

SPECIFICATION SHEET



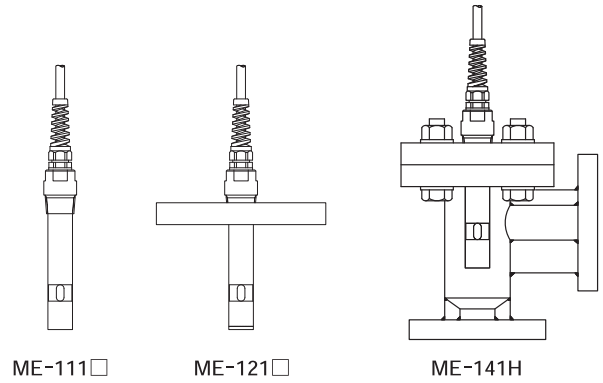
Electromagnetic Conductivity Detector

Compact Type ME-100 Serial

It is an electric conductivity detector based on electromagnetic induction action. Combined with a dedicated converter, accurately measures the conductivity of various solutions accurately.

Samples with high corrosiveness and high electrical conductivity are difficult to measure with the electrode method, but electromagnetic induction type detectors are able to measure them. The materials of wet part are C-PVC, PVDF or PFA. The detector can be installed by means of insertion type with tube, drop-in immersion type or flow-through type, etc.

For the robust type ME-6□□,7□□,11T series, please refer to the separate spec sheet.



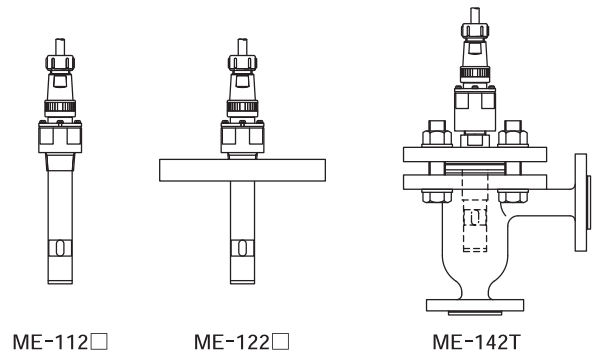
ME-111□

ME-121□

ME-141H

Features

- It covers broad measurement range.
The minimum measurement range is 0 to 0.5mS/cm (0.05S/m).
The maximum measurement range is 0 to 2000mS/cm (200S/m).
- Hydrochloric acid, sulfuric acid, sodium hydroxide, etc. can be converted into concentrations from measured values of conductivity and temperature. So they can be used as a concentration meter in combination with a converter.
- The detector is of vertical core miniature (light weight) with external diameter $\phi 22.5\text{mm}$ (resin layer thickness approx. 1mm). The standard length of detector's cable is 5m, and can be 20m max.
- The detector can be installed outdoor for its drip-proof structure.



