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CATALOGUE

Float Type Level Switch

HM-90S Series



Doc. no. : HM90S_E_R0

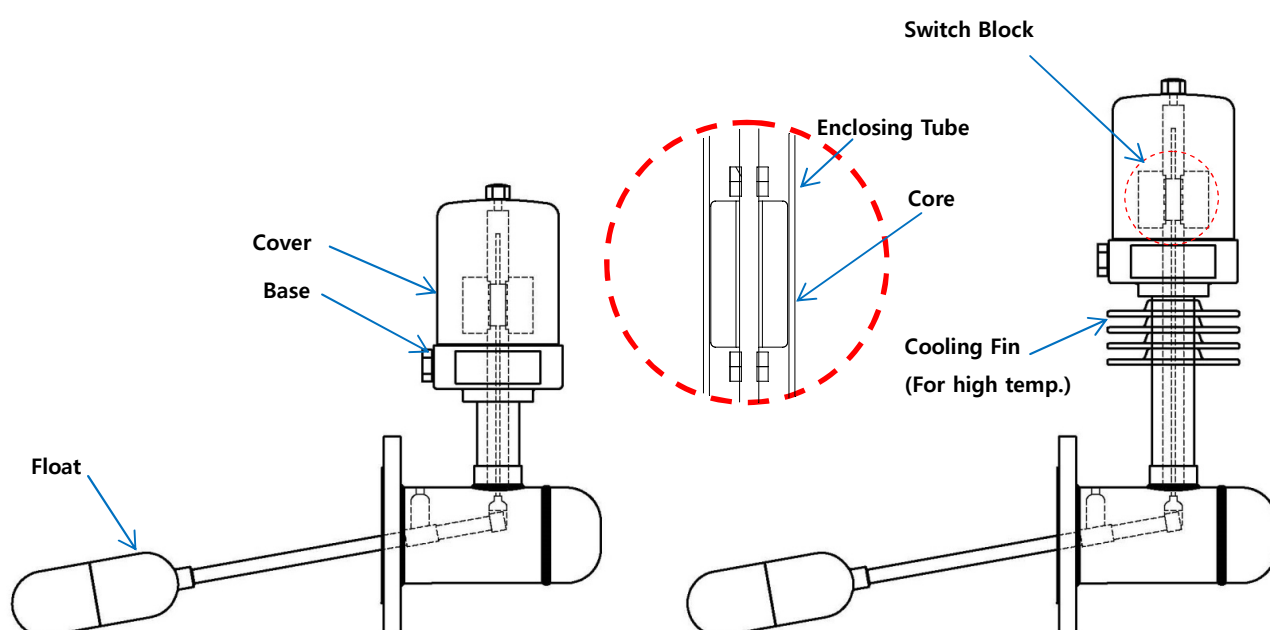
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Overview

HM-90S Series is a level switch with ON/OFF contact signals to detect upper and lower limits of vessel. It has a solid structure and high reliability. It is mainly used as a water level detector for boilers of power plants and refining equipment of petrochemical plants.

Operating Principles

When the level of the object to be measured rises, the float also rises due to buoyancy and, accordingly, the connected core also rises. When the core rises, a switch block magnet responds to the core so as to trigger the switch.

**Characteristics**

- Solid structure and long service life
- Current operation state display
- Customizable with special material (alloy)
- Ex-proof type available (HM-90S-Ex, HM-90SH-Ex)

Specifications

Weather-Proof

Model	HM-90S	HM-90SH
Process connection	80A JIS 10K RF, Others	80A JIS 10K RF, Others
Ambient Temperature	-20°C ~ +80°C	
Max. Process Temp.	-40°C to +120°C	-40°C to +200°C -40°C to +350°C -40°C to +500°C
Max. Process Pressure	Up to 20kg/cm ² (300#)	Up to 20kg/cm ² (300#)
Switch Type	Micro Switch	
Contact Form	SPDT, DPDT	
Enclosure	Weather-Proof (IP65)	
Material	Flange	C.S, 304 SS, 316L SS
	Chamber	C.S, 304 SS, 316L SS
	Float	316L SS
Housing; Cable Entry	C.S; PF 3/4"(F), AL.; PF 3/4"(F)	
Installation	Side	

