

■ Common standard specifications

- High quality/high reliability

Highly reliable electronic parts are adopted.

Aging test of each part as well as burn-in aging test of the product under a high temperature are implemented.

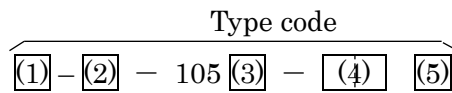
- PCB treatment

In order to reinforce insulation resistance stability of PCB surfaces and prevent the surfaces from insulation deterioration, B side of the PCB was cleaned and coated with high humidity resistant varnish after parts installation.

■ Type code designation

- Digital % scale type

- Actual scale type



- LCD type



(1) Scale		(2) Setting		(3) Option		(4) (5) Specification code
Mark	Scale	Mark	Setting	Mark	Option	Input specification, Auxiliary supply
SD	Actual scale	HL	Upper/lower limit setting	No mark	Standard	* Refer to specification code.
SDD	Digital % scale	HH	Upper/Upper limit setting	D	With contact delay circuit	
		LL	Lower/lower limit setting			
		H	Upper limit setting			
		L	Lower limit setting			

■ Standard specification

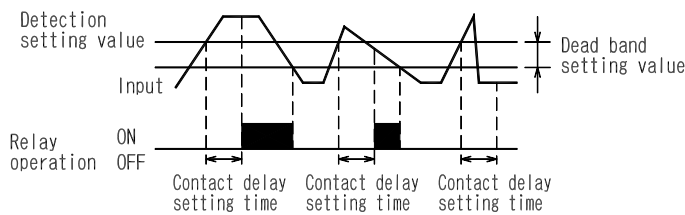
Item	Specification	
Type	SDD - □ -105 SD - □ -105	
Setting method	HL,HH,LL,H,L	
Setting range	0-99% 1% step (digital switch) Minimum input value~ Maximum input value	
Scale division	— Decide scale classification by maximum setting value MAX50 divisions	
Dead band	0.5-5% variable (% against input span)	
Start delay	0.5 sec. (up to 10 sec. manufacturable by specifying)	
Repeatability	±0.5%	
Setting accuracy	±1.0% ±3.0%	
Response speed	≤0.3 sec. 1C	
Output	Contact output	Each 1C relay contact output
	Contact capacity	AC120V, 1A (COS φ = 1) DC30V, 2A (resistance load)
Insulation resistance	Between electric circuit and outer case	≥50MΩ at DC500V
	Between input/power/contact	≥50MΩ at DC500V
Withstand voltage	Between electric circuit and outer case	AC2, 000V, 1 min, 50/60Hz
	Between input/power/contact	AC1, 500V, 1 min, 50/60Hz
Impulse withstand voltage	Between electric circuit and outer case	5kV 1.2/50μs positive/negative polarity, 3 times each
Appearance color	Munsell N1.5 (black)	
Operating temperature/ humidity range	-10+55°C, 30-85%RH (no condensation)	
Storage temperature range	-30+60°C	
Weight	450g	

Item		Specification
Type	SDLC-105	
Setting method	Anyone of HL, HH, LL, H, and L is settable.	
Setting range	Any value between -9999+9999	
Scaling division	Any value between -9999+9999	
Dead band	Any value between 0.5%-50.0%	
Start delay	Any value between 1-180 sec.	
Contact delay	Any value between 1-180 sec.	
Repeatability	±0.1%	
Setting accuracy	±2.0%	
Display accuracy	±0.2% ±1digit	
Response speed	Approx. 0.5 sec. 1C	
Output	Contact output	Each 1C relay contact output
	Contact capacity	AC120V, 1A (COS φ = 1) DC30V, 2A (resistance load)
Insulation resistance	Between electric circuit and outer case	≥ 50MΩ at DC500V
	Between input/power/contact	≥ 50MΩ at DC500V
Withstand voltage	Between electric circuit and outer case	AC2, 000V, 1 min, 50/60Hz
	Between input/power/contact	AC2, 000V, 1 min, 50/60Hz
Impulse withstand voltage	Between electric circuit and outer case	5kV 1.2/50μs positive/negative polarity
Appearance color	Case/socket: black (munsell N1.5) Rating plate: grey	
Operating temperature/humidity range	0+55°C, 30-85%RH (no condensation)	
Storage temperature range	-25+70°C	
Weight	380g	

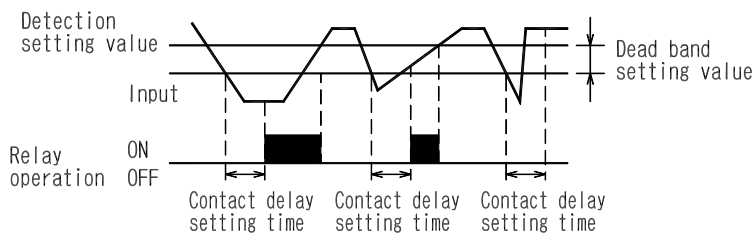
Relay operation

■ Contact delay function (definite time type of SDD and SD, SDLC)

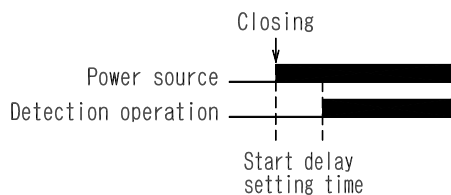
Relay operation during overvoltage detection



Relay operation during undervoltage detection



■ Start delay function (definite time type of SDD and SD, SVD, SDLC, SDDV)



Detecting operation starts in start delay setting time from power on.

