SANUP®

Products Guide

Vol. 13

In Harmony with Machines

Introduction

Sanup Electric Co., is a temperature control industry leader in advanced technology,
announced that it has commenced production of the industries control technology.
Established in 1963, we have long history for temperature and process control technical development.
We have a strong pride for high quality and specialized temperature control technology.
Sanup has the best and excellent solution for control process.
Sanup intends to take a leading role in the future progress of temperature control industry.
Now, we are actively promoting our brand value, the core element of business growth.

Company History

1963. 05 Establishment in Seoul_ Kook il Electric Co. President. Mr. KIM, In-Sik
1968. 03 Changed the name of company as SANUP ELECTRIC WORK Co.

1978. 06 Factory movement to Euijeongbu city
1979. 04 Seoul Office open

1988. 10 Model SD302 Patent listed in Korean Intellectual Property Office (Patent number 41595)
1989. 09 IRAN Tehran Agency Open
Changed the name of company as SANUP ELECTRIC Co

1993. 08 Factory and head office moved in euijeongbu city new building
1995. 02 Certified Korean Industrial Standard from Korean Standards Association
KS C 1613 Thermocouple Type Digital Temperature Instruments Listing number 11718
KS C 1614 Resistance Temperature Detector Type Digital Temperature Instruments Listing number 11719
1996. 10 Award of New Economy Leader from Mayor of euijeongbu city
1999. 02 Middle-East Area Sales Branch opened in Iran Tehran

2001. 05 Participation the 6th IRAN International Electricity Exhibition at Tehran International Fairground
2002. 06 Certified UL/CUL Model SDM series
Install of ERP (Enterprise Resource Planning) system for strong management
2002. 11 SDM and SDU Series Approved European CE Marking
2003. 05 Local sales shop opened in Seoul
2003. 08 Participation the 7th IRAN International Electricity Exhibition at Tehran International Fairground
2003. 11 Development Digital Type three Phase SCR Power Controller
Model : TPR3E Plus
2004. 08 Accession President Mr. Kim Do Young
2005. 09 Development Digital Type Single Phase Power Controller
Model : SPR-Pro, TPR-Pro
2007. 01 SPR-Pro, SDM 5600 and SDM 700 Series Approved European CE Marking
2007. 09 Selected '2007 Best New Product' by KSBC
2007. 11 Selected Innoavtion Business Company by INNOBIZ association
2007. 12 Selected VENTURE company by KSBC (Recognized temperature control technology)
2011. 07 Certified ISO 9001/14001

Company Overview

Company	SANUP ELECTRIC Co.,
President	Mr.Kim, Do Young
Address	[HQ & Factory] 240-42, Uijeongbu 2-Dong, Uijeongbu-Si, Kyoungki-Do, Korea
	Tel] +82-31-876-4641~3 , Fax] +82-31-876-4640
	[Sales Office] 42, Jangsa-Dong, Jongro-Gu, Seoul, Korea
	Tel] +82-2-2265-2298, 2272-0785 Fax] +82-2-2272-9450
Establishment	May 1, 1963
Products	Temperature Controller, Temperature Indicator, Thermo-Couple & R.T.D
	Humidity Controller, Temp/Humidity Transmitter, 1P & 3P Thyristor Power Regulator
Certification	INNOBIZ VENTURE
Contact to	[URL] http://www.sanup.com, www.sanupelec.com
	[General] sanup@sanup.com
	[Sales] sanup05@sanup.com
	[Product] sanup07@sanup.com
	[R&D] sanup08@sanup.com

Line up

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Digital
PID Controller

SDM series

NEW

SDU series

NEW

SDX series

12~13page

Board Type
PID Controller

NEW

SDL 880

SDU 880

SDX 8

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Multi Functional
Controller

NEW

SDP 9

SDP 2

SDP 3

16~17page

Digital
Indicator

NEW

SDM 5700

SDM 5600

18~19page

Digital Large
Indicator

SD 700

SDM 700

SD series

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Analog Controller

SD 700WR-N SD 700WR-R

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Water Proof Indicator

NEW

Smart TPR Smart SPR TPR pro SPR pro

26~27page

Power Regulator

SRN 100 SRN 200 SRN 300

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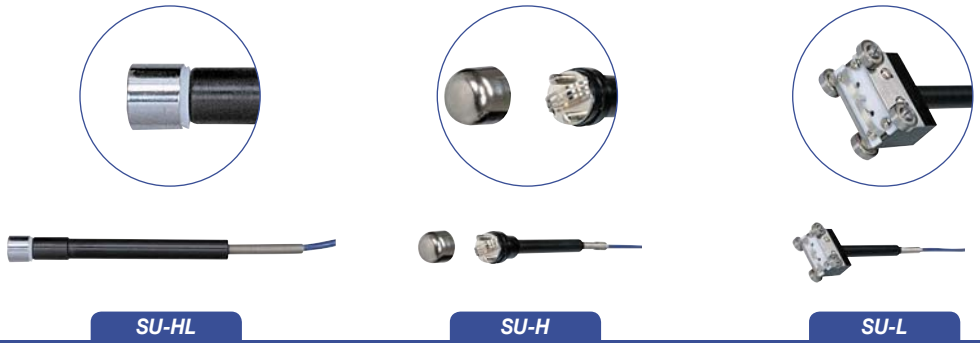
Temp/ Humi Transmitter



SU-HL SU-H SU-L

30page

R.T.D & T.C Sensor Probe

SDM series

Features

- 2 Pattern 12 Segment Programable control
- Heat-Cool Control
- Universal Input/ Output
- User selectable control mode
- Various alarm mode (Max 8 Alarm code)
- Retransmission output (PV, SV, MV)
- Fuzzy logic
- RS485 Interface (Modbus ASCII)
- Changeable SV1/SV2, Auto/Manual control by External S/W
- Changeable manual control by front key

Certificate

CE

Specifications

	SDM 9000	SDM 4900	SDM 7000	SDM 9400	SDM 4000
Dimension	96×96×100	48×96×100	72×72×100	96×48×100	48×48×90
Input	Universal Input : T.C (K, J, E, N, C, T, R, S, B), DPT100Ω, JPT100Ω, 1-5Vdc, 0-5Vdc				
Output	Universal Output : Relay, 4-20mA, SSR				None Universal
Sampling Time	160ms				
Control Mode	PID, PI, PD, P, On-Off, Heat - Cooling				
Accuracy	T.C : ±0.3% of F.S+1Digit or 3℃, R.T.D & Vdc : ±0.2% of F.S+1Digit				
Alarm	2 Points Alarm : Relay				1 Point Alarm
Power	100-240Vac, 50/60Hz, Max 0.5A				
Operating Condition	Temperature : 0-50℃, Humidity : 35-85%RH				
Others	2 Pattern 12 Segment Program Control, 17Vdc Sensor Power, RS485 Interface, Digital Input				

Typical Application

- ☑ Programable Control —— 2 Pattern 12 Segment
- ☑ Sensor Power —— 17Vdc, Max 30mA
- ☑ Retransmission Output —— 4-20mA Current Output
- ☑ Initial Increasing Temperature —— Upper Time Ratio
- ☑ Communication —— RS485 Interface (Modbus ASCII)
- ☑ Output Operation —— Heating (REV) / Cooling (DIR)
- ☑ Display Type —— 4 Digit FND SV/PV Display
- ☐ Control StandBy Timer —— Reservation Timer
- ☐ Control End Timer —— Control Stop Timer
- ☑ Alarm Type —— Max 8 Alarm Code
- ☑ Control Stop/Start Mode —— Control Run/Stop

Input Type & Measurment Range

T.C	K (K1)	-70~1370℃ (-100.0~400.0℃)
	J	-70~950℃
	E	-70~750℃
	N	-100~1300℃
	C	0~2300℃
	T	-200~400℃
	R, S	0~1760℃
	B	0~1800℃
R.T.D	DPT, JPT (DPT1,JPT1)	-200~600℃ (-200.0~600.0℃)
DC V	1-5V, 0-5V	-900~9000
DC A	4-20mA, 0-20mA	-900~9000

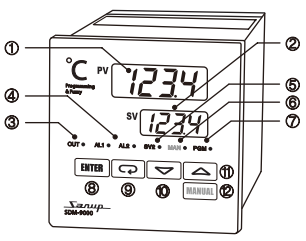
Ordering Code

SDM □-□□□□□

- Option — RS485, RET, DI
- Power — 100-240Vac, 50/60Hz
- Output — Universal
- Range — Range
- Input — Universal
- Model — 9000, 4900, 7000, 9400, 4000
- Series — Programable Controller

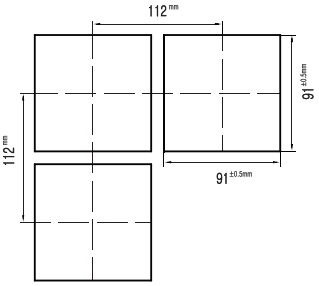
* RET, DI applied to SDM7000

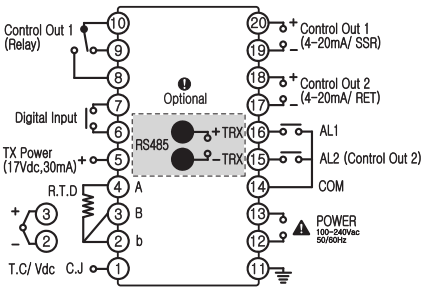
Functional Description



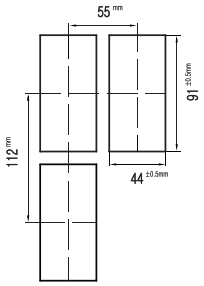
① PV : Display of Process value & Parameters
② SV : Display of Set value
③ OUT : Control output LED
④ AL1,2 : Alarm 1,2 status LED
⑤ SV2 : SV2 select LED
⑥ MAN : Manual control mode or Auto-tuning (Blink)
⑦ PGM : Program control mode
⑧ ENTER : Parameters fix or Program control RUN
⑨ MODE : Parameter select
⑩ DOWN : Decrement of parameter data & SV
⑪ UP : Increment of parameter data & SV
⑫ MANUAL : Changeable Auto/Manual control or Auto-tuning STOP

