

MAGNETOSTRICTIVE LEVEL TRANSMITTER

HT-100M Series



ASME



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HITROL CO., LTD.

Overview

HT-100M Series is a Magnetostrictive Type Level Transmitter which continuously measures the liquid level in the tank using buoyancy and outputs a current signal. This transmitter can be easily installed and adjusted, and can be especially applied for corrosive and acidic liquids with various anti-corrosive materials such as PVC or Teflon for the sensor. HT-100M Series is extensively used to measure liquid levels in various industries.

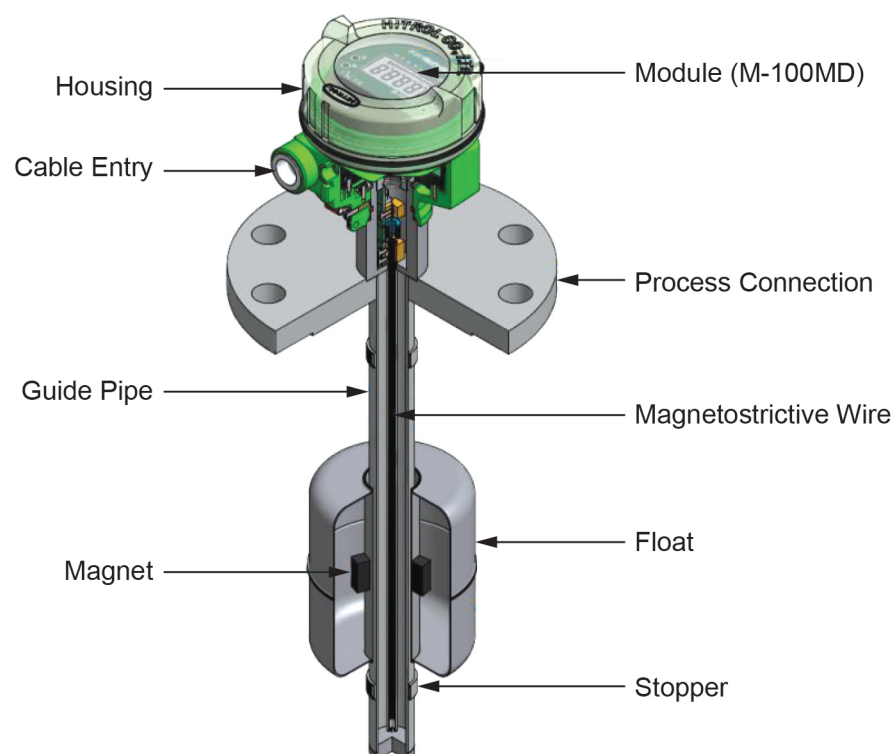
Characteristics

- Provision of precise measurement with high resolution (Resolution 1mm)
- Widely used to measure various liquid levels
- Applicable to corrosive and acidic liquids with anti-corrosive material for the sensor (PVC and Teflon)
- Strong structure and high reliability
- Available in compact sizes (Application of 1" float)
- Local Indication is available (Display Type)
- NAMUR NE43 is applied.

Operation Principle and Composition

- As liquid level is changed in the tank, the float which is manufactured in accordance with the specific gravity of liquid moves upward or downward along the guide pipe with the same liquid level by buoyancy. The magnet is installed in the float and it creates a torsion of pulse along a magnetostrictive wire inside the guide pipe. This torsion is detected by the module (M-100MD) in the housing, continuously outputting a current signal (DC 4-20mA).

