XMT 908P64 Program Control instrument

Operation Instruction

Ⅰ、basic concept

program segment： The instrument can be set up a multi-segment curve, the number of segments user setup program by segment and platform curve slopes composed according to the re

Ramp segment： When executed in accordance with the slope of the ramp segments continues to calculate the changes in the setpoint. As starting ramp portion of the measured value belo w the target, the set value is increased by the slope (the slope by heating).
As the starting point of the measured value is higher than the target segment ramp set value by reducing the slope (by the slope of the cooling).

Flat roof segment： Setpoint does not change the platform section, but the timer job in the instrument cluster, when the timing period of time to reach the platform, the end of the platform section.

Ⅱ 、Main Technical Indexes

1 Basic error： ≤±0.5%F.S±1，±0.3%F.S±1

2 Cold end compensating deviation： ≤±2.0℃

3 Sampling period： 0.5 second

4 Control cycle：relay output 2～120S , other is 2S.

5 Alarm output the drop in level： 0.5 or 5

6 Relay output contact capacity：AC250V/3A (resistance load) or AC250V/0.3A (perceptual load)

7 Dring controllable pulse output：≥3V scope，≥50μS widthcontact with pulse when move to exceed zero

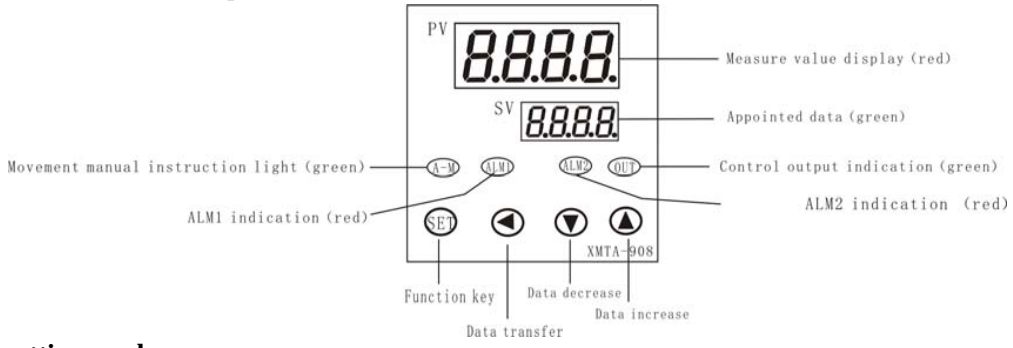
8 Driving solid relay signal output: driving electric current≥15mA, voltage≥9V.

9 Continuous PID : 0～10mA (load 500±200Ω), 4～20mA (load 250±100Ω), or 0～5V (load≥100kΩ) , 1～5V (load≥100kΩ)

10 Power: AC90V～242V, 50/60Hz

11 Work environment： temperature 0～50.0℃, relative humidity≤85%RH, without corrode and strong electric radiation.

Ⅲ、Panel



Ⅳ、Code setting mode

Series	Code	Name	Remark	Setting range	Ex-Factory
0	SP	Appointed data	—	Determined by P-SL P-SH	50.0
1	AL-1	Alarm 1	Testing Value>AL-1 upper limit alarm Testing Value< ALM1-Hy(fixed value 0.5) Release upper limit alarm	Detemined by P-SL ,P-SH Deviation range is ±50.0	0.0
2	AL-2	AL-2	Testing Value< AL-1 upper limit alarm Testing Value>ALM2＋Hy(fixed value 0.5) Release upper limit alarm	Detemined by P-SL ,P-SH Deviation range is ±50.0	0.0
3	Pb	Deviation revisal	The sensor have deviation,can use this item to revisal	0～±20.0	0.0
4	P	Proportion modulus	When the P↑,the proportion and differential function ↑ ;if the P ↓ ,the proportion and differential function↓. When P=0,the meter is ON/OFF control	1～9999	100
5	I	Calculus time	When the I↓ ,the calculus function↑ ;I ↑the calculus function↓. When I=0,no calculus function,it is PD adjustment	0～3000	500

