Intelligent PID Temperature Control instrument
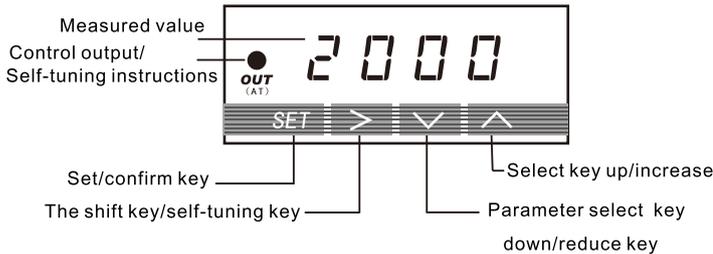
- Input type cna be RTD input(Pt100、Cu50) or Thremocouple input(T、R、J、B、S、K、E、WRe3-WRe25)
- The instrucment has automaticing function to self adapt to different systems
- Instrument can be degrees Celsius, degrees Fahrenheit temperature

一、Specifications

◆ Power supply:AC/DC85～260V (50Hz/60Hz)

◆ Load capacity:250W

◆ Power consumption:6W

◆ Temperature precision:0.2%FS

◆ Environment:0～+50℃;≤85%RH

◆ Outline Dimension:48×24×75

◆ Panel Dimension:45×22

二.Panel description

Measured value
Control output/
Self-tuning instructions

Set/confirm key
The shift key/self-tuning key
Select key up/increase
Parameter select key down/reduce key

三、Parameter setting guide

(一)、Initiation function parameter(Log in by inputting password 0089 after pressing set key)

1.Detials of parameters

Symbol		Description	Range	Factory value
INTY	inty	Input type	Table 一	P10.0
OUTY	outy	Control output type	2	2
HY	Hy	Autotuning pV bias	0～9999	0.3
PSB	Psb	pV bias	-1000～1000	0.0
RD	rd	Control action type	0	0
CORF	CorF	Engineering un selection	0	0
END	End	End		

2.Parameters of the initial functional description

1)inty : Temperature sensor type list

Table 一

Symbol	Name	Sensor type	Temperature range℃	Mark
t	T	T TC	-200～400	
r	R	R TC	-50～1600	
j	J	J TC	-200～1200	
wre	WRE	WRE TC	0～2300	Internal resistance 100KΩ
b	B	B TC	350～1800	
s	S	S TC	-50～1600	
k	K	K TC	-200～1300	
e	E	E TC	-200～900	
p10.0	P10.0	Pt100 RTD	-199.9～600.0	Constant current output 0.2mA
p100	P100	Pt100 RTD	-199～600	
cu50	Cu50	Cu50 RTD	-50.0～150.0	

2)Psb : Zero error correction

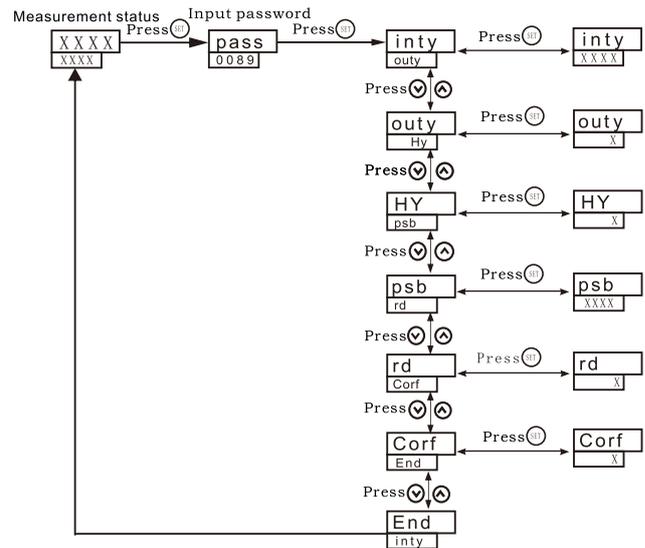Amendments End value = amended before the value + PSB

3)rd : Heat、Cool selection

0 : heat   1 : cool

4)Corf : Choice of temperature actions

F and C for the conversion relations:

$F=9/5℃+32$(℃：degree Celsius;F: degree fahrenheit)

3.Parameters settings procedure

(二)Initiation function parameter(Log in by inputting password 0036 after pressing set key)

1.Detial of PID parameters

Symbol		Description	Range	Factory value
P	P	Proportional band	0.1～99.9%	5.0
I	i	Integral timre	2～1999(minute)	100
D	d	Derivative time	0～399(minute)	20
SOUF	SouF	Overshoot suppression factor	0.0～1.0	0.2
OT	ot	Proportional cycle	2～199(minute)	2
FILT	FiLt	Digital filter factor	0～3	0
END	End	End		

2.PID parameter setting guide

Note 1(P):the temperature oscillation is inverse proportion of P value and proportion of the response speed

Note 2(i):Set the time of integral action which eliminate the offset occurring in proportional control

Note 3(d):Set the time of derivative action which prevents ripples by predicting output change abd thus improves cont-rol stability

Note 4(Souf):Overshooting and undershooting are restricted by the Souf and incrase of the parameter can suppress the overshooting

Note 5(ot):In general,control cycle is 2 when outputtype is volt-age
pluse output,and is 5-15 when output type is relay contact output.
Note 6(Filt):0 means the Pvdigital filter is turned off;1,2 and 3
are weak,medium and strong,respectively.

Start AT function: In the constant temperature control, con-stant or
if they can not over-temperature phenomena, canactivate the self-
tuning instrument functions, more app-ropriate instrument calculates
the PID parameters.Long press > keys, flashing lights until the AT
instrument to enter a state of self-tuning; AT lamp goes out, the end
of self-tuning, instrument set by self-tuning PID parameter adjustment
Ending AT function: a long three seconds by the> key, AT light is off
the end of self-tuning, the parameters do not change

- Self-tuning from time to time, there will be a significant
  over-temperature, please lower SV values appropriate to
  prevent the accident
- Must be properly connected to the corresponding sensor,
  heater, otherwise self-tuning unable to complete
- Self-tuning system response time depends on speed, ra-
  nging from a few minutes to several hours
- Self-tuning is a function of time on the start line, do not
  need to start every time

(三) Temperature setting SV (Log in by inputing pass-
word"0001' after pressing set key)

1.Detail of SV parameters

Symbol		Description	Range	Factory value
SV	SV	set value	Arbitrary set	710
End	End	End		

Note:In normal display mode,the SV is increased by using
the Up and Down key.

四、Wiring diagram