ME-112□

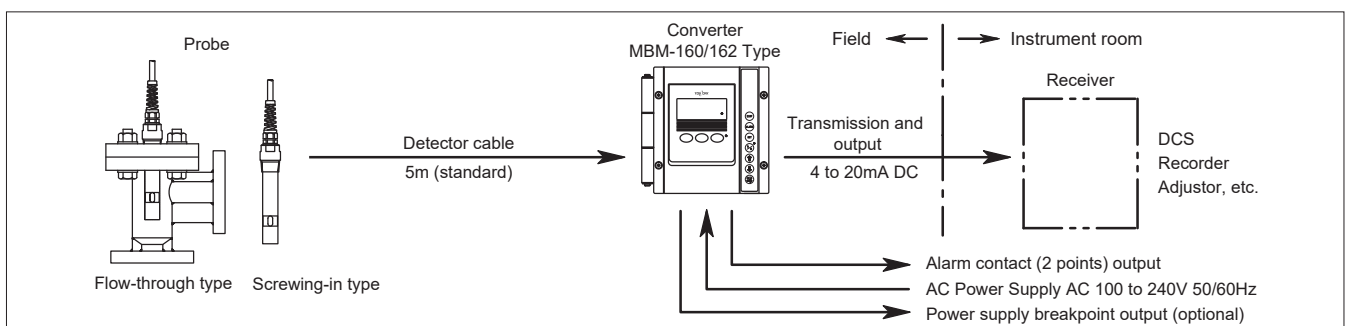
ME-122□

ME-142T

Detector Type

Type	ME-111□	ME-121□	ME-141□	ME-171□	ME-112□	ME-122□	ME-142□	ME-172□
Classification	Detector and cable as one-piece				Detector with separable cable			
Probe	Screwing-in	Flange	Flow-through	Immersion	Screwing-in	Flange	Flow-through	Immersion
Material of wet part	C-PVC, PVDF or PFA				C-PVC, PVDF or PFA			

System Configuration



Product Code

● **Screwing-in insertion type with pipe and sink** ● **Through-in type optional for only ME-111H Type**

ME111-1-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
A	.....	ME-111H	.....	Material of wet part ^{*1}	C-PVC (high-temperature resistant PVC)	
B	.....	ME-111F	.....		PVDF (polyvinylidene fluoride)	
C	.....	ME-111T	.....		PFA (fluor resin)	
				Specifications of the screw for tube connection		
1	.....				R ³ / ₄	
				Length of insertion (under the screw)		
1	.....				123mm	
				Length of cable		
1	.....				5m (standard)	
2	.....				10m	
				Cell constant (unit) ^{*2}		
A	.....				/cm	
B	.....				/m	
				Written form		
A	.....				Japanese	
B	.....				English as designated	
				Combined converter ^{*3}		
0	.....				Manufacturing simultaneously	
1	.....				None	



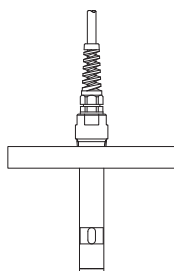
Note:

- The screwing-in insertion type detector with tube and sink can be installed either horizontal or upside-down.
- The ME-111H Type detector (made of C-PVC) can be used in seawater, river or lake (dam), and can be immersed as drop-in type in water 5m depth. In case of fast flow, please set up protection tube or suspend with an electric wire; please do not put extra load on to the cable.
The ME-111F/111T Type detector (body made of fluor resin) shall not be used as drop-in (immersion) since the cable is of PVC type.
- Refer to the following data for the water temperature range and pressure range of various materials of wet part.

Wet part	C-PVC	0 to 65°C	0.3MPa and below
	PVDF	0 to 100°C	0.5MPa and below
	PFA	0 to 120°C	0.5MPa and below
- The screws on installation side shall be made of resin.

● **Flange insertion type with pipe and sink**

ME121-2-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
A	.....	ME-121H	.....	Material of wet part ^{*1}	C-PVC (high-temperature resistant PVC)	
B	.....	ME-121F	.....		PVDF (polyvinylidene fluoride)	
C	.....	ME-121T	.....		PFA (fluor resin)	
				Specifications of flange connection		
1	.....				50A JIS 10K FF	
4	.....				40A JIS 10K FF (ME-141H box body combined)	
5	.....				40A JIS 10K RF (ME-141F/T box body combined)	
				Length below flange (nominal size)		
1	.....				96mm (ME-141H box body combined)	
2	.....				200mm	
3	.....				300mm	
5	.....				500mm	
6	.....				1000mm	
7	.....				1500mm	
8	.....				2000mm	
				Length of cable		
1	.....				5m (standard)	
2	.....				10m	
				Cell constant unit ^{*2}		
A	.....				/cm	
B	.....				/m	
				Written form		
A	.....				Japanese	
B	.....				English as designated	
				Combined converter ^{*3}		
0	.....				Manufacturing simultaneously	
1	.....				None	



Note:

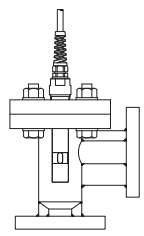
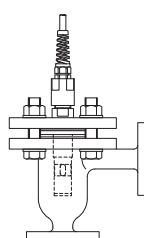
- Flange immerse (insertion) type detector with tube and sink can be installed either horizontal or upside-down. Moreover, it can be used to replace the flow-through type ME-141 detector.
- Refer to the following data for the water temperature range and pressure range of various materials of wet part.

