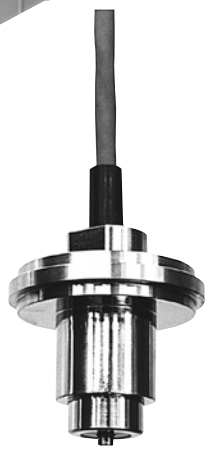
SPECIFICATION SHEET

SANITARY CONDUCTIVITY METER/DETECTOR

WBM-121A
AK-3□

Panel-type electric conductivity developed exclusively for the food industry for applications such as CIP (cleaning-in-place) management, defoamer control, liquid level control, etc., installed in pipelines and tanks of the food manufacturing process.

WBM-121A



AK-33

Features

○Compact and lightweight DIN size (96× 96)

○A microcomputer is used for temperature compensation, and temperature compensation is performed with high accuracy over a wide temperature range. Of course, you can also set any temperature characteristic.

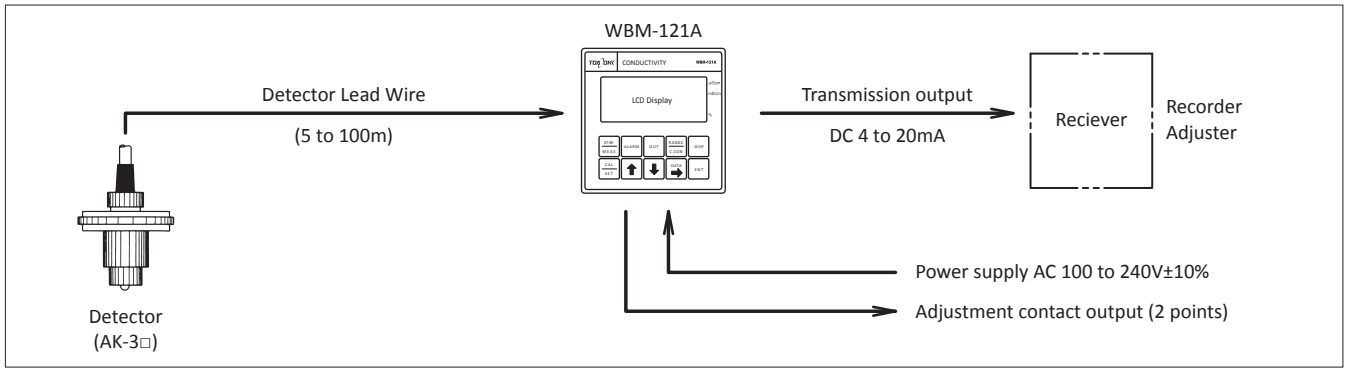
○The measuring range is a 2-range manual switching method. 0 to 300/3000μS/cm (25°C) or 0 to 20/200 mS/cm (25°C) can be selected according to the cell constant of the combined detector.

○The transmission output has a span expansion function.
Any width of 25% or more of each measurement range can be set. In addition, the transmission output signal is insulated 4 to 20mA DC.

○Span calibration can be easily performed using a solution.
If the electrical conductivity of the sample is determined separately, calibration can be performed while the detector is installed.
It can also be calibrated by rewriting the cell constant value (ratio to the design value for this instrument) like a general electrical conductivity meter.

○Equipped with 2-point control contact output.
Upper/higher limit function or upper/lower limit function can be set, and delay time can be set arbitrarily.
In addition, it is also possible to set the AND / OR of electrical conductivity and liquid temperature.

