

# SPECIFICATION SHEET

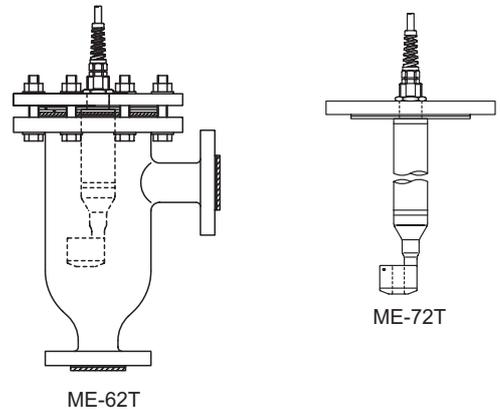


## High Sensitivity Type Electromagnetic Conductivity Detector

ME-6□□/7□□/11T Series

These products are conductivity sensors that function based on electromagnetism. Combined with a dedicated converter, they provide accurate measurement of the conductivity of a solution. They can measure highly corrosive or conductive acid or alkaline solutions and seawater, which cannot be measured with electrode type devices.

PFA or PVC is used as the liquid contact material. There are multiple mounting methods available: pipe-insertion types, immersion types, throw-in types, and flow liquid types.



### Features

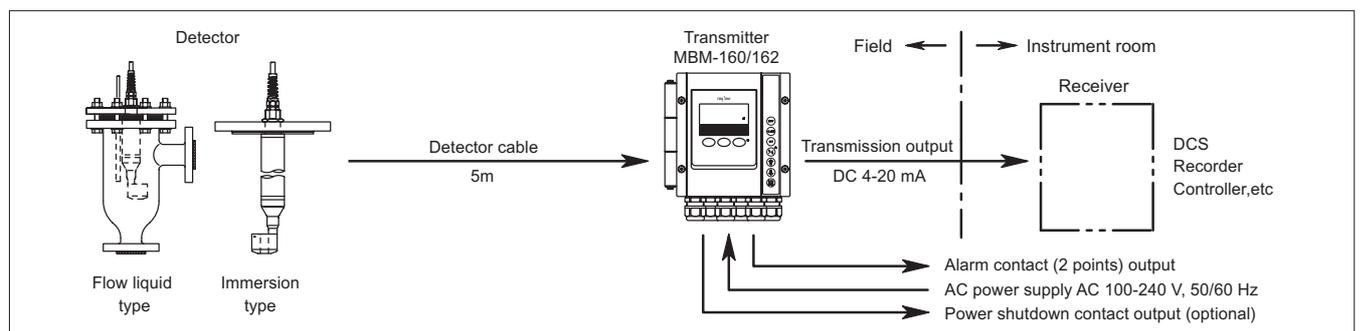
For hydrochloric acid, sulfuric acid, and caustic soda, conductivity and temperature can be measured and converted into concentrations. This means the product can be manufactured as a concentration meter. A wide range of measurements is possible. The minimum measurement range (maximum sensitivity) is 0–500 $\mu$ S/cm (0.5 mS/cm). The maximum measurement range is 0–2 S/cm (2000 mS/cm).

There are two series—a high-sensitivity type with diameter of  $\varnothing$ 44 (ME-11T/6/7 model; cell constant 2.6/cm) and a small lightweight type with a diameter of  $\varnothing$ 22.5 (ME-1□□ model; cell constant 9.0/cm). Either type can be selected depending on the usage and installation conditions. The devices are installed beneath a drip-proof structure and can be set up outdoors.

### Representative sensors and basic specifications

Model	ME-62T**	ME-72T**
Category	High-sensitivity with vertical hole	
Shape / Use	Flow liquid type	Immersion type
Process connection	25A JIS 10K RF	100A JIS 10K RF
Contact liquid component material	PFA	
Cell constant	2.6/cm (260/m)	
Working temperature	0 - 120°C	
Working pressure	1.0 MPa or less	
Weight	Approx. 19kg	Approx. 10kg (L: 500)
Construction	Outdoor installation Rainproof type	

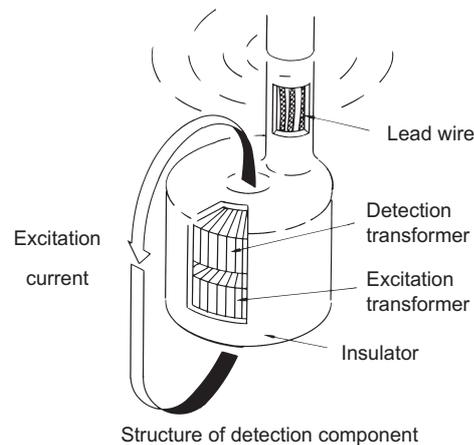
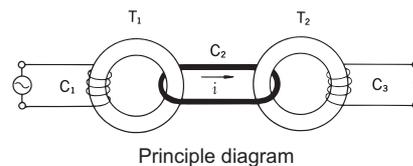
### System configuration



**Measurement principle**

The detection component comprises two stacked transformers that are molded or lined with insulators. The component is immersed in a sample liquid to perform conductivity measurement by using the electromagnetic current flowing in the liquid.

