



深圳市欣天锐电子科技有限公司
Shenzhen TanRex Electronic Technology Co.,Ltd

源自台湾，TanRex系列热道温控系统生产商！

From TaiWan, TanRex hot runner temperature controller manufacture



2010-11版

公司简介

深圳市欣天锐电子科技有限公司是一家集生产热流道温度控制器(TanRex), 时序控制器(TanRex), 重载工业连接器(GW); DIP、SMT线路板无铅焊接和为工矿企业提供自动化设备的综合性企业。公司有温控事业部、电子事业部等多个生产部门; 每个事业部拥有独立专业的研发、生产、品保、销售服务队伍, 能够为客户提供品质优良、性能稳定的产品及点对点售后服务。

TanRex温控系列产品是从台湾、美国引进专业技术, 针对国内热流道、塑胶、模具企业的生产要求, 结合当前热流道系统特点精心研制的系列产品。热流道温控系列产品包括: 插卡式温控器、智能集中显示温控器、时序控制器及其他配件。

TanRex电子事业部拥有多条电子产品组装, 测试, 生产线; 可为电子家电、仪器设备等企业提供线路板插件和SMT贴片的生产。并可承接其他电子产品及电器产品从设计、生产、加工一条龙服务的OEM定单生产。

热诚欢迎各热流道、塑胶、模具及其他电子类企业及其他厂商与我们建立长期合作伙伴关系。我们将以优质的产品、真诚的服务来回馈您的厚爱。



Introduction of Tanrex manufacture

TanRexTechnology Co., Ltd. is a professional manufacture in ShenZhen of China, we are professional in hot runner temperature controller, timing controller (TanRex), heavy industrial connectors (GW); DIP, SMT lead-free soldering and provide automation equipment for the industrial and mining enterprises.

TanRex includes hot runner department, temperature controller department, welding department, and QC department, we have professional research and development, production, quality control, sales and service teams. We can provide high quality and stable performance products and point to point after-sales service for our customers.

We referenced professional technique from Taiwan, United States, combining the features of the current hot runner system to well developed our hot runner controller system, which include temperature control cards, smart centralized display temperature controller, timing controller and other accessories.

Welding department includes many electronic assembling, testing production lines. We can also provide electronic assembling, SMT and OEM orders.

We will provide superior quality products and service to all of our customers, and looking forward to build a long term partnership with you.

热流道集中显示温度控制器 Temperature controller with centralized display



产品特点

- ◆ 可支持4-128路温控系统，根据需要随意定制；
- ◆ 采用触摸屏集中显示各回路温度和参数，控制和修改参数一目了然；
- ◆ 每个温控模块含4路温控回路，单独配备LCD显示屏显示，每回路可独立操作；
- ◆ 采用PID算法控制和MODBUS通讯，控温精准，通讯快捷；
- ◆ 输入信号可选择J型和K型热电偶，或Pt100热电阻；
- ◆ 输出可直接驱动可控硅和固态继电器；
- ◆ 具有软启动功能（可选择）和参数自整定功能（可选择），可自动适应和充分保护加热设备；
- ◆ 可根据需要选择多种规格尺寸的触摸屏，或选择无触摸屏，通过温控模块自带LCD显示屏工作；
- ◆ 温控模块采用插卡式设计，维修方便快捷，易于操作。

Product Features

- ◆ It can supports 4 – 128 channels of temperature control system, and can be customized as requirement
- ◆ use touch–screen to centralized display temperature and parameters of all channels together, it is easy to control and modify the parameters
- ◆ Each module contains 4 channels of controller , with a separate LCD display, each channel can operate independently
- ◆ Use PID algorithm and MODBUS communications, temperature control is very precise, and communications are very fast
- ◆ Can select J–type and K–type thermocouple or Pt100 hot resistance for signal inputting
- ◆ Output can drive SCR and solid–state relay directly;
- ◆ With a soft–start function (optional), and parameter self–tuning function (optional), automatically adapt and the full protection for heating equipment
- ◆ According your requirement to choose a variety of touch screen size, or without touch screen, working with the separate LCD display .

热流道插卡式温度控制器 Hot Runner Controller



单组热流道温控器
1 Zone Hot Runner Controller



2组热流道温控器
2 Zone Hot Runner Controller



4组热流道温控器
4 Zone Hot Runner Controller



6组热流道温控器
6 Zone Hot Runner Controller



8组热流道温控器



12组热流道温控器

热流道温控卡 Hot Runner Controller



TR-2006



TR-0610



TR-TCS1



TR-550S

注:

- 1、热流道温控类、时序类及其他配件类产品均可做贴牌代工生产，或按客户要求OEM、ODM生产；
- 2、热流道插卡式温控器1-36点均有成品现货；38点以上需定做；
- 3、热流道温控器采用德国SIEMENS断路器，意大利GW连接器等全球知名品牌工控配件；
- 4、热流道温控器可提供YUDO（1、2加热线；3、4热电偶〈3+4-〉），MOLDMAX（1、2加热线，13、14热电偶〈13+，14-〉）、DME、HASCO等全球知名品牌接线方式；（或可按客户要求做任何电压及任何加热/热电偶分布的接线方式）。

Notes:

- 1、Temperature controller、sequence controller and other fittings can all be OEM、ODM according to customer's require.
- 2、1-36 zones card type temperature controller is finished product,38 zones and above should be customized.
- 3、Temperature controller uses German SIEMENS breaker, Italian GW connector and other world-famous fittings.
- 4、Temperature controller can provide YUDO(1、2heater cable;3、4 thermocouple cable 〈3+4-〉), MOLDMAX(1、2heater cable;13、14 thermocouple cable 〈13+14-〉), DME、HASCO and other world-famous brand connections (or make any connections of voltage、heater、thermocouple according to customer's require).