ALARM SETTER

SDD - □ - 105 □ - □ □ □

DIGITAL % SCALE TYPE

■ Use

A digital % scale type setter for instrumentation. The device inputs DC voltage or DC current signal and outputs contact signal.



SDD-HL-105
(80×50×133mm/450g)

■ Features

1. Compact plug-in type (11 pin)
2. Alarm can be set easily by front digital switch.(Convert input to 0 -100%)
3. Relay contact output. (1C contact)
4. Red LED indication type, state of control is understandable in one glance.
5. Dead band range can be changed by front VR.
6. Built-in start delay circuit. (0.5 sec)
7. Built-in contact delay circuit (MAX. 10 sec) is also manufacturable. (option)
8. Control power source DC110V of integral construction is also manufacturable.
9. Precise resistance unit for measures against current input open is manufacturable, too.
(UR-1, selling separately)

■ Specification

Input (input resistance)		Auxiliary supply	Common specification
A1 : DC0-10mV (approx.1MΩ)	C3 : DC0-1mA (100Ω)	1 : AC100V±15%, 50/60Hz	Consumption VA: AC power source:3VA DC power source:3W Weight: AC power source:450g DC power source:450g Dead band: 0.5-5% (difference between operation value and return value) variable
A2 : DC0-50mV (approx.1MΩ)	C5 : DC0-10mA (100Ω)	2 : AC110V±15%, 50/60Hz	
A3 : DC0-60mV (approx.1MΩ)	C6 : DC0-16mA (100Ω)	3 : AC200V±15%, 50/60Hz	
A4 : DC0-100mV (approx.1MΩ)	C7 : DC4-20mA (100Ω)	4 : AC220V±15%, 50/60Hz	
A5 : DC0-1V (approx.1MΩ)	00 : other than those above	5 : DC24V±20%	
A6 : DC0-5V (approx.1MΩ)		6 : DC48V±20%	
A7 : DC0-10V (approx.1MΩ)		7 : DC110V±20%	
A8 : DC1-5V (approx.1MΩ)		0 : other than those above	
Input product range : Voltage input: DC10mV-250V Current input : DC1mA-100mA			

● Option Contact delay circuit (2 sec. Operation delay instantaneous return)

Contact starts to operate when input exceeded pickup value continuously for 2 sec., and returns when input falls below dropout value. The device can prevent the operation of contact that caused by instantaneous overload and other. Please specify as "with contact delay".

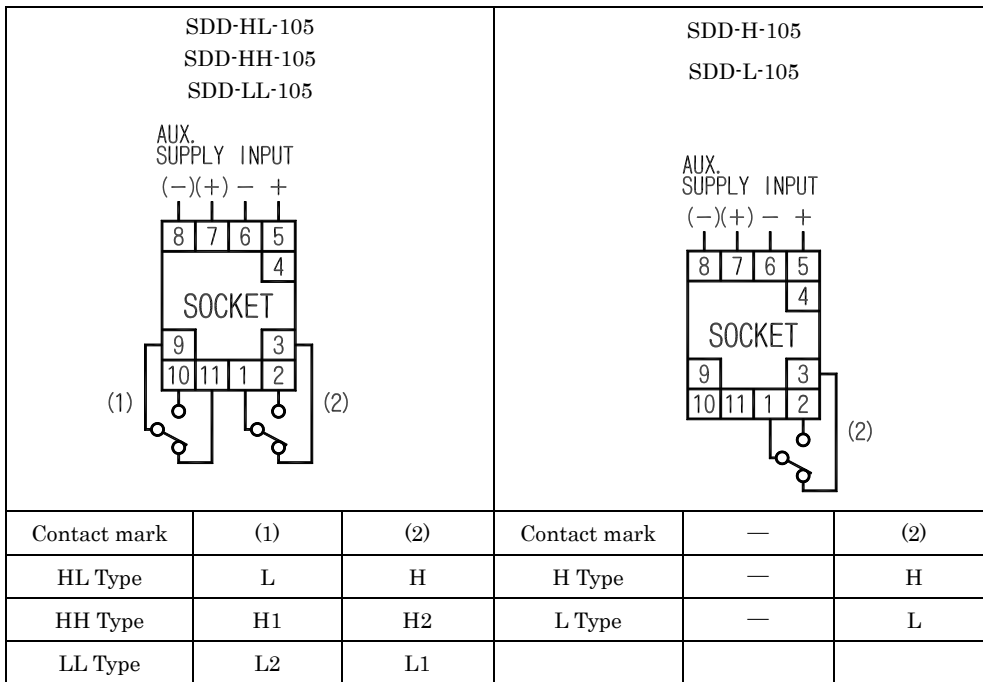
Type code: SDD - □ - 105 **D** - □ □ □

● UR-1 precise resistance unit (Selling separately)

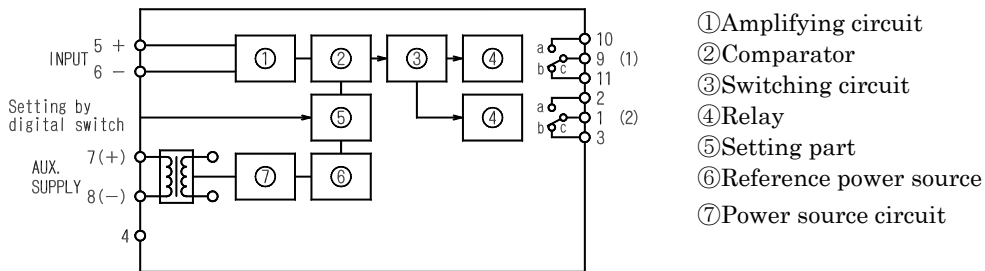
Use UR-1 combined with an alarm setter of voltage input. When changing the alarm setter in a hot line state at the time of current input, if measures against open are necessary, connect UR-1 to socket and convert it into a voltage signal before using it.