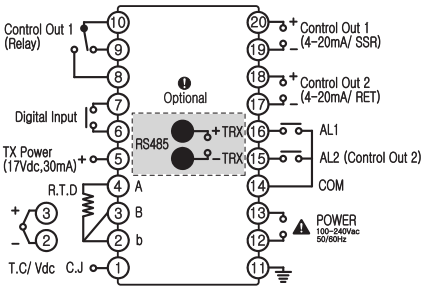
SDM 9000



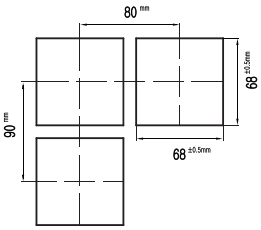


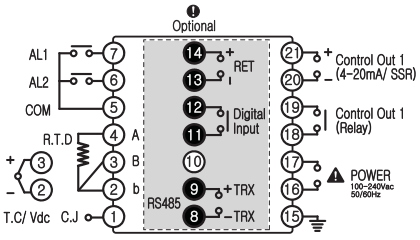
SDM 4900



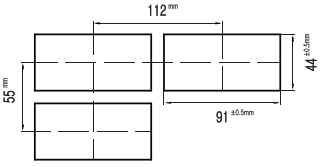


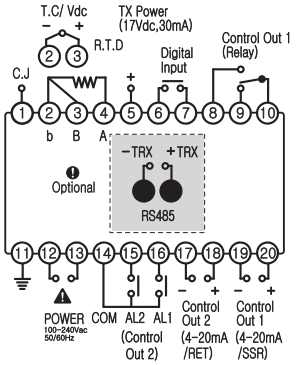
SDM 7000



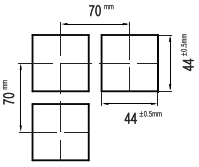


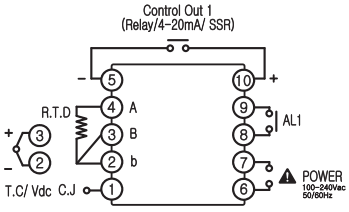
SDM 9400





SDM 4000





SDU series

Features

- Digital PID control
- Universal Input
- User selectable control mode
- Various alarm mode (Max 8 Alarm code)
- Retransmission output (PV, SV)
- Control improves stability by Initial increasing temperature
- RS485 Interface (Modbus ASCII)
- Sensor Power supply (17Vdc, Max 30mA)
- Control stop timer
- Auto-tuning start/stop by front key

Certificate

CE

Specifications

	SDU 990	SDU 490	SDU 770	SDU 940	SDU 440
Dimension	96×96×100	48×96×100	72×72×100	96×48×100	48×48×90
Input	Universal Input : T.C (K, J, E, N, C, T, R, S, B), DPT100Ω, JPT100Ω, 1-5Vdc, 0-5Vdc				
Output	Relay (250Vac 3A), 4-20mA (Max 600Ω), SSR				None Universal
Sampling Time	160ms				
Control Mode	PID, On-Off (Each Direct/ Reverse Mode)				
Accuracy	T.C : ±0.3% of F.S+1Digit or 3℃, R.T.D & Vdc : ±0.2% of F.S+1Digit				
Alarm	2 Points Alarm : Relay				1 Point Alarm
Power	100-240Vac, 50/60Hz, Max 0.5A				
Operating Condition	Temperature : 0-50℃, Humidity : 35-85%RH				
Others	Control Output OFF Timer (99h59m), 17Vdc Sensor Power (SDU990/940/490 Only), Input Filter				

Typical Application

- ☐ Programable Control —— 2 Pattern 12 Segment
- ☑ Sensor Power —— 17Vdc, Max 30mA
- ☑ Retransmission Output —— 4-20mA Current Output
- ☑ Initial Increasing Temperature —— Upper Time Ratio
- ☑ Communication —— RS485 Interface (Modbus ASCII)
- ☑ Output Operation —— Heating (REV) or Cooling (DIR)
- ☑ Display Type —— 4 Digit FND SV/PV Display
- ☐ Control StandBy Timer —— Reservation Timer
- ☑ Control End Timer —— Control Stop Timer
- ☑ Alarm Type —— Max 8 Alarm Code
- ☐ Control Stop/Start Mode —— Control Run/Stop

Input Type & Measurment Range

T.C	K (K1)	-70~1370℃ (-100.0~400.0℃)
	J	-70~950℃
	E	-70~750℃
	N	-100~1300℃
	C	0~2300℃
	T	-200~400℃
	R, S	0~1760℃
	B	0~1800℃
R.T.D	DPT, JPT (DPT1,JPT1)	-200~600℃ (-200.0~600.0℃)
DC V	1-5V, 0-5V	0~9000
DC A	4-20mA, 0-20mA	0~9000

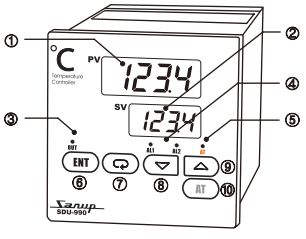
Ordering Code

SDU□-□□□□□

- Option — RS485, RET, DI
- Power — 100-240Vac, 50/60Hz
- Output — User Fix
- Range — Range
- Input — Universal
- Model — 990, 490, 770, 940, 440
- Series — Digital PID Controller

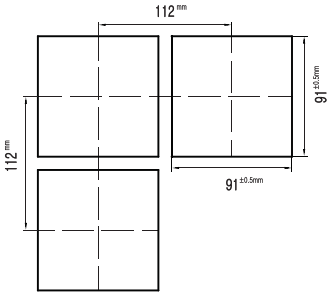
* SDU440 does not allow you to select the RET (Option)

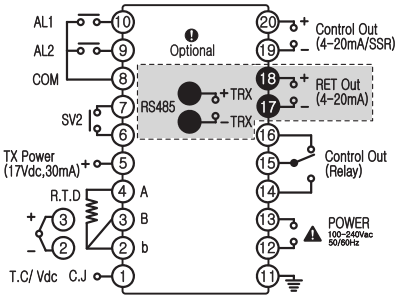
Functional Description



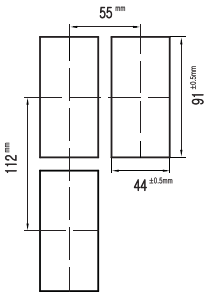
① PV : Display of Process value & Parameters
② SV : Display of Set value
③ OUT : Control ouput LED
④ AL1,2 : Alarm 1,2 status LED
⑤ AT : Auto-tuning LED
⑥ ENT : Parameters fix
⑦ MODE : Parameter select
⑧ DOWN : Decrement of parameter data & SV
⑨ UP : Increment of parameter data & SV
⑩ AT : auto-tuning Start/Stop

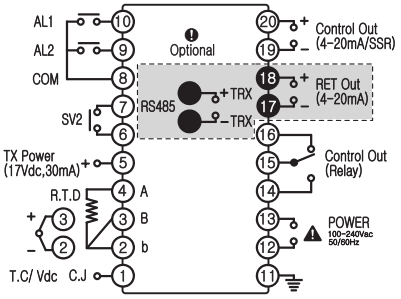
SDU 990



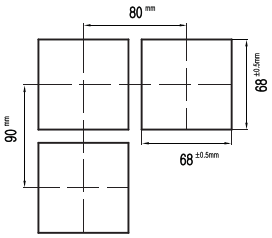


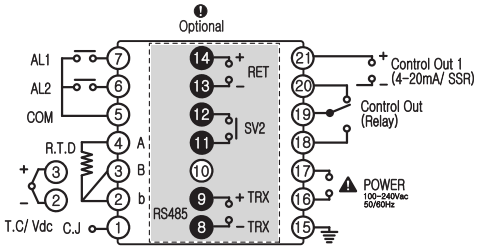
SDU 490



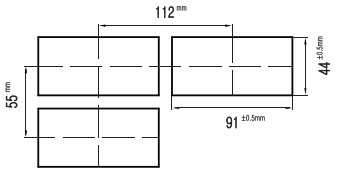


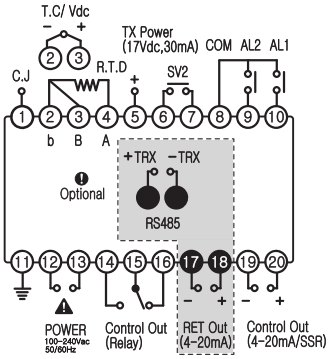
SDU 770



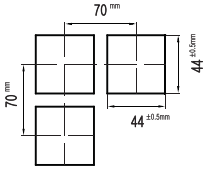


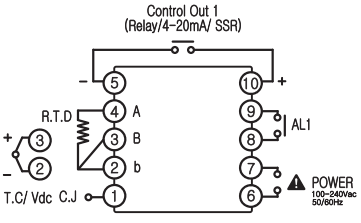
SDU 940





SDU 440





SDX series

Features

- Economical & Multifunctional PID Controller
- Universal Input
- Control Start/Stop mode
- Paramerters set Lock/Unlock
- Various alarm mode (Max 23 Alarm code)
- Control Start/Stop mode
- Control start timer (Reservation)/ Control stop timer
- Manual control mode
- Short-Key for Lock, AT, Manual, RUN/STOP
- Phase angle control by SSR(Random type), Triac

Certificate

CE

Specifications

	SDX 9	SDX 2	SDX 7	SDX 3	SDX 4
Dimension	96×96×100	48×96×100	72×72×100	96×48×100	48×48×100
Input	Universal Input : T.C (K, J, E, T, R), DPT100Ω, JPT100Ω, 1-5Vdc, 0-5Vdc, 0-10Vdc				
Output	Relay, 4-20mA, SSR, Triac				
Sampling Time	250ms				
Control Mode	PID, PI, PD, P, On-Off, Heating or Cooling				
Accuracy	T.C : ±0.5% of F.S+1Digit or 3℃, R.T.D & Vdc : ±0.2% of F.S+1Digit				
Alarm	2 Points Alarm : Relay				
Power	100-240Vac, 50-60Hz, Max 0.5A				
Operating Condition	Temperature : 0-50℃, Humidity : 35-85%RH				
Others	Control Stop Timer, Reservation Timer, Wait, Ramp, LBA, INIT				