MAGNETOSTRICTIVE TYPE LEVEL TRANSMITTER HT-100M Series



Specification

► STAINLESS STEEL

Model	HT-100MS	
	Std.	Opt.
Mounting	Banding at HLG-100F	Flange
Process Temperature	Max. 90°C	
Process Pressure	None	Up to 20kg/cm ² (300#)
Power Source	DC + 24V	
Output	DC 4~20mA (2-wire)	
Accuracy	±1mm or ±0.1% @ F.S whichever is greater	
Enclosure	Weather Proof IP65 / IP66 (AL.)	
Wetted Part Material	SUS 316L	
Process Connection	None	Min. 25A
Housing	PBT / AL. (Opt.)	
Cable Entry	PF 1/2 "	
Resolution	1mm	

Model	HT-100MV	
Mounting	Flange	
Process Temperature	Max. 60°C	
Process Pressure	Up to 0.5kg/cm ²	
Power Source	DC + 24V	
Output	DC 4~20mA (2-wire)	
Accuracy	±1mm or ±0.1% @ F.S whichever is greater	
Enclosure	Weather Proof IP65 / IP66 (AL.)	
Wetted Part Material	PVC	
Process Connection	100A JIS 10K FF	
Housing	PBT / AL. (Opt.)	
Cable Entry	PF 1/2 "	
Resolution	1mm	

Model	HT-100MT	
Mounting	Flange	
Process Temperature	Max. 90°C	
Process Pressure	Up to 0.5 or 3kg/cm ²	
Power Source	DC + 24V	
Output	DC 4~20mA (2-wire)	
Accuracy	±1mm or ±0.1% @ F.S whichever is greater	
Enclosure	Weather Proof IP65 / IP66 (AL.)	
Wetted Part Material	SUS316L + TEFLON	
Process Connection	100A JIS 10K FF	
Housing	PBT / AL. (Opt.)	
Cable Entry	PF 1/2 "	
Resolution	1mm	

► **Order Code** can be printed at our website (www.hitrol.com)



The warranty period for PTFE(Teflon) float and tube is one year from the date of shipment.

Float Application

Float Material	Environment						
	Temperature	Pressure	Acid	Alkaline	Oil	Solvent	Liquid gas
SUS 316L	-40°C~150°C	Up to 20kg/cm ²	△	○	○	◎	△
PVC	-10°C~60°C	0.5kg/cm ²	○	○	X	△	X
TEFLON	-20°C~150°C	0.5~3kg/cm ²	◎	◎	X	○	△
NBR	-40°C~60°C	Up to 20kg/cm ²	X	△	◎	△	○
TITANIUM	-20°C~150°C	Up to 10kg/cm ²	X	△	◎	○	○

Note : ◎ = Excellent ○ = Good △ = Acceptable X = Not good

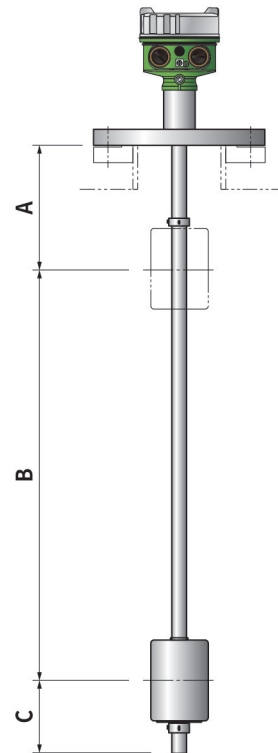
* Above application can be different according to the specific gravity and the special medium.

Measuring Length

Section	HT-100MS (Unit : mm)			
	1"	2"	3"	4"
A	100 (50)			
B	1,340 (1,390)	3,340 (3,390)	5,300 (5,350)	5,300 (5,350)
C	60	60	100	100

Section	HT-100MV (Unit : mm)		
	2"	3"	4"
A	100 (50)		
B	3,320 (3,370)	3,800 (3,850)	3,800 (3,850)
C	80	100	100

Section	HT-100MT (Unit : mm)			
	1"	2"	3"	4"
A	100 (50)			
B	1,330 (1,380)	2,830 (2,880)	4,300 (4,350)	4,300 (4,350)
C	70	70	100	100



A = Upper Dead Band : Minimum length which cannot be measured from the bottom flange

B = Measuring Range : It can be different according to the material.

