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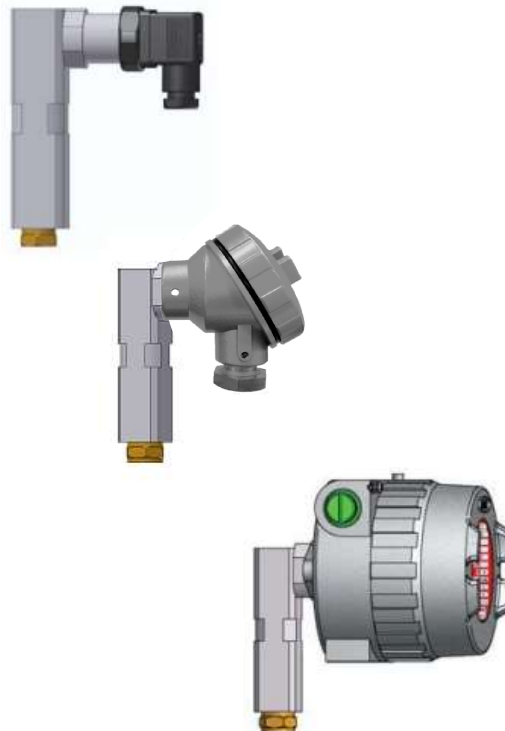
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INSTRUCTION MANUAL

Level Switch for Magnet Float Type Level Gauge

HR-10L Series



Doc. no. : HR10L_IM_Eng_Rev.0

Issue date : 2020. 06

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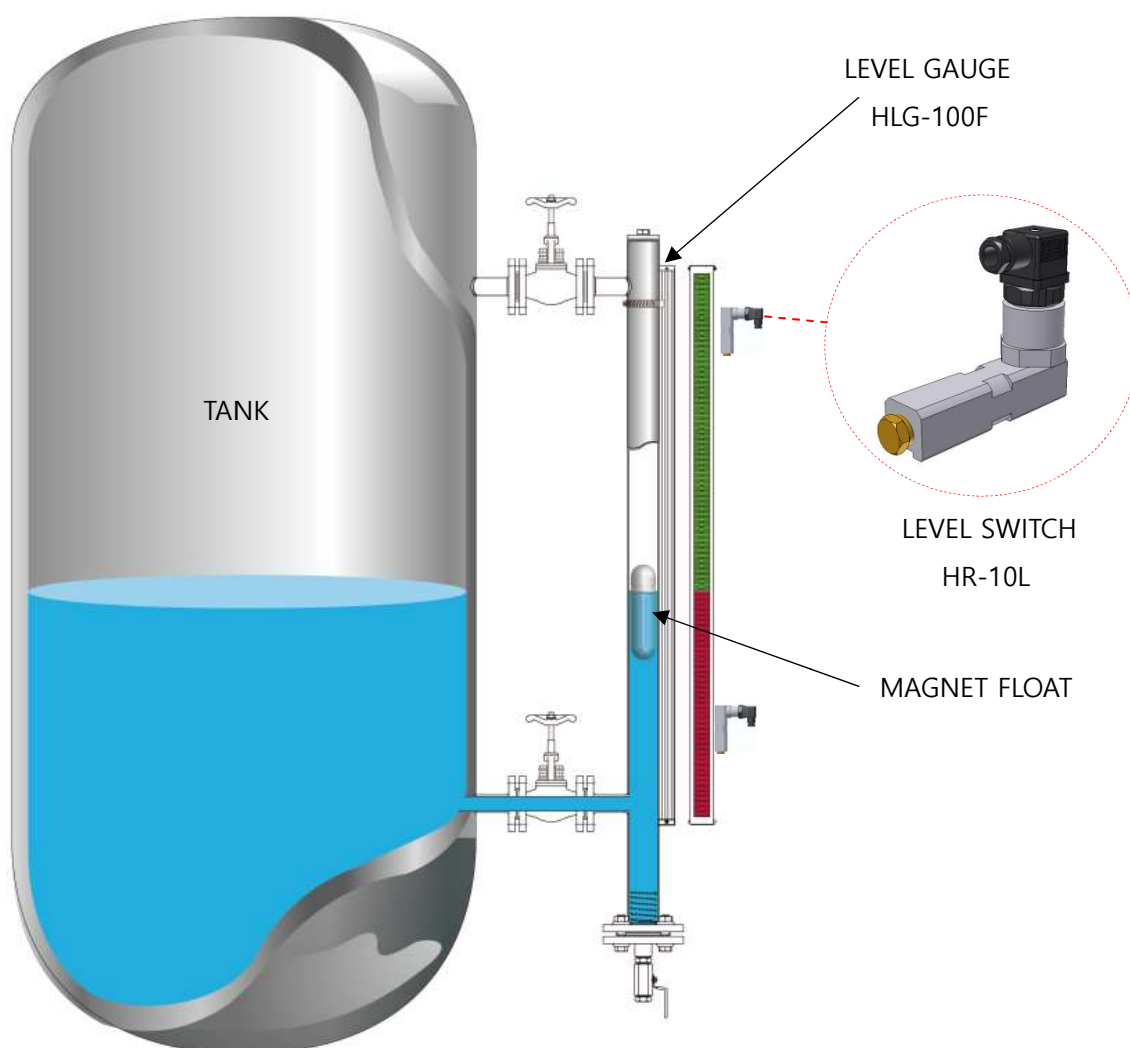
Overview and Feature

