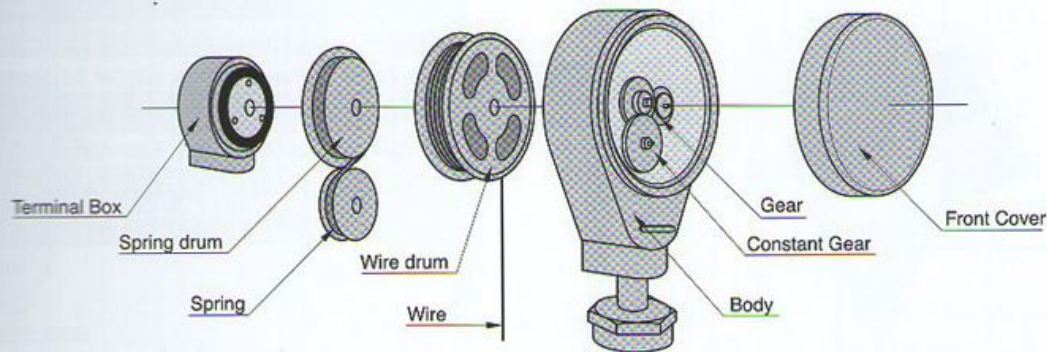
# DGL Series

## Applications

- It is widely used for ordering, controlling and alarming the liquid level.
- It is used in the water tanks and high tanks.
- It is used in the wastewater and water-purifying tanks.
- It is widely used in deep tubular well pumps.
- It is used in the medical chemicals tanks and chemical tanks.
- It is widely used in the diverse water tanks.



## Drawing of Parts



## Feature

It is easy to be installed in the tanks without ceiling level. Both the site demanding and remote demanding are possible. Also, the transportation, installation and test operation are very convenient. To allow connection to the adjacent machineries, the DC4~20mA output transmission is possible. It is easier and more accurate than the float type which is most widely used currently and presents an outstanding performance.

## Operating principle

When the buoyancy generated in the float is delivered to the rotating spring, the gear rotates as much as the movement scope according to the internal gear connected to the spring to perform site demanding.

The way to transmit the electric current signal to the outside is sending a signal by installing a potentiometer converter.

## Technical Data

Classification	DGS-100	DGS-100A	DGL-200	DGL-200L	Special Specification
Type	Remote Indicator	Remote Indicator	Local & Remote Indicator	Local Indicator	-
Power Supply	DC 24V	DC 24V	DC 24V	-	-
Output Signal	4~20mA	4~20mA	4~20mA	-	-
Range	Max 6M	Max 6M	Max 6M	Max 6M	poss. to order up to 12M
Pressure	ATM	ATM	ATM	ATM	-
Connection	JIS 10k 100A FF or JIS 10k 80A FF or Screw 2" PT or Screw 2" PF				
Material	Housing: A.D.C or A.B.S Wire: SUS304 or SUS316 Float: SUS304 or SUS316 or A.B.S or P.V.C				

# DGL Series

## ■ Selection

- DGL-200
- DGL-200L
- DGS-100

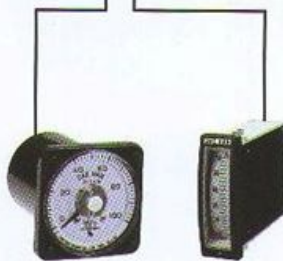


Sensor



DFIC-4U

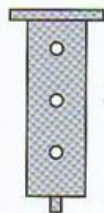
Unit



DI-100A

DI-152

Indicator



Chamber

Chamber

Model	Specification
DGS-100	Remote Indicator
DGL-200	Local & Remote Indicator
DGL-200L	Local Indicator

Model	Specification
DFI-24V	Power Supply
DFI-24VN	Power Supply (digital LCD)
DFIC-4U	Hi/Alarm, H,L Low/Alarm
DFIC-4D	Hi/Alarm, H,L Low/Alarm
DFIC-4DN	Hi/Alarm, H,L Low/Alarm (Panel attachment type)

Model	Classification
DI-100A	Analog indicating instrument
DI-100D	Digital indicating instrument
DI-152A	Vertical type indicating instrument

YES / NO

Coating : PVC

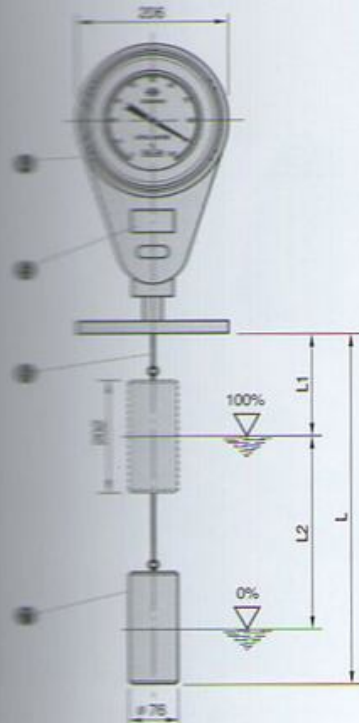
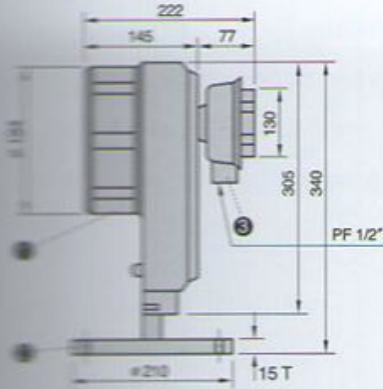
## ■ Cautions in Use

- A chamber must be installed to a tank with liquidity on the surface by a whisk.
- It can not be used in a pressure tank or a high-temperature tank.
- Do not move the float up or down rapidly.

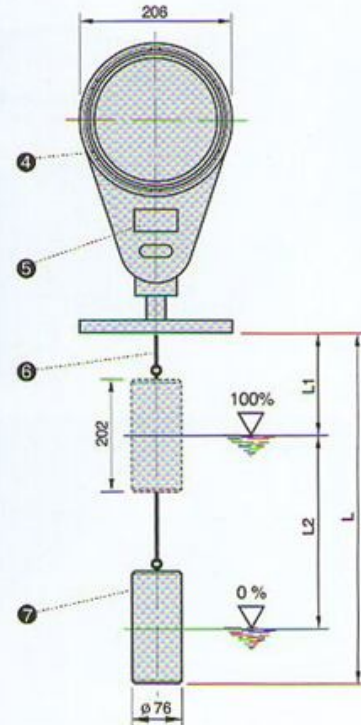
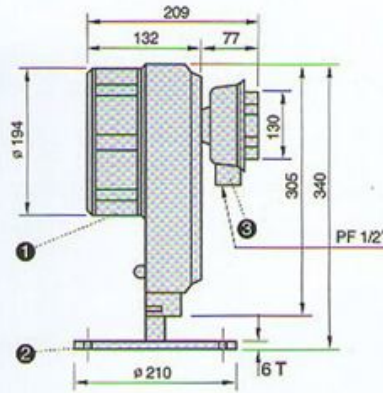
# DGL Series

## Dimension [mm]

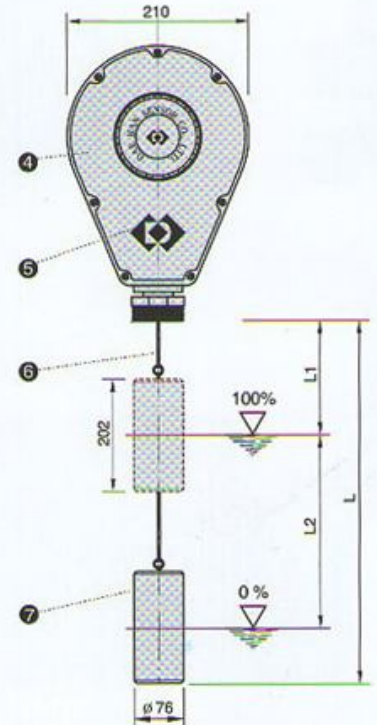
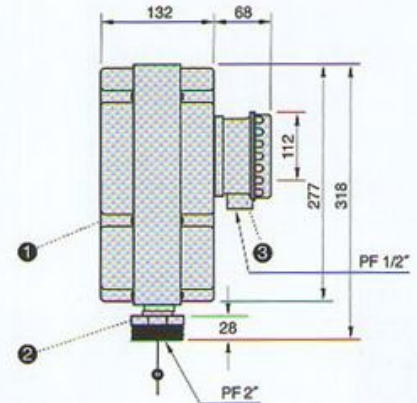
● DGL-200, 200L



● DGS-100



● DGS-100A



## Overall Dimension

Name of Part	Front cover	Flange	Terminal Box	Body	Name Plate	Wire	Float
Material	ADC12 or A.B.S	SUS 316,304 or A.B.S	ADC 12 or A.B.S	ADC 12 or A.B.S	Aluminum	SUS 304,316 SUS P.P Coating	SUS 304,316 A.B.S P.V.C
Number	①	②	③	④	⑤	⑥	⑦

Model: DPS-500



Model: DPS-1000

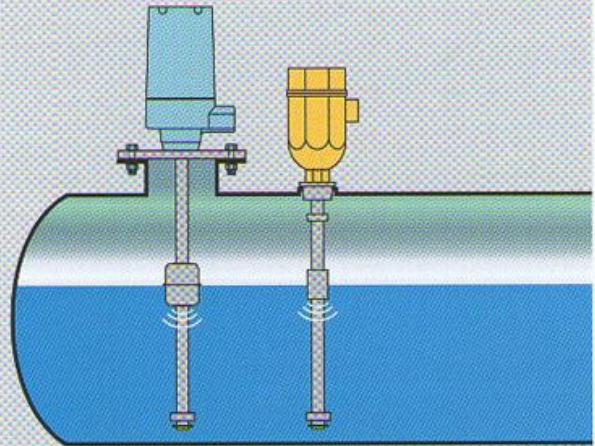


# Magnetostrictive Displacement Transmitter

# DPS Series

## Applications

- The microprocessor is installed inside that it is possible to measure very accurate values.
- The installation is easy and economical and usually used in the oil storage tank.
- The cost can be saved and high quality is ensured.
- If customized order is possible according to the user's choice
- It is used in the liquid tanks that demand various accurate measures
- It is used in situations where the cylinder measuring device and accurate measurement amounts are measured



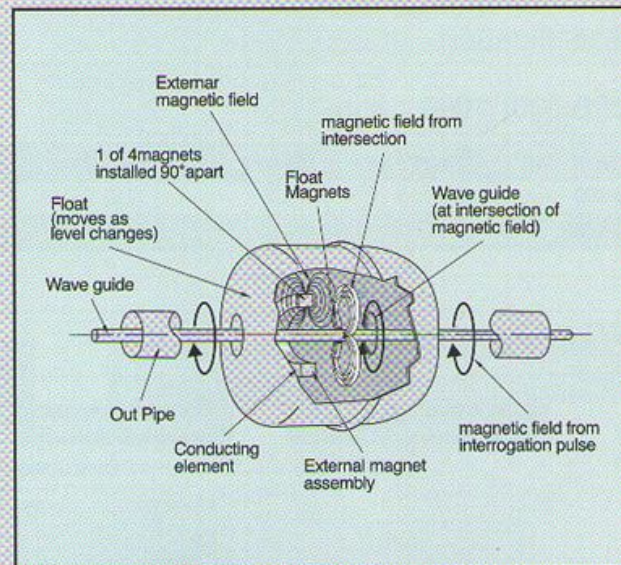
## General Description

As a product which uses the magnetostriction principle, it is an accurate level sensor certified by each certification organization. Although it outputs in the electric current values basically, multi communication such as RS485 is also possible. It is usually used in the storage tanks in which an accurate measuring is required.

## Level Sensor Structure

### Principle of Magnetostrictive Sensor

- An electric pulse is induced in a waveguide by the momentary interaction of two magnetic fields.
- One field is generated by a movable permanent magnet housed in a float, which passes along the outside of the sensor tube. And the other field comes from a current pulse.
- The interaction between the two magnetic fields produces a twisted pulse, which travels at sonic speed along the waveguide until the pulse is detected at the head of the sensor.
- The position of the magnet is determined with high precision by measuring the elapsed time between the launching of the electronic interrogation pulse and the arrival of the twisted pulse.
- The time difference between original pulse and feedback pulse is used to calculate extremely accurate non-contact level sensing.



