TS-TR Series Thermal Resistance Temperature Isolation Transmitter

● The TS-TR series thermal resistance signal isolator accepts thermal resistance signals from the site and outputs standard current/voltage signals to the control room, PLC, display instruments, DCS, etc. through isolation and transmission.

● Connect the PC upper computer through the miniUSB interface to measure the graduation number, range, and alarm output value of the input signal; Configure the range and type of output range. Equipped with RS485 communication function (customization required).

● This product requires independent power supply and adopts DIN35mm standard guide rail independent installation method (optional bus power supply function); The input, output, and power supply are isolated from each other.

Selection Table

TS-TR	X	X	X	INSTRUCTIONS
Channel	1			1 IN 1 OUT
	2			1 IN 1 OUT
	5			2 IN 2 OUT
Input Signal (Type Of Thermal Resistor)		C5		Cu50(-50～+150℃)
		C1		Cu100(-50～+150℃)
		P1		Pt100(-200～+850℃)
		P2		Pt1000(-200～+250℃)
		P5		Pt500(-200～+250℃)
		N1		Ni100(-60～+180℃)
		N2		Ni1000(-60～+150℃)
		N5		Ni500(-60～+180℃)
		R3		Resistance, Potentiometer (0～3KΩ)
		R5		Resistance, Potentiometer(0～5KΩ)
Output Signal			1	4-20mA
			2	0-20mA
			4	0-5V
			6	0-10V
Note: Customers need to determine the input signal form and output signal form when placing an order. If there are special needs, they can customize it				

Product Selection

Eg: TS-TR5C51/0-100, 2 IN 2 OUT, input signal Cu50 (0-100 ℃), output 4-20mA.

MAIN TECHNICAL PARAMETERS

Input

Input signal: Thermal resistance, resistance, potentiometer and other resistance signal
Allowable line resistance ⩽50Ω (three-wire system)
Over-limit alarm: The input is lower than the lower limit of the range, the output current is about 3.8mA (when the current is output)
The input is higher than the upper limit of the range, the output current is about 20.5mA (when the current is output)
Line break alarm: When the input line is broken, the output current is about 22mA(current output)

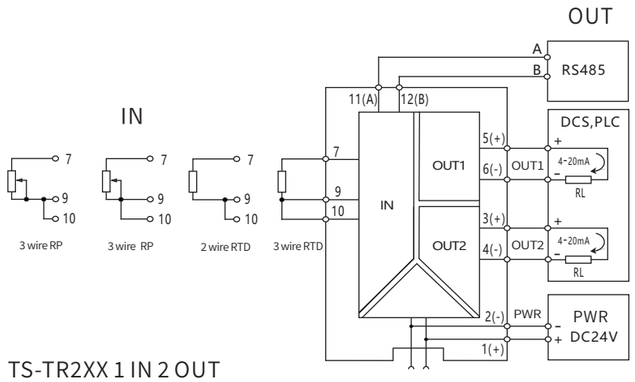
Output

Output signal: Current signal: 0-20mA; Voltage signal: 0-10V(The type and range of current and voltage signal can be set by PC)
Digital signal: RS485(optional, not included by default)
Output load resistance: RL⩽400Ω(output current signal), RL⩾10KΩ(output voltage signal)

General Technical Parameters

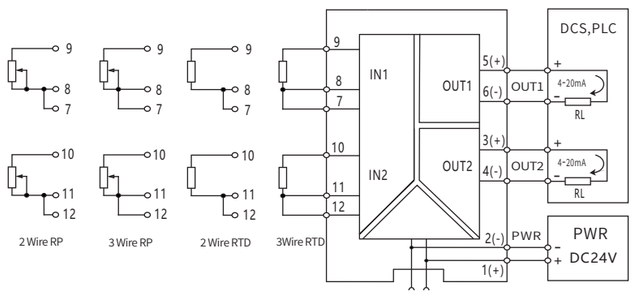
Channels: 1 IN 1 OUT, 1 IN 2 OUT, 2 IN 2 OUT
Power supply: DC24V, voltage range: DC18 ~ 32V
Consumption current: ≤80mA (2 IN 2 OUT, 24V power supply, 20mA output)
Basic accuracy: ±0.1%F.S or ±0.2%F.S (20℃) subject to physical labeling
Temperature drift: ±0.01%F.S/℃ (-20℃ ~ +55℃)
Response time: ≤1S(0-90%) (TYP)
Insulation strength: 1500V AC/1min(between input, output and power supply)
Insulation resistance: ≥100MΩ(input, output, power supply)
Operating temperature range: -20 ~ +55℃ (no condensation, no icing)
Electromagnetic compatibility: In accord with GB/T 18268.1(IEC61326-1)
Applicable field equipment: Thermal resistor, resistor, potentiometer

WIRING DIAGRAM



TS-TR2XX 1 IN 2 OUT

TS-TR1XX contains only one part of channel 1



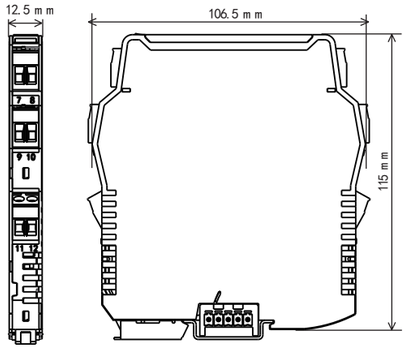
TS-TR5XX 2 IN 2 OUT

Note:
1. Wire heating resistor or potentiometer signal input, terminal 9,10 (TS-TR2XX); 7,8 (TS-TR5XX); 11,12 (TS-TR5XX) Must be short-circuited. Two-wire connections do not eliminate wire resistance, and errors increase.

2. When the three-wire heating resistor or potentiometer signal is input, the resistance value of the three wires should be equal as far as possible.

3. The bus power supply and RS485 output function is optional, if necessary, please specify and purchase the bus power supply module when ordering. TS-TR5XX No 485 output function.

OVERALL DIMENSION



TS-TC Series Thermocouple Temperature Isolation Transmitter

● The TS-TC series thermocouple signal isolator accepts thermocouple signals from the site and outputs standard current/voltage signals to the control room, PLC, display instruments, DCS, etc. through isolation and transformation.

● Connect the PC upper computer through the miniUSB interface to measure the graduation number, range, and alarm output value of the input signal; Configure the range and type of output range. Equipped with RS485 communication function (customization required).

● This product requires independent power supply and adopts DIN35mm standard guide rail independent installation method (optional bus power supply function); The input, output, and power supply are isolated from each other.

Selection Table

TS-TC	X	X	X	INSTRUCTIONS
Channel	1			1 IN 1 OUT
	2			1 IN 2 OUT
	5			2 IN 2 OUT
Input Signal (Thermocouple Type)		B		400～+1820℃
		E		-100～+1000℃
		J		-100～+1200℃
		K		-180～+1372℃
		N		-180～+1300℃
		R		-50～+1760℃
		S		-50～+1760℃
		T		-200～+400℃
Output Signal			1	4-20mA
			2	0-20mA
			4	0-5V
			6	0-10V

Note: Customers need to determine the input signal form and output signal form when placing an order. If there are special needs, they can customize it

Product Selection

Eg: TS-TC5K1/0-1000, 2 IN 2 OUT, input signal K-type thermocouple (0-1000 ℃), output 4-20mA.

MAIN TECHNICAL PARAMETERS

Input

Input signal: B, E, J, K, N, R, S, T, etc thermocouple signal

Cold end compensation: Compensation range: -20 ℃~+60 ℃; Cold end compensation accuracy: ± 1 ℃

Compensation method: internal compensation (default); External compensation (optional)

Over limit alarm: The input is below the lower limit of the range, and the output current is about 3.8mA (during current output)

The input is above the upper limit of the range, and the output current is about 20.5mA (during current output)

Wire breakage alarm: When the input wire is disconnected, the output current is approximately 22mA (when the current is output)

Output

Output signal: Current signal: 0-20mA; Voltage signal: 0-10V

(The type and range of current and voltage signals can be set by the PC upper computer)

Digital signal: RS485 (optional function, not included by default)

Output load resistance: RL ⩽ 400 Ω (output is current signal) RL ⩾ 10K Ω (output is voltage signal)

General Technical Parameters

Number of channels: 1 IN 1 OUT, 1 IN 2 OUT, 2 IN 2 OUT

Power supply: DC24V, voltage range: DC18-32V

Consumption current: ⩽ 80mA (2 IN 2 OUT, 24V power supply, 20mA output)

Basic accuracy: ± 0.1% F.S or ± 0.2% F.S (20 ℃) shall be subject to the physical label.

