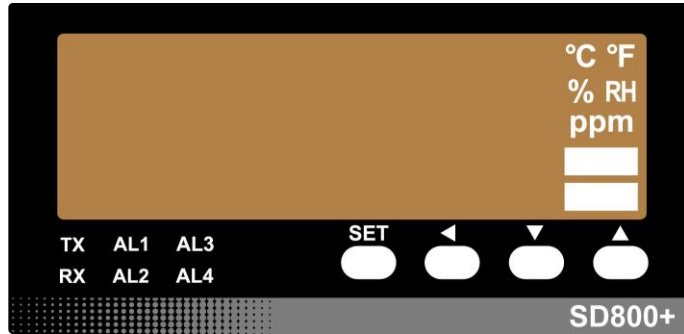# SD800+ Microprocess based Indicator


■ Highlight Features

- ■ 5-digit 0.8"LED display
- ■ Thermocouple, Pt100, mV, mA input signal available
- ■ Up to 4 alarm relay outputs with various alarm function/mode.
- ■ Auxiliary 24Vdc power supply to drive transmitter
- ■ RS485 communication available (Modbus RTU)

■ Front panel description

- ■ 5-digital LED display - Parameter index code / setting value
- ■ AL1 - 1st Alarm status indicator
- ■ AL2 - 2nd Alarm status indicator
- ■ AL3 - 3rd Alarm status indicator
- ■ AL4 - 4th Alarm status indicator
- ■ TX/RX - Communication status indicator
- ■ ℃ ℉ % RH PPM - Unit indicato
- ■ (SET) Parameter selection
- ■ (SET) + (◄) Press both simultaneously for 5 seconds to access the parameter
  in second or third level
- ■ (▲) Increase the set value or parameters value
- ■ (▼) Decrease the set value or parameters value
- ■ (◄) select the digit to be adjusted。
- ■ (SET) + (▲) Press both simultaneously to return to PV indication

■ Panel Cutout
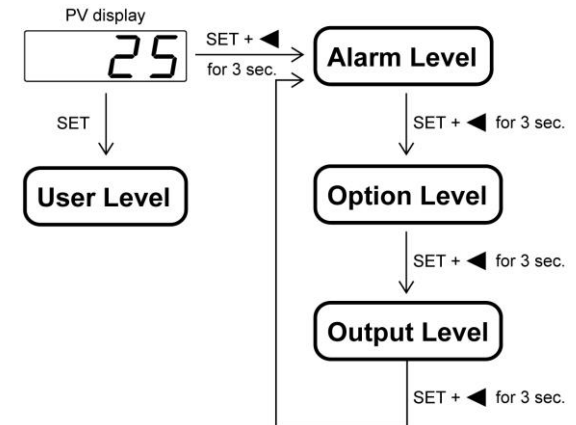**D 80mm x H 45mm x W 92mm**
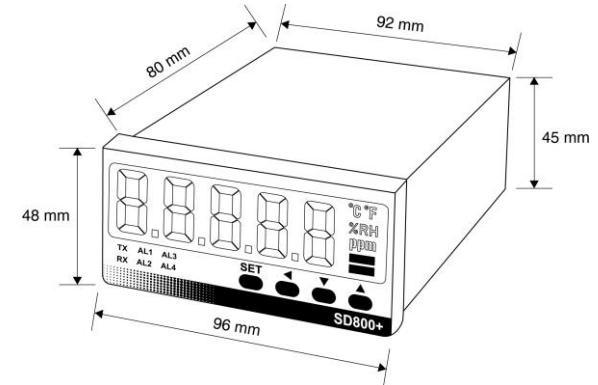
■ Wiring Diagram
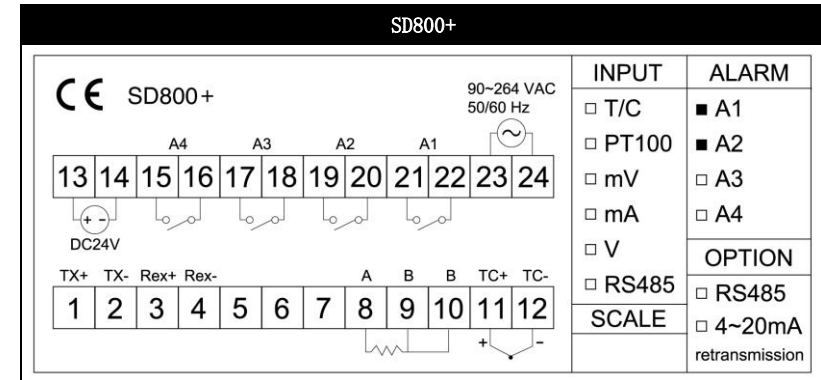
Wiring precaution

Inverter, mechanical contact relays, arc welders and ignition transformers are all common source of electrical noise in an industrial environment, so always keep signal wires away from those noise-generating devices.