# DPS Series

## Technical Data

### General Specification

Input Voltage	24VDC ± 5%
Input Current	Less than 200mA
Temperature Range	Probe: -10°C ~ 50°C
Storage Temperature	Probe: -40°C ~ 80°C
Measurement Range	1000mm ~ 9999mm

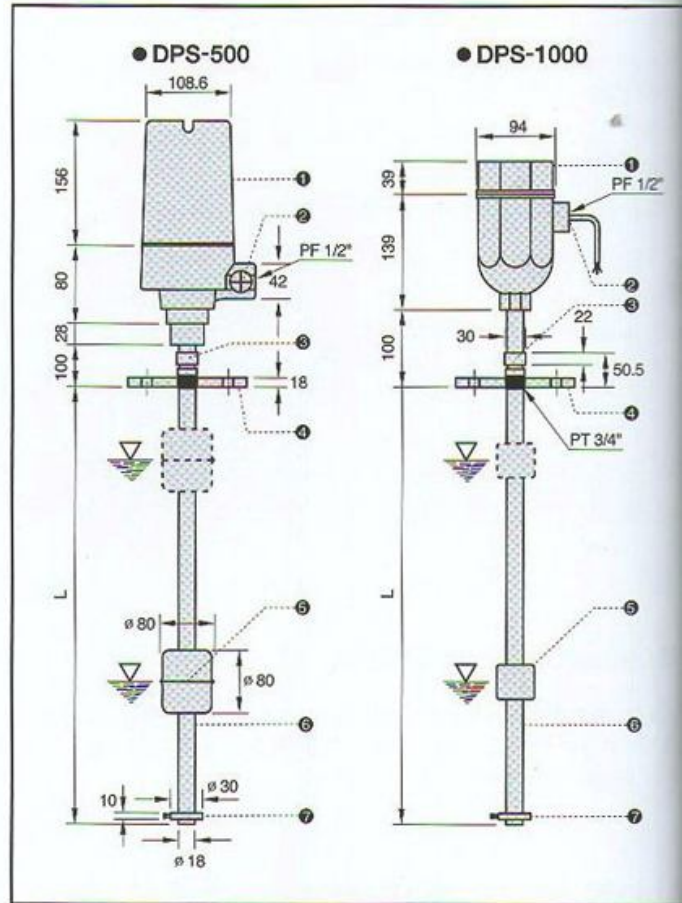
### Physical Specification

Probe	SUS 316, 316L, 304
Head Cover	Anodized Aluminum, Intrinsic Safety & Explosion Proof (Intrinsically safe or Explosion proof)
Float	SUS 316, P.V.C, Teflon, N.B.R

### Output Specification

Level Output	DC 4~20mA or RS 485
Resolution	16bit
Accuracy	Less than 0.01%
Non linearity	0.03% F.S
Hysteresis	0.001m

## Dimension [mm]

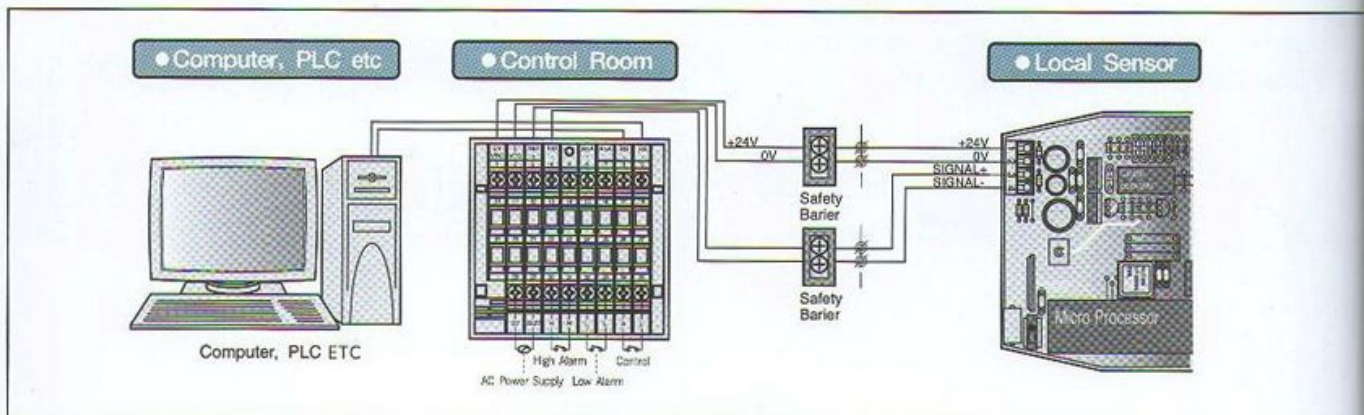


## Specification

### DPS-500, 1000

Name of Part	① Head Case	② Earth	③ Fitting	④ Flange	⑤ Float	⑥ Stem	⑦ Stopp
DPS-500	A.C	S.S.T	SUS 316	SUS 304, 316	N.B.R SUS 304, 316	SUS 304, 316L	SUS 304, 316
DPS-1000	A.C	S.S.T	SUS 316	SUS 304, 316	N.B.R SUS 304, 316	SUS 304, 316L	SUS 304, 316

## Wire Connection



Precision Level Controller

# DPC Series

## Applications

As a micro-miniature and very accurate controller, it can be connected to the GPS Series or used in level sensors with 4~20mA outputs. Also, it can control the on/off of pump and valve automatically.

## Features

- Digitally scaled Analog output
- Relay output
- 6 or length Display select
- Programmable Set point output
- Digital Communication

## General Specification

Input Power	AC 110 / 220V
Display Update	5Digit 7 segment 0.315 inch
Display Time	0.25 sec
Transistor Supply	24VDC 200mA
Operating Temperature	0°C~60°C
Storage Temperature	-10°C~50°C
Material	Polycarbonate & ABS

## Output Specifications

### 4~20mA Analog Output

Max. Current	22mA
Resolution	16bit
Accuracy	Less than 0.01%
Maximum Load	500ohms internally powered
Non Linearity	0.03% F.S
Repeatability	0.001m

## Relay Output

Max. Switching Power	2000VA, 240W
Max. Switching Voltage	250VAC
Max. Switching Current	5A

## Input Specification

### 4~20mA Analog Input

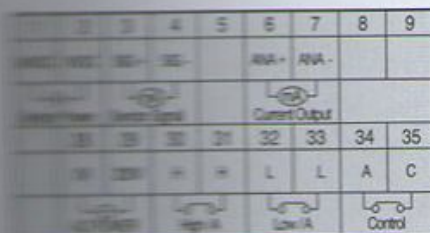
Impedance	250 ohms
Accuracy	Less than 0.001%
Isolation	Non Isolation
Linearity	0.02% F.S
Resolution	24bit



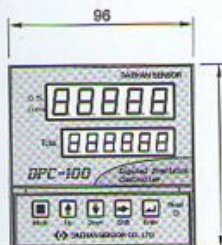
- Model:
- DPC-100
  - DPC-10

## Dimension(mm)

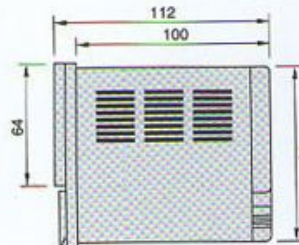
● Connection Diagram



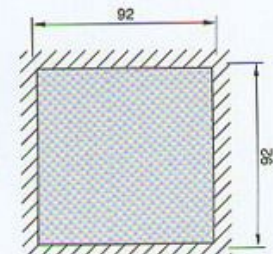
● Front of Controller



● Side of Controller



● Panel Cutting Size



Model: DC-100S



Model: DRF-200F



Model: DRF-100S



# Capacitance Type Level Sensor

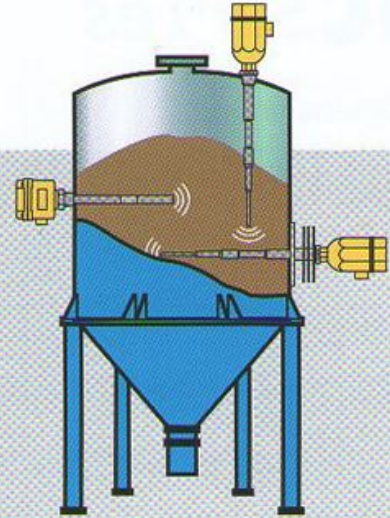
Model: DC-300



## DC Series

### Applications

- It is easy to handle and strong against the highly conductive change of material. It can be used in not only powder but also liquid.
- It is widely used in the sewage and wastewater treatment industry, oil refinery industry, and chemical plant.
- It is much used in grain and food tanks.
- It is a measuring device appropriate in the plant measurements that places importance in the high accuracy and high liability.
- It can measure not only the level of liquid but also that of powder and solids.
- It is a high precision sensor which can widely be used in the instrument and F.A. System applied fields.



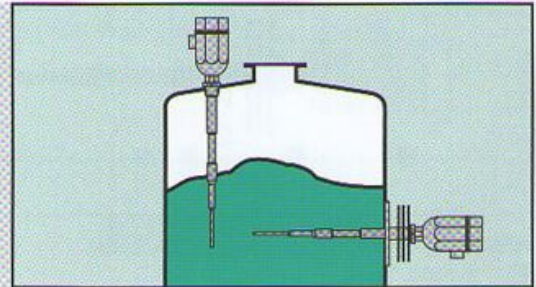
### Operating principle

The outage capacity type radio frequency level sensor is detected according to the change of outage formed between the earth electrodes when the measuring electrode and the electrode area are in the air and in the material. This change alters the electrical control signal of the main unit that it is possible to receive the relay output point of contact.

### Example of general Applications

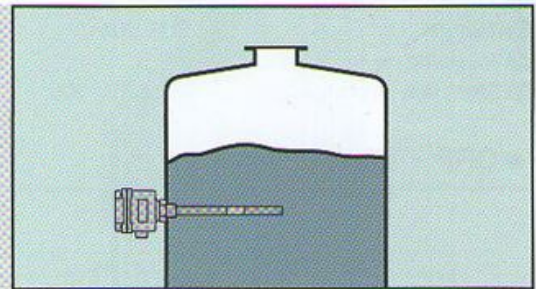
#### ■ Powder

It is a sensor which can be applied to sensible part of a incinerator such as plastic powder, calcium hydroxide, chemical fertilizer, grain, cement, food (wheat flour and soup)



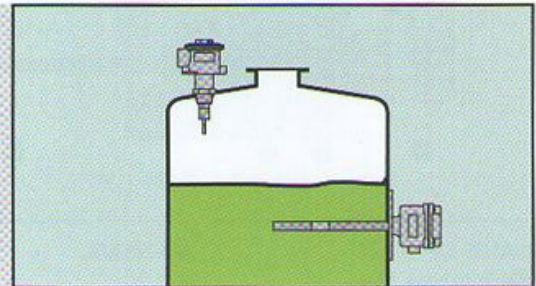
#### ■ Solid

It is a measuring sensor proper for sensitivity and used in all the solid types such as gravel, stone, iron ore, rear earth resources, coal, and sand.



#### ■ Liquid

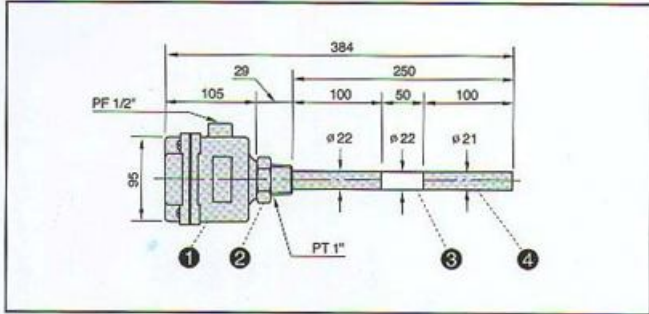
It is a sensor used for multipurpose to all liquids such as water, beverage, milk, beer, cosmetic liquid, food (soybean paste, red pepper paste, and cream) and reagent (acetone, ink, synthetic detergent, benzene, and picture development liquid).



