

INSTRUCTION MANUAL

PLUG-IN TRANSDUCER
FINE SERIES

ALARM SETTER

FSDLC

Thank you for purchasing DAIICHI ELECTRONICS product.
Please read this instruction manual carefully before using.

Safety precautions

■ Environment conditions

Please be sure to use this product in a place that meets the following conditions. In places that do not meet this condition, malfunctions and failures, and performance and product life may be reduced.


- Within the range of ambient temperature -10 to +55 °C, humidity 5 to 90% RH.
- Place free of dust, corrosive gas, salt and oily smoke. (Corrosive gas : SO₂ / H₂S, etc.)
- Location that is not affected by vibration and shock.
- Location that is not affected by external noise.
- Altitude 1000m or less.

■ Outdoor use conditions

- These products are not a dustproof, waterproof, and splash proof construction.
Please avoid the place with much dust. Moreover, please install in the place not exposed to rain or water drop.
- Please do not install in the place where sunlight hits directly.
Discoloration and degradation of a name plate, and deformation of the case by the surface temperature rise may occur.

■ Mounting and wiring

Please refer to this instruction manual for mounting and the wiring.

 CAUTION	<ul style="list-style-type: none"> ● Please refer to connection diagram for the wiring. ● Please avoid hot line work. ● Please use an electrical wire size suitable with the rated current. ● Please check the tightening of the screw.
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■ Preparation

This product must be set before use. Please set correctly after reading this instruction manual.

■ Maintenance and inspection

- Inspection in energized state is dangerous.
- This product does not include parts to be replaced at periodic inspection.
- In case you need to check an input and control power supply by the hot line condition, please be warned not to touch output wiring and a human body to other terminals.
- Please make sure that the power LED (POWER) is lit properly.
- Please regularly to see if wiring and mounting screws and fixing screws are not loose.
- Please wipe off lightly with the dry soft cloth. Please do not use the organic solvent, chemicals, cleaners, etc., such as an alcohol, for cleaning.

■ Storage

Please store in a place that meets the following conditions.

- The ambient temperature within -25 to +70 °C (storage temperature).
- Daily average temperature 40 °C or less.
- Location corresponding to the usage environment and use conditions.
- Location that is not affected by vibration and shock.
- Aluminum electrolytic capacitors are used in products. Please energize the power supply within one year after purchase.

■ Countermeasures against troubles

If trouble occurs within the warranty period, DAIICHI ELECTRONICS will repairs this product.

■ Disposal

Please dispose this product as industrial waste (non-combustible).
Mercury parts and a nickel-cadmium battery are not used for this product.

■ Warranty period

The warranty period of the product is one year after the date of delivery.

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1. Outline on the product

This product is a small plug-in structure alarm setter.

This product takes a DC voltage or DC current signal as input, compares it with the preset operating point, and outputs the excess or deficiency as a contact signal.

The full scale of the input can be arbitrarily set on the actual scale according to the process amount, and each set value (operating value, contact delay, etc.) can also be set freely.

This product is used in combination with a mounting base (FWBA-□, hardware model B).

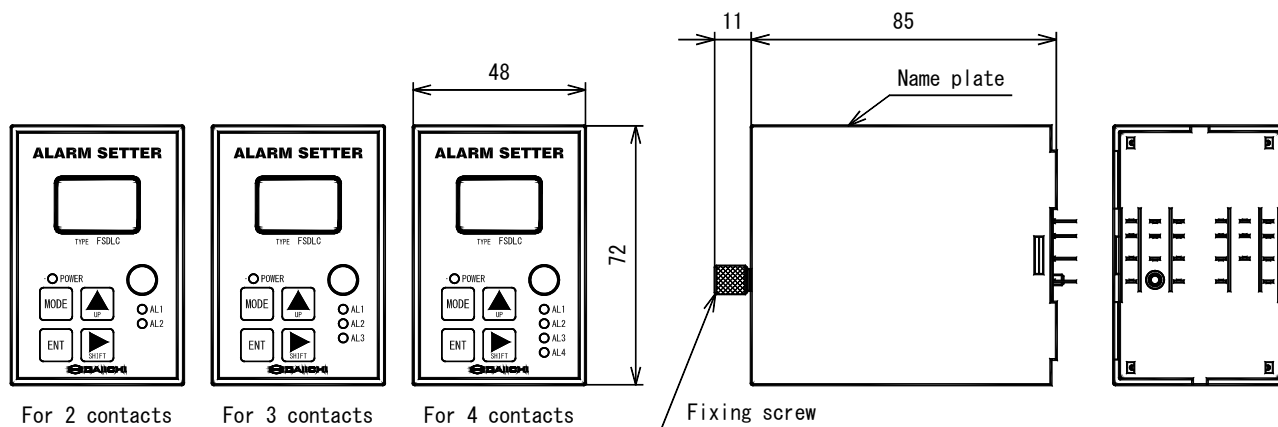
1.1 Features of product

- The setting accuracy is $\pm 0.1\%$ (% of input span).
The display accuracy is $\pm 0.1\% \pm 1$ digit (% of input span).
($\pm 0.2\%$ for voltage input less than 1V)
- Various settings can be changed with the front switch.
- The measured value (real scale) and various set values can be confirmed on the LCD.
- The backlight lights when a key is pressed.
The backlight lights off 30 seconds after the key operation is completed.
- The set value is guaranteed by the non-volatile memory E²PROM even during a power failure.
- The pre-alarm function displays the progress of the contact delay time by blinking the monitor lamp.
(Pre-alarm ON/OFF can be selected by setting)

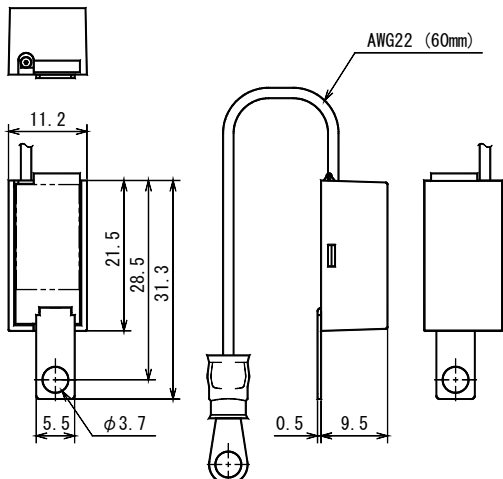
2. Installation

2.1 Outline dimensions (Unit mm)

(1) FSDLC



(2) Precision Resistance Unit, Type : UR-2 (option)



UR-2 combines an alarm setter of voltage input, and please use it. When open measures are necessary when they change an alarm setter with hot line condition in current input, they connect UR-2 to socket, and please use it by voltage signal.

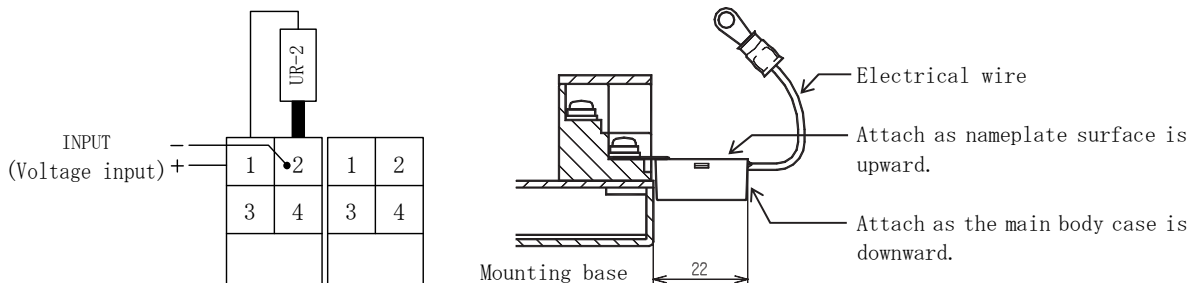
(UR-2, Specify resistance value)

