

# SPECIFICATION SHEET



## CONDUCTIVITY TRANSMITTER

## WDM-135A (2-wire type) WDM-136A (4-wire type)

It is a type of small firm aluminum 2-electrode site-installation CONDUCTIVITY TRANSMITTER (signal transmitter) and easy to operate.

The device is divided into 2-wire type (24V DC power supply) and 4-wire type (free power supply AC), and the transmission output is 4 to 20mA DC.

Please additionally refer to the detailed specification of conductivity meter detector for the details.



### Functions • Features

#### ○ Large measurement range

It has large measurement range from ultrapure water (0 to 0.2 $\mu$ S/cm) to plant drainage (0 to 20mS/cm) and large temperature compensation range of -5 to 120°C. according to the cell constant of detector, the following measurement range is available for selection.

Cell constant	0.01/cm	0.1/cm	1.0/cm	10/cm (note 3)
Measurement range (note 1)	0 to 0.200	0 to 2.00	0 to 20.0	0 to 0.200
	0 to 0.500	0 to 5.00	0 to 50.0	0 to 0.500
	0 to 1.000	0 to 10.00	0 to 100.0	0 to 1.000
	0 to 2.000	0 to 20.00	0 to 200.0	0 to 2.000
	0 to 3.00	0 to 30.0	0 to 300	0 to 3.00
	0 to 4.00	0 to 40.0	0 to 400	0 to 4.00
	0 to 5.00	0 to 50.0	0 to 500	0 to 5.00
	0 to 10.00	0 to 100.0	0 to 1000	0 to 10.00
	0 to 15.00	0 to 150.0	0 to 1500	0 to 15.00
	0 to 20.00	0 to 200.0	0 to 2000	0 to 20.00
Unit (note 2)	$\mu$ S/cm	$\mu$ S/cm	$\mu$ S/cm	mS/cm

(Note 1) Equivalent value at 25°C (Note 2) S/m unit system can be also made.

(Note 3) If the cell constant is 10/cm high conductivity, it is recommended to use the electromagnetic induction type conductivity meter with better stability.

#### ○ Changeable measurement range

As shown in the table above, the cell constants are changeable in 10 types of measurement range. For example, if the cell constant is 0.1/cm, it can be changed between 0 to 2.00 $\mu$ S/cm and 0 to 200.0 $\mu$ S/cm.

#### ○ Temperature display

The measured sample water temperature (-5 to 120°C) is displayed.

#### ○ Measured value adjustment

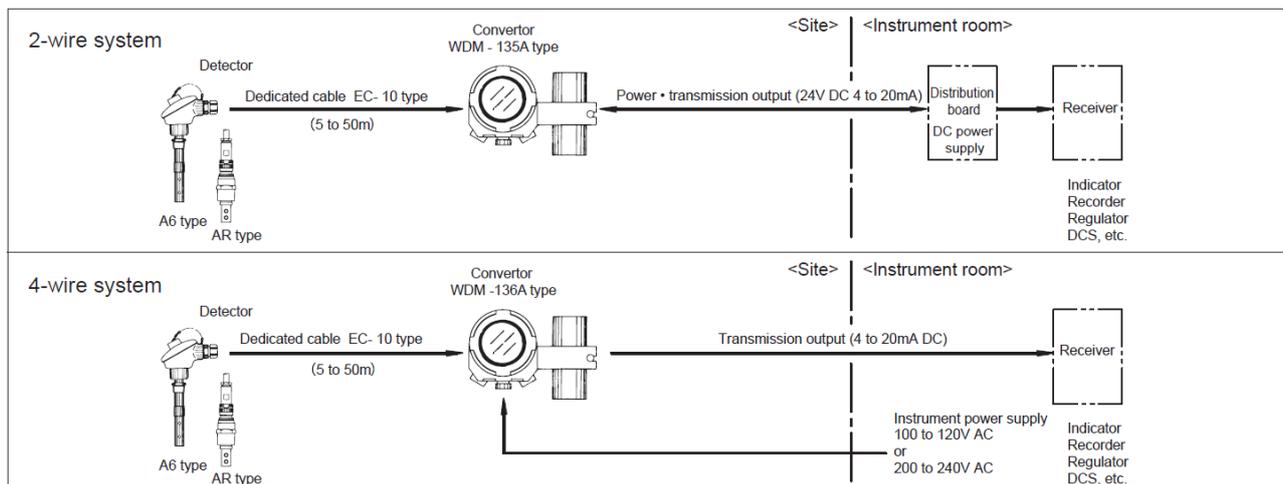
The measured value can be adjusted based on the conductivity value of secondary standard meter, etc. (Adjustment extent:  $\pm$ 10% of measured value).