Temperature drift: ± 0.01% F.S/℃ (-20 ℃~+55 ℃)

Response time: ⩽ 1S (0-90%) (TYP)

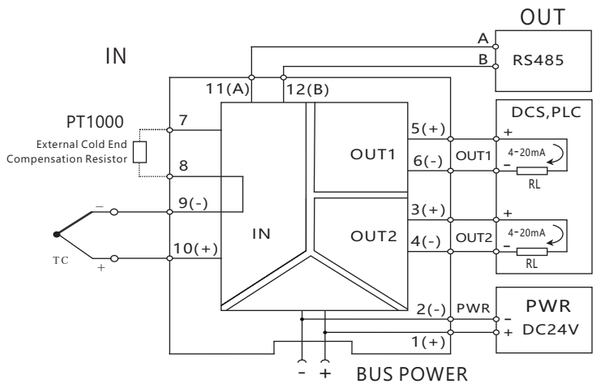
Insulation strength: 1500V AC/1min (between input, output, and power supply)

Working temperature range: -20~+55 ℃ (without condensation or icing)

Electromagnetic compatibility: In accord with GB/T 18268.1 (IEC61326-1)

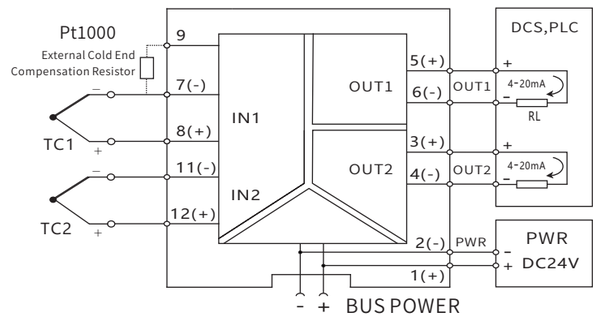
Applicable on-site equipment: Thermocouple

WIRING DIAGRAM



TS-TC2XX 1 IN 2 OUT

TS-TC1XX 1 IN 1 OUT only includes channel 1 part



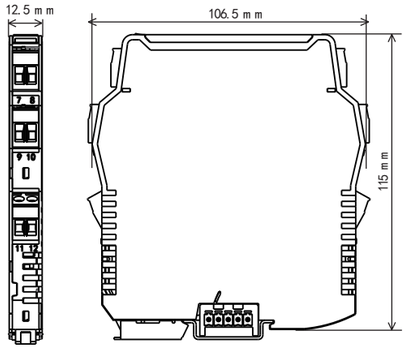
TS-TC5XX 2 IN 2 OUT

Note:

1. When inputting thermocouples, the compensation wire should be directly connected to the input terminal, and other materials of wire should not be connected in the middle, otherwise it will cause measurement errors.

2. The bus power supply and RS485 output functions are optional functions. If necessary, please specify and purchase a bus power supply module separately when ordering. TS-TC5XX has no 485 output function for two inputs and two outputs.

OVERALL DIMENSION



TS-SV/A Series Intelligent Voltage/Current Signal Isolator

● TS-SV/A series intelligent voltage/current signal isolator, which isolates and transmits voltage or current signals from industrial sites to output standard current/voltage signals to control rooms, PLCs, display instruments, and DCS.

● Connect the input signal type, range, and alarm output value to the PC upper computer through the miniUSB interface; Configure the range and type of output range. Equipped with RS485 communication function (customization required).

● This product requires independent power supply and adopts DIN35mm standard guide rail independent installation method (optional bus power supply function); The input, output, and power supply are isolated from each other.

Selection Table

TS-SV/A	X	X	X	INSTRUCTIONS
Channel	1			1 IN 1 OUT
	2			1 IN 2 OUT
	5			2 IN 2 OUT
Input Signal		2		0-20mA
		4		-100mV～+100mV
		7		0-10V
				The range of input signal range can be set through the upper computer
Output Signal			2	0-20mA
			6	0-10V
				The output signal range can be set through the upper computer

Note: Customers need to determine the input signal form and output signal form when placing an order. If there are special needs, they can customize it

Product Selection

TS-SA5XX, current signal input
Eg: TS-SA522　2 IN 2 OUT, input signal 0-20mA, output signal 0-20mA.

TS-SV5XX, voltage signal input
Eg: TS-SV576　2 IN 2 OUT, input signal 0-10V, output signal 0-10V.

MAIN TECHNICAL PARAMETERS

Input

Input signals: voltage, current, millivolt signal
Distribution: Open circuit voltage: ⩽ 26V; Voltage at 20mA: ⩾ 21V;
Normal working current: ⩽ 25mA (single circuit).
Input impedance: ⩽ 25 Ω (current input); ⩾ 1M Ω (voltage input); ⩾ 800K Ω (millivolt input).
Over limit alarm: The input is below the lower limit of the range, and the output current is about 3.8mA (during current output)
The input is above the upper limit of the range, and the output current is about 20.5mA (during current output)

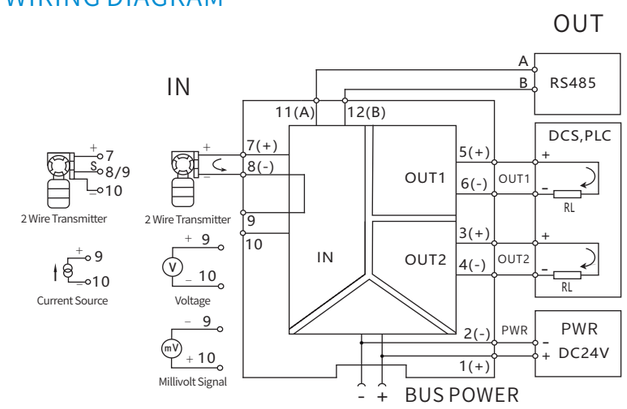
Output

Output signal: Current signal: 0-20mA; Voltage signal: 0-10V
(The type and range of current and voltage signals can be set by the PC upper computer)
Digital signal: RS485 (optional function, not included by default)
Output load resistance: RL ⩽ 400 Ω (output is current signal)
RL ⩾ 10K Ω (output is voltage signal)

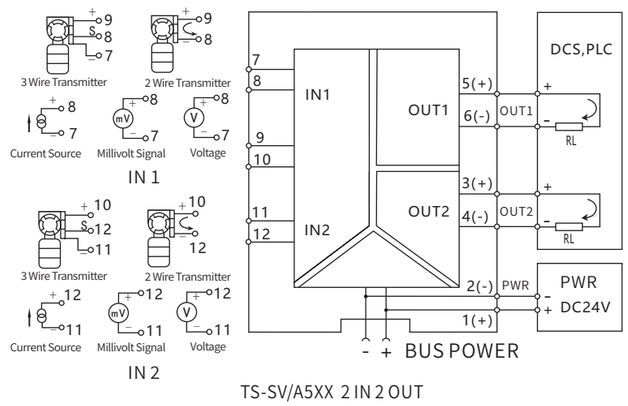
General Technical Parameters

Number of channels: 1 IN 1 OUT,1 IN 2 OUT,2 IN 2 OUT
Power supply: DC24V, voltage range: DC18-32V
Consumption current: ⩽ 100mA (2 IN 2 OUT, 24V power supply, distribution input, 20mA output)
Basic accuracy: ± 0.1% F.S or ± 0.2% F.S (20 ℃) shall be subject to the physical label.
Temperature drift: ± 0.01% F.S/℃ (-20 ℃~+55 ℃)
Response time: ⩽ 1S (0-90%) (TYP)
Insulation strength: 1500V AC/1min (between input, output, and power supply)
Insulation resistance: ⩾ 100M Ω (between input, output, and power supply)
Working temperature range: -20~+55 ℃ (without condensation or icing)
Suitable for on-site equipment: Voltage, current, millivolt signal.

