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INSTRUCTION MANUAL

MAGNETOSTRICTIVE TYPE LEVEL TRANSMITTER

HT-100M Series



Doc. no.: HT100M_IM_Eng_Rev.1.5

Issue date: 2026. 06

Table of Contents

Overview · · ·

Overview

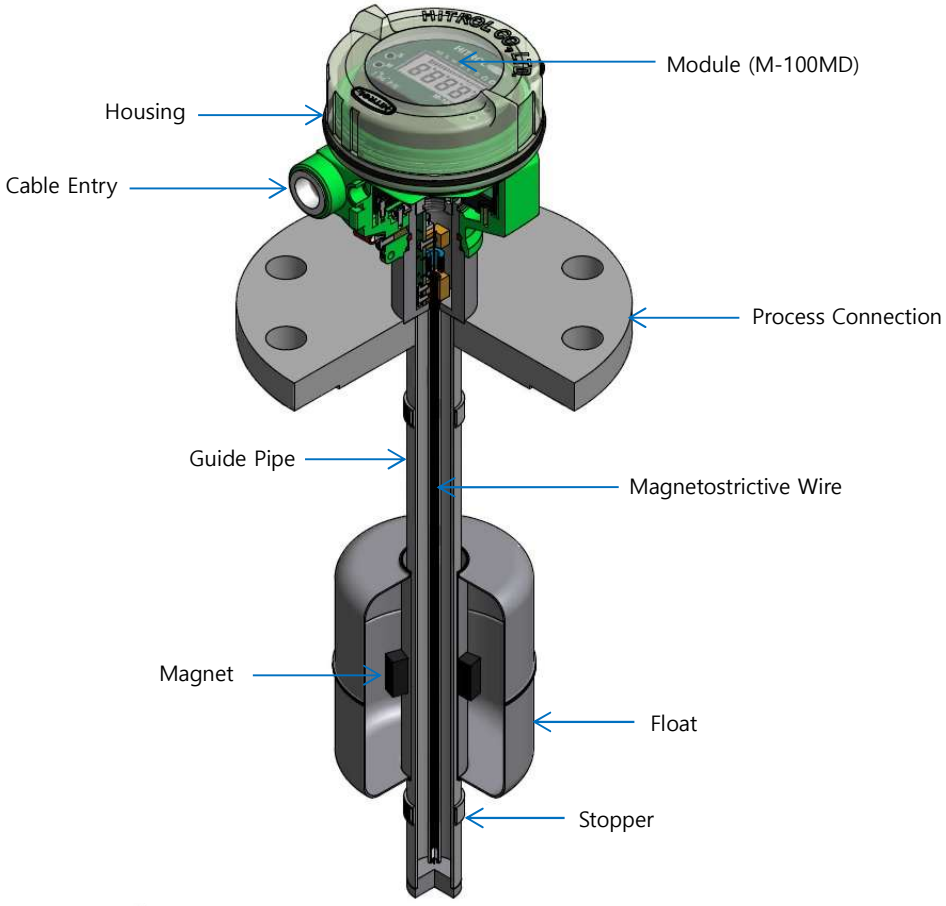
HT-100M(-Ex) Series are MAGNETOSTRICTIVE TYPE LEVEL TRANSMITTER that continuously measure water levels in containers using buoyancy. These transmitters can be easily installed and adjusted and can be used for chemicals because PVC and Teflon are used on their detecting elements. These transmitters are mainly used to measure clean water, industrial water, and liquids in LPG tanks and chemical tanks.

Characteristics

- Precise measurement (Resolution 1mm)
- Widely used to measure various liquids (Resolution 1mm)
- Applicable to corrosive and acidic liquids with anti-corrosive material for the sensor (PVC, Teflon)
- Applicable to explosion area (Ex-proof Version)
- Strong structure and high reliability
- Local indication is available.

Operating Principles and Composition

When a float manufactured to match the specific gravity of the measurement moves up and down to the level of the liquid due to buoyancy, the magnet embedded in the float causes distortion of the pulse moving along the magnetostrictive wire inside the guide pipe. The round trip time from the torsion point is detected by the module (M-100MD) inside the housing to continuously output the current value (DC 4-20 mA).



NOTICE **Product images are for reference only.**

Specifications (Weather -Proof)

STAINLESS STEEL

Model	HT-100MS		HT-100MSH	
	Std.	Opt.	Std.	Opt.
Mounting	Banding	Flange	Banding	Flange
Process Temp.	Max. 90℃		Max. 130℃	
Process Pressure	None	Up to 20kg/cm2	None	Up to 20kg/cm2
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			
Process Connection	None	Min. 25A	None	Min. 50A
Housing	PBT / AL. (Opt.)			
Cable Entry	PF 1/2″			
Resolution	1mm			

PVC

Model	HT-100MV
Mounting	Flange
Process Temperature	Max. 60℃
Process Pressure	Up to 0.5kg/cm2
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

TEFLON

Model	HT-100MT	HT-100MTH
Mounting	Flange	
Process Temperature	Max. 90℃	Max. 130℃
Process Pressure	Up to 0.5 or 3kg/cm2	
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	

Specifications (Explosion -Proof)

STAINLESS STEEL

Model	HT-100MS-Ex		HT-100MSH-Ex	
	Std.	Opt.	Std.	Opt.
Mounting	Banding	Flange	Banding	Flange
Process Temp.	T6(Max. 70℃) / T5(Max. 90℃)		Max. 130℃	
Process Pressure	None	Up to 20kg/cm2	None	Up to 20kg/cm2
Power Source	DC +24V			
Output	DC 4~20mA (2-wire)			
Accuracy	±1mm or ±0.1% @ F.S whichever is greater			
Enclosure	Ex-Proof (Ex d IIC T6/T5, IP66)		Ex-Proof (Ex d IIC T4, IP66)	
Wetted Part Material	SUS316L			
Process Connection	None	Min. 25A	None	Min. 50A
Housing	AL.			
Cable Entry	PF 1/2"			
Resolution	1mm			

PVC

Model	HT-100MV-Ex
Mounting	Flange
Process Temp.	Max. 60℃
Process Pressure	Up to 0.5kg/cm2
Power Source	DC +24V
Output	DC 4~20mA (2-wire)
Accuracy	±1mm or ±0.1% @ F.S whichever is greater
Enclosure	Ex-Proof (Ex d IIC T6, IP66)
Wetted Part Material	PVC
Process Connection	100A JIS 10K FF
Housing	AL.
Cable Entry	PF 1/2"
Resolution	1mm

