DISTRIBUTOR

MODEL TZ-5LA

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.Othewise 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

This is a receiver with a built-in power supply unit for driving a 2-wire system transmitter. It supplies power to the 2-wire system transmitter, receives a current of 4 to 20mA DC from the transmitter through a built-in precision resistor, and then converts the current to various voltages or currents through an isolator transformer, thereby achieving highly reliable and precise conversion.

■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） TZ－5LA－AA

TZ－5LA－□□

Output code	0	DC0～5V	1	DC1～5V
	2	DC0～10V	3	DC-10～10V
	4	DC-2～2V	5	DC-2.5～2.5V
	6	DC-5～5V	7	DC0～4V
	A	DC4～20mA	B	DC0～20mA
	Y	Special		
Input code	A	DC4～20mA		

■Accessories

None

■Input Specification

Code No.	Input Signal	Input Resistance
A	4 to 20mADC	250Ω

■Output 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
3	-10 to 10VDC	Negative output:more than 10kΩ
4	-2 to 2VDC	
5	-2.5 to 2.5VDC	
6	-5 to 5VDC	
7	0 to 4VDC	More than 2kΩ
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 + 15 V DC and more than -12V DC

Minimum span : Less than +27V DC and more than 0.06V DC

(Load resistance:10kΩ at the output exceeding 10V,and a negative output)

(Base accuracy : ±0.15％F.S and temperature characteristic : ±0.03％F.S /℃ for a span of less than 1V)

Current output : Less than +20mA DC and more than 0mA DC

Minimum span : Less than +20mA DC and more than 1mA DC

Outputs can be reversed for both voltage and current outputs.

■General Specifications

Base Accuracy : ±0.1％F.S(At 25±2℃)

Power supply variation : ±0.06％F.S

Load resistance variation : ±0.06％F.S

Temperature characteristic : ±0.02％F.S/℃

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

Front adjustments : ±5％ for zero and span.

Insulation resistance : Between input and output/power supply; More than 100MΩ at 500V DC

Dielectric strength : Between input and output/power supply; For 1 min. at 1500V AC

Power supply voltage : 24V DC±10％

Consuming current : Less than 70mA (At DC24V Voltage output) Less than 90mA (At DC24V Current output)

Operating ambient temperature : -5 to 50℃

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

Storage temperature : -10 to 70℃

Case material : ABS resin (Black) 94V-2

Weight : Approx. 80g

Vibration resistance : Frequency:10 to 55Hz;amplitude(half):0.15mm to 10 sweeps of 5 min each in X,Y,and Z directions

■Specifications of power supply for 2-wire transmitter

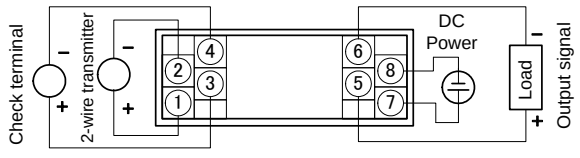
Output voltage range : 24V～32V DC (At no load)

Current capacity : Less than 22mA DC

Transmitter circuit shorting current : Less than 30mA DC

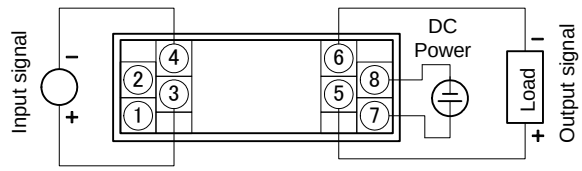
Short circuit duration : Indefinite

① When using it as Distributor



Note : pay attention to the connection polarity.