WIRING DIAGRAM



TS-SV/A2XX 1 IN 2 OUT
TS-SV/A1XX 1 IN 1 OUT only includes channel 1 part

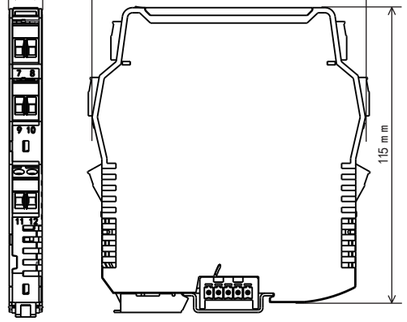


TS-SV/A5XX 2 IN 2 OUT

Note:
1. The bus power supply and RS485 output functions are optional. If necessary, please specify and purchase a bus power supply module separately when ordering.

2. The TS-SV/A5XX 2 IN 2 OUT specification does not have 485 output function.

OVERALL DIMENSION



TS-IPX11 Series Current Signal Isolator

● The TS-IPX11 series current input distribution isolator is used to provide isolated distribution power for on-site transmitters. At the same time, the 4-20mA signal generated by the transmitter or current source is isolated, interference suppressed, and processed to output current or voltage signals to the control system, PLC, DCS, and other instruments.

● Input interface current source, universal for two wire and three wire transmitters; Internally, efficient magnetoelectric isolation technology is used, with input, output, and power sources isolated from each other, featuring high accuracy, high linearity, extremely low temperature drift, and short response time.

● Adopting a 12.5mm ultra-thin shell and DIN35mm standard guide rail independent installation method (optional bus power supply function); Adopting the latest energy-saving circuit, with minimal temperature rise, suitable for dense installation of guide rails. Input, output, and power supply are isolated.

Selection Table

TS-IP	X	X	X	INSTRUCTIONS
Channel	1			1 IN 1 OUT
	2			1 IN 2 OUT
	5			2 IN 2 OUT
Input Signal		1		4-20mA
		2		0-20mA
Output Signal			1	4-20mA
			2	0-20mA
			4	0-5V
			6	0-10V

Note: Customers need to determine the input signal form and output signal form when placing an order. If there are special needs, they can customize it

Product Selection

Eg: TS-IP5110
2 IN 2 OUT, input signal 4-20mA, output signal 4-20mA.

MAIN TECHNICAL PARAMETERS

Input

Input signal: 0 (4) -20mA
Maximum input current: 22mA
Distribution:Distribution voltage ⩾ 21V (at 20mA);
Normal working current: ⩽ 25mA (single circuit).
Power distribution output clamp current: 28mA (± 2mA)
Input impedance: ⩽ 25 Ω

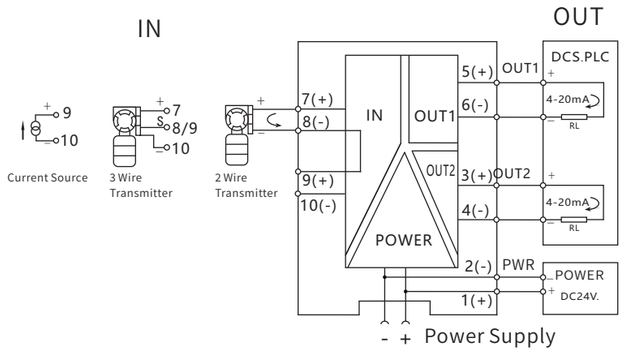
Output

Current output: 0 (4) -20mA; Load resistance: RL ⩽ 800 Ω
Voltage output: 0 (1) -5V; Load resistance: RL ⩾ 330K Ω
0 (2) -10V; Load resistance: RL ⩾ 660K Ω

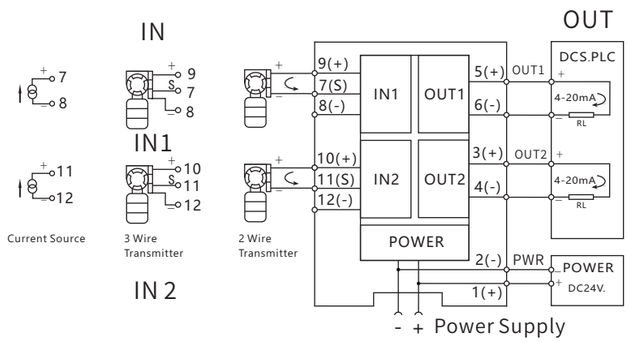
General Technical Parameters

Number of channels: 1 IN 1 OUT, 1 IN 2 OUT, 2 IN 2 OUT
Power supply: DC24V, voltage range: DC18-40V
Consumption current: ⩽ 60mA (1 IN 1 OUT, 24V power supply, distribution input, 20mA output, When load resistance=550 Ω)
⩽ 70mA (1 IN 2 OUT, 24V power supply,distribution input, 20mA output, When load resistance=550 Ω)
Basic accuracy: ± 0.1% F.S (20 °C)
Temperature drift: typical value ⩽ ± 1uA/10 °C (-20 °C~+60 °C)
Response time: ⩽ 10mS (0-90%) (TYP)
Insulation strength: 2500V AC/1min (between input, output, and power supply)
Insulation resistance: ⩾ 100M Ω (between input, output, and power supply)
Working temperature range: -20~+60 °C (without condensation or icing)
Applicable on-site equipment: Two wire and three wire transmitters; Current source.

WIRING DIAGRAM



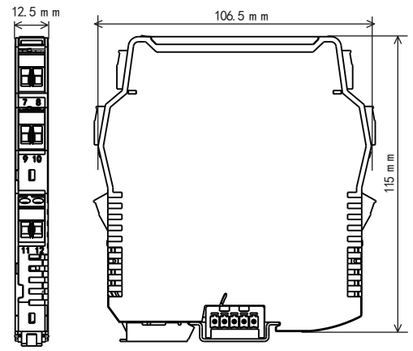
TS-IP211 1 IN 2 OUT
Note: TS-IP111 only includes input and output part 1.



TS-IP511 2 IN 2 OUT

Note:
The bus power supply function is optional, and customers need to specify it when ordering and purchase a bus power supply module separately.

OVERALL DIMENSION



TS-IP/UX11 Series Signal Isolation Distributor

● The TS-IP/UXXX series signal isolation distributor uses DC24V power supply to provide isolation and distribution power for on-site transmitters. It also realizes the conversion of voltage, current, and other signals, and has signal distribution function. It has multiple output types such as one input, three outputs, and one input, four outputs.

● Internally, efficient magnetoelectric isolation technology is used, with input, output, and power sources isolated from each other, featuring high accuracy, high linearity, low temperature drift, and short response time.

● Adopting a 12.5mm ultra-thin shell and DIN35mm standard guide rail independent installation method.

Selection Table

TS-IP/U	X	X	X	INSTRUCTIONS
Channel	3			1 IN 3 OUT
	4			1 IN 4 OUT
Input Signal		1		4-20mA
		2		0-20mA
		5		0-5V
		7		0-10V
Output Signal			1	4-20mA
			2	0-20mA
			4	0-5V
			6	0-10V

Note: Customers need to determine the input signal form and output signal form when placing an order. If there are special needs, they can customize it

Product Selection

TS-IPXXX current input
Eg: TS-IP411　1 IN 4 OUT, input signal:4-20mA,output signal: 4-20mA.

TS-UXXX voltage input
Eg: TS-U376　1 IN 3 OUT, input signal:0-10V, output signal:0-10V.