#### ○ Self-diagnosis

#### ○ Automatic recovery to measuring mode

If the maintenance mode lasts for 2 hours, the measuring mode will be recovered automatically.

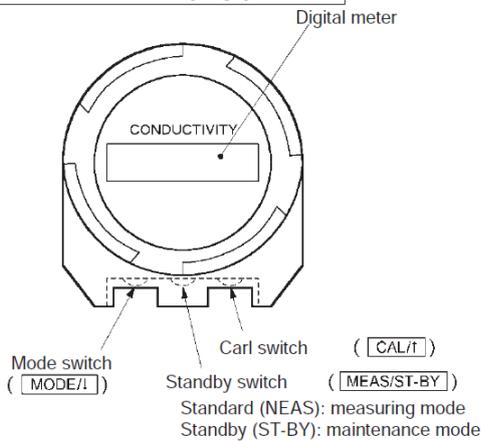
### Structure diagram



## Standard specification

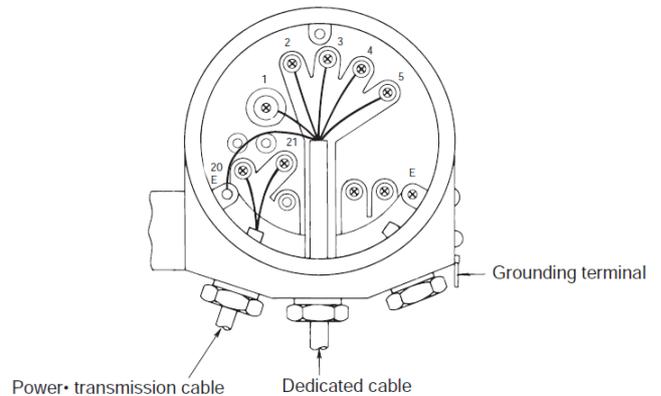
<b>Product name</b>		CONDUCTIVITY TRANSMITTER	
<b>Model</b>		WDM-135A (2-wire type)	WDM-136A (4-wire type)
<b>Measuring method</b>		AC 2-electrode method	
<b>Measurement range</b>		Min.: 0 to 0.2 $\mu$ S/cm Max.: 0 to 20mS/cm Or Min.: 0 to 20 $\mu$ S/m Max.: 0 to 2000mS/m (Temperature: -5 to 120°C, only displayed, no transmission output)	
<b>Display method</b>		4-bit electronic LCD	
<b>Temperature compensation</b>		Compensation range: -5 to 120°C Conversion temperature: 25°C Temperature characteristic: Conductivity temperature characteristic of NaCl solution Accuracy: within $\pm 1.0\%$ FS (equivalent power)	
<b>Performance</b>	<b>Linearity</b>	Within $\pm 0.5\%$ FS (equivalent input)	
	<b>Repeatability</b>	Within $\pm 0.2\%$ FS (equivalent input)	
<b>Transmission output</b>		4 to 20m A DC insulating type resistive load: less than 650 $\Omega$	
<b>Power supply</b>		24V $\pm 10\%$ DC	90 to 132V AC or 180 to 264V 50/60Hz AC
<b>Power consumption</b>		Less than 0.6VA	About 3 VA
<b>Ambient temperature • humidity</b>		-20 to 55°C, less than 99% (RH) (but no condensation)	
<b>Structure</b>		Outdoor installation, IP 55 (dust proof type, shunt preventing type)	
<b>Overall dimensions</b>		118 (W) $\times$ 129 (H) $\times$ 178 (D) mm	
<b>Installation method</b>		50A pipe is used	
<b>Weight</b>		About 3 kg	
<b>Wiring interface</b>		3 positions of G $\frac{3}{4}$ (PF $\frac{3}{4}$ F)	
<b>Materials</b>	<b>Main body</b>	Aluminum alloy casting	
	<b>Observation window</b>	Resin	
	<b>Assembly part</b>	SUS 304	
<b>Coating color</b>		Metal silver and blue	