Typical Application

- ☐ Programable Control —— 2 Pattern 12 Segment
- ☐ Sensor Power —— 17Vdc, Max 30mA
- ☐ Retransmission Output —— 4-20mA Current Output
- ☑ Initial Increasing Temperature —— Upper Time Ratio
- ☐ Communication —— RS485 Interface (Modbus ASCII)
- ☑ Output Operation —— Heating (REV) or Cooling (DIR)
- ☑ Display Type —— 4 Digit FND SV/PV Display
- ☑ Control StandBy Timer —— Reservation Timer
- ☑ Control End Timer —— Control Stop Timer
- ☑ Alarm Type —— Max 23 Alarm Code
- ☑ Control Stop/Start Mode —— Control Run/Stop

Input Type & Measurment Range

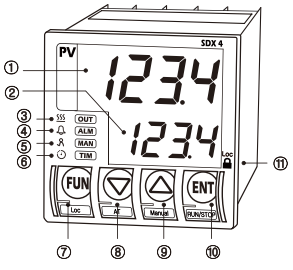
T.C	K (K1)	-200~1370℃ (-199.9~999.9℃)
	J	-199.9~999.9℃
	E	-199.9~999.9℃
	T	-199.9~999.9℃
	R	0~1700℃
R.T.D	DPT, JPT (DPT1,JPT1)	-200~400℃
DC V	1-5V, 0-10V	-1999~9999℃
DC A	4-20mA, 0-20mA	-1999~9999℃

Ordering Code

SDX □ - □□□□□

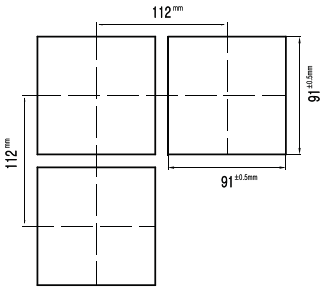
- Option — AL2, PWM
- Power — 100-240Vac, 50-60Hz
- Output — User Fix
- Range — Range
- Input — Universal
- Model — 9, 2, 7, 3, 4
- Series — Digital PID Controller

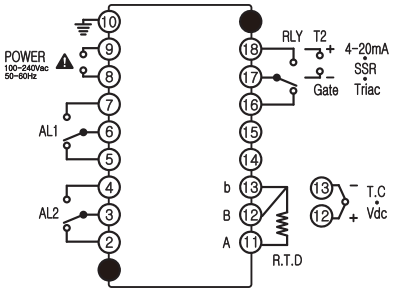
Functional Description



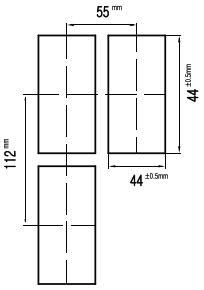
① PV : Display of Process value & Parameters
② SV : Display of Set value
③ OUT : Control ouput LED
④ ALM : Alarm 1,2 status LED
⑤ MAN : Manual control mode
⑥ TIM : Timer run & time set LED
⑦ FUN : Display mode/parameter select & digits shift
⑧ DOWN : Decrement of parameter data & Set value
⑨ UP : Increment of parameter data & Set value
⑩ ENT : Parameters fix & control RUN
⑪ Loc : Parameters set Lock/Unlock DOT

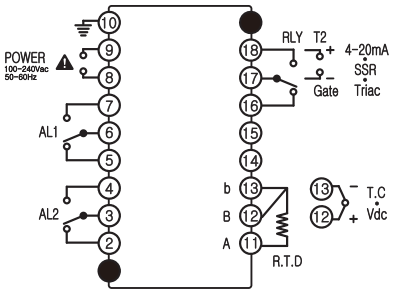
SDX 9



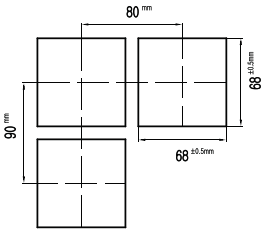


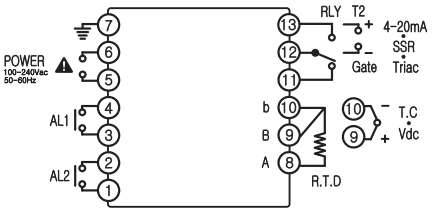
SDX 2



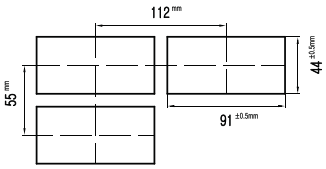


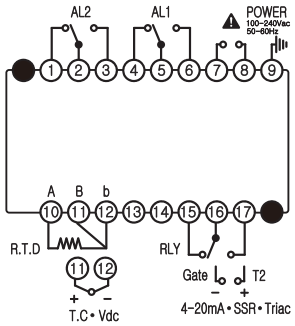
SDX 7



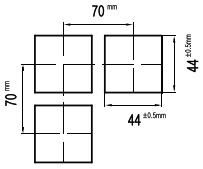


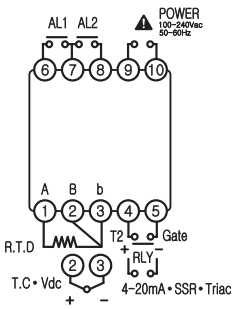
SDX 3





SDX 4





Board Type

Features

- Multifunctional Digital PID Control (Board type)
- Universal Input
- Control Start/Stop mode (SDX 8)
- STN LCD Display (SDL 880, 8800)
- Various alarm mode (Max 8 Alarm code)
- Parameters set Lock/Unlock
- Control stop timer
- Manual control mode
- Short-Key for Lock, AT, Manual, RUN/STOP
- Various output (Relay, 4-20mA, SSR, Triac)

Certificate

CE

Specifications

	SDU 880	SDU 8800 (Program)	SDL 880	SDL 8800 (Program)	SDX 8
Dimension	110×85	110×85	97×87	97×87	100×85
Input	Universal Input : T.C (K, J, E, N, C, T, R, S, B), DPT100Ω, JPT100Ω, 1-5Vdc, 0-5Vdc				N, C, S, B 제외
Output	Relay, 4-20mA, SSR, Triac				
Sampling Time	160ms				250ms
Control Mode	PID, PI, PD, P, On-Off, Heating or Cooling				
Accuracy	T.C : ±0.3% of F.S+1Digit or 3℃, R.T.D & Vdc : ±0.2% of F.S+1Digit				
Alarm	1 Point Alarm				2 Point Alarm
Power	100-240Vac, 50/60Hz, Max 0.5A				
Operating Condition	Temperature : 0-50℃, Humidity : 35-85%RH				
Others	SDU 880, 8800 : FND, SDL 880, 8800 : LCD, SDX 8 : FND				

Typical Application

☐	Programable Control	2 Pattern 12 Segment
☐	Sensor Power	17Vdc, Max 30mA
☐	Retransmission Output	4-20mA Current Output
☑	Initial Increasing Temperature	Upper Time Ratio
☑	Communication	RS485 Interface (Modbus ASCII)
☑	Output Operation	Heating (REV) or Cooling (DIR)
☑	Display Type	STN LCD Display
☐	Control StandBy Timer	Reservation Timer
☑	Control End Timer	Control Stop Timer
☑	Alarm Type	Max 8 Alarm Code
☑	Control Stop/Start Mode	Control Run/Stop

Input Type & Measurment Range

T.C	K (K1)	0~1200℃ (0.0~999.9℃)
	J	-100~950℃
	E	-100~750℃
	N	-100~1300℃
	C	0~2300℃
	T	-200~400℃
	R, S	0~1760℃
	B	0~1800℃
R.T.D	DPT, JPT (DPT1,JPT1)	-200~600℃ (-200.0~600.0℃)
DC V	1-5V, 0-5V	0~9000
DC A	4-20mA, 0-20mA	0~9000

* Differs by input range of SDX8, Please refer to the instruction manual

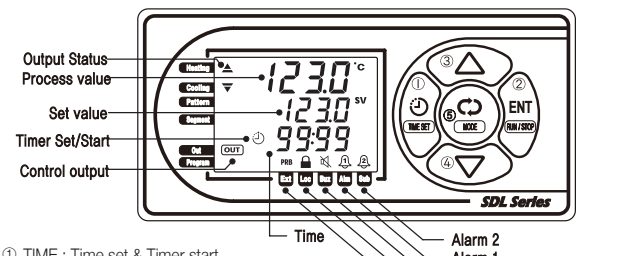
Ordering Code

SD[ ][ ]-[ ][ ][ ][ ][ ]

Option	AL2, PWM, INPUT2
Power	100-240Vac, 50-60Hz
Output	User Fix
Range	Range
Input	Universal
Model	880, 8800, 8
Series	U(FND), L(LCD), X(FND)

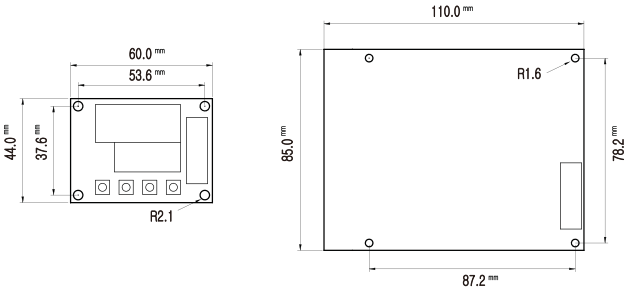
* AL2, PWM applied to SDX8
* Input 2 applied to SDL880

Functional Description

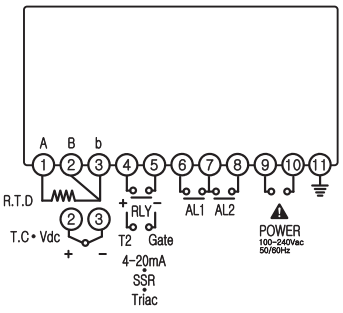


① TIME : Time set & Timer start
② ENTER : Parameters fix or control RUN
③ UP : Increment of parameter data & SV
④ DOWN : Decrement of parameter data & SV
⑤ MODE : Parameter select

