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XMTD-2MB-YS Series Temperature Controller Operation Manual

Thank you for using Winpark products. Please read this manual carefully before operating the controller and always keep it around you to make it available easily anytime.

General Electrical Data

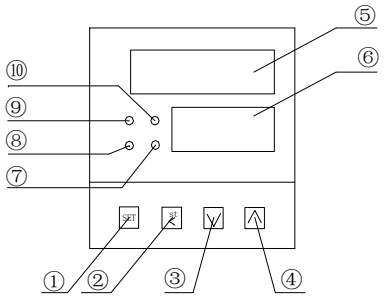
Rated voltage	180 -240V AC 50/60HZ 90 -120V AC 50/60HZ	Power Consumption	≤5W
Accuracy class	0.5 Class	Work environment	Temperature: 0°C ~50°C, RH: 35%~85%
Display accuracy	1°C/ 0.1°C	Connection methods	Terminal

In accordance with standard of "Q/320401HBD001-2000XMT series PID intelligent temperature controller"

Product Model:

XMTD-2MB-YSV-SSR （K sensor 0～400℃ Logic level output）
XMTD-2MB-YSV-JW （K sensor 0～400℃ Output relay trigger signal, user equips external relay）

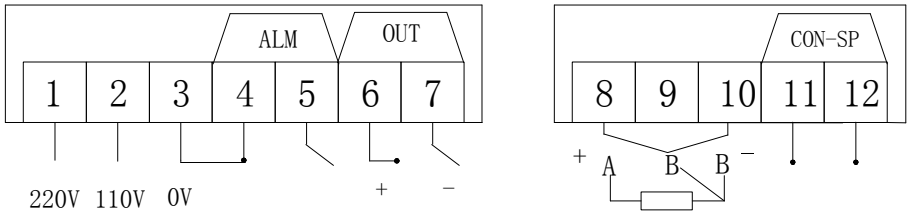
Panel explanation



①set key （SET）
②time set & shift key （ST/<）
③minus key（∨）
④plus key（∧）
⑤measuring value（PV）
⑥time display（SV）
⑦time up indicator (END, green)
⑧alarm indicator (ALM ,red)
⑨heat output indicator （OUT, green）
⑩auto-tuning indicator（AT，red）

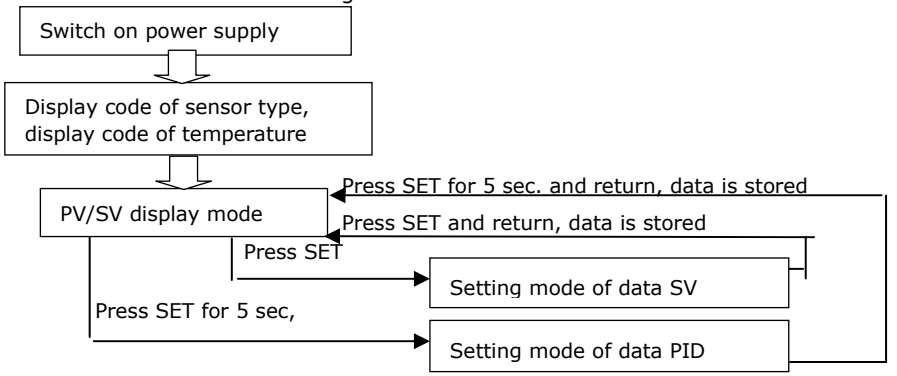
Wiring connection

XMTD-2MB-YSV （Terminal 3 and 4 has been connected inside the controller）:

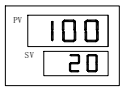
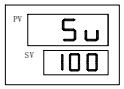
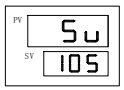
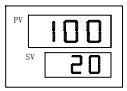


Operation instruction

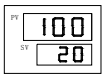
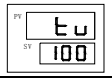
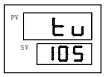
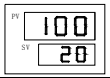
Operation Procedures When Entering into Each State



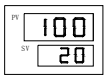
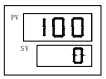
How to set temperature:

Display	Description	Operation
	Upper line displays measured temperature Lower line displays time set value	Press "SET" to enter temperature setting mode
	Upper line displays SV Lower line displays temperature set value	Press "∧" or"∨", to add or minus SV value
	Upper line displays SV Lower line displays temperature set value	Hold "∧" or"∨", to add or minus SV value continuously
	Upper line displays measured temperature Lower line displays time set value	Press "SET" to return to working mode.

