

FLOAT TYPE LEVEL SWITCH

MANUAL

Revision No. 001 (2022)

DC SERIES



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※ Please **READ** carefully
and
make sure you **UNDERSTAND** this manual
for safely usage.

- This manual describes how to install, adjust and inspect DC series product.
- Keep this manual in place being available to refer immediately.
- The specification of product mentioned in this manual may not be satisfied by the condition of your environment. Please check and consider carefully before using.
- The contents of this manual could be changed any time due to improvement of product. It will be updated quarterly.
- Please contact Dong Sung Sensors sales office department via email or phone for further questions.

WARRANTY & DISCLAIMER

1. Dong Sung Sensors warrants the product against defects in materials and workmanship under normal use for a period of ONE(1) YEAR form the date of purchase.
2. Dong Sung shall not be responsible for the following.
 - 1) Damage arising from improper use or inspection and failure to follow manual instructions.
 - 2) Repair is done by the person who is not from Dong Sung.
 - 3) Improper parts are used and replaced.
 - 4) Damage is occurred by device or machine not from Dong Sung.
 - 5) Do not include fire, earthquake, tsunami, lightning, war, radioactive pollution, acts of Government, compliance with law, regulation and order.
3. The warranty only covers the damage of products. The secondary and third kind disasters are not covered by Dong Sung Sensors.
4. This Limited Warranty applies only to Dong Sung products, that must be identified by "DSS" mark on to them.

Unpacking

- Our unit has been thoroughly inspected and packed at the factory to prevent damage during shipment.
- Thus, please unpack carefully and visually check the product's exterior for damage.
- Do not place in piles.

FRAGILE

- Please carry the sensor very carefully.
Sensor may not work properly if you drop or damage on it.
- Do not remove the Sensor discretion.
This may cause damage and malfunction.

1. Introduction

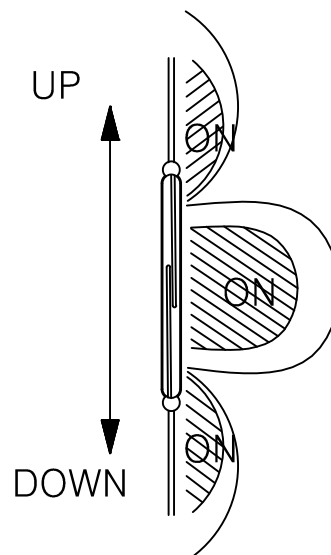
DC series are designed to measure liquid level by using buoyancy and magnetic force as multi-wire signal transmission.

2. Features

- Widely available with various liquid, such as municipal water, clean water, industrial water, LPG, chemical & medical liquid.
- Simple installation / Precise measurement
- Various material options depends on liquid type. (SUS, PVC, PTFE or PP)
- Available for explosion-proof purpose.

3. Operation Principle

While float moves up / down as liquid level rises / falls, the magnetic force within the float will operate the reed switch(stem) so that the resistance value(measurement) varies.



4. Specification

► Sensor

type category		DC-10S~40S-□F	DC-10V~40V-□F	DC-10T~40T-□F
material	head	ABS, ADC12	ABS, ADC12	ABS, ADC12
	flange	SUS304 or 316	PVC	PTFE
	float	SUS304 or 316	PP	PTFE
contact capacity		220V, 0.2A	220V, 0.2A	220V, 0.2A
temperature		Normal: Max100°C	Normal: Max80°C	Normal: Max80°C
		High: Max150°C		
pressure		Max: 10kgf/Cm ²	Max: 2kgf/Cm ²	ATM
specific gravity		at least 0.7	at least 0.7	at least 1.0
float size		φ49 x H50 x φ15.2	φ49 x H51 x φ20.5	φ49 x H55 x φ17
control contact		SPST 1~4 Point	SPST 1~4 Point	SPST 1~4 Point
mounting spec		JIS10K50A	JIS10K50A	JIS10K80A
cable grand		PF1/2"	PF1/2"	PF1/2"
enclosure		IP56	IP56	IP56