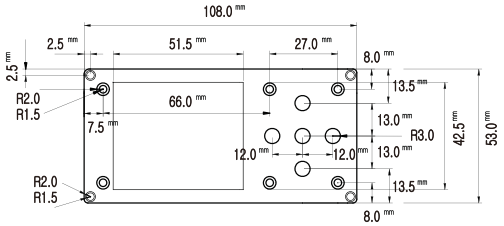
SDU 880

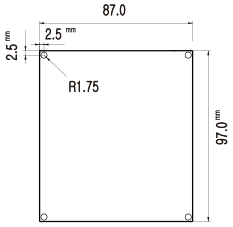


SDU 8800

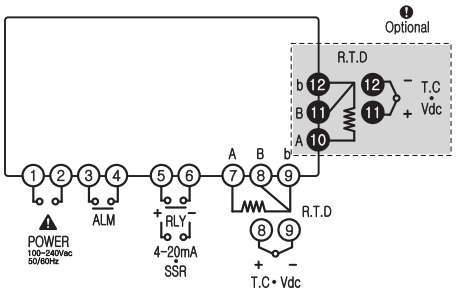


SDL 880

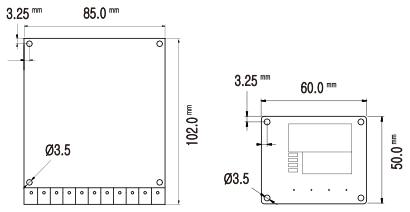


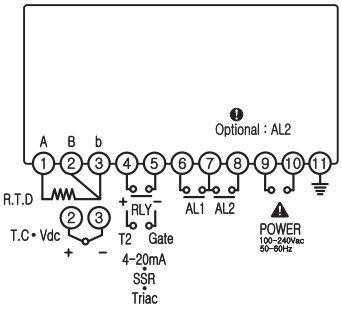


SDL 8800



SDX 8





SDP series

Features

- Multifunctional PID Control & Load check
- Full Function same with SDX
- Manual control by external volume
- Current limit by external volume
- User select to CT ratio by load capacity
- User selectable control mode (Zero Cross, PWM)
- Display for control and load status by 3 Color LED
- Alarm output by open of load or short
- Alarm output by input signal error or fault
- Short-Key for Lock, AT, Manual, RUN/STOP

Certificate

CE

Specifications

	SDP 9	SDP 2	SDP 3
Dimension	96×96×100	48×96×100	72×72×100
Input	Universal Input : T.C (K, J, E, T, R), DPT100Ω, JPT100Ω, 1-5Vdc, 0-5Vdc, 0-10Vdc		
Output	Relay, 4-20mA, SSR, Triac		
Sampling Time	250ms		
Control Mode	PID, PI, PD, P, On-Off, Heating or Cooling		
Accuracy	T.C : ±0.5% of F.S+1Digit or 3℃, R.T.D & Vdc : ±0.2% of F.S+1Digit		
Alarm	2 Points Alarm : Relay/ Status Error Alarm		
Power	100-240Vac, 50-60Hz, Max 0.5A		
Operating Condition	Temperature : 0-50℃, Humidity : 35-85%RH		
Others	Control Stop Timer, Reservation Timer, Wait, Ramp, LBA, INIT		

Typical Application

- ☐ Programable Control —— 2 Pattern 12 Segment
- ☐ Sensor Power —— 17Vdc, Max 30mA
- ☐ Retransmission Output —— 4-20mA Current Output
- ☑ Initial Increasing Temperature —— Upper Time Ratio
- ☐ Communication —— RS485 Interface (Modbus ASCII)
- ☑ Output Operation —— Heating (REV) & Cooling (DIR)
- ☑ Display Type —— 4 Digit FND SV/PV Display
- ☑ Control StandBy Timer —— Reservation Timer
- ☑ Control End Timer —— Control Stop Timer
- ☑ Alarm Type —— Max 23 Alarm Code
- ☑ Control Stop/Start Mode —— Control Run/Stop

Input Type & Measurment Range

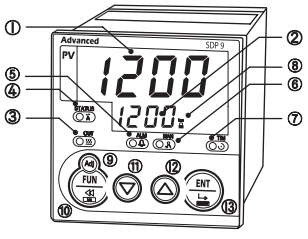
T.C	K (K1)	-200~1370℃ (-199.9~999.9℃)
	J	-199.9~999.9℃
	E	-199.9~999.9℃
	T	-199.9~399.9℃
	R	0~1700℃
R.T.D	DPT, JPT (DPT1,JPT1)	-200~400℃
DC V	1-5V, 0-5V, 0-10V	-1999~9999℃
DC A	4-20mA, 0-20mA	-1999~9999℃

Ordering Code

SDP □ - □□□□□

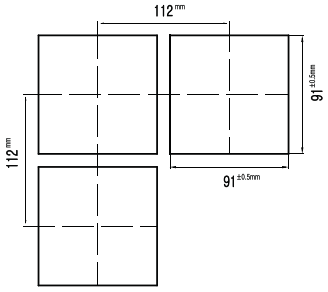
- Option — AL2, PWM
- Power — 100-240Vac, 50-60Hz
- Output — User Fix
- Range — Range
- Input — Universal
- Model — 9, 2, 3
- Series — Digital PID Controller

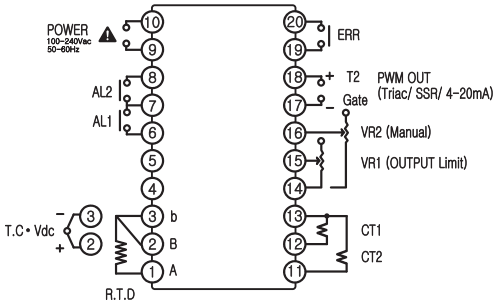
Functional Description



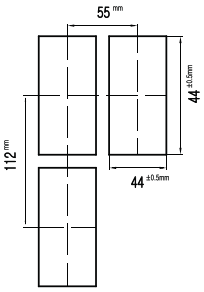
① PV : Display of Process value & Parameters
② SV : Display of Set value
③ OUT : Control ouput LED
④ STATUS : Control output check LED
⑤ ALM : Alarm 1,2 status LED
⑥ MAN : Manual control mode LED
⑦ TIM : Timer run & time set LED
⑧ Loc : Parameters set Lock/Unlock DOT
⑨ Adj : Manual control mode & current set
⑩ FUN : Display mode/parameter select & digits shift
⑪ DOWN : Decrement of parameter data & SV
⑫ UP : Increment of parameter data & SV
⑬ ENT : Parameters fix or control RUN

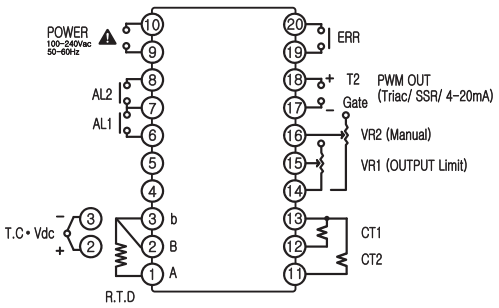
SDP 9



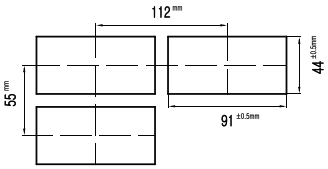


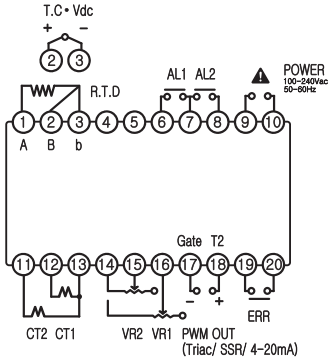
SDP 2



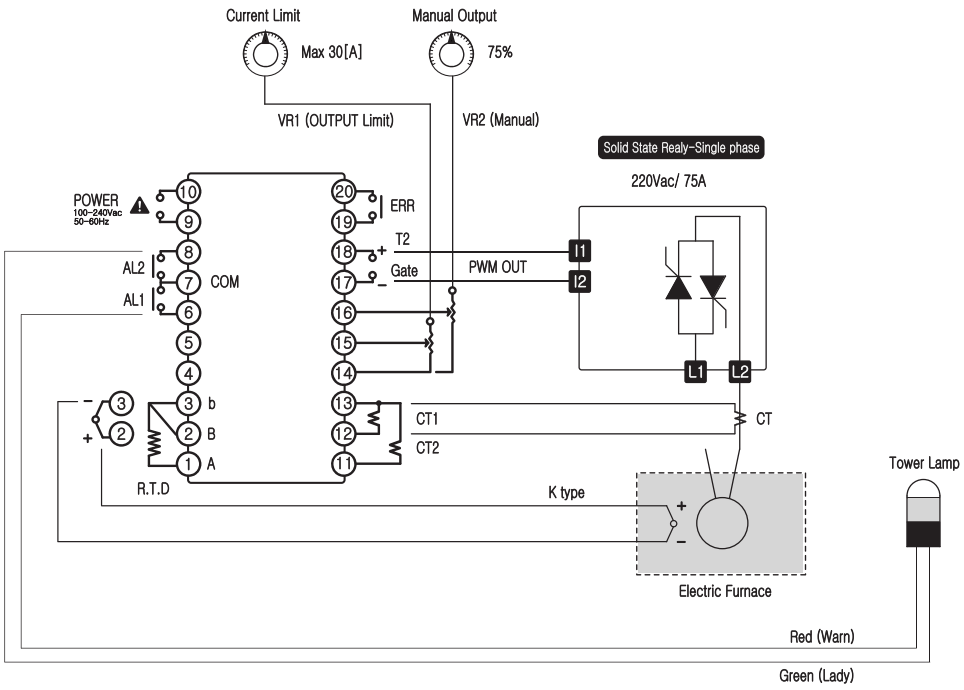


SDP 3





Application Diagram



Digital Indicator

Features

- Multifunctional Digital indicator
- Universal input & full scale range
- Individual 2 point alarm (Max 4 point alarm)
- PV display by communication
- RS485 interface (Modbus ASCII)
- Sensor Power supply (17Vdc, Max 200mA)
- Retransmission output (PV)
- High brightness display FND
- PV peak hold