TR-2006型热流道温度控制器说明书

TR-2006 Hot Runner Controller Guide

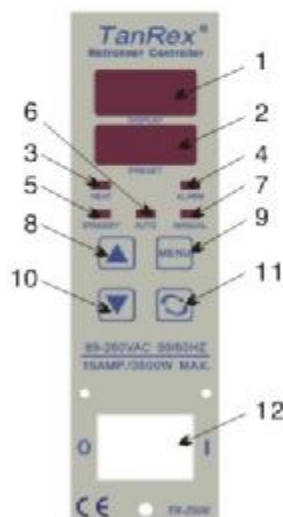
产品简介

TR-2006 型温度控制器是在借鉴美国先进热流道温度控制技术的基础上，结合当前热流道温度控制的特点，精心研制、改进的一款高性能温度控制器。它采用微电脑PID算法控制，在使用过程中能查看输出百分比、回路电流值、PID控制参数等，具有软启动功能，能手动设定PID参数和手动调节输出百分比，精确的PID参数自整定功能，在控温过程中具有控温精确、升温无过冲、使用简捷易懂的特点。

使用环境温度： 0° C----55° C
 感温器类型： K型或J型热电偶
 控温范围： 0° C----537° C
 控温精度： ±1° C
 控制输出形式： 可控硅 (Triac) 输出
 最大输出： AC220V/15A 3600W
 输入电源： AC85----260V 50/60Hz

面板说明

- | | |
|----------|-------------|
| 1、实际温度显示 | 2、设定温度及参数显示 |
| 3、加热输出指示 | 4、报警指示 |
| 5、等待状态指示 | 6、自动状态指示 |
| 7、手动状态指示 | 8、数字上调键 |
| 9、菜单键 | 10、数字下调键 |
| 11、切换键 | 12、电源开关 |



拨码开关功能说明

拨码开关位	功能	ON	OFF	出厂设置
1	软启动设置	有软启动	无软启动	ON
2	热电偶类型转换	K型	J型	OFF
3	温度单位转换	°C	°F	ON
4	无	无	无	OFF

操作说明

1) 设定温度

电源开关打开后，面板上方三位红色数码管显示检测到的实际温度，下面四位绿色数码管显示当前的温度设定值，按 ▲ 键和 ▼ 键就可任意调节设定温度的值，调节范围为0°C----537°C。（出厂默认值为230°C）

2) 软启动和PID参数自整定

温控器打开电源后即进入软启动工作状态（实际温度低于93°C时），这时AUTO指示灯闪烁，HEAT指示灯点亮，温控器缓慢加温，以保护受加热的器件。当实际温度超过93°C或在软启动状态时按 切换键 一次，即停止软启动，进入自动加温状态。如果温控器设定了PID参数自整定功能，则在软启动结束后即开始PID控制参数的自整定过程，这时红色数码管交替显示实际温度和 t_{un} 字样，为了精确捕捉加热器件的热敏特性，这个过程会较为耗时，温度会有1—2个升降周期，当温控器数码管停止闪烁后，表明PID参数自整定过程结束，温控器将会精确地将温度控制在设定温度点上。在自整定过程中按 切换键 即可停止自整定（一般建议温控器用在新模具上使用自整定一次，以后不再整定。具体操作方法详见《参数查看与设定》一节）。

3) 参数查看与设定

A) 查看温控器的输出百分比和输出电流

该温控器可提供给用户查看当前的输出百分比和输出电流。温控器正常工作状态下按 MENU 键，下方的绿色数码管会显示当前的输出百分比（0%—100%），再按一次则会显示当前输出的电流值，单位为A(安培)。

B) PID参数的查看和设定

按住 MENU 键不放，直至红色数码管显示出 P I d 字样为止。按 切换键 键，绿色数码管会分别显示出 P b、r A t E 和 R t O P 字样，显示每种字样的同时会交替显示该字样代表的参数的值。按 ▼ 和 ▲ 键可改变其值的大小。

a) 比例系数 (P) P b : PID运算中的比例系数 调节范围为0.01 出厂默认值为55

- C) 自整定设定 RLOP : 在这项中可设定温控器PID参数整定的方式, 有以下三种方式可供选择: (同样用 ▲ 和 ▼ 键来选择)
- 1、d IS (关闭使能): 选择该项时温控器关闭PID参数自整定功能, PID参数用手动来调节。
 - 2、oncE (整定一次): 选择该项时PID参数自整定功能开启, 在下次温控器通电时自动整定一次, 整定成功后进入正常使用状态, 以后不再自动整定。
 - 3、EnR (使能): 选择该项时PID参数自整定功能开启, 而且在每次通电时都会自动整定一次。
(温控器出厂设置为自整定一次) 按住 **MENU** 键不放即可以退出参数设定界面。

4) 手动调节输出

当测温热电偶出现故障, 致使温控器无法正常工作, 而又不能停止生产时, 可以用手动调节输出的方式来控制温度(当然在这种情况下, 温控器看不到实际温度的显示)。

重复按 **↻** 键直到MANUAL (手动) 指示灯亮, 这时绿色数码管会显示出一个数值, 它就是温控器的手动调节的百分比输出值, 用户可根据经验或周围其他温控器的自动输出百分比来给定一个值(按 ▲ 和 ▼ 键来调节这个值的大小), 以求在热电偶损坏而又无法停机维修的紧急情况下达到继续生产的目的。