# DC Series

## Dimension [mm]

### DC - 100S



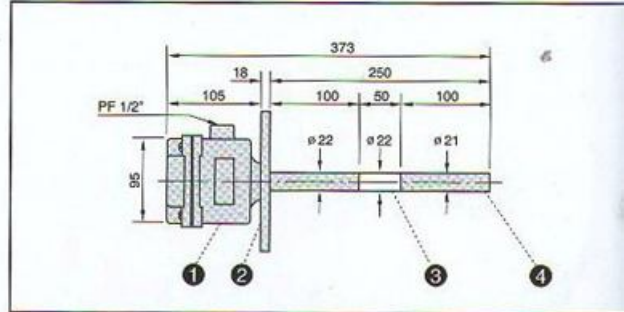
**NAME OF PART**

- ①: Terminal Box
- ②: Socket
- ③: Insulator
- ④: Electrode Probe

**MATERIAL**

Nylon + Glass Fiber  
 SUS 304, 316L  
 PE, PTFE  
 SUS 304, 316L

### DC - 100F



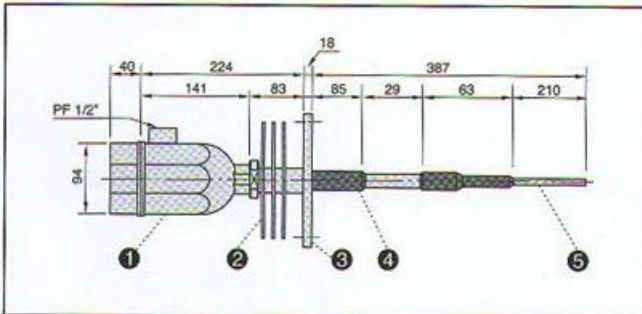
**NAME OF PART**

- ①: Terminal Box
- ②: Flange
- ③: Insulator
- ④: Electrode Probe

**MATERIAL**

Nylon + Glass Fiber  
 SUS 304, 316L  
 PE, PTFE  
 SUS 304, 316

### DRF - 200F



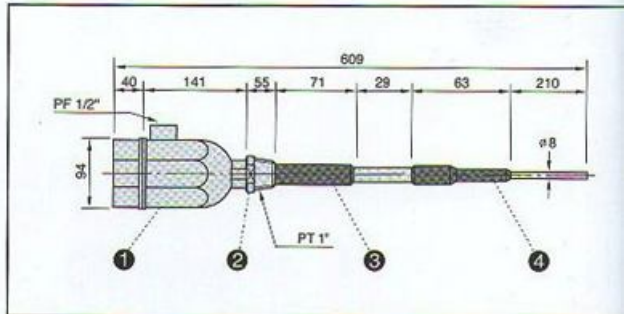
**NAME OF PART**

- ①: Terminal Box
- ②: Protection Plate
- ③: Flange
- ④: Insulator
- ⑤: Electrode Probe

**MATERIAL**

A.D.C  
 AL  
 SUS 304  
 P.P.S  
 SUS 304, 306

### DRF - 100S



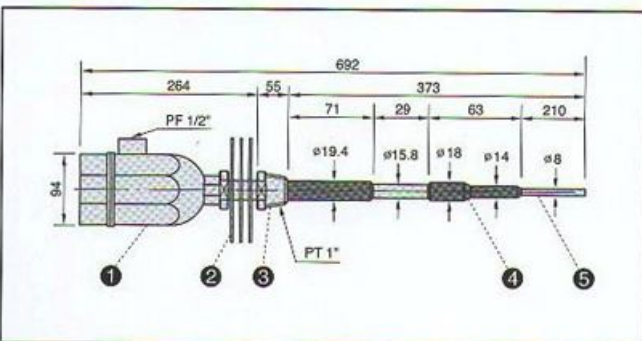
**NAME OF PART**

- ①: Terminal Box
- ②: Socket
- ③: Insulator
- ④: Electrode Probe

**MATERIAL**

A.D.C  
 SUS 304  
 P.P.S  
 SUS 304, 306

### DRF - 200S



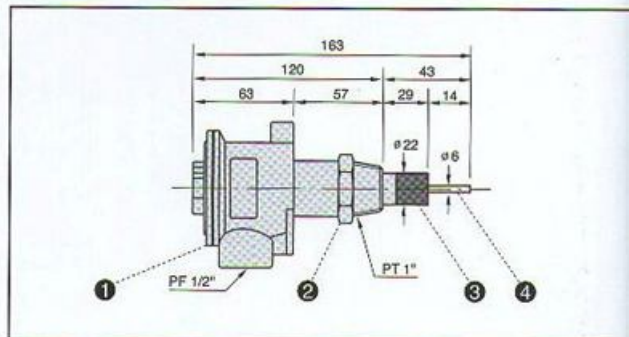
**NAME OF PART**

- ①: Terminal Box
- ②: Protection Plate
- ③: Socket or Flange
- ④: Insulator
- ⑤: Electrode Probe

**MATERIAL**

A.D.C  
 AL  
 SUS 304  
 P.P.S  
 SUS 304

### DC - 300



**NAME OF PART**

- ①: Terminal Box
- ②: Socket or Flange
- ③: Insulator
- ④: Electrode Probe

**MATERIAL**

A.D.C or Nylon + Glass Fiber  
 SUS 304  
 PTFE  
 SUS 304, 306

## DC Series

### Technical data

Type	DC - 300	DC - 100S	DRF - 100S	Special Specification
Power Supply	DC 24V	AC 220V/100V	AC 220V or DC 24V	
Output Signal	1 SPDT	1 DPDT	1 SPDT	
Contact Rating	250V 5A	250V 5A	250V 5A	
Sensor Range	Standard	Standard	Standard	possible to order
Humidity	85% RH	85% RH	85% RH	
Temperature	80°C(Max)	-20°C ~ +80°C	-20°C ~ +80°C	possible to order above 100°C
Pressure	ATM	ATM	ATM	possible to order
Protection	IP 65	IP 65	IP 65	
Weight(g)	Approx 540g	Approx 990g	Approx 1300g	
Installation	Top Mounting	Top Mounting or Side	Top Mounting or Side	possible to order

### Sensitivity Scope

- This DC or DRF Series level sensor has a wide sensitivity scope and can set the sensitivity scope from 0 to 2500PF by using an internal select switch. Also, it is possible to adjust the sensitivity more precisely by a minute adjustment volume.

- In addition, when forwarding, the customized manufacturing according to the requested sensitivity by the user is possible. Also, there can be a bit of difference in the detected sensitivity in the actual use due to the differences in the length of electrodes.

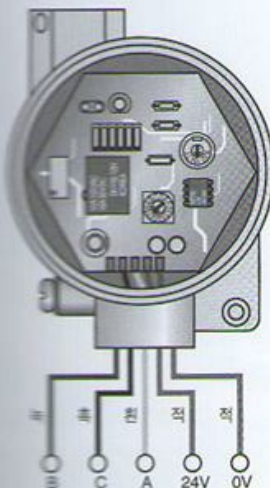
- For a safe detection, set the sensitivity scope to the minimum. Also, in case of liquids with strong conductivity or powder with strong absorption, set it to a smaller scope because an error in the operation can be caused more readily due to attachment of measuring material on the sensor part.

- Smaller the sensitivity scope, better the sticking resistance.

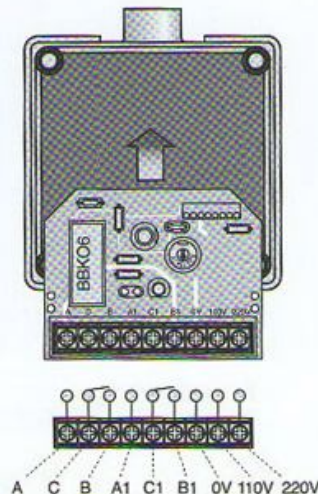
- Do not use multiple level switches at the same time.

### Connection Diagram per Model

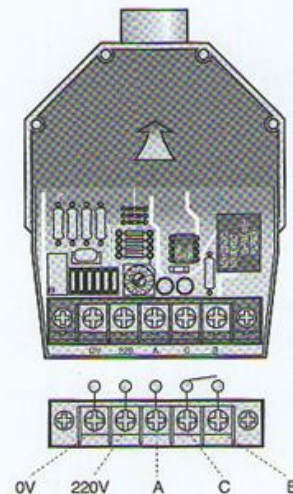
● Model: DC-300



● Model: DC-100S



● Model: DRF-100S



Model: DMC-3S

Model: DMC-100S



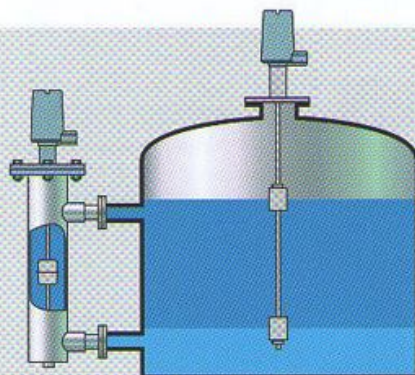
# Displacement Type Level Sensor

# Displacement Type Level Sensor

## DMC Series

### Applications

- It can be applied to tanks of sewage, clean water, various chemical medicines, fuel, beverage, high-temperature and high-pressure.
- The displacement level switch is used in the coal tar fuel, heavy oil, precipitate, sewage wastewater, clean water, lubricating oil, and light water tanks.



### Operating principle

It is installed in the spring head part which supports by reducing 2 floats to make it proportionate to the gravity of the float to allow the 2 floats to turn the switch on when the water is supplied without water (turned off in case of drainage). At this moment, even when the pump is operated to begin supplying the water and the float at the bottom is sunk in the water, the switch remains the same status. When the water is up to the upper float, the switch is turned off.

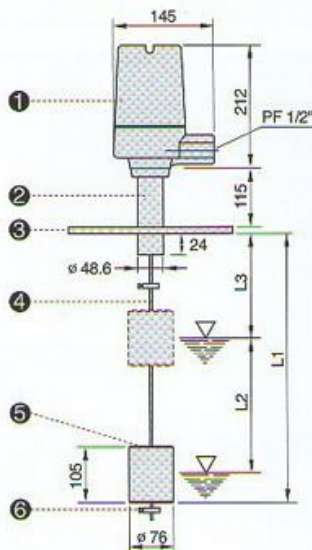
### Features

- The DMC level switch is easy to install. It can be installed, runoff, and test operated without professional knowledge.
- It can even be used in the high temperature or high pressure tanks
- It is possible to set the ceiling and the floor freely. Even when the tank is deep there is little difference in price.
- This product is manufactured in an explosion-proof structure.

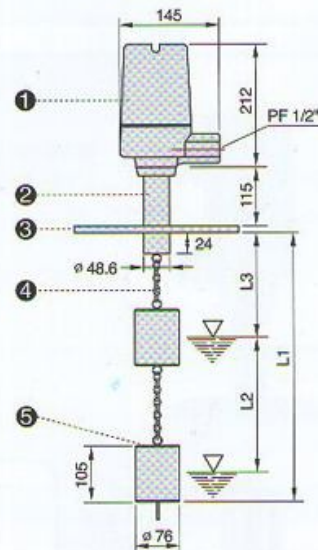
### Dimension[mm]

Name of Part	Material
①: Body	ADC 12
②: Pipe	SUS 304
③: Flange	SUS 304
④: Stem	SUS 304
⑤: Float	SUS 304
⑥: Stopper	SUS 304

● DMC-100S



● DMC-2S




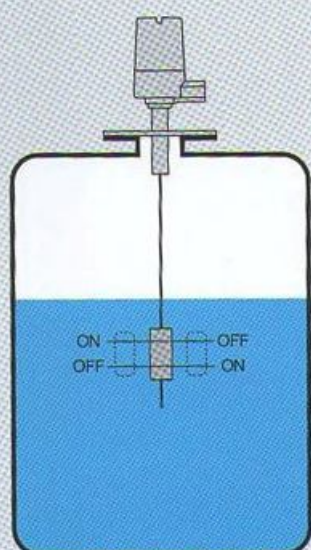

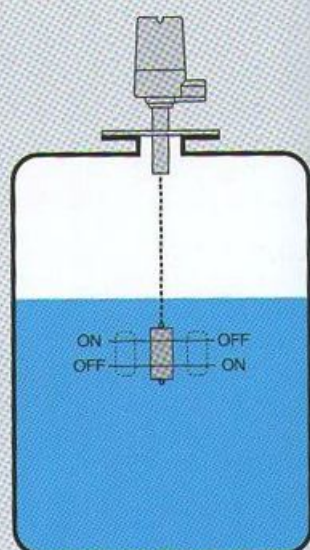
### Terminal & Contact


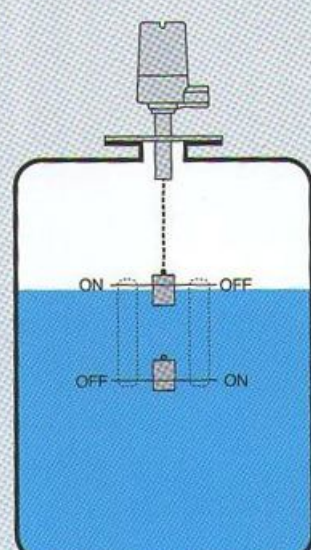

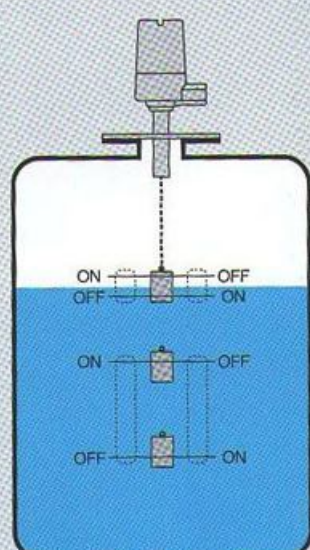
Model	DMC - 100S	DMC - 2S
Measuring Range	50 to 2000mm	300 to 6000mm
Contact Rating	AC 220V 5A	AC 220V 5A
Contact configuration	1SPDT	
	1DPDT	