TEFLON

Model	HT-100MT-Ex	HT-100MTH-Ex
Mounting	Flange	
Process Temp.	T6(Max. 70℃) / T5(Max. 90℃)	Max. 130℃
Process Pressure	Up to 0.5 or 3kg/cm2	
Power Source	DC +24V	
Output	DC 4~20mA (2-wire)	
Accuracy	±1mm or ±0.1% @ F.S whichever is greater	
Enclosure	Ex-Proof (Ex d IIC T6/T5, IP66)	Ex-Proof (Ex d IIC T4, IP66)
Wetted Part Material	SUS316L+TEFLON	
Process Connection	100A JIS 10K FF	
Housing	AL.	
Cable Entry	PF 1/2"	
Resolution	1mm	

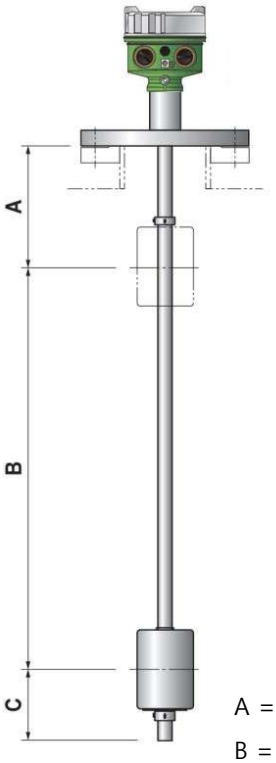
Float Application

Float	환경						
	온도(℃)	압력(kg/㎠)	Acid	Alkaline	Oil	Solvent	Liquid gas
SUS 316L	-40 ~ +150	Up to 20	△	○	○	◎	△
PVC	-10 ~ +60	0.5	○	○	X	△	X
TEFLON	-20 ~ +150	0.5~3	◎	◎	X	○	△
NBR	-40 ~ +60	Up to 20	X	△	◎	△	○
TITANIUM	-20 ~ +150	Up to 10	X	△	◎	○	○

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

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

Section Distance



Section	HT-100MS(H)			(Unit : mm)
	1" (*)	2"	3"	4"
A	100			
B	1340	3340	5300	5300
C	60	60	100	100

Section	HT-100MV		(Unit : mm)
	2"	3"	4"
A	100		
B	3320	3800	3800
C	80	100	100

Section	HT-100MT(H)			(Unit : mm)
	1" (*)	2"	3"	4"
A	100			
B	1330	2830	4300	4300
C	70	70	100	100

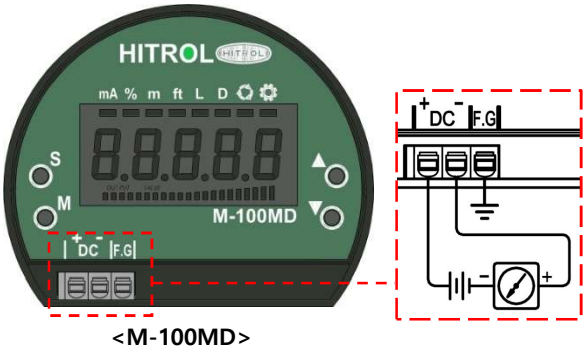
A = Upper Dead Band; Minimum length which cannot be measured from the bottom of flange

B = Max. 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.

(*) HT-100MS, HT-100MT Only

Wiring



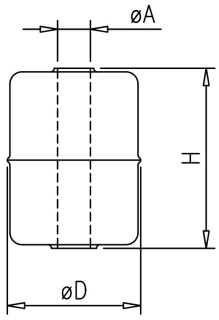
<M-100MD>

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

- Make sure to connect the power with correct polarity (+, −).
- The power supply must be between DC +17 and +40V.
- Do not connect the wire with the power connected.
- The external ground must be connected.

Float Application

Table



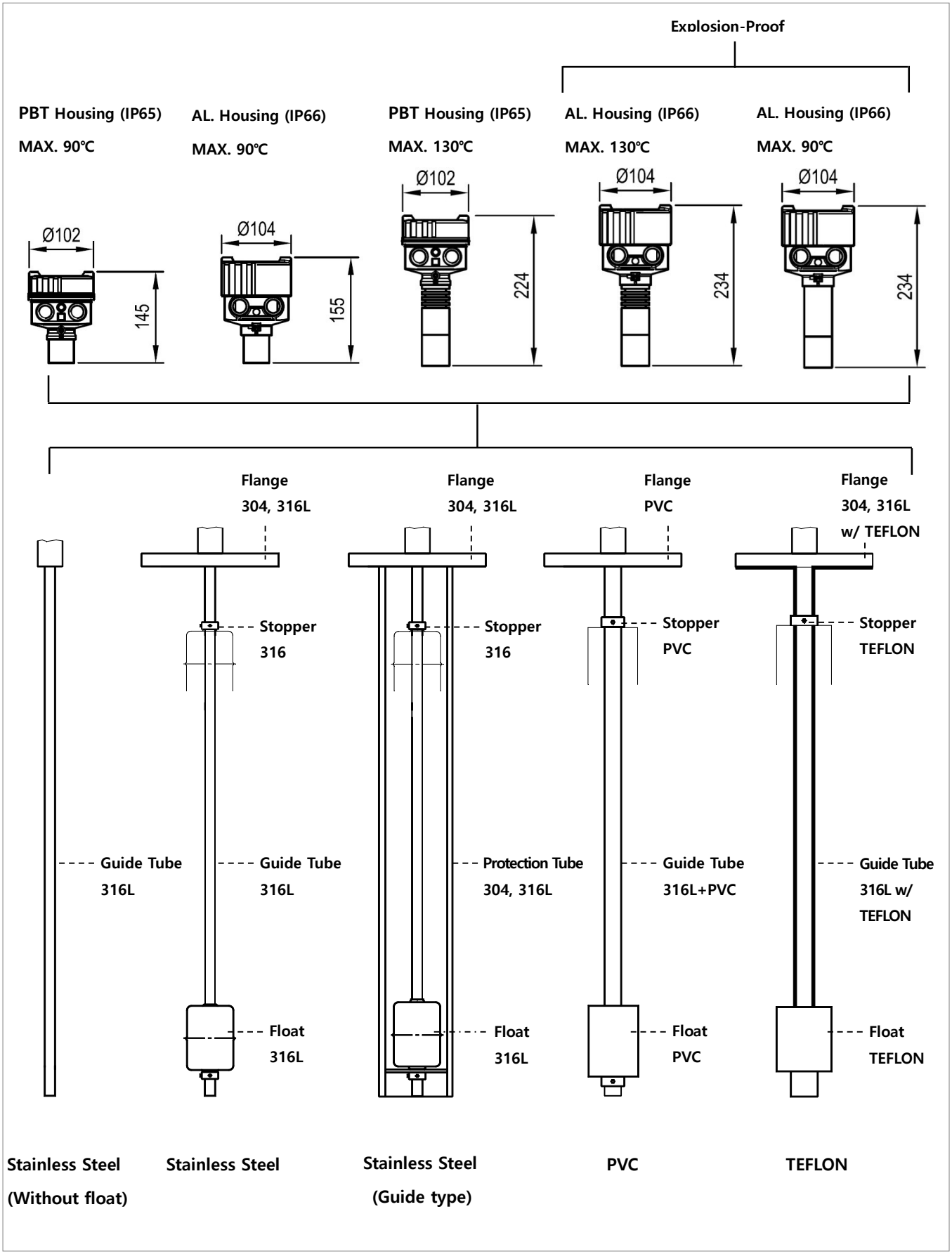
Product	Size	Dimensions (mm)			Guide Tube	Material	S.G Range
		D	H	A			
HT-100MS	1"	Ø28	28	Ø9.5	Ø8	316L	0.9~1.4
		Ø26	15	Ø9.5	Ø8	발포 NBR	0.8~1.3
	2"	Φ49	50	Φ15.5	Φ12.7	316L	0.7~1.0
		Φ50	45	Φ20	Φ15.8	NBR	0.6~0.9
		Φ42	50	Φ15	Φ12.7	316L	0.8~1.3
	3"	Φ73	105	Φ23.5	Φ21.7	316L	1.0~1.5
		Φ73	108	Φ23	Φ21.7	Titanium	0.6~0.9
		Φ65	90	Φ25	Φ21.7	316L	0.9~1.5
	4"	Φ95	119	Φ30	Φ25.4	316L	0.8~1.3
		Φ95	103	Φ23	Φ21.7	Titanium	0.6~0.8
		Φ95	118	Φ23	Φ21.7	Titanium	0.5~0.6
		Φ80	80	Φ28	Φ25.4	NBR	0.5~0.7

