

# VT900 SERIES TEMPERATURE CONTROLLER

**DECLARATION of CONFORMITY**

Application of Council Directive(s) : 89/336/EEC  
Standard(s) to which Conformity is Declared : EN 50081-1, EN 50082-1  
Basic Standards and Procedures : EN 55022, IEC 801-2, IEC 801-3, IEC 801-4

MANUFACTURER : Shuan Rong Industrial Company Limited  
ADDRESS : 2F, No 3-1, Tzu-Chang Street, Tu-Cheng Inc, District, Taipei Hsien, Taiwan, R. O. C.

Type of Product : Analogue Temperature Controllers  
Model Number(s) : SR-T9XX (VT900 Series)  
Year Of Manufacture : 1997

European Representative :

I, the undersigned, hereby declare that the equipment specified above conforms to the applicable Directives and Standards.

Signed : [Signature] Date : 16-6-97  
Full Name : Colin M. NEWELL Position / Title : M/D



**Certificate Of Conformity For Low Voltage Device European Directive**

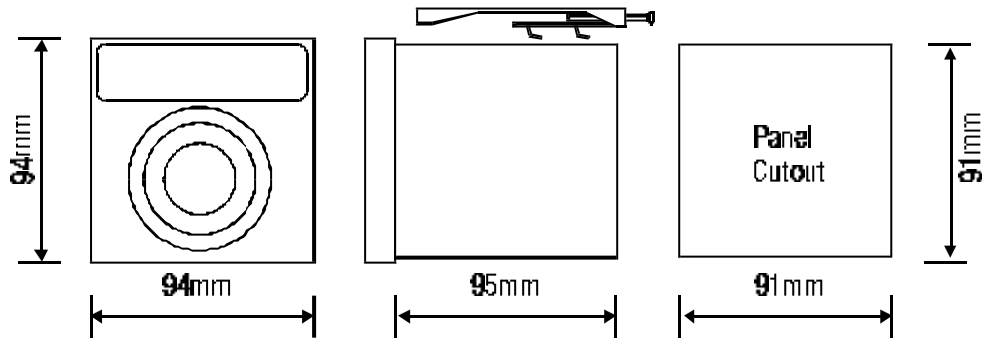


# INSTALLATION MANUAL

## INSTALLATION

- Cut out the hole in the panel to the dimensions shown.
- Insert the controller into the panel.
- Locate the Mounting Brackets in the slots on the top and bottom sides of the case such that the screw head is pointing to the rear.
- Once located, tighten the screws to firmly locate the controller into the panel.
- DO NOT OVER TIGHTEN.
- Install the controller in a well ventilated cabinet away from direct sources of heat.

## CONTROLLER DIMENSIONS & PANEL CUTOUT



## POWER

- Connect the power to the controller by connecting the Neutral power lead to terminal 5 and the power to either 6 or 7, depending on voltage rating. The voltage must be within 10% of the specified rating and between 50 and 60Hz.
- It is recommended that an in-line quick blow fuse of rating 500mA is used on the Line connection.

<b>5</b>	Neutral
<b>6</b>	110V +/- 10%
<b>7</b>	220V +/- 10%

## THERMOCOUPLE SENSOR

- Always use the correct compensating cable to connect the sensor to the controller (See chart).
- Always route low voltage sensor cables away from high voltage power cables.
- Ensure that any connections are clean and tight.
- When using shielded cables, ensure that the cable is grounded at one end only.