As shown in the main diagram, two toroidal transformer coils *T1* and *T2* are fitted, forming an equivalent single-coil circuit, *C2*, which is cross-linked with *T1* and *T2*. When an alternating current is sent to primary coil *C1*, then current *i*, which is relative to the conductivity of the solution, flows to *C2*. On the other hand, voltage *e*, which is proportional to the current flowing to coil *C2*, is generated in secondary coil *C3* in transformer *T2*, which uses *C2* as its primary coil. This voltage value is proportional to the conductivity of the solution, thus enabling the conductivity of a solution to be determined by measuring voltage *e*.



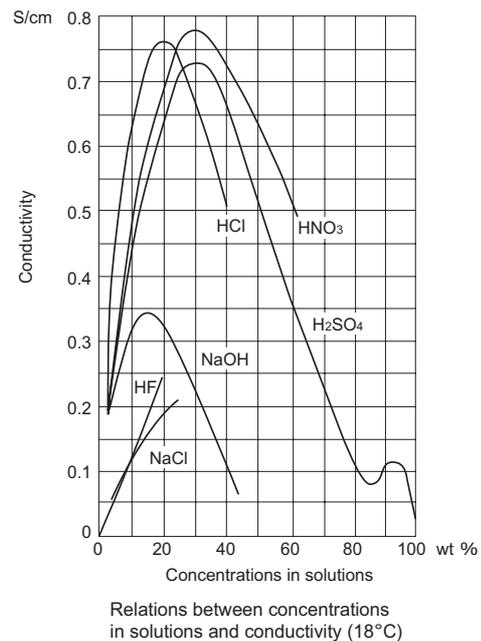
**1. Conditions for concentration meters**

Electromagnetic type concentration meters function based on the principle of conductivity measurement. When the conductivity of solution concentrations is graphed, maximum or minimum points are apparent for most high-concentration inorganic salts. Thus, no concentration meter should be manufactured that includes these points within the measurement range. For example, with  $\text{HNO}_3$ , maximum conductivity is at a concentration of around 30%. A nitric acid concentration meter therefore must have a measurement range of, for instance, 0%–25% or, to exclude maximum points, 35%–60%.

If changes in conductivity in response to concentrations of impurities or coexisting components in the sample liquid are negligible in comparison with conductivity changes in response to concentrations of measured components, then it is possible to measure concentrations; however, measurement errors will increase if the former changes are too great to be ignored.

**2. Minimum and maximum conductivity measurement ranges**

- (1) Minimum range (highest sensitivity)···0 - 500 $\mu\text{S}/\text{cm}$
- (2) Maximum···0 - 2S/cm



**Electromagnetic conductivity sensor**

In your request for a quotation or order placement, please specify the following:

◆ Measurement item

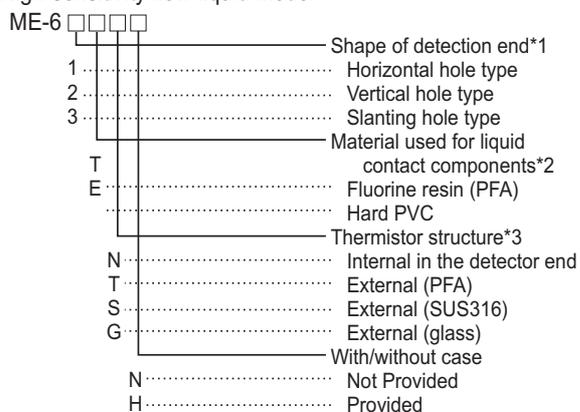
- 1. Name of solution: \_\_\_\_\_
- 2. Fluctuation range: \_\_\_\_\_
- 3. Presence / absence and percentage of coexisting elements: \_\_\_\_\_
- 4. Temperature (°C) Maximum: \_\_\_\_\_  
Normal: \_\_\_\_\_  
Minimum: \_\_\_\_\_
- 5. Pressure (MPa) Maximum: \_\_\_\_\_  
Normal: \_\_\_\_\_  
Minimum: \_\_\_\_\_

Requested specifications

- 1. Classification :  High-sensitivity type     Compact lightweight type
- 2. Mounting method :  Screw insertion type (screw standards: \_\_\_\_\_)  
 Flange-insertion type     Flow liquid type with case  
 Immersion type with flange (length: \_\_\_\_\_)  
(flange standards: \_\_\_\_\_)  
 Immersion type for open tank     Throw-in immersion type
- 3. Liquid contact material :  Hard PVC heat-resistant 60°C  
 Heat-resistant PVC heat-resistant 70°C  
 PFA heat-resistant 120°C     PVDF heat-resistant 100°C
- 4. Special specifications:

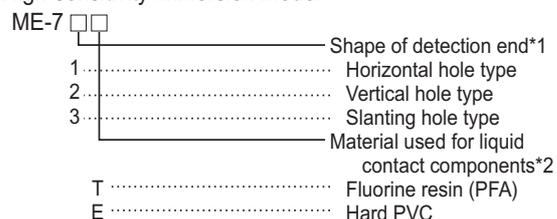
Model name manufacturing specifications

◆ High-sensitivity flow-liquid model



\*1. The horizontal hole type is appropriate for measuring horizontal flows of sample water, while the vertical hole type is better for measuring vertical flows (to prevent stain adhesion and to prevent air bubbles from being mixed in sample water).

◆ High-sensitivity immersion model



◆ High-sensitivity multi-use model (PFA)



\*2. Heat-resistant to 120°C with PFA, 100°C with PVDF, 65°C with heat-resistant PVC, and 60°C with hard PVC.