(UR-1, resistance specified)

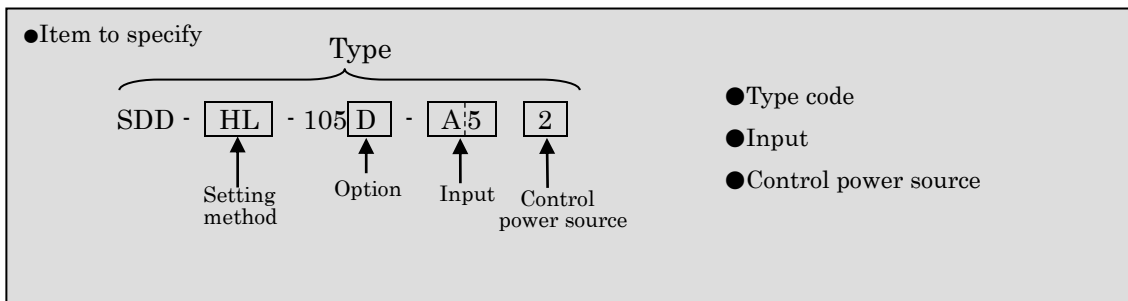
■ Connection diagram



■ Block diagram



■ Purchase specifications



ALARM SETTER

SD - □ - 105 □ - □ □ □

ACTUAL SCALE TYPE

■ Use

An actual scale type setter for instrumentation. The device inputs DC voltage or DC current signal and outputs contact signal.



SD-HL-105
(80×50×133mm/450g)

■ Features

1. Compact plug-in type (11 pin)
2. Alarm can be set easily by front VR because the device is actual scale type.
3. Relay contact output. (1C contact)
4. Two-color LED indication type, state of control is understandable at one glance.
(When not detected: green; When detected: red)
5. Dead band range can be changed by front VR.
6. Built-in start delay circuit. (0.5 sec)
7. Built-in contact delay circuit (MAX. 10 sec) is also manufacturable. (Option)
8. Precise setting by a digital switch is possible because the device is VR method.
9. Precise resistance unit for measures against current input open is manufacturable, too.
(UR-1, selling separately)

■ Specification

Input (input resistance)		Auxiliary supply	Common specification
<u>A1</u> : DC0-10mV (approx.1MΩ)	<u>C3</u> : DC0-1mA (100Ω)	<u>1</u> : AC100V±15%, 50/60Hz	Consumption VA: AC power source:3VA DC power source:3.5W Weight: AC power source:450g DC power source:450g Dead band: 0.5-5% (difference between operation value and return value) variable
<u>A2</u> : DC0-50mV (approx.1MΩ)	<u>C5</u> : DC0-10mA (100Ω)	<u>2</u> : AC110V±15%, 50/60Hz	
<u>A3</u> : DC0-60mV (approx.1MΩ)	<u>C6</u> : DC0-16mA (100Ω)	<u>3</u> : AC200V±15%, 50/60Hz	
<u>A4</u> : DC0-100mV (approx.1MΩ)	<u>C7</u> : DC4-20mA (100Ω)	<u>4</u> : AC220V±15%, 50/60Hz	
<u>A5</u> : DC0-1V (approx.1MΩ)	<u>00</u> : other than those above	<u>5</u> : DC24V±20%	
<u>A6</u> : DC0-5V (approx.1MΩ)		<u>6</u> : DC48V±20%	
<u>A7</u> : DC0-10V (approx.1MΩ)		<u>0</u> : other than those above	
<u>A8</u> : DC1-5V (approx.1MΩ)			
Input product range : Voltage input: DC10mV-250V Current input : DC1mA-100mA			

● Option Contact delay circuit (2 sec. Operation delay instantaneous return)

Contact starts to operate when input exceeded pickup value continuously for 2 sec., and returns when input falls below dropout value. The device can prevent the operation of contact that caused by instantaneous overload and other. Please specify as "with contact delay".

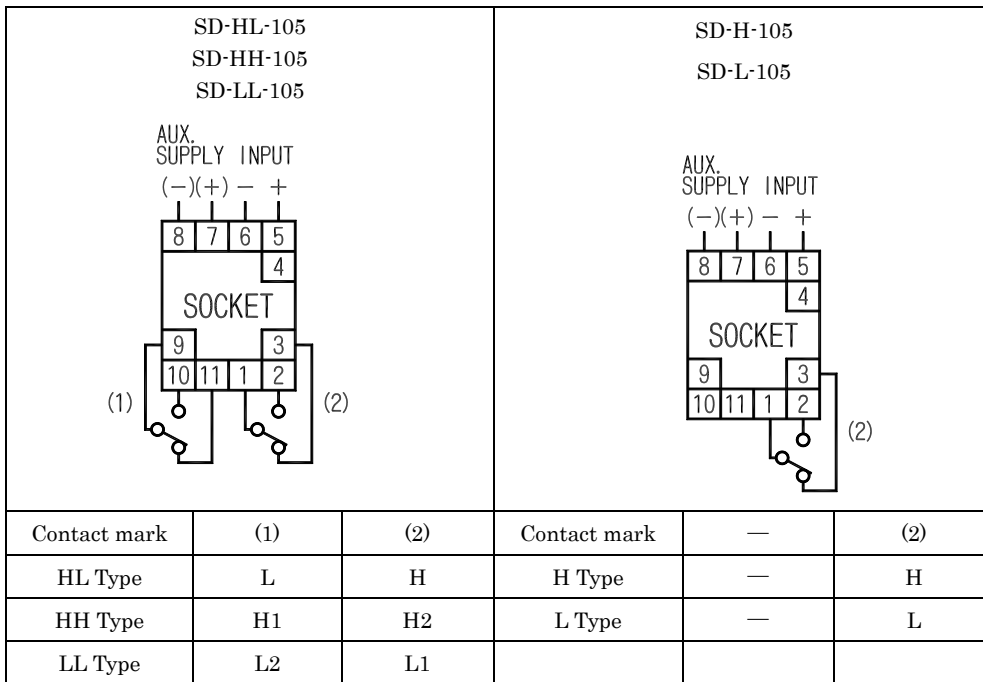
Type code: SD - □ - 105 D - □ □ □

● UR-1 precise resistance unit (Selling separately)