MAIN TECHNICAL PARAMETERS

Input

Input signals: 0-20mA, 4-20mA, 0-5V, 0-10V, etc
Distribution: Open circuit voltage ⩽ 25V; Voltage ⩾ 15V at 20mA;
Normal working current: ⩽ 25mA
Input impedance: Current input: ⩽ 50 Ω;
Voltage input: ⩾ 300KΩ

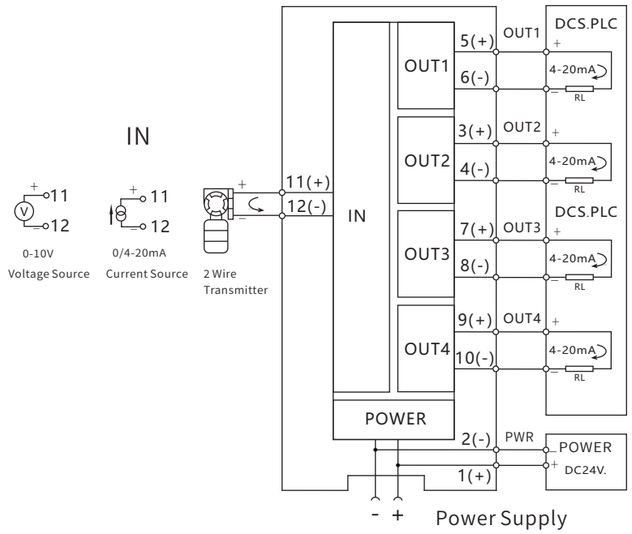
Output

Current output: 0 (4) -20mA; Load resistance: RL ⩽ 400 Ω
Voltage output: 0 (1) -5V; Load resistance: RL ⩾ 10K Ω
0 (2) -10V; Load resistance: RL ⩾ 10K Ω

General Technical Parameters

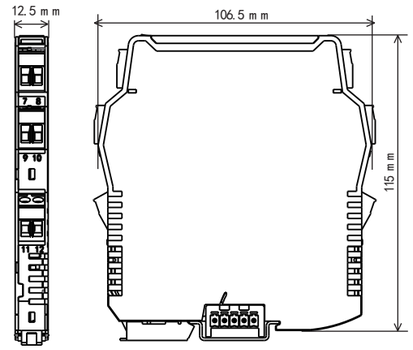
Number of channels: 1 IN 3 OUT, 1 IN 4 OUT
Power supply: DC24V ± 10%
Consumption current: ⩽ 120mA (1 IN 3 OUT, 24V power supply, distribution input, 20mA output)
⩽ 140mA (one in four out, 24V power supply, distribution input, 20mA output)
Basic accuracy: ± 0.1% F.S (20 ℃)
Temperature drift: typical value ⩽ ± 0.005% F.S./℃ (-20 ℃~+50 ℃)
Response time: ⩽ 10mS (0-90%) (TYP)
Insulation strength: 1500V AC/1min (between input, output, and power supply)
Insulation resistance: ⩾ 100M Ω (between input, output, and power supply)
Working temperature range: -20~+50 ℃ (without condensation or icing)
Applicable on-site equipment: Two wire and three wire transmitters; Current source.

WIRING DIAGRAM



TS-IP/U3XX 1 IN 3 OUT
TS-IP/U4XX 1 IN 4 OUT

OVERALL DIMENSION



Note:
TS-IP/U3XX only includes input and output parts 1,2,3.
The bus power supply function is optional, and customers need to specify it when placing an order, and provide additional information Outsourcing bus power supply module.

The TS-IP311 and TS-IP411 current input isolators default to the current source input mode at the factory. If the customer's input terminal is connected to a two wire transmitter, the input selection switch on the side of the housing needs to be turned down to the "P" position.

TS-FXX Series Intelligent Frequency Signal Conversion Isolator

● The TS-F series frequency signal conversion isolator isolates and converts industrial site frequency signals into standard signals such as 4-20mA and 0-5V.

● Connect the input signal input method, range, high and low level threshold range, voltage ratio, distribution voltage, damping coefficient to the PC upper computer through Micro USB interface; Configure the range, type, upper and lower alarm values, and other parameters of the output signal.

● This product requires independent power supply; Adopting DIN35mm standard guide rail independent installation method (optional bus power supply function); Input, output, and power supply are isolated.

Selection Table

TS-F	X	X	X	INSTRUCTIONS
Channel	1			1 IN 1 OUT
Input Signal		A		0.1Hz-100KHz
		C		Customer customization
Output Signal			1	4-20mA
			2	0-20mA
			5	0-5V
			7	0-10V
			0	Customer customization

Note: Customers need to determine the input signal form and output signal form when placing an order. If there are special needs, they can customize it

Product Selection

Eg: TS-F1A1

1 IN 1 OUT, input signal 0.1-100KHz, output signal 4-20mA.

MAIN TECHNICAL PARAMETERS

Input

Signal type: Sine wave, triangular wave, square wave

Input method: Three wire NPN, PNP type sensors, active frequency signal, dry node signal, two wire proximity switch

Distribution voltage: 24V ± 10%, 12V ± 10%, or 8V ± 10% (8V is only valid for firmware versions A2.XX and above)

Distribution current:<20mA

Frequency range: 0.1Hz -100KHz

Amplitude range: 0.5-350Vpp

Output

Output signal: 4-20mA; 0-20mA; 0-5V; 0-10V

Output load resistance: RL ⩽ 400 Ω (output as current signal)

RL ⩾ 10K Ω (output as voltage signal)

Indicator Light Status

1. After powering on, the power indicator light is constantly on, but not on indicates a power failure or poor contact;
2. When configuring parameters, the power indicator light flashes;
3. When the input is normal, the alarm indicator light turns off;
4. The alarm indicator light remains on when the input frequency range exceeds the upper and lower limits;

General Technical Parameters

Power supply: DC24V, voltage range: DC 18-32V

Consumption current:<60mA @ DC 24V

Measurement accuracy: Measurement value ± 0.05%

Current output accuracy: ± 0.015mA

Voltage output accuracy: ± 0.008V

Comprehensive accuracy: Take the larger value of measurement accuracy and output accuracy

Temperature drift: ± 0.01% F.S/℃

Insulation strength: 1500V DC/1min (between power supply, input, and output)

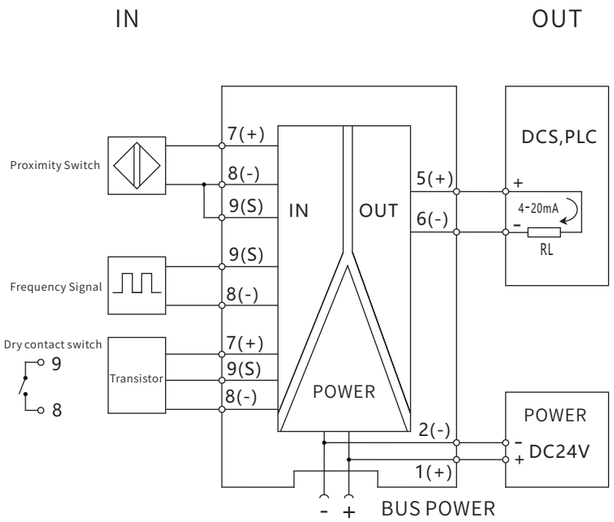
Insulation resistance: ⩾ 100M Ω (between power supply, input, output and shell)

Working temperature range: -20 ℃~+60 ℃

Electromagnetic compatibility: In accordance with GB/T 18268.1 (IEC 6132-1)

Applicable field equipment: NAMUR proximity switches, dry node switches, and other field equipment that comply with DIN19234, level pulse signals,three-wire NPN/PNP sensor outputs, incremental encoders, etc.

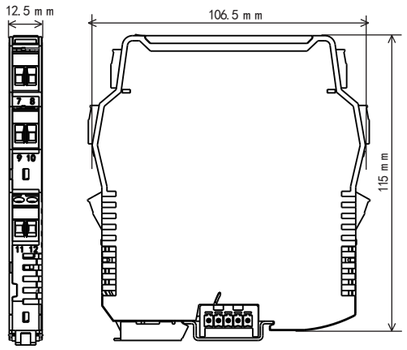
WIRING DIAGRAM



Dry contact pins 10 and 7 need to be short circuited
NPN type transistors require short circuiting between pins 10 and 7
PNP type transistor requires short circuiting between pins 10 and 8

Note:
The bus power supply function is optional, and customers need to specify it when ordering and purchase a bus power supply module separately.

OVERALL DIMENSION



TM-TR Series Thermal Resistance Temperature Isolation Transmitter

● The TM-TR series thermal resistance signal isolator receives thermal resistance signals from the site and outputs standard current/voltage signals to the control room, PLC, display instruments, and DCS through isolation and transmission.

● Connect the PC upper computer through the miniUSB interface to measure the graduation number, range, and alarm output value of the input signal; Configure the range and type of output range. Equipped with RS485 communication function (customization required).

● This product requires independent power supply and adopts DIN35mm standard guide rail independent installation method; Equipped with bus power supply interface; The input, output, and power supply are isolated from each other.