Resistance in input signal

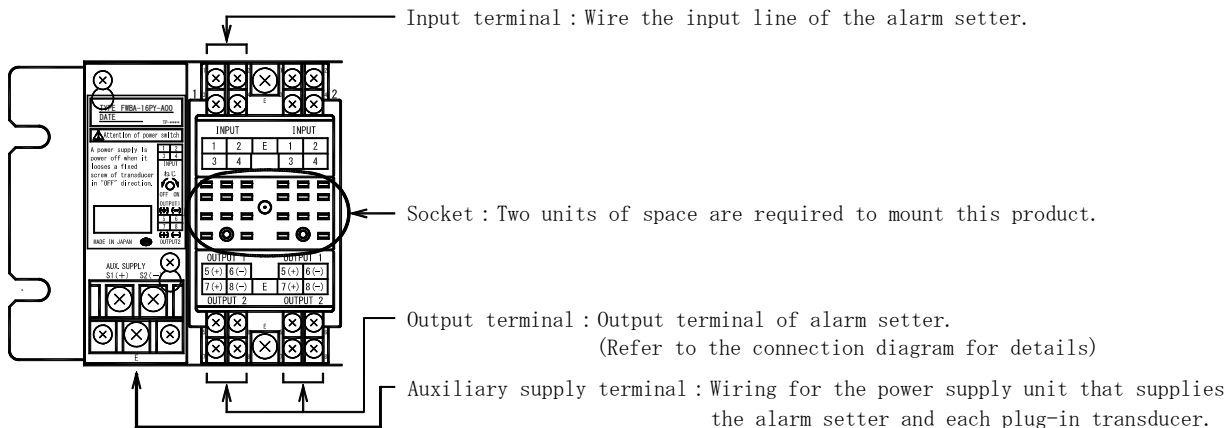
Input Resistance	DC0 - 1mA	DC0 - 10mA	DC0 - 16mA	DC0 - 20mA	DC2 - 10mA	DC4 - 20mA	DC10 - 50mA
10 Ω	—	DC0 - 100mV	DC0 - 160mV	DC0 - 200mV	DC20 - 100mV	DC40 - 200mV	DC100 - 500mV
50 Ω	—	—	—	DC0 - 1V	DC100 - 500mV	DC0.2 - 1V	DC0.5 - 2.5V
62.5 Ω	—	—	DC0 - 1V	—	—	DC0.25 - 1.25V	—
100 Ω	DC0 - 100mV	DC0 - 1V	—	—	—	DC0.4 - 2V	DC1 - 5V
250 Ω	—	—	—	DC0 - 5V	—	DC1 - 5V	—
500 Ω	—	DC0 - 5V	—	DC0 - 10V	DC1 - 5V	—	—
1k Ω	DC0 - 1V	DC0 - 10V	—	—	—	—	—

<How to mount UR-2>

When using UR-2 (resistor module), install it as shown in the figure below.



(3) Mounting base

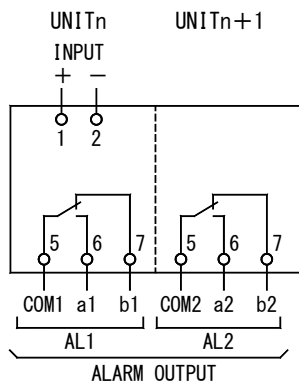


2.2 Connections

■ Connection diagram

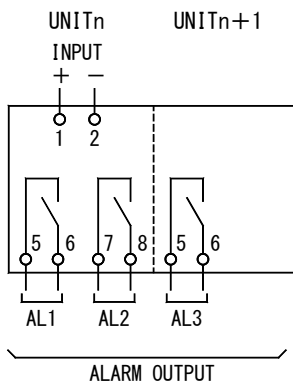
2 contacts

Each change over contact (1c)



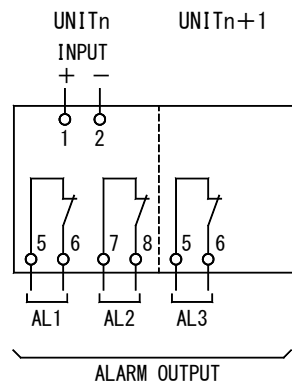
3 contacts

Each normally open contact (1a)



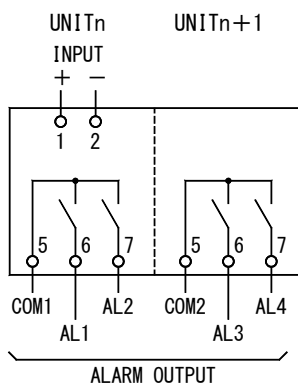
3 contacts

Each normally close contact (1b)



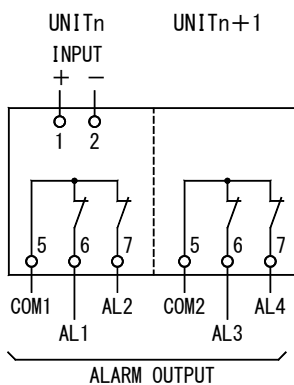
4 contacts

Each normally open contact (1a)



4 contacts

Each normally close contact (1b)



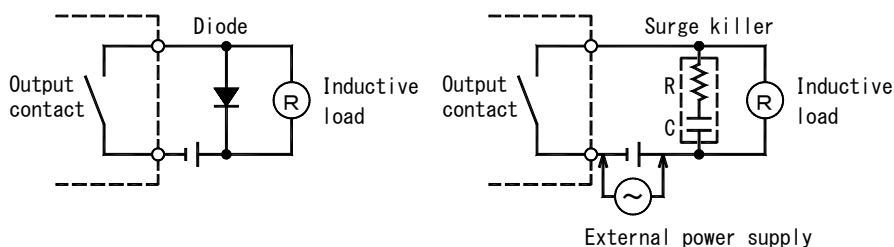
Connect 1(+) and 2(-) of the left unit to INPUT of this product.

* When mounting this product on a multiple base (FWBA-08□ or FWBA-16□), the space for 2 units is used.

<Caution>

- Please shut off the auxiliary power supply and input before starting work. Touching terminals etc. while wet hands may cause electric shock. Because burnout accident may be caused by wiring differences, please be careful of wiring. Also, it is dangerous to inspect it in places with inflammables and flammable chemicals and gases.
- When inductive loads (electromagnetic relay, etc.) are connected to output contact, it recommends attaching diode or surge killer etc. near the load.

《Spark elimination circuit example》



2.3 About of auxiliary supply

By applying auxiliary power to the power supply (AUX. SUPPLY) terminal of mounting base, power is supplied to each unit.

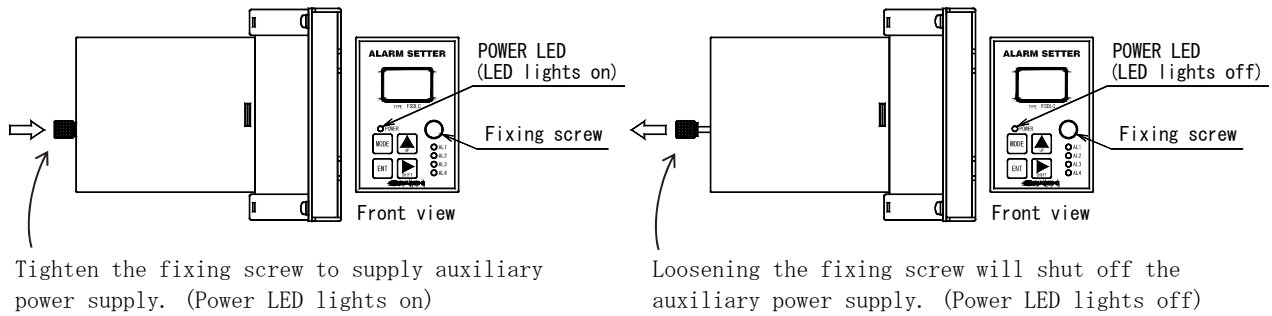
When mounting base has unit individual power switch.

Please insert this product into the mounting base and tighten the screw to fix the main body.