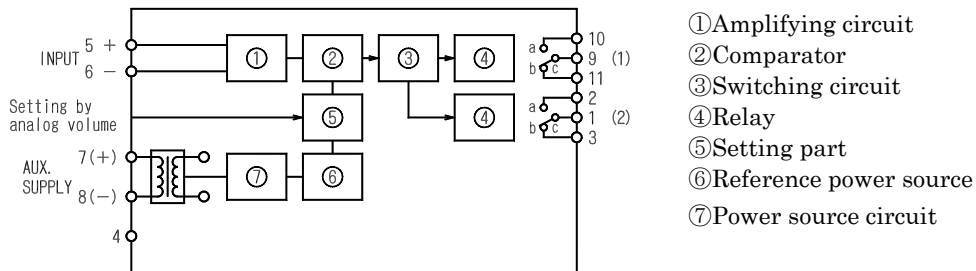
Use UR-1 combined with an alarm setter of voltage input. When changing the alarm setter in a hot line state at the time of current input, if measures against open are necessary, connect UR-1 to socket and convert it into a voltage signal before using it.

(UR-1, resistance specified)

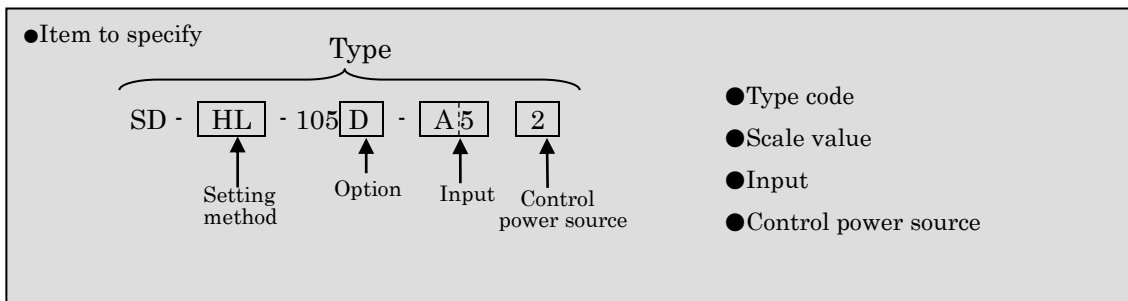
■ Connection diagram



■ Block diagram



■ Purchase specifications



AC VOLTAGE ALARM SETTER

SVD - □ - 105□ - □ □

DIGITAL % SCALE TYPE

■ Use

A digital % scale setter for instrumentation. The device inputs an AC voltage and outputs a contact signal.

■ Features

1. Compact plug-in type.
2. Alarm can be set easily by front digital switch. (Convert input to 0-100%)
3. Relay contact output. (1C contact)
4. Red LED indication type, state of control is understandable at one glance.
5. Dead band range can be changed by front VR.
6. Built-in start delay circuit. (0.5 sec)
7. Built-in contact delay circuit (MAX. 10 sec) is also manufacturable. (Option)



SVD-HL-105
(80×50×131mm/320g)

■ Specification

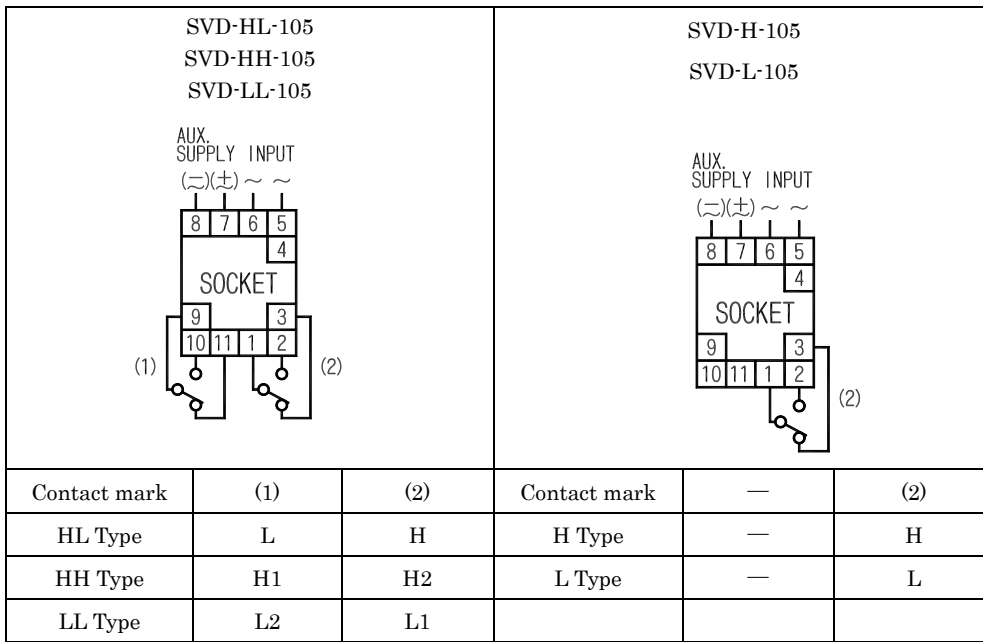
How to specify SVD - □ - 105□ - □ □				
Setting method	Contact delay circuit	Input (input current)	Auxiliary supply	Consumption VA
□ : Upper limit □ : Lower limit □□ : Upper/lower limit □□ : Lower/lower limit □□ : Upper/upper limit	□ : Without contact delay circuit (standard) □ : with (option)	□ : AC0-63.5V (110/√3) (1mA) □ : AC0-86.6V (150/√3) (1mA) □ : AC0-110V (1mA) □ : AC0-127V (220/√3) (1mA) □ : AC0-150V (1mA) □ : AC0-173.2V (300/√3) (1mA) □ : AC0-220V (1mA) □ : AC0-300V (1mA) □ : other than those above (rated frequency: 50/60Hz) product range: AC10-300V, 45-65Hz	□ : DC19-29V (DC24V±20%) □ : AC/DC80-264V AC100/110V ±20%,50/60Hz AC200/220V ±20%,50/60Hz DC100/110V±20%	AC /DC80-264V: AC power source:5.7VA DC power source:2.2W DC19-29V : 2.2W