Product	Size	Dimensions (mm)			Guide Tube	Material	S.G Range
		D	H	A			
HT-100MV	2"	Φ49	60	Φ20	Φ18	PVC	1.0~1.6
	3"	Φ76	110	Φ31.5	Φ26		
	4"						

Product	Size	Dimensions (mm)			Guide Tube	Material	S.G Range
		D	H	A			
HT-100MT	1″	Ø26	30	Ø10.5	Ø10	TEFLON	1.1~1.7
		Ø28	35	Ø11	Ø10		1.1~1.7
		Ø28	30	Ø11	Ø10	PP	1.0~1.7
	2"	Φ45	50	Φ17	Φ15	TEFLON	0.9~1.6
							1.1~1.7
	3″&4″	Φ69	96	Φ23.5	Φ21		0.8~1.3
							0.9~1.5
	4"	Φ85	100	Φ33	Φ28		1.1~1.7

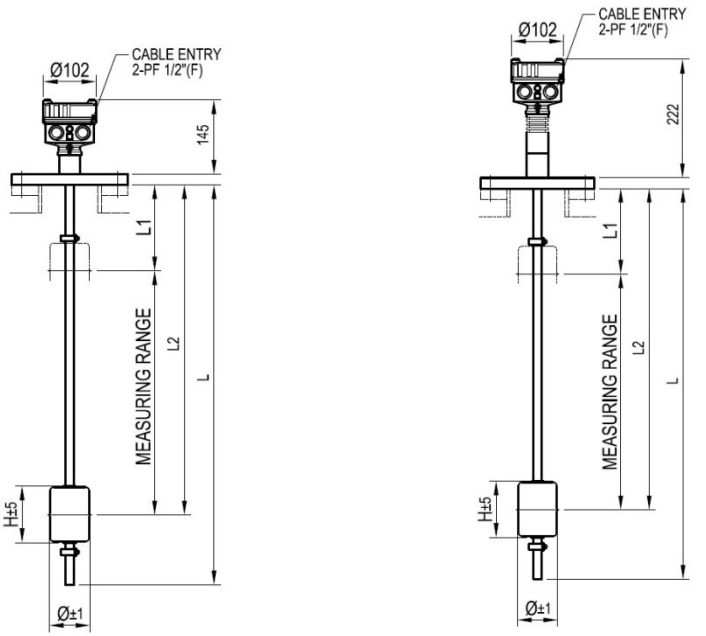
(*)S.G: Specific Gravity

Product Composition



*** PVC Type's workable temperature is Max 60℃**

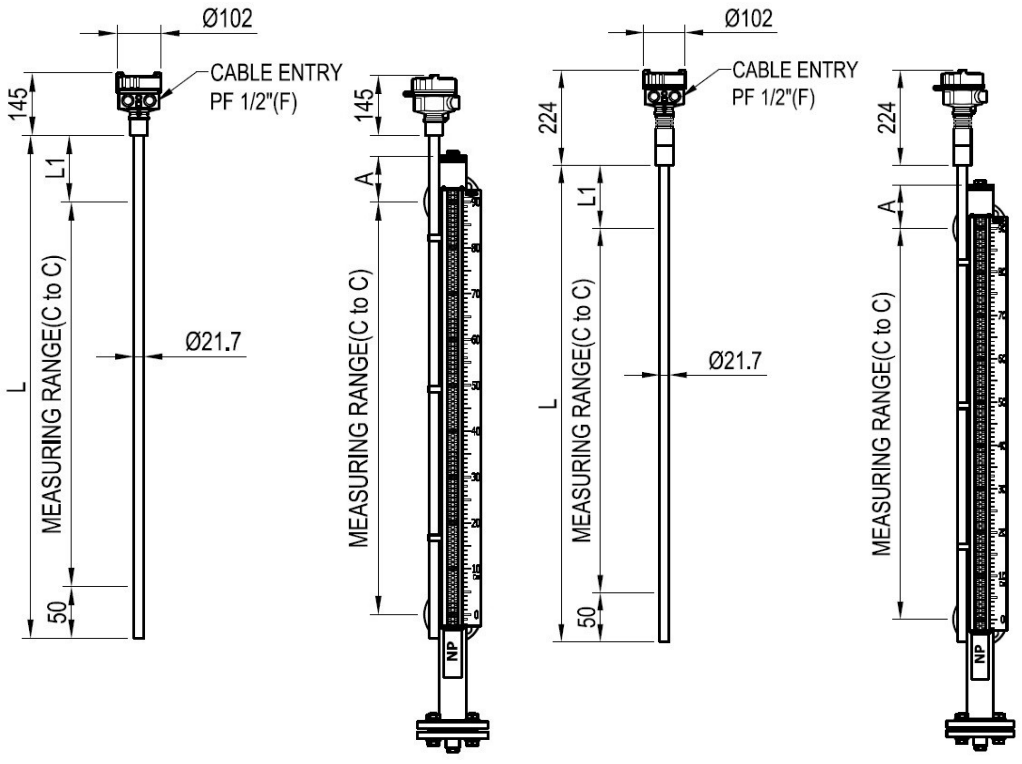
Dimensions (Weather -Proof)