(注意: 在正常情况下如果将温控器设置在这种状态将导致温控器无法正常控温)。

5) 状态指示灯说明

温控器数码管下有两排共5个状态指示灯, 显示出温控器的工作状态。

- a) HEAT (加热) 指示灯: 该灯点亮时表示温控器有电压输出。
 - b) ALARM (报警) 指示灯: 当温控器本身出现故障、或外部器件出现故障或温度控制异常(超出设定值 20°C)时, 该灯点亮。
 - c) STANDBY (等待) 状态指示灯: 该灯点亮时温控器停止加热。
 - d) AUTO (自动) 状态指示灯: 该灯点亮时表示温控器处于正常工作状态, 将自动控制温度。
 - e) MANUAL (手动) 状态指示灯: 该灯点亮时温控卡处于手动调节输出状态, 温控器停止自动工作, 由人工手动调节输出。
- 注意: 重复按 **↻** 键可以让温控器在STANDBY (等待)、AUTO (自动) 和MANUAL (手动) 三种工作状态之间切换。

故障及报警说明

1) 外部故障

当非温控器本身故障, 外部器件出现问题时, 温控器也会有报警显示, 且报警指示灯点亮。故障代码会显示在四位绿色数码管上。

- a) E c o P n : 表示热电偶断线。检查温控箱及热电偶的接线。
- b) E c r E u : 表示热电偶接反。检查温控箱及热电偶的接线。
- c) b R d H e r : 表示加热圈损坏或断线。检查温控箱及加热圈接线。
- d) o u t S H r b : 表示可控硅短路, 更换可控硅。
- e) L P b r : 表示加热太慢, 温控器在999秒内升温不到设定值的1%即出现该报警。检查温控箱及加热圈的接线。

2) PID参数自整定故障

- a) E u n E r 3 : 参数整定过程中加热如果实际温度下降或则上升过快, 会出现此故障, 检查热电偶接线, 看是否接反或接触不良。
- b) E u n E r 5 : 表示整定时, 设定温度与实际温度差别太小, 二者之间一定要相差至少 5°C 才能实现参数自整定。
- c) E u n E r 8 : 整定过程中, 实际温度的变化不符合常理(变化不规则), 无法成功地自整定, 请使用手动调节PID参数。
- d) E u n E r 9 : 参数整定超时, 温控器难以捕捉到合适的升温曲线, 请使用手动整定参数。

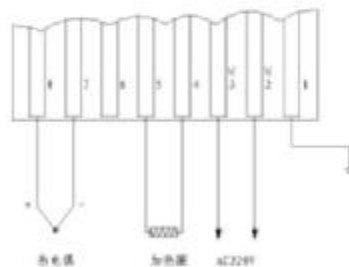
3) 温控器系统故障

当温控器红色数码管显示 Err 字样, 绿色数码管显示四位故障代码(四位数字)时, 表明该温控器出现了内部系统故障, 请将温控器寄回我公司, 由专业维修人员处理。

接线说明

本温度控制器采用通行的金手指插接方式联线。金手指的1端为温控器的下端。

- 1——接地
- 2、3——接AC220V (50Hz) 电源输入
- 4、5——接加热元件
- 6——不用
- 7、8——接感温热电偶



Product brief Introduction

TR-2006 hot runner controller is made of highly micro-computer, It Control temperature with a high precision and easy to use. Thermocouple Of J type or K type can be connected to the controller.

Ambient Temperature: 0°C-----55°C

Thermocouple Type: J or K

Range: 0°C-----537°C

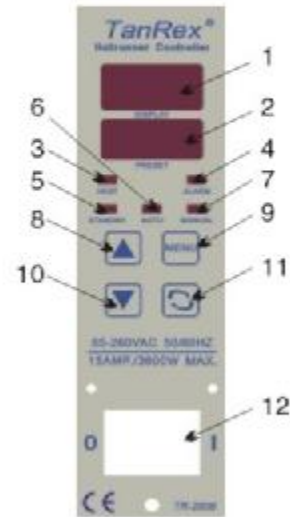
Precision: ±1°C

Load: AC220V/15A 3600W

Supply: AC85-----260V 50/60Hz

Interface Board

1. Present temperature
2. Preset temperature
3. Output LED
4. Alarm LED
5. Standby LED
6. Automatic LED
7. Manual LED
8. Increase key
9. Menu key
10. Decrease key
11. Transform key
12. Supply switch



Dip Switch

Dip switch	Function	ON	OFF	Default
1	Soft Start	Yes	No	ON
2	T/C Type	K	J	OFF
3	Temperature Unit	°C	°F	ON
4	N/C	N/C	N/C	OFF

Interface Board

Operation:

1) Adjust the set point

When the controller is powered up, it will automatically do a soft start, During the soft start the AUTO LED flashes. To adjust the set point press And .

2) Soft start and Autotune

The new controllers are set to do a soft start every time they are powered Up (if the PV is less than 93°C), and then to do an Autotune operation each Time the controller is powered up until a successful Autotune is completed.

Let the Autotune proceed without interruption. During Autotune, the process Value alternates with $\xi\sigma\eta$. At the conclusion of a successful Autotune, the flashing $\xi\sigma\eta$ disappears.

