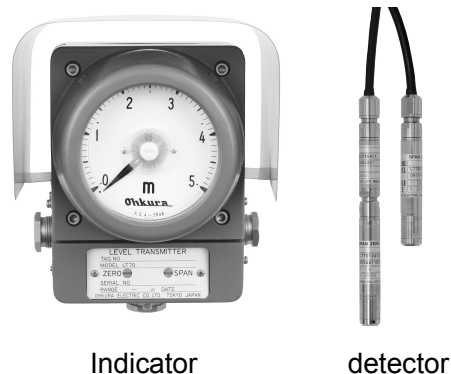


Specifications Sheet	No.SPEC-2209E	(1st Edition)	
LT7000B	Water Level Transmitter		

OUTLINE

Model LT7000B is a water level transmitter achieving high-accuracy and high-reliability with a silicon piezoresistive sensor built in. In addition, a lightning protector for protecting a detector is newly adopted for reinforcing lightning surge protection.

Furthermore, this model of transmitter is designed to be interchangeable with the conventional model of transmitter (LT3000) in functional and structural specifications and is easily applied to existing instrumentation systems.



Indicator

detector

FEATURES

- Accuracy achieving $\pm 0.1\%$ of span
With a highly accurate sensor module and an updated transmission circuit, the water level measurement with high-accuracy is achieved.
- Improved long stability ($\pm 0.2\%$ of span/year)
High-stability and high-reliability are achieved with a silicon piezoresistive sensor built in.
- A lightning protector provided in the detector (option)
In addition to lightning protectors built in an indicator, a lightning protector for the detector is provided. This lightning protector protects the detector from lightning-induced surge.
- Measuring range available from 0-3m to 0-150m
Wide range of water level measurement is enabled.
- The detector with well-drained structure detector provided for cold district
The detector with well-drained structure is newly added as a measure against breakdown of the detector (pressure-sensitive diaphragm) caused by frozen water in cold district.
- Succeeding structural specifications for applying to existing instrumentation systems
The ultra-thin detector with the 20mm outer diameter.

SPECIFICATIONS

• Functional specifications

Measuring range:

0-3m to 0-150m (Refer to the model code.)

Transmission system: 2-wire transmission system

Transmission output: 4 to 20mA DC

Power supply:

DC drive ; 12 to 26VDC

AC drive ;

Power voltage (rated) 100 ~ 240V AC

Power voltage 85 ~ 264V AC

Frequency (rated) 50/60Hz

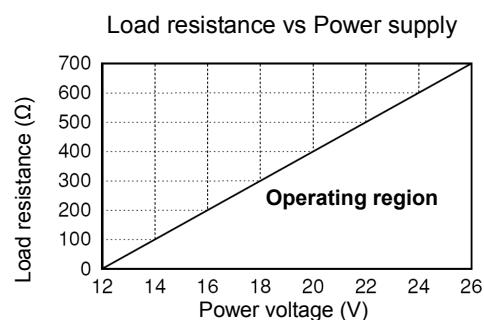
Frequency 47 ~ 65Hz

Power consumption:

DC drive; 0.5W

AC drive; 3VA

Load resistance: Max. 600 Ω , at 24VDC



Temperature range:

Indicator

Temperature compensating range;
-15 to 50°C

Operating temperature range;
-30 to 80°C

Detector (at non-frozen range)

Temperature compensating range;
0 to 30°C

Operating temperature range;
-10 to 80°C

Lightning protector:

Indicator

- Built-in lightning protector on transmission line
- Built-in lightning protector on AC power line

Detector

- Built-in lightning protector on detector transmission line (option)

Cold district measures:

- The detector with well-drained structure is available.

• Performance specifications

Transmission accuracy: $\pm 0.1\%$ of span

- (The output calibration is performed on the condition that the water density is 1.)

Indication accuracy:

- Class 1.0 (Indicator specification)

Water pressure resistant:

- 150% of span (Detector specification)

Response time: About 1.5s at 99% response

Temperature effects (typical):

Indicator

- 0.35% of span/ -15 to 50°C

Detector

- Zero effect; $\pm 0.015\%/^{\circ}\text{C}$

- Span effect; $\pm 0.015\%/^{\circ}\text{C}$

Excepting;

For 0-4m range

- Zero effect; $\pm 0.025\%/^{\circ}\text{C}$

- Span effect; $\pm 0.025\%/^{\circ}\text{C}$

For 0-3m range

- Zero effect; $\pm 0.03\%/^{\circ}\text{C}$

- Span effect; $\pm 0.03\%/^{\circ}\text{C}$

Long term stability: $\pm 0.2\%$ of span/year

Resolution: 10^{-4} (0.01% of span)

Mounting Position Effect: 15mm

(Detector specification)

Insulation resistance: 100M Ω at 50VDC

- (Performance on the condition that lightning protectors are dismount .)