Selection Table

TM-TR	X	X	X	INSTRUCTIONS
Channel				
	5			2 IN 2 OUT
Input Signal (Type Of Thermal Resistor)		C5		Cu50(-50～+150℃)
		C1		Cu100(-50～+150℃)
		P1		Pt100(-200～+850℃)
		P2		Pt1000(-200～+250℃)
		P5		Pt500(-200～+250℃)
		N1		Ni100(-60～+180℃)
		N2		Ni1000(-60～+150℃)
		N5		Ni500(-60～+180℃)
		R3		Resistance, Potentiometer(0～3KΩ)
		R5		Resistance, Potentiometer(0～5KΩ)
Output Signal			1	4-20mA
			2	0-20mA
			4	0-5V
			6	0-10V

Note: Customers need to determine the input signal form and output signal form when placing an order. If there are special needs, they can customize it

Product Selection

Eg: TM-TR5C51/0-100

2 IN 2 OUT, input signal Cu50 (0-100 ℃), output 4-20mA.

MAIN TECHNICAL PARAMETERS

Input

Input signal: Resistance signals such as thermal resistance, resistance, Potentiometer, etc

Allowable line resistance ⩽ 50 Ω (three wire system)

Over limit alarm: The input is below the lower limit of the range, and the output current is about 3.8mA (during current output)

The input is above the upper limit of the range, and the output current is about 20.5mA (during current output)

Wire breakage alarm: When the input wire is disconnected, the output current is approximately 22mA (when the current is output)

Output

Output signal: Current signal: 0-20mA; Voltage signal: 0-10V

(The type and range of current and voltage signals can be set by the PC upper computer)

Digital signal: RS485 (optional function, not included by default)

Output load resistance: RL ⩽ 400 Ω (output as current signal) RL ⩾ 10K Ω (output as voltage signal)

General Technical Parameters

Number of channels: 2 IN 2 OUT (TM-TR5XX)

Power supply: DC24V, voltage range: DC18-32V

Consumption current: ⩽ 55mA (2 IN 2 OUT, 24V power supply, 20mA output)

Basic accuracy: ± 0.1% F.S or ± 0.2% F.S (20 ℃) shall be subject to the physical label.

Temperature drift: ± 0.01% F.S/℃ (-20 ℃~+55 ℃)

Response time: ⩽ 1S (0-90%) (TYP)

Insulation strength: 1500V AC/1min (between input, output, and power supply)

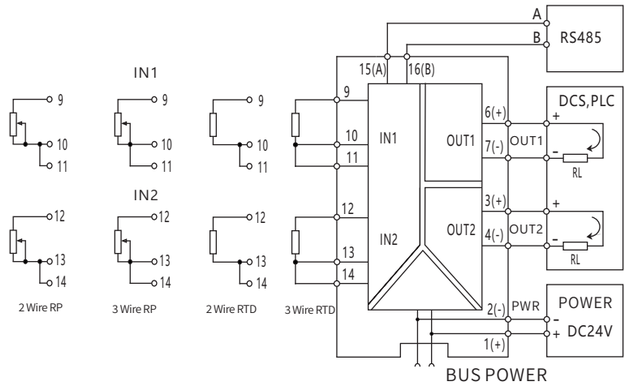
Insulation resistance: ⩾ 100M Ω (between input, output, and power supply)

Working temperature range: -20~+55 ℃ (without condensation or icing)

Electromagnetic compatibility: In accordance with GB/T 18268.1 (IEC61326-1)

Applicable field equipment: Thermal resistance, resistance, Potentiometer

WIRING DIAGRAM



TM-TR5XX 2 IN 2 OUT

Note:

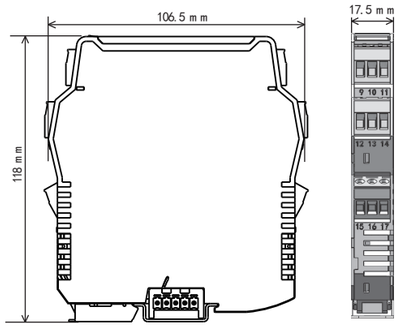
1. When the two-wire thermistor or Potentiometer signal is input, terminals 10 and 11; 13 and 14 must be short circuited.The two wire connection method cannot eliminate wire resistance, and the error will increase.

2. When the three wire thermal resistor or Potentiometer signal is input, the resistance value of three wires shall be equal as far as possible.

3. The RS485 output function is optional and is not included by default. If necessary, please specify it when ordering.

4. Bus power supply requires customers to separately purchase bus power supply modules.

OVERALL DIMENSION



TM-TR-P Series Liquid Crystal Display Thermal Resistance Temperature Isolation Transmitter

● The TM-TR-P series thermal resistance signal isolator receives thermal resistance signals from the site and outputs standard current/voltage signals to the control room, PLC, DCS, and display instruments through isolation and transmission.

● Equipped with LCD display function, it can switch and display parameters of different channels through button switches, and display real-time input measurement values, theoretical output values, units and channel numbers, fault alarm information, and other content on the LCD screen.

● The graduation number, range, and alarm output value of the input signal can be connected to the PC upper computer or mobile app through the miniUSB interface; Configure the range and type of output range. Equipped with RS485 communication function (optional).

● This product requires independent power supply; Adopting DIN35mm standard guide rail independent installation method (optional bus power supply function); Input, output, and power supply are isolated.

Selection Table

TM-TR-P	X	X	X	INSTRUCTIONS
Channel	1			1 IN 1 OUT
	2			1 IN 2 OUT
	5			2 IN 2 OUT
Input Signal (Thermal Resistance Type)		C5		Cu50(-50～+150°C)
		C1		Cu100(-50～+150°C)
		P1		Pt100(-200～+850°C)
		P2		Pt1000(-200～+250°C)
		P5		Pt500(-200～+250°C)
		N1		Ni100(-60～+180°C)
		N2		Ni1000(-60～+150°C)
		N5		Ni500(-60～+180°C)
		R5		Resistance, Potentiometer(0～5KΩ)
Output Signal			1	4-20mA
			2	0-20mA
			4	0-5V
			6	0-10V

Note: Customers need to determine the input signal form and output signal form when placing an order. If there are special needs, they can customize it

Product Selection

Eg: TM-TR-P5C51/0-100, 2 IN 2 OUT, input signal Cu50 (0-100 °C), output 4-20mA.

MAIN TECHNICAL PARAMETERS

Input

Input signal: resistance signals such as thermal resistance, resistance, Potentiometer, etc
Allowable line resistance ⩽ 22 Ω (three wire system)

Over limit alarm: The input is below the lower limit of the range, and the output current is about 3.8mA (during current output)
The input is above the upper limit of the range, and the output current is about 20.5mA (during current output)
When the input is disconnected, the output current is approximately 22mA (during current output)

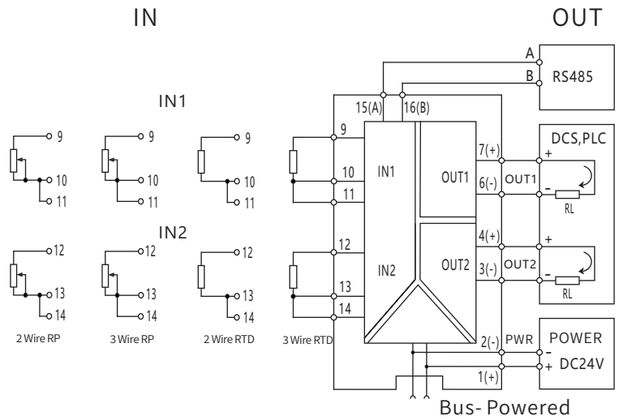
Output

Output signal: Current signal: 0-20mA; Voltage signal: 0-10V
(The type and range of current and voltage signals can be set by the PC upper computer)
Digital signal: RS485 (optional function, not included by default)
Output load resistance: RL ⩽ 400 Ω (output as current signal) RL ⩾ 10K Ω (output as voltage signal)

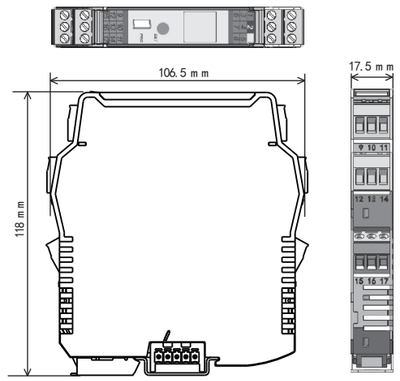
General Technical Parameters

Number of channels: 1 IN 1 OUT; 1 IN 2 OUT; 2 IN 2 OUT.
Power supply: DC24V, voltage range: DC18-32V
Consumption current: ⩽ 55mA (two in two out, 24V power supply, 20mA output)
Basic accuracy: ± 0.1% F.S or ± 0.2% F.S (20 °C) shall be subject to the physical label.
Response time: ⩽ 1S (0-90%) (TYP)
Insulation strength: 1500V AC/1min (between input, output, and power supply)
Working temperature range: -20~+55 °C (without condensation or icing)
Applicable field equipment: thermal resistance, resistance, Potentiometer

WIRING DIAGRAM



OVERALL DIMENSION



TM-TR-P5XX 2 IN 2 OUT
TM-TR-P1XX 1 IN 1 OUT only includes channel 1 part;
The TM-TR-P2XX 1 IN 2 OUT input section only includes channel 1.