Configuration



Standard specifications

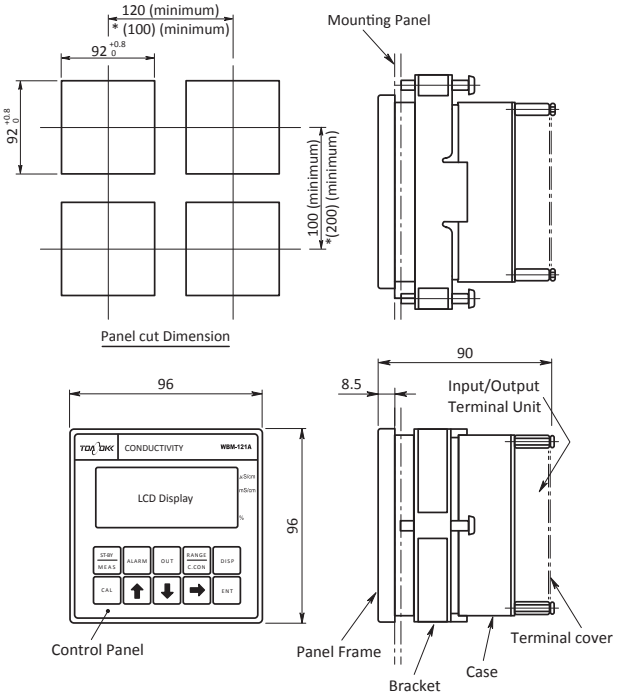
Product Name : Sanitary Conductivity Meter
Model : WBM-121A
Measurement Method : AC 2-electrode method
Measurement Range :

Cell Constant (design value)	0.4cm^{-1}	11cm^{-1}
Measurement range	0 to 300, 0 to 3000 (µS/cm at 25˚C), 2range manual switch	0 to 20 , 0 to 200 (µS/cm at 25˚C), 2range manual switch
Transmission output Expanded span	Can be set freely 25% or more within each measurement range	

Display : Main display; 4digits LCD (7segments)…Conductivity
Sub-display; 4digits LCD (14segment)…Solution temperature
Temperature compensation : Calculation; Digital calculation by micro-computer
Temp. feature; Calculation by conductivity Electrical conductivity temperature feature of NaCl solution (change to other features)
Temp. range; −5 to 105˚C (In case of NaCl solution)
Accuracy; Within ±3%FS (without detector in case of NaCl)
(NaCl solution feature. Without detector)
Transmission output signal : Insulation DC 4 to 20mA Load resistance 650Ω or less With transmission output expandability
Adjustment function : Setting range; 0 to FS of each measurement range
Numbers of circuits; Limit, Two circuits for upper and upper limits (Manual switching between upper and lower limit is possible)
Output contact capacity; AC 250V 3A (resistive load) or DC 30V 3 A(Load resistance)
Delay time; 0 to 99sec, free setting avilable
Function (without detector) : Linearity; Within ±1.5% FS
Repeatability Within ±1% FS
Ambient temperature/humidity : −10 to 50˚C, 95%RH or less
Power : AC 100 to 240V±10%, 50/60Hz
Power consumption : Approx. 10VA
Construction : Panel mounting
Panel cut…92(W)×92(H)mm
Case material : Aluminum
Weight : Approx. 500g
Combined Detector : AK-3□

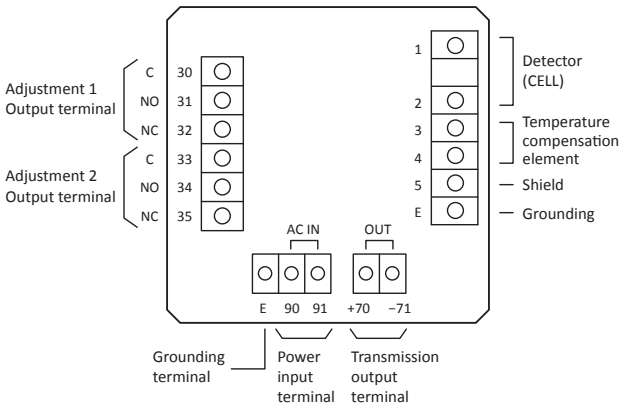
Dimensions

Unit : mm



*The dimensions in parentheses are for mounting with the fixing brackets up and down.

Terminal connection



Product code

WBM121A-0-□□□□□

- Power pressure
  - 1 ····· AC 100 to 240V 50/60Hz
- Transmission output
  - A ····· DC 4 to 20mA
- Measurement range (transmission output)
  - A ····· 0 to 300/3000µS/cm at 25˚C *1
  - B ····· 0 to 20/200mS/cm at 25˚C *2
  - Y ····· Others specified *3
- Language
  - A ····· Japanese (standard)
  - B ····· English
  - Custom spec. code; Numeric digit: 9 Alphabet: Z
- Combined detector (AK cell)
  - 0 ····· None *4
  - 1 ····· Simultaneous production

*1. General sanitary (food processing) measurement range combined with AK-33 type cell (detector), with manual switching between 2ranges.
*2. High power port for CIP cleaning liquid combined with AK-34 type cell (detector). Two ranges are manually switched in the air conductivity measurement range.
*3. Any width of 25% or more of each measurement range above can be set. For example, in the case of 0 to 3000µScm, the minimum setting is 0 to 750µS/cm or 750 to 1500µS/cm.
*4. If the detector (AK cell) is not manufactured at the same time, please let us know the "type name" and "manufacturing number" of the combined detector.