• Structural specifications

Indicator

- Structure: Rain-proof structure (JIS C0920)
Sun hood as standard equipment

- Meter: $\varnothing 100$ wide-angle analog meter
(Class 1.0)

Cable inlet: G3/4

Mounting (option):

- 2B pipe mounting, wall mounting or
flange mounting

Recommended transmission cable:

- 2-core shielded twisted cable
(Outer diameter; 9.6 to 10.6mm)

Case material:

- Aluminum casting
(Coating color; Munsell N4)

- Weight: About 3.7kg

Detector

Outer diameter: $\varnothing 20\text{mm}$

Mass: About 150g (excepting cable)

Material:

- Case; SUS316

- Pressure-sensitive portion; SUS316L

Sealed material: Fluorine rubber

Detector cable

Structure:

- Water-resistant cable with vent tube inside

Outer diameter: About $\varnothing 9\text{mm}$

Material: Polyethylene

Mass: About 80g/m

Cable length: Specified range + 5m

Option

Lightning protector for detector

Mounting bracket assembly

(For 2B pipe or wall mounting)

Mounting flange assembly

Anchor

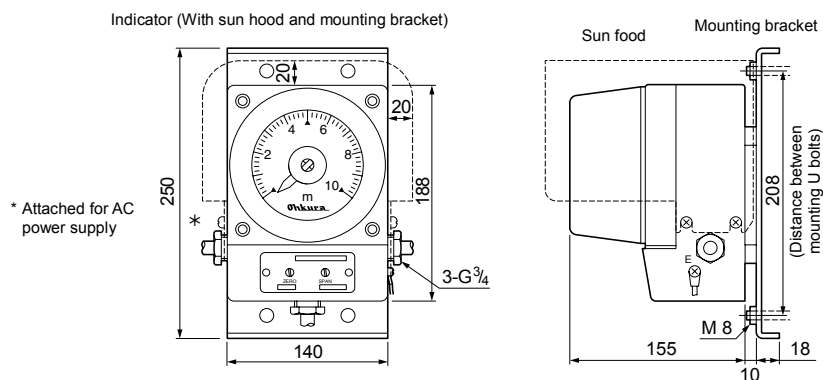
(Weight for fixing the detector)

Cable clamp (For 2B pipe)

