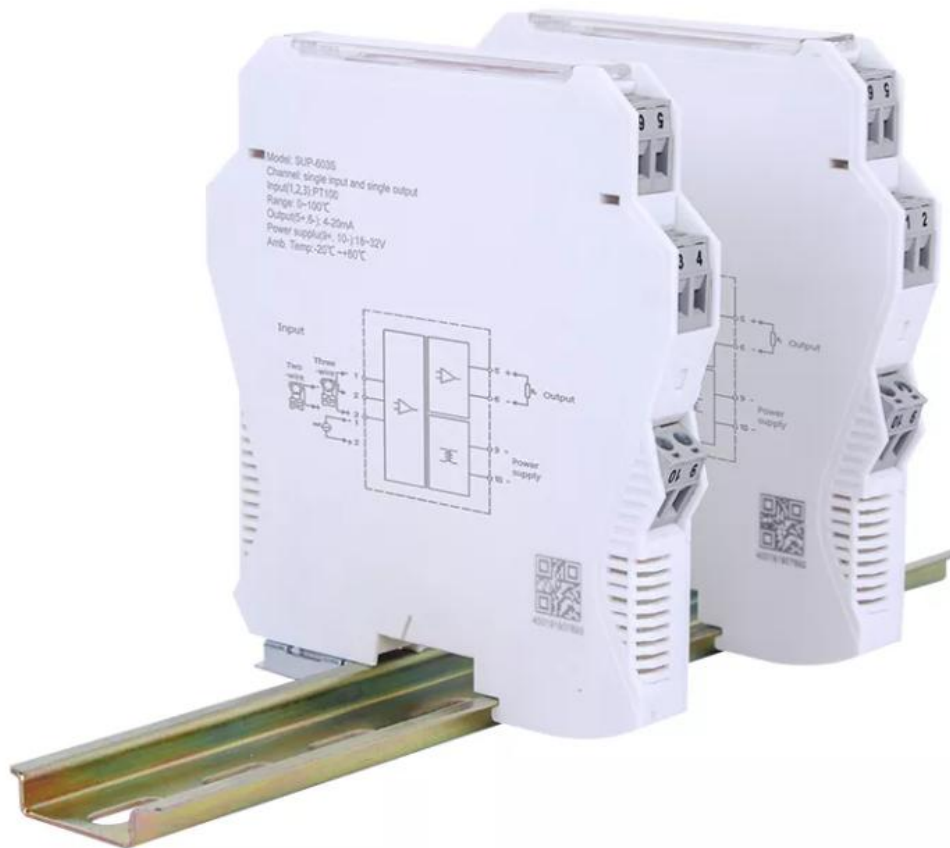


# Temperature isolator

Committed to process automation solutions

## Datasheet



**SUP-603S**

Input thermocouple/thermal resistance signal, and output current/voltage signal transmitted via isolation.

The input, output and power supply terminals are isolated from each other. The product provided with online failure self-diagnosis and other functions is a smart temperature transmitter. The dedicated portable programmer of the company may be matched to modify parameters or conduct calibration (see "Programmer Instructions").

- Input signal type
  - Thermocouple: K, E, S, B, J, T, R, N and WRe3-WRe25, WRe5-WRe26, etc.;
  - Thermal resistance: two-/three-wire system thermal resistance (Pt100, Cu50, Cu100, BA1, BA2, etc.)
  - The type and range of input signal can be determined at the time of ordering or self-programmed.
- Output signal type:
  - DC: 0(4)mA~20mA; 0mA~10mA;
  - DC voltage: 0(1)V~5V; 0V~10V;

## Parameters

- ▶ **Output ripple:** <5mV rms (load 250 Ω)
- ▶ **Accuracy of isolated transmission:** (25°C ±2°C, excluding cold junction compensation)
- ▶ **Response time:** ≤0.5s
- ▶ **Temperature drift:** 40ppm/°C
- ▶ **Accuracy of cold junction temperature compensation:** ±1°C (preheating time of 10 minutes)
- ▶ **Range of cold junction temperature compensation:** -20°C~+60°C
- ▶ **Allowed lead resistance for measurement of thermal resistance:** ≤ 20 Ω/lead
- ▶ **Load capacity:**

