

SPECIFICATION SHEET



Resistivity Analyzer/Controller

AQM-100A

The AQM-100A is a compact and lightweight panel type resistivity analyzer. This model, which allows for a wide range of temperature compensations from 0 to 100°C, is suitable for measuring the resistivity of ultra-pure water (0 – 20MΩ·cm) used in semiconductor manufacturing plants, etc. The 4 – 20mADC transmission output and alarm contact output (2 circuits, contact “c”) come standard. Various features include sample water temperature display.



Features

Compact DIN 96 size

Features compact and lightweight design –
Dimensions: 96mm x 96mm (DIN standard) x 90mm
Temperature compensation through microprocessor calculations

Comparing to analog-type instruments, highly accurate temperature compensation is achieved with a wider temperature range covered.

Suitable for high-temperature applications up to 99.9°C
The unit can be used for measurements during hot water sterilization processes for ultra-pure water.

2 detectors connectable (optional feature)

Water quality index at 2 different locations can be displayed; this is selectable by key operation. However, note that transmission output and alarm contact output correspond to the selected detector only.

Temperature display

As well as resistivity, sample water temperature can also be monitored at each point of measurement.

The model operates on a universal AC power supply at 90 – 264VAC.

Cell constant adjustable

When replacing the detector to a new one, the cell constant can be easily adjusted by key operation. This ensures the value to be measured accurately.

2 alarm points setting available

2 alarm points corresponding to measured values can be set; low-limit alarm and lower-low-limit alarm or upper-limit alarm and lower-limit alarm. If the measured value falls below the set point, the corresponding LED, “ALM 1” or “ALM 2,” illuminates and no-voltage contact will be activated.

Isolated 4 – 20mADC transmission output signals

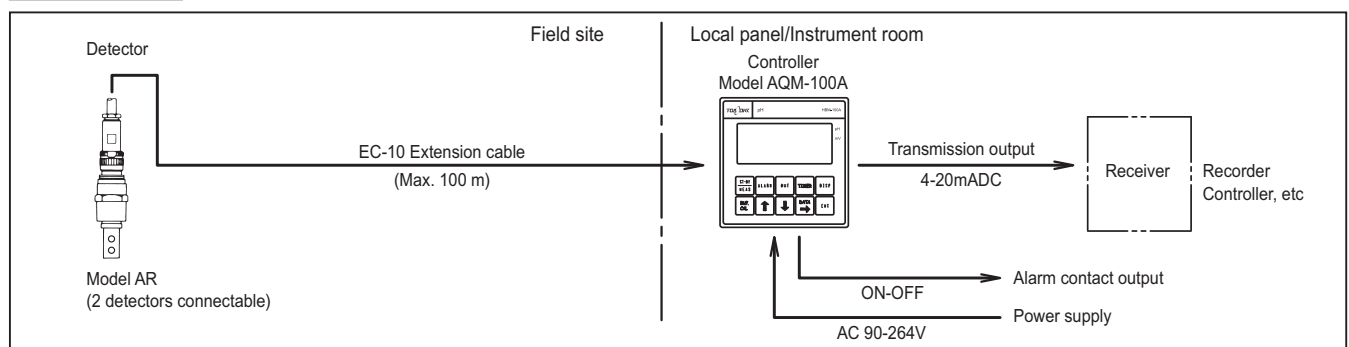
2 isolated 4 – 20mA signals are available for connection to any external device.

Easy determination of detector and transmitter quality
By removing the detector’s connector and replacing it with an equivalent resistance calculator, whether a fault is caused by the detector’s side or transmitter’s side (including the cable) can be assessed.

RS-232C interface (optional feature)

Resistivity and solution temperature data can be output via RS-232C connection.