Wet part	C-PVC	0 to 65°C	0.3MPa and below
	PVDF	0 to 100°C	0.5MPa and below
	PFA	0 to 120°C	0.5MPa and below
- The speed resistance of water sample is below 2m/s when at 200mm length.
Moreover, since the detector made of PFA is very soft, the length cannot be made over 1,000mm.

General Attention

- In case strong alkali solution, nitric acid, sulphuric acid and organic solution is mixed, since the resistance of C-PVC and PVDF is not sufficient, please select the detector made of PFA.
- Please ensure to use the same measurement unit of the converter.
- In case the detector cannot be operated with converter simultaneously, please contact manufacturer for converter type and serial number.

● Flow-through type (incl. box body) with 15A pipe connection

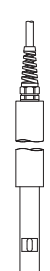
ME141-2-		□□□□	
 <p>ME-141H Type</p>	A	ME-141H	Material of wet part *1
	B	ME-141F	C-PVC (high-temperature resistant PVC)
	C	ME-141T	PVDF (polyvinylidene fluoride)
 <p>ME-141F/T Type</p>	Z		PFA (fluor resin)
			Special material
	1	ME-141H	15A JIS 10K FF
	5	ME-141F/T	15A JIS 10K RF
	Z		Special
			Length of cable
	1		5m (standard)
	2		10m
			Cell constant unit *2
	A		/cm
	B		/m
			Written form
	A		Japanese
	B		English as designated
			Combined converter *3
	0		Manufacturing simultaneously
	1		None

Note:

- The flow-through detector with 15A flange connection can be installed on 15A bypass with stop valve.
If made of C-PVC, the box body is of welding structure; if made of PVDF and PFA, the box body is of FCD400/PFA (casting with PFA lining).
The space between the flanges of two box bodies is 110x107, and the two box bodies are through to each other.
- Refer to the following data for the water temperature range and pressure range of various materials of wet part.

Wet part	C-PVC	0 to 65°C	0.1MPa and below (in case of detector monomer, then 0.3MPa and below)
	PVDF	0 to 100°C	0.5MPa and below
	PFA	0 to 120°C	0.5MPa and below
- The water sample flow rate at 0.5 – 10L/min will be appropriate.

● Immersion type for open tank

ME171-1-		□□□□	
	A	ME-171H	Material of wet part *1
	B	ME-171F	C-PVC (high-temperature resistant PVC)
	C	ME-171T	PVDF (polyvinylidene fluoride)
			PFA (fluor resin)
			Length of detector
	1		200mm
	2		300mm
	4		500mm
	5		1000mm
	6		1500mm
	7		2000mm
			Length of cable
	1		5m (standard)
	2		10m
			Cell constant unit *2
	A		/cm
	B		/m
			Written form
	A		Japanese
	B		English as designated
			Combined converter *3
	0		Manufacturing simultaneously
	1		None

Note:

- Regarding the immersion type detector (external diameter φ32) to install above the open-top tank (water tank), the fitting can be ZC-2 type.
- Refer to the following data for the water temperature range and pressure range of various materials of wet part.

Wet part	C-PVC	0 to 65°C	0.3MPa and below
	PVDF	0 to 100°C	0.5MPa and below
	PFA	0 to 120°C	0.5MPa and below
- The speed resistance of water sample is below 2m/s when at 200mm length.
Moreover, since the detector made of PFA is very soft, the length cannot be made over 1,000mm.

General Attention

- In case strong alkali solution, nitric acid, sulphuric acid and organic solution is mixed, since the resistance of C-PVC and PVDF is not sufficient, please select the detector made of PFA.
- Please ensure to use the same measurement unit of the converter.
- In case the detector cannot be operated with converter simultaneously, please contact manufacturer for converter type and material type.

■ Compact Leadless ME-1□2 Series

Refer to the following table for the miniature leadless electrical conductivity detector (4 types and 12 models).