### Operation switch • display position

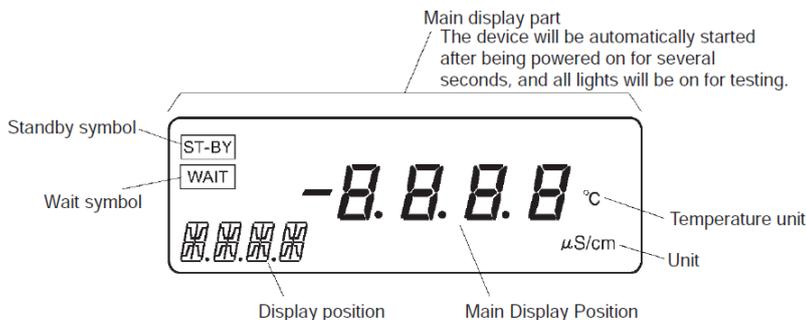
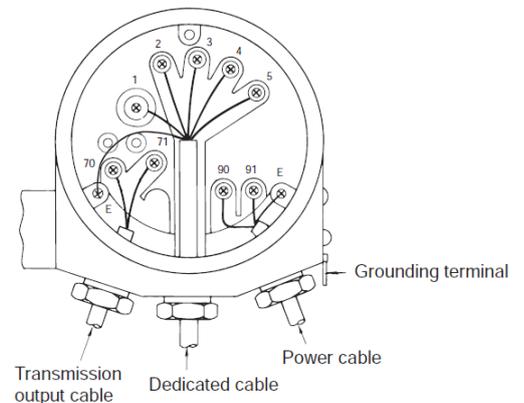


### Terminal diagram

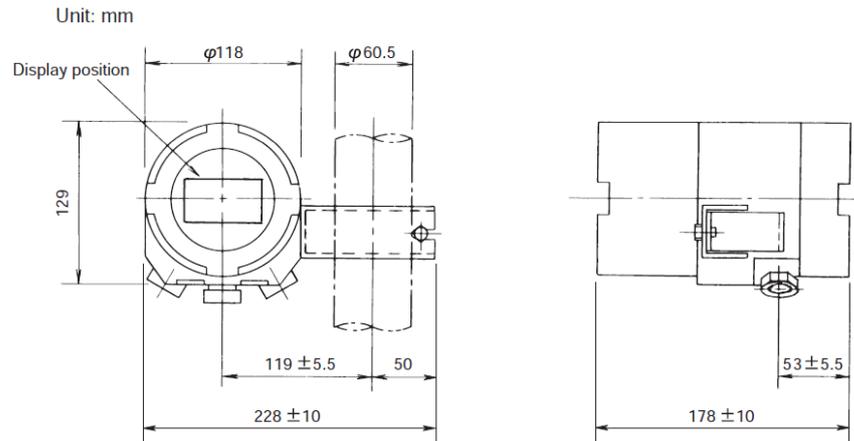
#### ● WDM-135A type (2-wire type)



