

General Specifications

Model SALD (Style S)
mV and Temperature Alarm Unit

YEW SERIES 80

GS 01B04K02-02E

■ GENERAL

The SALD mV and Temperature Alarm Unit accepts a mV DC, thermocouple or RTD input signal, compares the input signal with an alarm setpoint, and outputs an alarm signal. One or two absolute alarm outputs can be provided on one input. Direct/reverse action can also be set to each of the alarm setpoints. Alarm LED is provided on the front panel for confirming alarm relay action (when relay is energized).

A PC (VJ77) or the JHT200 Handy Terminal* is used for setting the Alarm Unit parameters. For the SALD with display setter (SALD-□□4), input indication and alarm setpoints can be set on the front panel.

With the VJ77 Parameter Setting Tool you can do the following:

- Read/write all parameters at once
- Save read parameters to a file
- Copy parameters to other devices of the same model and suffix code (only with style code R or S).

*: When connecting a PC (VJ77) or the JHT200 Handy Terminal, the adapter for modular-jack (model E9786WH) is required.
When using the BT200 BRAIN Terminal of YOKOGAWA Electric Corporation, the communication cable of 5-pin connector type (model F9182EE) and the adapter for modular-jack (model E9786WH) are required.

■ STANDARD SPECIFICATIONS

Input Signals

Input: mV DC, thermocouple or RTD
Number of input: 1

Input Type		Measuring Range
mV DC		0 to 100 mV DC
Thermocouple (*1)	Type K	-270.0 to 1372.0°C
	Type T	-270.0 to 400.0°C
	Type J	-210.0 to 1200.0°C
	Type E	-270.0 to 1000.0°C
	Type B	50.0 to 1820.0°C
	Type R	-50.0 to 1768.0°C
	Type S	-50.0 to 1768.0°C
	Type N (*3)	-270.0 to 1300.0°C
	Type W3 (*3)	0 to 2315°C
	Type W5 (*3)	0 to 2315°C
RTD (*2)	JPt100	-200.0 to 510.0°C
	Pt50	-200.0 to 649.0°C
	Pt100 (ITS-90)	-200.0 to 850.0°C
	Pt100 (IPTS-68)	-200.0 to 660.0°C

*1: Thermocouple JIS C 1602, IEC 60584-1 (ITS-90)
TypeK, T, E, J, R, S, B, N, W3(Note 1), W5(Note 2)
Note 1: ASTM E988 Standard: W97Re3-W75Re25
(tungsten97% rhenium3%-tungsten75% rhenium25%)
Note 2: ASTM E988 Standard: W95Re5-W74Re26
(tungsten95% rhenium5%-tungsten74% rhenium26%)



- *2: RTD JIS C 1604, IEC 60751 (ITS-90) Pt100
JIS C 1604: 1989, DIN (IPTS-68) Pt100
JIS C 1604: 1989, JPt100
JIS C 1604: 1981, Pt50 JIS C 1604
- *3: For SALD-7 type only

Measurement unit: °C, °F(*), K, mV

*: When specify the option code "/FCAL".

Input/Output Resistance

mV DC, Thermocouple:
Input resistance 1 MΩ,
External input resistance 500 Ω or less
RTD: Input leadwire resistance 10 Ω/lead or less

Output Signals

Output: Relay contact
Contact Capacity:
100 V AC, 1 A (resistive load)
220 V AC, 0.5 A (resistive load)
30 V DC, 1 A (resistive load)
110 V DC, 0.1 A (resistive load)
Contact Life Expectancy: 600,000 times
Number of Outputs: 1 (SALD-□1□) or 2 (SALD-724)

Alarm Functions

Alarm Action: 1 input, 1 absolute alarm (SALD-□1□)
1 input, 2 absolute alarms (SALD-724)

Alarm Settings

Absolute Alarm Setpoint:
-19999 to +32000 (engineering unit)
Hysteresis: 0 to 32000 (engineering unit)
Alarm ON/OFF Delay: 0 to 999 sec.
Direction of Alarm Action: Direct/Reverse
SALD-□□0 Selection by the parameter.
SALD-□□4 Selection by the jumper switch.