0(4)mA~20mA: ≤550 Ω; 0mA~10mA: ≤1.1k Ω

0(1)V~5V: ≥1M Ω; 0V~10V: ≥2M Ω;

- ▶ **Full-load power consumption:**

In case of 24V DC power supply and single-channel full-load output 0.7W

In case of 24V DC power supply and double-channel full-load output 1.3W

- ▶ **Range of service voltage:** 18V DC~32V DC (typical value: 24V DC)
- ▶ **Dielectric strength (leakage current 1mA, with test time of 1 minute):**

≥2500V AC (between input/output and input/power supply)

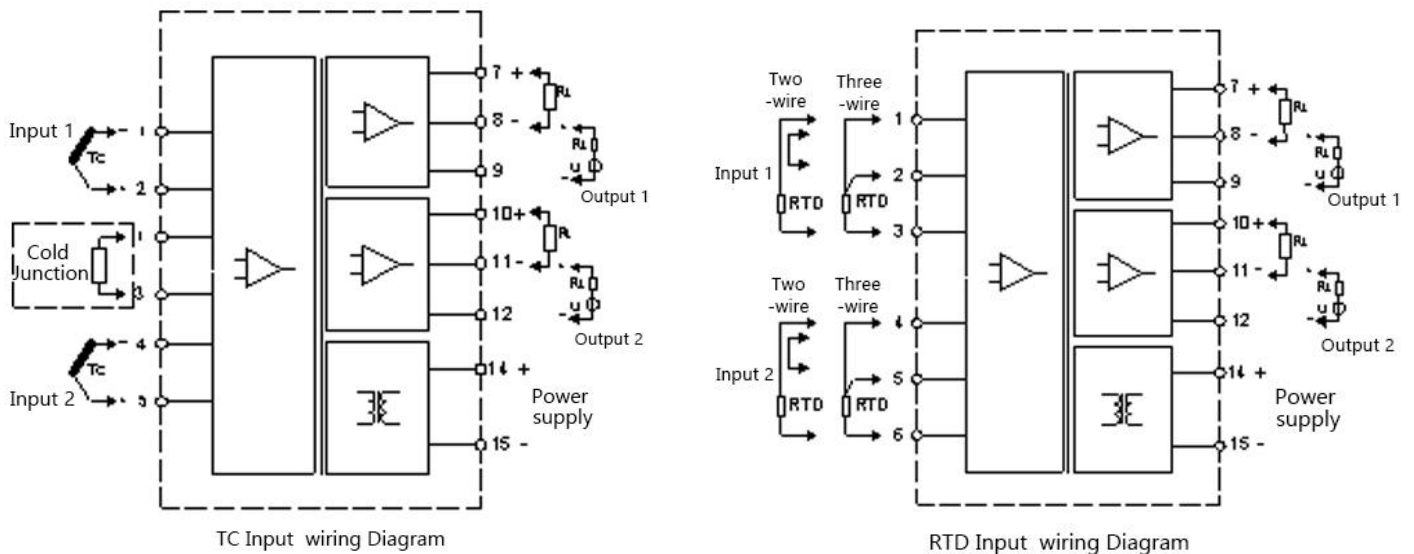
≥1500V AC (between output/power supply)

- ▶ **Insulation resistance:** ≥100M Ω (among input/output/power supply)
- ▶ **EMC:** EMC conforms to IEC61326-3

## Output Status

Follow-up mode: unless specially indicated by the user, no matter what kind of fault status occurs in the input signal (except disconnection, disconnection output 0 V/mA), the output will change following the input signal in the full-scale range, without exceeding 110% of the upper limit of the output range at a maximum (for example, in case of 0mA~ 20mA output, the minimum output can be 0mA, without exceeding 22mA at a maximum).