Withstand voltage varies according to material and shape (structure). Please see the specifications (product code) for each model.

\*3. If the sample water temperature is subject to fast and violent changes, the external thermistor type is recommended because it responds more rapidly to temperature fluctuations.

Sensor selection based on measuring solutions and measurement conditions

Solution	Measurement range	Working temperature: 0 - 60(65)°C Pressure: 0 - 0.2MPa	
		Working temperature: 60 - 100(120)°C Pressure: 0.2 - 0.5(1.0)MPa	
Sodium chloride (NaCl)	0 - 5%	ME-63E / 73E	ME-6□□T / 7□□T / 11T
	0 - 10%		
	0 - 20%		
Hydrochloric acid (HCl)	0 - 5%	ME-63E / 73E	ME-6□□T / 7□□T / 11T
	0 - 10%		
	25 - 40%		
	30 - 40%		
Nitric acid (HNO <sub>3</sub> )	0 - 20%	ME-63E / 73E ME-1□□H	ME-6□□T / 7□□T / 11T
	60 - 70%	ME-6□□T / 7□□T / 11T	
Caustic soda (NaOH)	0 - 5%	ME-63E / 73E	ME-6□□T / 7□□T / 11T
	0 - 10%		
	0 - 15%		
	20 - 40%		
Sulfuric acid (H <sub>2</sub> SO <sub>4</sub> )	0 - 5%	ME-63E / 73E	ME-6□□T / 7□□T / 11T
	0 - 10%	ME-6□□T / 7□□T / 11T	
	0 - 30%		
	40 - 80%		
	60 - 80%		
Conductivity	94 - 99.5%	ME-63E / 73E	ME-6□□T / 7□□T / 11T
	0 - 0.5mS/cm *		
	0 - 5mS/cm		
	0 - 10mS/cm		
	0 - 20mS/cm		
	0 - 50mS/cm		
	0 - 100mS/cm		
	0 - 200mS/cm		
0 - 500mS/cm			
0 - 1S/cm			

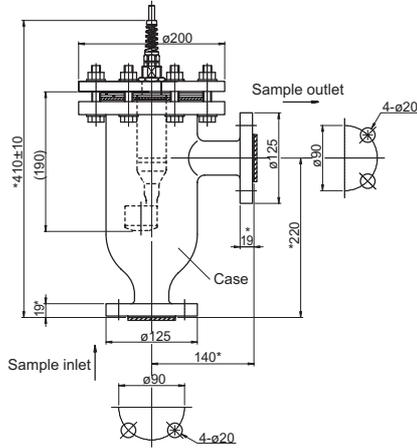
Note: For measurement to 0 - 0.5 mS/cm (500 μS/cm) or less, select a double-electrode type conductivity meter.

## High-sensitivity flow-liquid type

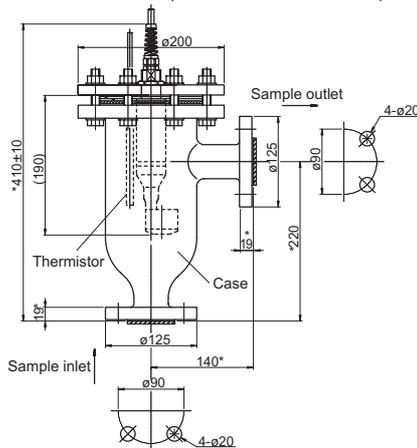
### Dimensions

Unit : mm

- ME-62TNH (PFA, vertical hole type, internal thermistor)



- ME-62TTH (PFA, vertical hole type, external thermistor)



### Product code

- Fluorine resin (PFA), vertical hole type, cell constant 2.6/cm

ME62T-0-□□□□□		With/without casing material
0	ME-62T□□□	Not provided *1
A	ME-62T□□H	FCD400/liquid contact surface PFA lining provided
Standards for case connection (flange)		
1		25A JIS 10K RF equivalent
2		1"ANSI 150LB RF equivalent
8		No applicable: (without case)
Thermistor mounting method *2		
0	ME-62TN□□	Internal detection end type (standard)
1	ME-62TT□□	External type
Cable length *3		
A		5 m (standard)
Y		Specified (maximum 20 m)
Cable end		
1		For MDM-13□□A, MBM-10□□A, and MBM-16□□ models
2		For MDM-3□□□ model
Marking		
0		Japanese(standard)
1		English
Combined transmitter		
A		Equipped
B		N/A *4

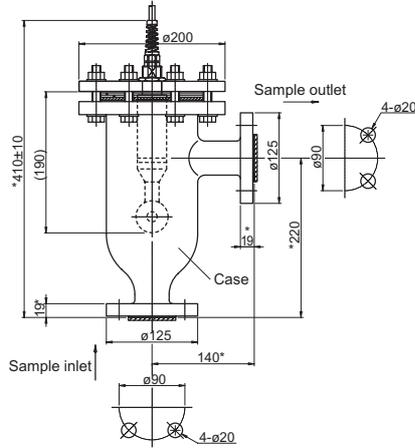
Custom spec. code;  
 Numeric digit: 9  
 Alphabet: Z

- \*1. For case-free models, inform us of the mounting conditions (whether you are using our proprietary case or your own measurement tank).  
If you intend to mount this unit on your own measurement tank, you will need an internal diameter of 100A or more to comply with the cell coefficient.
- \*2. The temperature compensation thermistor is usually built into the detection end (internal type). If the sample water temperature is prone to sharp fluctuations over short periods, select an external type because it responds more rapidly to temperature fluctuations.  
The withstand voltage of the external thermistor type is 0.2 MPa.
- \*3. The standard cable length (external diameter 8 mm) is 5 m. If you require a cable of more than 5 m in length, select Y (Specify) and enter the necessary length (up to maximum 20m).
- \*4. If a transmitter is indicated as "Not provided," inform us of the model name and production number of the transmitter that you are using.