HT-100MS
HT-100MV
HT-100MT

HT-100MSH
HT-100MTH

<Flap Type Level Gauge with HT-100MS(H)>

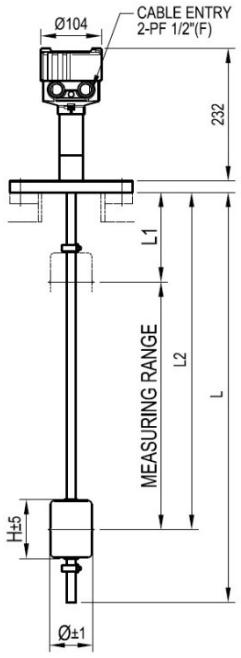


HT-100MS + HLG-100F

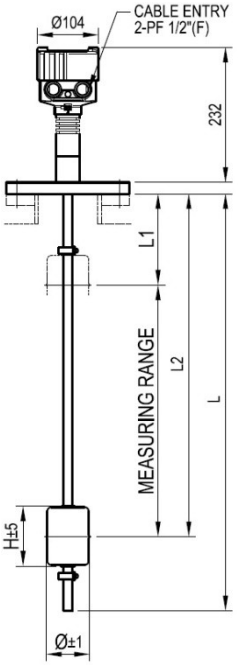
HT-100MSH + HLG-100F

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

Dimensions (Explosion -Proof)

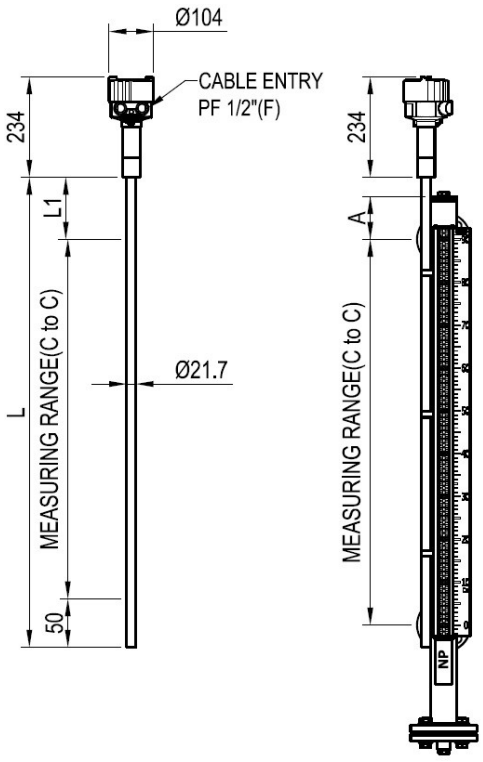


HT-100MS-Ex
HT-100MV-Ex
HT-100MT-Ex

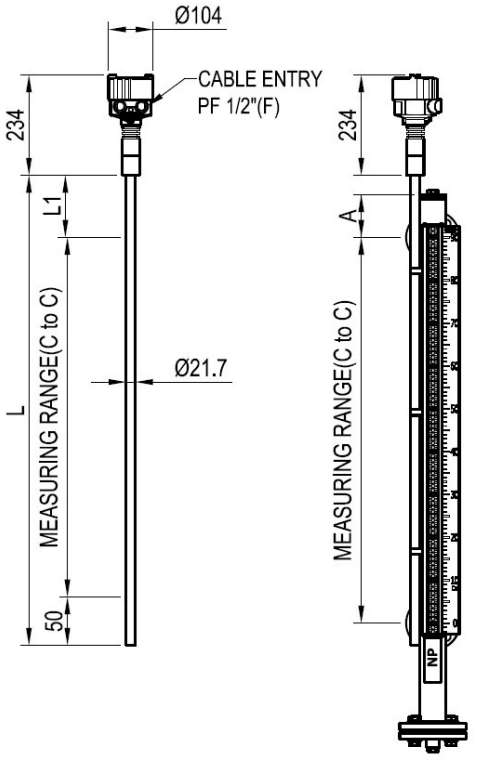


HT-100MSH-Ex
HT-100MTH-Ex

<Flap Type Level Gauge with HT-100MS(H)-Ex>



HT-100MS-Ex + HLG-100F



HT-100MSH-Ex + HLG-100F

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

Precautions for Installation

- Use the same standard flange or screw.
- Make sure to insert washers between bolts and nuts to prevent loosening.
- When you attach the product to a hopper, make sure that it is as bonded as possible by means of tools.
- 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.
- After the installation is complete and the cover of the product is assembled, power it on.



If you twist the head to install product, it may cause product defects, so you must hold the connector to install it.

Precautions for Removal

- Check the level and presence of measurements in the tank before removing it.
- Wear gloves when removing it, to prevent a burn.
- Disassemble work shall be done with the power off.
- If there is explosive gas atmosphere, do not open the cover.
- Unlock the lock key (Set screw) before removing the cover. (Ex-proof)
- Make sure that any O-ring or gasket is not damaged while opening or closing the cover of product.



Do not disassemble the product when the power is applying in explosion district.

Maintenance

The major parts of the HT-100M(-Ex) Series level transmitters to be inspected are divided into the sensor element and the transmission element. The sensor element consists of Coil Board, Magnetostrictive Wire, and the Float, and the transmission element is the M-100MD. The life spans of major parts vary with user environments and can be used in optimum conditions through periodic inspections. Therefore, the user should maintain and repair the product through periodic inspections conducted at least once a year. The appearance of the product should be visually checked to see if there is any damage, and if there is scale caused by measure objects, it should be removed for the smooth operation of the float.



When maintenance, checkup should be carried out after power is completely cutting off.

Precautions for Inserted External Wire (Ex-Proof)

- Use the cable gland connection or metal pipe line lead-in on the wire inlet, and 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 closed plug that passes safety certificate above equivalent performance with the product.