► Controller

type category		DLC	DLCA-H(4w)	DLCA-H/L(5w)
sensor voltage		DC 12V	DC12 V	DC 12V
power supply		AC 110/220V ±10%, 50/60Hz		
temperature		0 ~ 60°C		
contact capacity		AC 250V, 5A		
control output		supply control drain control	high / alram	high / alram on / off low / alram
fuse capacity		AC 250V, 100mA	AC 250V, 100mA	
specific gravity		at least 0.7	at least 0.7	at least 1.0
material		Base Plate: ABS Cover: ABS	Base Plate: ABS Cover: ABS	
mounting		Wall Mount		
dimensions		60(w) x 86.7(d) x 41.7(h)	88.5(w) x 128.5(d) x 66(h)	

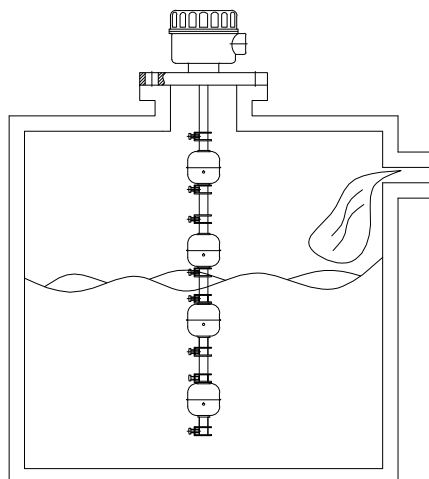
5. Installation

Before installation,

1. Please check product's specification for use within high temp/pressure tank.
2. The DC series is a Reed S/W type and is vulnerable to impact
Thus, please careful when carrying and installing them
3. Default setting of DLC, DLCA-H, DLCA-HL controller is in supply mode
4. Sensor may not works with sticky liquid or liquid includes floating matters.
5. Please do not use oil with PVC float.
6. Use PTFE models for liquids such as highly corrosive chemicals
7. Check the specific gravity of measure object.
8. To use in high viscous liquids, please contact us.

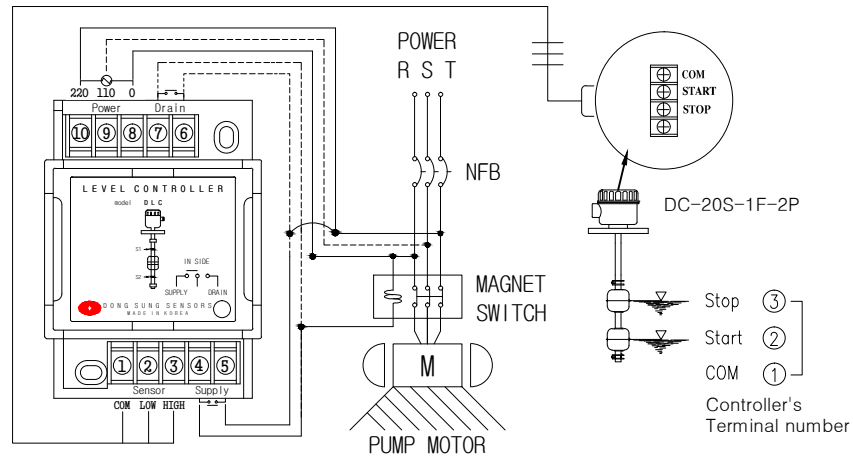
During installation,

1. Check the sensor's flange specification if it matches with tank's.
2. Put sensing unit into the tank attach with a bolt and nut (see the pics below).
3. Connect wire between your control unit and terminal block(sensor)
– Refer to "Wire connection" part of this manual.
4. Use flange-datachable product for low ceiling.
5. For outdoor use, must use head-protect cover.
6. Must keep the stopper's position.