Direction of Alarm Relay Action (at normal operation):
De-energized/Energized

Direction of Alarm Relay Action: De-energized setting at normal operation

Action	Input value < Setpoint	Setpoint < Input value
Direct	Relay de-energized	Relay energized
Reverse	Relay energized	Relay de-energized

Direction of Alarm Relay Action: Energized setting at normal operation

Action	Input value < Setpoint	Setpoint < Input value
Direct	Relay energized	Relay de-energized
Reverse	Relay de-energized	Relay energized

Alarm Outputs

1 transfer contact for each setting

NO: "Normally Open" means open when relay is not energized.

NC: "Normally Closed" means closed when relay is not energized.

Burnout Function: UP/DOWN/OFF

SALD-□□0 Selection by the parameter

SALD-□□4 Selection by the jumper switch

Burnout Time: 60 sec.

Wiring Resistance Correction Function:

Corrects an error by wiring resistance using the parameter.

BRAIN Communication Function:

Use a PC (VJ77) or the JHT200 Handy Terminal* for setting the alarm action and specifying the function.

*: When connecting a PC (VJ77) or the JHT200 Handy Terminal, the adapter for modular-jack (model E9786WH) is required.

When using the BT200 BRAIN Terminal of YOKOGAWA Electric Corporation, the communication cable of 5-pin connector type (model F9182EE) and the adapter for modular-jack (model E9786WH) are required.

Indication Setting Function (SALD-□□4)

Digital indicator:

5-digit 7-segment LED (red)
Indication range; -19999 to +32000
(decimal point position selectable)
PV is displayed when SP indicator is not lit.

LED indicators

Alarm relay action indicator
(ALM1/ALM2; yellow)
Lit at relay energized state.
Alarm setpoint indicator
(SP1/SP2; green)
Lit when alarm setpoint is displayed.
(ALM2 and SP2 are provided on
SALD-724 only.)

Key switches (can set alarm setpoint)

Setting switches (→, ↑, SET, △) 4
Enable switch (ENBL) 1

Jumper switch

Alarm actions 1/2, burnout action, ON/
OFF of RJC

Indication Function (SALD-□□0):

Digital indicator is not provided.

LED indicator (ALM1: yellow)

Alarm action indicator (ALM1)
Lit at relay energized state.

■ MOUNTING AND APPEARANCE

Mounting: Indoor rack mounting

Wiring

Signal wiring: ISO M4 size (4 mm) screws on terminal block

Power and Ground wiring

100 V version: JIS C 8303 two-pin plug with earthing contact

Cable Length: 300 mm

Power supply terminal type (option code /TB)

220 V version: CEE 7 VII (CENELEC standard) plug (option code /A2ER)

Cable length: 300 mm

Power supply terminal type (option code /A2TB)

External Dimensions:

(Height× Width× Depth from the mounting face)

180× 48× 300 (mm)

Weight: 1.7 kg (including rack-mounting case)

■ STANDARD PERFORMANCE

Input accuracy: ± 0.5% (*4)/measuring range

Note that for thermocouple input, add the reference junction compensation accuracy to the accuracy above.

Reference Junction Compensation Accuracy

For temperatures 0°C and over:

±0.5°C (except for Types R and S)

±1.0°C (for Types R and S)

For temperatures below 0°C: Multiply accuracy for temperatures over 0°C by K, where

$$K = \frac{(\text{Thermocouple output change}/^{\circ}\text{C near } 0^{\circ}\text{C})}{(\text{Thermocouple output change}/^{\circ}\text{C at measurement temperature})}$$

Reference junction compensation is not performed for type B.

Alarm Setting Accuracy: Same as the input accuracy.

Repeatability of alarm action: Same as the input accuracy.

*4: Types K, T, E and N: Input accuracy for the temperature below -200°C is ±2.5%.

Type B: Input accuracy for the temperature below 600°C is ±2.5%.

Maximum Power Consumption

Type	Power Supply		
	24 V DC (mA)	100 V AC (VA)	220 V AC (VA)
SALD-□1□	35	3.2	4.7
SALD-724	45	3.8	5.3

■ POWER SUPPLY AND ISOLATION

Power Supply Rated Voltage:

100 V version:

24-110 VDC \pm , -10 % , +10 % , 60 mA

100-120 VAC \sim , -10 % , +10 % , 50/60 Hz , 6.0 VA

220 V version:

135-300 VDC \pm , -10 % , +10 % , 10 mA

200-240 VAC \sim , -10 % , +10 % , 50/60 Hz , 8.0 VA

Power Supply Input Voltage: AC/DC both usage

100 V version: DC drive 20 to 130 V , no polarity

AC drive 80 to 138 V , 47 to 63 Hz

220 V version: DC drive 120 to 340 V , no polarity

AC drive 138 to 264 V , 47 to 63 Hz

Insulation Resistance

Between Input/Alarm output and Ground:

100 M Ω /500 V DC

Between Power and Ground:

100 M Ω /500 V DC

Dielectric Strength

Between Input terminals and Ground:

500 V AC for 1 minute

Between Alarm output terminal/Power and Ground:

1000 V AC for 1 minute (100 V version)

1500 V AC for 1 minute (220 V version)

■ NORMAL OPERATING CONDITIONS

Ambient Temperature: 0 to 50°C

Ambient Humidity: 5 to 90% relative humidity
(non-condensing)

Operating environment: Area free of hydrogen sulfide gas and other corrosive gases and dust and where the device is not exposed to sea breeze or direct sunlight.

Continuous vibration: (at 5 to 9 Hz) Half amplitude of 1.5 mm or less
(at 9 to 150 Hz) 4.9m/s² or less,
1 oct/min for 90 minutes each
in the three axis directions

Impact: 49 m/s² or less, 11 ms, 3 axes, 6 directions, 3 times each

Installation altitude: 2,000 m or less above sea level

Warm-up time: 15 minutes or more after the power is turned on

■ TRANSPORT AND STORAGE CONDITIONS

Temperature: -25 to 70°C

Temperature change rate: 20°C per hour or less

Humidity: 5 to 95%RH (no condensation)

■ OPTIONS

/NHR: Without rack case (internal unit only)

/FBP: Power supply fuse bypass

/LOCK: Power supply plug with lock

/WSW: With spring washer

/REK: Mount to same line with EK series rack

/TB: With power supply terminal

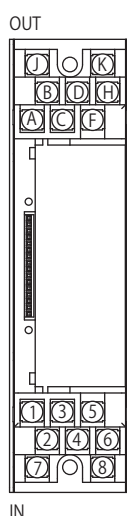
/A2TB: 220V version with power supply terminal

/A2ER: 220V version with power supply plug

/FCAL: Fahrenheit range

■ TERMINAL CONNECTIONS

Terminal arrangement



Terminal Designation	Description
A	NC
B	COM
C	
D	
F	NC
H	COM
J	NO
K	NO

Alarm output 1 (terminals A, B, C, D)
Alarm output 2 (*5) (terminals F, H, J, K)

Do not connect to the output terminal when the terminal is not in use.

*5: For SALD-724 only.

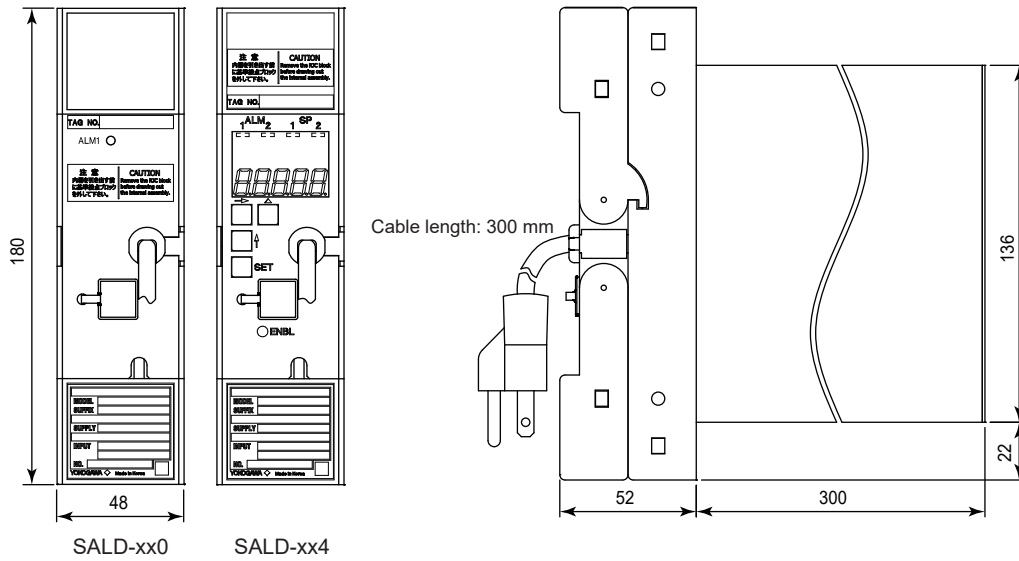
Terminal Designation	Description	
	SALD-1□□, 2□□	SALD-3□□
1	+	A
2	-	B
3		
4		
5		
⑥	(RJC block installation terminal)	B
7		
8		

Input 1 (terminals 1, 2, 3, 4, 5, 6, 7, 8)

For SALD-7□□, the connection depends on the selected sensor type (mV DC, thermocouple or RTD).