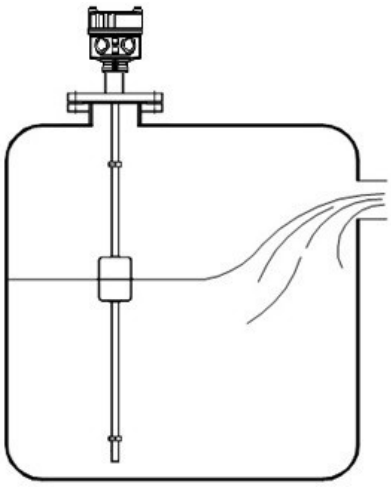
Precautions for Grounding

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

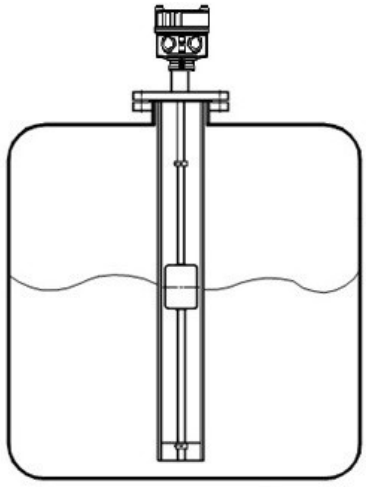
WARNING **Make sure to insert a washer if the terminal lug is removed from ground terminal and then re- connected. (Loosening prevention)**

Installation

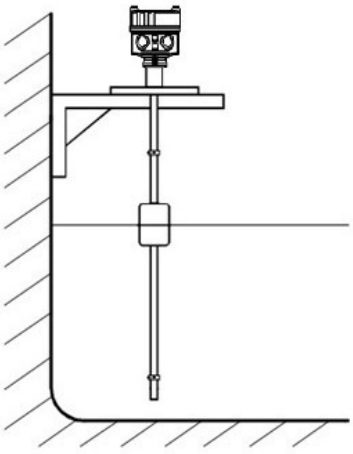
Below recommendation shall be considered when installation.



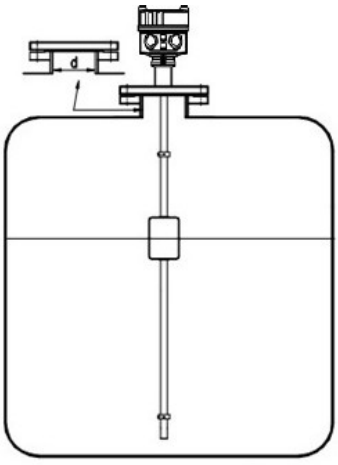
The product may malfunction if the product has been installed at the inlet through which the measure object flows in. Therefore, a guide should be installed in such case or the product should be installed at a position distant from the inlet for measure objects.



When there is flow or sloshing in the measured object or there is agitator around the sensor, the protective tube type must be used.



When installing the product on a concrete wall, you may want to install it as shown in the figure above.



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

Safety and Environment

■ Precautions for Use

- When fastening the product the piping, make sure to use tools to ensure maximum fastening.
- Do not apply excessive impact to the product.
- The user should judge the Ex-Proof area of the relevant product and use the suitable product.
- Do not bend or arbitrarily cut or extend the sensor.
- Power should be applied after installation is completed and cover of the product is closed.
- Do not use when the ambient temperature around installation area is exceeded [Weather-Proof : -20°C~+60°C], [Explosion-Proof : -20°C~+40°C].
- It should not be used for the area above the qualified protection grade.
- Do not use it on where there is vibration.

■ Precautions for Wiring

- The power voltage of the device must be connected after checking the specifications, checking, and then turning it on.
- Incorrect power voltage may cause damage or failure to the device.
- There is a risk of an electric shock, so you have to be careful about your safety.

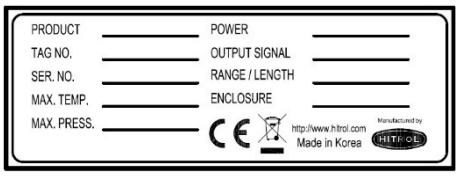
■ Disposal of Product

- Make sure to separate the amplifier and main unit from housing before disposing the products. Also, the amplifier shall be detached and discard the metal and non-metallic materials. No part (ex. Mercury switch) has influence on the environment, so

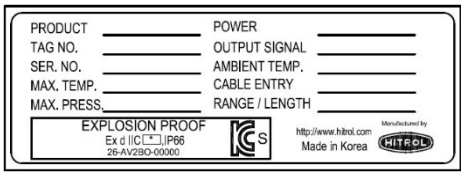
Marking

■ Product Identification

The product identification mark is attached onto the housing and shows the model name, serial number, working temperature, working pressure, and matters regarding output. The serial number is a unique manufacturing number for the identification of products.



<Weather Proof>



<Explosion Proof>

Model Notation

The model configuration of the HT-100M(-Ex)_Series is shown below.

HT - 100M a b - Ex

- ▣ Process Temperature
  - • : Normal Temperature
  - • H : High Temperature
- ▣ Wetted Part Material
  - • S : Stainless Steel
  - • V : PVC
  - • T : Teflon

User Training

The above matters should be fully understood, and the temperature of fluids in the container where the product is used shall not exceed 90℃ in the case of general types and 130℃ in the case of high temperature types. In addition, make sure that the ambient temperature of housing is kept at [Weather-Proof : -20℃~+60℃], [Explosion-Proof : -20℃~+40℃]. (However, product with PVC sensor part, the fluid temperature of the container is limited to 60℃.)

In case of Ex-Proof version, do not open the cover during the operation. Ex-Proof version are designed according to Article 34 of the Industry Safety and Health Act and the Ministry of Employment and Labor Notice No. 2020-33.



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 2

Failure Mode & Actions

When the output current is below 4mA,

Cause	Checked
Calibration error	Recalibrate
The DC24V power supply line has not been connected.	Check the power supply line and reconnect
The FLOAT Stopper below the sensor has been loosened.	Reassemble or replace the Stopper
The sensor FLOAT lost buoyancy or has been damaged.	Replace FLOAT
The M-100MD inter element has been damaged.	Replace the M-100MD

When the output current is above 20mA,

Cause	Checked
Calibration error	Recalibrate
The Float Stopper above the sensor has been loosened.	Reassemble or replace the Stopper
The M-100MD inter-element has been damaged.	Replace the M-100MD

Output current holding phenomenon

Cause	Checked
When the buoyancy has been lost because of impurities between the FLOAT of the sensor and the pipe	Clean the pipe and the FLOAT

Output hunting phenomenon

Cause	Checked
1In the process for the inter-element (diode) of the M-100MD to be damaged, temporary over-measurement (approximately 10%) caused by over current and noise outputs are formed.	Replace the M-100MD
When the ground is not connected	Check internal and external grounding

Warranty and Contact

■ Warranty and Service

This product is subject to the warranty for 2 years of shipment and unpaid service will be provided for any damage found under normal operating conditions. If it is not about the failure of product, the service charge will be payable.

You can request A/S at our website or by contacting our headquarters.



PTFE Float and Tube have a warranty period of one year after the product is shipped.



This manual is based on STD and may differ from the contents of this manual if it is not an STD product.