An auxiliary power is supplied. Also, when removing, by loosening the screw, supply of auxiliary power supply is cut off. (When the auxiliary power is supplied, the power LED of this product lights on, and it lights off when it is shut off.)

Without individual unit power supply switch.

Regardless of the tightening of the fixing screw on the main unit, auxiliary power is supplied.



CAUTION

If the unit has an individual power switch, auxiliary power will not be supplied to this product unless the fixing screws are securely tightened. Be sure to tighten the fixing screw.

2.4 Cautions on installation

● Wiring state

Please separate wiring of input and output and perform consideration to noise. And, please separate from a line with the power line used as the source of a noise and steep voltage, and current as much as possible. Please use shielding wire for the bottom of the remarkable environment of a noise.

● Environmental condition

(1) Ambient temperature and humidity range

The ambient temperature and humidity during the operation of each equipment should be in the following range.

Temperature: -10 to 55 °C, humidity: 5 to 90% RH (Non condensing)

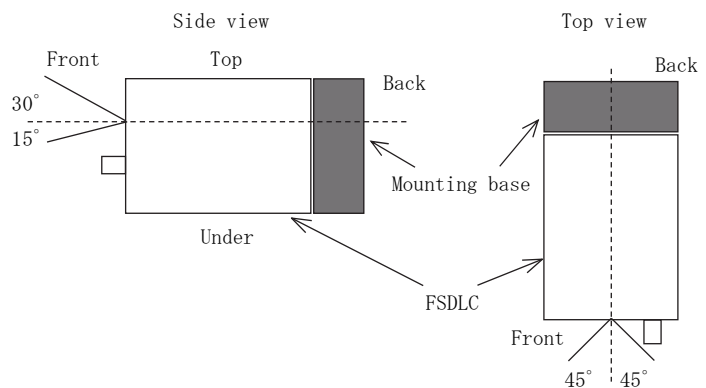
(2) Ambient atmosphere

Please be careful when using in dusty environments.

Also, please consult us when using under corrosive gas [hydrogen sulfide (H₂S), chlorine (Cl), etc.] environment.

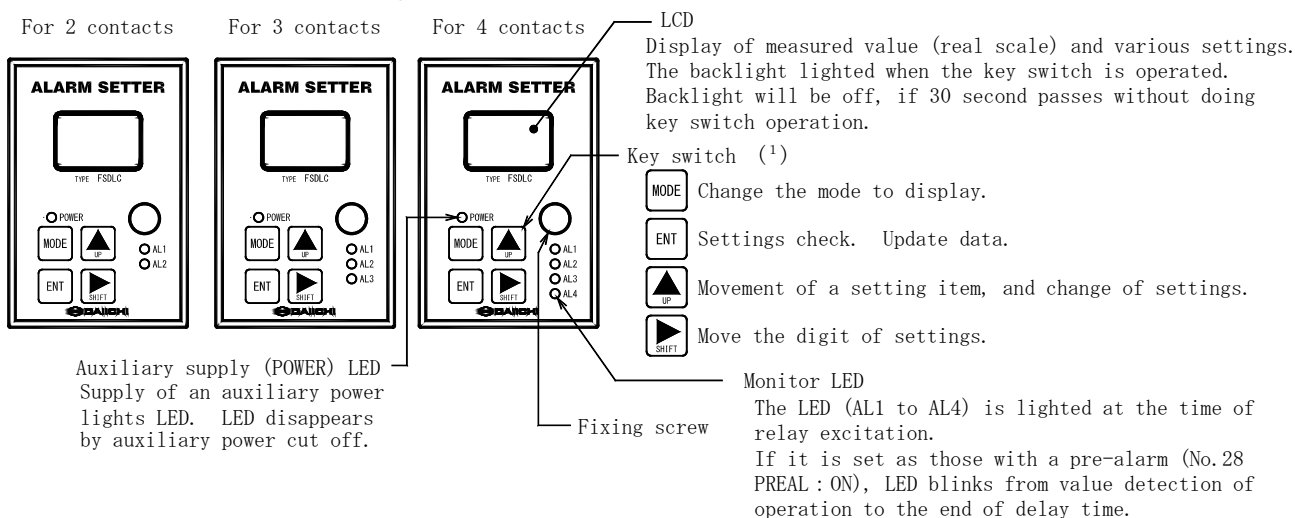
2.5 LCD viewing angle

Mount the LCD to obtain an optimum angle, since the contrast changes according to the monitoring angle.



3. Operation method

3.1 The name and function of each part

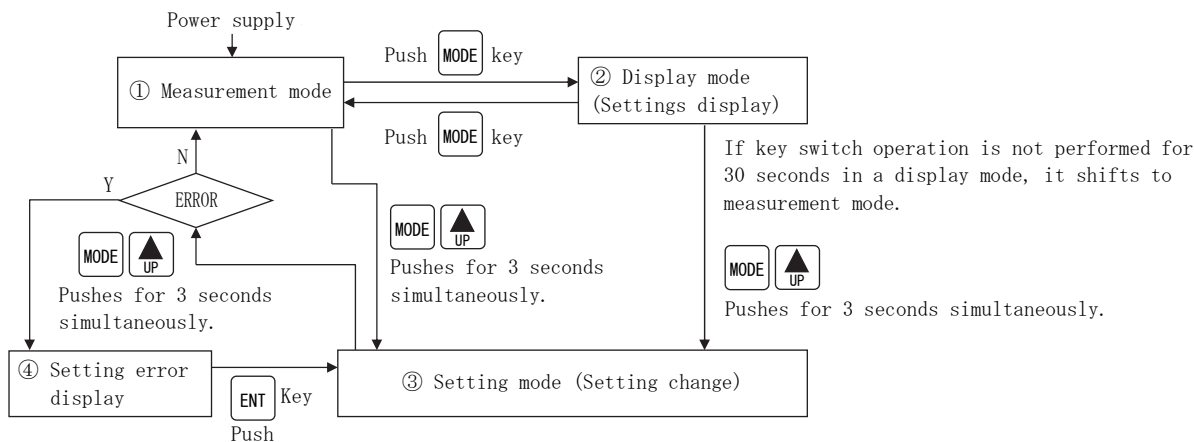


Note⁽¹⁾ Please operate at a moderate force without applying excessive force to the key switch. If you press the key switch in excessive force, there is a possibility that affect the display becomes a stress on the front plate.

3.2 Each display mode and operation

Shift in each mode

A display mode shifts to each mode by those with four type, and the following switch operations.

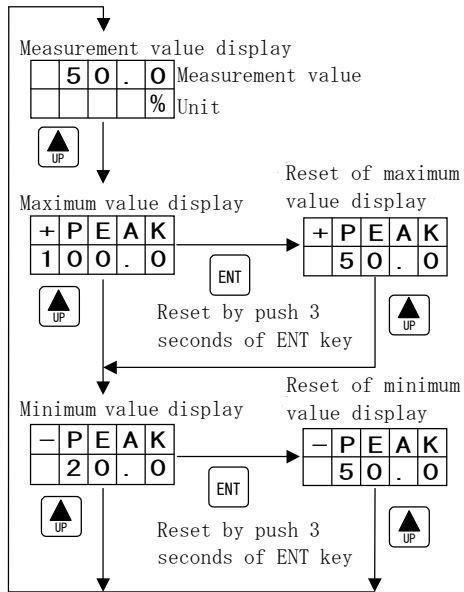


- ① Measurement mode
Input value, maximum value, and minimum value are displayed.
- ② Display mode
Setting item is displayed in order and the check of set value can be performed. Change of set value cannot be performed.
- ③ Setting mode
Setting item is displayed in order and change of set value can be performed. Please perform the check of set value with a display mode.
- ④ Setting error display
After setting change in setting value change mode, an error code is displayed when combination error occurs.