6. Wire Connection

1. DLC

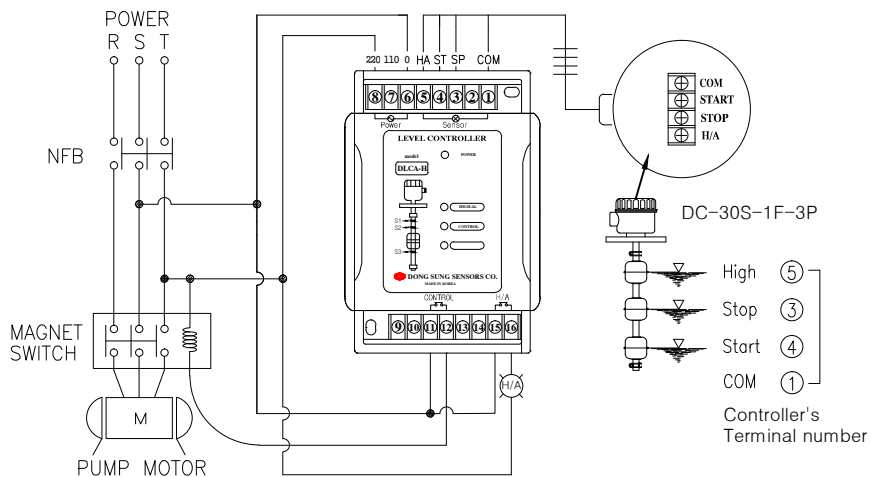


- Check supply/drain terminal.
- Match the terminal number to sensor correctly.

– Caution

- Make sure the connection between Level Controller and Sensor, for proper use.
- Sensor and Level Controller MUST be treated very carefully.

2. DLCA-H-4W

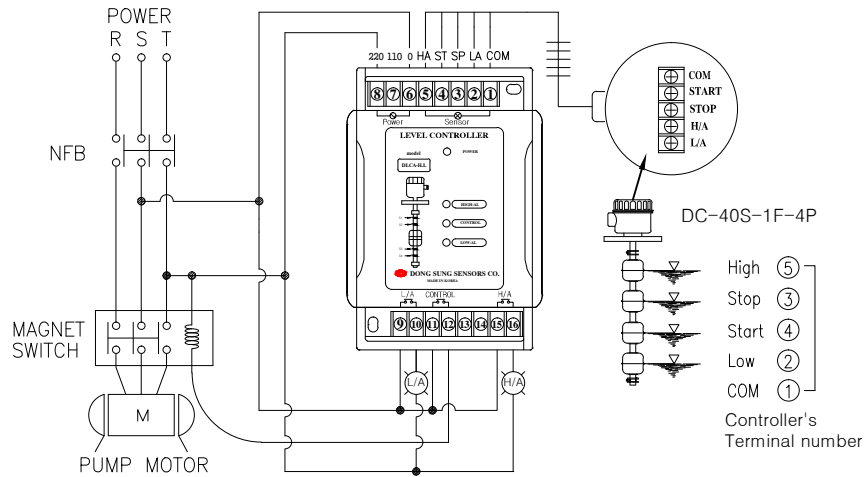


- Match the number of Controller and sensor.
- To change DLCA-H's supply/drain option, use switching switch inside of Controller(remove upper cover).
- Check the connection state when you open/close the Controller's cover.

– Caution

- Make sure the connection between Level Controller and Sensor, for proper use.
- Sensor and Level Controller MUST be treated very carefully.