■ Headquarters . Factory . Laboratory Contact Number

ADRESS: HITROL CO., LTD 141, Palhakgol-gil, Jori-eup, Paju-si, Gyeonggi-do, Korea

T E L : 031-950-9700 (Headquarters & A/S)

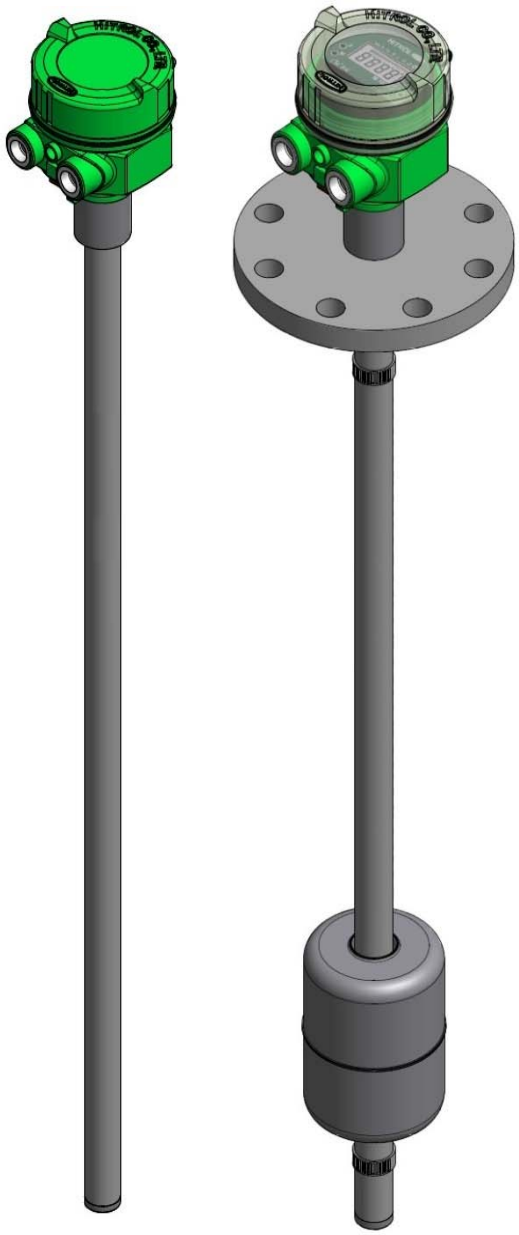
F A X : 031-943-5600 (Headquarters & A/S)

APPENDIX Z

M-100MD

User Manual

Magnetostrictive Type Level Transmitter



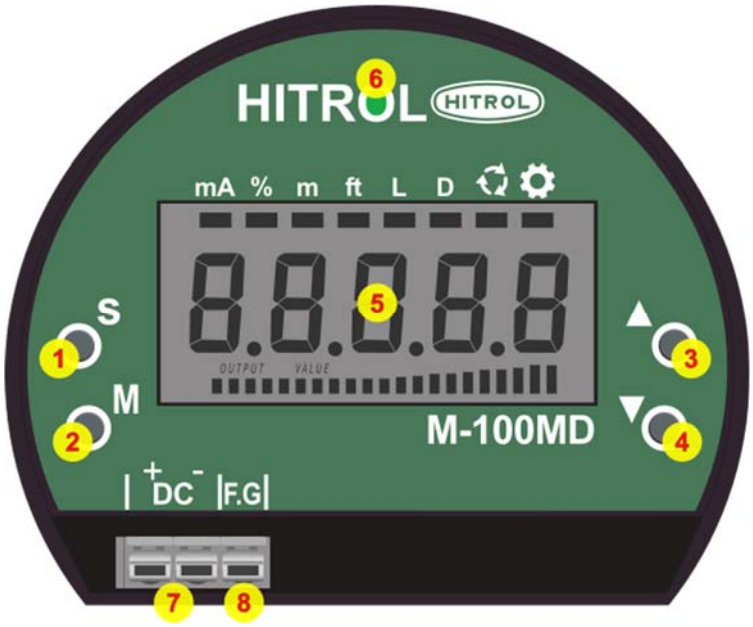
Doc. No. : Rev.1.3

Issued Date : 2026.09.08

Version : V26I03 ~

Always The Best Solution
HITROL CO., LTD.

1. M-100MD Configuration and Functions



No	Configuration	Function
1	S Key	■ Function setting ■ Save setting value
2	M Key	■ Mode change ■ Cancel
3	▲ Key	■ Move digit left / increase setting value
4	▼ Key	■ Move digit right / decrease setting value
5	LCD	■ Display operation and setting status
6	LED	■ Display power and status
7	PWR	■ Supply power and current output ■ For output current check
8	F.G	■ Field Ground

2. Electrical Specifications

Item	Specification	
Enclosure	Weather Proof	
Material	PBT	
Microprocessor	16Bit Microprocessor	
Current Loop Interface	2-Wire Loop Current	
Supply Voltage	DC+17V ~ +40V @ Typ.+24V	
Level/Distance Resolution	± 1 mm	
Output Current Range	■ 3.8mA ~ 20.5mA @ Alarm, 3.6mA, 21mA [NAMUR NE43]	
	■ 4.0mA ~ 20.0mA @ NAMUR NE43 Holding	
Output Current Offset	■ 4.1 mA ~ 19.9 mA	
Self-Diagnosis	■ When sensor cable is not connected	3.6mA current output
	■ When below Zero point	3.8mA current output [NAMUR NE43]
	■ When above Span point	21mA current output [NAMUR NE43]
Simulation Current Out	■ 4mA @ 5sec.	
	■ 12mA @ 5sec.	
	■ 20mA @ 5sec.	
Status Indicator	■ Tri-Color LED [Green]	Normal operation
	■ Tri-Color LED [Red]	Abnormal status warning
	■ Tri-Color LED [Yellow]	Zero, Span not set
Field Ground	F.G	
Setting Method	Quick Setting / Set Mode Setting	
Wire Connection	One-Touch Connector (AWG 16~26)	
Display	mA, %, m, ft, Level, Distance, Rotation	
Ambient Temperature	-20℃ ~ +60℃	

