

# General Specifications

## Model SALD (Style R) 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).

The JHT200 Handy Terminal (\*1) 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.

\*1: When connecting 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	
Type K (ITS-90, JIS'95)	-270.0 to 1372.0°C
Type T (ITS-90, JIS'95)	-270.0 to 400.0°C
Type J (ITS-90, JIS'95)	-210.0 to 1200.0°C
Type E (ITS-90, JIS'95)	-270.0 to 1000.0°C
Type B (ITS-90, JIS'95)	50.0 to 1820.0°C
Type R (ITS-90, JIS'95)	-50.0 to 1768.0°C
Type S (ITS-90, JIS'95)	-50.0 to 1768.0°C
Type N (ITS-90, JIS'95)	-270.0 to 1300.0°C
Type W3 (*2) (ASTM E988)	0 to 2315°C
Type W5 (*3) (ASTM E988)	0 to 2315°C
RTD	
JPt100 (JIS'89)	-200.0 to 510.0°C
Pt50 (JIS'81)	-200.0 to 649.0°C
Pt100 (ITS-90, JIS'97)	-200.0 to 850.0°C
Pt100 (IPTS-68, JIS'89)	-200.0 to 660.0°C

\*2: ASTM E988 Standard: W97Re3-W75Re25 (tungsten97% rhenium3%-tungsten75% rhenium25%)

\*3: ASTM E988 Standard: W95Re5-W74Re26 (tungsten95% rhenium5%-tungsten74% rhenium26%)

#### 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 the JHT200 Handy Terminal <sup>(\*)</sup> for setting the alarm action and specifying the function.
- 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-pole plug with earthing contact
    - 220 V version: CEE 7 VII (CENELEC standard) plug
  - Cable Length: 300 mm
- External Dimensions:
  - (Height×Width×Depth from the mounting face)
  - 180×48×300 (mm)
- Weight: 1.7 kg (including rack case)

## ■ STANDARD PERFORMANCE

- Input accuracy:  $\pm 0.5\%$  <sup>(\*)</sup>/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:
    - $\pm 0.5^\circ\text{C}$  (except for Types R and S)
    - $\pm 1.0^\circ\text{C}$  (for Types R and S)
  - For temperatures below 0°C: Multiply accuracy for temperatures over 0°C by K, where
 
$$K = \frac{(\text{Thermocouple output change}/^\circ\text{C near } 0^\circ\text{C})}{(\text{Thermocouple output change}/^\circ\text{C at measurement temperature})}$$
- 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  $\pm 2.5\%$ .  
Type B: Input accuracy for the temperature below 600°C is  $\pm 2.5\%$ .
- Maximum Power Consumption

Type	Power Supply		
	24 V DC (mA)	100 V AC (VA)	220 V AC (VA)
SALD-□□1□	60	5.4	8.4
SALD-724	70	5.8	8.7

- Insulation Resistance
  - Between Input/Alarm output and Ground:
    - 100 M $\Omega$ /500 V DC
  - Between Power and Ground:
    - 100 M $\Omega$ /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)
- Power Supply: 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

## ■ OPTIONS

- /A2ER : 220 V power supply (plug connection)
- /NHR : No rack case (internal unit only)
- /TB : Power supply terminal type

## ■ ACCESSORIES

- Fuse (1A) : 1
- Alarm label : 1 sheet

## ■ TERMINAL CONNECTIONS

Terminal Designation	Description
1	
2	
3	
4	
5	
⑥	(RJC block installation terminal)
7	B
8	