			instrument		
6	d	Differential time	When the d ↓ the proportion and calculus function ↑ ;If d ↑ ,the propotion and calculus function ↓,but the differential function ↑ .when d ≤ t,it has no differential function.	0～2000S	100S
7	t	Control period	Control relay output period	2～120	20S
8	FILT	Filt modulus	Is the software filter constants of measurement sampling.The constant ↑ ,the Measurements antijamming capability Measurements antijamming capability ↑,but the measurement and system time ↓	0～99	20
9	Hy	Main control by drop in level	When the meter is ON/OFFcontrol,the value lower the control is good,But when the relay output it will detriment to the service life.	0.1～50.0	0.5or 1.0
10	dp	Decimal position	When dp=0,the decimal point units does not display; When dp=1 ～ 3,the decimal point in turn in tens,hundreds,thousands.	0～3	0or 1 or According to The request
11	outH	Output high limit	When the meter control the voltage or current output,it has the lowest and highest output limit function	outL～200	According to The request
12	outL	Output low limit	Like 11.	0～outH	According to The request
13	AT	Parameter setting	0: close; 1:open	0～1	0
14	LocK	Electronics lock	0-all the parameter can be revised 1-only the SP can be revised	0～50	0
15	Sn	Input type	‘0’ Cu50 –50.0～150.0℃； ‘1’ Pt100 –199.9～200.0℃； ‘2’ Pt100 –199.9～600.0℃； ‘3’ K -30.0～1300℃；‘4’ E -30.0～700.0℃ ； ‘5’ J -30.0～900.0℃；‘6’ T -199.9～400.0℃； ‘7’ S -30～1600℃； ‘8’ R -30.0～1700.0℃ ； ‘9’ WR25 -30.0～2300.0℃ ； ‘10’ N -30.0～1200.0℃ ；‘11’ Idiosyncratic type ； ‘12’ 0～50MV ； ‘13’ 10～50MV ‘14’ 0～5V(0～10mA) ； ‘15’ 1～5V(4～20mA) .	0～15	According to The request
16	OP-A	Main control by output method	‘0’ no output ‘1’ relay output ‘2’ solid relay output ‘3’ phase over zero trigger adjustment ‘4’ phase trigger adjustment ‘5’ 0～10mAor 0～5V； ‘6’ 4～20mAor 1～5V；‘7’ valve control	0～7	According to The request
17	OP-B	Vice control by output method	‘0’ no output；‘1’ RS232 or RS48 ‘2’ contact the micro-printer ‘3’ 0～10mA or 0～5V output； ‘4’ 4～20mAor 1～5V output	0～4	According to The request
18	ALP	Alarm	‘0’ no alarm；‘1’ high limit alarm； ‘2’ low limit alarm； ‘3’ high,low limit alarm ‘4’ positive deviation alarm ‘5’ negative deviation alarm. ‘6’ positive,negative deviation alarm ‘7’ outside the interval alarm ‘8’ inside the interval alarm ‘9’two high limit alarm ‘10’ two low limit alarm	0～10	According to The request
19	COOL	System function choice	0:reverse control. 1.positive control	0～1	0
20	P-SH	Display the high limit	When the input is thermocouple oe thermal resistance, appointed data and alarm setting range,but it does not detriment Todisplay.Whentheinputis voltage,current,P-SH decide the display range.	P-SL～9999	According to The request
21	P-SL	Display the low limit	The same as above	-1999～P-SH	According to The request

22	Addr	Communication address	The meter's number in the control system	0～63	
23	bAud	Communication baud rate	'0' 1200；'1' 2400；'2' 4800；'3' 9600	0～3	1200
24	m-A	Manual output			

Partial parameter of curve program control（the third setting area）

25	AL_P	Automatic pause	When system windage absolute value>the testing value,the meter pause automatically.	0～100.0	10.0
26	run	running state	'0' stop：SP as routine thermostatic control '1' hold：After finish the curve program control ,the meter turn to this state，the meter will be closed,and output in the state of single display '2' pause：the setting value△SP as thermostatic control，the meter stop timing . '3' run：the meter run as according to the slope temperature and time parameter.	0～3	0
27	Pro	program segmentation	The present running zone，change this parameter can skip at random. Running time TE to reset at time	0～64	0
28	TE	Run time	The run time of nonce segment（only read）	≤setting time of this section,the unit is minute	According to The request
29	r1	Slope of brae 1	The unit is ℃/min when r=0 finish this curve control，and enter the stand by state（run=1 pro=1）when r=200.0,skip this slope section to enter the next platform.	0-200.0 ℃/min	According to The request
30	t1	Running time of Platform 1	soaking time of Platform 1,when the time is 0 ，the program will skip to next section.	0～9999second	According to The request
31	C1	Arget temperature value of Platform 1		Determined by P-SL P-SH	According to The request
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122	r32	The slope of ramp 32	The same as above		According to The request
123	t32	The running time of platform 32	The same as above		According to The request
124	C32	target temperature value	The same as above		According to The request

2、Time parameter（only use when with the print function）

Series	symbol	Name	Remark	Setting range	Ex-Factory
125	year	year		0～99	
126	yue	Month		1～12	
127	dA	Day		1～31	
128	Ho	Hour		1～23	
129	Fen	Second		0～59	

Ⅴ、Technical indexes

1、The first setting area

Press the SET key 3S enter into the first setting area, the meter will display the parameter code 1～23 in the window at the upper row and display the parameter data at the low row. In this time press the ▲、▼ or ◀ key to adjust the parameter, then press the SET key to preserve. If within 10 seconds do not press every key then it will automatically to preserve the data and withdraw the setting.