Table of Specifications

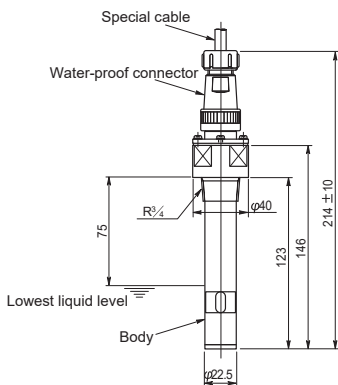
Installation	Connection specs	Type	Mat. of wet part	Size	Water sample conditions			Weight
					Temp.	Press	Flow rate	
Screwing-in insertion type with tube and sink	R ³ / ₄	ME-112H	High temp. resistant PVC	L. of insertion 123mm	0 to 65°C	0.3MPa and below	2m/s and below	Approx. 0.2kg
		ME-112F	PVDF		0 to 100°C	0.5MPa and below	2m/s and below	
		ME-112T	PFA		0 to 120°C	0.5MPa and below	2m/s and below	
Flange insertion type with tube and sink	50A JIS 10K FF	ME-122H	High temp. resistant PVC	L. of insertion 96mm to 2000mm	0 to 65°C	0.3MPa and below	2m/s and below	Approx. 1kg L: 96mm
		ME-122F	PVDF		0 to 100°C	0.5MPa and below	2m/s and below	
		ME-122T	PFA		0 to 120°C	0.5MPa and below	2m/s and below	
Flow-through type (incl. box body) with 15A tube connection	15A JIS 10K FF	ME-142H	High temp. resistant PVC	Space between flanges 110×107	0 to 65°C	0.1MPa and below	0.5 to 10L/m	Approx. 2kg
	15A JIS 10K RF	ME-142F	PVDF/PFA		0 to 100°C	0.5MPa and below	0.5 to 10L/m	Approx. 6kg
	15A JIS 10K RF	ME-142T	PFA		0 to 120°C	0.5MPa and below	0.5 to 10L/m	
Immersion type for open-top sink	None	ME-172H	High temp. resistant PVC	Length 200mm to 2000mm	0 to 65°C	0.3MPa and below	2m/s and below	Approx. 1kg L: 500mm
		ME-172F	PVDF		0 to 100°C	0.5MPa and below	2m/s and below	
		ME-172T	PFA		0 to 120°C	0.5MPa and below	2m/s and below	

1. The length of special cable is 5m or 10m, and the total maximum length (incl. detector) can be made up to 20m.
2. The cell constant is 9.0/cm, and the lower limit of measurement range is 0 to 0.5mS/cm.
3. The combined converter is of MBM-100A/102A, MDM-135A/137A and MBM-160/162 type.
4. The lower side and circular part of the detector shall be filled with water sample up to 25mm in order not to affect the cell constant.