The display reverts to the AUTO mode operating display: PV on top line, SP on Lower line. The proportional band and rate values calculated by the controller During the Autotune have been saved.

3) Parameter Setting

A) To see the process value

Press , SV display the percent of output (%).

Press again, SV display the current of output (A).

B) To see and set the proportional band and rate

Press and hold until you see P I Δ

And display the values of the parameter, press \blacktriangledown and \blacktriangle to adjust.

a) Proportional band P_b : Valid range is 0 to 537. Default is 56.

b) Rate r_{RE} : The valid range is 0.0 to 999. Default is 18.

c) Autotune operation Rt_{OP} : Choices are:

1. d_{IS} : Autotune disabled.

2. $onc\bar{E}$: Autotune once at next power up, then disable if Autotune was successful.

3. $\bar{E}n\bar{A}$: Autotune enabled every time controller is powered up.

Press \square and hold, the controller return normal work mode.

4) Manual Mode

When thermocouple is open or short, you can use the controller without Thermocouple, use manual mode adjust the percent of output.

Press \square several times until MANUAL LED light, it will display the value of the percent of output, you can adjust this value you need (press \blacktriangledown and \blacktriangle to adjust), but can not display the present temperature on the top line. Because thermocouple can not input signal now.

5) Mode LED

The controller has 5 LED on interface board, display work mode.

a) HEAT LED: When it lights, the controller has voltage output.

b) ALARM LED: When it lights, some problem occurred in your controller, or present temperature high or low 20°C than set point.

c) STANDBY: When it lights, the controller stop work.

d) AUTO: When it lights, the controller in automatic mode.

e) MANUAL: When it lights, the controller in manual mode. you can adjust a value of output.

Press \square to select STANDBY, AUTO and MANUAL mode

Alarm

1) Error outside the controller

When heater or thermocouple have some problem, the controller will display alarm.

ALARM LED lights.

a) $\bar{E}c\ oPn$: Thermocouple is open.

b) $\bar{E}c\ r\bar{E}u$: Thermocouple leads are reversed.

c) $bRd\ Htr$: Heater problem detected.

d) $out\ SHrt$: Output is off, but current flow is detected

e) $\bar{L}Pbr$: PV has not increased at least 1% of supported sensor span in 999 seconds.

2) Autotune Error

a) $\bar{E}un\ Er3$: Set point is higher than the process value. Look at the set point. If it is realistic for your process, then check the thermocouple; maybe they are reversed.

b) $\bar{E}un\ Er5$: There is no enough difference between initial PV and the set point. For Autotune to work, the difference must be at least 5°C.

c) $\bar{E}un\ Er8$: The startup curve (change in PV) was not acceptable to the Autotune algorithm. This could be caused by a process upset that occurred during tuning. Try Autotune again when the process is stable. If the error recurs, your process is not suitable for Autotune. Use manual tuning.

d) $\bar{E}un\ Er9$: The Autotuning timed out, because the process was Unresponsive (or extremely slow). Your process is not suitable Autotuning. Use manual tuning.

3) System Error

When then controller display Err on the top line, and display four-digit number on the lower line, please note the error code and call for service.

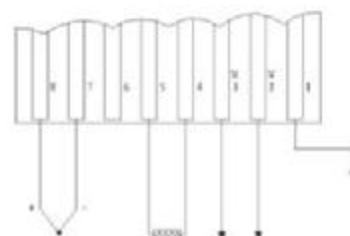
Connection

1----Ground connection

2, 3----AC220V Input

4, 5----Heater

6----No use



TR-TCS1型热流道温度控制器说明书

TR-TCS1 Hot Runner Controller Guide

温控卡简介

感谢您选购本公司TanRex系列高品质的温控器。本控制器具有如下特点：

- 1、在现有的热流道控制系统相容性上可容易达到维修与互换。
- 2、可同时显示温度设定点与温度实际值，以及温度输出功率、百分比和电流值。
- 3、内建分析操作情况，具有故障提示功能，以方便维修。
- 4、可提供安全的软启动模式，经由向量比例方式控制输出电压（安全开机）。

本控制器是以微电脑控制的“OT-Runner”（热流道）系统控制模组为架构，提供温度控制与操作界面程式，采用一个J或K型热电偶测量温度以达到控制一个区域温度的目的。

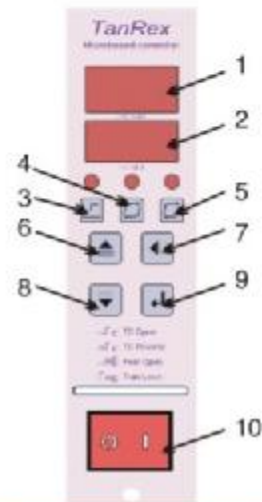
本控制器操作界面输入是通过一组4个按键输入，显示是通过两组LCD的七段显示器，前一组显示为三位数码管(显示实际温度)，后一组是一个四位数码管(显示温度设定值)，另外还有三个分离型LED指示灯，显示系统运转模式。

本控制器是由控制板及显示板组成的控制系统，一个是主控制板，另一个是操作面板，它可以完全的相容并存在于其它品牌的热流道模温控制系统上。

本控制器适用于工业环境中，操作简单方便。

面板说明

- 1、实际温度显示
- 2、设定温度及参数显示
- 3、软启动状态
- 4、自动状态
- 5、手动状态
- 6、数字上调键
- 7、数字左移位键
- 8、数字下调键
- 9、输入确认键
- 10、电源开关