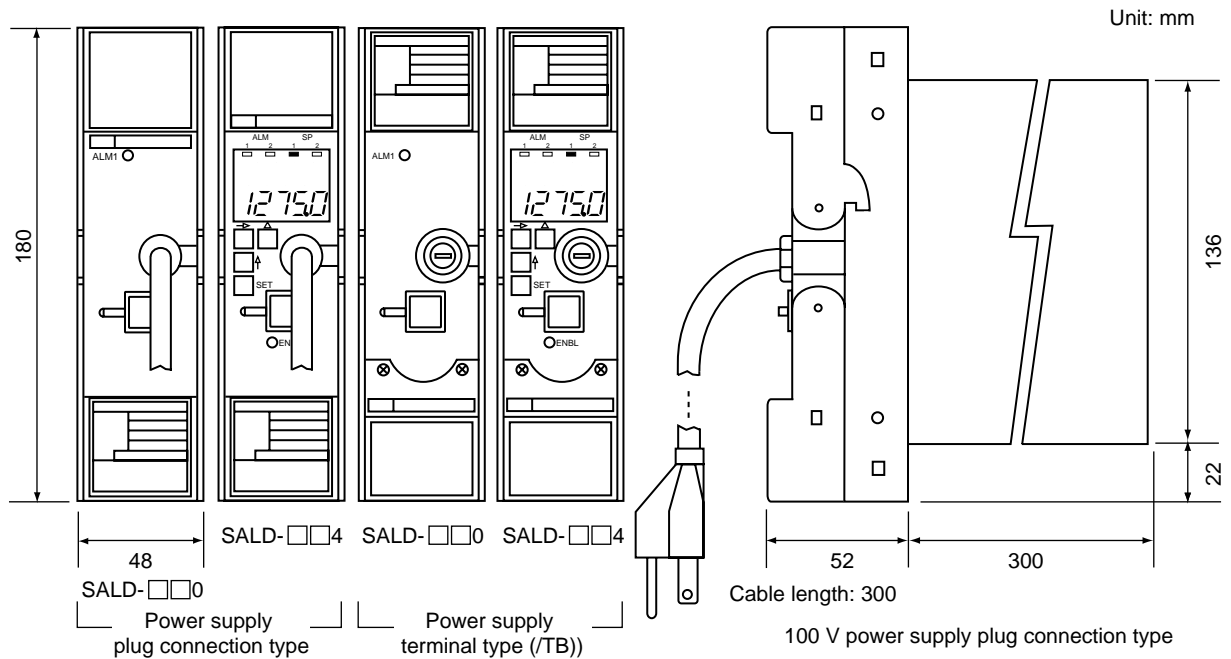
For SALD-7□□, the connection depends on the selected sensor type (mV DC, thermocouple or RTD).

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

When outputs are not used, the terminals are opened.

\*5: For SALD-724 only.

## ■ EXTERNAL DIMENSIONS



**MODEL AND SUFFIX CODES**

Model	Suffix Codes	Auxiliary Codes	Style	Optional Suffix Codes	Description
SALD					mV and Temperature Alarm Unit
Input Signal	-1 -2 -3 -7				mV DC input Thermocouple input RTD input Universal input
Alarm	1 2				One input, one setpoint absolute alarm One input, two 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  Auxiliary Codes SALD-1□□: "-MV" SALD-2□□: "-TK" to "-TS" SALD-3□□: "-PA" to "-PD" SALD-7□□: "-UN"	-MV -TK -TT -TJ -TE -TB -TR -TS -PA -PB -PD -UN				mV DC Type K (ITS90, JIS'95) Type T (ITS90, JIS'95) Type J (ITS90, JIS'95) Type E (ITS90, JIS'95) Type B (ITS90, JIS'95) Type R (ITS90, JIS'95) Type S (ITS90, JIS'95) JPt100 (JIS'89) Pt50 (JIS'81) Pt100 (ITS-90, JIS'97) Universal
Style Code			*R		Style R
Option				/A2ER /NHR /TB	220 V power supply No rack case Power supply terminal type

**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)  
Default: Pt100, JIS'97  
Select a sensor type (see table of Input Type on page 1).
3. Burnout selection (for SALD-□□0 only)  
Default: OFF  
Select from UP, DOWN or OFF.