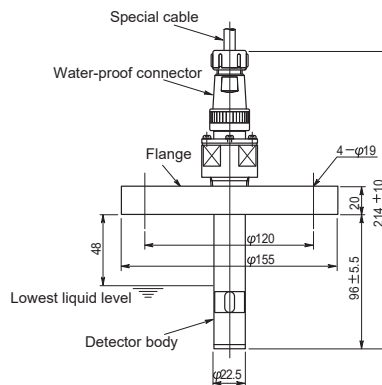
Outline Dimensions

Unit: mm

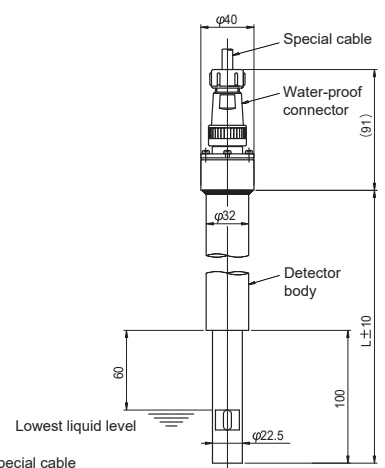
● ME-112H/F/T Type



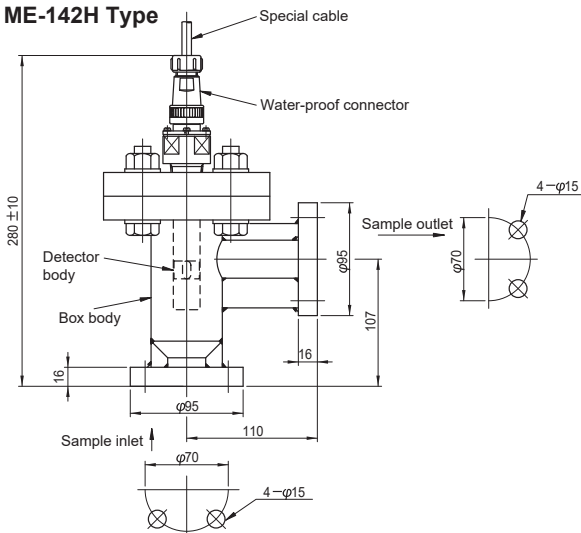
● ME-122H/F/T Type



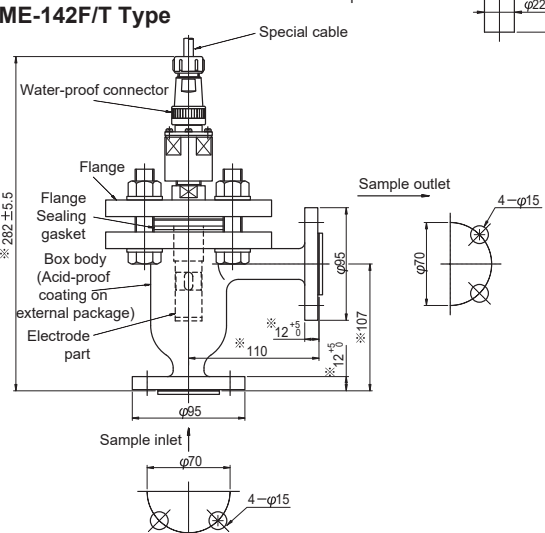
● ME-172H/F/T Type



● ME-142H Type




● ME-142F/T Type



Product Code

● **Screwing-in insertion type with pipe and sink**

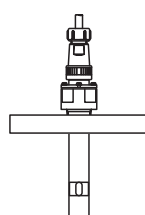
	ME112-1-	□	□	□	□	
	A	ME-112H	Material of wet part ¹	C-PVC (high-temperature resistant PVC)		
	B	ME-112F	PVDF (polyvinylidene fluoride)			
	C	ME-112T	PFA (fluor resin)			
	1		Specifications of the screw for pipe connection	R $\frac{3}{4}$		
	1		Length of insertion (under the screw)	123mm		
	A		Cell constant (unit) ²	/cm		
	B		/m			
	A		Written form	Japanese		
	B		English as designated			
	0		Combined converter ³	Manufacturing simultaneously		
	1		None			

Note:

- The screwing-in insertion type detector with pipe and sink can be installed either horizontal or upside-down.
- Refer to the following data for the water temperature range and pressure range of various materials of wet part.

Wet part	C-PVC	0 to 65°C	0.3MPa and below
	PVDF	0 to 100°C	0.5MPa and below
	PFA	0 to 120°C	0.5MPa and below
- The screws on installation side shall be made of resin.

● **Flange insertion type with pipe and sink**

	ME122-2-	□	□	□	□	
	A	ME-122H	Material of wet part ¹	C-PVC (high-temperature resistant PVC)		
	B	ME-122F	PVDF (polyvinylidene fluoride)			
	C	ME-122T	PFA (fluor resin)			
	1		Specifications of flange connection	50A JIS 10K FF		
	4		40A JIS 10K FF (ME-142H box body combined)			
	5		40A JIS 10K RF (ME-142F/T box body combined)			
	1		Length below flange (nominal size)	96mm (ME-142H box body combined)		
	2		200mm			
	3		300mm			
	5		500mm			
	6		1000mm			
	7		1500mm			
8		2000mm				
A		Cell constant unit ²	/cm			
B		/m				
A		Written form	Japanese			
B		English as designated				
0		Combined converter ³	Manufacturing simultaneously			
1		None				

