STEC INDUSTRIAL SOLUTIONS INC.

TMF Series 12-60 zones

Hot Runner Temperature
Controller Operation Manual

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We focus on hot-runner temperature controller

Provide world-class temperature control solution for hot runner mold

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Specification

- Control error : ±2℉ (±1℃)
- Cold junction compensation error : ≤±2℉(≤±1℃)temperature coefficient
- Scope of temperature control : 0-752℉(0-400℃) for K-type thermocouple; 0-752℉(0-400℃) for J-type thermocouple
- Total output power: : 50KW
- Maximum output current of single circuit: 15A
- Alarm scope: freely set within 0－200℉(0-100℃)
- Applicable model of thermocouple: K and J
- Working power supply: AC240V (three-phase)
- Digital PID adjustment
- Working environment: -10℃-60℃, relative humidity of 35%-85%RH. Non-corrosive and no strong electromagnetic radiation

Function

- Large-screen visual display of LCD graph
- Touch key-press control
- Display of current and output proportion
- Prompt of fuse damage
- Malfunction detection on thermocouple
- Malfunction detection on heating tube
- SCR temperature detecting
- SCR temperature detecting
- Maximum current limiting function
- The linear voltage is adopted to control the output so as to provide better protection for heating tube

Alarm description

- Acoustic alarm:

  Acoustic alarm: interrupted alarm sound—communication fault

  Continuous alarm sound—control alarm

- Prompt symbol of alarm:

Over voltage
Low temperature
Communication fault
Fuse damage
Heating open-circuit
Heating short-circuit
SCR high temperature
SCR open-circuit
SCR short-circuit
TC Reverse
Overtemperature
TC open

- Status symbol:

OFF	RUN	FLW	DIS	MT

Note: Please turn off the main power on backboard if you don't use this machine for a long time !

Operation interface

■ The main display interface

■ Setting temperature interface

■ Single-circuit parameter setting interface

Operation instructions

- 1.Startup & shutdown:

①.Move the power main switch on backboard of control cabinet to the position ON .

As shown in figure 

②.Press down "Open/Close" button on main display interface of screen.

As shown in figure 

③. If it is required to set single-circuit switch, press down the display frame of this circuit "ON/OFF" key on upper left corner

As shown in figure 

- 2.Temperature setting:

Press down "SV" key, and then the keyboard setting interface will appear on the screen press down the required temperature, and then press down "enter" key.

As shown in figure 

If it is required to set the whole circuit as same temperature, for example, set the first 10 circuits as same temperature, you only need to press down "COPY" key 

on upper right corner after setting the temperature of circuit 1, and then the

below the screen will show the selected circuit number 1; then, you need to press down "COPY" key 

of circuit 2-9 and then you can quickly set circuit 2-9 to have a same temperature with circuit 1.

- 3.Parameter setting:

If you need to adjust the parameter of this control circuit, enter into temperature setting interface and press down "parameter" key.

After you enter into parameter setting interface,  move the cursor. 

after you move the cursor to the parameter to be set, press left and right key

to select setting parameter, or directly type in parameter on keyboard. After completion of setting, press down "enter" key. 

If you need to recover this circuit to factory settings, it is ok to press down "reset" key. 

■ ①Auto/Manual set:
Set range : Auto and Manual.
For automatic set-up, controller will automatically control temperature in accordance with thermocouple signals; for manual setup, controller will output the percentage "parameter 2".

②Manual output:
Set range : 0-100% it is required to set the parameter 1 as manual
For manual mode, set the percentage output

③Thermocouple type
Set range : J or K

④Alarm function :
Set range : Enable or Disable
For setting at "Disable", controller will not alarm in case of abnormal situations.

⑤Over temperature range :
Set range : 0-200℉
For set temperature of 30℉, the system will alarm when actual temperature exceeds the set temperature of +30℉.

⑥Low temperature range:
Set range : 0-200℉
For set temperature of 30℉, the system will alarm when actual temperature is below the set temperature of -30℉.

⑦Temperature correction range:
Set range : -15℃15℃
This parameter unit is Celsius degree.

⑧Control mode:
Set range : zero_cr or PWM

⑨SCR alarm :
If there is SCR fault parameter, it will display short circuit or open circuit. It is empty Under normal conditions.

⑩Soft start time:
Set range: 1-99min.

⑪Soft start output :
Set range : 0-100%

⑫PID control parameter P:
Set range : 0-999

⑬PID control parameter I:
Set range : 0-999

⑭PID control parameter D:
Set range : 0-999

⑮Maximum current note:
Maximum current note is used for recording the maximum current of controller.

⑯Maximum work current limit :
Maximum work current limit is used for displaying the maximum output current of controller. For setting of 12.0, the maximum output current of controller is 12A.

⑰Delay start time:
Set range : 0-99min.
For setting at 0, the controller will start without delay. After opening the switch, the controller will be at temperature-control mode. If the time is set at 20min, after opening the switching, the controller will not enter in temperature-control mode immediately until 20min later.

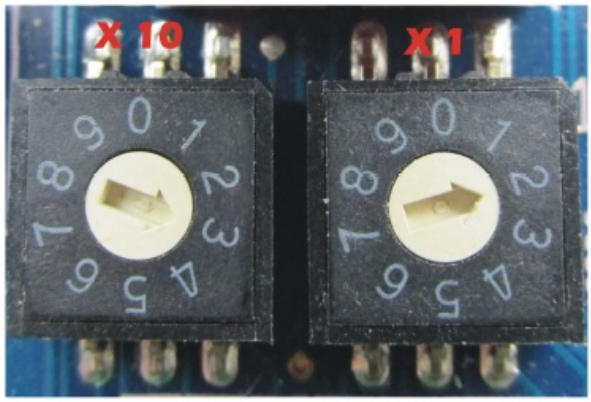
⑱ Follow control:
Set range : 0-60
For setting at Disable, the controller is in normal temperature-control mode. For setting at 1, the controller will enter tracking output model. The output voltage of controller will be the same with the output voltage of Channel 1.

⑲Load testing:
Set range: 5-12
Set the sense resistor of heater, the smaller of the number, the smaller of the allowed heater resistance.

Maintenance

- Replacement of control card

  If it is found that there is any damage in control card in the use process, you can pull out the control card and replace it of standby control card. Before the standby control card is inserted, it is required to set address code of control card; see figure below as for address setting:



- Description on indicator light of control card

Warning!

1.The main power on backboard must be closed before you replace die and pull out connecting cable !
2.The main power on backboard must be closed before you replace or maintain control card uni !
3.Please close battery main switch if you don't use this product for a long time !
4.The control cabinet must have reliable earthing before it is used !
5.Please confirm the arrangement mode of heater and thermocouple of control cabinet and die before connection of die .

This product is of metal shell; there shall be good earthing while it is used so as to avoid electric shock! !

Statement of responsibility

- Although we have designed many design measures in the control cabinet, the user still shall set suitable protective device in application system of control cabinet. In full consideration of loss which may be caused due to reliability of controller, we state that we will not bear responsibility of compensation for all losses (including personal or property, etc.) caused due to reliability of controller or other reasons except the control cabinet itself.

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