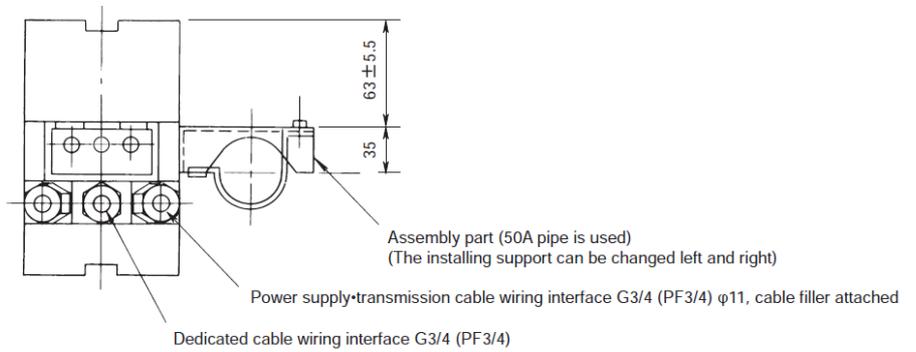
#### ● WDM-136A type (4-wire type)



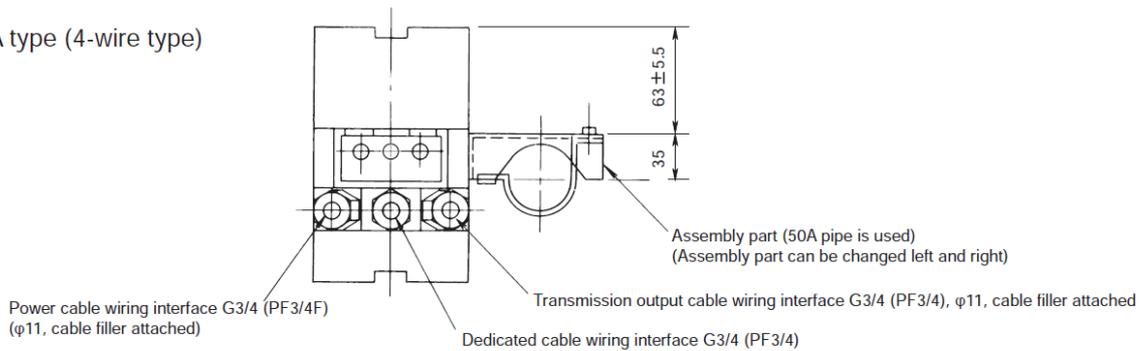
## Outline dimensions



### ● WDM-135A type (2-wire type)



### ● WDM-136A type (4-wire type)



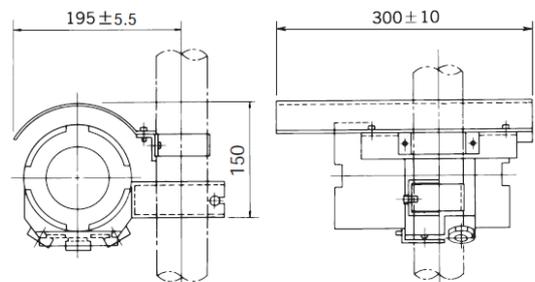
### ● Hood (optional)

Installed outdoors; recommended to be used in case of exposure to direct sunlight.