No.	Contents of error	Measures
ERROR 0	Scaling combination error	Set again so that MAX>MIN.
ERROR 1	COMP1 setting range outside error	Set again so that the measurement display range is -25 to +125%.
ERROR 2	COMP2 setting range outside error	
ERROR 3	COMP3 setting range outside error	
ERROR 4	COMP4 setting range outside error	

3.3 Measurement mode

After turning on the power supply, measurement mode is entered. The display switches each time the UP key is pressed, and you can check each display (measurement value display, maximum value display, minimum value display).



● Explanation of a key switch

-  Mode (Measurement ⇔ display) change
-  Reset of maximum value and minimum value.
-  Display change
-  Not use

< Notes of maximum value and minimum value >

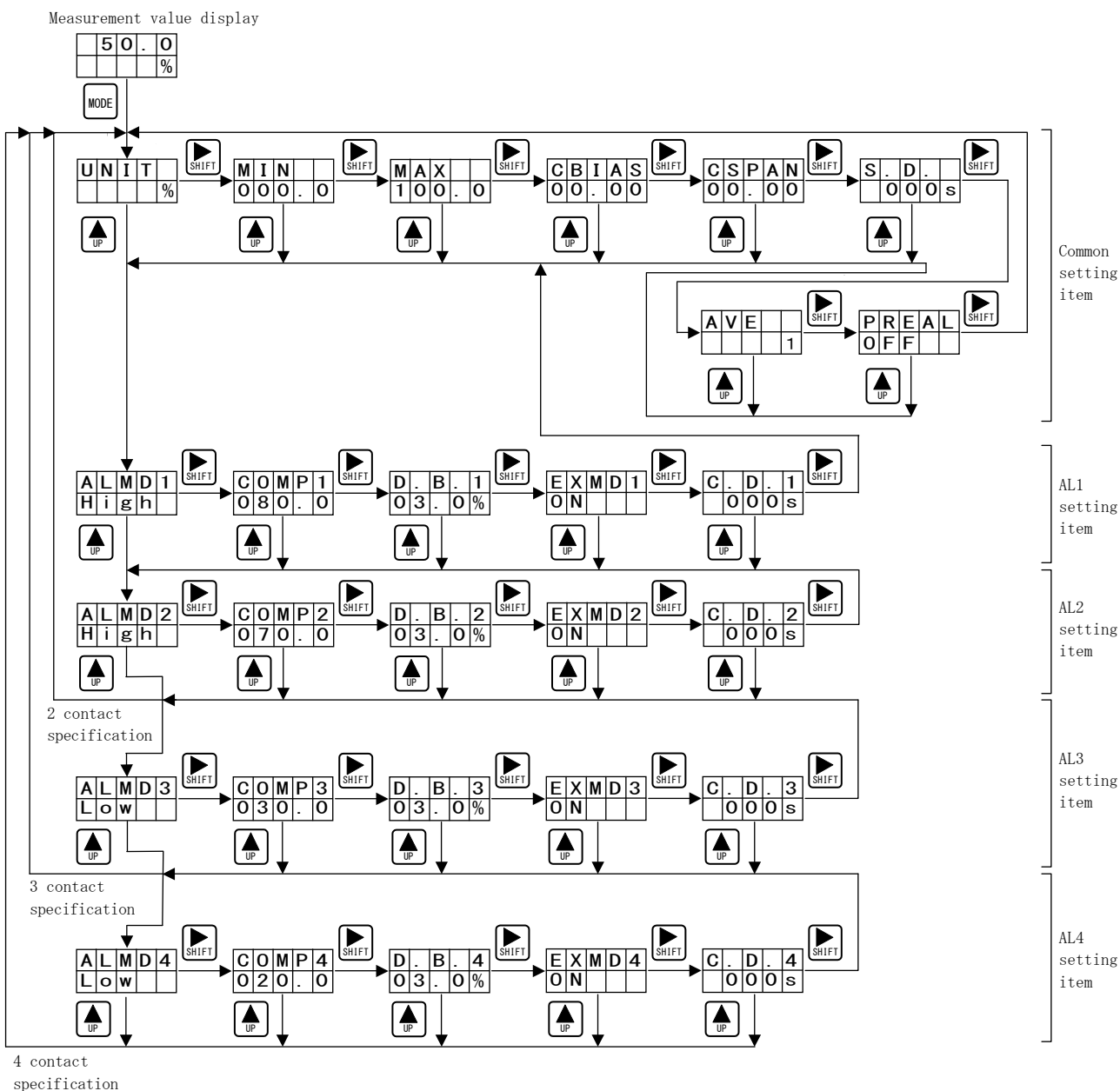
After set value change, please reset a maximum value display and a minimum value display.

3.4 Display mode





Setting item is displayed in order and the set value check of all items can be performed.

Once it pushes the MODE key, it will change to a display mode.

Common item (AL1 to AL4) is changed by the UP key. Each setting item is displayed as the SHIFT key.



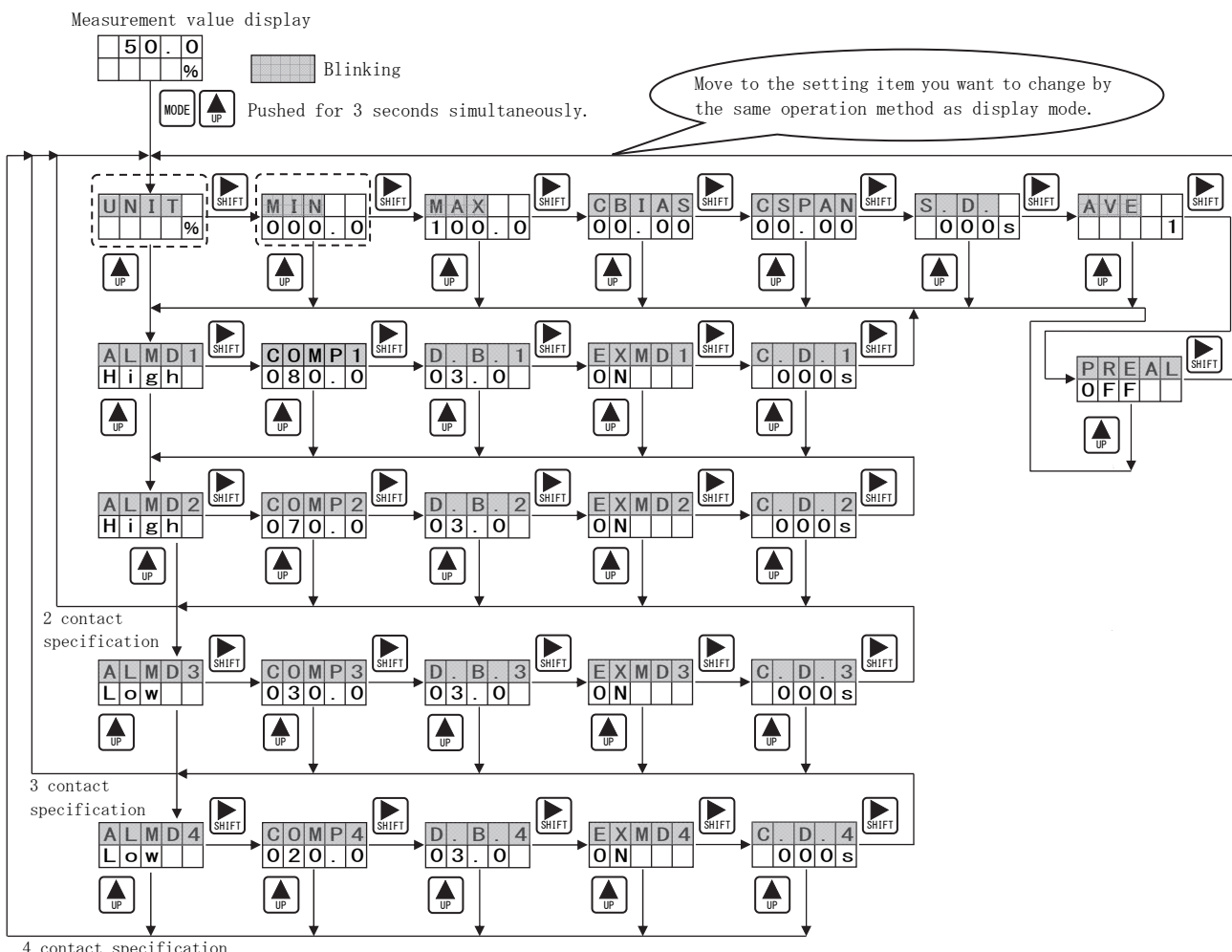
● Explanation of key switch

-  Mode (Measurement ⇔ display) change.
-  Not use.
-  Common item (AL1 to AL4) is changed.
-  Each setting item is changed.