Displacement Type Level Sensor

# DMC Series

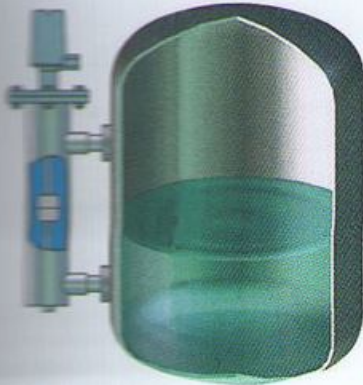
## ■ Specification

	<p>● <b>Model: DMC-100S</b></p> <ul style="list-style-type: none"> <li>• High, or Low Alarm 용</li> <li>• Micro Switch</li> <li>• 1SPDT or 1DPDT</li> </ul> 		<p>● <b>Model: DMC-1S</b></p> <ul style="list-style-type: none"> <li>• High/A, or Low/A 용</li> <li>• Micro Switch</li> <li>• 1SPDT or 1DPDT</li> </ul> 
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	<p>● <b>Model: DMC-2S</b></p> <ul style="list-style-type: none"> <li>• Pump Start, Stop, High/A 용</li> <li>• Micro Switch</li> <li>• 1SPDT or 1DPDT</li> </ul> 		<p>● <b>Model: DMC-3S</b></p> <ul style="list-style-type: none"> <li>• Pump Start, Stop, High/A 용</li> <li>• Micro Switch</li> <li>• 2SPDT</li> </ul> 
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# DMC Series

## Operating principle

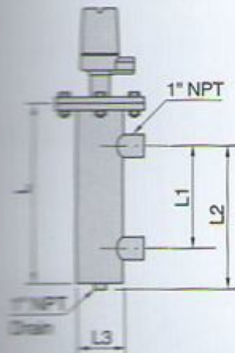


When the surface level of the liquid is decreased, the pulling axis of the magnet is lowered accordingly to go down under the magnetic field created by the magnet installed outside.

The bias spring pulls the magnet from the ceiling tube to operate the switch. The reverse action happens when the surface level is increased. As the pulling axis goes into the magnetic field, it pushes the magnet into the ceiling tube and operates the switch.

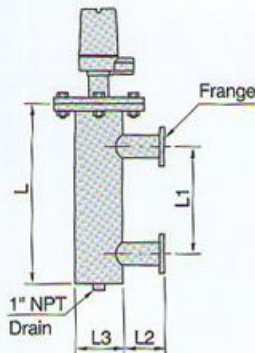
## Chamber Dimension

● unit : mm



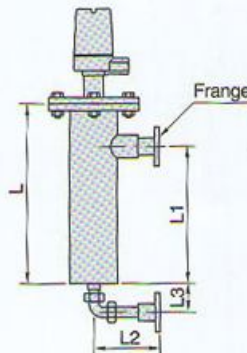
● Horizontal Screw Type

● unit : mm



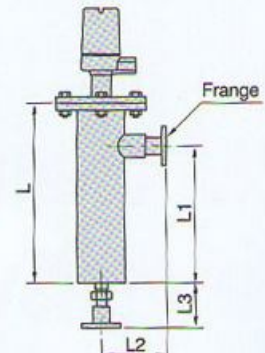
● Upper Side & Bottom Vertical Flange Type

● unit : mm



● Horizontal Flange Type

● unit : mm



● Flange Weld Upper Side & Bottom

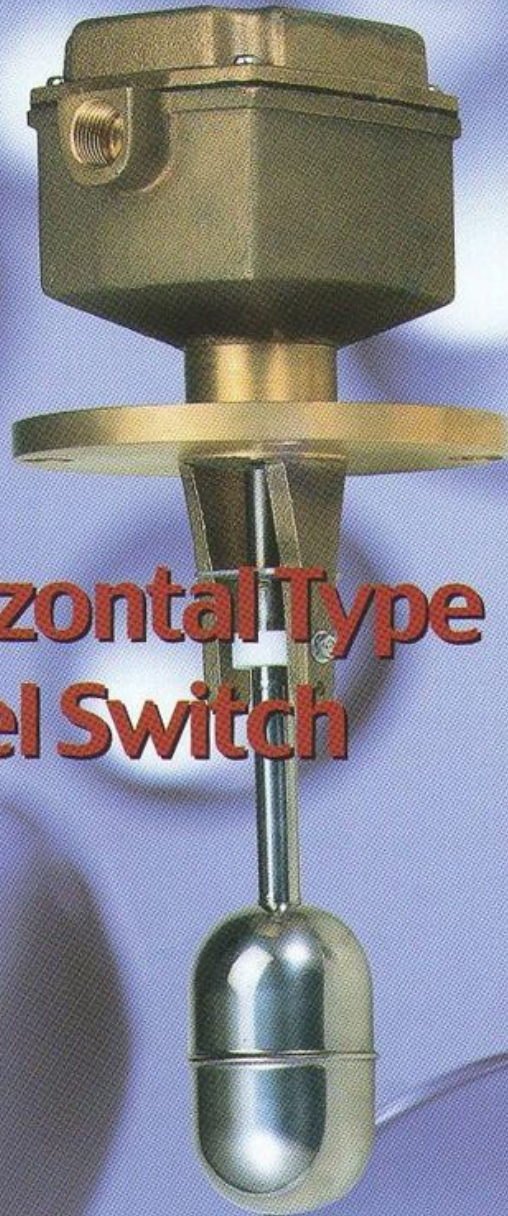
## Specification

Material Head	ADC
Range	SUS 304, SS41, SUS 316
Flat	SUS 304, SS41, SUS 316
Wire	SUS 304, SS41, SUS 316
Chamber	SUS 304, SS41, SUS 316
Enclosure	Weather Proof(NEMA 4), Explosion Proof(NEMA 7)

## Technical data

Temperature Limit	Max. 180°C
Pressure Limit	Max. 20kg/cm <sup>2</sup>
Switch Capacity	AC220V 5A
Output Control	High or Low Alarm Pump Start Stop Alarm & Pump Control
Measuring Range	Max 5m
Installation	Top Mounting
Mounting Method	Flange Type Chamber Mounting(Side Mounting)

# Horizontal Type Level Switch



Model: DH-100F

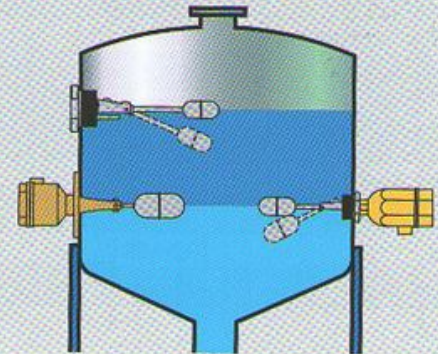


Model: DH-100S

# DH Series

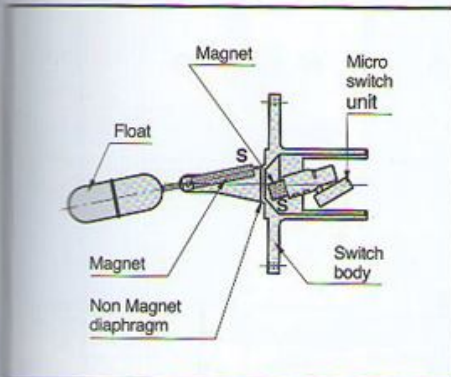
## Applications

The DH type level switch is used in the heavy oil, precipitate, sewage waste water, clean water, lubricating oil, and light oil tanks.



## Operating principle

When the magnetic float type level switch detects the surface level and emits the contact point output, the micro switch or reed switch turns on or off. The two magnets completely separated by the diaphragm each operates. One is hanging at one end of the float and the other magnet is hanging on the micro switch unit of housing.



## Features

- Complete waterproof**  
The switch unit is completely separated.
- Liability**  
There is no problem since the allowed contact point capacity is large with 250VAC and 3A.
- Easy Maintenance and Repair**  
Since it is designed in a simple structure, the maintenance and repair is easy.
- Firm Float**  
The stainless steel float welded by the argon gas is durable to high pressure and high temperature.

## Model number code system

DH - [ ] [ ] [ ] [ ] [ ]

### • Connection size

- 1** : A-Flange(square)
- 2** : 5K 65A(STD)

### • Main for the main sensor (Horizontal mounting)

- HD** : General purpose
- HD** : Differential
- HS** : S-Shape

### • Enclosure

- W** : Weather proof
- E** : Explosion proof(dz G1)

### • Option

- T** : With test device

### • Contact form

- S** : SPDT
- D** : DPDT

# DH Series

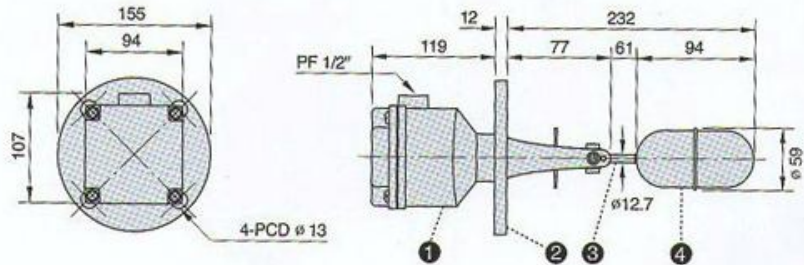
## Technical data

Spec.	DH-100F	DH-100S	DH-200S
Contact Capacity	AC220V or 110V / 5A	DC 250V AC, 0.5A MAX.	DC 250V AC, 0.5A MAX.
Switch	Micro Switch	Reed Switch	Reed Switch
Operating Temperature	-25~+120°C	-10~+100°C	-10~+100°C
Operating Pressure	10kgf/cm <sup>2</sup> (Max.)	10kgf/cm <sup>2</sup> (Max.)	10kgf/cm <sup>2</sup> (Max.)
Output	1 SPDT	1 SPST	1 SPST
S. G	0.7(Min.)	0.71~1.0(Min.)	0.71~1.0(Min.)
Actuation Angle	±15°	± -9°~+23°	± -9°~+23°
Mounting Standard	JIS 5K 65A FF	PT 1½", 1¼"	PT 2"
Material	BRASS	SUS 304 / SUS 316	SUS 304 / SUS 316
Enclosure Class	Weather proof	-	-

## Dimension[mm]

### ● DH-100F

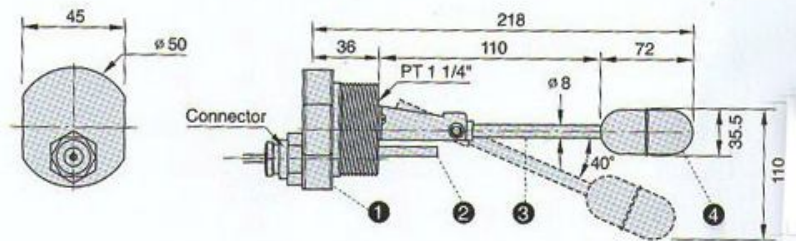
Name of Part	Material
• 1: Terminal Box	Brass
• 2: Flange(5Kg 65A)	Brass
• 3: Shaft	SUS 304
• 4: Float	SUS 304



• This is a micro-switch type.

### ● DH-100S

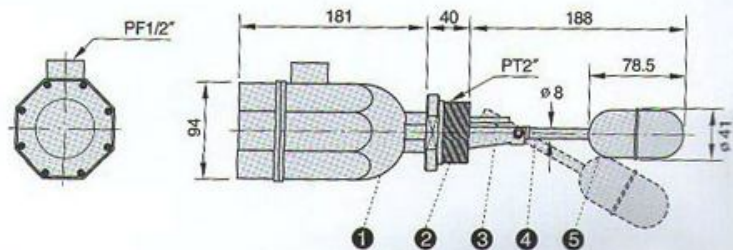
Name of Part	Material
• 1: Socket	SUS 304
• 2: Shaft	SUS 304
• 3: Stem	SUS 304
• 4: Float	SUS 304



• This is a reed-switch type.