Note: It is used as an electrical conductivity change detection (AK-33 type cell combination) or an alarm (AK-34 type cell combination) in the food manufacturing process, and cannot be used as a general electrical conductivity meter.

Combined Detector

It is an IDF flange connection method that does not cause liquid pooling even if it is attached to a pipeline or tank.

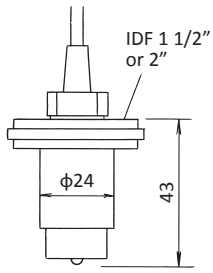
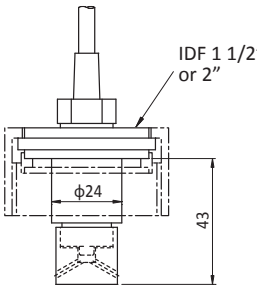
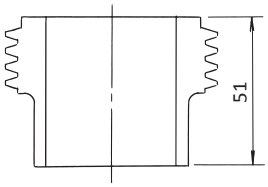
To insulate the inner and outer poles, we have newly developed special ceramic terminals with excellent heat and pressure resistance, greatly simplifying the electrode structure. Since the detector readout is sealed, it can be submerged in water for cleaning.

Standard specifications

Product name		Sanitary conductivity meter/detector	
Model		AK-33	AK-34
Purpose		Beverages in general, CIP cleaning liquid	CIP cleaning liquid
Cell constant		Approx. 0.4cm^{-1}	Approx.11cm^{-1}
Measuring range		0 to 3000μS/cm	0 to 200mS/cm
Setting method		IDF union fittings	IDF union fittings
Sample	Temperature	0 to 100˚C	0 to 100˚C
	Pressure	1.0MPa or less	1.0MPa or less
	Flow rate	0.01 to 5m/s	0.01 to 5m/s
Ambient temperature		−10 to 55˚C	−10 to 55˚C
Mounting standard		IDF 1$^1/_2$", 2"	IDF 1$^1/_2$", 2"
Lead wire length		5, 10, 20, 30, 40, 50m	5, 10, 20, 30, 40, 50m
Wet material		SUS316, Titanium, Ceramics	SUS316, titanium, ceramics, PTFE, perfluoro
Construction		Waterproof type (JIS C 0920)	Waterproof type (JIS C 0920)
Weight		Approx. 1kg (Lead wire 0.6kg/10m)	Approx. 1kg (Lead wire 0.6kg/10m)

Dimensions

IDF mounting type

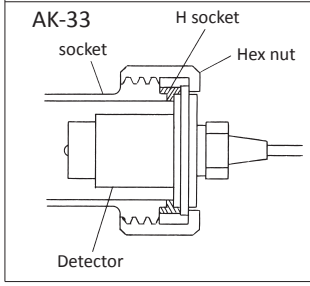
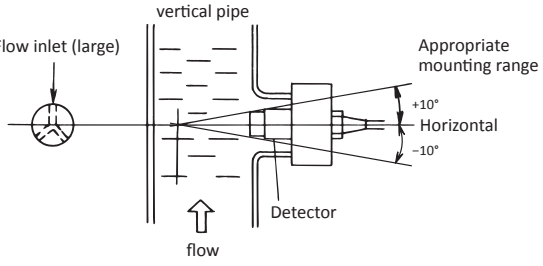
	Measurement range 0 to 3000μS/cm	Measurement range 0 to 3200mS/cm
Detector	 AK-33	 AK-34
Socket	 Cut the socket to match the inner diameter of the pipe, and then weld it.	

Welded torsion sleeve

Size	Parts code No.
IDF 1$^1/_2$"	117A844
IDF 2"	117A945

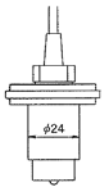
Mounting Example

The high concentration detector AK34 type has a narrow outlet for solution and air. When installing, it is necessary to fully consider the direction of the flow port, the liquid flow direction, and the installation position. Please refer to the figure below for installation.