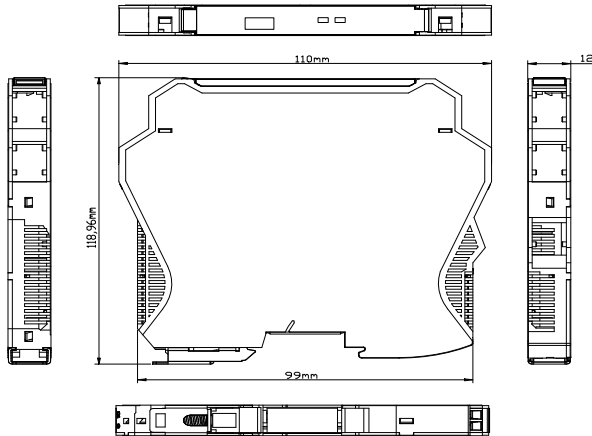
## Wiring



### Note:

The cold junction compensation terminals have been set up before leaving the factory and shall not be plugged, pulled off or discarded at will when the thermocouple is input.

## Dimensions



Width \* Height \* Depth  
(12.7mm \* 110mm \* 118.9mm)

## Panel Indicator

- PWR: Power indicator (green). When the instrument is powered, it lights up all the time.
  - ALM: Input signal status indicator, red
- The indicator does not light up during normal operation;  
The indicator flashes in case of input signal failures;  
The indicator lights up all the time when the input signal is out of range.

## Operational Environment

Ambient temperature during operation:  $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$

Allowed relative humidity during operation: 10%RH $\sim$ 90%RH ( $40^{\circ}\text{C}$ )

Allowed atmospheric pressure during operation: 80kPa $\sim$ 106kPa

Allowed ambient temperature during storage and transportation:  $-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$

## Programming and Calibration

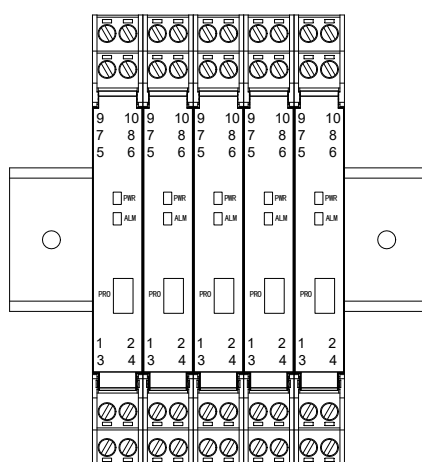
- ▶ There are two modes for programming and calibration of this product:
- ▶ On-site portable Chinese programmer: It can be used to for functional programming and measurement calibration of the instrument, provided with large-screen Chinese menu, which is of complete functions and convenient operation, but the price is higher;

- ▶ Simple programmer: single-line LCD menu operation, which can be used for functional settings of the instrument on the spot. It can be used and carried flexibly, and the price is economical;
- ▶ As this product adopts a digital structure and advanced technologies such as self-compensation of the ambient temperature and zero-point auto-calibration, the accuracy can be guaranteed within the specified range for many years without frequent calibration.

## Installation Method

35mm guide-rail type installation. Position stably and firmly.

Please install it as vertically as possible to facilitate heat dissipation inside the instrument.



### Considerations:

There shall not be strong vibration and the electromagnetic interference exceeding the intensity of Type 3 industrial field in the IEC61000-4 series from the signal terminal, power supply terminal and space at the installation location, and there shall be no harmful substances having serious corroding effect on the metallic and plastic parts in the operational environment.

## Ordering code

SUP-603S-0-P1-A1-C								Description
SUP-603S	-	-	-	-	-	-	-	Temperature Isolator
Type	0							One Input, One Output
	2							One Input, Two Outputs
	4							Two Inputs, Two Outputs
Input signal		P1						PT100 Thermoresistor
		P2						PT1000 Thermoresistor
		KU						K-type Thermocouple
		TU						T-type Thermocouple
		BU						B-type Thermocouple
		RU						R-type Thermocouple
		SU						S-type Thermocouple
		XX						Other
	Output signal			A1				
			V1					0~10V
			V2					0~5V
			B1					0~20mA Active
			V3					1~5V
			A0					4~20mA Passive
			XX					Other
Power supply				C				24VDC
				K				220VAC/DC

Note: Dual-channel can only do 24V, do not support other power supplies  
 The default range of PT100 thermal resistor and PT1000 thermal resistor is -50℃-200℃