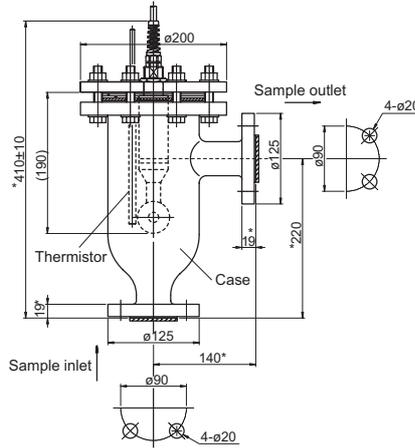
Note 1: The liquid contact material of this sensor is made from PFA and its maximum withstand voltage is 1.0 MPa. The maximum sample water temperature is 120°C. However, for the external thermistor type, the withstand voltage is 0.2 MPa.

Note 2: The detection end of the ME-62T□□□ model is a vertical hole type, making it appropriate for measurement of sample water flowing vertically. The detection end is designed to prevent the effect of air bubbles. Even if air bubbles are mixed in sample water, they do not mount to the detection end. The detection end of the ME-61T□□□ model is a horizontal hole type, making it appropriate for measurement of sample water flowing horizontally. Thus, when choosing a unit with case, the ME-62T□□H model or a vertical hole type is recommended because this type of unit is less affected by air bubbles.

● ME-61TNH ( PFA, horizontal hole type, internal thermistor )



● ME-61TTH ( PFA, horizontal hole type, external thermistor )



● Fluorine resin (PFA), horizontal hole type, cell constant 2.6/cm

ME61T-0-□□□□□□□□	With/without casing material
0	ME-61T□□□ Not provided *1
A	ME-61T□□□ FCD400/liquid contact surface PFA lining provided
1	Standards for case connection (flange)
2	25A JIS 10K RF equivalent
8	1"ANSI 150LB RF equivalent
	No applicable: (without case)
	Thermistor mounting method *2
0	ME-61TN□□ Internal detection end type (standard)
1	ME-61TT□□ External type
	Cable length *3
A	5 m (standard)
Y	Specified (maximum 20 m)
	Cable end
1	For MDM-13□□, MBM-10□□, and MBM-16□□ models
2	For MDM-3□□□ model
	Marking
0	Japanese(standard)
1	English
	Combined transmitter
A	Equipped
B	N/A *4

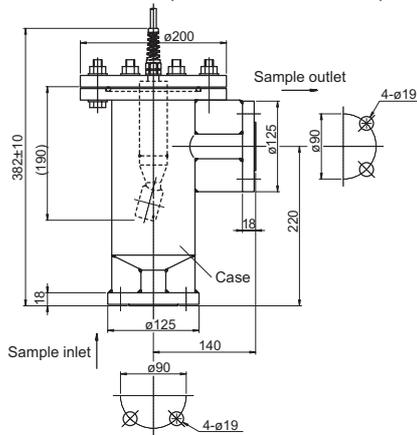
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 Numeric digit: 9  
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- \*1. For case-free models, inform us of the mounting conditions (whether you are using our proprietary case or your own measurement tank).  
 If you intend to mount this unit on your own measurement tank, you will need an internal diameter of 100A or more to comply with the cell coefficient.
- \*2. The temperature compensation thermistor is usually built into the detection end (internal type). If the sample water temperature is prone to sharp fluctuations over short periods, select an external type because it responds more rapidly to temperature fluctuations.  
 The withstand voltage of the external thermistor type is 0.2 MPa.
- \*3. The standard cable length (external diameter 8 mm) is 5 m. If you require a cable of more than 5 m in length, select Y (Specify) and enter the necessary length (up to maximum 20m).
- \*4. If a transmitter is indicated as "Not provided," inform us of the model name and production number of the transmitter that you are using.

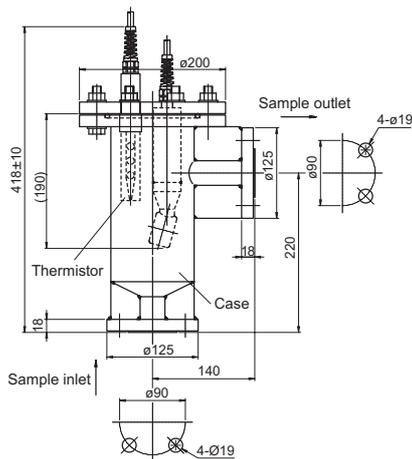
Note 1: The liquid contact material of this sensor is made from PFA and its maximum withstand voltage is 1.0 MPa. The maximum sample water temperature is 120°C. However, for the external thermistor type, the withstand voltage is 0.2 MPa.