● Option Contact delay circuit (2 sec. Operation delay instantaneous return)

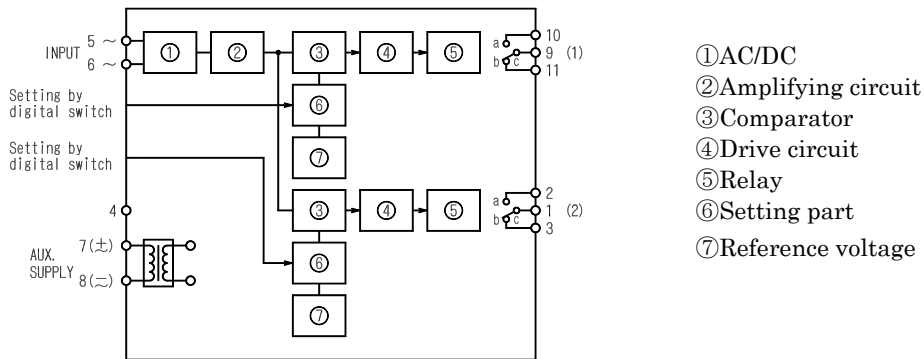
Contact starts to operate when input exceeded pickup value continuously for 2 sec., and returns when input falls below dropout value. The device can prevent the operation of contact that caused by instantaneous overload and other. Please specify as "with contact delay".

Type code: SVD - □ - 105□□ - □ □

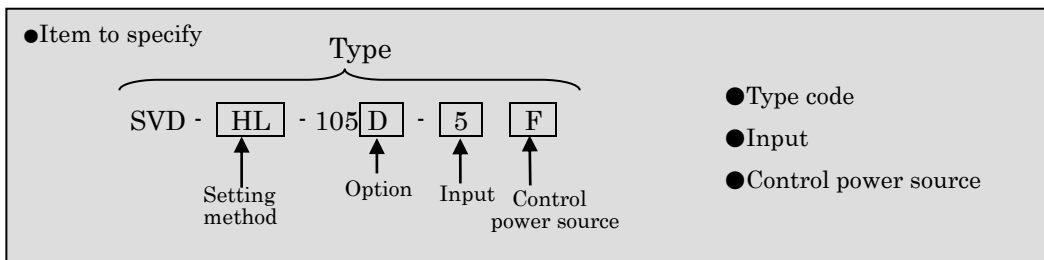
■ Connection diagram



■ Block diagram



■ Purchase specifications



ALARM SETTER

SDLC - 105 - □ □ □ □

LCD TYPE

■ Use

A digital % scale setter for instrumentation that inputs a DC voltage or DC current signal, compares the signal with preset signal, then outputs the over-and-short by two independent contact signals. Because the device is software compatible type, besides scale of input can be set at will in accordance with process quantity, each setting value (operation value, contact delay, etc) can be set and changed freely as well. Also, actual indication of input and each setting value can be displayed by a LCD (with back light) in 4 digit.



SDLC-105
(80×50×133mm/380g)

■ Features

1. Setting accuracy ±0.2%, indication accuracy ±0.2% ±1digit.
2. Withstand voltage between input/output/power source/outer case is AC2, 000V.
3. Display and setting of actual scale by LCD can be implemented freely by front SW button, also suitable for scaling change and so on.
4. Setting values are stored in a nonvolatile RAM and are free from the affection of a power failure.
5. By sufficient derating of parts used and reduction of internal heat generation, liability is improved.
6. Back light turns on during key operation. It turns off automatically 30 sec. after key operation finished.