### ● DH-200S

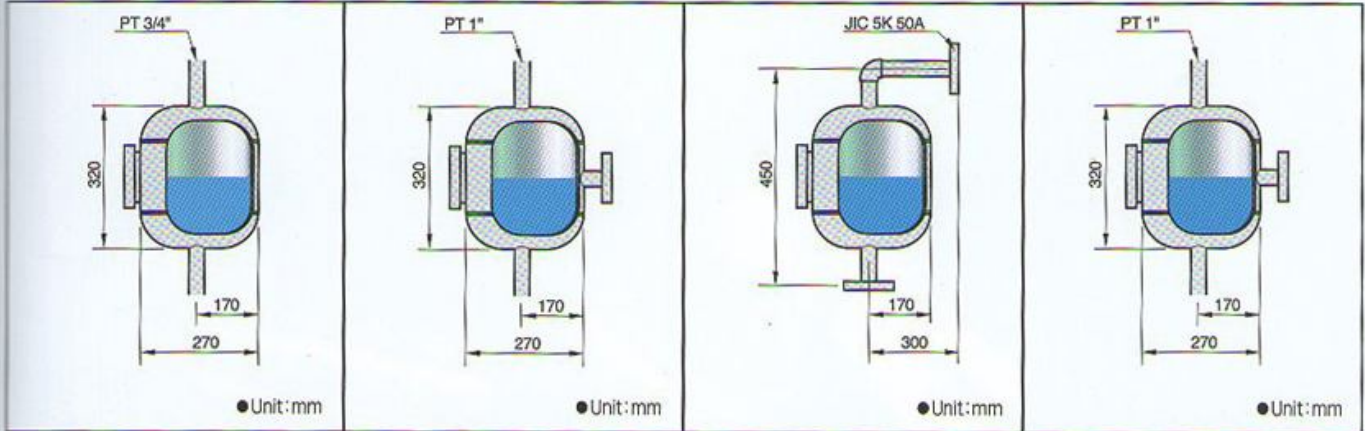
Name of Part	Material
• 1: Terminal Box	A.D.C
• 2: Socket	SUS 304
• 3: Shaft	SUS 304
• 4: Stem	SUS 304
• 5: Float	SUS 304



• Housing can be change on customer's demand.

# DH Series

## Table for Chamber Selection



● Horizontal Flange Type

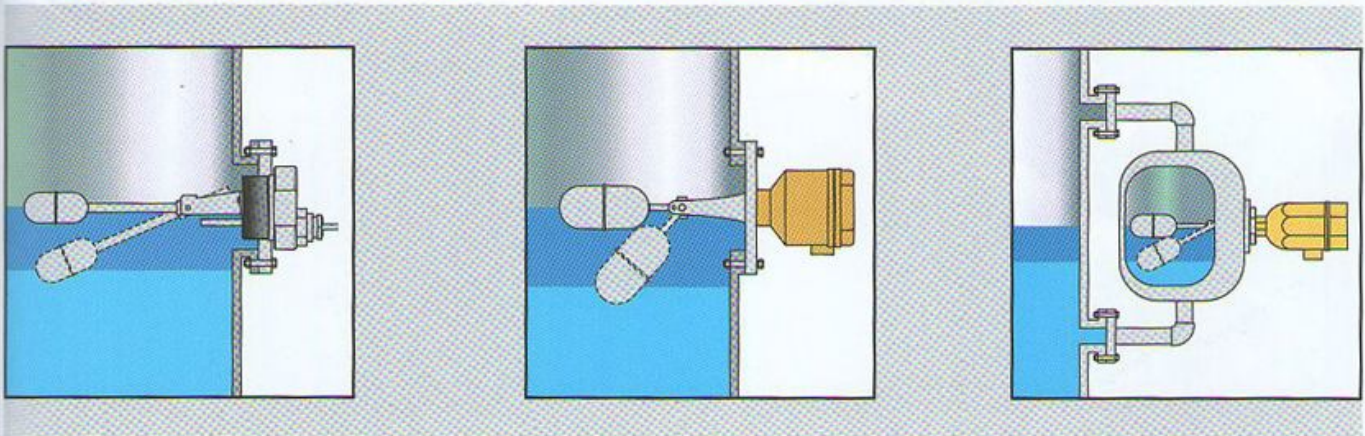
● Socket Well Upper side & Bottom

● Horizontal Flange Type

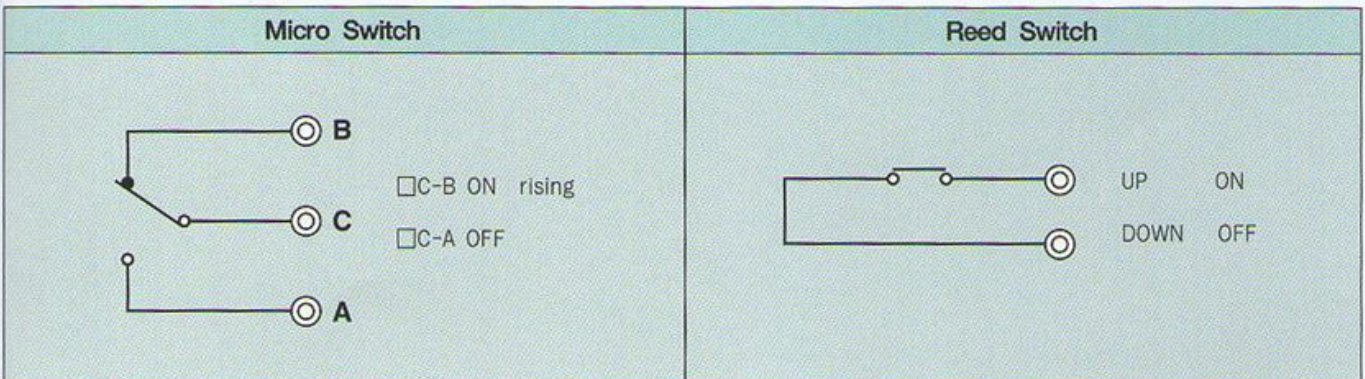
● Upper side Bottom Vertical Flange Type

⚠ It is possible to order chamber size.

## Chamber Type & Installation



## Terminal & Contact for SPDT. SPST



Model: DLF-3

Model: DLF-2

Model: DLF-1

# Horizontal Level Switch Side Type

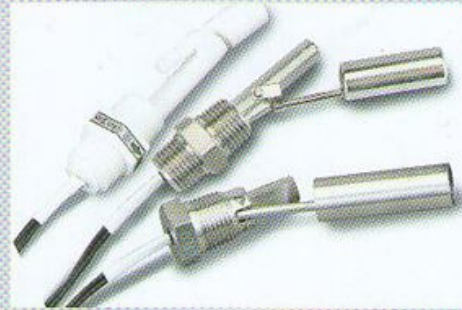


# DLF Series

## Applications

The DLF is a level switch for controlling the water level of a small tank. According to the change of water level inside the tank, the movement of float changes.

The magnetic inside the float is a level switch which moves the reed switch inside the sensor to allow using the point of contact signal following the change of water level.



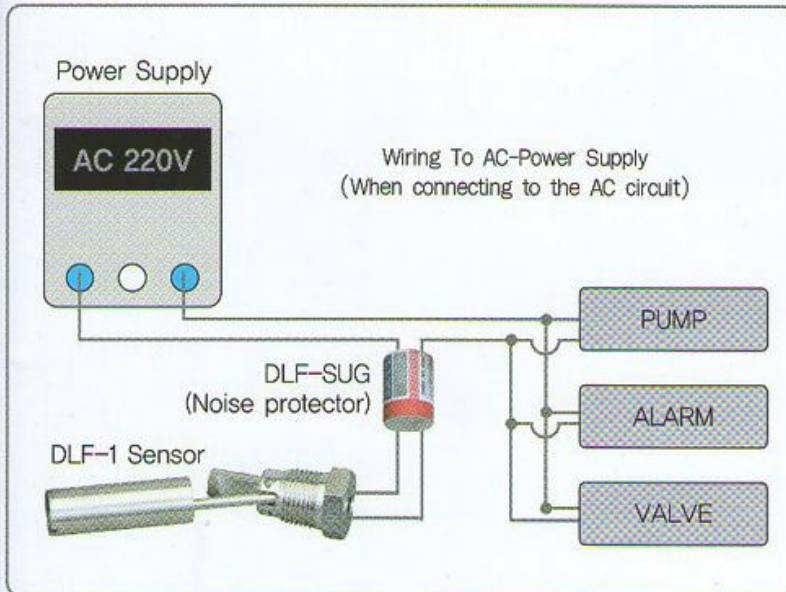
## Feature

As a small-type level switch, it is widely used for controlling and alarming.

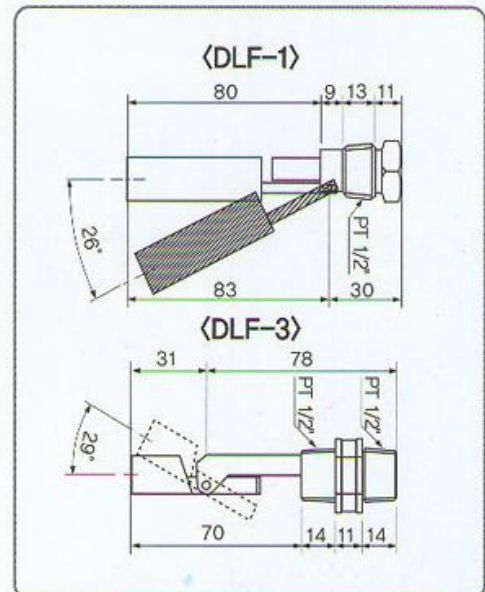
It is a product widely used in the semi-conductor equipments, medical equipments and chemical tanks.

As the subminiature, ultralight, and low-price-high performance sensor, it is a widely used level switch.

## Wiring



## Dimension



## Technical Data

Spec.	DLF-1	DLF-2	DLF-3
Purpose	Water, Oil	Pure, Oil	Water, Medicals, Oil
Material	SUS 304	SUS 316	P.P
Max. Using Voltage	220V 1A(MAX)	220V 1A(MAX)	220V 1A(MAX)
Max. Using Temp.	-20°C ~ 100°C	-20°C ~ 100°C	-20°C ~ 80°C
Max. Using Pressure	10 kg/cm <sup>2</sup>	10 kg/cm <sup>2</sup>	10 kg/cm <sup>2</sup>
Lead Line Size	-20°C ~ 100°C	-20°C ~ 100°C	-20°C ~ 80°C
General Using Temperature	AWG 22(1015)	AWG 22(1015)	AWG 22(1015)
Insulation Resistance	500M OHM(Min)	500M OHM(Min)	500M OHM(Min)
Mounting	PT1/2"	PT1/2"	PT1/2"
Protective Size	IP65	IP65	IP65

Model: DSP-300



Model: DSP-200



Model: DSP-100

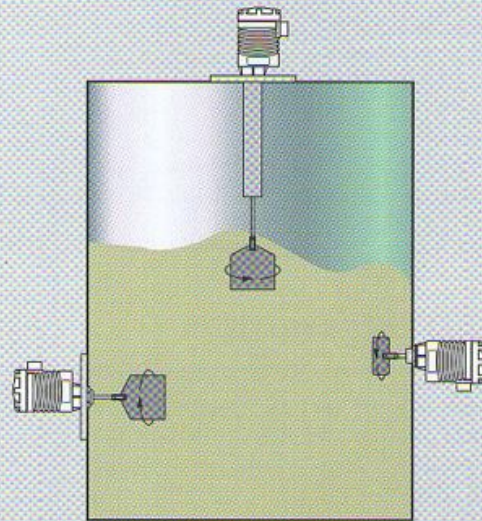


# Paddle Type Level Switch

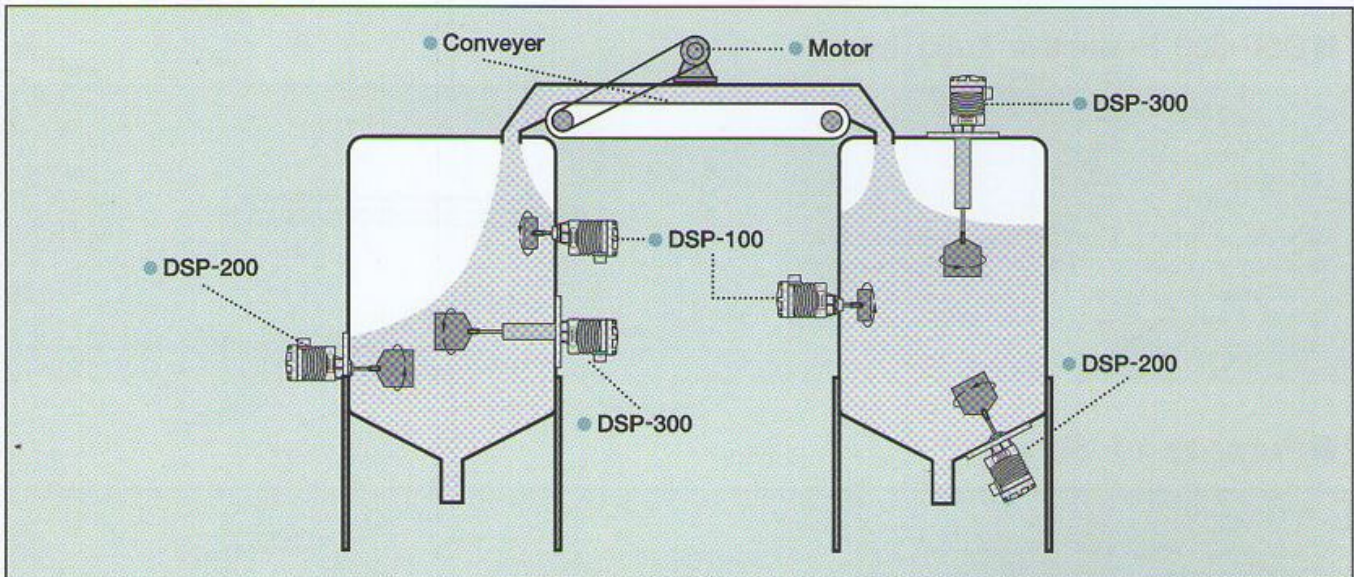
# DSP Series

## Applications

- Plastic surgery equipment
- Plastic mixer
- Paint solid mixer
- Tube conveyor equipment
- Pulverizer
- Various types of molding equipments
- Rice cleaner
- Grain mixer
- Dryer
- Mill



