

SPECIFICATION SHEET



CONDUCTIVITY ANALYZER / TRANSMITTER (4 linear type)

WBM-160

Robust aluminum die-cast 4-wire (AC-free power) field-installation electrical conductivity meter (2-electrode) transducer.

By selecting 4 types of standard cell constant for each type, the system can accommodate a wide measuring range from ultrapure water to factory wastewater.

It is equipped with a transmission output DC 4 to 20mA for electric conductivity and water temperature, and a 2-point adjustment (upper/lower limit alarm-c contact) output.

For details of the combined detector (electrode), refer to the separate industrial electrical conductivity detector spec sheet.



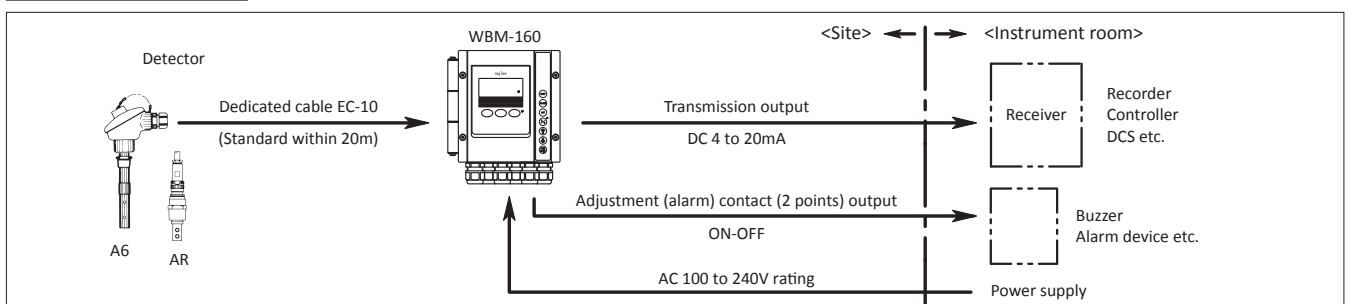
Features

- **Changing the transmission output range**
Within the specified measuring range, the transmission DC 4 to 20mA can be set to 25% or more.
- **Temperature measurement display and output**
The temperature of the sample water is measured and displayed (-5 to 120°C) and the transmission output DC 4 to 20mA is output.
- **Adjustment of the measured value**
You can adjust the measurement to a known electrical conductivity value.
- **Simple operation with the waterproof seat key on the front**
Without opening the door, the waterproof seat key on the front can be used to change the setting and other operations.
- **Automatic return to measurement mode**
When 2 hours have elapsed in maintenance mode, the unit automatically returns to measurement mode.
[Option]
- **RS-232 C Output**
Data can be imported to a PC.
- **Power off signal**
Outputs a closed contact when the power supply is cut off.
- **Hood (shade)**
Required for installation under direct sunlight.
- **Heavy duty coatings**
Can be used in salt and corrosion-resistant atmospheres.

Standard specifications

- Product Name : Electric conductivity meter transducer type
- Model : WBM-160
- Measurement Range : By selecting from among four cell constants, Specify the following 1 to 4 types of selection.
 - Indication ..(1)0 to 20μSt/oc m(3range) [cell constant]
 - (0 to 0.2/0 to 2/0 to 20μ)S/cm [0.01/cm]
 - (2)0 to 200μS/cm
 - (0 to 2/0 to 20/ to 200μS/cm) [0.1/cm]
 - (3)0 to 2000μS/cm
 - (0 to 20/0 to 200/0 to 2000μS/cm)[1.0/cm]
 - (4)0 to 20mS/cm (Electromagnetic induction type recommended)
 - (0 to 0.2/0 to 2/0 to 20mS/cm) [10.0/cm]
 - Temperature ..-5 to 120°C minimum indication 0.1°C
 - Temperature compensation : -5 to 120°C
 - Temperature compensation accuracy : Cable length less than 2 0 m
 - Within ±1.5%FS (With an equivalent resistance)
 - Cable length 20m to 50m
 - Within ±2.0%FS (With an equivalent resistance)
 - Transmission output : Electrical conductivity ... 25% or more than measurement range (Optional setting is possible)
 - Temperature.....10°C or more range in units of 1°C (Can be arbitrarily set in the range of -5 to 120°C)

Composition diagram



Performance : Linearity.....Within $\pm 0.5\%$ FS
 (Excluding detector) However, if the cable length is 20 to 50m, it is within $\pm 1.0\%$ FS
 Repeatability...Within $\pm 0.2\%$ FS

Alarm feature : Target...Conductivity
 Alarm contact points...2 points with contact c
 Contact rating...AC 250V 3A or less (resistance load)
 DC 30V 3A or less (resistance load)
 Setting range...Free setting is allowed (2 points), 0 to FSA