Note:
1. When the two-wire thermistor or Potentiometer signal is input, terminals 10 and 11; 13 and 14 must be short circuited.The two wire connection method cannot eliminate wire resistance, and the error will increase.

2. When the three wire thermal resistor or Potentiometer signal is input, the resistance value of three wires shall be equal as far as possible.

3. The RS485 output function is optional and is not included by default. If necessary, please specify it when ordering.

4. Bus power supply requires customers to separately purchase bus power supply modules.

TM-TC Series Thermocouple Temperature Isolation Transmitter

● The TM-TC series thermocouple signal isolator accepts thermocouple signals from the site and outputs standard current/voltage signals to the control room, PLC, display instruments, DCS, etc. through isolation and transformation.

● Connect the PC upper computer through the miniUSB interface to measure the graduation number, range, and alarm output value of the input signal; Configure the range and type of output range. Equipped with RS485 communication function (customization required)

● This product requires independent power supply and adopts DIN35mm standard guide rail independent installation method; Equipped with bus power supply interface; The input, output, and power supply are isolated from each other.

Selection Table

TM-TC	X	X	X	INSTRUCTIONS
Channel				
	5			2 IN 2 OUT
Input Signal (Thermocouple Type)		B		400～+1820°C
		E		-100～+1000°C
		J		-100～+1200°C
		K		-180～+1372°C
		N		-180～+1300°C
		R		-50～+1760°C
		S		-50～+1760°C
		T		-200～+400°C
Output Signal			1	4-20mA
			2	0-20mA
			4	0-5V
			6	0-10V
Note: Customers need to determine the input signal form and output signal form when placing an order. If there are special needs, they can customize it				

Product Selection

Eg: TM-TC5K1/0-1000，2 IN 2 OUT, input signal:K-type thermocouple (0-1000 °C), output:4-20mA.

MAIN TECHNICAL PARAMETERS

Input

Input signals: B, E, J, K, N, R, S, T, etc thermocouple signal

Cold end compensation: Compensation range: -20 °C~+60 °C; Cold end compensation accuracy: ± 1 °C

Compensation method: Internal compensation (default); External compensation (optional)

Over limit alarm: The input is below the lower limit of the range, and the output current is about 3.8mA (during current output)

The input is above the upper limit of the range, and the output current is about 20.5mA (during current output)

Wire breakage alarm: When the input wire is disconnected, the output current is approximately 22mA

(when the current is output)

Output

Output signal: Current signal: 0-20mA; Voltage signal: 0-10V

(The type and range of current and voltage signals can be set by the PC upper computer)

Digital signal: RS485 (optional function, not included by default)

Output load resistance: RL ⩽ 400 Ω (output as current signal)　　RL ⩾ 10K Ω (output as voltage signal)

General Technical Parameters

Number of channels: 2 IN 2 OUT (TM-TR5XX)

Power supply: DC24V, voltage range: DC18-32V

Consumption current: ⩽ 55mA (2 IN 2 OUT, 24V power supply, 20mA output)

Basic accuracy: ± 0.1% F.S or ± 0.2% F.S (20 °C) shall be subject to the physical label.

Temperature drift: ± 0.01% F.S/°C (-20 °C~+55 °C)

Response time: ⩽ 1S (0-90%) (TYP)

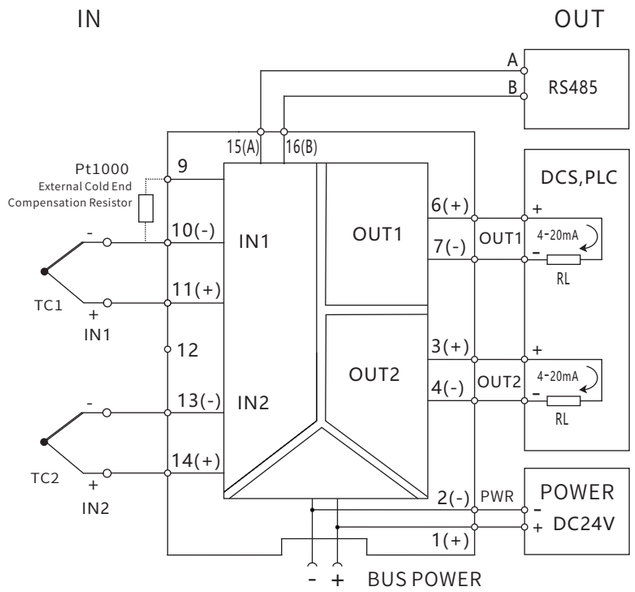
Insulation strength: 1500V AC/1min (between input, output, and power supply)

Working temperature range: -20~+55 °C (without condensation or icing)

Electromagnetic compatibility: In accordance with GB/T 18268.1 (IEC61326-1)

Applicable on-site equipment: Thermocouples

WIRING DIAGRAM



TM-TC5XX 2 IN 2 OUT

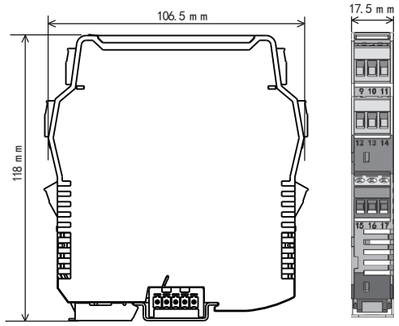
Note:

1. When inputting thermocouples, the compensation wire should be directly connected to the input terminal, and other materials of wire should not be connected in the middle, otherwise it will cause measurement errors.

2. The RS485 output function is optional, please specify it when ordering.

3. Bus power supply requires customers to separately purchase bus power supply modules.

OVERALL DIMENSION



TM-TC-P Series Liquid Crystal Display Thermocouple Temperature Isolation Transmitter

● The TM-TC-P series thermal resistance signal isolator receives thermal resistance signals from the site and outputs standard current/voltage signals to the control room, PLC, DCS, and display instruments through isolation and transmission.

● Equipped with LCD display function, it can switch and display parameters of different channels through button switches, and display real-time input measurement values, theoretical output values, units and channel numbers, fault alarm information, and other content on the LCD screen.

● The graduation number, range, and alarm output value of the input signal can be connected to the PC upper computer or mobile app through the miniUSB interface; Configure the range and type of output range. Equipped with RS485 communication function (optional).

● This product requires independent power supply; Adopting DIN35mm standard guide rail independent installation method (optional bus power supply function); Input, output, and power supply are isolated.

Selection Table

TM-TC-P	X	X	X	INSTRUCTIONS
Channel	1			1 IN 1 OUT
	2			1 IN 2 OUT
	5			2 IN 2 OUT
Input Signal (Thermocouple Type)		B		400～+1820℃
		E		-100～+1000℃
		J		-100～+1200℃
		K		-180～+1372℃
		N		-180～+1300℃
		R		-50～+1760℃
		S		-50～+1760℃
		T		-200～+400℃
Output Signal			1	4-20mA
			2	0-20mA
			4	0-5V
			6	0-10V

Note: Customers need to determine the input signal form and output signal form when placing an order. If there are special needs, they can customize it

Product Selection

Eg: TM-TC-P5K1/0-1000, 2 IN 2 OUT, input signal K-type thermocouple (0-1000 ℃), output 4-20mA.

