

# Digital Temperature Controller

**SESTOS™**

**MANUAL**

**Model: D1S**

## ■ Features

- DIN(48X48mm) Temperature Controller
- Support multi sensor input (K, S, Wre, T, E, J, B, N, CU50, PT100)
- Wide control range -50~1300°C(K sensor)
- Indication and control accuracy 0.1°C, high measurement accuracy ±0.2%FS
- PID and ON/OFF control mode
- Output and alarm format can be set by user
- Built-in digital filter reduce interfere
- Self calibration technology, keep stabilization
- 0.39" height LED, prevent dazzle, highly visible display
- Switching power supply and low consumption



※Thank you very much for selecting **SESTOS** products, Please read and understand this MANUAL before using this unit.

## ■ Safety Precautions

- ⚠ This product must be mounted on the panel, avoid electric shock.
- ⚠ When the power is turned on, is not connecting the terminal, avoid electric shock.
- Ensure the product within the specification.
- Never disassemble, repair or modify the product, if needed please contact agent or us
- Do not use the product in locations subject to gases, dust, vibration, corrosive direct sunlight, water and oil, strong EMI

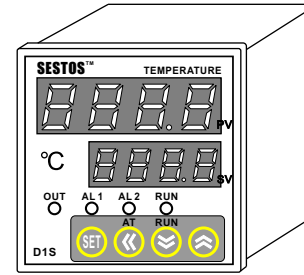
## ■ Specification

- Power and input: The power supply and input circuit are isolated.
- Voltage(Ordering): AC 100-240V ±10% 50/60Hz ≤5VA  
AC/DC 12-24V ±10% ≤4VA
- Character : PV: 4 digital 9.9mm height, high light red LED  
SV: 4 digital 8.0mm height, high light green LED
- Unit: °C
- Range:

K	S	Wr	T	E
-50~1300	-50~1700	0~2300	-2000~350	0~1000
J	B	N	CU50	PT100
0~1000	0~1800	0~1300	-50~150	-200~600

- Contact output(D1S-2R): AC 250V 3A(Resistive load) NO/NC.  
Alarm 1 AC250V 3A(Resistive load) NO/NC.  
12V; Alarm 1 AC250V 3A(Resistive load) NO/NC.
- SSR(D1S-VR): Mechanical: 10,000,000 operations min. Electrical: 100,000 operations min.
- Life expectancy:
- Sampling period: 0.5 S
- Indication accuracy: ±0.2%FS 0.1°C (under 1000°C); 1°C (over 1000°C)
- Data storage: 10 years
- Temperature compensating: 0-50°C
- Cutout size: 45X45 mm
- Mounting Method: Flush mounting and screw terminals
- Weight: Approx. 140g
- Ambient temperature: Operating: -10~55°C (with no icing or condensation)  
Storage: -25~65°C (with no icing or condensation)
- Ambient humidity: 35~85% RH

## ■ Nomenclature



OUT : Output  
AL1 : Alarm 1  
AL2 : Alarm 2  
RUN : Manual  
SET : Setting key  
← : Move, Auto adjustment  
↓ : Down key  
↑ : Up key  
PV : Present value  
SV : Set value

