

FLOAT TYPE LEVEL TRANSMITTER

HT-100R Series



ISO 9001



ISO 14001

ASME



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Always The Best Solution

HITROL CO., LTD.

Overview

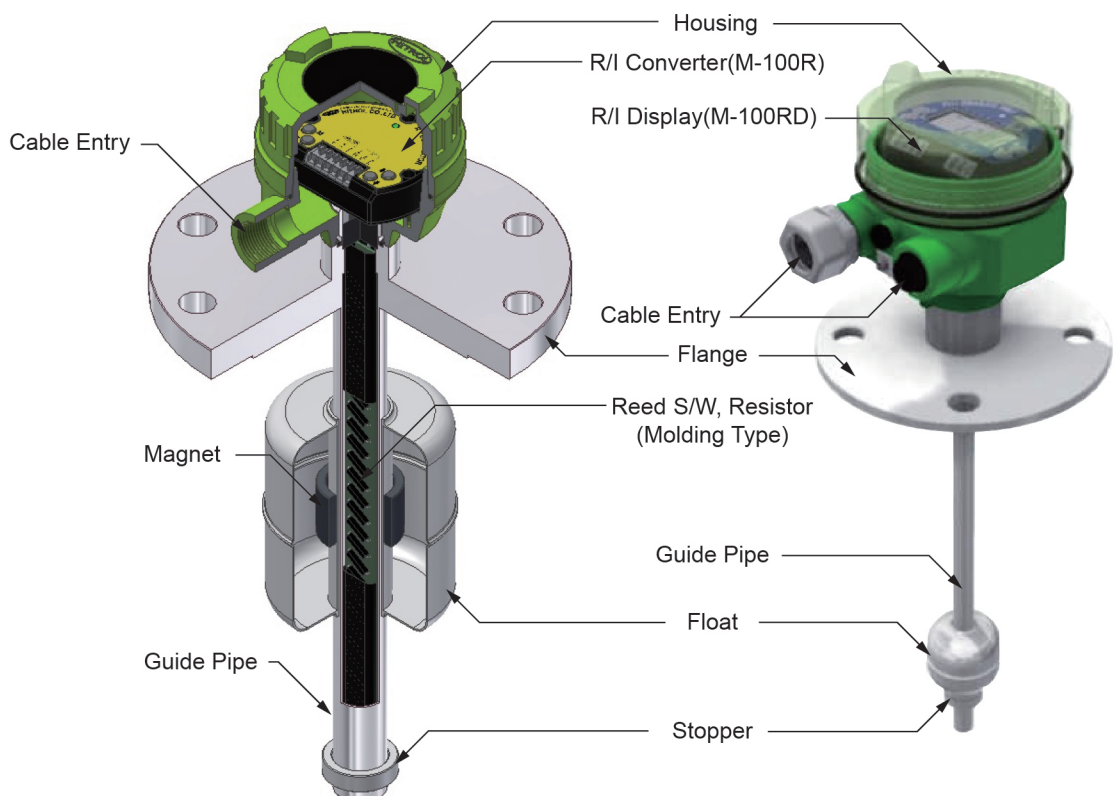
HT-100R Series is a Float Type Level Transmitter which continuously measures the liquid level in the tank by usage of buoyancy. This transmitter can be easily installed and adjusted, and can be especially applied for corrosive and acidic liquids with various anti-corrosive materials such as PVC or Teflon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

Characteristics

- Widely used to measure various liquid levels with high resolution (Resolution 10mm)
- Applicable to corrosive and acidic liquids with anti-corrosive material for the sensor (PVC and Teflon)
- Applicable to explosion area (Ex-Proof version)
- Strong structure and high reliability
- 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 activates reed switches that are installed in the guide pipe continuously, and activation of reed switches changes the resistance value. The variation of resistance value is transmitted to the R/I converter in the housing and it converts this resistance value to current output of DC 4~20mA continuously.



