



This terminal block type signal converter (alarm setter) inputs DC signals and outputs a relay contact signal or photocoupler signal if the DC signal input value exceeds the preset value.

## Features

- ★ Up and below alarm setup to DC voltage electric current signal.
- ★ Possible to one touch mounting to the DIN rail.

## Ordering code

TW - **3RA** - **□□□** - N

Code	Input	Display	Input Resistance	Accuracy (23°C±5°C)
11	±99.99mVdc	±9999	100MΩ or more	±(0.03% reading + 2 digits)
12	±999.9mVdc		Approx. 1MΩ	
13	±9.999mVdc			
1V	1 to 5Vdc			Approx. 50Ω
2A	4 to 20mAdc			

Code	Output
1	Relay output (normal open contact)
2	Relay output (normal close contact)
3	Photocoupler output

## Specifications

### ◆ Common specifications

<b>Input method</b>	Single ended
<b>A/D conversion method</b>	ΔΣ conversion method
<b>Sampling rate</b>	Max. 25 times per second
<b>Display</b>	Red 7 segment LED (height 8mm)
<b>Polarity</b>	"-" is displayed at negative polarity
<b>Overrange indication</b>	When input exceeds the maximum display, oL or -oL
<b>Display range</b>	Max. 9999 (4 digits)
<b>Decimal points</b>	Settable to any digit position by the button on the front
<b>Zero display</b>	Leading zero suppression
<b>Backup</b>	Keep the setup data by EEPROM (rewrite cycles : 10 thousand times)
<b>Operating temperature</b>	-20 to 70°C
<b>Operating relative humidity</b>	60% (non-condensing)
<b>Power supply</b>	24Vdc ±20%
<b>Power consumption</b>	approx. 1.5W
<b>Dimensions</b>	98mm(W) x 48mm(H) x 41mm(D)
<b>Weight</b>	approx. 140g
<b>Dielectric strength</b>	1500Vac per 1 min : power supply terminal - case 500Vac per 1 min : between power supply terminal - case, comparative output, input terminal - comparative output
<b>Insulation resistance</b>	500Vdc, 100MΩ or more on the above terminals

### ◆ Comparative output specifications

<b>Control method</b>	Microcomputer calculation method
<b>Setup range</b>	-9999 ~ +9999
<b>Comparative operation</b>	Depends on the sampling rate
<b>Comparative condition</b>	High and low limiter judgment judgement display (HI, LO's LED display) Comparative output (relay contact or photocoupler output)
<b>Hysteresis</b>	Configurable from 1 to 999 digits in each comparative value
<b>Relay contact output</b>	Contact capacity 125Vac 0.3A, 30Vdc 1A (Resistance load)
<b>Photocoupler output</b>	Output rating 30Vdc 50mA Output saturation voltage 1.2V or less (At 50mA)

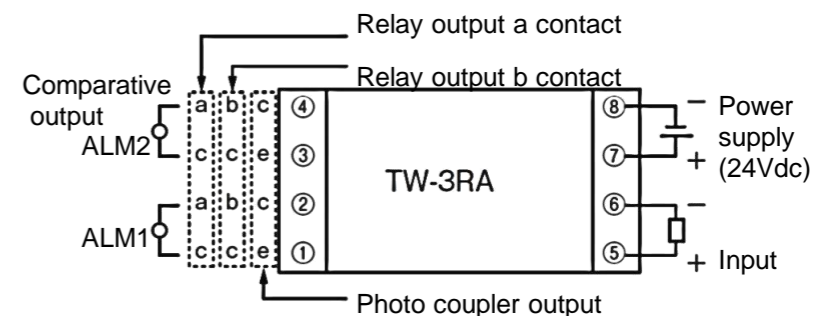
### ◆ Relay contact output (normal contact) or photocoupler output

Comparative condition	Judgement display		Comparative output	
	ALM1	ALM2	ALM1	ALM2
Measurement value > upper limit judgment value	Light-off	Light	ON	OFF
Upper limit judgment value ≥ measurement value ≥ lower limit judgment value	Light-off	Light	OFF	OFF
lower limit judgment value ≥ measurement value	Light	Light	OFF	ON

### ◆ Relay contact output (normal close contact)

Comparative condition	Judgement display		Comparative output	
	ALM1	ALM2	ALM1	ALM2
Measurement value > upper limit judgment value	Light-off	Light	OFF	ON
Upper limit judgment value ≥ measurement value ≥ lower limit judgment value	Light-off	Light-off	ON	ON
lower limit judgment value ≥ measurement value	Light	Light-off	ON	OFF

## Terminal connections



### ◆ Relay output (normal open contact)

No	Signal	Description
1	No.1 OUTPUT(NO) *	No.1
2	No.1 OUTPUT(COM)	Alarm output
3	No.2 OUTPUT(NO) *	No.2
4	No.2 OUTPUT(COM)	Alarm output
5	INPUT(+)	Input
6	INPUT(-)	
7	POWER U(+)	Power Supply
8	POWER V(-)	

\* NC (normal close) when b contact

### ◆ Photocoupler output

No	Signal	Description
1	No.1 OUTPUT(+)	No.1
2	No.1 OUTPUT(-)	Alarm output
3	No.2 OUTPUT(+)	No.2
4	No.2 OUTPUT(-)	Alarm output
5	INPUT(+)	Input
6	INPUT(-)	
7	POWER U(+)	Power Supply
8	POWER V(-)	

\* Specification is subject to change without notice