[Table 1] Electrical Specifications

3. Setting Menu Function Configuration

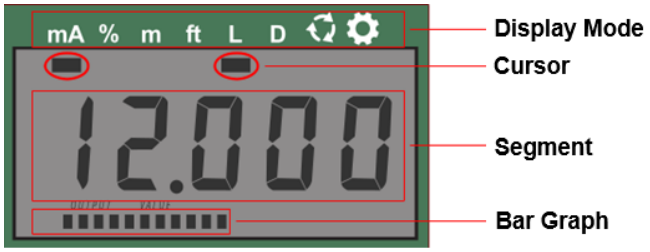
No.	Content	Description	Remarks
[01]	Level / Distance setting	▲ Level ▼ Distance / Default: Level	Quick Menu, (UP+DOWN long press)
[02]	Zero Trim	Displayed as current distance (TOF) on LCD (fixed at current 0% TOF value)	Factory setting
[03]	Span Trim	Displayed as current distance (TOF) on LCD (fixed at current 100% TOF value)	Factory setting
[04]	0% point setting	Liquid column height corresponding to 4.000 mA, Default : 0.000 mm, (**Settings value** < 100% point height)	. Short press : digit ±1 . Long press : move digit Enter height (m) according to field conditions)
[05]	100% point setting	Liquid column height corresponding to 20.000 mA (based on sensor), Default : 0.000 mm, (0% point height < **Settings value**)	
[06]	Tank height setting	Tank total height (for Distance display) , Default : 1.000 m, If greater than [05], includes upper margin in remaining height	. Short press : digit ±1, . Long press : digit
[08]	NAMUR setting	Up : ON (lower limit 3.6 mA / upper limit 21.0 mA), Down : OFF (4.0 ~ 20.0 mA damp) , Default : OFF	Function to express field deviation value
[10]	Damping setting	Damping time (0~5.0 sec @ 0.1 sec Step); larger setting may be slower, (Function to prevent fluctuation)	
[11]	'mA' Offset adjustment	mA offset adjustment (4.000 ~ 20.000 mA)	. Short press : digit ±1, . Long press : digit
[12]	'%' Offset adjustment	% offset adjustment (0.0 ~ 100.0 %)	. Short press : digit ±1, . Long press : digit
[13]	'mm' Offset adjustment	mm offset adjustment (current corrected output to the target level (m)), Ex) 0.818 -> 0.828, then press and hold SET	. Short press : digit ±1, . Long press : digit
[14]	'mA' decimal place setting	Number of decimal places for mA display, (Default: 3)	Determines the number of decimal places
[20]	0% output current	Loop current when tank is empty (0%), 3.600 ~ 21.000 mA, Default : 4.000 mA **(Function to select the currently output value)**	. Short press : digit ±1, . Long press : digit
[21]	100% output current	Loop current when tank is full (100%), 3.600 ~ 21.000 mA , Default : 20.000 mA **(Function to select the currently output value)**	. Short press : digit ±1, . Long press : digit
[30]	Rotation time setting	0.5 ~ 10 sec (0.5 sec step), Default : 3.0 sec	Screen switching function
[31]	'mA' Display On/Off	Rotation 'mA' screen display selection, Default : On	Screen_On/Off
[32]	'%' Display On/Off	Rotation '%' screen display selection, Default : On	Screen_On/Off
[33]	'Meter' Display On/Off	Rotation 'Meter' screen display selection, Default : On	Screen_On/Off
[34]	'Feet' Display On/Off	Rotation 'Feet' screen display selection, Default : On	Screen_On/Off
[40]	Current simulation	'4mA'current output fixed for 5 seconds, '12mA'current output fixed for 5 seconds, '20mA'current output fixed for 5 seconds	Quick Menu, Up/Down:4<->12 <->20
[86]	Raw data count	Median of the most recent N ADC values / 0 ~ 50 (1 step) , Default : 21 Larger value = less sensitive to fluctuation, smaller value = faster response	Up/Down cycle
[87]	Noise Filter setting	Used when hunting occurs/ 0~50mm (1mm step); smaller number = higher precision (0 means no dead band). Ex) 2mm recommended / 20~30mm for large sloshing	Up/Down cycle
[88]	Save setting value (Backup)	Save setting value, if backup ex ists: SAVE if not: SAVED	Execute by pressing all 4 keys simultaneously (long press)
[89]	Restore setting value (Restore)	Restore setting value saved in [88], LOAD if backup exists, NONE if not	Execute by pressing all 4 keys simultaneously (long press)
[90]	Error number output	Displays the error number corresponding to the abnormal status	
[91]	Distance (TOF) check	Displays Curr / Span / Zero upon entry, Up/Down: Curr <-> Span <-> Zero	
[99]	Firmware Version	Displays Firmware Version	
[100]	Reset	Reset to previously saved setting value	Up : Yes / Down : No

[Table 2] Setting Menu List

※ **Caution) Factory settings require measurement equipment, so never adjust them.**

4. Operation

■ LCD screen configuration



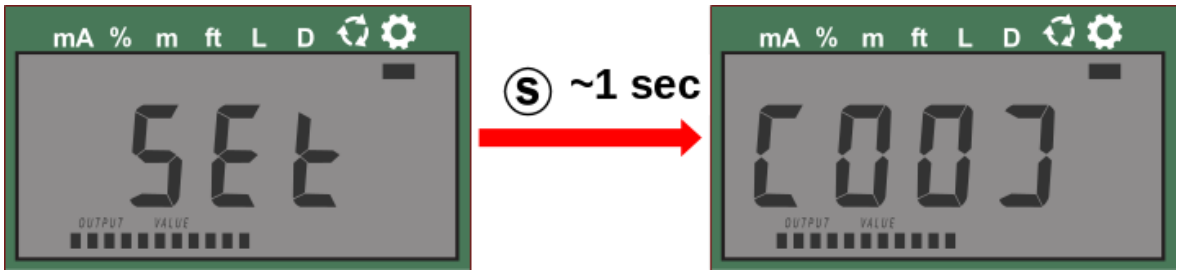
DISPLAY MODE	
mA	mA Mode
%	Percent Mode
m	Meter Mode
ft	Feet Mode
L	Level Mode (user setting)
D	Distance Mode (user setting)
↻	Rotation Mode
⚙	Setting Mode

■ Ⓜ Each time the button is pressed, the cursor moves sequentially.

■ The movement order is as follows.

mA → % → m → ft → ↻ → ⚙ → mA → % →...

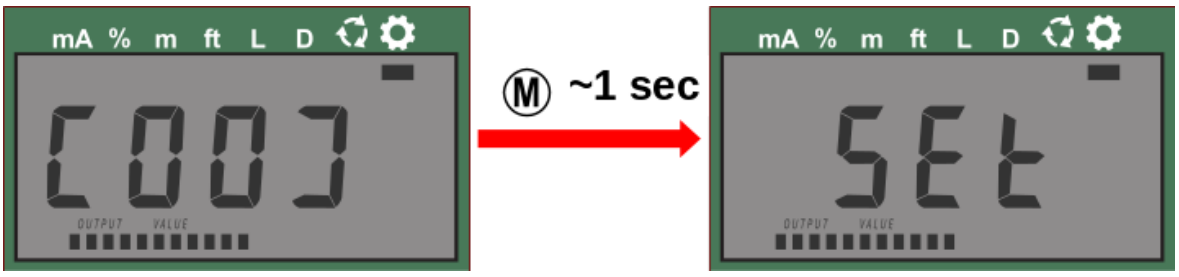
■ How to enter Setting Menu



■ Press the button so the cursor moves to [SET] Mode (⚙)