3. DLCA-H/L-5W

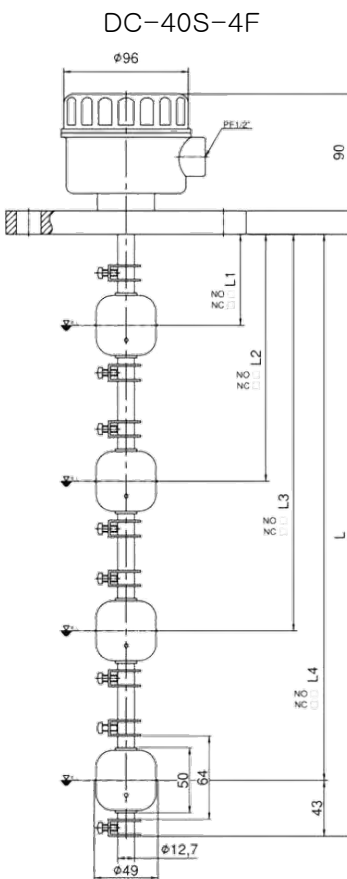
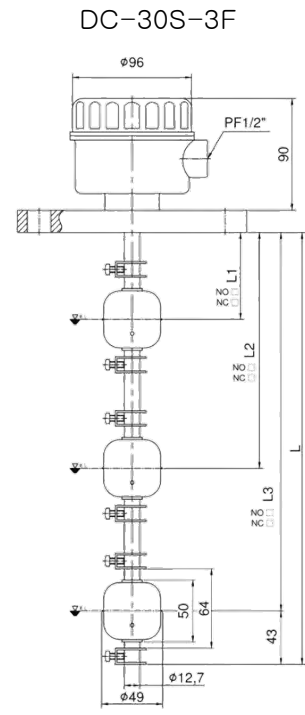
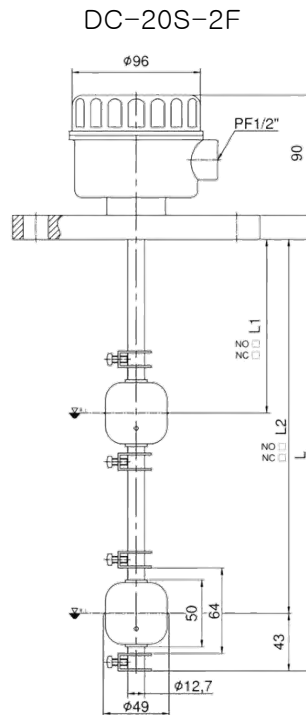
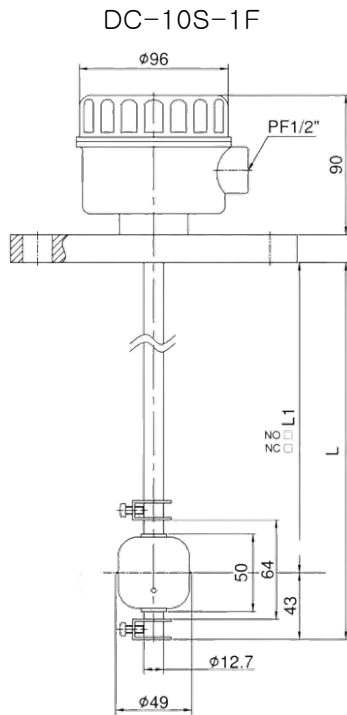


- Match the number of Controller and sensor.
- To change DLCA-H's supply/drain option, use switching switch inside of Controller(remove upper cover).
- Check the connection state when you open/close the Controller's cover.

- Caution

- Make sure the connection between Level Controller and Sensor, for proper use.
- Sensor and Level Controller MUST be treated very carefully.