MAIN TECHNICAL PARAMETERS

Input

Input signals: B, E, J, K, N, R, S, T, etc thermocouple signal
Cold end compensation: Compensation range: -20 ℃~+60 ℃; Cold end compensation accuracy: ± 1 ℃
Compensation method: Internal compensation
Over limit alarm: The input is below the lower limit of the range, and the output current is about 3.8mA (during current output)
The input is above the upper limit of the range, and the output current is about 20.5mA (during current output)
Wire breakage alarm: When the input wire is disconnected, the output current is approximately 22mA
(when the current is output)

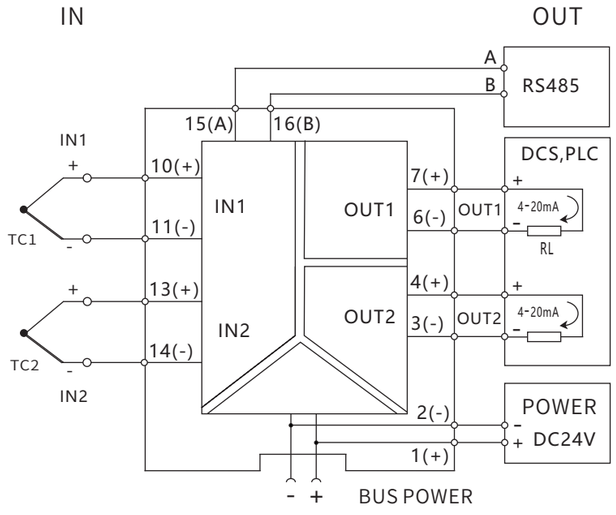
Output

Output signal: Current signal: 0-20mA; Voltage signal: 0-10V
(The type and range of current and voltage signals can be set by the PC upper computer)
Digital signal: RS485 (optional function, not included by default)
Output load resistance: RL ⩽ 400 Ω (output as current signal) RL ⩾ 10K Ω (output as voltage signal)

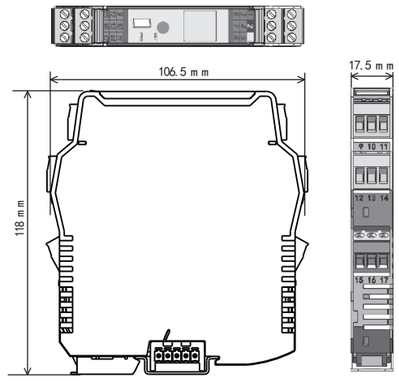
General Technical Parameters

Number of channels: 1 IN 1 OUT, 1 IN 2 OUT, 2 IN 2 OUT
Power supply: DC24V, voltage range: DC18-32V
Consumption current: ⩽ 55mA (2 IN 2 OUT, 24V power supply, 20mA output)
Basic accuracy: ± 0.1% F.S or ± 0.2% F.S (20 ℃) shall be subject to the physical label.
Response time: ⩽ 1S (0-90%) (TYP)
Insulation strength: 1500V AC/1min (between input, output, and power supply)
Working temperature range: -20~+55 ℃ (without condensation or icing)
Applicable on-site equipment: Thermocouples

WIRING DIAGRAM



OVERALL DIMENSION



TM-TC-P5XX 2 IN 2 OUT
TM-TC-P1XX 1 IN 1 OUT only includes channel 1 part;
The TM-TC-P2XX 1 IN 2 OUT input section only includes channel 1.

Note:
1. When inputting thermocouples, the compensation wire should be directly connected to the input terminal, and other materials of wire should not be connected in the middle, otherwise it will cause measurement errors.

2. The RS485 output function is optional, please specify it when ordering.

3. Bus power supply requires customers to separately purchase bus power supply modules.

TM-SV/A Series Intelligent Voltage/Current Signal Isolator

● The TM-SV/A series of intelligent voltage/current signal isolators isolate and transmit voltage or current signals from industrial sites to output standard current/voltage signals to control rooms, PLCs, display instruments, and DCS.

● Connect the input signal type, range, and alarm output value to the PC upper computer through the miniUSB interface; Configure the range and type of output range. Equipped with RS485 communication function (customization required).

● This product requires independent power supply and adopts DIN35mm standard guide rail independent installation method; Equipped with bus power supply interface; The input, output, and power supply are isolated from each other.

Selection Table

TM-SV/A	X	X	X	INSTRUCTIONS
Channel				
	5			2 IN 2 OUT
Input Signal		2		0-20mA
		4		-100mV～+100mV
		7		0-10V
				The range of input signal range can be set through the upper computer
Output Signal			2	0-20mA
			6	0-10V
				The output signal range can be set through the upper computer
Note: Customers need to determine the input signal form and output signal form when placing an order. If there are special needs, they can customize it				

Product Selection

TM-SA5XX, current signal input
Eg: TM-SA522, 2 IN 2 OUT, input signal 0-20mA, output signal 0-20mA.

TM-SV5XX, voltage signal input
Eg: TM-SV576, 2 IN 2 OUT, input signal 0-10V, output signal 0-10V.

MAIN TECHNICAL PARAMETERS

Input

Input signals: Voltage, current, millivolt signal
Distribution: Open circuit voltage: ⩽ 26V; Voltage at 20mA: ⩾ 21V;
Normal working current: ⩽ 25mA (single circuit).
Input impedance: ⩽ 25 Ω (current input); ⩾ 1M Ω (voltage input); ⩾ 800K Ω (millivolt input).
Over limit alarm: The input is below the lower limit of the range, and the output current is about 3.8mA (during current output)
The input is above the upper limit of the range, and the output current is about 20.5mA (during current output)

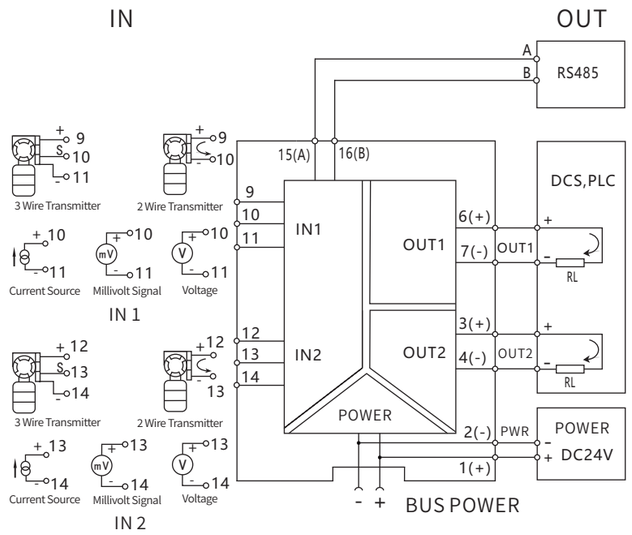
Output

Output signal: Current signal: 0-20mA; Voltage signal: 0-10V
(The type and range of current and voltage signals can be set by the PC upper computer)
Digital signal: RS485 (optional function, not included by default)
Output load resistance: RL ⩽ 400 Ω (output as current signal)
RL ⩾ 10K Ω (output as voltage signal)

General Technical Parameters

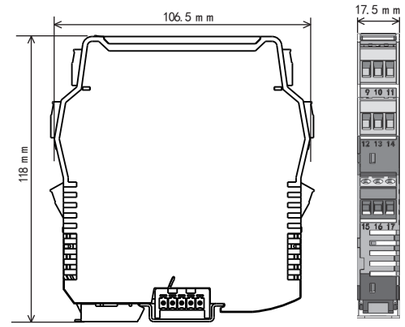
Number of channels: 2 IN 2 OUT (TM-TR5XX)
Power supply: DC24V, voltage range: DC18-32V
Consumption current: ⩽ 100mA (two in and two out, 24V power supply, distribution input, 20mA output)
Basic accuracy: ± 0.1% F.S or ± 0.2% F.S (20 ℃) shall be subject to the physical label.
Temperature drift: ± 0.01% F.S/℃ (-20 ℃~+55 ℃)
Response time: ⩽ 1S (0-90%) (TYP)
Insulation strength: 1500V AC/1min (between input, output, and power supply)
Insulation resistance: ⩾ 100M Ω (between input, output, and power supply)
Working temperature range: -20~+55 ℃ (without condensation or icing)
Suitable for on-site equipment: Voltage, current, millivolt signal.

WIRING DIAGRAM



TM-SV/A5XX 2 IN 2 OUT

OVERALL DIMENSION



Note:
1. The RS485 output function is optional, please specify it when ordering.