Note:

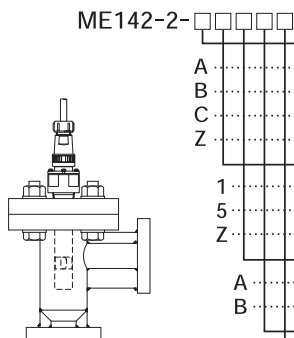
- Flange immerse (insertion) type detector with pipe and sink can be installed either horizontal or upside-down. Moreover, it can be used to replace the flow-through type ME-142 detector.
- Refer to the following data for the water temperature range and pressure range of various materials of wet part.

Wet part	C-PVC	0 to 65°C	0.3MPa and below
	PVDF	0 to 100°C	0.5MPa and below
	PFA	0 to 120°C	0.5MPa and below
- The speed resistance of water sample is below 2m/s when at 200mm length. Moreover, since the detector made of PFA is very soft, the length cannot be made over 1,000mm.

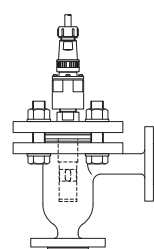
General Attention

- In case strong alkali solution, nitric acid, sulphuric acid and organic solution is mixed, since the resistance of C-PVC and PVDF is not sufficient, please select the detector made of PFA.
- Please ensure to use the same measurement unit of the converter.
- In case the detector cannot be operated with converter simultaneously, please contact manufacturer for converter type and material type.

● Flow-through type (incl. box body) with 15A pipe connection



ME-142H Type



ME-142F/T Type

ME142-2-	□	□	□	□	
A	ME-142H	Material of wet part ^{*1}	C-PVC (high-temperature resistant PVC)		
B	ME-142F		PVDF (polyvinylidene fluoride)		
C	ME-142T		PFA (fluor resin)		
Z			Special material		
1	ME-142H	Specifications of flange with box body connection	15A JIS 10K FF		
5	ME-142F/T		15A JIS 10K RF		
Z			Special		
A		Cell constant unit ^{*2}	/cm		
B			/m		
A		Written form	Japanese		
B			English as designated		
0		Combined converter ^{*3}	Manufacturing simultaneously		
1			None		

Note:

- The flow-through detector with 15A flange connection can be installed on 15A bypass pipe with stop valve. If made of C-PVC, the box body is of welding structure; if made of PVDF and PFA, the box body is of FCD400/PFA (casting with PFA lining). The space between the flanges of two box bodies is 110x107, and the two box bodies are through to each other.
- Refer to the following data for the water temperature range and pressure range of various materials of wet part.

Wet part	C-PVC	0 to 65°C	0.1MPa and below (in case of detector monomer, then 0.3MPa and below)
	PVDF	0 to 100°C	0.5MPa and below
	PFA	0 to 120°C	0.5MPa and below
- The water sample flow rate at 0.5 to 10L/min will be appropriate.

● Immersion type for open tank



ME172-1-	□	□	□	□	
A	ME-172H	Material of wet part ^{*1}	C-PVC (high-temperature resistant PVC)		
B	ME-172F		PVDF (polyvinylidene fluoride)		
C	ME-172T		PFA (fluor resin)		
1		Length of detector	200mm		
2			300mm		
4			500mm		
5			1000mm		
6			1500mm		
7			2000mm		
A		Cell constant unit ^{*2}	/cm		
B			/m		
A		Written form	Japanese		
B			English as designated		
0		Combined converter ^{*3}	Manufacturing simultaneously		
1			None		

Note:

- Regarding the immersion type detector (external diameter φ32) to install above the open-top tank (water tank), the fitting can be ZC-2 type.
- Refer to the following data for the water temperature range and pressure range of various materials of wet part.

Wet part	C-PVC	0 to 65°C	0.3MPa and below
	PVDF	0 to 100°C	0.5MPa and below
	PFA	0 to 120°C	0.5MPa and below
- The speed resistance of water sample is below 2m/s when at 200mm length. Moreover, since the detector made of PFA is very soft, the length cannot be made over 1,000mm.