EXTERNAL DIMENSIONS

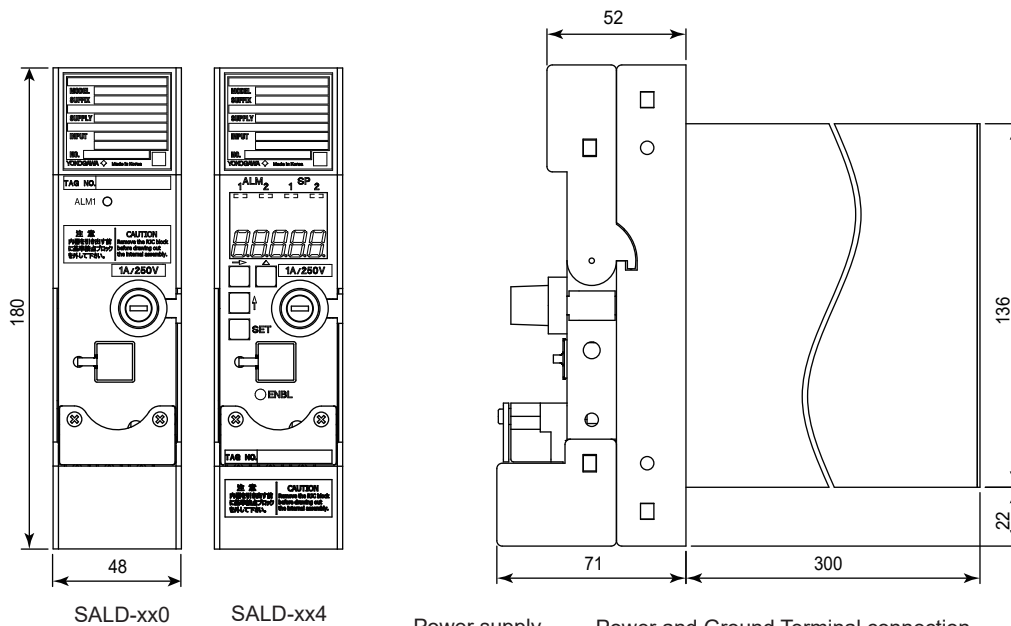
Power supply plug type



Trigonometry
 Unit: mm
 General tolerance = $\pm(\text{value of tolerance class IT18 based on JIS B 0401-2016}) / 2$

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Power supply terminal type(option /TB or /A2TB)



Power supply terminal block



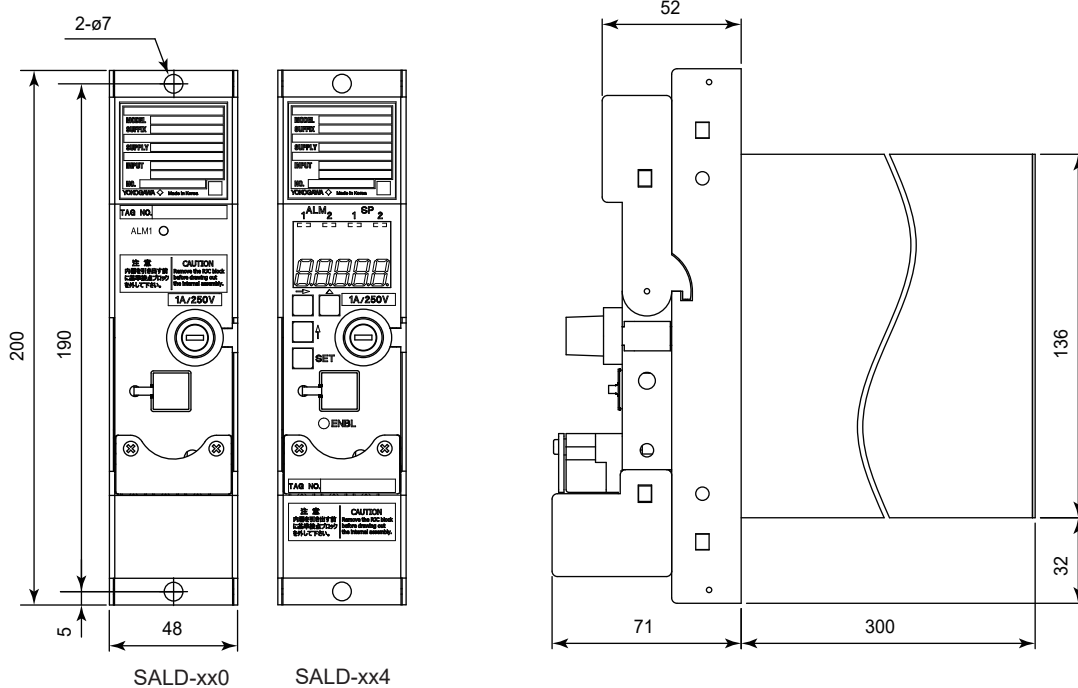
Power and Ground Terminal connection
 (Connection screw: M4)