拨码开关说明











DIP SWITCH	ON	OFF
1、频率	60HZ	50hz
2、温度单位	°C	°F
3、感测器型式	J	K
4、温度异常警示	无警示	偏离设定点20度闪烁警示
5、无	保持ON	
6、PID模式	负载较小用（半电压输出）	一般负载用
7、无	保持ON	
8、室温温度校正	校正	正常状态

异常状态说明

当本系统正常开机时会自动检测其周边设备，如有发现任何错误会出现错误信息提示以告知。当正常运转时若有异常发生时，亦会出现错误讯息藉以告知。




- 1、 r_{TC} : TC Open 表示温度感测器是呈现断路的状态，或是根本就没有接上。
- 2、 r_{TC} : TC Reverse 表示温度感测器线接反了。
- 3、 r_{HE} : Heater Open 表示加热器是呈现断路的状态，或是根本没接上。
- 4、 r_{NC} : Traic Latch 表示可控硅呈现短路状态。

异常状态说明

- 1、当本系统开机时会自动以安全模式  运转，待温度上升到120°C时或20分钟后，便跳至自动模式  运转。
- 2、本系统正常开机运转时，按住  键便跳至自动模式运转，按住  键便跳至手动模式运转。
- 3、温度设定，当按  或  时，个位数字会开始闪烁，当重复按向上或向下键时可速增或速减其数值，这时再按  可将数字移动到十位数及百位数，依相同方法可改变其值，最后再按  以作确定。
- 4、当持续按住  3秒钟后会显示OP（OUTPUT）电压输出功率百分比，经过10秒钟后会恢复原来状态。
- 5、当持续按住  3秒钟后会显示OP（OUTPUT）输出功率电流值，经过10秒钟后会恢复原来状态。

PID参数查看及设定

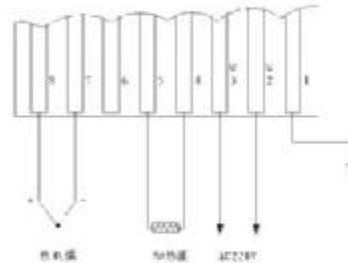
本系统运行时会自动整定PID参数。一般情况下都可以准确地计算出负载所适合的参数来加以控制。

- 1、当持续按住  3秒钟后，三位数码管显示 f_{un} ，当该值为0时，系统处于自整定控制状态，按  可以看到KP、Ti、Td的值。
- 2、当需要手动设定参数时，先将 f_{un} 的值改位 1，然后按  分别调出KP、Ti、Td的值加以修改。如想改回自动整定控制，只需将 f_{un} 的值改回 0 即可。
- 3、一般情况下不主张手动调节参数，除非用户对控制方式非常熟悉。
- 4、自整定一定要让加热器件从常温下开始，否则有可能出现参数自整定错误。

接线说明

本温度控制器采用通行的金手指插接方式联线。金手指的1端为温控器的下端。

- 1——接地
- 2、3——接AC220V (50Hz) 电源输入
- 4、5——接加热元件
- 6——不用
- 7、8——接感温热电偶



使用环境温度	32到131°F (0到55°C)
保存环境温度	-40到158°F (-40到70°C)
感测器的种类	J或K型热电偶感应器
感测器的温度范围	32到750°F (0到399°C)
取样速度	10Hz (100ms)
上方显示高度	17mm
下方显示高度	14mm
软启动模式指示	红色LED (左边)
自动模式指示	红色LED (中间)
手动模式指示	红色LED (右边)
控制输出型式	Triac 15A 220VAC
电源供应	220VAC 50/60Hz

规格说明

Product Brief Introduction

Thanks for you select TanRex series hot runner controller:

1. The controller is based on standard structure of international, it is very easy to be replaced by other temperature card and easy to reverse.
2. The controller can display present temperature, preset temperature, percent of output and load current flow.
3. Alarm or fault display.
4. Soft start function, it removes the humidity from heaters and increases heater life.

Thermocouple of J type or K type can be connected to the controller.

The 4 key is used to adjust parameter.

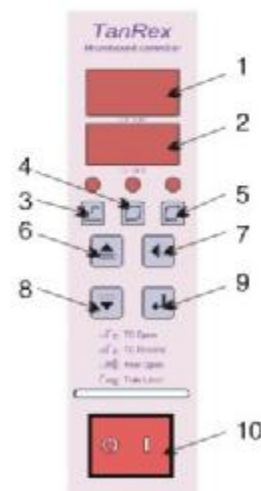
The 7segment LED is used to display temperature, alarm.

The LED is used to display run mode.

The controller is made of a main board and an display board, it is standard structure and can be install into other temperature box. (If the box is international standard.

Product Brief Introduction

- | | |
|-----------------------|----------------------|
| 1、Present temperature | 2、Preset temperature |
| 3、Soft start mode | 4、Automatic mode |
| 5、Manual mode | 6、Increase key |
| 7、Replacement key | 8、decrease key |
| 9、Enter key | 10、Power switch |



Dip Switch Function















DIP SWITCH	ON	OFF
1、 Power frequency	60HZ	50hz
2、 Temperature unit	°C	°F
3、 Thermocouple	J	K
4、 Temp. alarm	N/A	Flash
5、 NO use	N/A	N/a
6、 PID mode	heater	Main heater
7、 No use	N/A	N/A
8、 Cool junction temp	Enable	N/A

Alarm

After power on, the system test itself, if any fault detected, an alarm message will display:



1. OC : T/C open: Thermocouple is open.
2. RC : T/C reverse: Thermocouple leads are reversed.
3. HE : Heater open: Heater is open.
4. TC : Triac latch: Triac is shorted.