Power off output (option) : Outputs closing contact point signal when power is off.
 Contact rating ...AC 250V 3 A or less (resistance load)

Display : Liquid crystal display

Transmission output : Insulation type ...DC 4 to 20mA,
 Resistance load 650Ω or less
 Conductivity and liquid temperature (2 circuits common)

Ambient temperature, : -20 to 55°C , 95%RH or less (However humidity make sure there is no condensation)

Power source : AC 90 to 264V 50/60Hz

Power consumption : Approx. 10VA

Structure : Outdoor installation, IP6 5(dust resistant, jet-proof type)

Dimensions : $181(\text{W})\times 180(\text{H})\times 95(\text{D})\text{mm}$ (Water stopper not included)

Mounting method : 50A pipe mounting (Option; wall, rack installation)

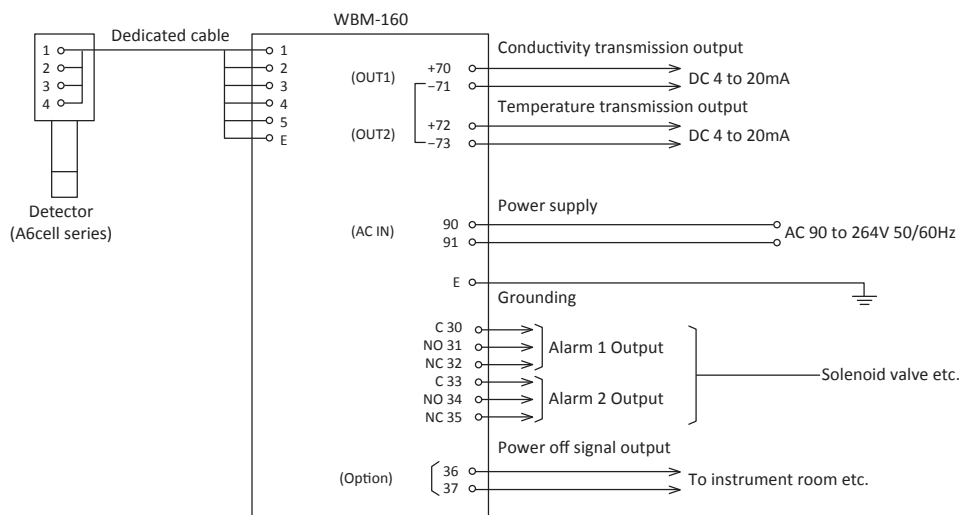
Material : Main unit ...Aluminum die cast
 Window...Polyester resin

Paintings : Metallic silver

Wiring port : Cable gland 6 points (Outer diameter for 6 to $\phi 12$ cable) Possible to remove the cable grounds and connect an electric wire tube ($G1/2\times 6$)