The LOCK is electronics lock, when Lock=0, all the parameter can be revised; when Lock=1, only the "SP" can be revised; when the Lock＞1, all the parameter can not be revised. But don't set the Lock＞50

2、The second setting area

When the meter is set up with the electricity, press the SET key enter into the second setting area, you can according the 1 to set the "SP".

3、**The third setting**

Curve parameter setting area,press SET+◀3 Second to enter into ,the other operation is the same above .

4、Time parameter setting area

When the power on ， press SET＋▲＋▼key to enter into the setting area，the other is the same as above。

5、Manual regulation

When the meter is set up with the electricity, press the ◀ key about 3S enter into the manual regulation, it will display "H" at the lower row, in this time can set the output power; press the ◀ key about 3S again it will withdraw the manual regulation.

When the control object is valve, the manually operation value >50,and is co rotating，whereas is reversal，stable output duty ratio is 100%。

6、reposition: press shift key +▼ about 1 Second, the program will reposition the first stage, run according to the running state.

7、Normal using ,it shows the measurement data in the window at the upper row and display the setting data SV at the lower row,press the▼ key it will display the main control output data,the first LED display "F"，latter three LED 0～100 output data.

8、outer switch operation (these outer switch and indicator light can set according to the client's request.

When the meter in the state of stop o state or during the state of stand by or interim ,press outer switch K，the meter Will enter running state,the circumscribe indicator light will be lighten.when the meter stay in the running state,press outer inching switch K，the meter will enter into the pause state,the circumscribe indicator or plain stage indicator willcoruscate.

Ⅵ、Operation method of running curve program

1、Three work state of the meter

State of stop:

when the meter is in the state of stop,the meter is used as the thermostatic control,the setting value is the basic setting value（SP）,display in the window below,the running indicator light turn off.

State of running：

When the meter is in the state of running ,the meter constantly modify the setting value （SV）according to the setting curve，make the measured value（PV） changing according to the curve program,so as to achieve the purpose of curve program control,and the indicator light turn bright.

State of interim ：

When the meter is in the state of interim,the calculagraph stop timing ,the setting value（SV）maintain unchanged,and it also will prolong the running time of the curve program,the indicator light will coruscate.

State of automatic pause：

The state of automatic pause is the special form of the state of interim,created by the meter itself,not can be controlled by artifial. In the running state,when the deviation absolutevalue of themeasured value and present setting value（SV）>automatic pause strap (AL_P)，the meter enter into the pause state，the indicator light will coruscate.，the calculagraph stop timing ,the setting value（SV）will not change. when the deviation absolutevalue of themeasured value and present setting value（SV）< automatic pause strap (AL_P),the meter will automatically resume the running state.

Hold state：

when the meter finish the curve program,and some section r=0 时,the meter will enter into the hold state (run=1)，and the main control output closed,the indicator light tirn off,the below window display the first setting value. When the outer switch touch off or set the meter Run parameter to 3,it can restart.

2、Disposal on the power-cut

During the running process of the curve program，the meter will for every 5 minutes to save the running parameter and the running state data，so when the power is off and then on ，the meter only run according to the last saved data to continue ，not from the beginning(if it need to start from beginning,press reposition key to start.

Ⅶ、Setting itself

The meter use in the first time or the surroundings have changer, finding it control not good, in this time you need use the setting itself. For example:

Set the HY is 0.5～1℃,if the output is relay set the t=2S, then set the AT=1,A-M light flickered, in this time the meter

enter into setting itself. It have three times vibrate, automatic preserved P, I, D parameter and the A-M light off, the setting itself finish.

Note：①when Setting itself,the instrument should not change the set value.

②when the power off during setting itself,as the meter has the memory,it will restart setting itself next time.

③when it need artificially exit during setting itself,set the parameter to 0 so that can exit，but the setting result will not be valid.

④The parameter set suitable for most of the system,but not for the minority system.so we can adjust P、I、D value.when artificially adjust ,,look into the response curve,.If it is the short cycle oscillate (about the same long as the oscillation cycle of setting itself or on-off control), decrease P(priority), increase Iand D; If it is the long cycle oscillate (more times as on-off control), increase I(priority), increase P、D; if with no oscillate but with steady-state error.decrease I(priority),increase P;if last can control steady but need long time decrease D(priority),increase P, decrease I.The adjustment can adopt step-by –step method, ,first to increase or decrease 30-50% with one parameter of P、I、D.If the control result is get better,then keep on increasing or decreasing the parameter till the result is best.In general ,we modify P first, then I, if the result is also not well,and modify D parameter.When modify these three parameter,we should consider the overshoot and control precision these two index.