## DSP-Type Diagram



## Technical Data

Housing	ABS Casting
Power Supply	AC 110V or AC 220V 60Hz
Output Control	1SPDT
Contact Capacity	AC 220V 5A
Conduit Connection	STD PF 1/2" (PT 3/4")
Temperature	Max 70°C
Pressure	Max 2kg/cm <sup>2</sup>
Paddle Speed	1 r.p.m
Protection	IP 65

# DSP Series

## ■ DSP-100 Standard type

- Temperature of inside the tank : maximum 70
- Temperature of outside the tank : maximum 55
- Pressure inside the tank : A.T.M

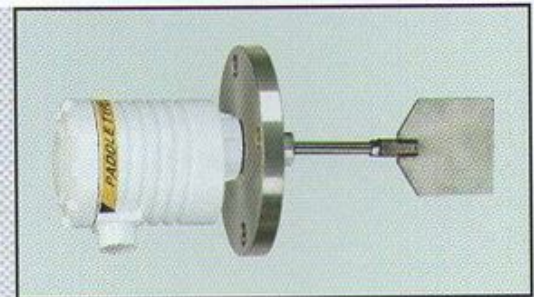
- It is possible to apply other than standard type flange
- It is possible to manufacture the SUS304/316 material to flange or socket



## ■ DSP-200 Standard type

- Temperature of inside the tank : maximum 70
- Temperature of outside the tank : maximum 55
- Pressure inside the tank : A.T.M

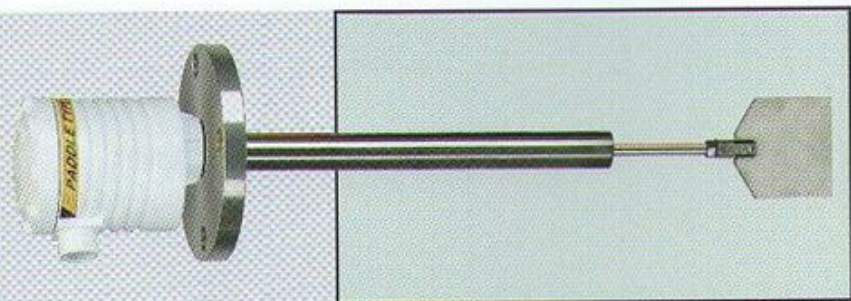
- It is possible to apply to non-standard length
- It is possible to manufacture the SUS304/316 material to flange or socket



## ■ DSP-300 Protective Tube type

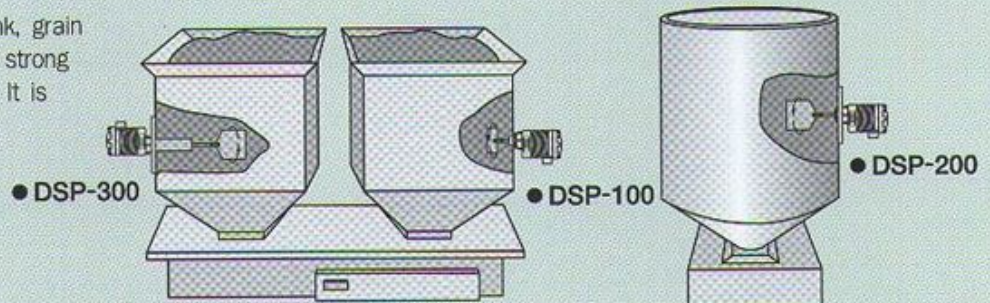
- L = 250mm
- L = 300mm
- L = 600mm

- It can be applied to vertical flange attachment type.
- It can be applied to maximum 120°C according to the requested specification
- It is possible to manufacture the SUS304/316 material to flange or socket



## ■ Purpose of Sensor

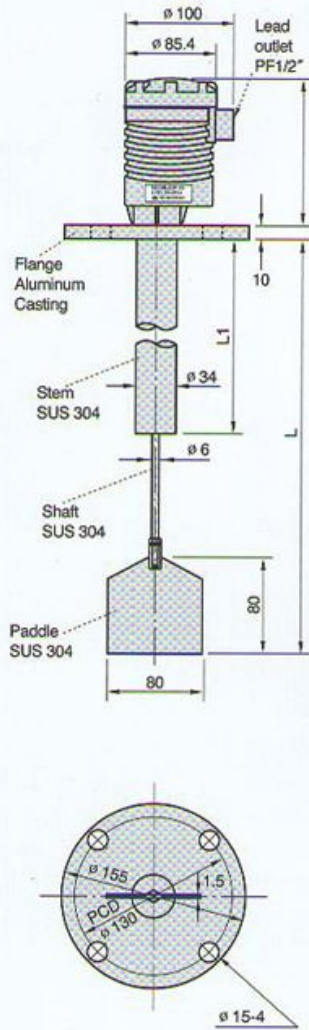
- It is used in the measuring the feed tank, grain tank, and powder. The durability is very strong and it is possible to adjust the storage. It is possible to be used in the low and high temperatures.



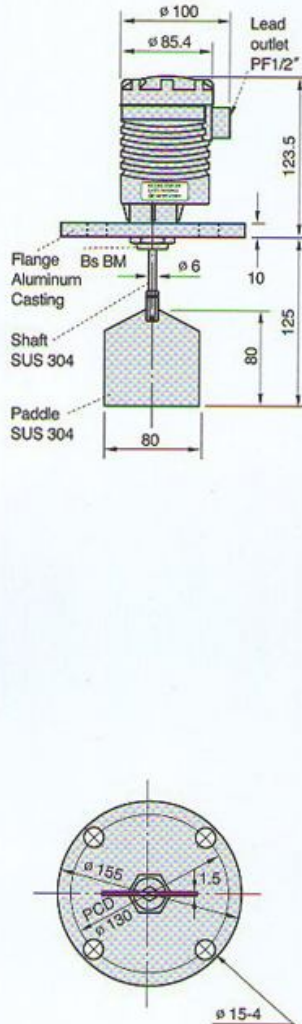
# DSP Series

## Dimension [mm]

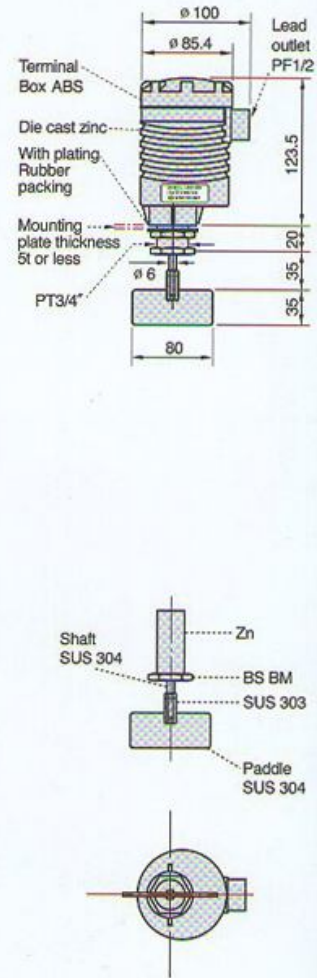
● DSP-300



● DSP-200



● DSP-100

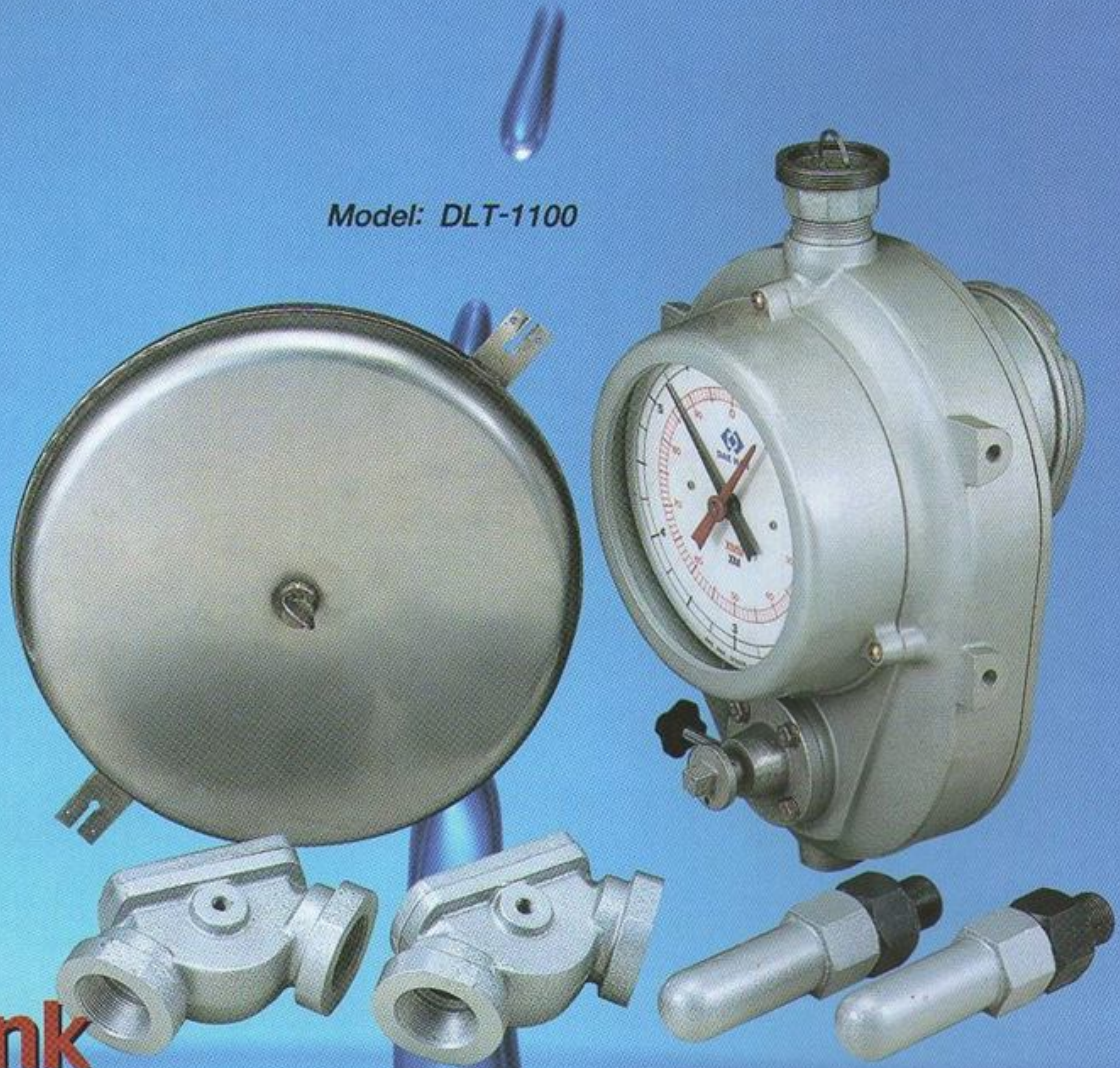


## Standard Specifications

Power supply	AC100V or AC 220V
Power consumption	1.5W
Contact capacity	AC250V 5A(Resistance load)
Detective torque	Standard 0.5kg. cm(Variable range from 0.3 to 0.6kg. cm)
Paddle revolving speed	1 rpm
Dia. of shaft	6mm $\phi$
Material of body	Zinc die cast
Paint color	G7-635(7.5 BG 4/1.5)
Lead wires	500mm(VCT 0.75mm. 5cores)
Weight	Approx. 800g( ! -85mm)

Model: DLT-1100

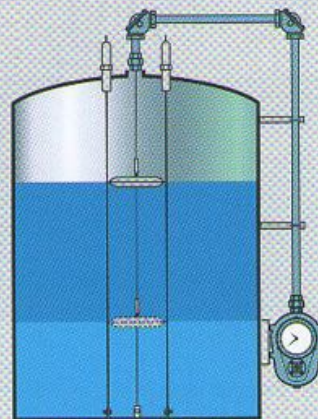
# Tank Level Gauge



# DLT Series

## ■ Purpose of Sensor

- Since it is very easy to be installed and separated, even a novice can manage well.
- Since it can be installed readily, it can be applied to all the existing equipments or tanks of any shape
- It can improve the safety against corrosion and toxicity by applying to a sealed tank
- It can establish a remote control or central inspection system by combining various transmission devices.
- Since a large indicating instrument is applied, it is easy to read even from a long distance.