Specification

► STAINLESS STEEL

Model	HT-100RS	HT-100RSH	HT-100RS-Ex	HT-100RSH-Ex
Mounting	Flange (std.)			
Temperature	Max. 80°C	Max. 150°C	Max. 80°C	Max. 150°C
Process Pressure	Up to 20kg/cm ² (300#)			
Power Source	DC + 24V			
Output	DC 4~20mA (2-wire)			
Enclosure	Weather Proof (IP65)		Ex-Proof (Ex d IIC T6)	Ex-Proof (Ex d IIC T4)
Wetted Part Material	SUS 316L			
Process Connection	100A JIS 10K FF (6t) (std.)			
Housing Material	PC, AL(opt.), PBT(opt.)	AL		
Cable Entry	PF 3/4" (F), Adaptor (PF 1/2" , NPT 3/4" ...)			
Resolution & Accuracy	±10mm			

► PVC

Model	HT-100RV	HT-100RV-Ex
Mounting	Flange (std.)	
Temperature	Max. 60°C	
Process Pressure	Up to 0.5kg/cm ²	
Power Source	DC + 24V	
Output	DC 4~20mA (2-wire)	
Enclosure	Weather Proof (IP65)	Ex-Proof (Ex d IIC T6)
Wetted Part Material	PVC	
Process Connection	100A JIS 10K FF (std.)	
Housing Material	PC, AL(opt.), PBT(opt.)	AL
Cable Entry	PF 3/4" (F), Adaptor (PF 1/2", NPT 3/4" ...)	
Resolution & Accuracy	±10mm	

► TEFLON

Model	HT-100RT	HT-100RTH	HT-100RT-Ex	HT-100RTH-Ex
Mounting	Flange (std.)			
Temperature	Max. 80°C	Max. 150°C	Max. 80°C	Max. 150°C
Process Pressure	Up to 0.5~3kg/cm ²			
Power Source	DC + 24V			
Output	DC 4~20mA (2-wire)			
Enclosure	Weather Proof (IP65)		Ex-Proof (Ex d IIC T6)	Ex-Proof (Ex d IIC T4)
Wetted Part Material	SUS 316L + Teflon			
Process Connection	100A JIS 10K FF (6t) (std.)			
Housing Material	PC, AL(opt.), PBT(opt.)	AL		
Cable Entry	PF 3/4" (F), Adaptor (PF 1/2", NPT 3/4" ...)			
Resolution & Accuracy	±10mm			

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

Float Application

Float Material	Environment						
	Temperature	Pressure	Acid	Alkaline	Oil	Solvent	Liquid gas
SUS 316L	-20°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	-48°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

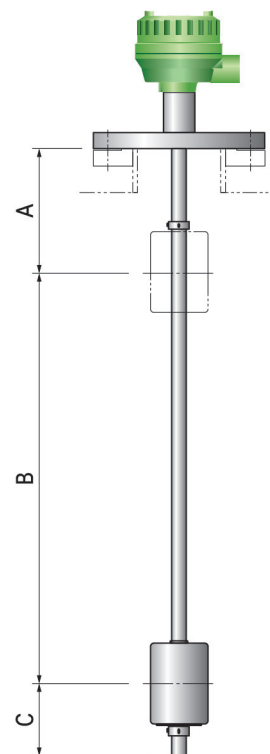
Section	Length (mm)		
	2"	3"	4"
A	50 (SUS,TEFLON) 100 (PVC)	100	
B	250~5,000*		
C	50 (SUS) 70 (TEFLON) 100 (PVC)	100	

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

* If the measuring length is below than 600mm, the accuracy can be lower than described.