When output control valve,as the cycle of open and closed is too long ,it should artificially modify PID parameter on the basis of Ex-Factory value if the result of setting itself is not well . (In general P↑ on the basis of Ex-Factory value,diminish and in order to avoid continual action ,D should adjust smaller.

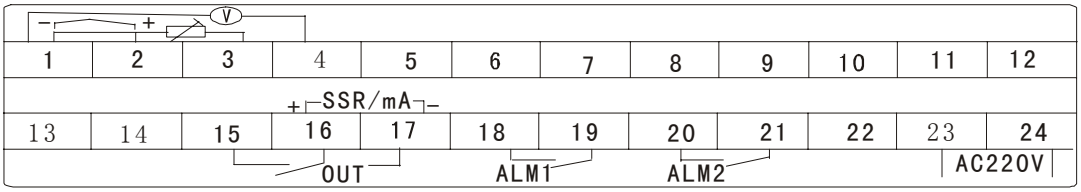
Ⅷ、Connection

Note①:Only one way for alarm use Alarm 1.only when alarm method ALP is 3(upper and lower limit alarm)、6(upper and lower deviation alarm) 、9(upper and upper limit alarm) 、10 (lower and lower limit alarm),it should use Alarm 2,when upper and lower limit alarm or upper and lower deviation alarm,it should use Alarm 2 as lower limit or lower deviation alarm.The indicator light will be lighten when the alarm output.

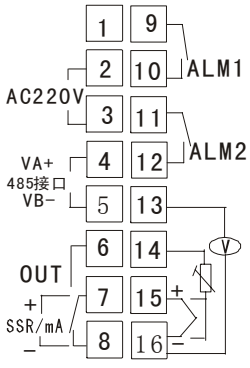
Note ②:The special connection when the meter used as value control ：when the meter used as value control,Alarm 1、Alarm 2 relay used to control the positive and negative rotation of the valve ,but the main relay is used as alarm control,so ALP only can be set for one group alarm,for example 1、2、4、5、7、8,otherwise the meter will broken.

Note③：when input current signal 0-10mAor 4-20mA ,it should respectively combine 1K or 250 250Ω to input port.Change the current signal to voltage signal.

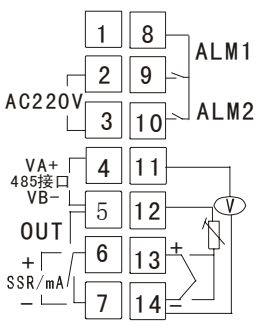
XMT/XMTS



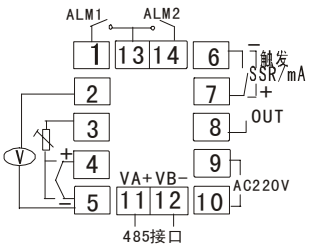
XMTA/XMTE/XMTF

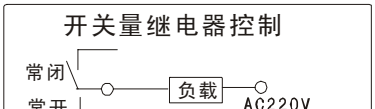


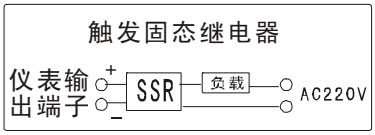
XMTD

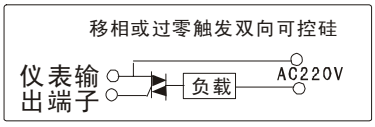


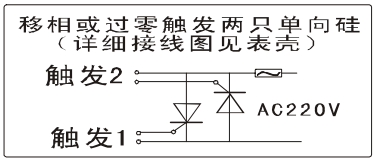
XMTG











Note ：The printer connection wire, ‘R’ is the ‘21’ wire ，‘T’is the ‘19’wire，‘GND’is the ‘10-18、20、22-24’wire.The other wire needn’t to connect .

The connection should be subject to the attached connection diagram.

- **As below take the surface of the paste solder equipment for instance setting the program section parameter：**

1、 prewarming zone:Rise the stove temperature from the starting temperature to soaking zone. r1=30℃/minutes；

2、 soaking zone：namely the first platform section C1=150℃ heat preservation T1=2minute；

3、 circumfluence zone：the program skip from the first platform to the second platform（r2=200℃/minute）,to make the stove rise to the soldering temperature C2=220℃,heat preservation T2=1minute；

4、 cooling zone：set r3=199℃/minute，andC3=80℃ to make cooling rapidly .and set T3=0 minute so as to finish the whole jointing process.

5、 reposition switch to stand by state：After the temperature decrease to 80℃ to enter into the third platform zone,but as T3=0,then enter into the fourth slope zone directly.when r4=0,so the meter skip to the first program zone to enter into the stand by state（pro=1 ； run=1）。

- **Temperature Curve chart as below：**