IDF mounting type	AK-34 recommended mounting method	Precautions
Applicable measurement range 0 to 3000μS/cm 		●Mounting on vertical pipes ●Solution flows from bottom to top ●Horizontal mounting angle within ±10° ●The flow hits the flow port ●Turn the flow port (large) upward

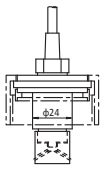
Product code

AK33-1- □□□□□□□□



- Piping standard
  - A ····· IDF 1 1/2”
  - B ····· IDF 2”
- Fixed nut (Hex nut)
  - 0 ····· None
  - 1 ····· Equipped
- Packing (H gasket)
  - 0 ····· None
  - 1 ····· Equipped
- Lead wire Length
  - 1 ····· 5m
  - 2 ····· 10m
  - 3 ····· 20m
  - 4 ····· 30m
  - 5 ····· 40m
  - 6 ····· 50m
  - 7 ····· 60m
  - 8 ····· 100m (Max)
- Language
  - A ····· Japanese (Standard)
  - B ····· English
- Type of combined detector
  - Custom spec. code; Numeric digit: 9 Alphabet: Z
  - 1 ····· WBM-120/121A
  - 3 ····· NRC-100-R
- Combined transmitter
  - 0 ····· None
  - 1 ····· Simultaneous production

AK34-1- □□□□□□□□



- Piping connection standard
  - A ····· IDF 1 1/2″
  - B ····· IDF 2″
- Fixed nut (hex nut)
  - 0 ····· None
  - 1 ····· Equipped
- Packing (H Gasket)
  - 0 ····· None
  - 1 ····· Equipped
- Lead wire length
  - 1 ····· 5m
  - 2 ····· 10m
  - 3 ····· 20m
  - 4 ····· 30m
  - 5 ····· 40m
  - 6 ····· 50m
  - 7 ····· 60m
  - 8 ····· 100m (max)
- Language
  - A ····· Japanese (standard)
  - B ····· English
- Types of combined transmitters
  - Custom spec. code; Numeric digit: 9 Alphabet: Z
  - 1 ····· WBM-120/121A
  - 3 ····· NRC-100-R
- Combined transmitter
  - 0 ····· None
  - 1 ····· Simultaneous production

Note.
1. It is used for the following measurement ranges for general beverages. (Cannot be used for general conductivity meter)
   Combined with WBM-120: 0 to 0.2/2mS/cm
   Combined with WBM-121A: 0 to 300/3000μS/cm
   Combined with NRC-100-R: 0 to 200/1000/2000μS/cm
2. Wetted part material is SUS316 and ceramic, cell constant is 0.4/cm.
3. The sample water temperature is 0 to 100°C and the pressure is 1MPa or less.
4. It is recommended that the mounting position is diagonally downward. (Because there is a risk of becoming an air layer when installing on the top)
5. If a socket (sleeve) to be welded to the customer's piping is required, order one of the following as a separate item.
   welded threaded sleeve
   IDF 1½″length 51mm Code No.117A844
   IDF 2 ″ length 51mm Code No.117A945
6. AK-23 model with improved NAOH and thermal shock resistance.

Note.
1. It is used for the following measurement ranges for CIP cleaning solution. (Cannot be used for general conductivity meter)
   Combined with WBM-120/121A: 0 to 20/200μS/cm
   Combined with NRC-100-R: 0 to 50000/100000/200000μS/cm
2. Wetted part materials are SUS316, ceramic and PTFE, and the cell constant is 11/cm.
3. The sample water temperature is 0 to 100°C and the pressure is 1MPa or less.
4. As for the mounting posture, we recommend horizontal mounting on vertical pipes.
   stomach. (Because air may be caught in the cell if it is installed vertically on a horizontal pipe.)
5. If a socket (sleeve) to be welded to the customer's piping is required, order one of the following as a separate item.
   welded threaded sleeve
   IDF 1½″length 51mm Code No.117A844
   IDF 2 ″ length 51mm Code No.117A945
6. AK-24 model with improved NAOH and thermal shock resistance.

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⚠ CAUTION Please read the operation manual carefully before using producuts.

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