2. Bus power supply requires customers to separately purchase bus power supply modules.

TM-IPX110 Series Current Signal Isolator

● The TM-IPX110 series current input distribution isolator is used to provide isolated distribution power for on-site transmitters. At the same time, the 4-20mA signal generated by the transmitter or current source is isolated, interference suppressed, and processed to output current or voltage signals to the control system, PLC, DCS, and other instruments.

● Input interface current source, universal for two wire and three wire transmitters; Internally, efficient magnetoelectric isolation technology is used, with input, output, and power sources isolated from each other, featuring high accuracy, high linearity, extremely low temperature drift, and short response time.

● The output interface has active output and passive output is universal.

● This product requires independent power supply; Adopting DIN35mm standard guide rail independent installation method (with bus power supply function); Input, output, and power supply are isolated.

Selection Table

TM-IP	X	X	X	INSTRUCTIONS
Channel	1			1 IN 1 OUT
	2			1 IN 2 OUT
	5			2 IN 2 OUT
Input Signal		1		4-20mA
		2		0-20mA
Output Signal			1	4-20mA
			2	0-20mA
			4	0-5V
			6	0-10V

Note: Customers need to determine the input signal form and output signal form when placing an order. If there are special needs, they can customize it

Product Selection

Eg: TM-IP5110

2 IN 2 OUT, input signal 4-20mA, output signal 4-20mA.

MAIN TECHNICAL PARAMETERS

Input

Input signal: 0 (4) -20mA

Maximum input current: 22mA

Distribution:Distribution voltage ⩾ 17V (at 20mA);

Normal working current: ⩽ 25mA (single circuit).

Power distribution output clamp current: 28mA (± 2mA)

Input impedance: ⩽ 25 Ω

Output

Active current output: 0 (4) -20mA;

Load resistance: RL ⩽ 550 Ω (customizable RL ⩽ 1000 Ω)

Passive current output: 4-20mA;

Load resistance: RL ⩽ [(Ue-3)/0.022] Ω

External power supply Ue: 12-30V DC

Voltage output: 0 (1) -5V; Load resistance: RL ⩾ 330K Ω (customizable RL ⩾ 10K Ω)

0 (2) -10V; Load resistance: RL ⩾ 660K Ω (customizable RL ⩾ 10K Ω)

General Technical Parameters

Number of channels:1 IN 1 OUT, 1 IN 2 OUT, 2 IN 2 OUT

Power supply: DC24V, voltage range: DC15-36V

Consumption current: ⩽ 110mA (two in two out, 24V power supply, distribution input, 20mA output)

Basic accuracy: ± 0.1% F.S (20 ℃)

Temperature drift: Typical value ⩽ ± 1uA/10 ℃ (-20 ℃~+60 ℃)

Response time: ⩽ 50mS (0-90%) (TYP)

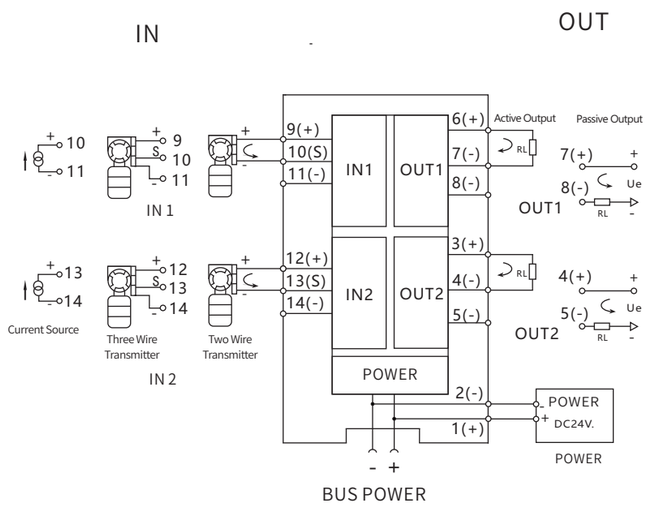
Insulation strength: 2500V AC/1min (between input, output, and power supply)

Insulation resistance: ⩾ 100M Ω (between input, output, and power supply)

Working temperature range: -20~+60 ℃ (without condensation or icing)

Applicable on-site equipment: Two wire and three wire transmitters; Current source.

WIRING DIAGRAM



TM-IP5110 2 IN 2 OUT

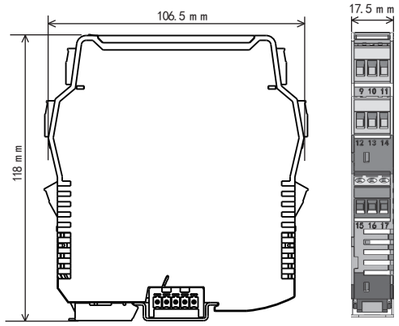
Note:

TM-IP1110 only includes input and output 1 part;

The TM-IP2110 input section only includes input 1;

The bus power supply function requires the customer to purchase a bus power supply module separately.

OVERALL DIMENSION



TEK-74XX Series Single-phase AC Power Acquisition Module

● TEK-74XX series products are a series of industrial grade standard single-phase AC power acquisition products, including single-phase AC current acquisition, single-phase AC voltage acquisition, and single-phase power acquisition products.

● Adopting RS-485 communication interface, the application layer adopts standard MODBUS-RTU protocol, which complies with industrial standards and is suitable for various industrial occasions and automation systems. Convenient communication with the upper computer, enabling fast networking and construction of detection systems.

Product Selection

TEK-7411:Single-phase AC power acquisition module
0-20A input ,0-500V input .
TEK-7421:Single phase
0-10A Current acquisition module
TEK-7422:Single phase
0-50A Current acquisition module
TEK-7424:Single phase
0-100A Current acquisition module
TEK-7431:Single phase
0-100A Voltage acquisition module
TEK-7432:Single phase
0-300A Voltage acquisition module
TEK-7433:Single phase
0-500A Voltage acquisition module

MAIN TECHNICAL PARAMETERS

Input

Input range:Reference model description
Frequency range: 45Hz-65Hz
Samples freuqency:Update rate≤3Hz
Current accuarcy:0.5%
Voltage accuarcy:0.5%
Votage frequency:±0.1Hz(When the input voltage is below 10V, accurate measurement will not be possible)
Apparent power accuracy:0.5%
Active power accuracy:±Active power accuracyx0.5%
Reactive power accuracy:±Active power accuracyx0.5%

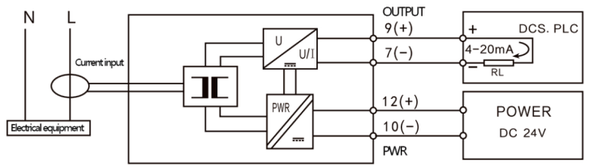
Output

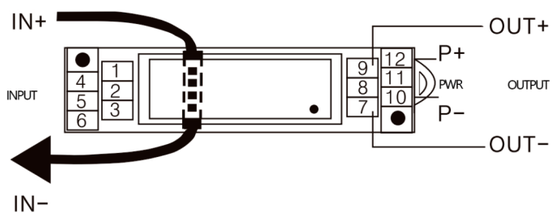
Signal type:RS-485 digital signal
BAUD:1200、2400、4800、9600、19200、38400、57600、115200bps
Output load resistance:RL≤500Ω (Output is current signal)
Verification method: no verification, odd verification, or even verification
Data bits:8bits
Communication protocol: Standard MODBUS-RTU protocol
Communication Distance:1200m(TYP)

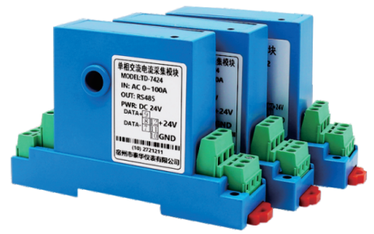
Basic Parameter

Power supply: DC24V,Voltage range:DC9-30V
Power consumption: ≤2W@DC24V
Insulation strength:1500VAC/1min(Between input and output)
Insulation resistance:≥100MΩ(Between input and output)
Electromagnetic Compatibility: According to GB/T 18268.1(IEC61326-1)
Suitable for on-site devices: configuration software, PLC, touch screen, computer, and other devices that support the MODBUS-RTU protocol.

WIRING DIAGRAM







OVERALL DIMENSION