■ Menu Flowchart

■ User level

Display	Description	Range	Default
PYoF	Process value offset correction	-19999 ~ 99999(dP=00000) -1999.9 ~ 9999.9(dP=0000.0) -199.99 ~ 999.99(dP=000.00) -19.999 ~ 99.999(dP=00.000) -1.9999 ~ 9.9999(dP=0.0000)	0.0
A1SP	Alarm 1 set-point	Same as above	20.0
A2SP	Alarm 2 set-point	Same as above	
A3SP	Alarm 3 set-point (Optional)	Same as above	
A4SP	Alarm 4 set-point (Optional)	Same as above	

Process value offset correction
A value to be added to PV to correct the sensor offset error

Alarm set-point
The setpoint of alarm event

■ Alarm level

Display	Description	Range	Default
A1FU	Alarm 1 function	《Table 1》	AoFF
A1HY	Alarm 1 hysteresis	99999 ~ 0	0.0
A1nd	Alarm 1 mode	《Table 2》	nonE
A1dt	Alarm 1 delay time	99:59~00:00	00:00
A2FU	Alarm 2 function	《Table 1》	AoFF
A2HY	Alarm 2 hysteresis	99999 ~ 0	0.0
A2nd	Alarm 2 mode	《Table 2》	nonE
A2dt	Alarm 2 delay time	99:59~00:00	00:00
A3FU	Alarm 3 function	《Table 1》	AoFF
A3HY	Alarm 3 hysteresis	99999 ~ 0	0.0
A3nd	Alarm 3 mode	《Table 2》	nonE
A3dt	Alarm 3 delay time	99:59~00:00	00:00
A4FU	Alarm 4 function	《Table 1》	AoFF
A4HY	Alarm 4 hysteresis	99999 ~ 0	0.0

Display	Description	Range	Default
A4nd	Alarm 4 mode	《Table 2》	nonE
A4dt	Alarm 4 delay time	99:59~00:00	00:00

Alarm function
Select the alarm function

Setting	Description	Contact Type	LED indicator	Contact
AoFF	Alarm Off	Normal open	OFF	Open
boFF	Alarm Off	Normal closed	OFF	Open
AH1	Process High Alarm	Normal open	ON	Closed
AH1	Process High Alarm	Normal open	OFF	Open
bH1	Process High Alarm	Normal closed	ON	Open
bH1	Process High Alarm	Normal closed	OFF	Closed
ALo	Process Low Alarm	Normal open	ON	Closed
ALo	Process Low Alarm	Normal open	OFF	Open
bLo	Process Low Alarm	Normal closed	ON	Open
bLo	Process Low Alarm	Normal closed	OFF	Closed
Aon	Alarm On	Normal open	ON	Closed
bon	Alarm On	Normal closed	ON	Closed

Table 1   Alarm Function

Alarm hysteresis
The hysteresis of alarm action

Alarm mode
Select the alarm mode

Setting	Description
nonE	Alarm mode disable
StdY	Standby mode prevents an alarm event while powering up. The alarm is active only after alarm event has been cleared and then occurs again.
LAtH	Latch mode. the alarm output and indicator will be latched as the alarm event occurs. The alarm output and indicator will not change its state even if the alarm event has been cleared unless the power is off.
StLA	Both standby and Latch mode are applied.

Table 2   Alarm mode

Alarm delay time,
Alarm delay time is set to postpone the alarm action by the setting time.
The unit of delay time is MM.SS or HH.MM depended on time scale
(PtnE) setting.

■ Option level

Display	Description	Range	Default
ᴶ : J type	Input signal type	丷 : J type	By order
typE	Input signal type	J : J type K : K type t : T type E : E type b : B type r : R type S : S type n : N type C : C type d-Pt : PT100(DIN) J-Pt : PT100(JIS) mA : mA mV : mV V : V Pv : External (RS485)	By order
SCdL	Low limit of linear input	Depended on Type	By order
SCdH	High limit of linear input	Depended on Type	By order
LnLo	Low scale for linear input	99999 ~ -19999	0.0
LnHi	High scale for linear input	99999 ~ -19999	1000.0
CUt	Cut-off function	nonE : None Lo : Low Hi : High HiLo : High/Low	nonE
Unit	Select the unit LED indicator	0 : none 1 : °C 2 : °F 3 : % 4 : RH 5 : %RH 6 : ppm 7 : user define	°C

Display	Description	Range	Default
dP	Decimal point	00000 0000.0 000.00 (for linear input only) 00.000 (for linear input only) 0.0000 (for linear input only)	0000
LoLt	Low limit of display	Depend on the input type	0
HiLt	High limit of display	Depend on the input type	500
FiLt	Digit filter	0.0 ~ 99.9	10.0
PtñE	Time scale	HH.MM MM.SS	HHññ
EroP	Error protection	**\<Table 3\>**	0000
LoCY	Security lock	0000 0001 0010 0010 0011	0011
Addr	Communication address	1~255	1
rtU	Parity and stop bit	o81 : odd parity check, 　1 stop bits E81 : even parity check, 　1 stop bits N82 : none parity check, 　2 stop bits N81 : none parity check, 　1 stop bits	N81
bAUd	Communication baud rate	9.6K 19.2K 38.4K 57.6K 115.2K	9.6K
LEd8	Turn On or Off The Aux LED indicator	OFF ON	OFF

Input signal type
Select the input signal type. The available input signal types are:
Thermocouple : J K T E B R S N C
RTD : PT100 (JIS standard) or PT100 (DIN standard)
mA: 4~20mA,
mV: 0~50 mV
V: 0~10 V
External: PV is input from RS485 communication

Low limit for linear input
Do not change the setting. The default setting is 4.000mA for 4~20mA, 0.000 for mV or V.

