

1-INPUT/ISOLATED 2-OUTPUT TRANSDUCER

MODEL TW-2X-4-N

INSTRUCTION MANUAL



Warning

This marking indicates that the erroneous operation of this transducer may result in death or serious injury.



Precautions

- (1) If voltage or current exceeding the input allowable voltage or current is applied to the input terminals, the transducer may be damaged.
- (2) Apply power within the applicable range of the transducer. Otherwise fire, electric shock or transducer damage may result.
- (3) The contents of this instruction manual are subject to change without prior notice.
- (4) This instruction manual is carefully prepared. However, if any mistake or omission is found, contact your nearest Watanabe sales agent or Watanabe directly.
- (5) Make this manual available easily anytime.

■ Outline

The Model TW-2X-4-N transducer is used to convert one DC voltage or current input to two independent DC voltage and/or current outputs, and its input and outputs are electrically isolated.

It uses 3.5mm terminal screws which can be used as junction terminals.

In addition, as its four ports of input, output1, output2, and power supply are mutually isolated.

The case can be mounted on a DIN rail in one touch.

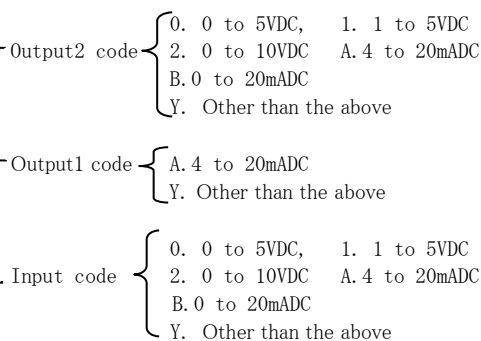
4P screw type terminal blocks are used for the input and output.

■ Model No. Configuration

Each code and the standard specifications of this transducer are as follows. First check whether or not your desired specifications are correct by comparing them to the following specifications.

Example: TW-2X-0A2-4-N

TW-2X-□□□-4-N



■ Accessories

None

■ Input Specification

Code No.	Input signal	Input resistance	Input allowable range
0	0 to 5VDC	More than 1MΩ	-50~ +150%F.S
1	1 to 5VDC		
2	0 to 10VDC	250Ω	
A	4 to 20mADC		
B	0 to 20mADC	Other than the above	
Y	Other than the above		

For Code No. Y

Limit of specifications

Voltage input : 250 VDC or less

Minimum span : 100 mVDC

Current input : 50 mADC or less

Minimum span : 1 mADC

■ Output1 Specification

Code No.	Output Signal	Allowable Load resistance
A	4 to 20mADC	Less than 550Ω
Y	Other than the above	

■ Output2 Specification

Code No.	Output Signal	Allowable Load resistance
0	0 to 5VDC	More than 2kΩ
1	1 to 5VDC	
2	0 to 10VDC	More than 4kΩ
A	4 to 20mADC	Less than 550Ω
B	0 to 20mADC	
Y	Other than the above	

For code No. Y

Limit of specifications

Voltage output : Less than DC +10 V and more than DC -10V

Minimum span : DC 1 V

Current output : Less than DC 20 mA

Minimum span : DC 1 mA

■ General specifications

Base Accuracy : $\pm 0.1\%$ F.S (At $25 \pm 2^\circ\text{C}$)

Power supply variation : $\pm 0.06\%$ F.S

Load resistance variation : $\pm 0.1\%$ F.S

Temperature characteristic : $\pm 0.02\%$ F.S/ $^\circ\text{C}$

Response time : Less than 50msec (0→90%)

Insulation resistance :

Between input and output1/output2/power supply ;
More than 100MΩ at 500VDC

Dielectric strength :

Between input and output1/output2/power supply ;
For 1 min. at 2000VAC

Power supply voltage : 24VDC $\pm 10\%$

Consuming current : Less than 110mA

Operating ambient temperature : -5 to 50°C

Operating ambient humidity : Less than 90%RH (No-condensing)