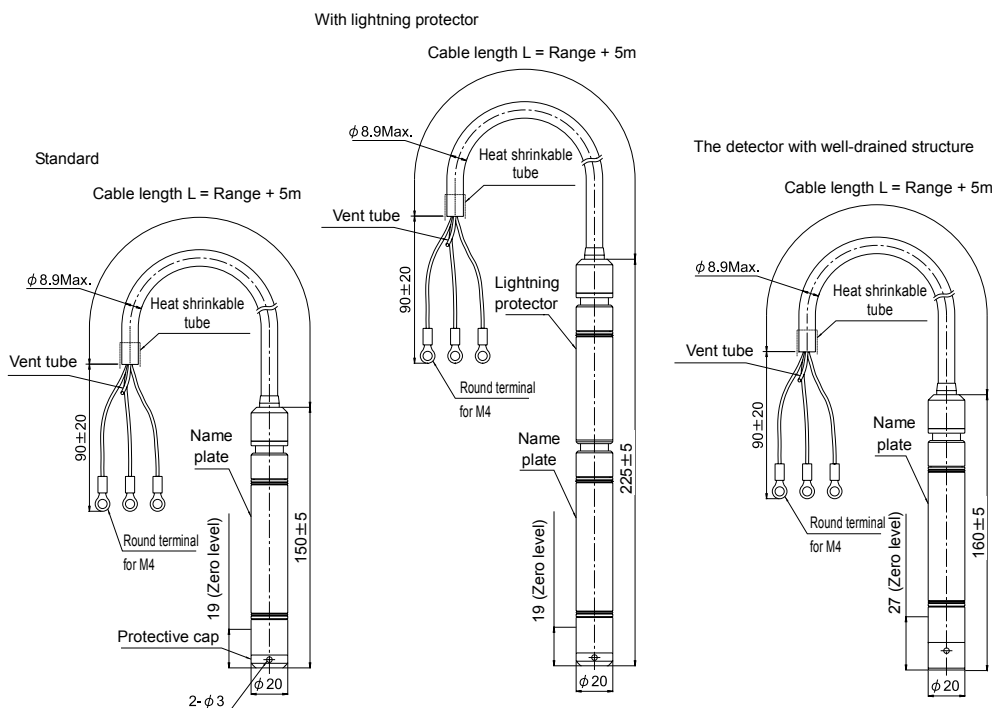
DIMENSIONS

Unit: mm

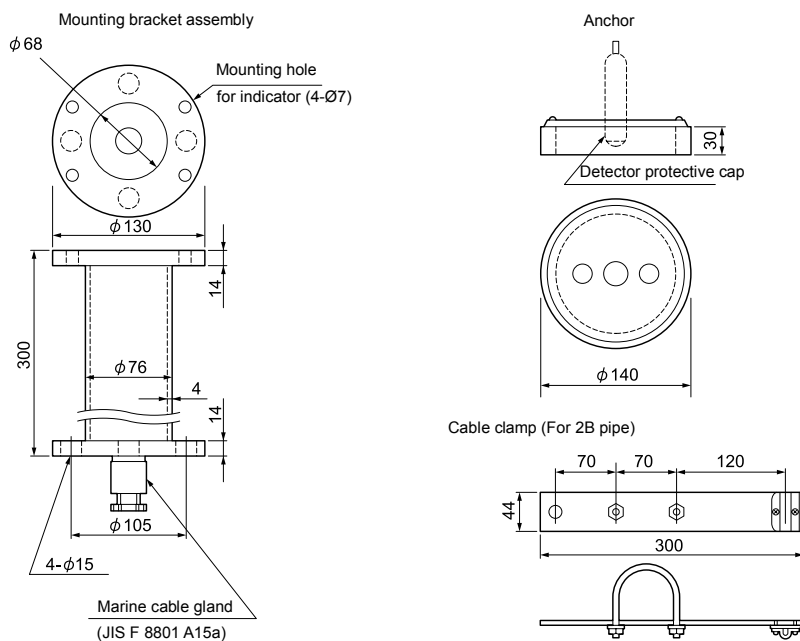
Indicator



Detector



Option



MODEL CODE NUMBER

• Model LT701 Water Level Transmitter (Standard system; composed of indicator and detector)

Basic model	Configuration	Drive		Scale	Range	Detec. spec.	Special spec.	Accessory	Description of code
LT70									Water level transmitter
	1								Standard system (Composed of indicator and detector)
		1							External DC power drive (24VDC)
		2							AC power drive
		9							Others
			B						
				1					Standard scale, Direct action (Note 2)
				2					Dual scale, Reverse action (Note 2)
				3					Dual scale, Direct action (Note 2)
				9					Other scales (Note 3)
					01				0 to 3m
					02				0 to 4m
					03				0 to 5m
					04				0 to 8m
					05				0 to 10m
					06				0 to 15m
					07				0 to 20m
					08				0 to 30m
					09				0 to 50m
					10				0 to 80m
					11				0 to 100m
					12				0 to 150m
					99				Other ranges
						A			Standard detector
						B			Detector with well-drained structure
							S		No special specification other than above code
							Z		With special specification other than above code
								0	Accessory not required
								1	Accessory required (Specify it from the following codes.)

Note 1: The measuring ranges are corresponding to the water density of 1 (fresh water at 4°C).

Note 2: The details of scales are;

Standard scale: Indication from the zero level of the detector to a water level.

Dual scale: Indication from the ground level to a water level in addition to the above

Direct action: Output increase with water level rising

Reverse action: Output decrease with water level rising

Note 3: When any other scale is required, specify both of a scale and an action.

Note 4: When "Accessory required" is specified, specify the required accessory by adding its code at the end of model code for the transmitter.

(Refer to the example of model code.)

Note 5: Any codes for accessories are not shown on the name plate.

Note 6: When the detector used in the standard system (composed of indicator and detector) is required, please inquire for it separately.

This detector can not be specified by [Model code Detector single system (independent detector) shown next model code.

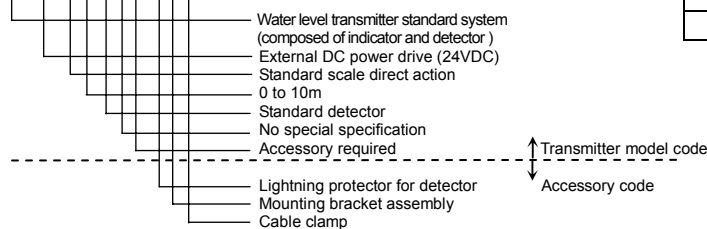
Note 7: May be provide no your required specifications (to other scales, other ranges, and other special specifications).

Please inquire for your required specifications.