Configuration

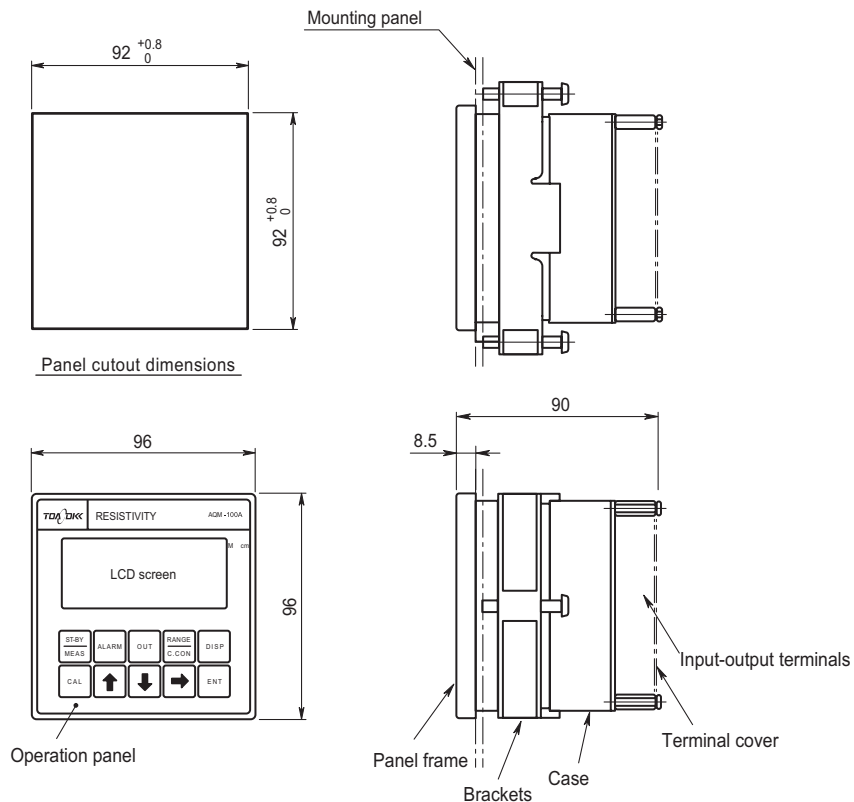


Standard Specifications

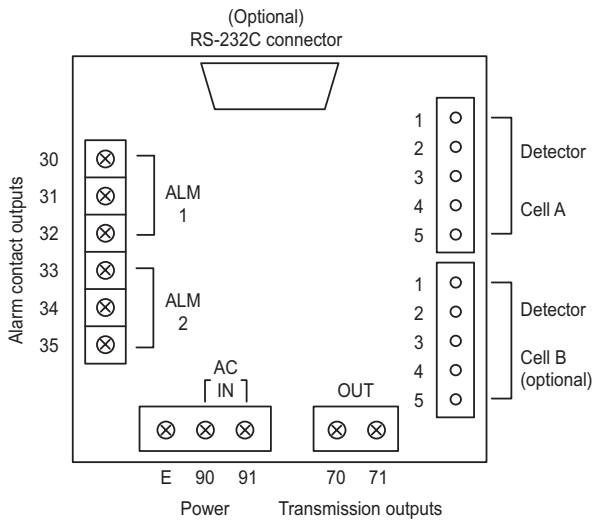
Product name	: Resistivity Analyzer/Controller	Number of detectors connectable	: Up to 2 detectors (The second detector is optionally available upon request at the time of order)
Model	: AQM-100A	Other functions	: Over-scale indication; Blinking LCD
Measurement method	: 2 metal electrodes	Performance (at equivalent resistance)	: Linearity; 0.04MΩ·cm Repeatability; 0.02MΩ·cm Temperature compensation; ±0.20MΩ·cm
Measurement range	: Resistivity; 0.00 – 20.00MΩ·cm (at 25°C) The number of decimal places displayed (20.00 or 20.0) is selectable by key operation Temperature; 0.0 – 99.9°C, resolution 0.1°C (display only)	Power requirements	: 90 – 264VAC, 50/60Hz
Display	: 4-digit digital LCD	Power consumption	: Approx. 5VA
Temperature compensation	: Temperature range; 0 – 100°C Temperature-sensing element; Thermistor (integrated into the detector)	Ambient temperature / humidity	: -10 – 50°C, 95%RH or less
Transmission output	: Isolated output, 4 – 20mADC, Max. load resistance 650Ω	Case	: Material; Main unit...Aluminum Window...Resin Mounting; Panel mount Panel cutout; 92(W) x 92(H)mm
Alarm functions	: Number of circuits; 2 circuits Setting range; 0 – 20MΩ·cm Contact output; No-voltage contact Contact capacity; 250VAC, 3A (resistance load) ALARM indication; LCD ALM 1 or 2 blinks	Dimensions	: 96(W) x 96(H) x 90(D)mm
		Weight	: Approx. 0.5 kg