3.5 Setting mode

Change of each set value is possible. If the MODE+UP key is pushed 3 seconds or more simultaneously, it will change to setting mode.

By the same operation as a display mode, a setting item is shifted and it displays. The ENT key is pushed by the item to make a setting change, and setting is changed.



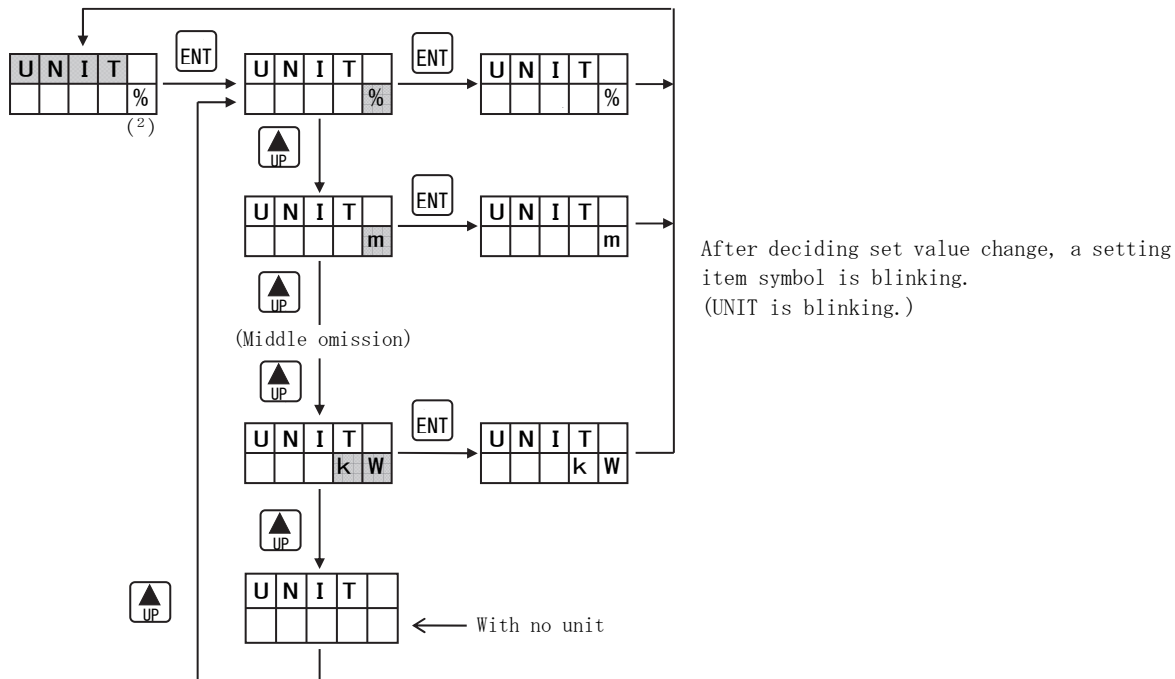
- Operation in setting mode

In setting mode, a setting item or set value is blinking.
 In setting mode, the back light is always turn on a light.
 After a setting mode is ended, it restarts.

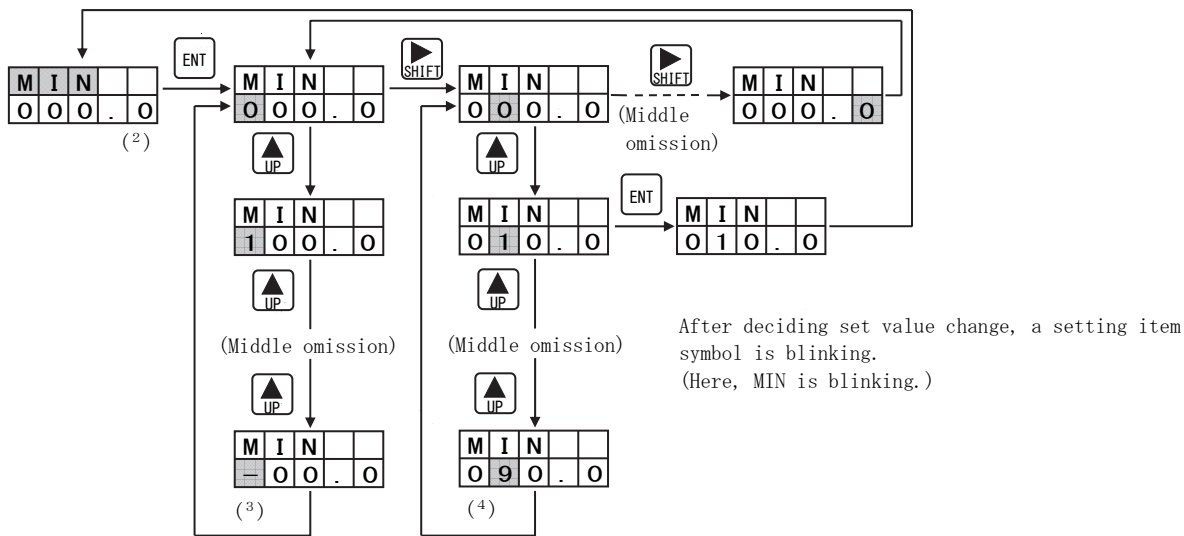
- Explanation of key switch

- Not used alone.
MODE+UP key is pushed 3 seconds or more simultaneously. Mode (Measurement ⇔ setting) change.
- Set value decision (Update of data)
Determination of setting item (Blinking is upper section ⇔ lower section)
- Setting item movement and change of set value.
MODE+UP key is pushed 3 seconds or more simultaneously. Mode (Measurement ⇔ setting) change.
- Movement of the setting item of AL1 to AL4, and the shift of set value.

● Unit display (UNIT) setting.



● Minimum value scaling (MIN) setting.



Note⁽²⁾ After set value changed, displays the change set value.

Note⁽³⁾ The number of the top digit becomes "-" (minus) after 0 to 9.

Note⁽⁴⁾ The number of digits other than the top digit becomes "." (decimal point) after 0 to 9. However, if decimal point is in other digits, decimal point does not display.