Operation

1. When the controller is powered on, it will automatically do soft start  for heater bake out if the process value is below 120° C or after 20 minutes.
 2. Press , the controller will turn to auto mode, and press , it will turn to manual mode.
 3. When you want to adjust the set point, press  or , the bit on the lower line will flashing, press these two key can change the value, press  can change the flashing bit, when you catch a value that you want, press  to confirm.
 4. Press  and hold, display the percent of output on the lower line, after 10 seconds, it come back.
 5. Press  and hold, display the load current flow on the lower line, and after 10 seconds, it come back.
 6. Press , the controller turn to manual mode, display the percent of output on the lower line, press ,  and  can adjust the value, then press  to confirm. The output setting range is 0—99%.
- You can use your controller in this mode without thermocouple if your thermocouple is open or short.

To See And Set PID Parameter

When the controller is powered up, it will do a soft start every time, and then to do an Autotune, the PID values calculated by the controller during the Autotune have been saved.

1. Press  and hold until display FUN on the top line, the value display on the lower line, when it is 0, means system will do an Autotune at next power up, press  again and again, you can see the value of Kp, Ti and Td.
2. If you want to use manual tuning, change the value of FUN to 1, then you can adjust the value of Kp, Ti and Td, the controller will not do an Autotune again at next power up.
3. Usually, do not use manual tuning, unless you know a lot of knowledge about the temperature controller, heater and thermocouple.
4. Confirm present temperature is below 120° C before power up.

Specifications

Ambient temperature	32--131°F (0--55°C)
Store temperature	-40--158°F (-40--70°C)
Thermocouple type	J or K
Range	32--750°F (0--399°C)
Sample time	10Hz (100ms)
Displayer on the top line	17mm
Displayer on the lower line	14mm
Soft start mode display	Red LED (left)
Auto mode display	Red LED (middle)
Manual mode display	Red LED (right)
Load	Triac: 15A 220VAC

热流道时间顺序控制器
Valve Gate Controller



油压式时间顺序控制器
Oil-pressurized Sequence Controller



气压式时间顺序控制器
Air-pressurized Sequence Controller

TR-VTC8热流道时间顺序控制器说明书

TR-VTC8 Valve Gate Controller Guide

产品简介

TR-VTC8型时序控制器主要应用于针阀式热流道注塑系统，通过检测注塑机的合模信号，根据客户模具注射需要可调整延迟锁模射胶和不同时间段关闭针阀等动作，准确开启和关闭气动式针阀热嘴的阀针，达到使注塑产品无结合线的目的。

该时序控制器具有如下特点：

- 1、具有4个时间段设定，在一个工作周期内可控制针阀动作两次(如果不需要两次动作，可将t3, t4段设为0)。
- 2、输入可采用开关信号或DC24V输入，通过电路板上跳针转换，操作方便。
- 3、输出可以选择AC220V, DC24V或开关输出，通过电路板上跳针转换，能适用任何电磁阀的连接。
- 4、具有A、b两种工作模式可供选择，参数设定简单，工作稳定可靠。
- 5、手动开阀功能。

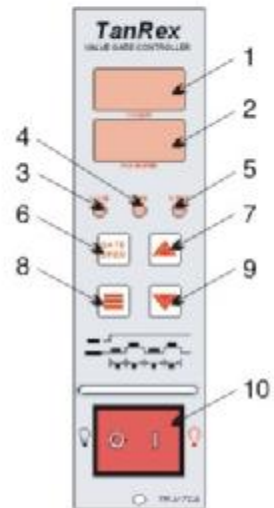
电源输入：200-240VAC 50/60Hz

信号输入：DC24V或开关输入（可选）

控制时间段：t1, t2, t3, t4四个时间段（t1, t3为延迟时间，t2, t4为射胶时间）

时间范围：0.0—900.0秒

输出方式：AC220V, DC24V或开关输出（可选）



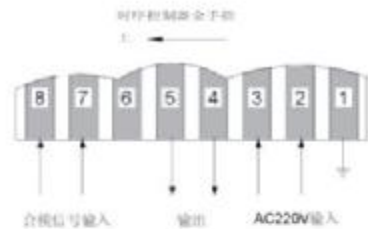
面板说明

- 1、时间段序号显示
- 2、动作时间及参数显示
- 3、关阀指示
- 4、开阀指示
- 5、动作周期指示
- 6、手动开阀键
- 7、数字上调键
- 8、菜单功能键
- 9、数字下调键
- 10、电源开关

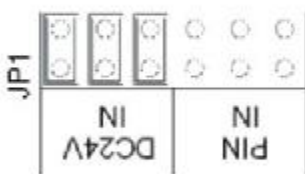
接线说明

接线图

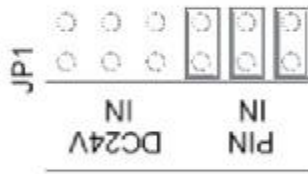
- 1) 图中1脚为接地脚；
- 2) 2, 3脚为AC220V电源输入；
- 3) 4, 5脚（或5, 6脚，4脚和6脚在电路板上已连接在一起）为时序控制器的输出脚，可以分为三种输出形式：AC220V输出、DC24V输出<4+5->和开关输出方式，三种输出方式通过电路板上JP2的跳线来进行转换。
- 4) 7, 8脚为注塑机合模信号输入，有DC24V输入和开关输入两种方式，通过电路板上Jp1的跳线来转换。