The HR-10L (Ex) Series attaches to its Level Gauge (HLG-100F) to detect the liquid level inside the various containers (tank). It is used for processes that perform the function of alarms and controls in water supply or drainage.

Operating and Composition

The Float rises or falls when the liquid level inside the Level Gauge rises or falls. If a magnet in the Float passes the contact point of the Reed Switch inserted into the Chamber within the Level Gauge, the contact point becomes On/Off.

Using this principle, the wiring with the Control Unit can be used to prevent idle of the automatic supply pump of liquid, to alarm the upper and lower level of the liquid, to supply the liquid automatically, and to drain the liquid automatically.



Specification Weather-Proof

Model		HR-10L	
Type		Level Switch	
Mounting		With HLG-100F Band Fasten	
Ambient Temperature		-20°C ~ +60°C	
Enclosure		Weather-Proof (IP65)	
Material	Head	PA66	ALC
	Body	Duralumin	
Switch Type		Reed Switch	
Max. Switching Voltage		24 VDC	
Switch Form		SPDT	
Cable Entry		PG 7	PF 1/2"(F)

Ex-Proof

Model		HR-10L-Ex	
Type		Level Switch	
Mounting		With HLG-100F Band Fasten	
Ambient Temperature		-20°C ~ +60°C	
Enclosure		Ex-Proof (Ex d IIC T6,IP65)	
Material	Head	ALC	
	Body	Duralumin	
Switch Type		Reed Switch	
Max. Switching Voltage		24 VDC	
Switch Form		SPDT	
Cable Entry		PF 3/4" (F)	

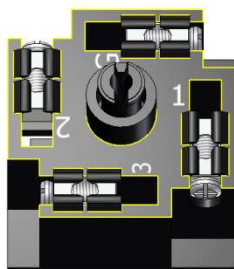
Contact Rating

Max. Switching voltage	Max. Switching current	Contact rating Capacity(VA)
220VAC/24VDC	0.5A / 0.5A	40W / 10W

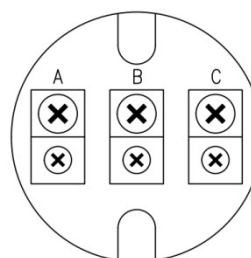
Wiring

The terminals of the products are composed according to contact points and shall be connected as follow.