How to set delay time:

Display	Description	Operation
	Upper line displays measured temperature Lower line displays time set value	Press "< " key to enter time setting mode
	Upper line displays TV Lower line displays time set value	Press "∧" or"∨", to add or minus TV value
	Upper line displays TV Lower line displays time set value	Hold "∧" or"∨", to add or minus SV value continuously
	Upper line displays measured temperature Lower line displays time set value	Press "SET" to return to working mode.

Description of time delay process

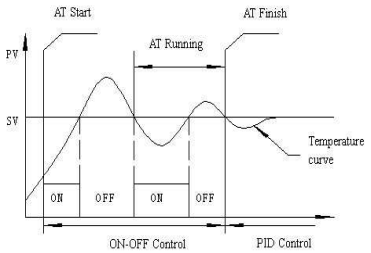
Display	Description	Operation
	Upper line displays measured temperature Lower line displays time set value	Short connect external input contacts, to enter time delay control mode
	Upper line displays measured temperature Lower line displays counting down	decrease 1 in every seconds
	Upper line displays measured temperature Lower line displays counting down	After 20 seconds, lower line counts down to"0", output time delay, "END"indicator on the panel turns on

Auto-tuning function

How to start and stop auto-tuning

1. When start auto-tuning, the heating system should be in working status and the measured temperature should be lower than setting value.
2. Press SET key for 5 seconds to enter parameter setting mode. Click SET key until "LCK" appears, set LCK=1. Click SET key until "AT" appears and input auto-tuning type (1, 2, 3 optional, usually choose 1). Press SET key for about 5 seconds, AT indicator light flashes. Auto-tuning is running.
3. **press minus key"∨"for 5 about seconds to enter auto-tuning status directly**

When auto-tuning is accomplished, AT indicator light turns off. The controller has calculated out a group of parameters fit to the system and would run under the new PID parameters.(New PID parameters could be found in the controller system.)



Remark: auto-tuning functions (AT) are sorted into 1, 2, 3 types
1). AT=1 means No.1: general type, fast temperature rise and excellent stability.
2). AT=2 means No.2: overshoot suppression type, suitable for the quick system which can't achieve short heating cycle.
3). AT=3 means No.3: lag/delay system type, especially suitable for those systems which are hard to bring down the temperature after overshooting

Parameter explanation

1. In PID data setting mode, press SET key each time; data in following table shall be displayed in sequence. However, based on the specifications when placing the order, some data may not appear and the initial value could be different.
2. If user needs ON-OFF control, set P=0 and D= return difference (0.1℃)

Para-meter	Name	Setting	Description	Defau lt
P	Proportional Band(Heat)	0~99.9 %	Set proportional band of heating end (when Pv=0, it is stepping control)	027
I	Integral Time	0-250	Integral Time for heating end (re-adjust time)	031
D	Differential Time	0~999	Differential Time for heating end (advance adjust time). When it is ON-OFF control, D parameter is return difference	005
IT	Overshoot suppression	0~200	The smaller is IT value, the smaller is the first overshoot, but it takes longer to reach the set temperature value.	005
SP	Proportion band separate	0~200	To prevent overshoot caused by proportion function.	0
T	Output cycle (Heat)	1~180 sec	Set the cycle time for the output of the controller (heat)	008
TR	Temperature modification	-99~100	Set Temperature modification parameter when there are affection caused by the position of sensor or other factors	0
AH	Alarm value 1	0~100	Set alarm parameter	010
RAG	Upper limit	0~999	Set upper limit for temperature	400
AT	auto-tuning	1,2,3	auto calculate PID parameter to fit the user's system	000
LCK	data lock	0,1	When LCK=000, all parameters are locked; when LCK=001, parameters could be modified.	000