Certificate

CE

Specifications

	SDM 5700	SDM 5600	SD 506	SD 503-5	SD 503
Dimension	96×48×100	96×48×100	96×48×100	96×96×120	96×96×120
Output	–				
Sampling Time	160ms	160ms	–		
Control Mode	–				
Accuracy	T.C : ±0.3% of F.S+1Digit or 3℃, R.T.D & Vdc : ±0.2% of F.S+1Digit			T.C, R.T.D : ±0.5%	
Alarm	4 Points Alarm	2 Points Alarm	–		
Power	100-240Vac, 50-60Hz, Max 0. 5A		110/220Vac, 50/60Hz		
Operating Condition	Temperature : 0-50℃, Humidity : 35-85%RH				
Others	17Vdc Sensor Power, Modbus Interface				
Input	Universal Input : T.C (K, J, E, N, C, T, R, S, B), Din PT100Ω, JPT100Ω, 1-5Vdc, 0-5Vdc				

Typical Application

☑ Universal Input	Thermocouple, R.T.D, Vdc, mAdc
☑ Sensor Power	17Vdc, Max 30mA
☑ Retransmission Output	4-20mA Current Output
☑ Scale	Measurement Range
☑ High Brightness Display	High Brightness 0.8" FND
☑ Communication	RS485 Interface (Modbus ASCII)
☑ PV Bias & Filter	PV Correction & Filter
☐ FND Size	Variable of display size
☑ Din Size Indicator	Din 96×48mm
☐ Large Size Indicator	Control Stop Timer
☑ Event Alarm	Max 4 Alarm

Input Type & Measurment Range

T.C	K (K1)	-100~1370℃ (-100.0~400.0℃)
	J	-100~950℃
	E	-100~750℃
	N	-100~1300℃
	C	0~2300℃
	T	-200~400℃
	R, S	0~1760℃
	B	0~1800℃
R.T.D	DPT, JPT (DPT1,JPT1)	-200~600℃ (-200.0~600.0℃)
DC V	1-5V, 0-5V	-1900~9999
DC A	4-20mA, 0-20mA	-1900~9999

Ordering Code

SDM□-□□□□□

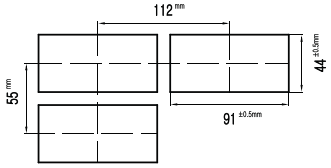
- Option: AL2, AL4, RS485
- Power: 100-240Vac, 50-60Hz
- Output: -
- Range: Range
- Input: Universal
- Model: 5700, 5600, 506, 503, 503-5
- Series: Digital Indicator

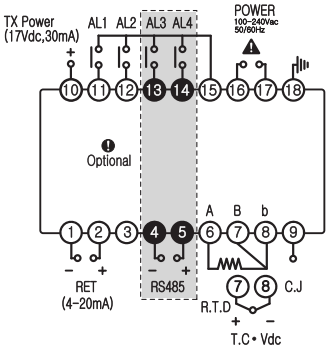
* AL2, AL4 applied to SDM5700

Functional Description

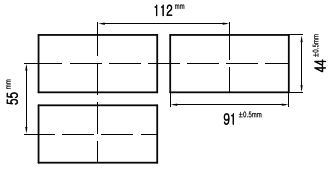
① AL1 : Alarm 1 status LED
② AL2 : Alarm 2 status LED
③ AL3 : Alarm 3 status LED
④ AL4 : Alarm 4 status LED
⑤ ENTER : Parameters fix
⑥ MODE : Parameter select
⑦ DOWN : Decrement of parameter data
⑧ UP : Increment of parameter data
⑨ PV : PV & Parameter display

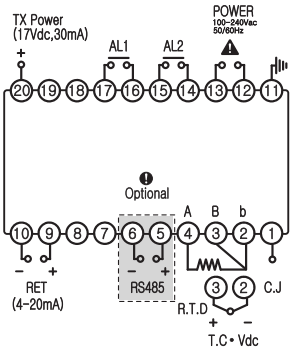
SDM 5700



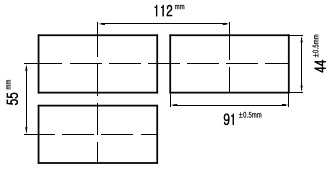


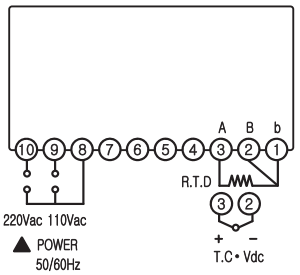
SDM 5600



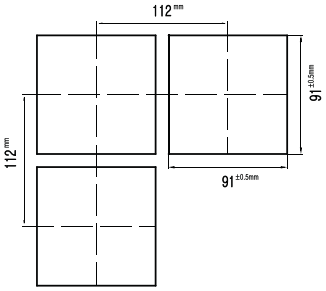


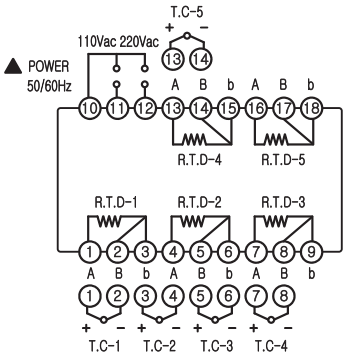
SD 506



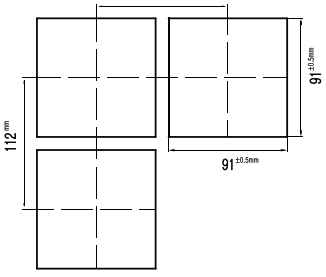


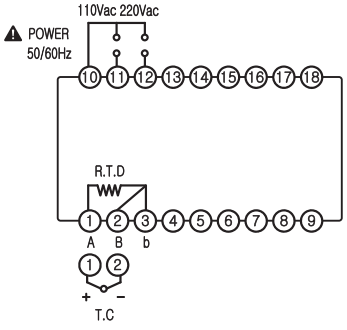
SD 503-5





SD 503





Large Indicator

Features

- Digital large indicator
- Universal input & full scale range
- Display of Various dimensions
- Individual 2 point alarm
- PV display by communication
- Modbus ASCII RS485 interface(SDM700)
- Sensor Power supply (17Vdc, Max 300mA)
- Retransmission output (PV)
- High brightness display FND
- PV peak hold

Certificate

CE

Specifications

	SD 700-T	SD 700-TH	SDM 700-T	SDM 700-TH
Dimension	274×182×74	310×207×82	310×207×82	310×207×82
Input	Universal Input : T.C (K, J, E, N, C, T, R, S, B), DPT100Ω, JPT100Ω, 1-5Vdc, 0-5Vdc			
Output	-			
Sampling Time	-		160ms	
Control Mode	-			
Accuracy	T.C : ±0.3% of F.S+1Digit or 3℃, R.T.D & Vdc : ±0.2% of F.S+1Digit T.C, R.T.D & Vdc : ±0.5% of F.S			
Alarm	-		2 Points Alarm : Relay	
Power	110/220Vac, 50/60Hz, Max 0.5A		110-240Vac, 50-60Hz, Max 0.5A	
Operating Condition	Temperature : 0-50℃, Humidity : 35-85%RH			
Others			RET, RS485 Modbus ASCII	

*SD700 모델은 입력타입 지정입니다.

Typical Application

- ☑ Universal Input —— Thermocouple, R.T.D, Vdc, mAdc
- ☑ Sensor Power —— 17Vdc, Max 30mA
- ☑ Retransmission Output —— 4-20mA Current Output
- ☑ Full Scale —— Measurement Range
- ☐ High Brightness Display —— High Brightness 0.8" FND
- ☑ Communication —— RS485 Interface (Modbus ASCII)
- ☑ PV Bias & Filter —— PV Correction & Filter
- ☑ FND Size —— Variable of display size
- ☐ Din Size Indicator —— Din 96×48mm
- ☑ Large Size Indicator —— Control Stop Timer
- ☑ Event Alarm —— Max 4 Alarm

Input Type & Measurment Range

T.C	K (K1)	0~1200℃ (0.0~999.9℃)
	J	-100~950℃
	E	-100~750℃
	N	-100~1300℃
	C	0~2300℃
	T	-200~400℃
	R, S	0~1760℃
	B	0~1800℃
R.T.D	DPT, JPT (DPT1,JPT1)	-200~600℃ (-200.0~600.0℃)
DC V	1-5V, 0-5V	0~9000
DC A	4-20mA, 0-20mA	0~9000

* Differs by input range of SD700, Please refer to the instruction manual (User Fix)

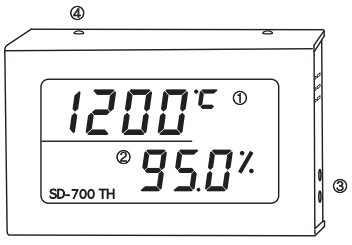
Ordering Code

□-□□□□□□□□

- Option — RS485
- Power — 100-240Vac, 50-60Hz
- Range 2 — Input 2 Range
- Range 1 — Input 1 Range
- Input 2 — Input 2 Type
- Input 1 — Input 1 Type
- Display — T,TH/ 1.8", 2.3"
- Model — SD700T/TH, SDM700T/TH

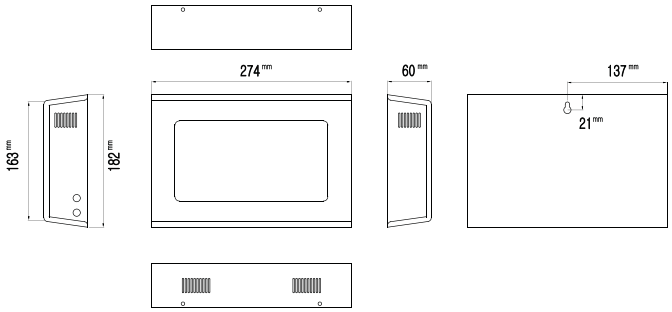
* RS485 applied to SDM700
* Power specifications vary depending on the model