<Weather-Proof>

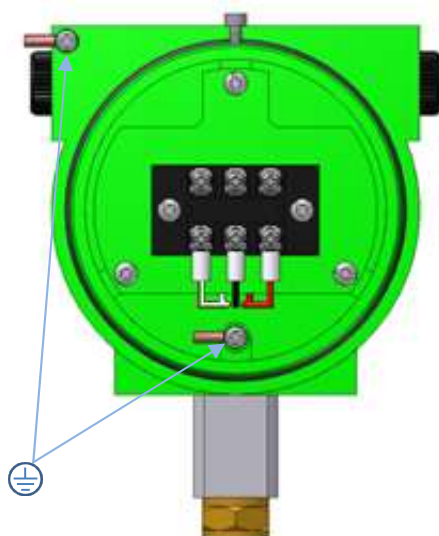


- 1 : High
- 2 : Low
- 3 : Com
- G : Ground



- A : High
- B : Low
- C : Com

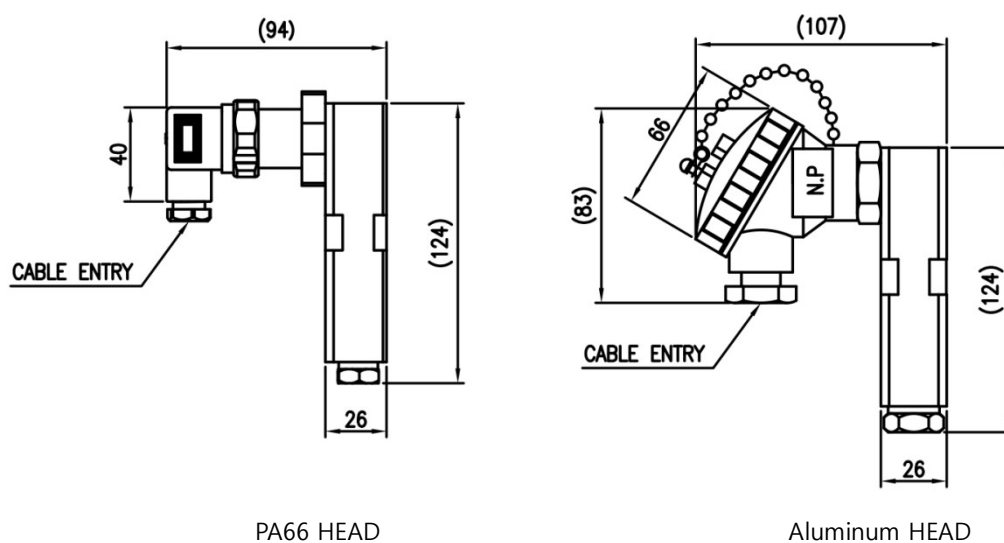
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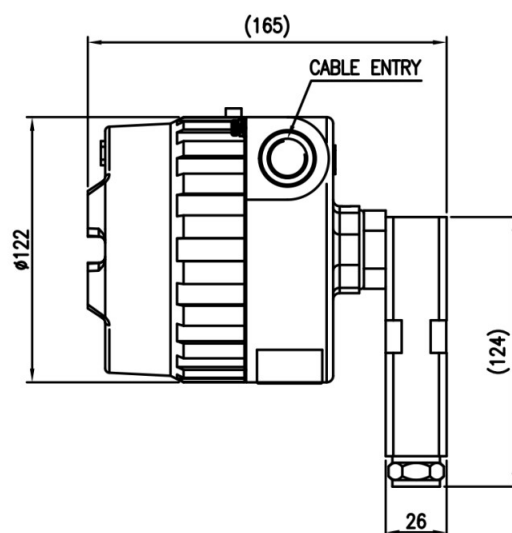
- Red : High
- Black : Low
- White : Com
- ⊕ : Ground

* Grounding of Ex-proof products is in external and internal.