## ■ Setting and function description

Function	Description	Range	Unit	Remarks	Factory setting
HIAL	Absolute-value upper-limit	-1999- +9999	1°C		9999
LoAL	Absolute-value lower-limit	-1999- +9999	1°C		-1999
dHAL	Upper limit(deviation)	0-9999	1°C		9999
dLAL	Lower limit(deviation)	0-9999	1°C		9999
dF	Hysteresis	0-200.0°C	0.1°C		0.3
Ctrl	Control output	0: ON/OFF; 3: PID; 2: Auto adjustment			3
M50	Integral	0-9999	0.1°C	0: cancel	1000
P	Differential	0-9999	0.01S/°C		500
t	Hysteresis time	1-9999	S		120
Ctl	Control period	0-120	S	0=0.5S	4
Sn	Input sensor	0: K 1: S 2: Wr 3: T	4: E 5: J 6: B 7: N	20: CU50 21: PT100	0
dIP	Decimal point position	0-3			1
dIL	input lower limit display	-1999- +9999	1 digital		0
dIH	input upper limit display	-1999- +9999	1 digital		1000
SC	Sensor calibration	-199- +199	0.1°C	PV=PV'+SC	0
oP1	Output method	0: Time duty; 2: AL1 together with OUT			0
oPL	Output lower limit	---			0
oPH	Output upper limit	---			100
ALP	Alarm function	0-31		See T1	0
CF	System function	2: Heater; 3: Cooler			2
Addr	---				1
Baud	---				9600
dl	Input digital filter	0-20		Filter effect	0
run	Run mode	0:Maunal; 1:Automatic; 2:inhibit manual			2
Loc	---				40
EP1	---				none
EP2	---				none
EP3	---				none
EP4	---				none
EP5	---				none
EP6	---				none
EP7	---				none
Ep8	---				none

## Alarm function table (T1)

Upper limit output AL1	0	Upper limit alarm A12	1
Lower limit output AL1	0	Lower limit alarm A12	2
Upper limit(deviation) output AL1	0	Upper limit(deviation) output A12	4
Lower limit(deviation) output AL1	0	Lower limit(deviation) output A12	8

Note: Can set alarm in combination format, choice the requirement functions and sum of the value setting in ALP.

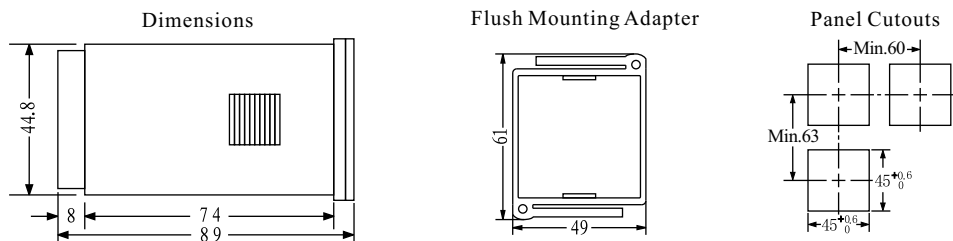
## Operation Procedures:

- 1/ Press SET key 2 second into the function mode, after return to the operation mode. If no any change after 10 second automatic return.
- 2/ For temperature setting, press the UP or Down key change the value, after 10 second operate the new setting.
- 3/ First operate the Auto adjustment, press AT key 2 second, SV display blink AT, finally into PID control mode. Press the AT key 2 second to abandon Auto adjustment.
- 4/ If successful the first Auto adjustment, can not use AT key for Auto adjustment again. It need change function setting Ctrl to 2 to operated again.
- 5/ Auto adjustment needs from few second to few hour.

## Suggestions:

- 1/ If use SSR or SCR for control part, setting control period prefer 4 second or shorter.
- 2/ If use relay for control part, setting control period prefer 20 second or longer for extend the relay life.

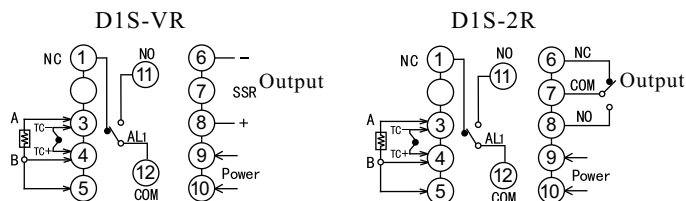
## ■ Dimensions with Flush Mounting Adapter



※All units are in millimeters unless otherwise indicated.

※Flush mounting adapter: YX-Y1 (Provided)

## ■ Terminal Arrangement



## ■ Precautions

- Separate the input signal cables from the power line.
- Short connecting wire from the sensor to the product is the best, if not please using shield cable.
- Use and store the product within the ratings specified for temperature and humidity

※Specifications and design subject to modifications without notice

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