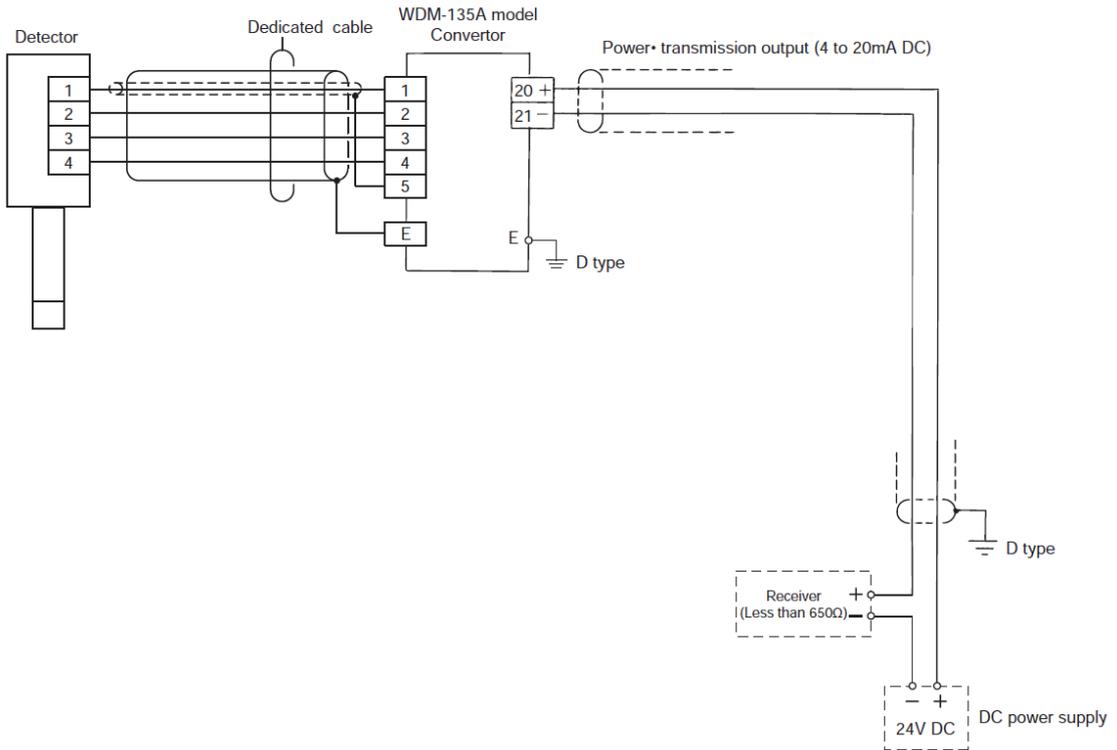
**Materials** : SUS304

**Installation method** : Installed on the 50A pipe

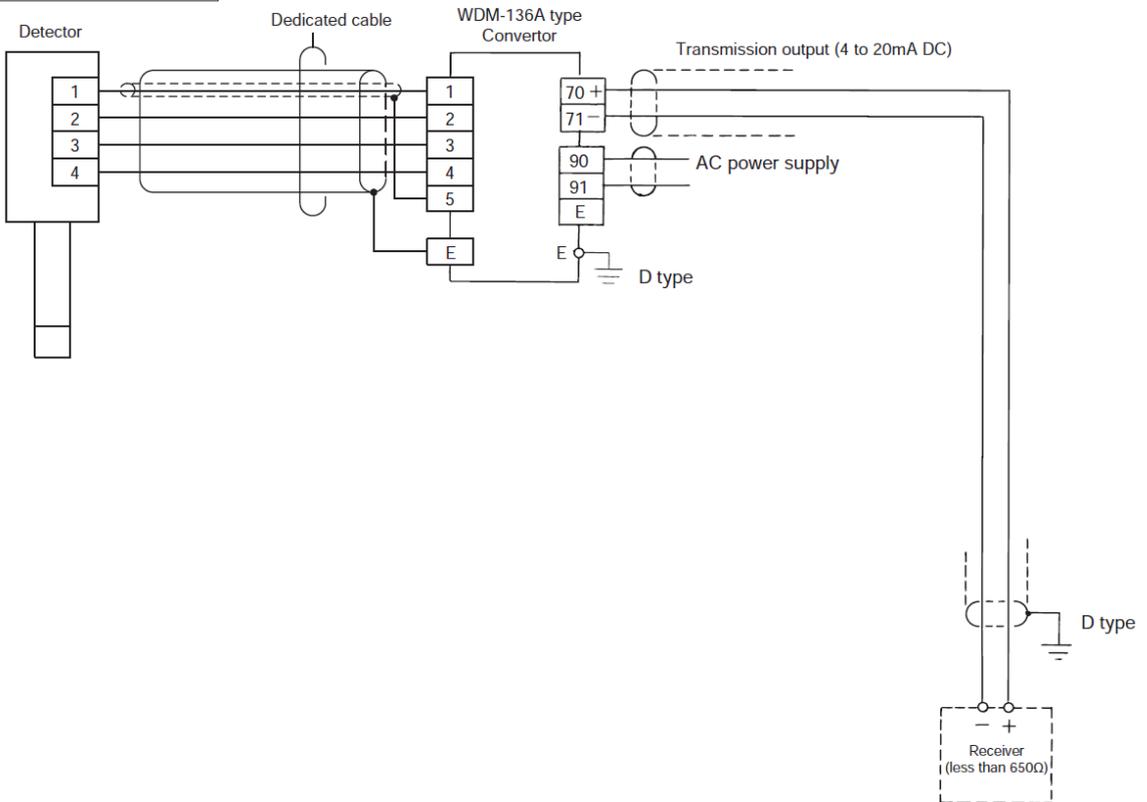
**Code No.** : 544493K



### 2-wire line connection diagram



### 4-wire line connection diagram



## Typical Combination Detectors

**Product Name:** Conductivity Detector

**Model:** A6 cell, AR cell

**Cell Constant:** A6 cell...0.01/cm, 0.1/cm, 1.0/cm

AR cell (Compact, For Pure Water)...0.1/cm