## ■ Operating principle

This product can easily be installed, maintained, and repaired. Also, it can be used for multiple purposes. Since it can be used in the petroleum oil, water, and other types of liquids, it can widely be used in the measuring of surface level of petroleum oil products. In addition, it can prevent environmental pollution in the sewage and wastewater treatment plants and allow a safe operation on chemical industry sites that handle acid and alkali, food, alcohol, cooking oil, and paint.

## ■ Specification of Pulley Elbow

Angle	90°
Temperature	-20°C ~ 70°C
Pressure	0.2kgf/cm <sup>2</sup>
Weight	About 1kg
Installation Specification	It can be installed at the 1 1/2" of the joint in the opposite side. Special specification: NPT 1 1/2" Flange: It can be applied from the 1 1/2" 0.2kgf/cm <sup>2</sup> JIS-RF to 1 1/2" 150pds/cm <sup>2</sup> ANSI-RF.
Measures	Refer to the installation diagram in page 27

## ■ Specification of Tape Wire

Weight	About 1kg
Measures	Refer to the installation diagram in page 27
Material	Stainless steel

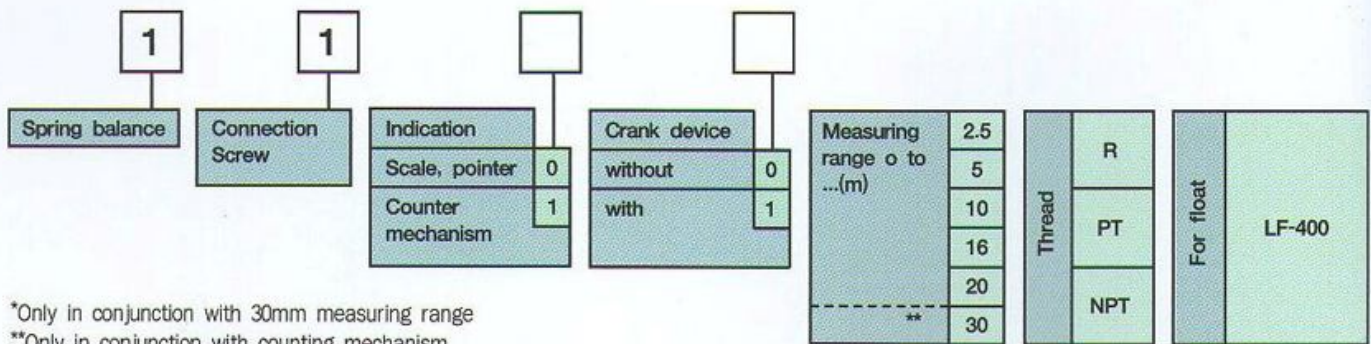
## ■ Specification of Upper Fixing Device

Temperature	20°C ~ 70°C
Pressure	0.2kgf/cm <sup>2</sup>
Weight	About 0.5kg
Installation Specification	PT1 socket or flange: It can be applied from 1 1/2 10kgf/cm <sup>2</sup> JIS-RF to 1 1/2 #150 pds/cm <sup>2</sup> ANSI-RF
Measures	Refer to the installation diagram in page 27

## ■ Specification of Float

Specific Gravity	0.5-2	
Model	LF-400	
Material	Stainless steel	
External Pressure	0.2kgf/cm <sup>2</sup>	
Guidance	LF-400 guide wire	
Weight	Specific Gravity	Weight
	0.5~0.64	4.2kg
	0.65~1.04	5kg
	1.05~2.0	8kg

# DLT Series



\*Only in conjunction with 30mm measuring range

\*\*Only in conjunction with counting mechanism

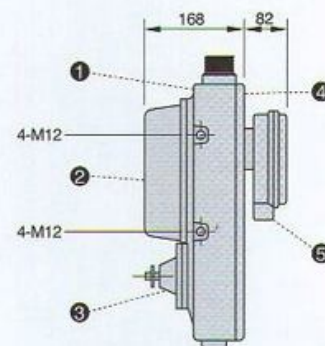
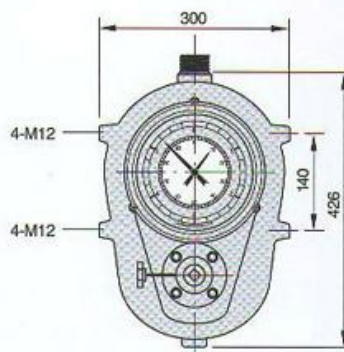
Example of order: LT-1100 / 10mm / JS / LF-400

Screwed execution, dimension and model numbering system

## Dimension [mm]

### Gauge Material

- ① Body: ADC12
- ② Front Cover: ADC12
- ③ Gear Box: ADC12
- ④ Back Cover: ADC12
- ⑤ Terminal Box: ADC12

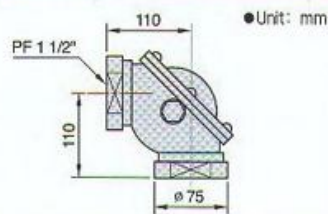


## DLT Accessories

### 90° elbow

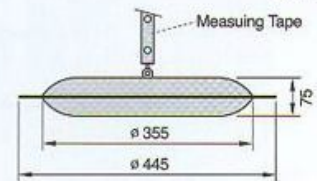
Material: ADC12

Aluminum alloy die casing



### Float

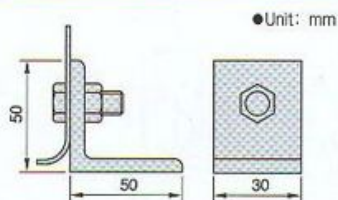
Material: SUS304



### Bottom piece

Material: SUS304 or ss41

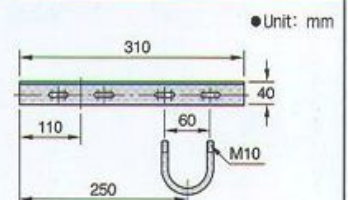
Top anchor 2 off  
Alumini alloy die casing



### Mounting part

Material: SUS304 or ss41

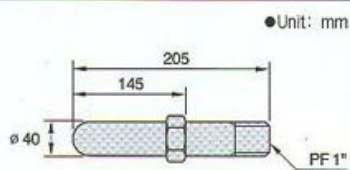
Not included in basic deliver



### Guide wire knob

Material: ADC12

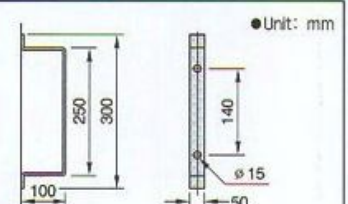
Top anchor 2 off  
Alumini alloy die casing



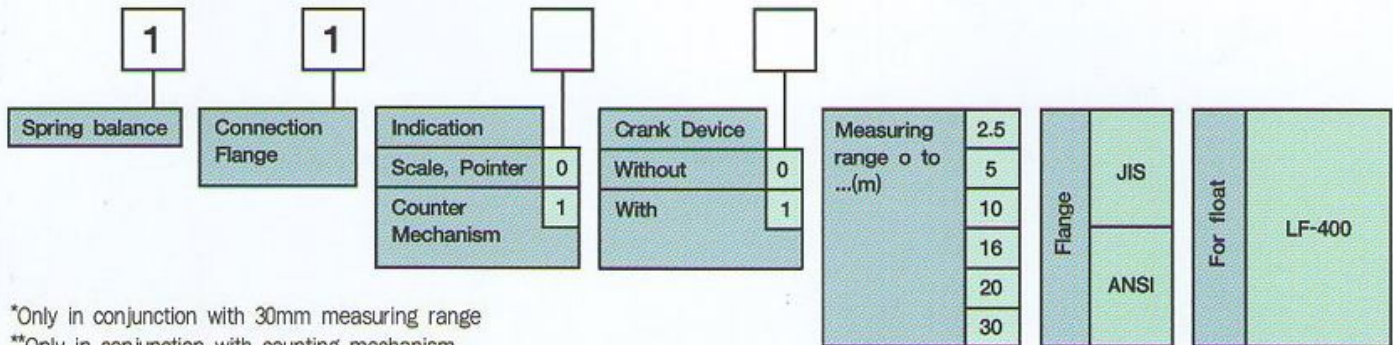
### Mounting part

Material: SUS304 or ss41

Not included in basic deliver



# DLT Series

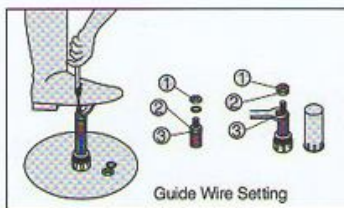


\*Only in conjunction with 30mm measuring range  
 \*\*Only in conjunction with counting mechanism  
 Example of order: LT-1100 / 10mm / JIS / LF-400

## Dimension of flanges

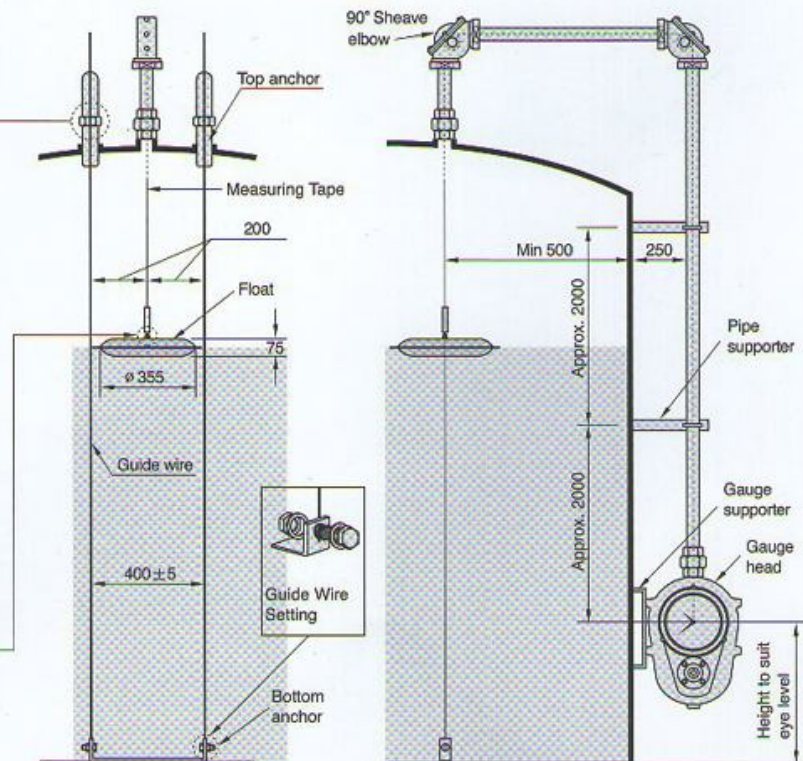
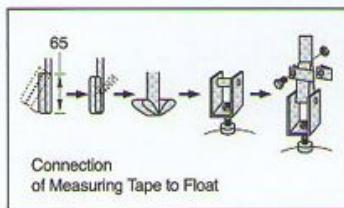
Spec.	Outside Diameter of flange	Diameter of bolt circle	Diameter of raised face	Diameter of bolt holes	Thickness of flange	Thickness of raised face	Nominal Diameter of bolt
1½ 10kgf/cm <sup>2</sup> JIS-RF	ø 140	ø 105	ø 85	4-ø 19	20	2	M16
1½ 150lb/in <sup>2</sup> ANS-RF	ø 127	ø 98.4	ø 73	4-ø 16	17.5	1.6	M12

## Installation Diagram



### Pipe Assembly

- Suggest to use a stainless steel pipe or inside galvanized pipe.
- Suggest to use of resin-painting in case of a highly corrosive substance.