输入方式说明



1. DC24V输入方式跳针位置

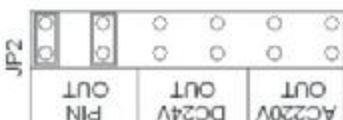


2. 开关输入方式跳针位置

- 1) 需要不同的合模信号输入时，按上图所示方式将跳针插在JP1的正确的位置；
 - 2) 当使用DC24V输入方式时，接线要注意，金手指8脚为正，7脚为负。
- 注意：JP1的跳针只能按以上两种方式插接，如以其他形式连接，有可能损坏电路！

输出方式说明

时序控制器的输出一般用来控制电磁阀，有三种输出方式可供选择，以适应不同用户的需要，分为AC220V输出，DC24V输出和开关输出，通过JP2的跳针进行转换：



特别注意:

- 1、在时序控制器使用前，必须首先确认所接电磁阀的驱动电压规格，不恰当的输出方式有可能烧毁电磁阀或损坏时序控制器。
- 2、JP2的跳针连接只能以上述三种方式连接，连接成其他样式有可能发生短路导致时序控制器的烧毁或造成触电事故!

操作说明

1) 设定工作模式及时间值

按住 **≡** 键三秒钟，进入设定菜单，这时上面的数码管显示A-b，下面的数码管显示当前的工作模式状态 (A或b)，按 **▲** 键和 **▼** 键可以改变工作模式。

A模式：合模信号输入一个脉冲，时序控制器工作一个周期；

B模式：合模信号必须保持输入一个周期，时序控制器才能工作一个周期。

再重复按 **≡** 键，上面的数码管分别显示t1, t2, t3, t4，这四个值分别表示四个工作时间段，下面数码管分别对应显示四个时间段的值，按 **▲** 键和 **▼** 键可改变时间值。时间设定范围为0.0-900.0秒。

注意：如只需2个时间段（即一个周期内只需要开关一次电磁阀），可将t3和t4的值设为0。

连续按 **≡** 键，控制器从参数设定状态退出，并保存所设定的参数，进入正常工作状态。

2) 手动开阀

工作过程中如果需要手动打开针阀，按住 **GATE OPEN** 键，针阀打开。

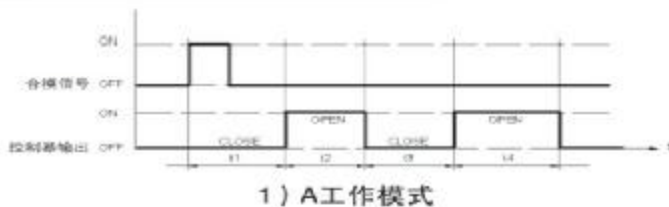
松开 **GATE OPEN** 键，针阀关闭，时序控制器进入自动工作状态。

3) 使用注意事项

使用本时序控制器时请注意以下事项：

- 1、通电前请确保所接电源为AC220V、50/60Hz，否则会引起控制器的损毁；
- 2、确认控制器输出所连接之电磁阀为AC220V，否则会引起电磁阀及本控制器的损毁；
- 3、控制器打开电源后，请根据需要按前页的第1)项调整好所需的射胶时间和延迟时间，并确认合模信号与本控制器的连接无误，方可投入使用；
- 4、使用过程中如控制器出现故障，请将控制器寄回本公司维修，切勿随意拆修本控制器，否则本公司将不承担保修责任。

时序控制器工作流程



Product Brief Introduction

TR-VTC8 valve gate controller is mainly used in hot runner injection needle-type system, by detecting injection molding machine signal, according to the mold injection based on customer needs that need to adjust the delay mold injection mode-locking plastic projectiles and different time periods, such as the closure of needle movements, accurately open and close the pneumatic needle hot mouth of the valve needle, to enable the injection molding product have no biding line purposes. The timing controller has the following characteristics:

- 1、With four time periods set in a working cycle can be controlled needle moves twice (If you do not need two movements can be t3, t4 paragraph is set to 0).
- 2、Input can switch signals or DC24V input, through the circuit board Jumper conversion, easy to operate.
- 3、Output can choose to AC220V, DC24V or switch output, through the circuit board Jumper conversion, could apply to any solenoid valve connections.
- 4、With A, b two working models to be optional, parameter setting is simple, stable and reliable work..
- 5、Manually open valve function.