Dimensions

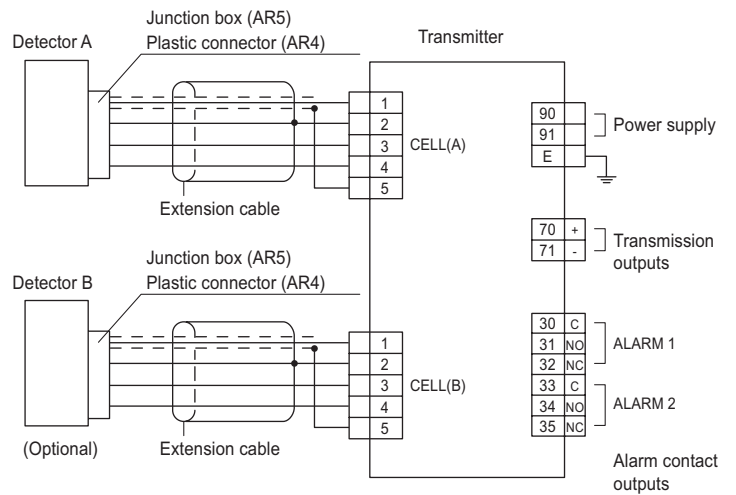
Unit : mm



Terminal connection



Wiring diagrams



Notes:

Either alarm contact output 1 or 2 can be set as the upper limit or lower limit.

Product code

AQM100A-1-□□□□□

1	Power supply	90 - 264VAC, 50/60Hz
9	Custom spec.	
	Transmission output	
1	4 - 20mADC	
2	4 - 20mADC equipped with RS-232C interface	
	Connecting cable length*1	
A	30m or less	
Z	Custom spec. (31 - 100m)	
	Sample water temperature	
1	60°C or lower	
2	60°C or higher*2	
	Language of documents	
1	Standard	
2	English	
9	Custom spec.	
	Detector to be connected*3	
0	None	
1	Manufactured together with instrument (1 set)	
2	Manufactured together with instrument (2 sets)	
9	Custom spec.	

- *1. The EC-10 extension cable must be separately ordered as required. (Max. 100m)
When the cable length is 31-100m, the instrument needs re-adjustment.
- *2. In-house testing will be conducted using high-temperature samples.
- *3. If the instrument is NOT ordered together with the detector, the information of the detector to be used by the client (serial number, etc.) is required.

Supported detectors

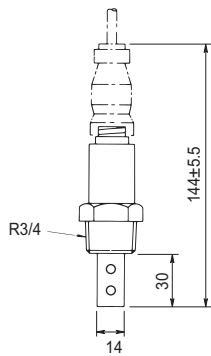
Standard Specifications

Product name : Industrial Resistivity/Conductivity Detector
 Model : AR4-212 or AR5-212
 Cell constant : Approx. 0.1 cm⁻¹
 Temperature-sensing element : Thermistor (sealed inside the inner electrode)
 Sample water conditions : Temperature; 0 - 100°C
 Pressure; 0.5MPa or less
 Materials : Electrode; Titanium
 Bushing; SUS316 (Teflon-coated)
 Seal; FKM
 Connector; Plastic (AR4)
 Junction box; ADC-12 (AR5)

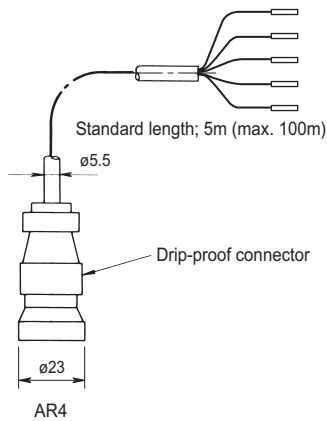
Pipe connections : R3/4, screw-in type
 Extension cable : Model; EC-10, Outside diameter; ø8,
 standard length; 5m (max. 100m),
 Equipped with drip-proof connector (for AR4),
 Equipped with drip-proof junction box (for AR5)

Dimensions

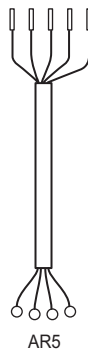
Unit : mm



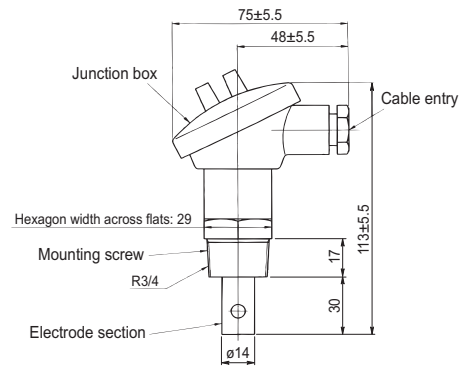
Model AR4-212



Extension cable (model EC-10)