Note 2: The detection end of the ME-62T□□□ model is a vertical hole type, making it appropriate for measurement of sample water flowing vertically. The detection end is designed to prevent the effect of air bubbles. Even if air bubbles are mixed in sample water, they do not mount to the detection end. The detection end of the ME-61T□□□ model is a horizontal hole type, making it appropriate for measurement of sample water flowing horizontally. Thus, when choosing a unit with case, the ME-62T□□□ model or a vertical hole type is recommended because this type of unit is less affected by air bubbles.

● ME-63ENH (PVC, slanting hole type, internal thermistor)



● ME-63EGH / ME-63ESH (PVC, slanting-hole type, external thermistor)



● Fluorine resin (PFA), vertical hole type, cell constant 2.6/cm

ME63E-0	□□□□□	Material used for liquid contact components
A	.....	Hard PVC (standard)
B	.....	Heat-resistant PVC (C-PVC)
0	.....	ME-63E□□□ Not provided *1
1	.....	ME-63E□□□ Provided; 25A JIS 10K FF equivalent (standard)
2	.....	Provided; 25A JIS 10K RF equivalent
3	.....	Provided; 1"ANSI 150LB RF equivalent
		Thermistor mounting method *2
A	.....	ME-63EN□□ Internal detection end type (standard)
B	.....	ME-63EG□□ External type External tube: glass
C	.....	ME-63ES□□ External type External tube: SUS316
		Cable length *3
A	.....	5 m (standard)
Y	.....	Specified (maximum 20 m)
		Cable end
1	.....	For MDM-13□□A, MBM-10□□A, and MBM-16□□ models
2	.....	For MDM-3□□□ model
		Marking
0	.....	Japanese(standard)
1	.....	English
		Combined transmitter
A	.....	Equipped
B	.....	N/A *4

Custom spec. code;  
 Numeric digit: 9  
 Alphabet: Z

- \*1. For case-free models, inform us of the mounting conditions (whether you are using our proprietary case or your own measurement tank).  
 If you intend to mount this unit on your own measurement tank, you will need an internal diameter of 100A or more to comply with the cell coefficient.
- \*2. The temperature compensation thermistor is usually built into the detection end (internal type). If the sample water temperature is prone to sharp fluctuations over short periods, select an external type because it responds more rapidly to temperature fluctuations. If the sample water is acidic, select an external glass tube. If the sample water is alkaline, select a SUS316 external tube.
- \*3. The standard cable length (external diameter 8 mm) is 5 m. If you require a cable of more than 5 m in length, select Y (Specify) and enter the necessary length (up to maximum 20m).
- \*4. If a transmitter is indicated as "Not provided," inform us of the model name and production number of the transmitter that you are using.

- Note 1: The liquid contact material of this sensor is made from PVC or C-PVC.  
 Its maximum withstand voltage is 0.1 MPa and the maximum sample water temperature is 60°C for hard PVC and 70°C for heat-resistant PVC.
- Note 2: This sensor serves as a concentration meter for measuring a wide range of substances, including sodium chloride (NaCl), hydrochloric acid (HCl), and caustic soda (NaOH). In addition, it can measure nitric acid (HNO<sub>3</sub>) up to 20% and sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) up to 10%.
- Note 3: The detection end is of a slanting-hole type. The slanting-hole type of sensor is less affected by air bubbles because it does not attract air bubbles in sample water.

Specifications
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Model	Liquid contact material / detection end / entire shape	Flange standards	Thermistor structure (material)	Sample Conditions			Weight
				Temp.	Pressure	Flow rate	
ME-62TNH	PFA / vertical hole type / with case	25A JIS 10K RF	Internal detection end	0 - 120°C	1.0MPa or less	1 - 20L/m	Approx.19kg
ME-62TNN	Same as above / without case / insertion length 190mm	100A JIS 5K RF	Same as above	0 - 120°C	1.0MPa or less	2m/s or less	Approx.8kg
ME-62TTH	PFA / vertical hole type / with case	25A JIS 10K RF	External (PFA)	0 - 120°C	0.2MPa or less	1 - 20L/m	Approx.19kg
ME-62TTN	Same as above / without case / insertion length 190mm	100A JIS 5K RF	Same as above	0 - 120°C	0.2MPa or less	2m/s or less	Approx.8kg
ME-61TNH	PFA / horizontal hole type / with case	25A JIS 10K RF	Internal detection end	0 - 120°C	1.0MPa or less	1 - 20L/m	Approx.19kg
ME-61TNN	Same as above / without case / insertion length 190mm	100A JIS 5K RF	Same as above	0 - 120°C	1.0MPa or less	2m/s or less	Approx.8kg
ME-61TTH	PFA / horizontal hole type / with case	25A JIS 10K RF	External (PFA)	0 - 120°C	0.2MPa or less	1 - 20L/m	Approx.19kg
ME-61TTN	Same as above / without case / insertion length 190mm	100A JIS 5K RF	Same as above	0 - 120°C	0.2MPa or less	2m/s or less	Approx.8kg
ME-63ENH	PVC / slanting hole type / with case	25A JIS 10K FF	Internal detection end	0 - 60°C	0.1MPa or less	1 - 20L/m	Approx.4kg
ME-63ENN	Same as above / without case / insertion length 190mm	100A JIS 5K FF	Same as above	0 - 60°C	0.1MPa or less	2m/s or less	Approx.2kg
ME-63ESH	PVC / slanting hole type / with case	25A JIS 10K FF	External (SUS316 tube)	0 - 60°C	0.1MPa or less	1 - 20L/m	Approx.4kg
ME-63ESN	Same as above / without case / insertion length 190mm	100A JIS 5K FF	Same as above	0 - 60°C	0.1MPa or less	2m/s or less	Approx.2kg
ME-63EGH	PVC / slanting hole type / with case	25A JIS 10K FF	External (glass tube)	0 - 60°C	0.1MPa or less	1 - 20L/m	Approx.4kg
ME-63EGN	Same as above / without case / insertion length 190mm	100A JIS 5K FF	Same as above	0 - 60°C	0.1MPa or less	2m/s or less	Approx.2kg