Dimension <Weather-Proof>



<Ex-Proof>



Maintenance

■ Inspection of products

The main inspection part of the HR-10L (Ex) series is Reed S/W.

The life span of the main components depends on the environment and can be used in optimal condition through periodic checks. Therefore, users should perform maintenance through regular inspections at least once a year. Using a Digital Multimeter, the inspection can be carried out simply as follows.

- Select the buzzer of the Digital Multimeter and connect it to the N.O. and Com terminals of the product.
- It is normal when the buzzer sounds at the point of contact by moving the magnet up and down at the body of HR-10L.

- If checking contact status with resistance, the Digital Multimeter represents 0 ohms when it represents a normal close (NC) and displays infinite when it is normal open (NO).

■ Precautions for Installation

- If there is explosive gas atmosphere, do not open the cover.
- Unlock the lock key (Set screw) before removing the cover. (Ex-proof)

**Precaution for
Transportation,
Assembly
and
Installation**

■ Precaution for Installation

- As it is assembled and shipped to a level gauge (HLG-100F), no special precautions are required for installation.
- Do not shock the product when transporting or dismantling it.

■ Precaution for Inserted External Wire (IP65)

- Use the cable gland connection or metal pipe line lead-in in the wire inlet.
- Use a product with equivalent Ex-proof certificate to connect it with the external line lead-in method.
- For Non-use external wire inlet, use a close plug that passes safety certificate above equivalent performance with the product.

■ Precaution for Grounding

- The grounding has an external and an internal grounding. When connection to an external ground, the ground wire shall be 4mm² (4mmSQ).
- The internal grounding wire shall be the same size as the power line, and the size of the internal grounding terminal lug shall be 3.1mm² (3.1mmSQ). If the power line is larger than 3.1mm² connect the ground wire without terminal lug.

<Warning> Make sure to insert a washer if the terminal lug is removed from ground terminal and then re-connected.

**Safety and
Environment**

■ Caution for Use

- Make sure to connect the product and the container using the required tools.
- Keep the lock key safe and make sure that it is locked.
- Do not cause high impact to the product.

■ Cautions for Wiring

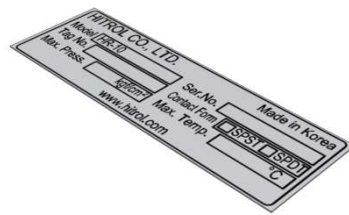
- Make sure to wire contacts correctly (Refer to Wiring)
- Internal ground (inside product housing) and external ground shall be connected.

■ Disposal

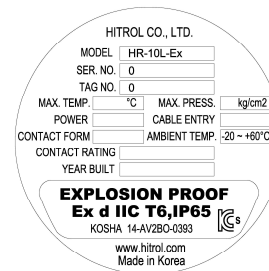
- Make sure to separate the AMP and main unit from the housing before disposing the product. No part has an influence on the environment, so special attention is not required (e.g., mercury switch).

Marking

The label stating the model, serial number working temperature, working pressure, and output is attached on the housing. The serial number is a unique manufacturing number.



<Weather-proof>



<Explosion-proof>

User Training

Temperature of the medium in the tank should not exceed the maximum temperature described at the specification. And also, ambient temperature around product should not be over -20 ~ +60°C.

Ex-proof type of product is certified as pressure-resistant. So, it is not allowed to open the cover of product if explosive gas atmosphere exists.

Do not apply the Non Ex-proof product in an Ex-proof zone.

The Ex-proof product can be used where the environment and liquid inside the containers are of Zone 1 and Zone 2.

Warranty and Contact

Warranty of the product is 2 years after shipment and it can be warranted for malfunction occurred under use in normal condition, but it can be charged regardless of warranty period in case that after sales service is requested not for malfunction of product.

The After sales service can be requested through our website or headquarter.

Headquarter · Factory · R&D Contact Number

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