Ex-Proof

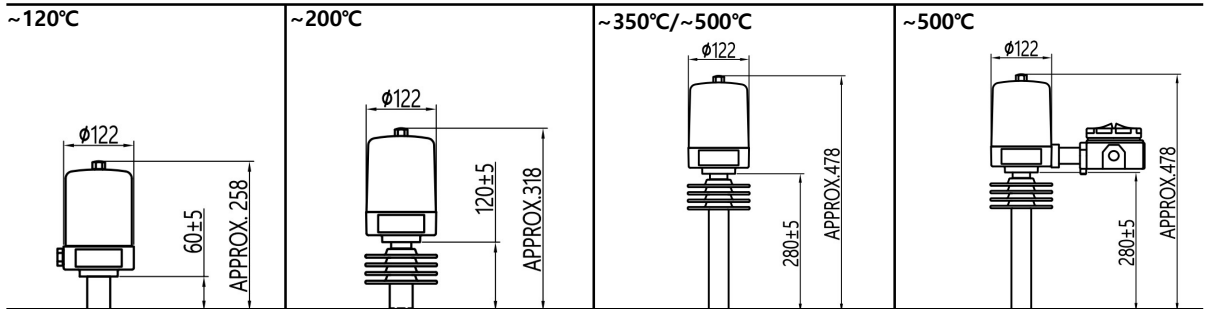
Model	HM-90S-Ex	HM-90SH-Ex
Process connection	80A JIS 10K RF, Others	80A JIS 10K RF, Others
Ambient Temperature	-20°C to +80°C	
Max. Process Temp.	-40°C to +120°C	-40°C to +200°C -40°C to +350°C
Max. Process Pressure	Up to 20kg/cm ² (300#)	Up to 20kg/cm ² (300#)
Switch Type	Micro Switch	
Contact Form	SPDT, DPDT	
Enclosure	Ex-Proof (Ex d IIC T4, IP65)	
Material	Flange	C.S, 304 SS, 316L SS
	Chamber	C.S, 304 SS, 316L SS
	Float	316L SS
Housing; Cable Entry	AL.; PF 3/4"(F), Others	
Installation	Side	

※ The housing is designed to avoid damage from dust or water, and if necessary, anti-corrosion housing (EPOXY Coated) can be selected.

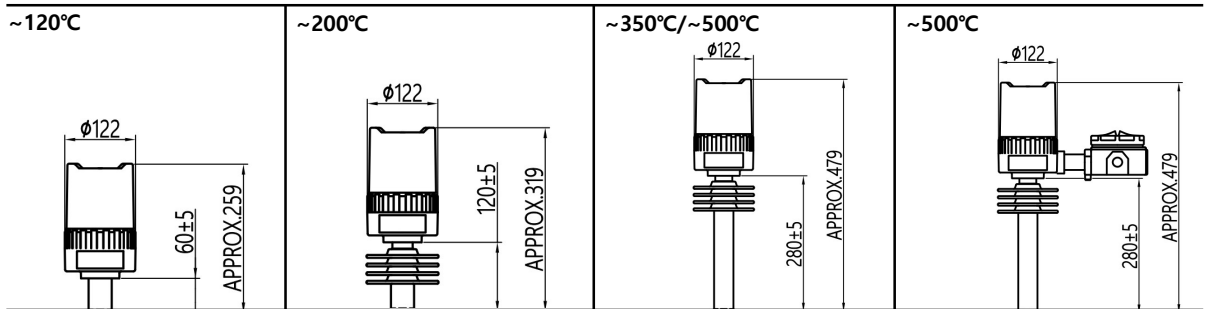
Dimensions & Technical Specifications

Carbon steel Housing (Weather-Proof)

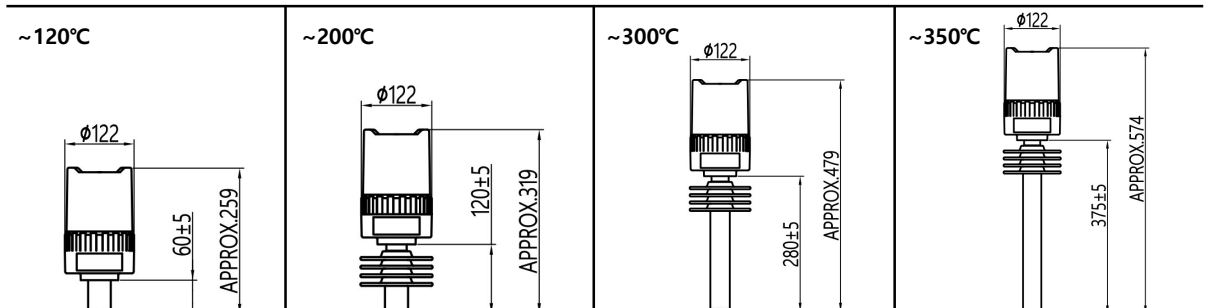
※ Unit of Length: [mm]



Aluminum Housing (Weather-Proof)



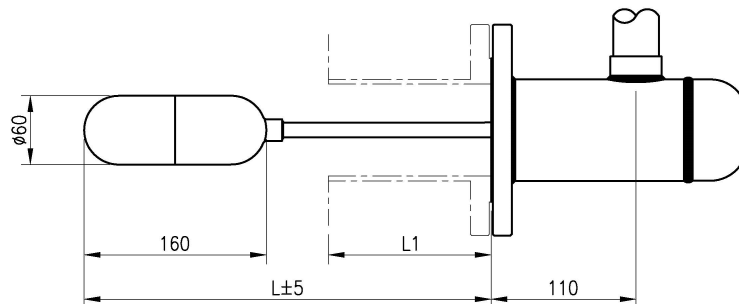
Aluminum Housing (Ex-Proof)



If the fluid temperature is over 200°C, heat resistance cables for high temperatures shall be applied.