Weight : Approximately 2kg

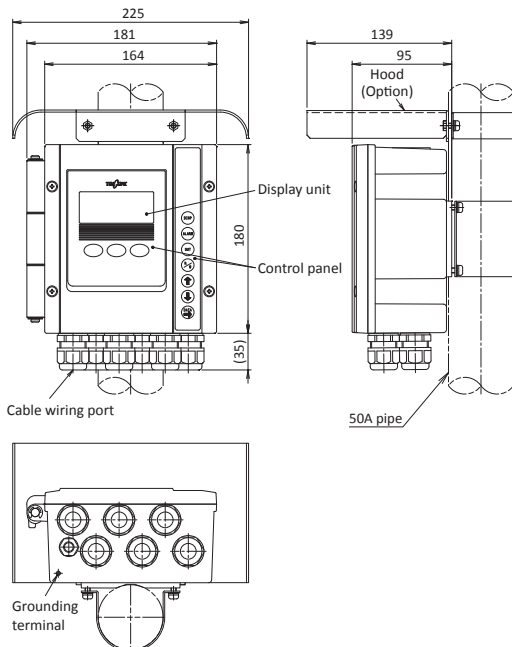
Terminal connection



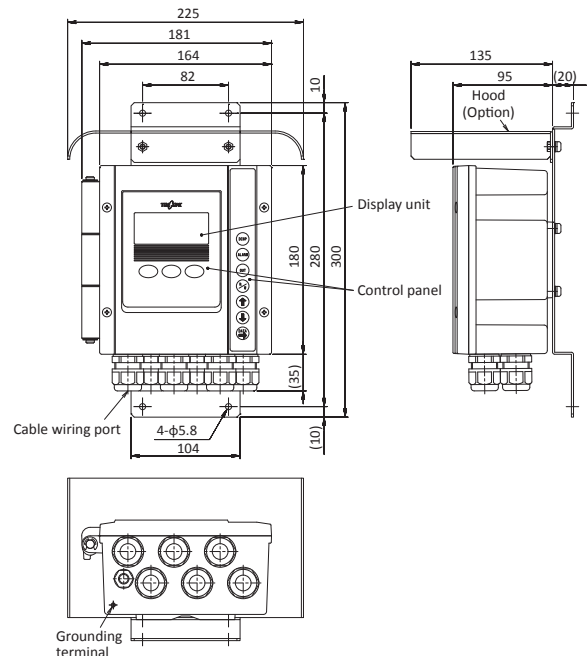
Dimensions

Unit : mm

● Pole installation



● Wall or rack installation



Product code

WBM160A-2-	□□□□□□□□□□□□□□□□	Measuring and labeling range (in S/cm)
B-2-	□□□□□□□□□□□□□□□□	(Unit S/cm)
A	□	Power source
1	□	AC 90 to 264V 50/60Hz
2	□	Transmission output
A	□	DC 4 to 20mA
to	□	With DC 4 to 20mA and RS-232C interface
N	□	Measurement / Display range
Y	□	See below chart
1	□	Others specified*1
8	□	Conductivity transmission output range
A	□	Standard
Y	□	Others specified*2
0	□	Liquid temperature transmission output range (-5°C to 120°C)
1	□	0 to 50°C
8	□	Others specified(can be arbitrarily set at 10°C or more in 1°C units)
A	□	Alarm contact output
Y	□	2-point alarm contact output (2-circuit c-contact)
0	□	2-point alarm contact output (2-circuit c-contact)
1	□	+ Power off signal (1-circuit a contact)
8	□	Combination cable length*3
A	□	20m or less
Y	□	Others specified (21 to 50m)
0	□	Mounting bracket
1	□	For 50A pipe mounting
2	□	For wall / rack mounting
A	□	Wiring port for power source / transmission / signal cables*4
Y	□	Cable gland for φ6 to φ12 (standard)
0	□	Wire pipe screw appears when cable gland is removed
1	□	G1/2 NPT1/2 (6 adapters included)
2	□	Surface finishing (coating)*5
A	□	Standard
B	□	Heavy coat
0	□	Built-in arrester*6
1	□	None
2	□	Exists
A	□	Presence of sunshade
Y	□	None (standard)
0	□	Present (50A pipe mounted)(Code No.7049930K)
1	□	Present (Wall mounted)(Code No.69304500)
2	□	Description form
A	□	Japanese (standard)
Y	□	English
0	□	Combined detector
1	□	None*7
2	□	Simultaneous manufacturing

*1. When specifying the measurement and display range other than the appended table, please select "Other designation" and inform the distributor of the designated range.

*2. The transmission output range can be arbitrarily set. However, a width of 25% or more of the measurement display range is required. If you have selected any other designation, please inform the distributor of the specified range (both electrical conductivity and liquid temperature).

*3. For the dedicated cable, please order a EC-10 type (up to 50m).

*4. The wiring port is provided with a φ6 to φ12 cable gland at six locations. When this cable gland is removed, G 1/2 screw for wiretubes appear. NPT 1/2 is supplied with 6 SUS316 adapters. Remove the cable gland and attach the required number to the wiring

port. The cable gland of the wiring port without conduit piping is used as a plug (hole blockage) while it is attached.

*5. Under and final coatings are standard. The average filmthickness is to be 30μm or more, and glossiness is to be G. For heavy duty, epoxy resin is used for under and intermediate coatings, and polyurethane resin is used for final coating. The average film thickness is to be 100μm or more and glossiness is to be G.

*6. Attach a ceramic surge arrester (simple) to the power supply line and transmission line.

*7. If this product is not manufactured at the same time as the detector, it is necessary to notify the data of the detector to be combined (serial number, etc.).

Display range

	Unit	S/cm		Cell constant/cm	S/m	
		to	Cell constant/cm		to	Cell constant/m
Conductivity measurement / display range	A	.0000 to	.2000μS/cm	0.01	0.00 to	20.00μS/m
	B	0.000 to	2.000μS/cm	0.01	0.0 to	200.0μS/m
	C	0.00 to	20.00μS/cm	0.01	0 to	2000μS/m
	D	0.000 to	2.000μS/cm	0.1	.0000 to	.2000mS/m
	E	0.00 to	20.00μS/cm	0.1	0.000 to	2.000mS/m
	F	0.0 to	200.0μS/cm	0.1	0.00 to	20.00mS/m
	G	0.00 to	20.00μS/cm	1.0	0.000 to	2.000mS/m
	H	0.0 to	200.0μS/cm	1.0	0.00 to	20.00mS/m
	J	0 to	2000μS/cm	1.0	0.0 to	200.0mS/m
	K	.0000 to	.2000mS/cm	10.0	0.00 to	20.00mS/m
	M	0.000 to	2.000mS/cm	10.0	0.0 to	200.0mS/m
N	0.00 to	20.00mS/cm	10.0	0 to	2000mS/m	
Y	Specified	* 1		Specified	* 1	