C = Lower Dead Band : Minimum length which cannot be measured from the end of guide pipe

() = Option

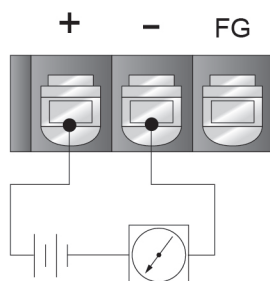
► Specification

Item	Specification
Model	M-100MD
Micom	16Bit MicroProcessor
Supply Voltage	DC +17V ~ +40V @ Typ.+24V
Status Indicator	Tri-Color LED (Green/Red/Orange)
Zero / Span Set	Quick Menu / Set Menu
Wire Connection	One-Touch Connector
Ambient Temperature	-20°C ~ +60°C
Dimension	80mm x 65mm x 58mm
Current Loop Interface	2-Wire Loop Current
Output Current Range	4.0mA ~ 20.0mA @ Alarm 3.8mA, 21mA [NAMUR NE43]
Frame Ground	FG

► Wiring



DISPLAY CONVERTER



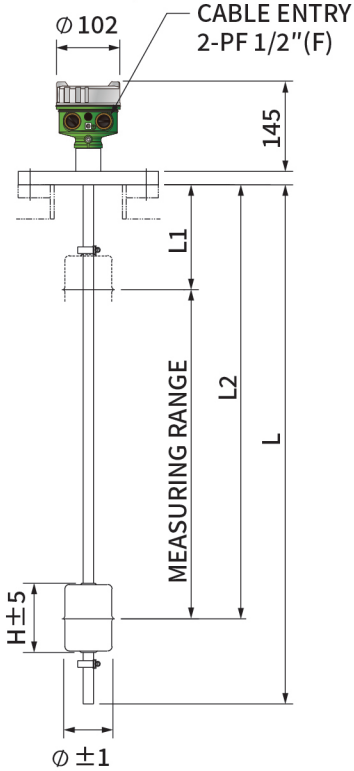
■ DISPLAY CONVERTER

- ◆ +- : DC 24V(DC 4~20mA Loop)
- ◆ FG : Frame Ground

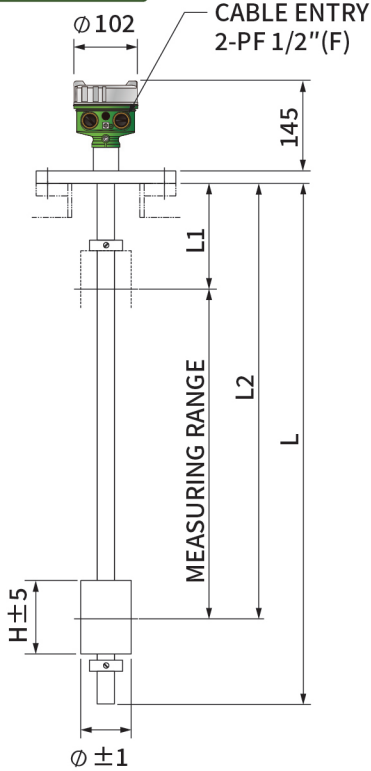
- ☑ It can be set freely according to user environment.
- ☑ Self-diagnosis Function (Diagnosis of float breakaway and state of sensor)
- ☑ Simulation Current Out Function (4mA, 12mA, 20mA))