Float

※ Based on pressure of 10kgf/cm², temperature of 120°C, Standard length.




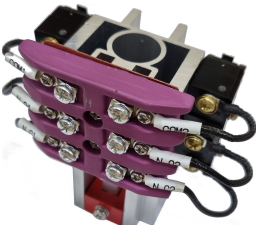
HM-90 Series


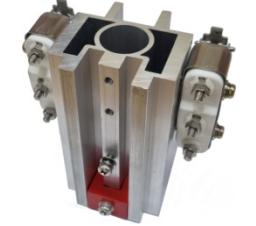
Std. Length L1 / L	Minimum Specific Gravity
150mm / 350mm	0.8



Some tolerances may occur with actual products.

Switch Specification by Process Temperature

Std. Type	Opt. Type	Process Temp.	Contact Rating
		~ 200°C	AC 250V, 15A DC 125V, 0.5A
		~ 350°C	AC 250V, 5A DC 125V, 0.5A

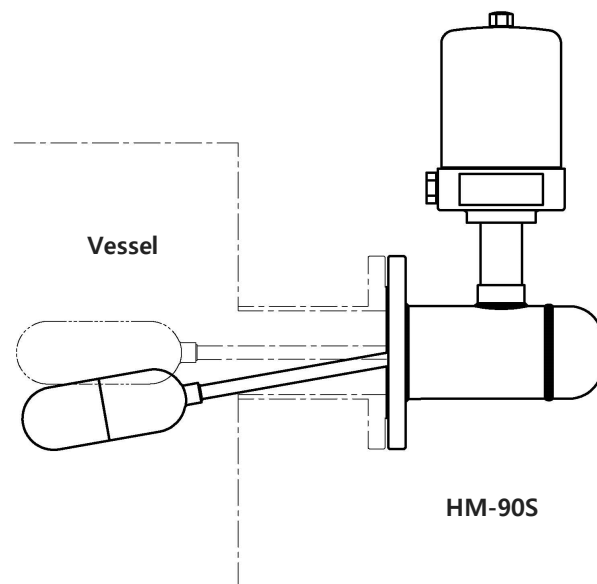
Std. Type	Opt. Type	Process Temp.	Contact Rating
	 + External Terminal Box	~ 500°C	AC 250V, 1A DC 125V, 0.4A



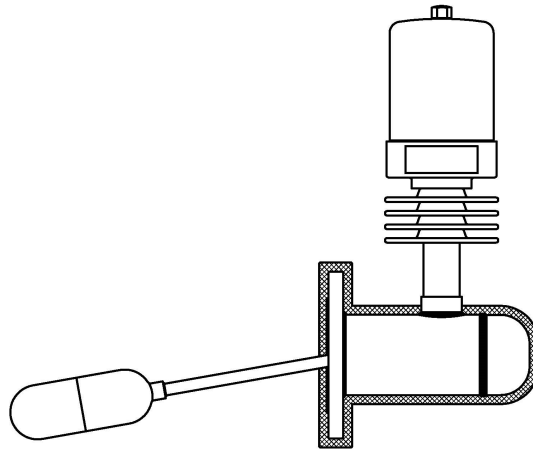
Specifications of Temperature and Contact Form (SPDT, DPDT) are optional.

Installation

- Default connection is a side type.
- According to the dimensions of the drawing, the connection and main unit shall be leveled.
Also, it is recommended to install a bracket to support the product if necessary.
- When installing, the nozzle length shall be checked before installing the product.



- If the temperature of object to be measured exceeds 350°C, an ex-proof product (HM-90S(H)-Ex) is not applicable.
- If the temperature of object to be measured exceeds 120°C, use a high-temperature product (HM-90SH, HM-90SH-Ex) and insulate the main unit and connection, as shown below.



Do not insulate the housing and cooling fin.

Precautions for Installation

- Use the same standard flange or screw.
- Make sure to insert washers between bolts and nuts to prevent loosening.
- Make sure to insert gaskets between flanges. (Select the gaskets in consideration of temperature of content and pressure of vessel.)
- Install an Ex-proof product only in an Ex-proof zone.

■ Headquarters . Factory . Laboratory Contact Number

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