■ Specification

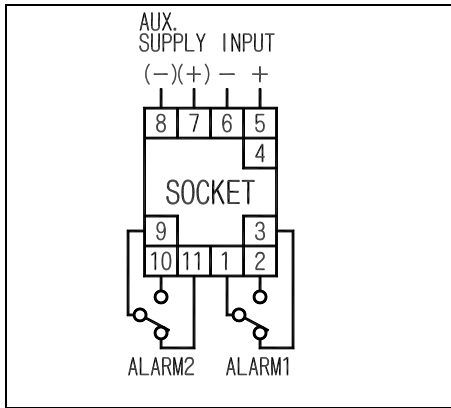
Input (input resistance)		Auxiliary supply
A4 : DC0-100mV (approx.1MΩ)	C3 : DC0-1mA (approx.100Ω)	1 : AC100V(±15%), 50/60Hz
A5 : DC0-1V (approx.1MΩ)	C4 : DC0-5mA (approx.100Ω)	2 : AC110V(±15%), 50/60Hz
A6 : DC0-5V (approx.1MΩ)	C5 : DC0-10mA (approx.100Ω)	3 : DC24V(±15%)
A7 : DC0-10V (approx.1MΩ)	C6 : DC0-16mA (approx.100Ω)	6 : DC48V(±15%)
A8 : DC1-5V (approx.1MΩ)	C7 : DC4-20mA (approx.100Ω)	7 : DC110V(+30%,-20%)
	00 : other than those above	0 : other than those above
Input product range : Voltage input: DC50mV-60V Current input : DC100 μ A-100mA Plus/minus input is not manufacturable.		VA consumption: AC power source4.5VA DC power source4.5W

● Factory preset

Product is shipped in the following setting if nothing was specified.

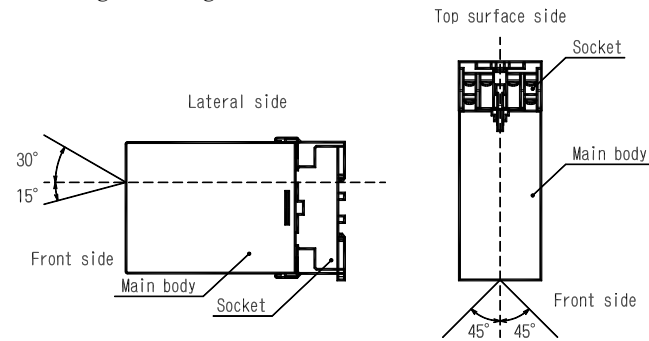
Item	Setting range	Product is shipped	
		With the following setting.	
		ALARM 1	ALARM 2
Scaling	-9999-9999	0.0-100.0	
Unit	%, m, °C, m3/h, ppm pH, Tpm, x10kg, Ω, kW	%	
Detection point	-9999-9999	70.0	30.0
Dead band	0.5-50.0%	3.0%	3.0%
Output mode	H, L, OFF and excitation/ non-excitation	H, excitation	L, excitation
Start delay (SD)	1-180S	5S	
Contact delay (CD)	0-180S	0S	0S

■ Connection diagram



● Visual angle range of LCD

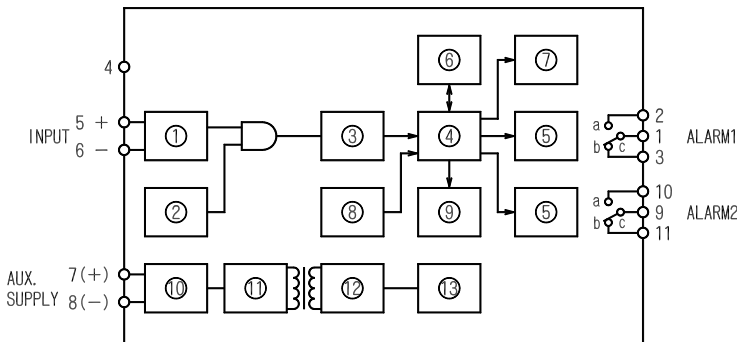
Because contrast of a LCD varies with the angles from which it is viewed, install it to the most suitable position in a panel according to the figure below.



● UR-1 precise resistance unit (Selling separately)

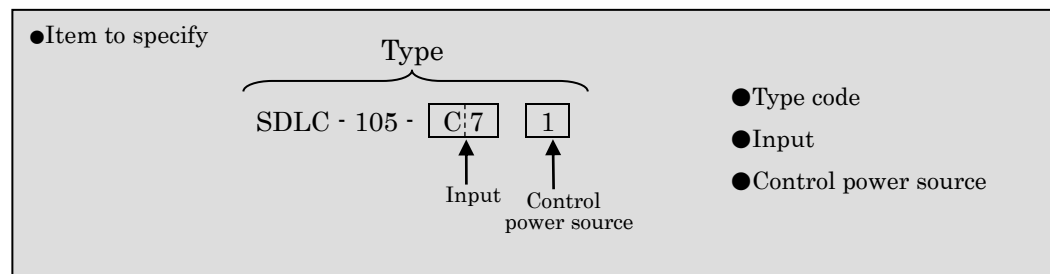
Use UR-1 combined with an alarm setter of voltage input. When changing the alarm setter in a hot line state at the time of current input, if measures against open are necessary, connect UR-1 to socket and convert it into a voltage signal before using it. (UR-1, resistance specified)

■ Block diagram



- ①Pulse width modulation
- ②Reference clock
- ③Pulse counter
- ④CPU operational circuit
- ⑤Relay
- ⑥Nonvolatile RAM
- ⑦LED indicator
- ⑧Operating switch
- ⑨LCD
- ⑩Rectification smoothing
- ⑪DC/DC power source
- ⑫Current smoothing
- ⑬Constant voltage circuit

■ Purchase specifications



DEVIATION ALARM SETTER

SDDV - 105 - □ □ □ □

LCD TYPE

■ Use

A compact plug-in setter for instrumentation. The device inputs two DC signals, calculates deviation between inputs and deviation of each input, compares the results with preset signal, then outputs the over-and-short. Because the device is software compatible, besides full scale of input can be set at will in accordance with process quantity, each setting value (operation value, moving average constant, contact delay, etc) can be set and changed freely as well. Also, input (actual scale) and each setting value can be displayed by a LCD (with back light) in 4 digits.