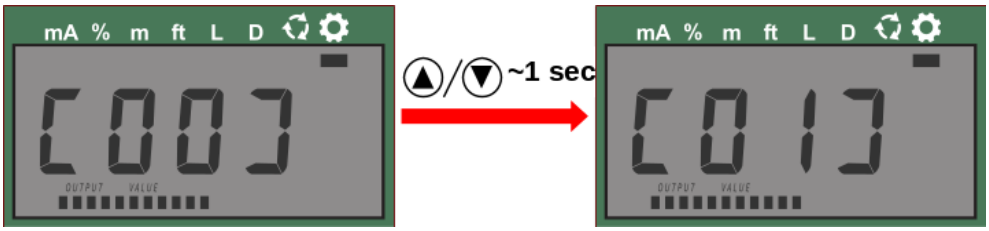
■ In [SET] Mode, pressing the Ⓢ button for about 1 second causes the green LED to blink, and you enter the Setting Menu.

■ How to return to [SET] Mode



■ In the Setting Menu, pressing the Ⓜ button for about 1 second causes the green LED to blink, and you return to [SET] Mode.

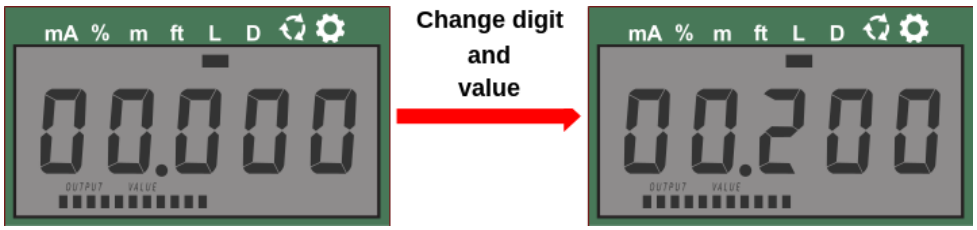
■ Setting Menu selection



■ In the Setting Menu, use the ▲ ▼ button to select a setting function.

■ Pressing the Ⓢ button for about 1 second on the selected setting function enters that function.

■ Change user setting value



Key Button	Function
▲ Press for 1 second or more	Increase digit (left)
▼ Press for 1 second or more	Decrease digit (right)
▲ Short press	Increase numeric value
▼ Short press	Decrease numeric value
Ⓢ Press for 1 second or more	Save and exit
Ⓜ Press for 1 second or more	Exit without saving

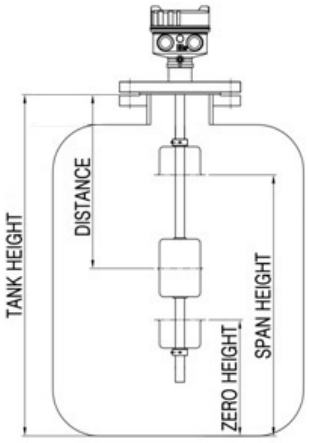
[Table 3] Key Button Usage

■ (Zero , Span) Trim

■ This is the factory default value and cannot be used by the user.

(Applies a 2-point linear method based on fixed 4~20mA Zero and Span)

■ Height setting



▶ **Zero Height**

Distance from the bottom of the tank to the center of the float at the Zero point

▶ **Span Height**

Distance from the bottom of the tank to the center of the float at the Span point

▶ **Tank Height**

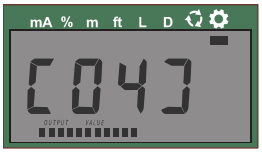
Distance from the bottom of the tank to the installation position

▶ **Distance**

Distance from the installation position to the center of the float

■ 0%, 100% Height Setting

■ 0% Setting



- When the measured object is at the Zero position
- Enter item [04] in the Setting Menu.
- After setting the Zero level value, press and hold the Ⓢ button for about 1 second to save.
- Caution) Must be less than [5] 100% point height.

■ 100% Setting

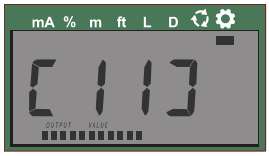


- When the measured object is at the Span position
- Enter item [05] in the Setting Menu.
- After setting the Span level value, press and hold the Ⓢ button for about 1 second to save.
- Caution) Must be greater than [4] 0% point height.

■ Offset Adjustment

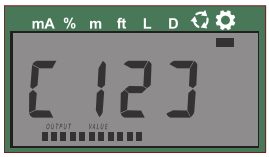
(if adjustment is needed, select only one of mA, %, or mm)

■ mA Offset



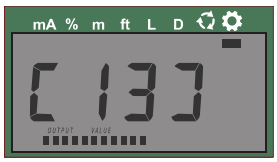
- Enter item [11] in the Setting Menu.
- After setting the mA value matching the current level, press the Ⓢ button for about 1 second and hold to save.

■ % Offset



- Enter item [12] in the Setting Menu.
- After setting the % value matching the current level, press the Ⓢ button for about 1 second and hold to save.

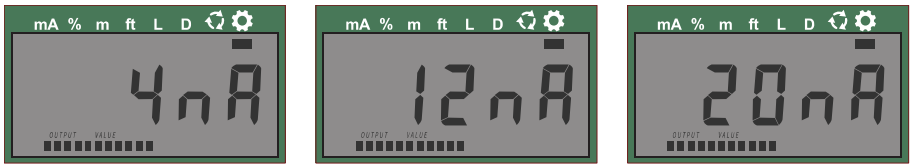
■ mm Offset



- Enter item [13] in the Setting Menu.
- After setting the mm value matching the current level, press the Ⓢ button for about 1 second and hold to save.

■ Current Simulation_Quick Setting

■ Current-specific setting screen



"At factory shipment, the default setting is 3-step mA units (4, 12, 20 mA fixed output)."

■ 4mA setting

Content	Quick Menu Setting Method
4mA setting	▼ Press for 1 second ➡ Enter setting ➡ Ⓢ Press for 1 second

■ 12mA setting

Content	Quick Menu Setting Method
12mA setting	▲ Press for 1 second ➡ Enter setting ➡ Ⓢ Press for 1 second

■ 20mA setting

Content	Quick Menu Setting Method
20mA setting	▲ Press for 1 second ➡ Enter setting ➡ Ⓢ Press for 1 second

This function forcibly outputs current through a 3-step (4, 12, 20mA) current simulation to check whether the product operates normally.

■ Others

- ▷ **mA, %, and mm can be set regardless of the Display Mode status.**
- ▷ "[Table 3] Key Button Usage" allows setting, saving, and canceling values, etc.
- ▷ 0%, 100% Height Setting the water level status must be maintained during setting.