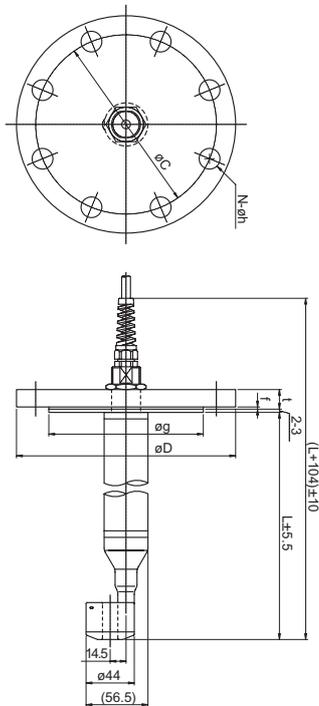
Note: For measurement sample water that fluctuates significantly in temperature, select an external thermistor type.

## High-sensitivity immersion type

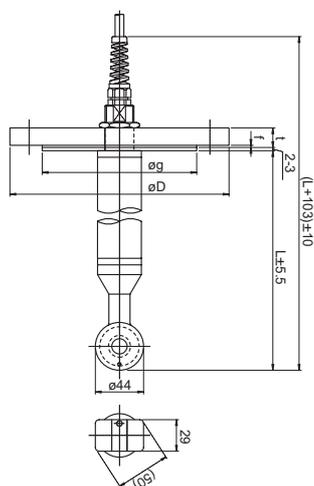
Dimensions Unit : mm

Product code

### ME-72T



### ME-71T



Nominal pressure 10 K flange						
N.D	øD	t	f	øg	øC	N - øh
50A	ø155	16	2	ø96	ø120	4 - ø19
65A	ø175	18	2	ø116	ø140	4 - ø19
80A	ø185	18	2	ø126	ø150	8 - ø19
100A	ø210	18	2	ø151	ø175	8 - ø19
125A	ø250	20	2	ø182	ø210	8 - ø23
150A	ø280	22	2	ø212	ø240	8 - ø23

N.D.=Nominal Diameter

### Fluorine resin (PFA) vertical hole type; cell constant 2.6/cm

ME72T-2-	□	□	□	□	□	
1	.....	.....	.....	.....	.....	Standards for connecting flange
2	.....	.....	.....	.....	.....	80A JIS 10K RF (Minimum size)
3	.....	.....	.....	.....	.....	100A JIS 10K RF (Standard)
5	.....	.....	.....	.....	.....	125A JIS 10K RF
						150A JIS 10K RF
						Flange-bottom length (nominal dimension)
1	.....	.....	.....	.....	.....	190mm (minimum)
2	.....	.....	.....	.....	.....	500mm (standard)
3	.....	.....	.....	.....	.....	1000mm
4	.....	.....	.....	.....	.....	1500mm
5	.....	.....	.....	.....	.....	2000mm
						Cable length *1
A	.....	.....	.....	.....	.....	5 m (standard)
Y	.....	.....	.....	.....	.....	Specified (maximum 20 m)
						Cable end
1	.....	.....	.....	.....	.....	For MDM-13□□, MBM-10□□, and MBM-16□□ models
2	.....	.....	.....	.....	.....	For MDM-3□□ model
						Marking
0	.....	.....	.....	.....	.....	Japanese(standard)
1	.....	.....	.....	.....	.....	English
						Combined transmitter
A	.....	.....	.....	.....	.....	Equipped
B	.....	.....	.....	.....	.....	N/A *2

### Fluorine resin (PFA) horizontal hole type; cell constant 2.6/cm

ME71T-2-	□	□	□	□	□	
1	.....	.....	.....	.....	.....	Standards for connecting flange
2	.....	.....	.....	.....	.....	50A JIS 10K RF (Minimum size) *1
3	.....	.....	.....	.....	.....	65A JIS 10K RF
4	.....	.....	.....	.....	.....	80A JIS 10K RF
5	.....	.....	.....	.....	.....	100A JIS 10K RF (standard)
6	.....	.....	.....	.....	.....	125A JIS 10K RF
						150A JIS 10K RF
						Flange-bottom length (nominal dimension)
1	.....	.....	.....	.....	.....	190mm (minimum)
2	.....	.....	.....	.....	.....	500mm (standard)
3	.....	.....	.....	.....	.....	1000mm
4	.....	.....	.....	.....	.....	1500mm
5	.....	.....	.....	.....	.....	2000mm
						Cable length *2
A	.....	.....	.....	.....	.....	5 m (standard)
Y	.....	.....	.....	.....	.....	Specified (maximum 20 m)
						Cable end
1	.....	.....	.....	.....	.....	For MDM-13□□, MBM-10□□, and MBM-16□□ models
2	.....	.....	.....	.....	.....	For MDM-3□□ model
						Marking
0	.....	.....	.....	.....	.....	Japanese(standard)
1	.....	.....	.....	.....	.....	English
						Combined transmitter
A	.....	.....	.....	.....	.....	Equipped
B	.....	.....	.....	.....	.....	N/A *3

\*1. Although the minimum size is 50A, if the internal surface of the 50A pipe in the mounting component (counterpart) has a lining, the internal diameter may be too small, preventing insertion of the pipe. Thus, the flange size should be 65A or more.