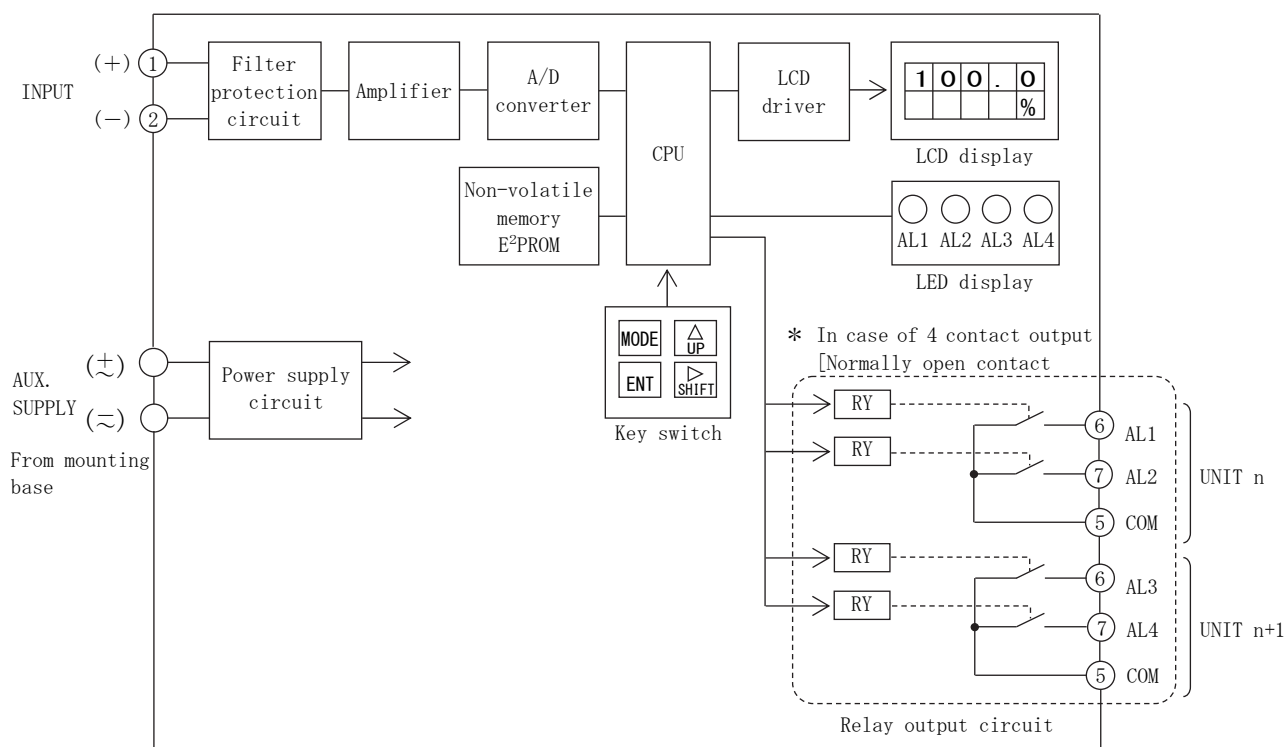
3.6 Calibration

Because this product is adjusted beforehand, there is no necessity for calibration. However, if the operating point of an alarm output shifts, please adjust in the next way.

- (1) After turning on the auxiliary power, perform preliminary energization for 15 minutes.
- (2) When the input equivalent to the minimum display is applied, in order that it may become the minimum display, set value CBIAS is set up.
Next, when the input equivalent to the maximum display is applied, in order that it may become the maximum display, it sets up by set value CSPAN.
Calibration is finishing, if the above is checked again and the display is correct.
In addition, please refer to the 4.5 section "setting mode" about setting of set value CBIAS and CSPAN.
- (3) Please perform the check of an operation value, a reset value, and a dead band.

4. Block-diagram and principle of operation

4.1 Block-diagram



4.2 Principle of operation

- (1) The inputted voltage or current passes along a filter protection circuit, and becomes the DC voltage below constant voltage. This voltage goes into an amplifier.
- (2) The input is converted into the suitable voltage range in an amplifier. This voltage constitutes an input of an A/D converter.
- (3) The data converted into digital one by the A/D converter are sent to CPU. A/D converter has 16-bit resolution and performs operation and conversion with 1MHz clock. Based on the scaling range that had this data set up, it calculates within CPU. And the measurement value scaling by the LCD is displayed.
- (4) The operation value and measurement value, which was set up beforehand, are compared, and the relay and LED are operated.
- (5) The front key switch makes each setting change.
- (6) The value set up by the switch is saved at non-volatile memory (E²PROM). ROM has the capacity of 128×16 bits.

5. Specification and performance

5.1 Alarm output specifications

Item	Specification	
Output	2 contacts, 3 contacts, 4 contacts	
Contact structure	2 contacts : Each change over contact (1c contact) 3 contacts : Each normally open contact (1a contact) or each normally close contact (1b contact) 4 contacts : Each normally open contact (1a contact) [One side two points common] or each normally close contact (1b contact) [One side two points common]	
Contact capacity	Maximum switching load	AC120V 1A (COS ϕ =1) , DC30V 1A (Resistance load)
	Minimum switching load	DC5V 10mA
Electrical life	500,000 times or more (Switching frequency 30 times/min)	
Output mode	Setting in five kinds of modes as follows is possible for operation of detection. ① High limit detection (H), Detection operation, Relay excitation ② High limit detection (H), Detection operation, Relay non-excitation ③ Low limit detection (L) , Detection operation, Relay excitation ④ Low limit detection (L) , Detection operation, Relay non-excitation ⑤ OFF , Relay non-excitation always	
Relay excitation status display	MAX. 4 contacts. Monitor lamp lights when each relay is excited. The monitor lamp blinks during the delay time when the pre-alarm setting is ON.	
Relay and monitor lamp operation	Auxiliary supply OFF, or relay non-excitation.	Relay normally close contact (b contact) ON, Monitor lamp OFF
	Relay excitation	Relay normally open contact (a contact) ON, Monitor lamp ON
	Output mode	Refer to the alarm output operation in section 5.2.
Relay contact status	Refer to the alarm output operation in section 5.2.	

5.2 Operation of alarm output

- ① At the auxiliary supply OFF, or at the relay non-excitation
: Relay normally close contact (b contact) ON, Monitor lamp OFF.
- ② At the relay excitation : Relay normally open contact (a contact) ON, Monitor lamp ON.

Output mode	Relay and monitor lamp operating state		
	▽ Operation value setting.		Input limit →
Excitation	H	Monitor lamp OFF ○	● ON
	L	Monitor lamp ON ●	○ OFF
Non-excitation	H	Monitor lamp ON ●	○ OFF
	L	Monitor lamp OFF ○	● ON
OFF (Excitation · Non-excitation)		Monitor lamp OFF ○	○ OFF

● Relay contact status

Status	4 contacts Each normally open contact (1a contact)	4 contacts Each normally close contact (1b contact)
Auxiliary supply OFF or relay non-excitation		
Relay excitation		

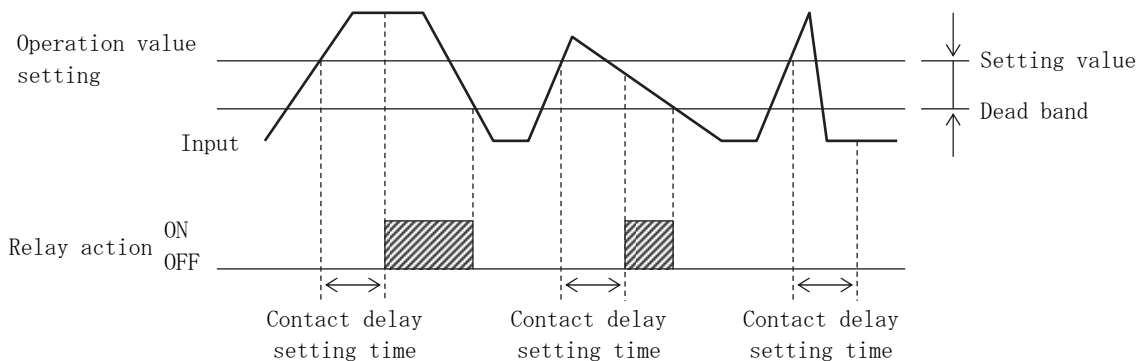
Status	3 contacts Each normally open contact (1a contact)	3 contacts Each normally close contact (1b contact)
Auxiliary supply OFF or relay non-excitation		
Relay excitation		

Status	2 contacts Each change over contact (1c contact)
Auxiliary supply OFF or relay non-excitation	
Relay excitation	