■ Features

1. Setting accuracy $\pm 0.5\%$
2. Indication accuracy $\pm 0.5\% \pm 1$ digit.
3. Withstand voltage between input/output/power source/outer case is AC2, 000V.
4. Display and setting of actual scale by LCD can be done freely with front SW button, also suitable for scaling change and so on.
5. Setting values are stored in a nonvolatile RAM and are free from the affection of a power failure.
6. By sufficient derating of parts used and reduction of internal heat generation, liability is improved.
7. Back light turns on during key operation. It turns off automatically 30 sec. after key operation finished.

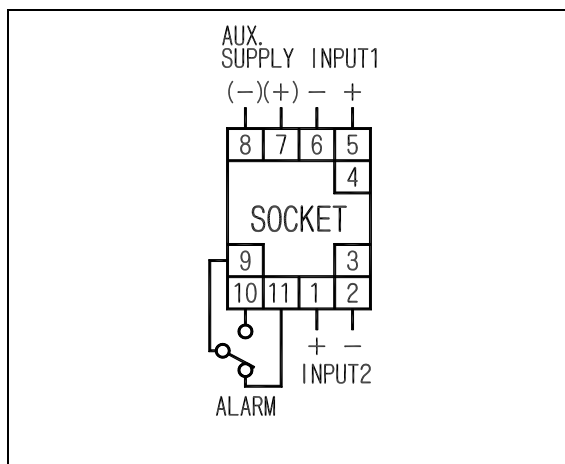
■ Specification

Input (input resistance)		Auxiliary supply
A4 : DC0-100mV (approx.1M Ω)	C3 : DC0-1mA (approx.100 Ω)	1 : AC100V($\pm 15\%$), 50/60Hz
A5 : DC0-1V (approx.1M Ω)	C4 : DC0-5mA (approx.100 Ω)	2 : AC110V($\pm 15\%$), 50/60Hz
A6 : DC0-5V (approx.1M Ω)	C5 : DC0-10mA (approx.100 Ω)	3 : DC24V($\pm 15\%$)
A7 : DC0-10V (approx.1M Ω)	C6 : DC0-16mA (approx.100 Ω)	6 : DC48V($\pm 15\%$)
A8 : DC1-5V (approx.1M Ω)	C7 : DC4-20mA (approx.100 Ω)	7 : DC110V(+30%,-20%)
	00 : other than those above	8 : DC100V(+43%,-12%)
		0 : other than those above (AC200/220V is not manufacturable.)
Input product range : Voltage input: DC50mV-60V Current input : DC100 μ A-100mA		VA consumption: AC power source4.5VA DC power source4.5W



SDDV-105
(80×50×133mm/380g)

■ Connection diagram



● UR-1 precise resistance unit (Selling separately)

Use UR-1 combined with an alarm setter of voltage input. When changing the alarm setter in a hot line state at the time of current input, if measures against open are necessary, connect UR-1 to socket and convert it into a voltage signal before using it.

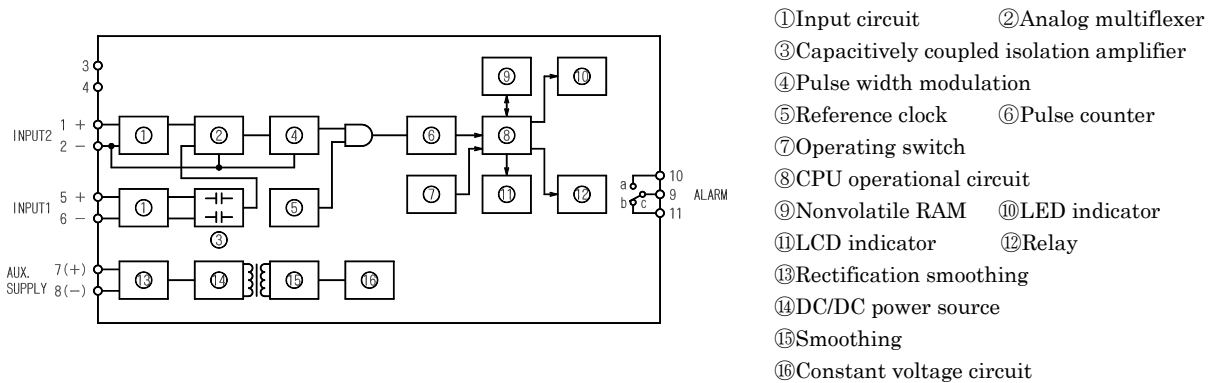
(UR-1, resistance specified)

● Factory preset

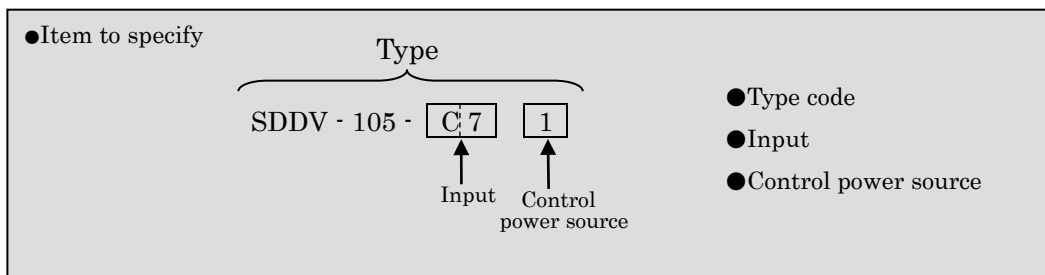
Product is shipped in the following setting if nothing was specified.