Functional Description

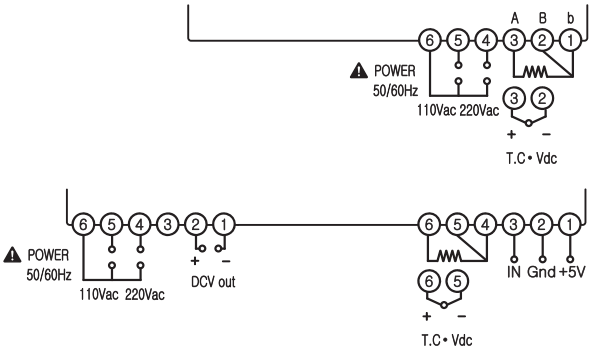


① PV : PV display (Temp)
② PV : PV display (Humi)
③ OUTLET : Power & sensor
④ Bolt : Fixing bolt

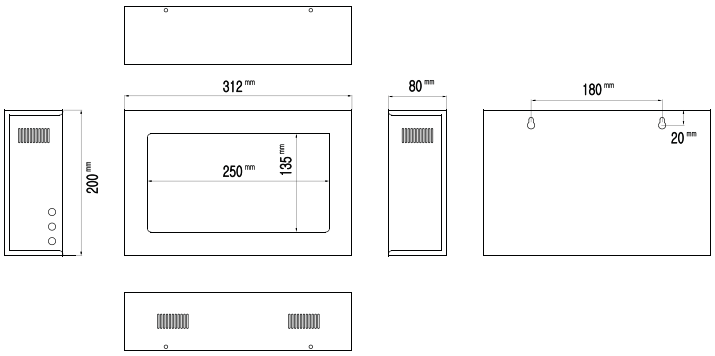
SD 700-T



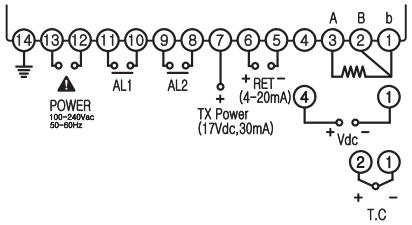
SD 700-TH



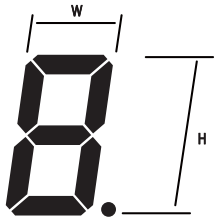
SDM 700-T



SDM 700-TH



Display Size



- 1.8" : 26.0×45.0×4.2
- 2.3" : 32.8×56.9×6.0
- 3.0" : 43.5×76.0×8.0
- 4.0" : 60.0×100.0×11.0
- 6.0" : 87.5×152.4×16.0
- 8.0" : 117.0×200.0×21.0

SD series

Features

- Digital temperature controller
- Control improves stability of Model of the same performance
- Alarm type support (Sub output)
- Simple operation by front volume & switch
- Variable of proportional band by PB volume
- Variable of Off-Set by MR volume
- Display LED for Output status
- Various dimensions of DIN size

Certificate

CE

Specifications

	SD 501(S)	SD 505(-5)	SD 301	SD 302	SD 104
Dimension	96×96×120	48×96×125	72×72×110	72×72×110	48×48×90
Input	K, J, E, T, R, S, B, Din PT100Ω	K, J, E, T, Din PT100Ω	K, J, E, T, Din PT100Ω, JIS PT100Ω		
Output	Relay (250Vac/3A), Current (4-20mA), SSR				
Sampling Time					
Control Mode	P, ON-OFF				
Accuracy	±1.0% of F.S				
Alarm	Relay (250Vac/3A)				
Power	110/220Vac, 50/60Hz				
Operating Condition	Temperature : 0-50℃, Humidity : 35-85%RH				
Others	PB Volume (Propotional Band), MR Volume (Manual Reset), Sub Alarm, ON-OFF Lamp				

Typical Application

☐	Universal Input	Thermocouple, R.T.D, Vdc, mAdc
☐	SV display	Set value
☐	Sensor Power	17Vdc, Max 30mA
☐	Retransmission Output	4-20mA Current Output
☑	Full Scale	Measurement Range
☐	High Brightness Display	High Brightness 2.3' FND
☐	Communication	RS485 Interface (Modbus ASCII)
☑	PB volume	Propotional Band
☑	MR volume	Manual Reset
☑	Volume set	PV setting
☑	Deviation alarm	Sub alarm

Input Type & Measurment Range

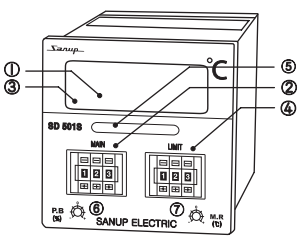
SD 501(S)	PT100Ω	0~100, 200, 400℃
	K (CA)	0~100, 200, 400, 1200℃
	PR-R	0~1600℃
SD 505(-5)	PT100Ω	0~100, 200, 400℃
	K (CA)	0~200, 400, 600, 999℃
SD 301	PT100Ω	0~100, 200, 400℃
	K (CA)	0~100, 200, 400, 700, 1200℃
SD 302	PT100Ω	0~100, 400℃
	K (CA)	0~100, 400, 1200℃
SD 104	PT100Ω, K (CA)	0~400℃

Ordering Code

SD □-□□□□□

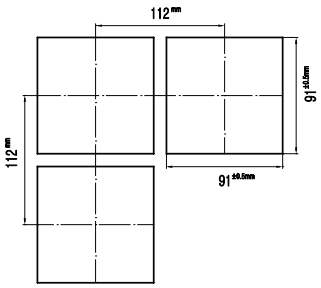
Option	-
Power	100/220Vac, 50/60Hz
Output	Relay, 4-20mA, SSR
Range	Range
Input	User Fix
Model	501(S), 505(-5), 301, 302, 104
Series	Digital Controller

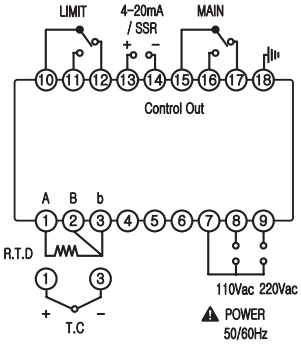
Functional Description



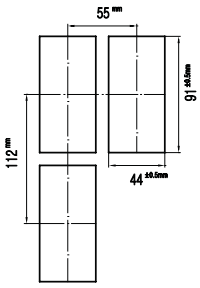
① PV : PV display
② MAIN : Set value
③ OUT : Output
④ LIMIT : Deviation alarm set
⑤ INPUT/OUTPUT : Input/Output specification
⑥ PB : Proportional band volume
⑦ MR : Manual reset volume

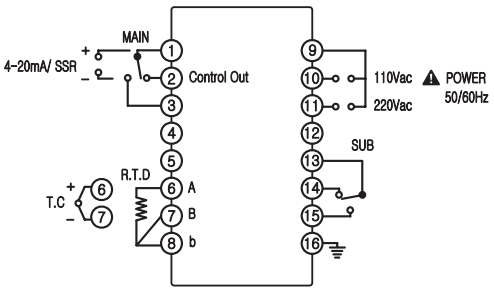
SD 501(S)



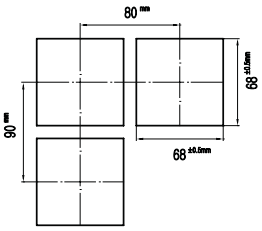


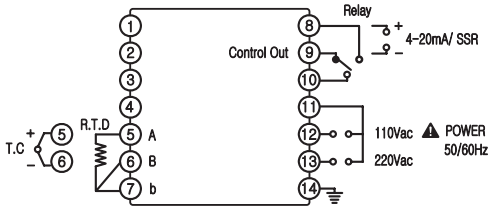
SD 505(-5)



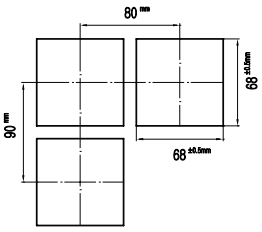


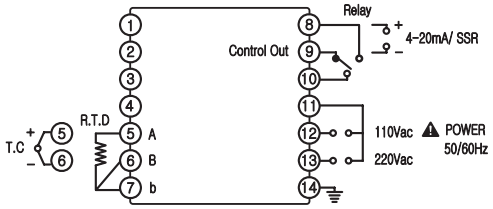
SD 301



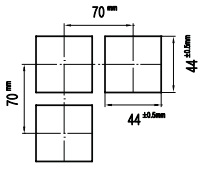


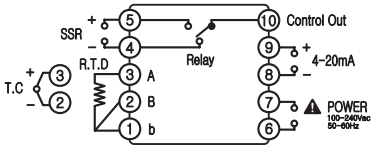
SD 302





SD 104





Analog series

Features

- Analog temperature controller
- Temperature measurement varies range
- Simple operation by front volume & switch
- Variable of proportional band by PB volume (DIC 2)
- Analog display of deviation temperature (DIC 2)
- Display LED for Output status
- Various dimensions of DIN size

Certificate

CE

Specifications

	IS	DIC 1	DIC 2	SM	IS 3
Dimension	96×96×130	96×96×130	48×96×125	72×72×110	48×48×90
Input	K, J, E, T, R, S, B, Din PT100Ω, JIS PT100Ω				
Output	Relay (250Vac/3A), Current (4-20mA), SSR				
Sampling Time					
Control Mode	P, ON-OFF				
Accuracy	±1.0% of F.S				
Alarm	-				
Power	110/220Vac, 50/60Hz				
Operating Condition	Temperature : 0-50℃, Humidity : 35-85%RH				
Others	IS, SM, IS3 : Analog setting/ Non indicating				

Typical Application

- ☐ Universal Input —— Thermocouple, R.T.D, Vdc, mAdc
- ☐ SV display —— Set value
- ☐ Sensor Power —— 17Vdc, Max 30mA
- ☐ Retransmission Output —— 4-20mA Current Output
- ☐ Full Scale —— Measurement Range
- ☐ High Brightness Display —— High Brightness 2.3' FND
- ☐ Communication —— RS485 Interface (Modbus ASCII)
- ☐ PB volume —— Propotional Band
- ☐ MR volume —— Manual Reset
- ☑ Volume set —— PV setting
- ☐ Deviation alarm —— Sub alarm