General Attention

- *1. In case strong alkali solution, nitric acid, sulphuric acid and organic solution is mixed, since the resistance of C-PVC and PVDF is not sufficient, please select the detector made of PFA.
- *2. Please ensure to use the same measurement unit of the converter.
- *3. In case the detector cannot be operated with converter simultaneously, please contact manufacturer for converter type and material type.

■ Combined Electromagnetic Induction type Electrical Conductivity Meter – Concentration Converter

Field Installation Type (2-wire system) MDM-135A / MDM-137A



- Compact, Robust, Aluminum Pressure Casting Structure (IP55), easy-to-operate and field configuration
- Power supply: 2-wire 24V DC
- Able to change transmission output range (4 to 24mA DC)
- Able to keep transmission output during maintenance
- Measured value conversion, cell constant setting and temperature display functions as the standard configuration
- Measurement range
 - MDM-135A: min. 0 to 0.5mS/cm; max. 0 to 2,000mS/cm
 - MDM-137A: 0 to 15%HCl, 93 to 99.5%H₂SO₄, 20 to 40%NaOH, 0 to 20%NaCl, etc.

Field Installation Type (4-wire system) MBM-160 / MBM-162



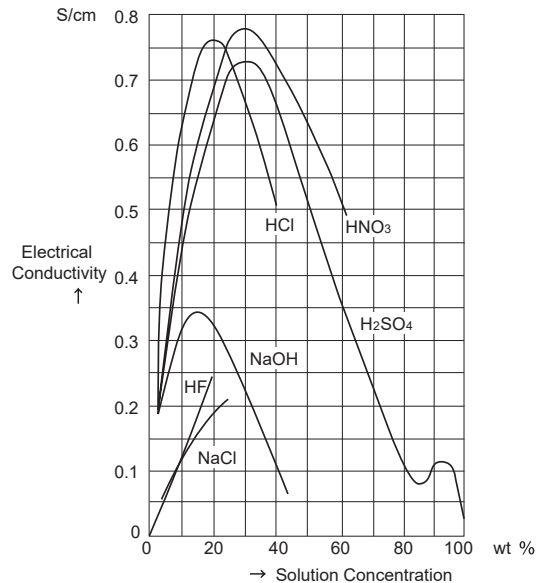
- Compact, Robust, Aluminum Pressure Casting Structure (IP65), easy-to-operate and field configuration
- Power supply: 100 to 240V AC free power
- Able to change transmission output range (4 to 20mA DC)
- With water sample temperature transmission output (4 to 20mA DC)
- With upper and lower limit alarm contact output
- Able to keep transmission output during maintenance
- Measured value conversion, cell constant setting and temperature display functions as the standard configuration
- Measurement range
 - MBM-160: min. 0 to 0.5mS/cm; max. 0 to 2,000mS/cm
 - MBM-162: 0 to 15%HCl, 93 to 99.5%H₂SO₄, 20 to 40%NaOH, 0 to 20%NaCl, etc.

Panel Installation Type MBM-100A / MBM-102A



- Compact DIN96 size, lightweight panel type (0.5kg)
- Power supply: 100 to 240V AC free power
- Able to change transmission output range (4 to 20mA DC)
- With upper and lower limit alarm contact output
- Able to keep transmission output during maintenance
- Measured value conversion, cell constant setting and temperature display functions as the standard configuration
- Measurement range
 - MBM-100A: min. 0 to 0.5mS/cm; max. 0 to 2,000mS/cm
 - MBM-102A: 0 to 15%HCl, 93 to 99.5%H₂SO₄, 20 to 40%NaOH, 0 to 20%NaCl, etc.

■ Relationship between Solution Concentration and Electrical Conductivity (at 18°C)



DKK-TOA CORPORATION



CAUTION

Please read the operation manual carefully before using products.

Overseas Sales Division:
DKK-TOA Corporation
29-10, 1-Chome, Takadanobaba, Shinjuku-ku,
Tokyo 169-8648 Japan
Tel : +81-3-3202-0225 Fax : +81-3-3202-5685