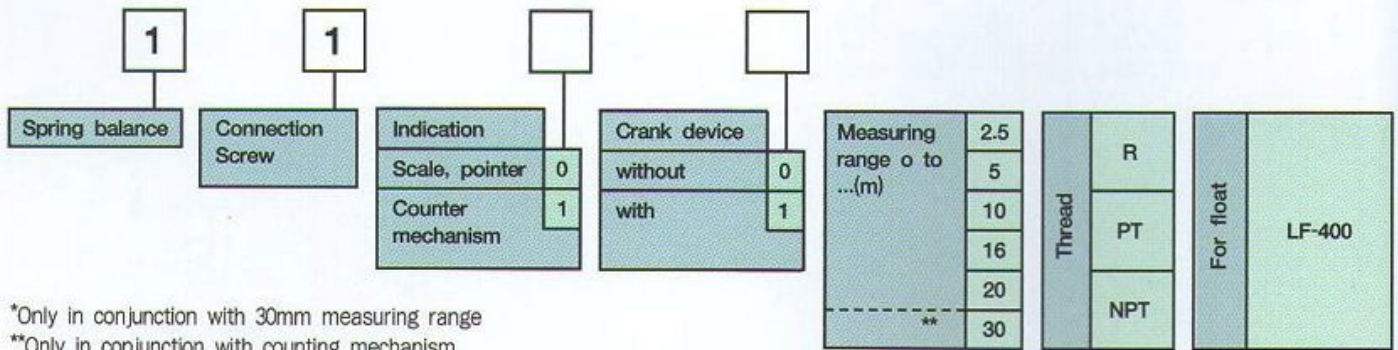


Model: DP-100S

# Pressure Level Transmitter



# DLT Series



\*Only in conjunction with 30mm measuring range

\*\*Only in conjunction with counting mechanism

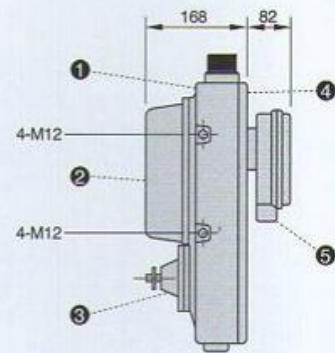
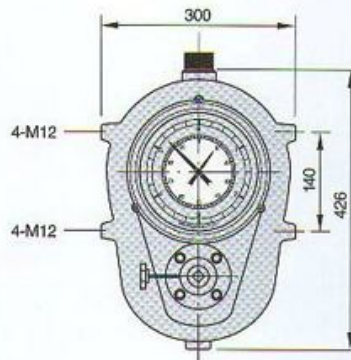
Example of order: LT-1100 / 10mm / JS / LF-400

Screwed execution, dimension and model numbering system

## Dimension [mm]

● Gauge Material

- ① Body: ADC12
- ② Front Cover: ADC12
- ③ Gear Box: ADC12
- ④ Back Cover: ADC12
- ⑤ Terminal Box: ADC12

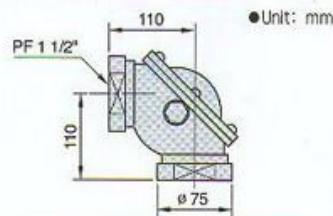


## DLT Accessories

● 90° elbow

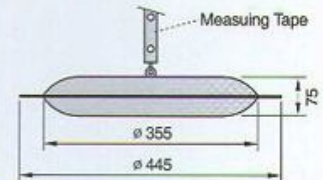
Material: ADC12

Aluminum alloy die casing



● Float

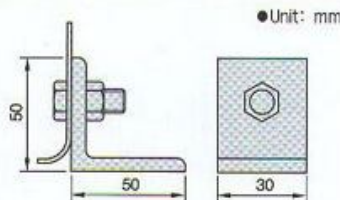
Material: SUS304



● Bottom piece

Material: SUS304 or ss41

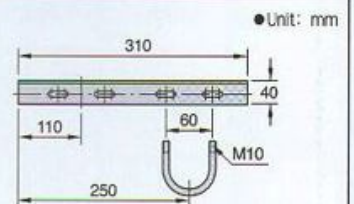
Top anchor 2 off  
Alumini alloy die casing



● Mounting part

Material: SUS304 or ss41

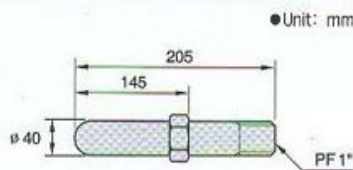
Not included in basic deliver



● Guide wire knob

Material: ADC12

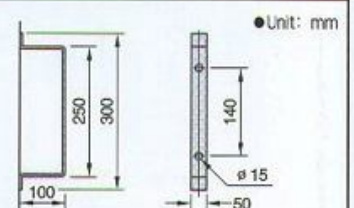
Top anchor 2 off  
Alumini alloy die casing



● Mounting part

Material: SUS304 or ss41

Not included in basic deliver



Model: DP-100S

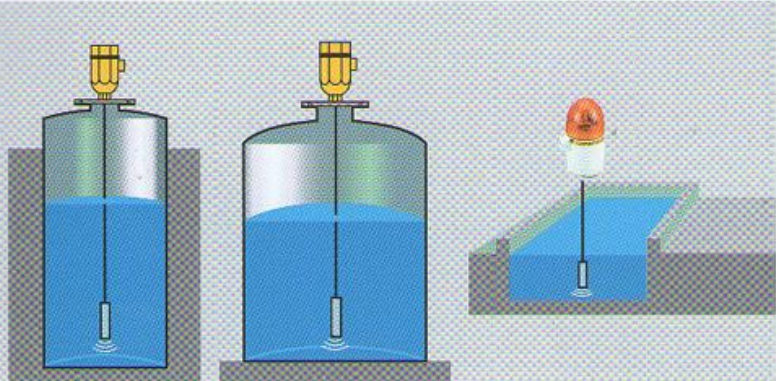
# Pressure Level Transmitter



# DP-100S

## ■ Purpose of Sensor

- Sensor installed in a dam or the upstream of river
- Possible to be used in a discharge pump
- Possible to be applied to the seawater, oil, and corrosive liquids
- Easy and simple to install
- Possible to install freely
- Possible to be installed in a submersible
- Widely used in the deep tubular well pumps

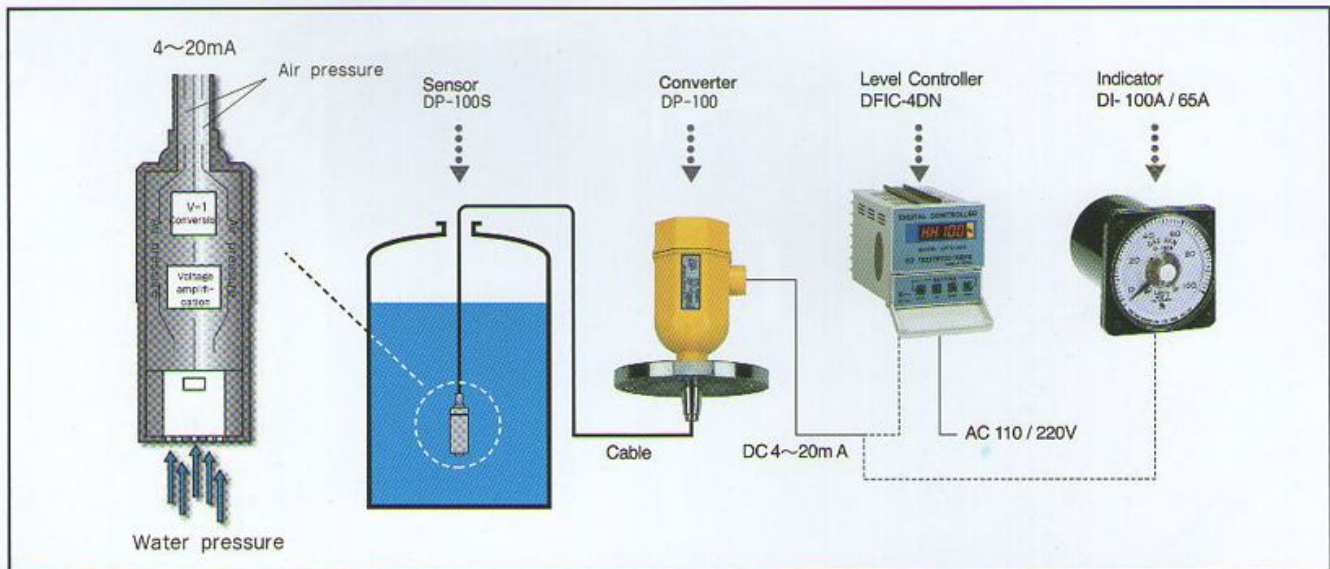


The DP-100S of DF Series has been designed according to the recent size on the ocean and industrial sites. This product watches the surface level of the tank and sends an average of 4~20mA output signal.

Also, it can be widely used in the oil for ships and floor tanks. The measurement pressure capsule/LVDT has been completely confirmed even in the worst environment.

The overall body is made of SUS316 stainless steel that it operates well especially in the low scope with high accuracy. It fits well with the chemical industry and oil. It is the most appropriate in the water distribution system and is strong against the lightning. This product has been proven its quality by the ISO 9001.

## ■ Operating Process



## ■ Technical Data

Minimum range	0-500mm	Output signal	DC 4-20mA
Maximum range	0-10Bar	Max. load	1000 ohms(30V)
Range adjustment	30%-100% of normal capsule range	Sensor cable	Heavy dust, Oil and sea-water resistant irradiated p.v.c
Over load	±50 Meters H <sub>2</sub> O(Min)	Max. length	100meters
Sensor body	SUS 316	Operating temp	-25°C to +85°C
Zero adjustment	±10% of span	Min. survival	-50°C
Power Supply	12-30V D.C	Protection	IP65
Accuracy	Better than ±0.25% FRO		

Model: DPM-500



# Position Potentiometer



# DPM Series

## ■ Purpose of Sensor

- Measuring the migration length/ measuring the location/ measuring the speed/ measuring the turning angle/ measuring the water level
- Detecting the location of a crane/ detecting the balance measurement/ measuring the width and height of crane/ measuring the migration length of injection machine
- Measuring the length of ladder location
- Measuring the height orbit of dam and floodgate

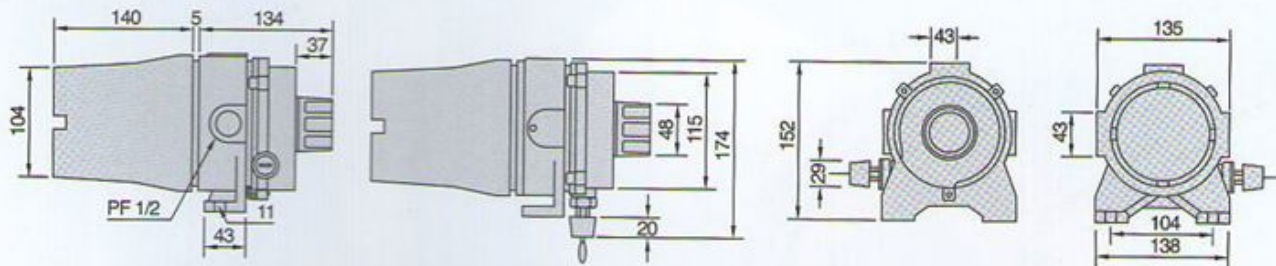


## ■ Operating principle

The position meter is a luxurious analog location transmitter which measures the amount of displacement of the subject. Inside its hard case in a waterproof and dustproof structure which can be applied to harsh environments, a high-accuracy position meter is installed to detect the migration displacement amount and precise location of the subject which requires control.

## ■ Dimension [mm]

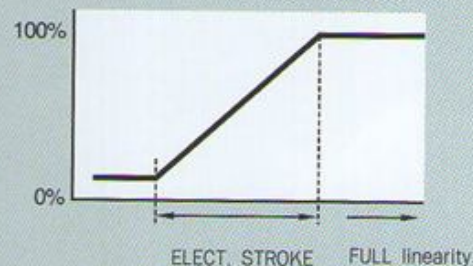
### ● DPM-500



## ■ Common Specification

- Output value : 0~2000[Ω] or 4~20[mA]
- Ambient temperature : -20°C ~ +60°C
- Response speed : 400mm/sec
- Tension dielectric : 1,000 Vrms, 50/60Hz For 1min
- Output flatness : 0.1% @ 1,000 Vdc

## ■ Output Property Diagram



1

2

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4

5

Potentiometer Type

6

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8