Note:
Electromagnetic induction type electric conductivity meter is recommended for the measurement range of cell constant 10.0/cm

■ Combination detector (typical example)

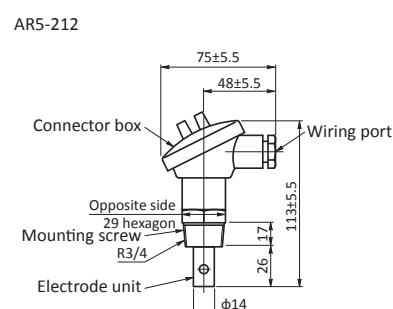
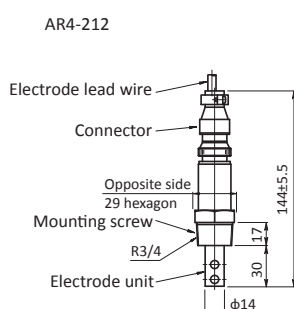
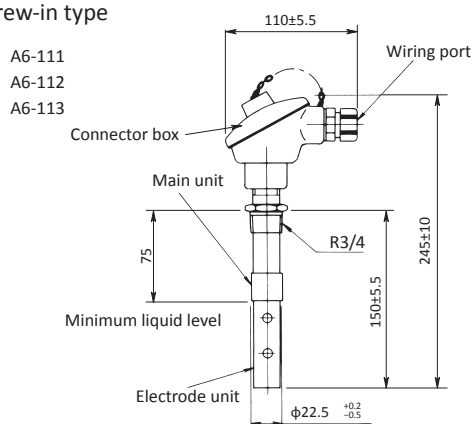
Product name : Conductivity detector
 Model : A6 cell, AR cell
 Cell constant : A6 cell...0.01/cm, 0.1/cm, 1.0/cm,
 AR cell (for small and pure water)...0.1/cm
 Resistance : Thermistor (encapsulated in inner
 temperature detector pole)
 Sample water : Temperature...0 to 100°C
 condition : Pressure...1MPa or less
 AR cell is 0.5MPa or less

Material : Electrode...SUS316
 Pipe connection : AR cell is titanium
 Dedicated : Electrode insulator...Glass / PTFE
 cable : AR cell; FKM·PPS
 Mount...SUS316
 Connector box...Aluminum casting
 Case...SUS316 or PP (polypropylene)
 : R 3/4screwed or flanged connection
 : EC-10 (outer diameter φ8)

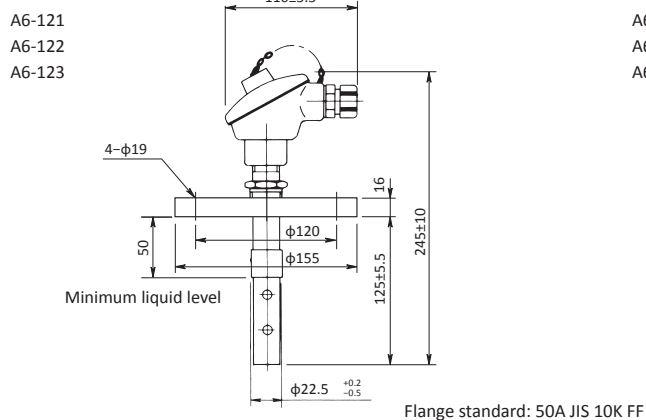
Dimensions

Unit : mm

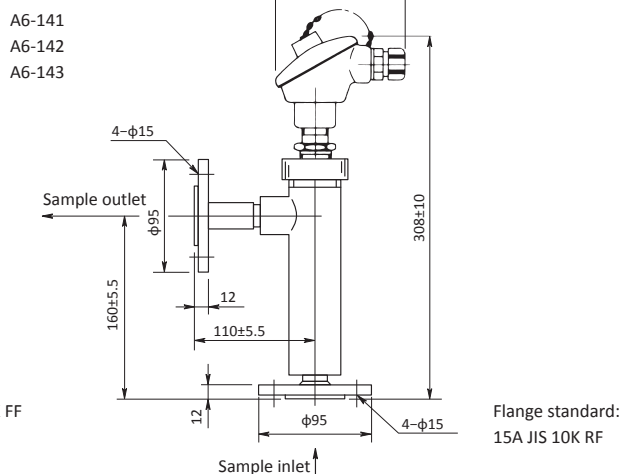
● Screw-in type



● Flange type



● With stainless case



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Please read the operation manual carefully before using products.