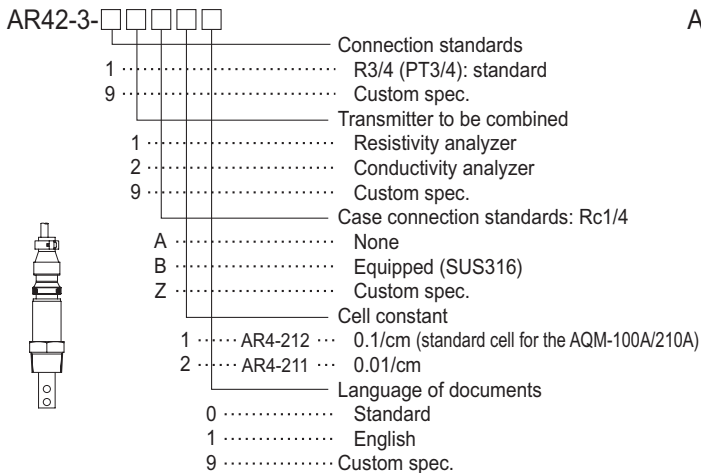
AR5



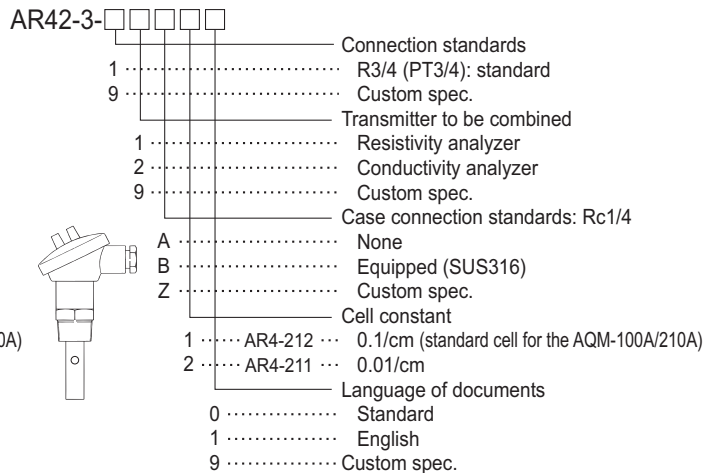
Model AR5-212

Product code

Model AR4-212 (equipped with drip-proof connector)



Model AR5-212 (equipped with junction box)



Note 1: This is a compact detector equipped with a drip-proof connector, designed for use in combination with the AQM-100A/210A resistivity analyzer. Since the thermistor (5kΩ at 25°C) sealed in the inner electrode is used as a temperature-sensing element, the detector can also be combined with the conductivity analyzer for ultra-pure water.

Note 2: For use in combination with the resistivity analyzer, select the appropriate cell constant according to the measurement range as shown below.
 0 – 0.2/2/20MΩ·cm: 0.1/cm 0 – 2/20/200MΩ·cm: 0.01/cm

Note 3: The main material of the electrodes is titanium. Insulation between the inner and outer electrodes is provided by PPS. An FKM (FKM rubber) O-ring insulating seal is also provided. Be sure to install the detector indoors, as it is not spray-proof.

Note 4: Sample water conditions
 Temperature: 0 – 100°C, Pressure: 0.5MPa or less

Note 5: The EC-10 extension cable must be separately ordered as required.

Note 1: This is a compact detector equipped with a junction box, designed for use in combination with the AQM-100A/210A resistivity analyzer. Since the thermistor (5kΩ at 25°C) sealed in the inner electrode is used as a temperature-sensing element, the detector can also be combined with the conductivity analyzer for ultra-pure water.

Note 2: For use in combination with the resistivity analyzer, select the appropriate cell constant according to the measurement range as shown below.
 0 – 0.2/2/20MΩ·cm: 0.1/cm 0 – 2/20/200MΩ·cm: 0.01/cm

Note 3: The main material of the electrodes is titanium. Insulation between the inner and outer electrodes is provided by PPS. An FKM (FKM rubber) O-ring insulating seal is also provided. Be sure to install the detector indoors, as it is not spray-proof.

Note 4: Sample water conditions
 Temperature: 0 – 100°C, Pressure: 0.5MPa or less

Note 5: The EC-10 extension cable must be separately ordered as required.



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CAUTION

Do not operate products before consulting instruction manual.