**Temperature Sensor:** Thermistor type (enclosed in inner pole)

**Sample Conditions:** Temperature: 0~100 °C

Pressure: max. 1 MPa

max. 0.5 MPa for AR type

**Materials:** Main body: SUS 316

Titanium for AR cell

**Electrode Insulation:** glass, PTFE

FKM, PPS for AR cell

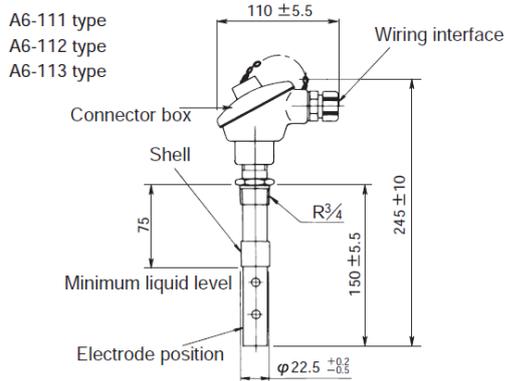
**Connector box:** cast aluminum

**Case:** SUS 316 or polypropylene (PP)

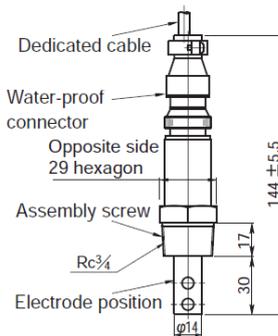
**Piping Connections:** R3/4 thread or Flange