DIGITAL TYPE R/I Converter & RLT

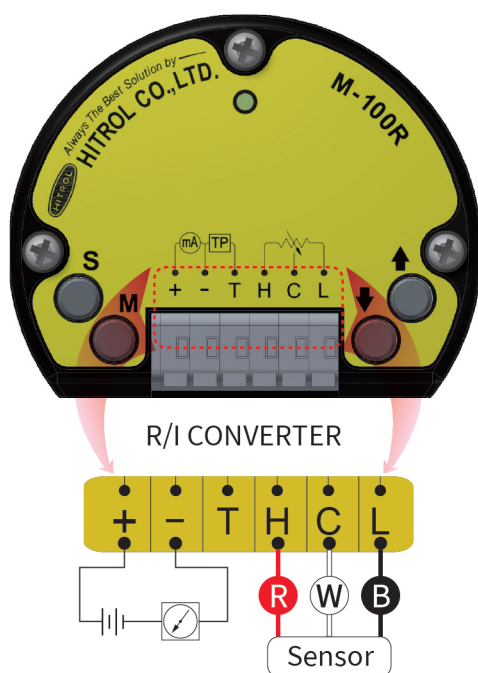
► Specification_R/I Converter

Item	Specification
Model	M-100R
Micom	16Bit MicroProcessor
Supply Voltage	+17V ~ +40V@Typ.+24V
Operating Voltage	+3.3V
Current Consumption	Less than or equal to 3mA@Sensor 1KΩ
Status Indicator	Bi-Color LED (Green/Red/Orange)
Zero / Span Set	Tact Switch
Wire Connection	One-Touch Connector
Ambient Temperature	-20°C ~ +85°C
Dimension	80mm x 65mm x 20mm
Weight	54g
Current Loop Interface	2-Wire Loop Current
Output Current Range (Accuracy)	4mA ~ 20mA@Less than±0.5%
Output Current Definite	TP

► Specification_RLT (Display Type)

Item	Specification
Model	M-100RD
Micom	16Bit MicroProcessor
Supply Voltage	+17V ~ +40V@Typ.+24V
Operating Voltage	+3.3V
Current Consumption	Less than or equal to 3mA@Sensor 1K Ω
Status Indicator	Bi-Color LED (Green/Red/Orange)
Zero / Span Set	Tact Switch
Wire Connection	One-Touch Connector
Ambient Temperature	-20°C ~ +85°C
Display	mA, %, m, ft, Level, Distance
Current Loop Interface	2-Wire Loop Current
Output Current Range (Accuracy)	4mA ~ 20mA@Less than $\pm 0.5\%$
Output Current Definite	TP

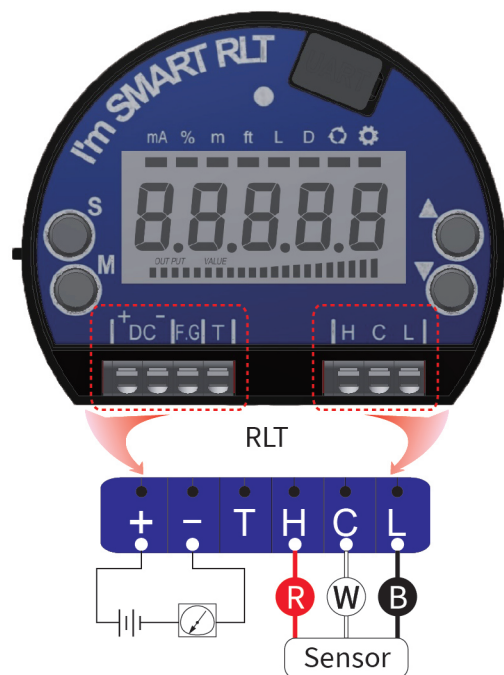
► Wiring



- ☑ It can be set freely according to user environment.
- ☑ Without removing of wire, output value can be checked using the T Terminal.
- ☑ Auto Set function (Patent No. : 10-1657573)
- ☑ Self-diagnosis Function(Diagnosis of float breakaway and state of sensor)
- ☑ Simulation Current Out Function (4mA, 12mA, 20mA)

■ R/I CONVERTER

- + - : DC 24V (DC 4~20mA Loop)
- T : Output Test Point
- H.C.L. : Terminals between Sensor and R/I Converter.



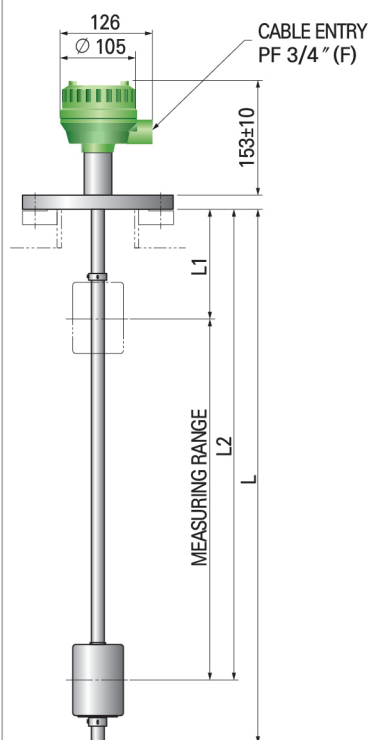
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■ RLT (Display Type)