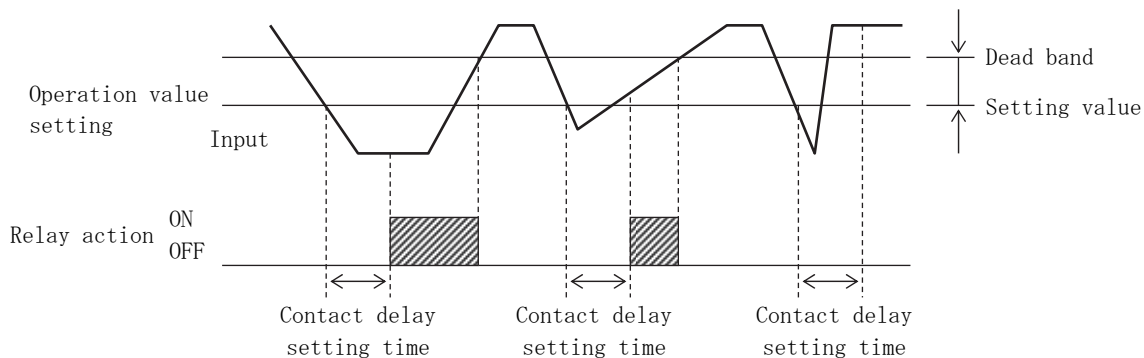
5.3 Relay action

■ Contact delay function

Relay operation in over-input detection. (Output mode : Excitation, H ⁽⁵⁾)

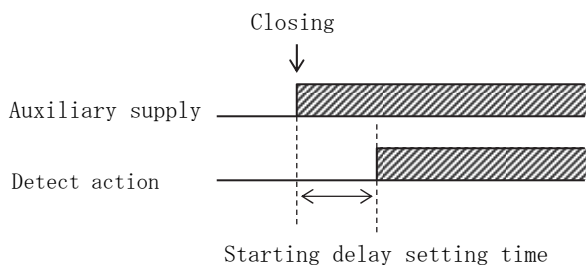


Relay operation in shortage-input detection. (Output mode : Excitation, L ⁽⁵⁾)



Note⁽⁵⁾ In case of non-excitation for relay excitation operation setting, action of relay becomes reverse.

■ Starting delay function



After an auxiliary supply apply, detection action is performed after a starting delay time.

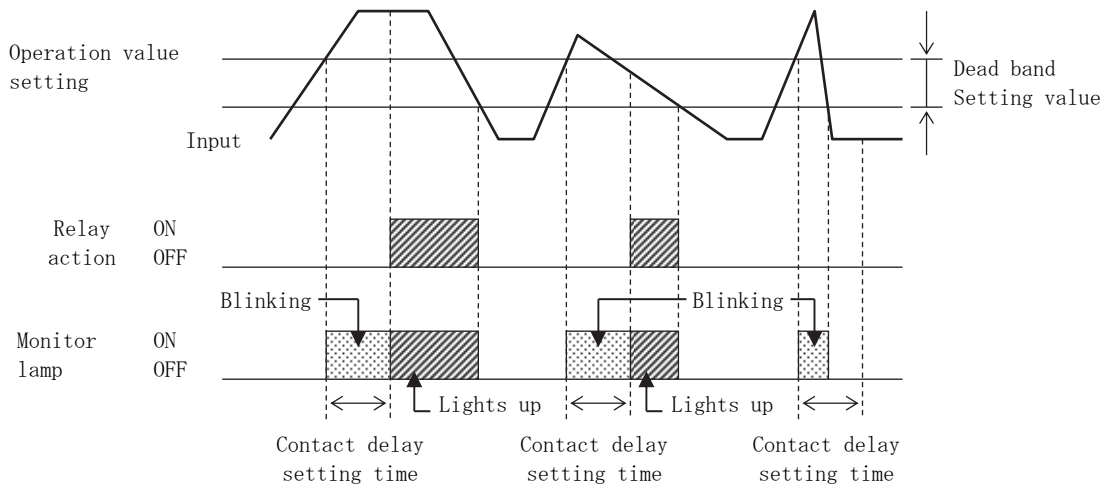
5.4 Pre-alarm function

A monitor lamp is blinked among contact delay time until excitation of a relay after operation value detection. Blinking of a monitor lamp will be gradually fast, and when the point of contact delay time passes, a monitor lamp is lights up.

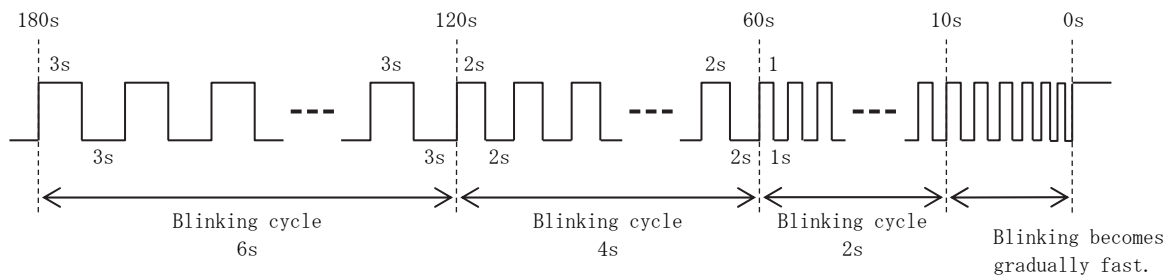
If contact delay time setting is made into 0 second, a pre-alarm function constitutes OFF.

- Relay action and pre-alarm in over-input detection.

(Output mode setting : Excitation H, Pre-alarm setting : ON)



- Action of the pre-alarm in contact delay time (blinking)



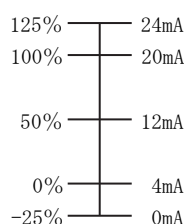
5.5 Setting value

No.	Contents	Mark	Default setting value			Setting range	
			2 contact outputs	3 contact outputs	4 contact outputs		
1	Unit display	UNIT	%			%, m, °C, m ³ /h, ppm, pH, TPm, ×10kg, Ω, kW, No unit	
2	Minimum value scaling	MIN	0.0			-9999 to 9999 -9.99 to 99.99	
3	Maximum value scaling	MAX	100.0			-99.9 to 999.9 0.000 to 9.999	
4	AL1	Output mode	ALMD1	High	High	High	High : H operation, Low : L operation, OFF : With no operation
5		Operation value	COMP1	70.0	80.0	80.0	Measurement display range -25 to +125% (Real scale)
6		Dead band	D. B. 1	3.0			0.5 to 50.0%
7		Excitation mode	EXMD1	ON			ON : Excitation, OFF : Non-excitation
8		Contact delay time (CD)	C. D. 1	0			0 to 180s
9	AL2	Output mode	ALMD2	Low	High	High	High : H operation, Low : L operation, OFF : With no operation
10		Operation value	COMP2	30.0	70.0	70.0	Measurement display range -25 to +125% (Real scale)
11		Dead band	D. B. 2	3.0			0.5 to 50.0%
12		Excitation mode	EXMD2	ON			ON : Excitation, OFF : Non-excitation
13		Contact delay time (CD)	C. D. 2	0			0 to 180s
14	AL3	Output mode	ALMD3	—	Low	Low	High : H operation, Low : L operation, OFF : With no operation
15		Operation value	COMP3	—	30.0	30.0	Measurement display range -25 to +125% (Real scale)
16		Dead band	D. B. 3	—	3.0		0.5 to 50.0%
17		Excitation mode	EXMD3	—	ON		ON : Excitation, OFF : Non-excitation
18		Contact delay time (CD)	C. D. 3	—	0		0 to 180s
19	AL4	Output mode	ALMD4	—		Low	High : H operation, Low : L operation, OFF : With no operation
20		Operation value	COMP4	—		20.0	Measurement display range -25 to +125% (Real scale)
21		Dead band	D. B. 4	—	3.0		0.5 to 50.0%
22		Excitation mode	EXMD4	—	ON		ON : Excitation, OFF : Non-excitation
23		Contact delay time (CD)	C. D. 4	—	0		0 to 180s
24	Starting delay time (SD)	S. D.	5			1 to 180s	
25	Bias point calibration	CBIAS	0.00			-9.99 to 9.99% (% of input span)	
26	Span point calibration	CSPAN	0.00			-9.99 to 9.99% (% of input span)	
27	Average number	AVE	1			1, 4, 8, 16, 32	
28	Pre-alarm	PREAL	OFF			ON : Pre-alarm ON, OFF : Pre-alarm OFF	

< Notes of setting >

- The decimal point position change of scaling is made by the minimum value scaling. If the decimal point position is changed, the decimal point position of maximum value scaling and operation values 1 to 4 will also change. If the decimal point position is changed, please be sure to check the set value of a maximum value scaling and an operation value.
- When changing the scaling, set the operation values 1 to 4 within the measurement display range (see below). Even if the output mode is set to OFF, keep it within the measurement display range.
- An operation value can be set up in -25 to +125% of the measurement display range (minimum value scaling to maximum value scaling).