Input Type & Measurment Range

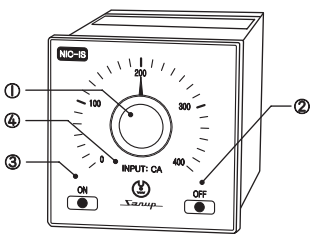
IS	PT100Ω	0~100, 200, 400℃
	K (CA)	0~100, 200, 400, 600, 1200℃
	PR-R	0~1600℃
DIC 1	PT100Ω	0~100, 200, 400℃
	K (CA)	0~200, 400, 600, 999℃
DIC 2	PT100Ω	0~100, 200, 400℃
	K (CA)	0~100, 400, 999℃
SM	PT100Ω	0~100, 200, 400℃
	K (CA)	0~100, 200, 400, 600, 1200℃
	PR-R	0~1600℃
IS 3	PT100Ω	0~100, 200, 400℃
	K (CA)	0~100, 200, 400, 600, 1200℃

Ordering Code

□-□□□□□

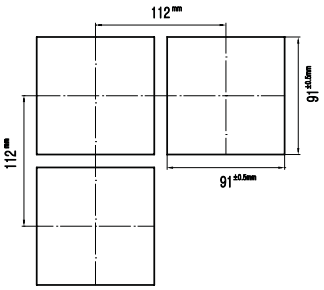
- Option -
- Power 100/220Vac, 50/60Hz
- Output Relay, 4-20mA, SSR
- Range Range
- Input User Fix
- Model IS, DIC 1, DIC 2, SM, IS3

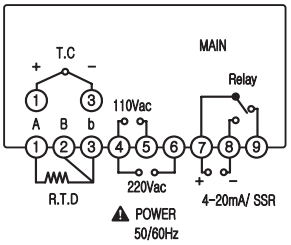
Functional Description



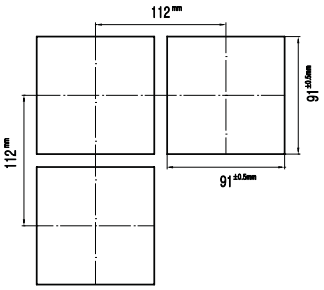
① SV : Setting volume
② OFF : Output off LED
③ ON : Output on LED
④ INPUT : Input type

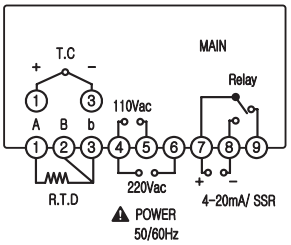
IS



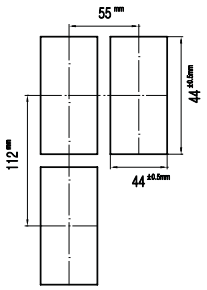


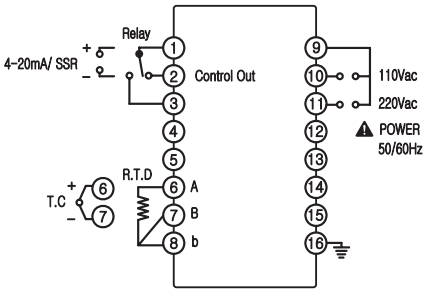
DIC 1



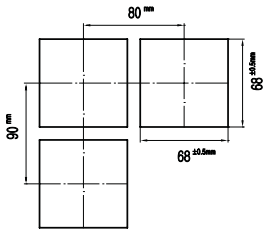


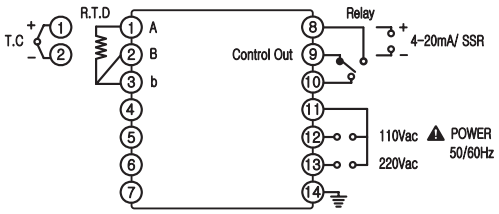
DIC 2



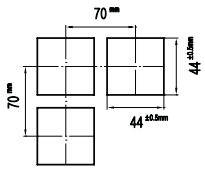


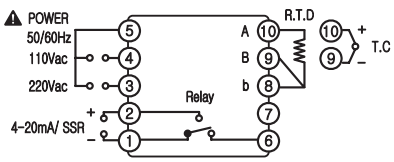
SM





IS 3





Water Proof Indicator

Features

- Water-proof Digital indicator
- Temperature & time display (R type)
- Safe from Electric shock by DC power supply
- PV Correction by touch switch (N type)
- Resolution selectable (0℃/ 0.1℃)
- Sensor burn-out when the display value set
  - set value display when sensor burn-out
- High brightness FND
- Remote control operation (R type)

Certificate

CE

Specifications

	SD700WR-N	SD700WR-R
Dimension	275×160×50	
Input	PT100Ω	PT100Ω, 4-20mA, K, 1-5V, 0-10V
Display Size	2.3" FND/ 3Digit	
Sampling Time	250ms	
Control Mode	-	
Accuracy	±0.5% of F.S	
Alarm	-	
Power	12Vdc, 300mA	
Operating Condition	Temperature : 0-60℃	
Others	Touch S/W, Bias, D-P	

Typical Application

☐	Universal Input	Thermocouple, R.T.D, Vdc, mAdc
☐	Sensor Power	17Vdc, Max 30mA
☐	Retransmission Output	4-20mA Current Output
☐	Full Scale	Measurement Range
☑	High Brightness Display	High Brightness 2.3" FND
☐	Communication	RS485 Interface (Modbus ASCII)
☑	PV Bias	PV Correction
☑	Water-Proof	Waterproofing Structure
☑	Decimal point	0℃/ 0.1℃
☑	Burn-Out	Disconnection of Sensor wire
☑	Touch S/W	Sensitivity Touch S/W

Input Type & Measurment Range

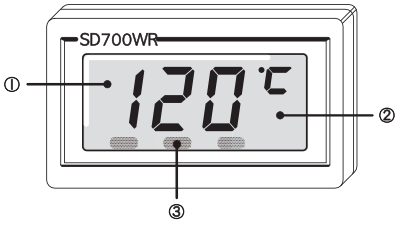
SD 700WR-N	PT100Ω	-50~199℃, -50.0~99.9℃-199℃
SD 700WR-R	4-20mA	-50~199℃, 0~99.9℃, 0~199℃
	PT100Ω	-50~199

Ordering Code

SD700WR - □□□□□□□

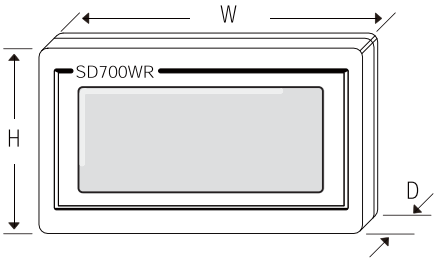
Option	-
Power	12Vdc
Range 2	
Range 1	-50~200℃
Input 2	-
Input 1	PT100Ω
Display	T/ 2.3"
Model	Water-Proof

Functional Description



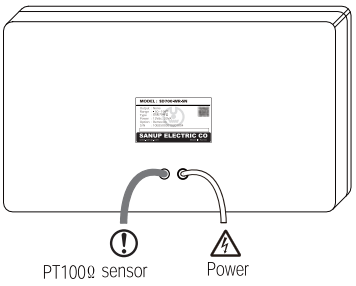
① PV : PV display
② Rem : Remote receiver (Option)
③ S/W : touch switch

SD700WR-N



W: 275.0, H: 160.0, D: 50.0 [mm]

SD700WR-R



Accessory

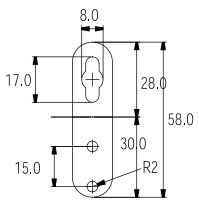
■ Sensor ■

■ Remocon ■

Specifications suitable for power connection
⎓ 12Vdc, Min 300mA

■ Adaptor ■

■ Bracket ■



■ Fixing Hinge ■

Smart series

Features

- Digital set
- Digital display
- Manual operating by PC interface
- Over current, Over temp, Load unbalance, SCR short check
- Programable Soft Start
- Input signal display (%)
- Load current display (R, T)
- Included Buzzer
- RS485 Interface(Modbus ASCII)
- Remote Controller (RC 1000) by remote set

Certificate

CE

Specifications

	Smart TPR	Smart SPR	TPR pro	SPR pro	RC 1000
Pole	3P	1P	1P	1P	–
Current Capacity	35 ~570A	100 ~240A	50, 75A	30A	
Control Input	4-20mAdc or Zero Voltage Contact				
Output Votage	0-95% Min. of Input Voltage				
Control Mode	Phase Angle (Pulse Width Modulation)				
Possible Load	All Resistance Load				Remote Controller
Control Element	SCR×3	SCR×1	SCR×1	Triac	
Power	110, 220, 380, 415, 440, 460Vac, 50/60Hz				
SCR Element Cooling	35-100A : Natural Air, 120-570A : Fan		Non		
Others	RS485, Alarm, Soft Start, Current Limit, Input Filtering				

Typical Application

- ☑ Digital Control — Digital Setting & Control
- ☑ Over Current Protection — Paramater Set
- ☑ Current Limit — Paramater Set
- ☑ Manual Output (VR) — External Volume
- ☑ Over Temp Protection — Paramater Set
- ☑ Status LED — Alarm indicator LED
- ☑ Phase Control — Pulse Width Modulation
- ☑ Sofe Start — Waterproofing Structure
- ☑ Open Phase Protection — Paramater Set
- ☑ Communication — RS485 Interface (Modbus ASCII)
- ☑ Event Alarm — 4 Type

Capacity

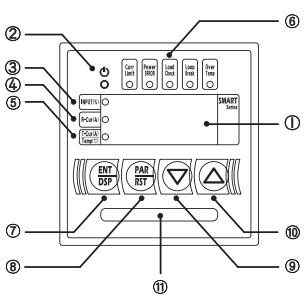
Smart TPR	35, 50, 60, 70, 80, 100, 120, 150, 190, 240, 300, 320, 400, 450, 500, 550, 570A ~
Smart SPR	100, 120, 150, 190, 240A ~
TPR pro	50, 75A
SPR pro	30A

Ordering Code

□-□□□□□□

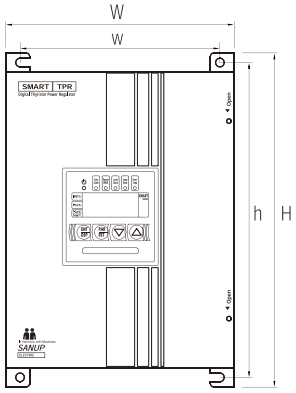
Option	RS485
Power	110, 220, 380, 415, 440, 460V
Pole	1P, 3P
Freq	50, 60Hz
Amp	Capacity
Input	4-20mA, 1-5V
Model	Smart TPR/SPR, TPR pro, SPR pro