<b>1</b>	Thermocouple +
<b>2</b>	Thermocouple -

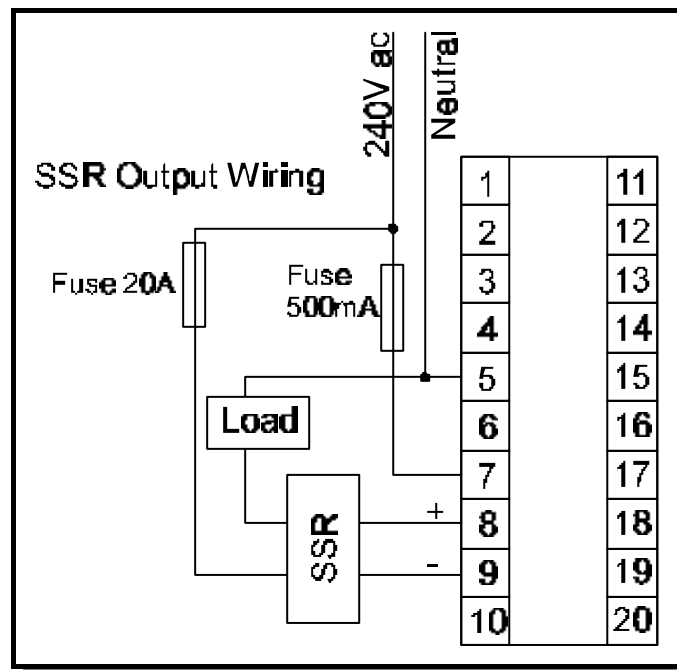
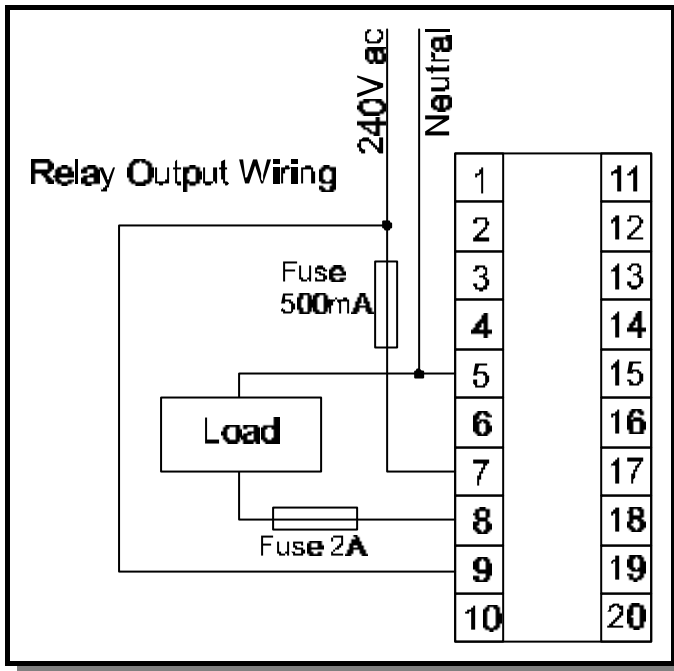
## TECHNICAL SPECIFICATION

Accuracy :	+/- 0.5% Full Scale
Input :	Thermocouple Type J, K or R, PRT 100.
Output :	Relay or SSR Drive
Relay Rating :	3A @ 240V (Recommended maximum load is 500W on Control or Alarm output)
Pulse Output Rating :	24V d.c.
Control Mode :	PD, P or On/Off (Default is PD, others available on request)
Control Cycle Time :	Relay : 16 seconds, Pulse : 3 seconds
T/C Protection :	Upscale T/C Break, with front panel indication
Supply Voltage :	110 / 220V ac +/-10%, 50Hz
Power Usage :	Relay output : 6VA, Pulse output : 5VA
Operating Temp :	0 to +50°C
Dimensions :	96mm x 96mm x 105mm (Depth behind panel : 93mm) (Panel cut-out : 91mm x 91mm)

## PRODUCT CODING

Ordering Code : VT90T-R-I-01-02-C-A

T=Type :	900, 901, 902 or 903
R=Range :	A= +/-50C, B=100C, C=200C, D=400C, E=800C, F=1000C, G=1200C, H=1600C Please note that at the current time only range D (0-400C) is available from stock.
I=Input :	J=T/C Type J, K=T/C Type K, R=T/C Type R, P=PRT100
O1=Output1 :	R=Relay, V=SSR Drive (Not available on VT902)
O2=Output2 :	N=Not Fitted (No second channel is available at this time)
C=Control :	O=On/Off, P=Proportional, PD=Proportional/Derivative. (Not available on VT902)
A=Alarm :	N=None, 1=Yes (Not available on VT902)



## RESISTANCE THERMOMETER SENSOR

- Always route low voltage sensor cables away from high voltage power cables.
- When using shielded cables, ensure that the cable is grounded at one end only.
- Connect the probe resistance between terminals 2 & 3.
- Connect the third, error compensating lead to terminal 1. If a third wire is not fitted to the sensor, then link together terminals 1 & 2.