Power supply: 200-240VAC 50/60Hz

Signal input: DC24V or switch input (optional)

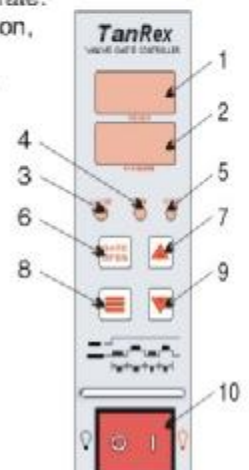
Control time period: t1, t2, t3, t4 four time periods (t1, t3 as delay time, t2, t4 for shooting plastic time)

The time range :0.0—900.0 seconds

Output ways: AC220V, DC24V or switch output (optional)

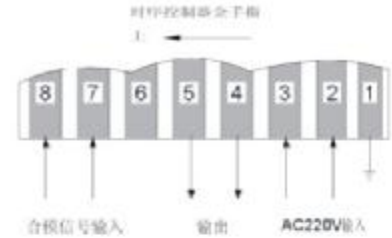
Product Brief Introduction

- | | |
|--------------------------------------|----------------------------|
| 1、Time period show the serial number | 6、Manually open valve keys |
| 2、Action time and parameter display | 7、The figures rise keys |
| 3、Closing valve instructions | 8、Menu function keys |



Wiring diagram:

- 1) Pin 1 on the picture is grounded.
- 2) Pin 2,3 are AC220V power input pins.
- 3) Pin 4,5(or pin 5,6, pin 4 and 6 have been connected together on the circuit board) are timing controller's output pins. There are 3 kinds of output style: AC220V output, DC24V output and switch output, these 3 kinds of output style are switched by Jp2 on the circuit board.
- 4) Pin 7,8 are injection molding machine's common-mode signal input pins, there are 2 kinds of input style: DC24V input and switch input, which are switched by JP1 on the circuit board.



Input style instruction



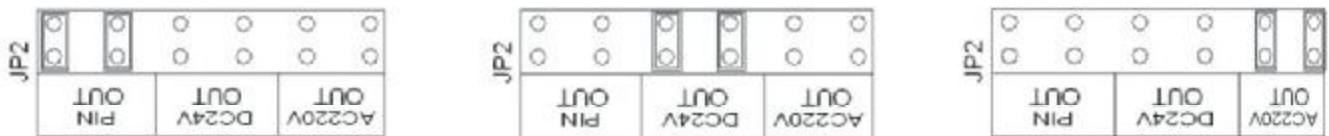
1. DC24V input jumper position

2. Switch input jumper position

- 1) When need different common-mode signal input please put jumper on the JP1 right position according to diagram above;
 - 2) When use DC24V input, please pay attention to wiring, pin 8 of the gold finger is positive, pin 7 is negative.
- Notice: JP1 must be connected in the 2 ways described above, if it is connected in other way, it is possible to damage the circuit board!

Output style instruction

Output of the timing controller is usually used to control solenoid valve, there are 3 kinds of optional output styles, in order to meet different user's need, they are AC220V output, DC24V output and switch output, switched by Jp2.



1. Switch output

2. DC24V output

3. AC220V output

Special note

1. Before using the timing controller, please confirm the driving power specification of solenoid valve, wrong output style it may damage the solenoid valve or the timing controller.
2. JP2 only can be connected in the 3 ways described above. if connected in other way, it is possible to damage the timing controller or result in electric shock, caused by shorting circuit!

Interface Board

1) Setting working mode and time value

Keep key pressed down for 3 seconds to enter setting menu, then the upper LED display shows A-b, the subjacent LED display shows the current working mode(A or b), Press or key can change working mode.

Mode A: one common-mode signal pulse is inputted, and the timing controller works a cycle;

Mode b: Common-mode signal must be kept inputting for one cycle to enable the timing controller to work for one cycle.

Repress key, the upper LED display separately shows t1,t2,t3,t4, these 4 values stand for 4 working period correspondingly, the subjacent LED display shows the 4 time period value accordingly, press and key can change the time value, which is set 0.0-900.0 seconds.

Note: if only need two time period(that is in one cycle only need to on-off the solenoid valve once), t3 and t4 valves can be set too

Press key continuously, the controller quits parameter setting state, and saves the parameter, and enters normal working state

2) Manually open valve

If need to manually open valve at the working process, please press key.

Releasing key, the valve is closed, timing controller will enter automatic working state.

3) Using note

When using the timing controller please take the subjacent note:

1. Please make sure the power is AC220V 50/60Hz before powering on, otherwise it will result in controller damage.
2. Make sure power of the solenoid valve connected to the timing controller's output is AC220V, otherwise it will damage the solenoid valve and timing controller.
3. After powering on the controller, please adjust plastic injection time and delay time that is needed according to item 1 in the former page, and make sure the common-mode signal is right connected to the controller.

热流道加热器、热电偶
Hot Runner Heater、thermocouple

单头加热棒 (Mould single end heating tube series)



发热棒Y2



发热棒Y3



发热棒Y4



发热棒Y11

加热圈 (Nozzle copper heating collars)



铜式加热圈 Bt2



封闭式加热圈 K1



弹簧式加热圈S3 3*3



弹簧式加热圈S4 3*3

四方加热管 (Thermocouple series)



弹性热流道管X1 D8.5



弹性热流道管X2 D8.5



四方热流道管H1 6X6



四方热流道管H2 6X6

热电偶 (Hot runner plate ring-type stainless steel double-edged flexible hoses)



热流道加热器、热电偶
Hot Runner Heater、thermocouple

单头加热棒 (Mould single end heating tube series)



发热棒Y2



发热棒Y3



发热棒Y4



发热棒Y11

加热圈 (Nozzle copper heating collars)



铜式加热圈 Bt2



封闭式加热圈 K1



弹簧式加热圈S3 3*3



弹簧式加热圈S4 3*3

四方加热管 (Thermocouple series)



弹性热流道管X1 D8.5



弹性热流道管X2 D8.5



四方热流道管H1 6X6



四方热流道管H2 6X6

热电偶 (Hot runner plate ring-type stainless steel double-edged flexible hoses)





热流道温控器
热流道时序器
热流道及配件
重载工业连接器



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