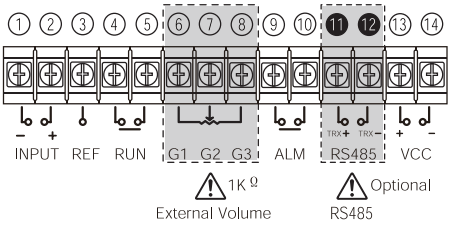
Functional Description



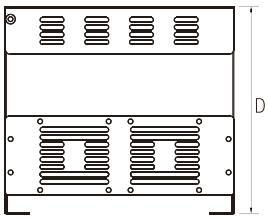
① PV : Parameter & Status display
② POWER : Power indicator LED
③ INPUT : input signal for display LED
④ R-CUR : R-phase current display for LED
⑤ T-CUR : T-phase current display for LED
⑥ ALM : Alarm indicator LED
⑦ ENT/DSP : Parameters fix & display mode select
⑧ PRA/RST : Select parameters & reset
⑨ DOWN : Decrement of parameter data
⑩ UP : Increment of parameter data
⑪ SPEC : Capacity

Smart TPR





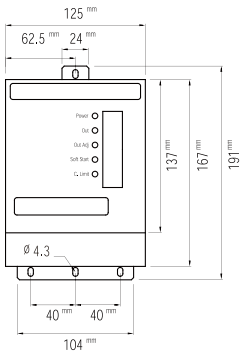
Smart SPR

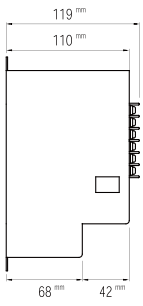


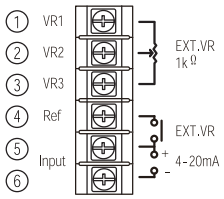
Model	SMART TPR					SMART SPR	
Amp	35–70A	80–100A	120–240A	300–400A	450–570A	100, 120A	150–240A
W	197	240	300	350	–	150	180
w	167	210	270	320	–	120	150
H	276	350	350	460	–	276	350
h	256	330	330	440	–	256	330
D	172	220	220	268	–	172	220

*450–570A : Order by

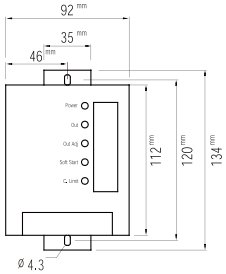
TPR pro

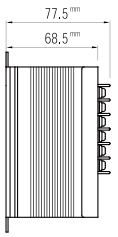


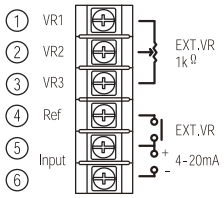




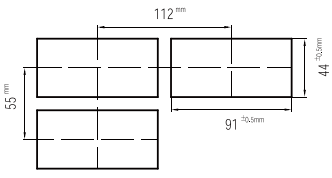
SPR pro

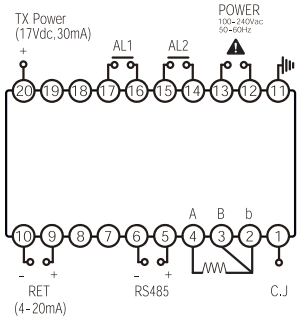






RC 1000





SRN series

Features

- Duct, Room Type Temp/Humidity transmitter
- Simple mounting & compact size
- Variety output (PT100, 4-20mA, 1-3Vdc)
- Wide measuring range
- High accuracy humidity (±3.0% class)
- Wide operating temperature range (-5~60℃)

Certificate

CE

Specifications

	SRN 100	SRN 200	SRN 300
Demension	70×114	70×114	86×86×293
Sensor	TEMP/ HUMI		
Accuracy	B-Class/ ±5.0%	B-Class/ ±3.0%	B-Class/ ±3.0%
Output	PT100Ω/ 1-4Vdc	PT100Ω, 4-20mA/ 4-20mA	PT100Ω, 4-20mA/ 4-20mA
Power	- / 5Vdc, 20mA	Each 16-24Vdc, 30mA	
Operating Condition	-5-60℃	-5-60℃	-20-60℃

Typical Application

- ☑ Transducer —— 1-3Vdc Output
- ☑ Transmitter —— 4-20mA Current Output
- ☑ Humi —— ±5.0%
- ☑ PT100Ω —— B Class
- ☑ Duct Type —— SRN 300 Series
- ☑ Room Type —— SRN 100,200 Series
- ☑ DC Source Power —— 12-24Vdc

Input Type & Measurment Range

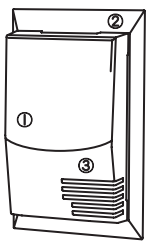
Temp	PT100Ω	-200~640℃
	4-20mA	-200~640℃
Humi	1-4Vdc	0~100%
	4-20mA	0~100%

Ordering Code

□-□□□□□□

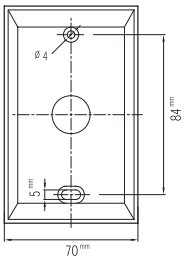
- Power — 15-35Vdc
- Range — 0-100%
- H-Out — 1-3V, 4-20mA
- Range — Full Scale
- T-Out — PT100Ω, 4-20mA
- Type — T, H, TH
- Model — SRN100, SRN200, SRN300

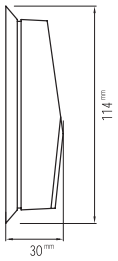
Functional Description



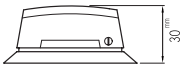
① COVER : Disassembly type cover
② BASE : Bottom case
③ SENSOR : Temp/ Humi sensing vents

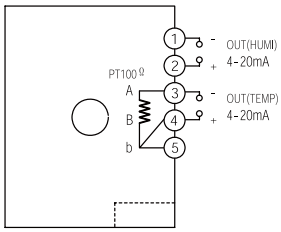
SRN 100



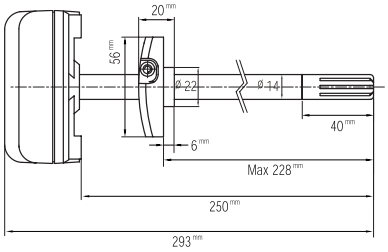


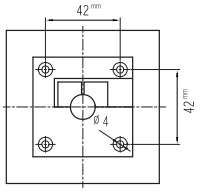
SRN 200

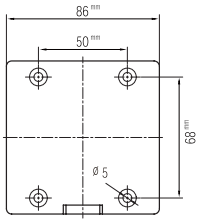


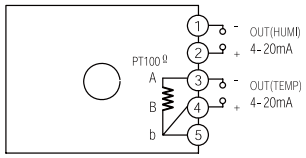


SRN 300



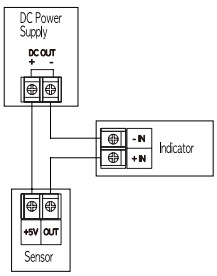




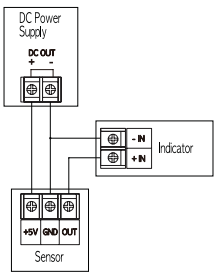


Connection Diagram

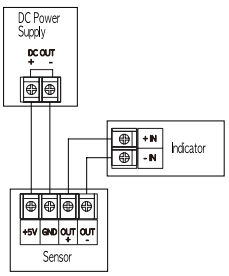
2 Wire Type



3 Wire Type



4 Wire Type



Sensor Thermocouple, R.T.D & Probe

SU-HL

for Small Surface

Type - K. E Max - 200OC

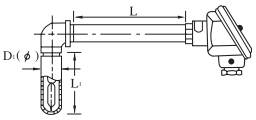
SU-V

for Air Temperature

Type - K. E Pt 1000 Ω(Max200 OC) Max - 400OC

SU-F

Metal Protection tube (900)



SU-H

for Surface

Type - K. J. E Max - 400O

SU-K

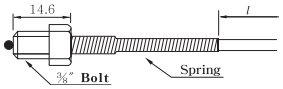
for High Temperature Surface

Stainless steel pipe has three kinds of angle type which consists of straight, 450 and 900

Type - K Max - 800OC

SU-M

Bolt Type



Thermo-Couple Type-K

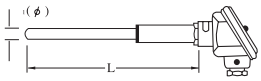
SU-L

for Rolling Wheel

Type - K. E Max - 400OC

SU-A

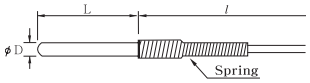
Ceramic Protection Tube.
(Metal Support)



Alumina HB or SSA-S. High Temp.

SU-N

Stainless Steel Protection Tube



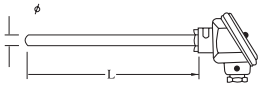
SU-P

for Needle Type

Type - K. E Max - 200OC

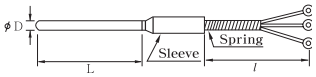
SU-B

Metal Protection Tube



SU-S

Stainless Steel Protection Tube.
(Sleeved)



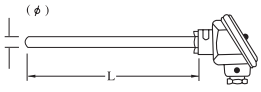
SU-PS

for Sharp Needle Type

Type - K. E Max - 400OC

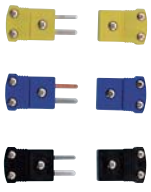
SU-D

Metal Protection Tube (Flanged)



SUS 304. 316. 310S. or Inconel

Thermocouple Plug



Global Network

Dealer

Advanced technology

Temperature Solution

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SANUP ELECTRIC CO.

INNOBIZ VENTURE

Head Office 240-42, Uijeongbu 2-Dong, Uijeongbu-Si, Kyounggi-Do, Korea
TEL] +82-31-876-4641~3 FAX] +82-31-876-4640

Sales Office 42, Jangsa-Dong, Jongro-Gu, Seoul, Korea
TEL] +82-2-2265-2298, 2272-0785 FAX] +82-31-876-4640

URL : http://www.sanup.com E-mail : sanup@sanup.com