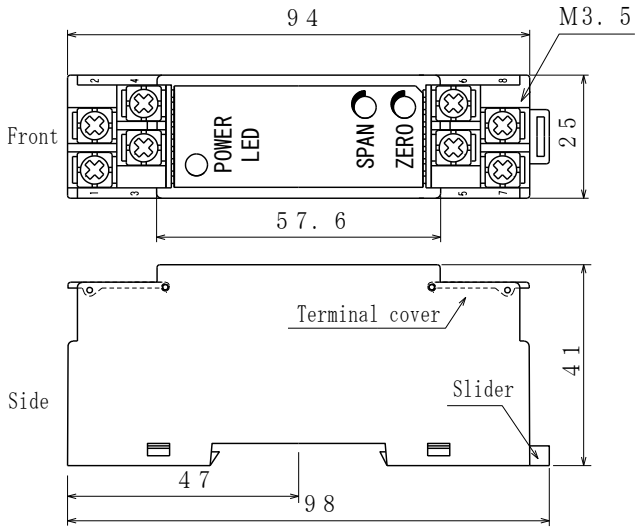
② When using it as Isolator



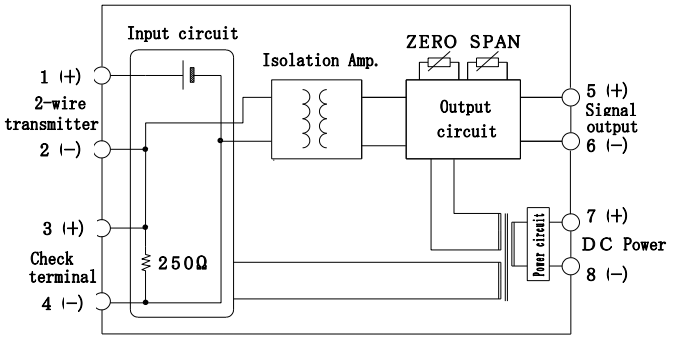
Note : pay attention to the connection polarity.

■Input/Output connection diagram

■Dimensions



■Block diagram



■Adjustment

This transducer is designed so that its zero point and span can be externally adjusted. However, its zero and span are not necessary to be adjusted as they have already been adjusted at the factory prior to shipment.

However, when it is periodically calibrated in order to maintain the accuracy for a long period of time, conduct its calibration using an accurate measuring instrument after more than 30 minutes following power-ON. In this case, use a standard measuring instrument having accuracy 10 times higher than that of this transducer.

■Zero Adjustment

Apply the minimum input signal to the input terminals, and then turn the ZERO trimmer until output signal reaches the minimum value described in the output specification.

■Span Adjustment

Apply the maximum input signal to the input terminals, and then turn the SPAN trimmer until output signal reaches the maximum value described in the output specification.

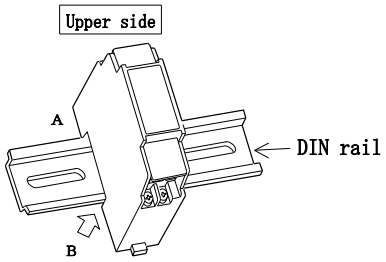
Repeat the above procedures a few times so that the minimum and maximum output signals are within the values described in the output specification when switched from the minimum to the maximum and vice versa.

■Mounting/dismounting

Mounting

A) Engage the upper side of the transducer with the rail.

B) Push the lower side of the transducer into the rail.

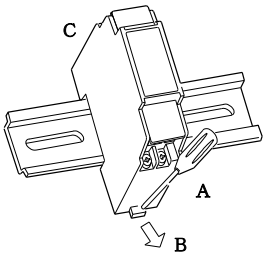


Dismounting

A) Push down the slider using a screwdriver.

B) Pull the transducer toward you, then disengage the lower side of the transducer from the rail.

C) Disengage the upper side of the transducer from the rail



Note :

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

■Caution

a) Store the transducer at a storage temperature of -10 to +70℃ and a humidity of less than 60%RH.

b) Use the transducer at a location where 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/communication wires with the power supply wires, nor put these wires in the same duct.

e) The unit is designed to function as soon as power is supplied, however, a warm up for 30 minutes is required for satisfying complete performance described in the data sheet.

■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.

watanabe
WATANABE ELECTRIC INDUSTRY CO., LTD.
6-16-19, Jingumae, Shibuya-ku, Tokyo 150-0001, Japan
Phone: (81)3-3400-6141
Homepage http://www.watanabe-electric.co.jp/en/