High limit for linear input
Do not change the setting. The default setting is 20.000mA for 4~20mA, 50.000 for mV, 10.000 or V.

Low scale for linear input
Select the low scale corresponding to low linear input signal (INL). The default low linear input signal for mA, mV and V is 4.00mA, 0.00mV and 0.00V separately. This parameter is only showed when the input signal type is set to mA, mV or V.

High scale for linear input
Select the high scale corresponding to high linear input signal (INH). The default low linear input signal for mA, mV and V is 20.00mA, 50.00mV and 10.00V separately. This parameter is only showed when the input signal type is set to mA, mV or V.

Cut-off function
The Cut-off function is used to limit the process value of linear input signal (mA, mV or V) within the boundary whenever the input signal is out of the high/low limit range (set by Hilt and LoLt). The cut-off function can be set to "Low", "High" or "High/Low", set to "None" disables the cut-off function. The cut-off function has no effect for input signal other than linear input.

Unit
Select the process value indication in °C or °F when the input signal type is set to thermocouple or PT100. Select engineer unit for linear input (mA, mV or V).

Decimal point
Select the decimal point position. The setting 000.00, 00.000, 0.0000 is available for linear input only.

Low limit
Set the low limit of measuring range. When the PV goes below the low limit, the PV display flashing indicates a low limit error. The alarm output will be set according to the Error Protection.

High limit
Set the high limit of measuring range. When the PV goes beyond the high limit, the PV display flashing indicates a high limit error. The alarm output will be set according to the Error Protection.

Digit filter
Set the time constant for digit filter (the first order filter). It is useful when the process value is too unstable to be read.

Time scale
Set the time scale used for alarm delay time.
HH.MM – The alarm delay time is in hour and minute
MM.SS – The alarm delay time is in minute and second.

Error protection
Set the retransmission output and alarm status whenever an error occurred.

Setting	Retransmission	Alarm 4	Alarm 3	Alarm 2	Alarm 1
00000	Off	Off	Off	Off	Off
00001	Off	Off	Off	Off	On
00010	Off	Off	Off	On	Off
00011	Off	Off	Off	On	On
00100	Off	Off	On	Off	Off
00101	Off	Off	On	Off	On
00110	Off	Off	On	On	Off
00111	Off	Off	On	On	On
01000	Off	On	Off	Off	Off
01001	Off	On	Off	Off	On
01010	Off	On	Off	On	Off
01011	Off	On	Off	On	On
01100	Off	On	On	Off	Off
01101	Off	On	On	Off	On
01110	Off	On	On	On	Off
01111	Off	On	On	On	On
10000	On	Off	Off	Off	Off

10001	On	Off	Off	Off	On
10010	On	Off	Off	On	Off
10011	On	Off	Off	On	On
10100	On	Off	On	Off	Off
10101	On	Off	On	Off	On
10110	On	Off	On	On	Off
10111	On	Off	On	On	On
11000	On	On	Off	Off	Off
11001	On	On	Off	Off	On
11010	On	On	Off	On	Off
11011	On	On	Off	On	On
11100	On	On	On	Off	Off
11101	On	On	On	Off	On
11110	On	On	On	On	Off
11111	On	On	On	On	On

Table 3   EROP setting

Security lock
The security lock is useful to lock out the parameters from unauthorized changed

Security lock	Description
0000	Only the security lock is adjustable, all other parameters are locked
0001	The security lock and user level parameters are adjustable. all the other parameters are locked
0010	The security lock, user and alarm level parameters are adjustable. all the other parameters are locked
0011	All parameters are adjustable

Communication address
Set the ID number in the communication network.

Parity and stop bit
Select the parity and stop bit combination.

Baud rate
Set the communication baud rate.

■ **Output level**

Display	Description	Range	Default
oUFU	Retransmission output type	OFF : Retransmission off 0-1Y : 0 ~1 V 0-5Y : 0~5V 0-10Y : 0~10V mA : 4~20mA	off
1Y-H	0~1V high scale	0~655356	N/A
1Y-L	0~1V low scale	0~655356	N/A
5Y-H	0~5V high scale	0~655356	N/A
5Y-L	0~5V low scale	0~655356	N/A
10Y-H	0~10V high scale	0~655356	N/A
10Y-L	0~10V low scale	0~655356	N/A
mA-H	4~20mA high scale	0~655356	N/A
mA-L	4~20mA low scale	0~655356	N/A

Retransmission output type
Specify the retransmission output signal type.

0~1V, 0~5V,0~10V,4~20mA high scale
Adjust the value (count) to have accurate high scale retransmission output.

0~1V, 0~5V,0~10V,4~20mA low scale
Adjust the value (count) to have accurate low scale retransmission output.