Item		Setting range	Factory preset
Measurement display (display against 0.0-100.0% of input span)	Reference input	-9999-9999 -99.9-999.9 -9.99-99.99	0.0-100.0
	Measurement input	0.000-9.999 (decimal point can be set at will)	
Display of deviation between inputs (Reference input – measurement input)		by setting of measurement display	0.0-100.0
Unit display		m, Tpm	m
Deviation action value between inputs (moving average detection, actual scale)		≥ 4% against full scale of measurement actual scale.	10.0
Deviation action value of individual input (instantaneous detection, actual scale)		(can not be set to be less than 4%)	30.0
Dead band (% against input span)	At the time of deviation between inputs	0.5-50%	3.0%
Output mode		Excitation/ non-excitation	Excitation
Contact delay	At the time of deviation between input	0-30S	1S
(C.D.)	At the time of deviation of individual input		1S
Start delay (S.D.)		1-30S	5S
Calibration (% against input span)	Bias	-9.99-9.99%	0.00
	Span	-9.99-9.99%	0.00
Sampling time (S)		1-30S	1S
Number of data sampling (N)		1-8	8

■ Block diagram



■ Purchase specifications



■ Dimensions (mm)

Fig.1

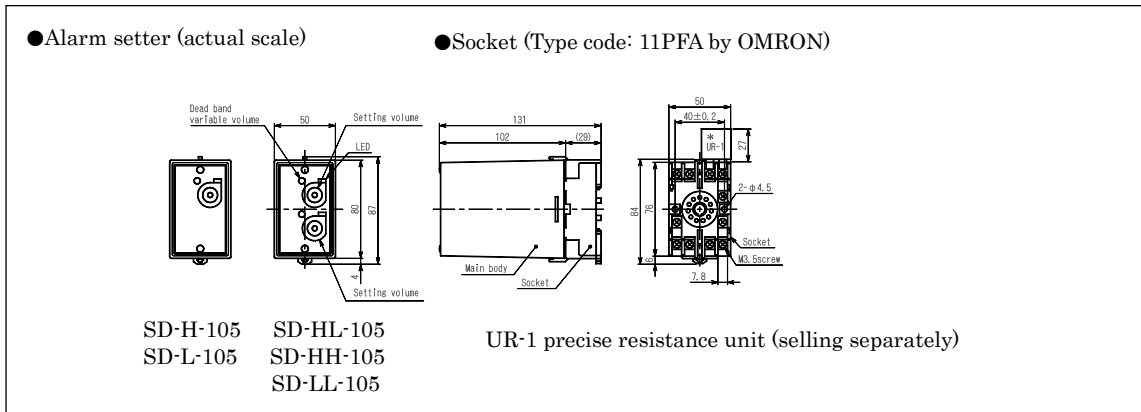


Fig.2

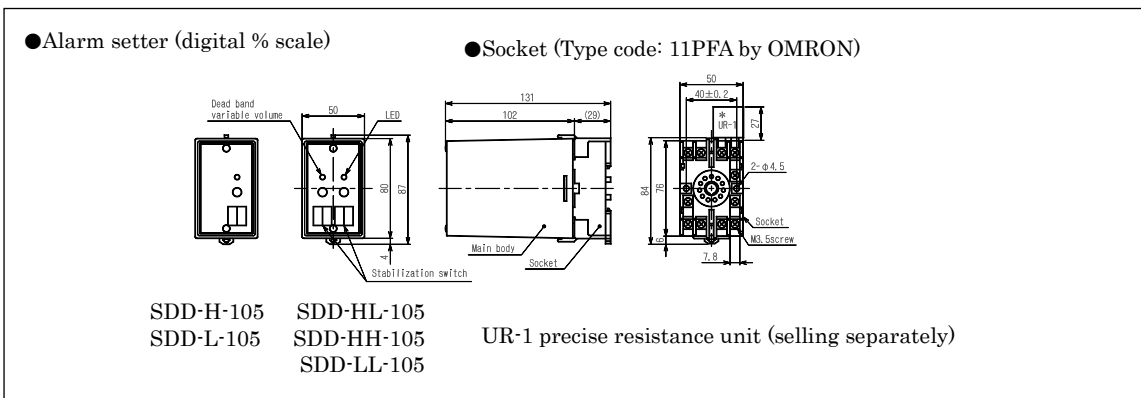
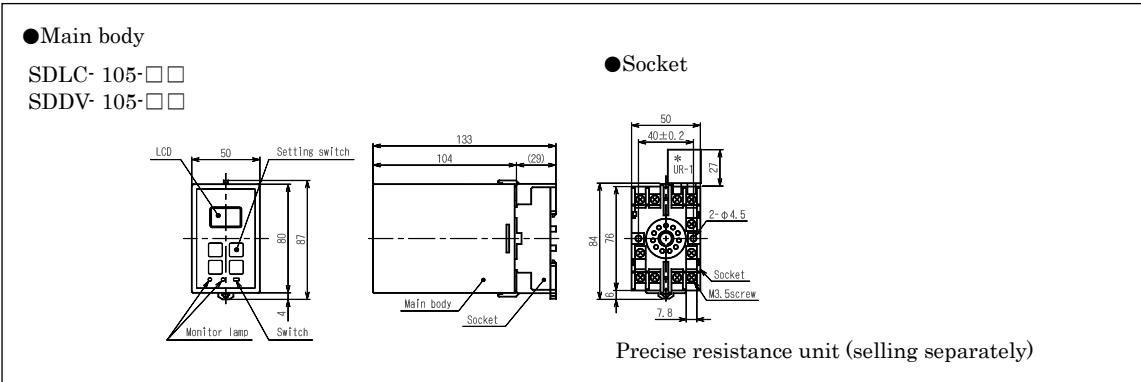


Fig.3



■ Multiple unit installation (mm)