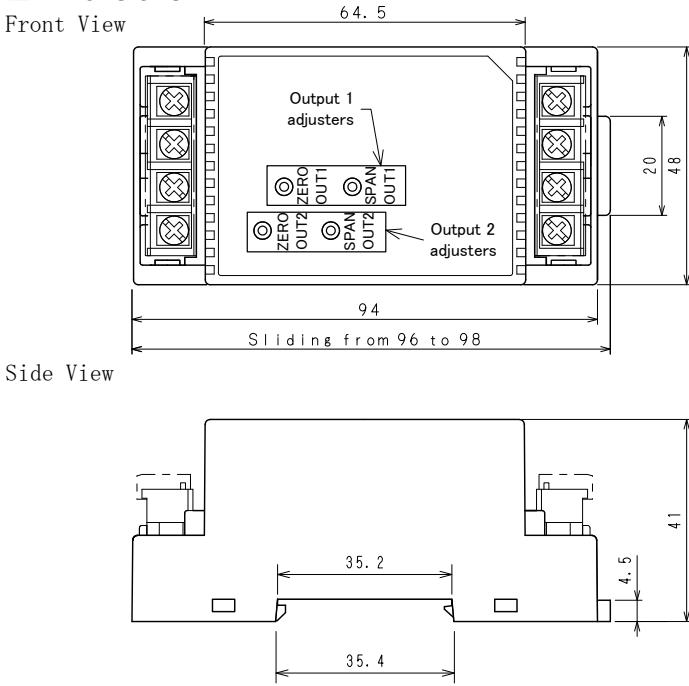
Storage temperature : -10 to 70°C

Storage humidity : Less than 60%RH (No-condensing)

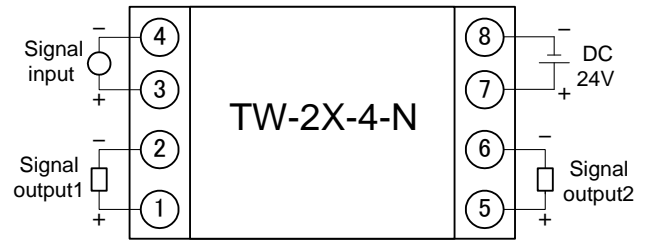
Case material : PBT 94V-0 (Black)

Weight : Approx. 130 g

■Dimensions

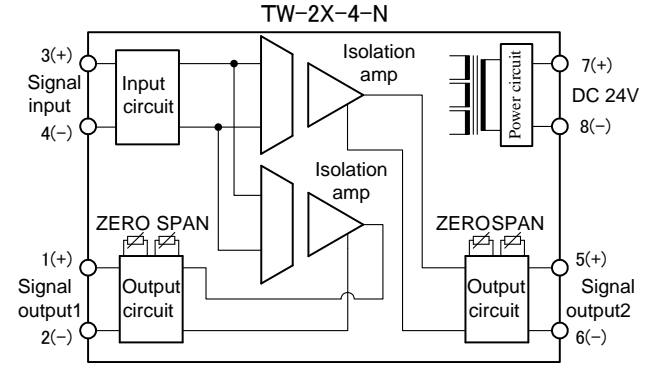


■Input/Output connection diagram



⚠ Note: Pay attention to the connection polarity.

■Block diagram



■Mounting/dismounting

■Mounting

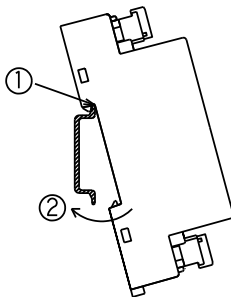
- 1) Engage the top side of the transducer with the rail.
- 2) Push the bottom side of the transducer into the rail.

Note :

If the transducer is dislocated after its mounting, it is recommended that a clamp be used.

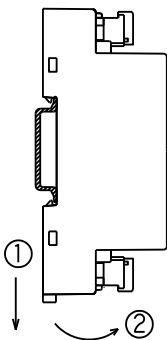
(For example E/NS35N made by PHOENIX CONTACT)

In addition, if two or more transducers are mounted side by side, do not contact them but keep enough space between them.



■Dismounting

- 1) Push down the slider using a screwdriver.
Push up the bottom side of the transducer.
- 2) Disengage the top side of the transducer from the rail.



■About solder less terminal to connect with the screw type terminal block

1. Screw size: M3.5×7L
2. Recommendation solder less terminal: Ring tongue (R type) M3.5
Spade tongue (A type) M3.5
Applicable AWG# 26 to 22
3. Quality of material: Screw Iron, nickel plating
Connection board Yellow copper, solder plating

■Caution

- a) Store the transducer at a storage temperature of -10 to +70°C and a humidity of less than 60 % RH.
- b) Use the transducer at a location where there are no chemicals or gases harmful to electrical parts or there is no dust.
- c) Do not apply any vibration or impact to the transducer.
- d) In order to lessen the effect of noise, etc., do not bundle the input/output wires with the power supply wires, nor put these wires in the same duct.

■Warranty

This transducer is warranted for a period of one year from date of delivery. Any defect which occurs in this period and is undoubtedly caused by Watanabe's faults will be remedied free of charge. This warranty does not apply to the transducer showing abuse or damage which has been altered or repaired by others except as authorized by WATANABE ELECTRIC INDUSTRY CO., LTD.

■After-sale service

This transducer is delivered after being manufactured, tested and inspected, under strict quality control. However, if any problem does occur, contact your nearest Watanabe sales agent or Watanabe directly giving as much information on problem as possible.

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