**Dedicated cable:** EC-10 type (OD φ8)

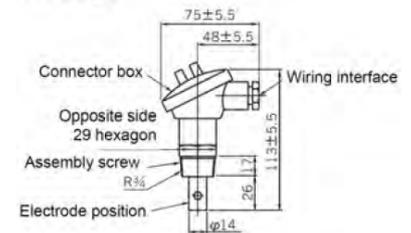
### ● Thread type



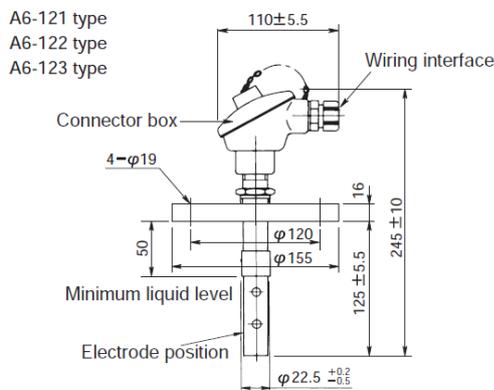
### AR4-212 type



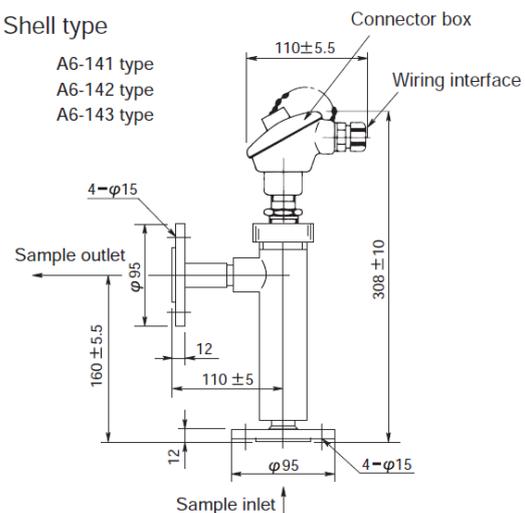
### AR5-212 type



### ● Flange type



### ● Shell type



### ● Dedicated cable

The dedicated cable is used for conductivity meter between the transmitter and detector

**Model** : EC-10

**Outer diameter** : φ8

**Insulating matter** : PP and plastic

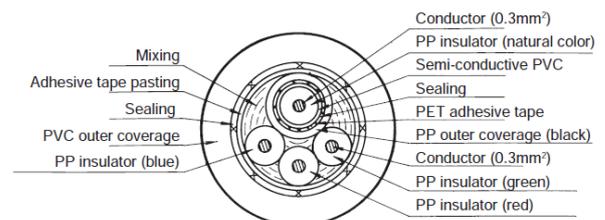
**External coverage** : Plastic

**Insulating resistance between cores** : more than 10<sup>9</sup>MΩ/100m

**Extended distance** : Max.: 50 m, not available to connect in the middle.

**Standard length** : 5m to 50m, in unit of 5m

**Weight** : about 0.5kg/5m



EC-10model Sectional view

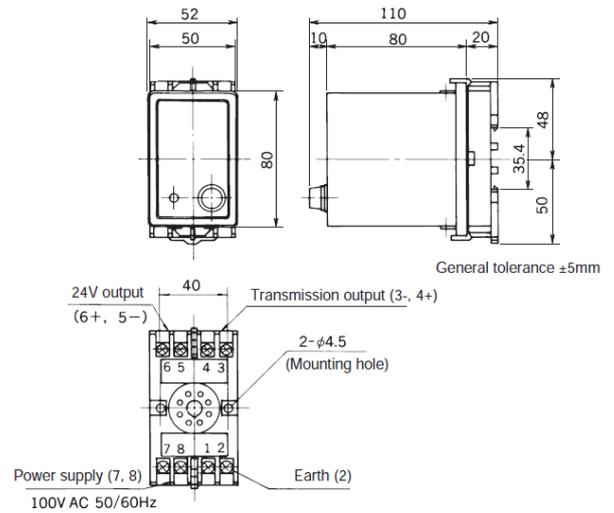
## Relevant equipment

Prepare the power supply for 2-wire convertor. Please order as per the demand.

### ● Power supply

**Model** : PA-24  
**Rated output voltage** :  $24V_{\pm 3\%}$  DC  
**Rated output current** : 2 to 22mA (2 meters cannot be connected in parallel)  
**Supply voltage** :  $100V_{\pm 10\%}$  50/60Hz AC  
**Ambient temperature** : -5 to 55°C  
**Structure** : for indoor application, insertion type  
**Weight** : about 300 g

※Terminal block transmission output signal; 4 to 20mA DC can be acquired.



**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

<http://www.toadkk.co.jp/english>

Information and specifications are subject to change without notice.

Issued on 12/3/2018