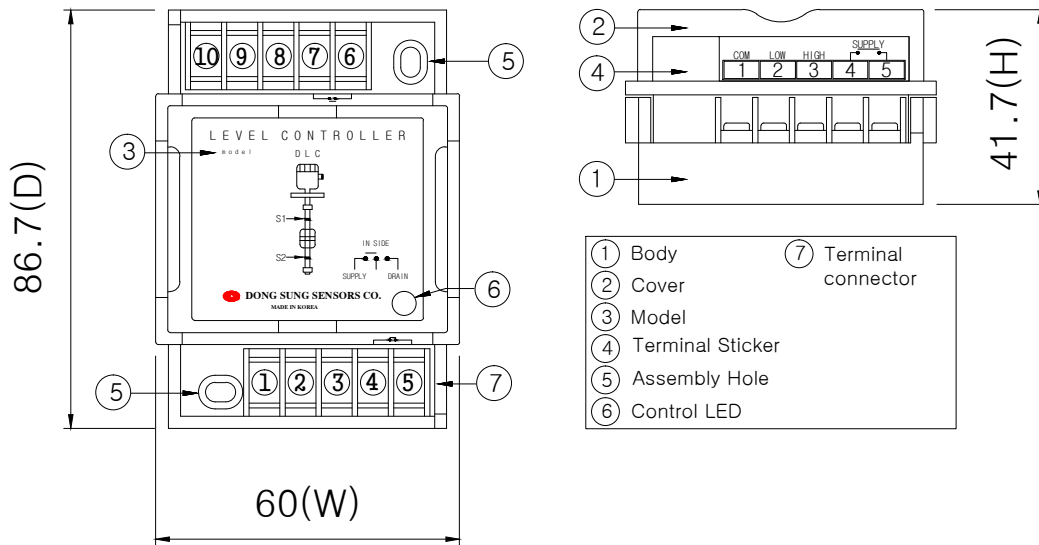
7. Dimensions



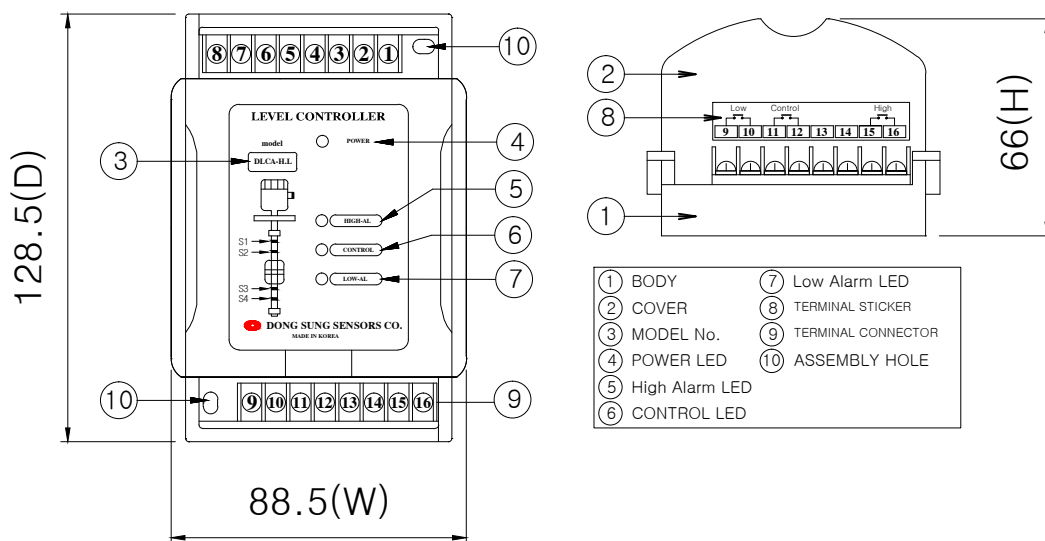
FLOAT TYPE LEVEL SWITCH

▶ Controller

1) DLC

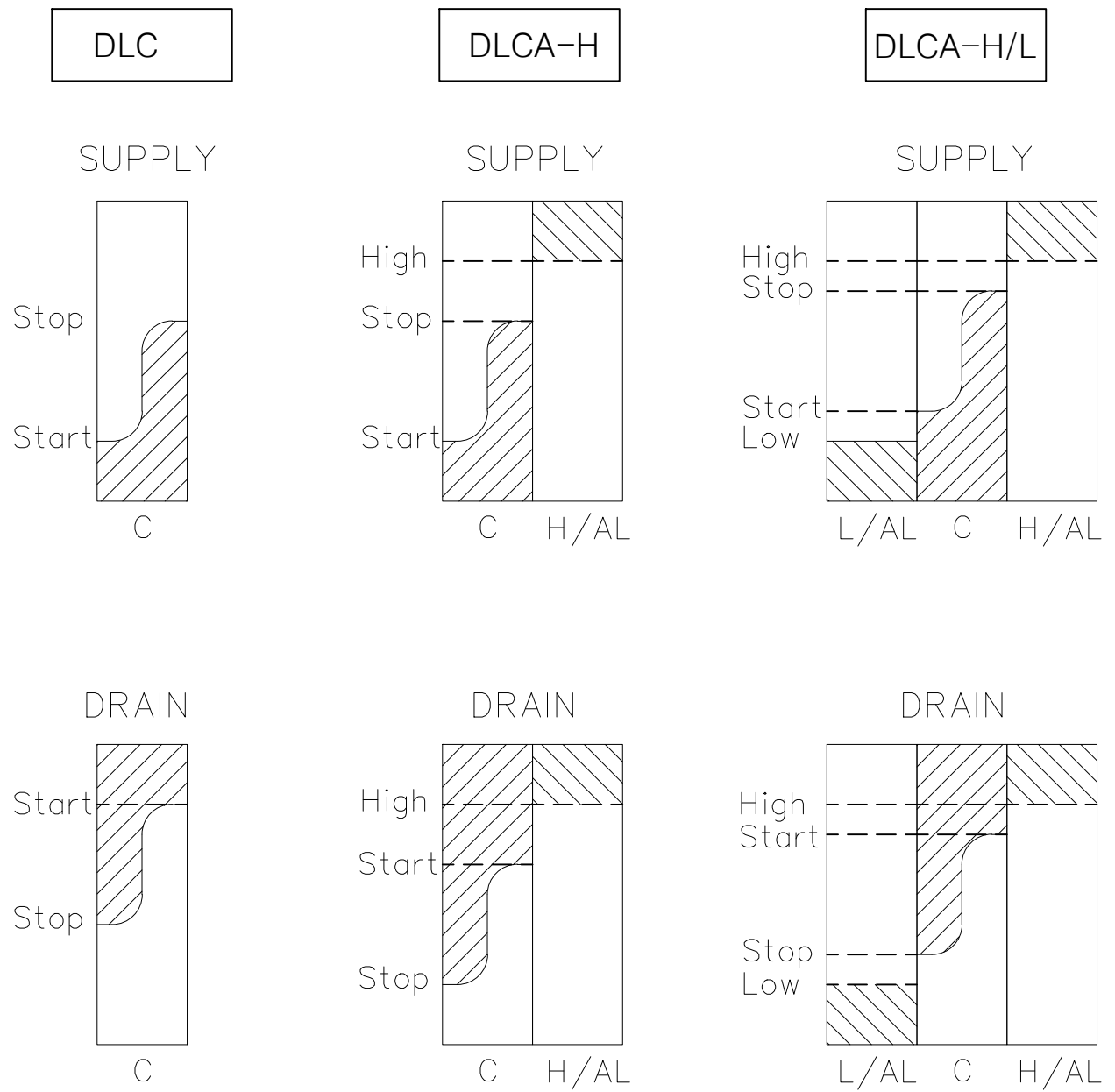


2) DLCA-H-4W / DLCA-H/L-5W



8. Contact Output

H / AL : High Alarm
 C : Control
 L / AL : Low Alarm



9. Maintenance

1. SELF-DIAGNOSIS

- 1) Please check DC sensor's contact output.
- 2) See if the float is leaking. (shake the float)
- 3) If contact output is unstable, check resistance value at each point.
- 4) Check the controller power.

2. CHECKLIST BEFORE A/S

- 1) See if all stoppers are on its position.
- 2) Keep the float clean. (soft up/down movements)
- 3) Check the power (DC 15V ~ 32V)
- 4) Check the wire connection.
- 5) If current rapidly increases when reed switch is broken partially, then you need A/S.

For any inquiries, please contact us via email.