Dimension

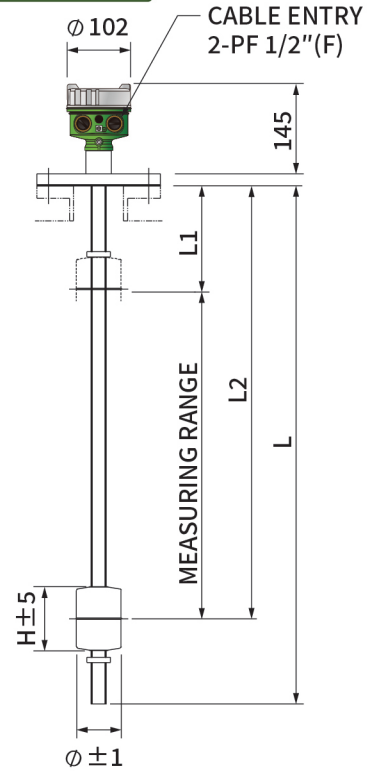
HT-100MS



HT-100MV

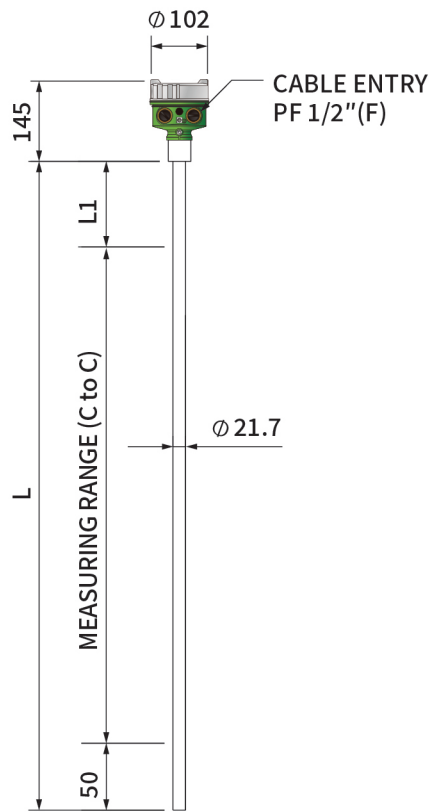


HT-100MT

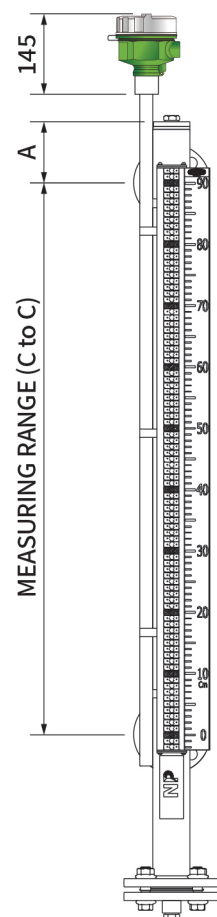


Flap Type Level Gauge with HT-100MS

HT-100MS



HT-100MS + HLG100F

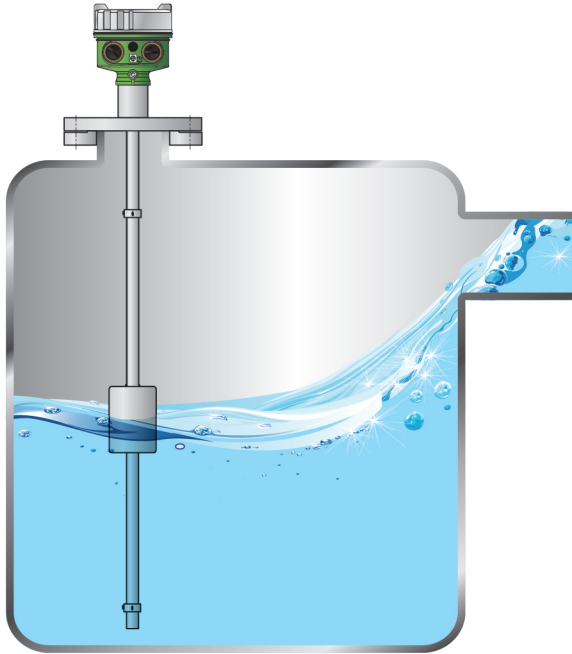


VENT PLUG
: L1 = A + 30mm
VENT VALVE /w PLUG
: L1 = A + 100mm

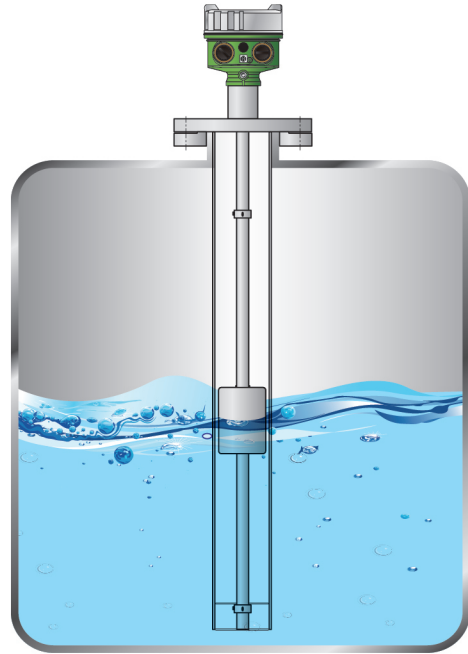
◆ Actual product may have a tolerance slightly.

Installation

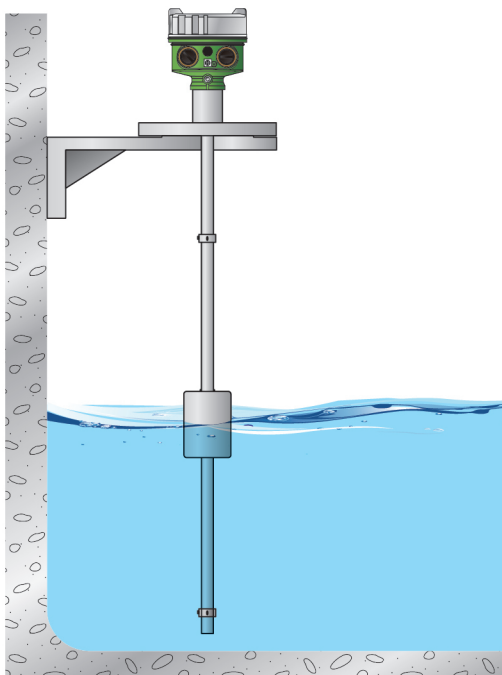
- Below drawing should be considered when installation.



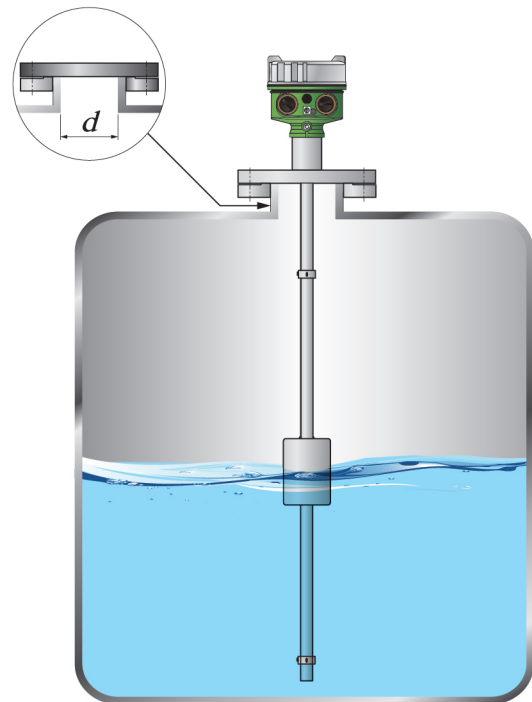
Product should be installed at the place far from inlet in order to avoid the malfunction.



When there is flow or sloshing in the measured object or there is a stirrer around the sensor, the protective tube type should be used.



Bracket should be installed with the product when the installation on the concrete as per above figure.



Inner diameter ("d") of tank nozzle should be larger than the outer diameter of float as per above figure.

MAGNETOSTRICTIVE TYPE
LEVEL TRANSMITTER

HT-100M Series

01 Higher Precision
(Resolution 1mm)

02 Sturdy Structure Design
Improved Durability and Stability

03 Display Type Converter

04 NAMUR NE43 is applied

05 Various Combination Unit &
Digital Indicator (HI-100D & HTA Series)



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* Design of product can be changed for upgrade without notice.