Code	Description of accessory code
T	Lightning protector for detector
A	Mounting bracket assembly (For 2B pipe or wall mounting)
F	Mounting flange assembly
U	Anchor (Weight for fixing detector)
C	Cable clamp (For 2B pipe)

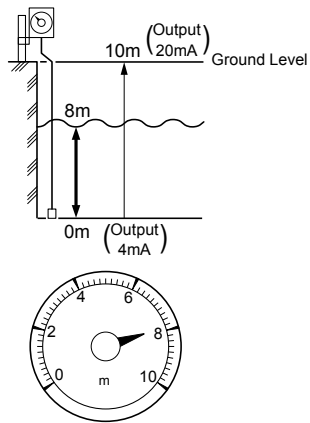
Example of model code

LT701 1 B 1 05 A S 1 / T A C

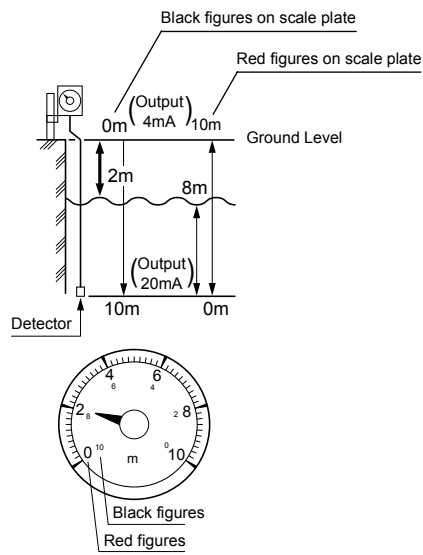


- Relation between scale and output

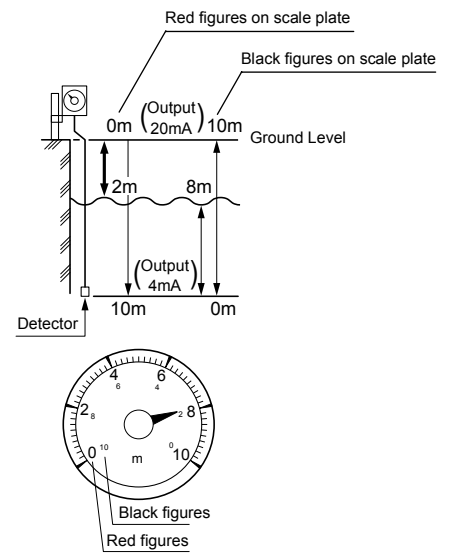
1. Standard scale (Direct action)



2. Dual scale (Reverse action)



3. Dual scale (Direct action)



• Model LT702 Water Level Transmitter (Detector single system; independent detector)

Basic model	Configuration	Drive		Action	Range	Detec. spec.	Special spec.	Accessory	Description of code
LT70									Water level transmitter
	2								Detector single system (independent detector)
		1							External DC power drive (24VDC)
		9							Others
			B						
				1					Direct action (4 to 20mADC output) (Note 3)
				2					Reverse action (4 to 20mADC output) (Note 3)
				9					Others
					01				0 to 3m
					02				0 to 4m
					03				0 to 5m
					04				0 to 8m
					05				0 to 10m
					06				0 to 15m
					07				0 to 20m
					08				0 to 30m
					09				0 to 50m
					10				0 to 80m
					11				0 to 100m
					12				0 to 150m
					99				Other ranges
						A			Standard detector
						B			Detector with well-drained structure
							S		No special specification other than above code
							Z		With special specification other than above code
								0	Accessory not required
								1	Accessory required (Specify it from the following codes.)

Note 1: The measuring ranges are corresponding to the water density of 1 (fresh water at 4°C).

Note 2: This code is applied to use of the detector without the indicator. This detector can not be used in the water level transmitter under the standard system (composed of indicator and detector).

For the detector used in the standard system, please inquire for it separately.

Note 3: Direct action: Output increase with water level rising

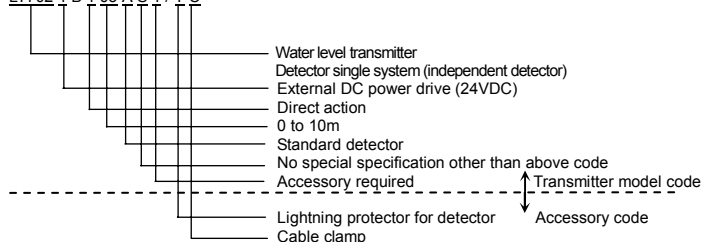
Reverse action: Output decrease with water level rising

Note 4: When "Accessory required" is specified, specify the required accessory by adding its code at the end of model code for the transmitter. (Refer to the example of model code.)

Note 5: Any codes for accessories are not shown on the name plate.

Example of model configuration

LT702 1 B 1 05 A S 1 / T C



Code	Description of accessory code
T	Lightning protector for detector
U	Anchor (Weight for fixing detector)
C	Cable clamp (For 2B pipe)



Do not install this device before consulting instruction manual

Specifications are subject to change without notice.

For further information, a quotation or a demonstration please contact to:

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