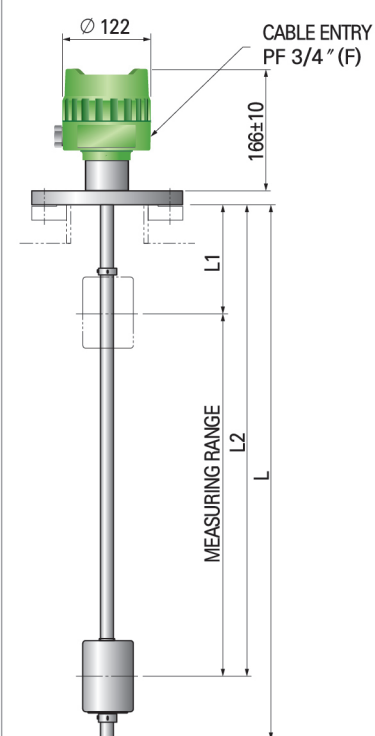
- + - : DC 24V (DC 4~20mA Loop)
- T : Output Test Point
- H.C.L. : Terminals between Sensor and RLT (Display Type)

Dimension

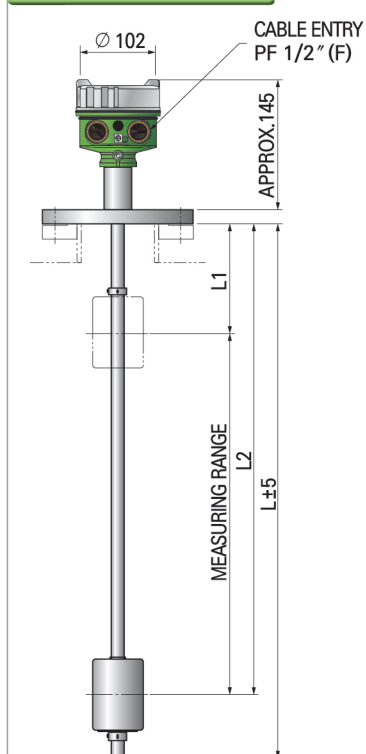
Standard Version



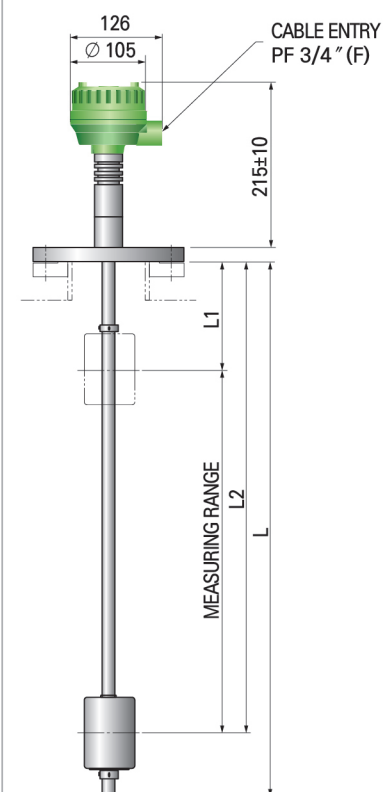
Ex-Proof Version



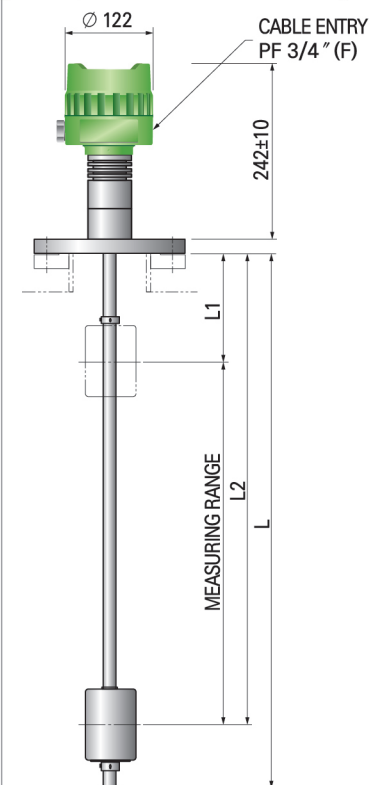
Display Standard Version



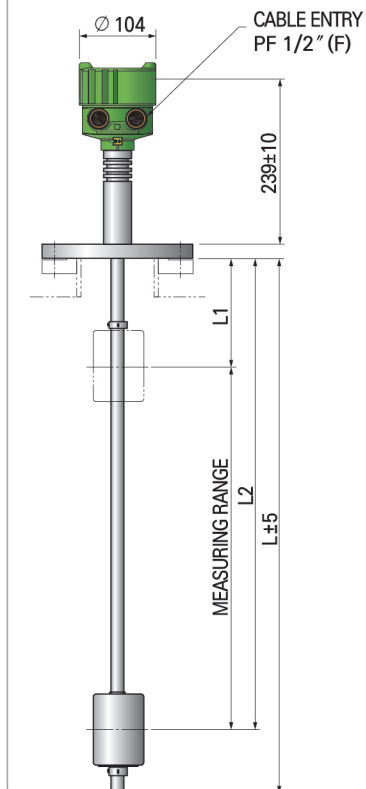
High Temperature Version



High Temperature and Ex-Proof Version



Display High Temperature Version



■ Actual product may have a tolerance slightly.

Installation

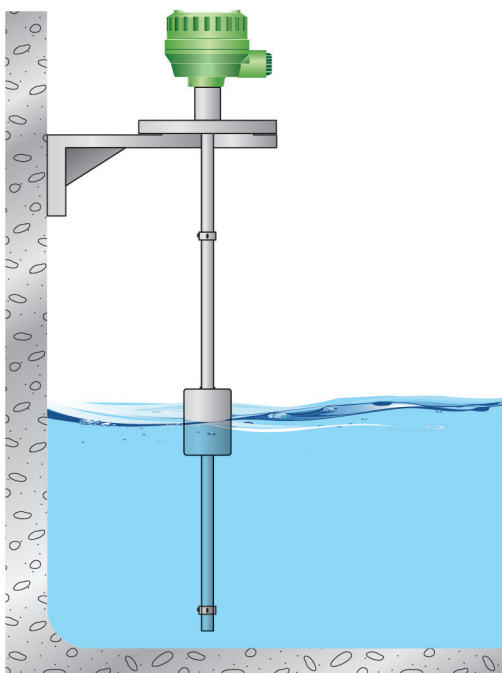
- Below drawing should be considered when installation.



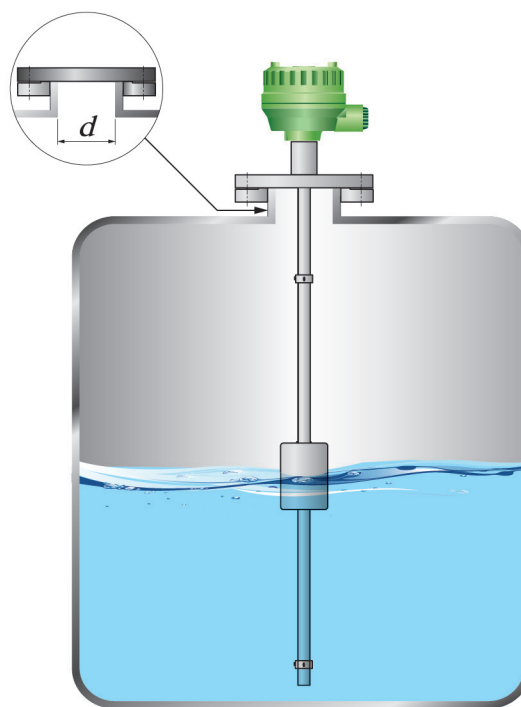
Product should be installed at the place far from inlet in order to avoid the malfunction.



Protection tube should be applied if there is a flow or slopping of the medium in the tank.



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

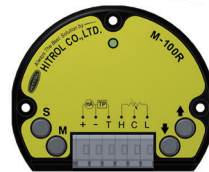


Inner diameter ("d") of tank nozzle should be larger than the outer diameter of float as per above figure.

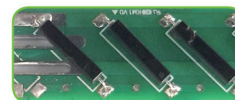
FLOAT TYPE LEVEL TRANSMITTER

HT-100R Series

01 Digital Type Intelligent R/I Converter



02 Molded Reed Switch with improved Stability and Precision



03 Display Type R/I Converter



04 NAMUR NE43 is applied

05 Convenient Product Operation Status Check!
UART MONITORING



USB Extension Cable



Smartphone



UART Adaptor

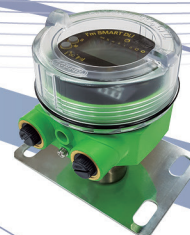


USB extension cable

Computer



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



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