\*2. The standard length of cable (external diameter of 8 mm) is 5 m. However, if the bottom length (nominal dimension) of sensor flange is, for example, 1000 mm, then effective length of cable is 4.0 m. When you need a length of more than 5 m, select Y "Specify" to inform us of the necessary length (maximum of 20 m, including sensor length).

\*3. If a transmitter is indicated as "Not provided," inform us of the model name and production number of the transmitter that you are using.

Note 1: In this sensor, PFA is used as the liquid contact material. The detection end incorporates a temperature compensation thermistor.

Note 2: The detection end is a horizontal hole type and is appropriate for sample water flowing horizontally. If the presence of air bubbles in sample water is suspected, we recommend selecting the ME-72T model, which is a vertical hole type, which is less affected by air bubbles.

Note 3: The maximum withstand voltage is 1.0 MPa, and the maximum sample water temperature is 120°C.

Note 4: SUS316 is used as the flange material. The liquid contact surface is protected with a PFA sheet.



## High-sensitivity ME-11T (multi-use) model

Product code

● Fluorine resin (PFA), horizontal hole type, cell constant 2.6/cm

ME11T-4-□□□□□□	
A	Mounting methods
B	Sensor body (G3/4 screw type)
C	Immersion type with extension tube (PFA)*1
D	Screw type (R2-R4 screw)
E	IDF flange (ferule) type
	Throw-in type (holder material PVC)
1	Length of immersion type extendable tube (PFA)
2	81 mm (total length L: 190)
3	391 mm (total length L: 500)
4	891 mm (total length L: 1000)
5	1391 mm (total length L: 1500)
8	1891 mm (total length L: 2000)
	Not applicable (sensor body, screw, IDF flange, throw-in type)
A	Screw material for screw type
B	SUS316
Y	C-PVC
	Not applicable (sensor body, immersion type, IDF flange, throw-in type)
1	Screw size of screw type
2	R2
3	R2 1/2
4	R3
8	4
	Not applicable (sensor body, immersion type, IDF flange, throw-in type)
A	Size of IDF flange type*2
B	IDF 2 1/2
C	IDF 3
D	IDF 3 1/2
Y	IDF 4
	Not applicable (sensor body, immersion type, screw, throw-in type)
A	Cable length*3
Y	5 m (standard)
	Specified (maximum 20 m)
A	Cable end
B	For MDM-13□A, MBM-10□A, and MBM-16□ models
	For MDM-300/310 models
0	Marking
1	Japanese (standard)
	English
A	Combined transmitter
B	Equipped
	N/A *4

Custom spec. code;  
Numeric digit: 9  
Alphabet: Z

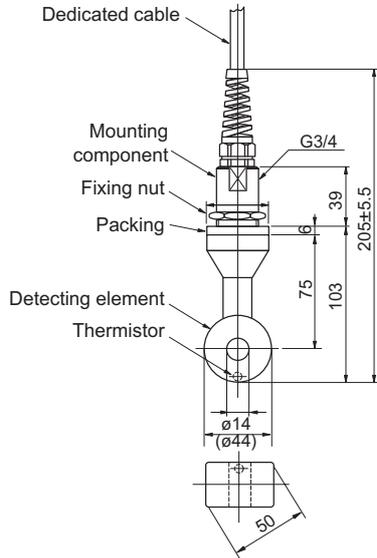
- \*1. Only in the immersion type, an extension tube (PFA) can be welded and connected to the detection end. If the R screw type or the IDF flange type needs an extension tube, the ME-1□2 Series is recommended.
- \*2. Only SUS316L is used as the material for the IDF flange (ferule).
- \*3. The standard cable length from the sensor body is 5 m. If the total length of the extension tube is 1 m, then the effective cable length will be 4 m. As a special case, it is possible to manufacture a cable of up to 20 m including the length of the sensor.
- \*4. If a transmitter is indicated as "Not provided," inform us of the model name and production number of the transmitter that you are using.

Note: This sensor can be used in various styles; mounted with a screw (G/R)/IDF flange, immersed in an open tank, or thrown in.