(Example) Input 4 to 20mA,
Operation value -25.0,
Output mode is "Low" setting.



Becomes the L detected at the input 0mA, can also be used as a disconnection detection.

- After setting change, in case a set value combination error occurs, it becomes a setting error display. Please push the **ENT** key and set up the right set value (in set value change mode).

5.6 Performance

Item		Specification		
Setting accuracy ⁽⁶⁾		$\pm 0.1\%$ (% of input span)		
Display accuracy ⁽⁷⁾ ⁽⁸⁾		$\pm 0.1\%$ (% of input span) ± 1 digit		
Reproducibility of the operating point ⁽⁶⁾		$\pm 0.1\%$ (% of input span)		
Operating time		± 0.25 seconds of set value (Setting value 0 seconds = 0.5 ± 0.25 seconds) Set value is contact delay time ⁽⁹⁾		
Reset time		0.5 seconds or less ⁽⁹⁾		
Starting delay time		± 0.25 seconds of set value		
Influence of temperature		0.2% (For input span) / $23 \pm 10^\circ\text{C}$		
Influence of auxiliary supply voltage variation		0.1% (For input span) / Within variation range		
Operation period		About 0.1 second		
Response time		About 0.5 second ⁽⁹⁾ When a step change of 90% to 110% of the operating value setting is given (at CD = 0 seconds)		
Overload capacity	Voltage input	2 times 10 seconds and 1.5 times continuation of rated voltage.		
	Current input	10 times 5 seconds and 1.5 times continuation of rated current.		
	Aux. supply	1.5 times 10 seconds of rated voltage. Variable range upper limit continuous.		
Insulation resistance	Between electric circuit and case.			Above $50\text{M}\Omega$ at DC500V
	Between input, output terminals and auxiliary supply terminals.			
	Between input terminals and output terminals.			
	Between output terminals	2 contacts	Between AL1 and AL2	
		3 contacts	Between AL1 and AL2 and AL3	
4 contacts		Between AL1 • AL2 and AL3 • AL4 ⁽¹⁰⁾		
Power frequency withstand voltage	Between electric circuit and case.			AC2000V (50/60Hz) 1 minute. There must not be malfunction.
	Between input, output terminals and auxiliary supply terminals.			
	Between input terminals and output terminals.			
	Between output terminals	2 contacts	Between AL1 and AL2	
		3 contacts	Between AL1 and AL2	
Between AL1 • AL2 and AL3				
4 contacts	Between AL1 • AL2 and AL3 • AL4 ⁽¹⁰⁾			
Impulse withstand voltage	Between electric circuit and case.	5kV 1.2/50 μs . Both positive and negative polarity for 3 times each. There must not be malfunction.		
Vibration	Vibration of vibration frequency 16.7Hz, Double amplitude 1mm. In the direction of X Y Z for each 10 minutes. There must not be malfunction.			
Shock	Error : 98m/s^2 , X, Y, Z direction for each 3 times. Duration : 294m/s^2 , X, Y, Z direction for each 3 times.			
Power failure guarantee	Each set value is data-saved by non-volatilized memory.			
Material of case	Case : Flame resisting ABS resin , Name plate : Polyester film			
Color	Munsell N1.5 (Black)			
Operating temperature and humidity limits	-10 to $+55^\circ\text{C}$, 5 to 90%RH (Non condensing)			
Storage temperature limits	-25 to $+70^\circ\text{C}$			
Mass	Approx. 180g			
Accessories	Unit symbol sheet, Instruction manual			

Note⁽⁶⁾ Input is DC60mV to less than 1V, DC $\pm 60\text{mV}$ to less than $\pm 1\text{V}$. $\pm 0.2\%$ (% of input span)

Note⁽⁷⁾ Input is DC60mV to less than 1V, DC $\pm 60\text{mV}$ to less than $\pm 1\text{V}$. $\pm 0.2\%$ (% of input span) ± 1 digit.

Note⁽⁸⁾ If the scaling span is 10,000 or more (5 digits excluding the decimal point), it is $\pm 0.1\%$ (for input span) ± 2 digits. If the scaling span is 10,000 or more and the input is less than 1V, it is $\pm 0.2\%$ (for input span) ± 2 digits.

Note⁽⁹⁾ When the average number is once. If the average number is 4, 8, 16, or 32, the operating time and reset time will vary depending on the conditions.

Note⁽¹⁰⁾ In case of 4-contact output, there is no insulation between AL1 and AL2 and between AL3 and AL4.

● About transition of a contact

In DC load switching, transition of a contact may start and a contact may not return by uneven connection. A contact evaporates locally with arc heat, what carried out contact evaporation to + polarity \rightarrow - polarity carries out the adhesion deposition of this, and a single-sided convex opposite side serves as a concave.

(Measure) Be sure to use each relay within a rated load.

6. Trouble shooting

Abnormal phenomenon	Cause of estimated	Method of settlement
Not output	Power supply input is not applied	Please power supply-input-check and apply.
	Alarm setter trouble	Repair of alarm setter
	Input is not connected	Please confirm connection of input.
	Abnormal of input	Please confirm measurement value.
	Error of setting	Please confirm set value.
	Output is not connected.	Please confirm connection of output.
	Power-supply voltage is low.	Please confirm power-supply voltage.
Display is abnormal (Large error)	Power-supply voltage is not regulation range.	Please check power-supply voltage and give as regulation range.
	Input is abnormal.	Please give a measurement value as a check and a normal input.
	Error of set value	Please confirm set value.
	Alarm setter trouble	Repair of alarm setter
Display error (Small error)	Secular change of input measurement	Display is proofread again. (Reference of instruction manual 3.6 section)
Set value cannot be changed.	Error of the setting method	Please check setting method. (Reference of instruction manual 3.5 section.)
	Alarm setter trouble	Repair of alarm setter
An error is displayed.	ROM	SUM value error
	RAM	READ/WRITE error
	EEP	Saving value error
	A/D	A/D conversion error
		Repair of alarm setter 〔 In case of EEP error, press ENT key to enter setting mode. Check the setting value. 〕

7. Composition of type and specification code

Type		Specification code		
FSDLC		①	②	③
① Input (Input resistance)		② Output contact		③ Auxiliary supply
A3 : DC0 to 60mV (About 1MΩ)		1 : Alarm output 2 contacts (Change over contact [c contact])		F : AC·DC 80 to 264V 3.6VA (Rated voltage AC100/110V, 50/60Hz AC200/220V, 50/60Hz DC100/110V)
A5 : DC0 to 1V (About 1MΩ)		2 : Alarm output 3 contacts (Normally open contact [a contact])		
A6 : DC0 to 5V (About 1MΩ)		3 : Alarm output 3 contacts (Normally close contact [b contact])		
A7 : DC0 to 10V (About 1MΩ)		4 : Alarm output 4 contacts (Normally open contact [a contact])		5 : DC19 to 29V 2.5W (Rated voltage DC24V)
A8 : DC1 to 5V (About 1MΩ)		5 : Alarm output 4 contacts (Normally close contact [b contact])		
B3 : DC±60mV (About 1MΩ)		0 : Other		
B5 : DC±1V (About 1MΩ)				
B6 : DC±5V (About 1MΩ)				
B7 : DC±10V (About 1MΩ)				00 : Other (Product range Voltage input : 60mV to 60V Current input : 1mA to 50mA)
C3 : DC0 to 1mA (About 100Ω)				
C4 : DC0 to 5mA (About 100Ω)				
C5 : DC0 to 10mA (About 100Ω)				
C6 : DC0 to 16mA (About 100Ω)				
C7 : DC4 to 20mA (About 100Ω)				

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