Symbol	Description
L	+ > Power supply
N	
⊥	Ground

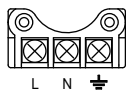
Trigonometry
 Unit: mm
 General tolerance = $\pm(\text{value of tolerance class IT18 based on JIS B 0401-2016}) / 2$

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Power supply terminal type(option /REK)



Power supply terminal block



Power and Ground Terminal connection (Connection screw: M4)

Symbol	Description
L	+ > Power supply
N	- > Power supply
⏏	Ground

Trigonometry

Unit: mm

General tolerance = ±(value of tolerance class IT18 based on JIS B 0401-2016) / 2

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MODEL AND SUFFIX CODES

Model	Suffix Codes	Option Codes	Descriptions
SALD			mV and Temperature Alarm Unit
Input Signal	-1 -2 -3 -7		mV DC input Thermocouple input RTD input Universal input (mV, TC, RTD input)
Alarm	1 2		1 input, 1 setpoint absolute alarm 1 input, 2 setpoints absolute alarm
Display Setter	0 4		Not provided Provided
Selectable Combination Suffix Codes SALD-110/-114 SALD-210/-214 SALD-310/-314 SALD-710/-714/-724	-MV -TK -TT -TJ -TE -TB -TR		mV DC Type K (ITS90, JIS C1602) Type T (ITS90, JIS C1602) Type J (ITS90, JIS C1602) Type E (ITS90, JIS C1602) Type B (ITS90, JIS C1602) Type R (ITS90, JIS C1602)
Auxiliary Codes SALD-1□□: "-MV" SALD-2□□: "-TK" to "-TS" SALD-3□□: "-PA" to "-PD" SALD-7□□: "-UN"	-TS -PA -PB -PD -UN		Type S (ITS90, JIS C1602) JPt100 (JIS'89) Pt50 (JIS'81) Pt100 (ITS-90, JIS C1604) Universal input (mV, TC, RTD input)
Style Code		*S	Style S
Option Codes (*1)(*2)(*3)		/NHR /FBP /LOCK /WSW /REK /TB /A2TB /A2ER /FCAL	Without rack case Power supply fuse bypass Power supply plug with lock With spring washer Mount to same line with EK series rack With power supply terminal 220V version with power supply terminal 220V version with power supply plug Fahrenheit range

*1: /LOCK, /REK, /TB, /A2TB, and /A2ER cannot be specified together.

*2: /FBP, /A2TB, and /A2ER cannot be specified together.

*3: When setting the temperature unit with "deg F", specify the option code /FCAL.

ACCESSORIES

Alarm label: 1 sheet

ORDERING INSTRUCTIONS

Specify the following when ordering:

1. Model, suffix code and auxiliary code, and optional suffix code, if necessary
2. Input sensor type (SALD-7□□ only): Mandatory specification
Select a sensor type (see table of Input Type on page 1).
If not specified: Pt100(ITS-90)
3. Burnout selection: Optional Specification
Select from UP, DOWN or OFF.
If not specified: OFF

BASIC CONDITIONS AND INDIVIDUAL CONTRACTS AT THE TIME OF PURCHASE

The warranty for this product is defined in the basic conditions and individual contracts at the time of purchase. The individual conditions are as follows.

- **Warranty period of firmware**

The warranty conditions for the firmware installed in this products are same as that of the hardware.