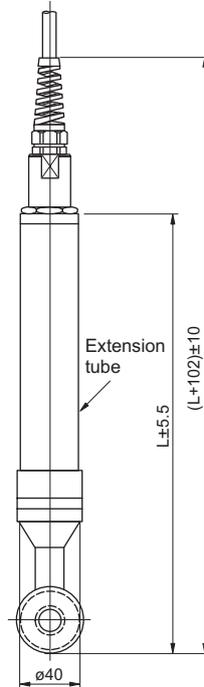
**Dimensions**

Unit : mm

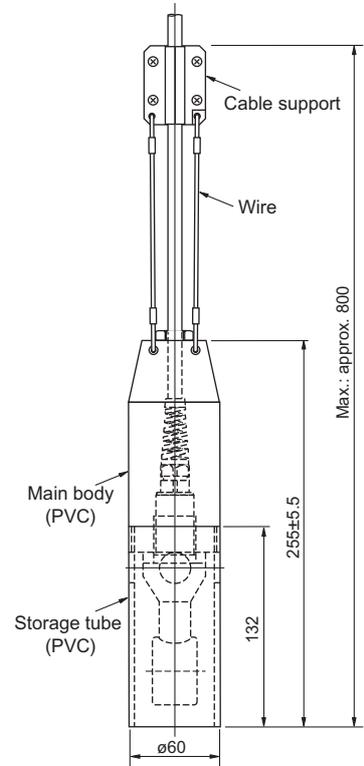
● Sensor unit type



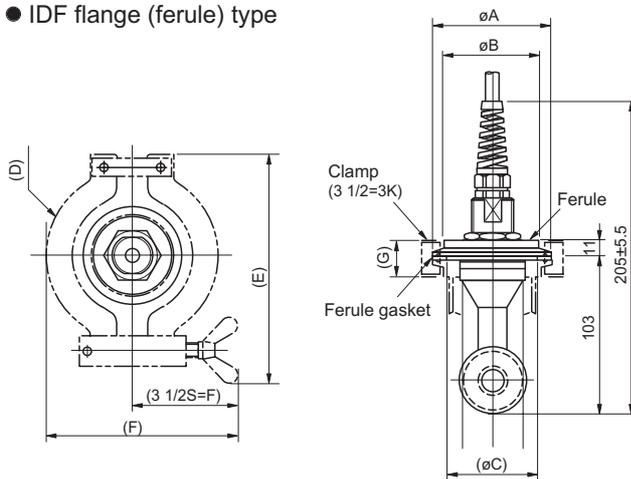
● Immersion type with extension tube



● Throw-in type

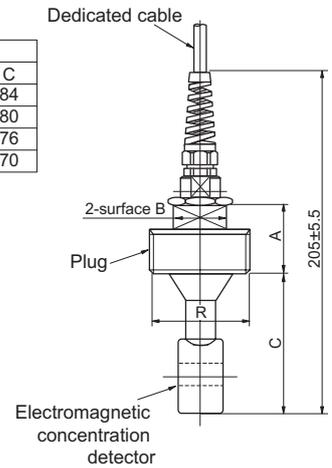


● IDF flange (ferule) type



● Screw type

Plug size			
R	A	B	C
R2	41	32	84
R2 1/2	48	41	80
R3	53	46	76
R4	62	58	70



Nominal	Clamp joint dimension						
	øA	øB	øC	øD	E	F	G
IDF 21/2S	ø 77.5	ø 63.5	ø59.7	ø 88	135	102	25
IDF 3S	ø 91	ø 76.3	ø72.5	ø106	148	112	27
IDF 31/2S	ø106	ø 89.1	ø85.3	ø121(3K)	146(3K)	60(3K)	18(3K)
IDF 4S	ø119	ø101.6	ø97.8	ø131	182	133	30

## ■ Combination electromagnetic conductivity meter/concentration meter transmitter

Field installation type (2-cable type)  
MDM-135A/MDM-137A



- Compact solid aluminum casting structure (IP55); simple field installation type unit
- Two-cable power supply DC 24 V
- Adjustable transmission output range (DC 4–20 mA)
- Transmission output maintained during maintenance
- Measurement value shift; cell constant settings; temperature display function provided as standard
- Measurement range  
MDM-135A: minimum 0 - 500 $\mu$ S/cm maximum 0 - 2000mS/cm  
MDM-137A: 0 - 15%HCl, 93 - 99.5%H<sub>2</sub>SO<sub>4</sub>,  
20 - 40%NaOH, 0 - 20%NaCl etc

Field installation type (4-cable type)  
MBM-160/MBM-162



- Compact solid aluminum die cast structure (IP65); field installation type unit
- AC 100–240 V free power supply
- Adjustable transmission output range (DC 4–20 mA)
- Transmission output of sample water temperature (DC 4–20 mA)
- Threshold alarm contact output
- Transmission output maintained during maintenance
- Measurement value shift; cell constant settings; a temperature display function provided as standard
- Measurement range  
MBM-160: minimum 0 - 500 $\mu$ S/cm maximum 0 - 2000mS/cm  
MBM-162: 0 - 15%HCl, 93 - 99.5%H<sub>2</sub>SO<sub>4</sub>,  
20 - 40%NaOH, 0 - 20%NaCl etc

Panel mounting type  
MBM-100A/MBM-102A



- Compact DIN96 size; lightweight (0.5 kg) panel type unit
- AC 100–240 V free power supply
- Adjustable transmission output range (DC 4–20 mA)
- Threshold alarm contact output
- Transmission output maintained during maintenance
- Measurement value shift; cell constant settings; a temperature display function provided as standard
- Measurement range  
MBM-100A: minimum 0 - 500 $\mu$ S/cm maximum 0 - 2000mS/cm  
MBM-102A: 0 - 15%HCl, 93 - 99.5%H<sub>2</sub>SO<sub>4</sub>,  
20 - 40%NaOH, 0 - 20%NaCl etc



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**CAUTION**

Please read the operation manual carefully before using products.