<b>1</b>	PRT Link
<b>2</b>	PRT Link / Resistance
<b>3</b>	PRT Resistance

## OUTPUT CONTROL : RELAY

- The fitted relay has a maximum output rating of 3 Amps at 240V ac. This is equivalent to 750W at 240V ac. It is recommended that a rating of 2 Amps (500W) is not exceeded.
- The relay acts as a switch only and requires an external voltage to be applied to one of the contacts to perform a control function by switching the control voltage onto the other terminals.
- It is recommended that an in-line quick blow fuse rated at 2A is wired between the output of the relay and the load.
- Where the relay is to be used to switch power to an inductive load (e.g. heater), it is strongly recommended that a suppression network consisting of a 100R, 0.5W resistor is connected in series with a 0.1uF, 250V ac Polyester Capacitor. This network is connected across terminals 8 and 9. This will reduce sparks created when the contacts open and increase the life of the relay.

<b>8</b>	Relay Normally Open
<b>9</b>	Relay Common
<b>10</b>	Relay Normally Closed

## OUTPUT CONTROL : SSR DRIVE (PULSE)

- The rating of this type of output is : 24V = ON, Less than 4V = OFF.
- The controller provides the necessary voltage for this output. No external voltage supply is required.
- Connect the positive output terminal (8) of the controller to the positive input terminal of the SSR.
- Connect the negative output terminal (9) of the controller to the negative input terminal of the SSR.

<b>8</b>	Logic O/P+ (24V)
<b>9</b>	Logic O/P- (0V)

## ALARM RELAY

- The fitted relay has a maximum output rating of 3A at 240V ac. This is equivalent to 750W. However, it is recommended that a rating of 2A (500W) is not exceeded.
- The relay acts as a switch only and requires an external voltage to be applied to one of the contacts to perform a control function.
- It is recommended that an in-line fuse of 2A is wired between the output of the relay and the alarm device.

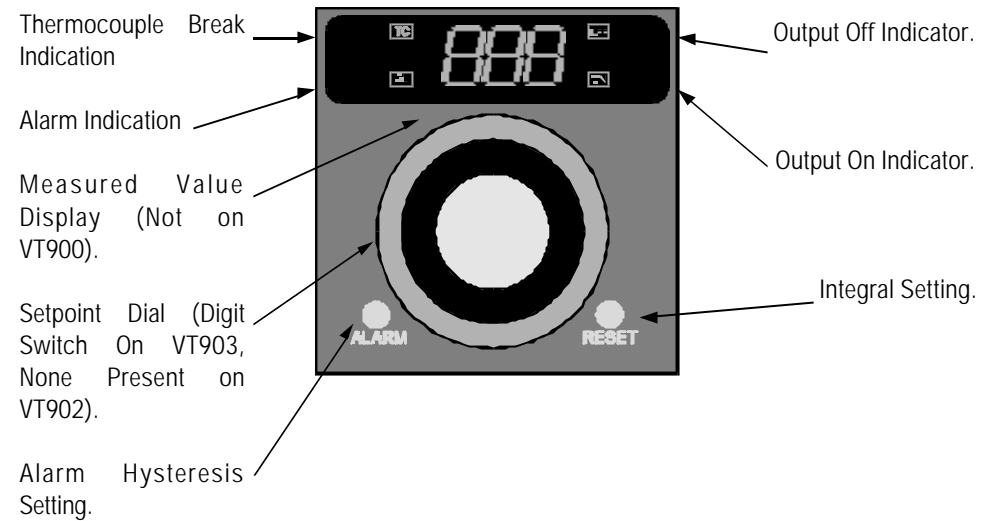
<b>18</b>	Relay Normally Closed
<b>19</b>	Relay Common
<b>20</b>	Relay Normally Open

## BASIC OPERATION

The setpoint is adjusted by either rotating the dial (900 & 901) or by entering the desired value using the digit switches (903).

To control the temperature of the load at the desired setpoint, the controller will vary the amount of time the output is On compared to the amount of time the output is Off. The total time between On pulses is known as the cycle time and the ratio between On and Off times is known as the mark / space ratio. This cycle time is internally set at 16 seconds for relay output and 3 seconds for SSR drive output.

## FRONT PANEL FEATURES



## TYPICAL WIRING CONFIGURATIONS

