THS-IP Series Current Input Distribution Isolator

- The THS-IP series current input distribution isolator uses DC24V power supply to provide isolation distribution power for on-site transmitters, while transmitting the current signal generated by the transmitter from the on-site isolation to the control room, PLC, DCS, etc.
- 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.
- DIN rail independent installation method; The 12.8mm ultra-thin shell adopts the latest energy-saving circuit, with almost no heat dissipation and minimal temperature rise, making it suitable for dense installation of guide rails.

Selecti	on Tabl	е		
THS-IP X		Х	Х	INSTRUCTIONS
	1			1 IN 1 OUT
Channel	2			1 IN 2 OUT
				4-20mA
Input S	Signal	2		0-20mA
Output Signal			1	4-20mA
			2	0-20mA
			4	0-5V
			6	0-10V

Product Selection

THS-IPXXX

Eg: THS-IP111,1 IN 1 OUT, Both input and output are 4-20mA

MAIN TECHNICAL PARAMETERS

Input

Input signal: 4-20mA; 0-20mA Maximum input current: 25mA Distribution voltage: \geq 21VDC Input impedance: \leq 25 Ω

Output

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

Maximum output current: 25mA

Output load resistance: RL \leq 800 Ω (output is current signal)

 $RL \ge 1M \Omega$ (output is voltage signal)

General Technical Parameters

Number of channels: 1 IN 1 OUT (THS-IP1XX)

1 IN 2 OUT (THS-IP2XX)

Power supply: DC24V, voltage range: DC20-40V

Consumption current: ≤ 39mA (1 IN 1 OUT, 24V power supply, distribution input,

20mA output, when load resistance = 550 Ω)

≤ 58mA (1 IN 2 OUT, 24V power supply, distribution input,

20mA output, when load resistance=550 Ω)

Basic accuracy: ± 0.1% F.S

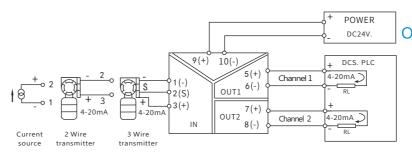
Temperature drift: Typical value ≤ ± 1uA/10 °C

Response time: ≤ 10mS (0-90%) (TYP)

Power on stability time: $\leq 1s$



WIRING DIAGRAM



THS-IP211 1 IN 2 OUT

Note

THS-IP111 only includes input and output part 1 $\,$

Protection parameters:

- ◆ Power on impact protection, power on slow start>20ms
- ◆ Power supply reverse connection protection, reverse connection voltage < -40V
- ◆ Distribution protection, distribution output clamp current 28mA (± 4mA)
- ◆ Output protection, output clamp current 25mA (± 1mA)

Port Misconnection and Surge Protection:

A. Between the two ports of the power input output circuit, it can withstand an external circuit voltage of < ± 24V

B. Short circuit, open circuit, and undamaged caused by incorrect connection between input output power supply. Can withstand external voltage of 2500V (1 minute without damage)

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

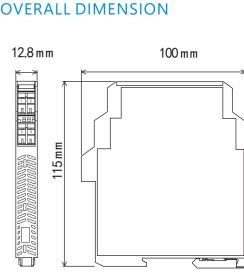
Insulation resistance: $\geq 100 M \Omega$ (between input, output, and power supply)

Working temperature range: -20~+55 °C

Electromagnetic compatibility: In accordance with GB/T 18268 (IEC61326-

1)

Suitable for on-site equipment: two wire, three wire transmitters, current sources.



THS-IP Series Current Input Distribution Isolator (2 IN 2 OUT)

- The THS-IP series current input distribution isolator uses DC24V power supply to provide isolation distribution power for on-site transmitters, while transmitting the current signal generated by the transmitter from the on-site isolation to the control room, PLC, DCS, etc.
- Input interface current source, universal for two 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.
- DIN rail independent installation method; The 12.8mm ultra-thin shell adopts the latest energy-saving circuit, with almost no heat dissipation and minimal temperature rise, making it suitable for dense installation of guide rails.

Selecti	on Tabl	е		
THS-IP	Х	Х	Х	INSTRUCTIONS
	5			2 IN 2 OUT
Channel				
		4		4.00
Input S	Signal	1		4-20mA
	J	2		0-20mA
Output Signal			1	4-20mA
			2	0-20mA
			4	0-5V
			6	0-10V

Product Selection

THS-IPXXX

Eg: THS-IP511, 2 IN 2 OUT, Both input and output are 4-20mA

MAIN TECHNICAL PARAMETERS

Input

Input signal: 4-20mA; 0-20mA Maximum input current: 25mA Distribution voltage: \geq 21VDC Input impedance: \leq 25 Ω

Output

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

Maximum output current: 25mA

Output load resistance: RL $\leq 800~\Omega$ (output is current signal)

 $RL \ge 1M \Omega$ (output is voltage signal)

General Technical Parameters

Number of channels: 2 IN 2 OUT (THS-IP5XX)

Power supply: DC24V, voltage range: DC20-40V

Consumption current: ≤ 93mA (2 IN 2 OUT, 24V power supply, distribution input,

20mA output, when load resistance=550 Ω)

Basic accuracy: ± 0.1% F.S

Temperature drift: Typical value ≤ ± 1uA/10 °C

Response time: ≤ 10 mS (0-90%) (TYP)

Power on stability time: ≤ 1s

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

Insulation resistance: $\geq 100M \Omega$ (between input, output, and power supply)

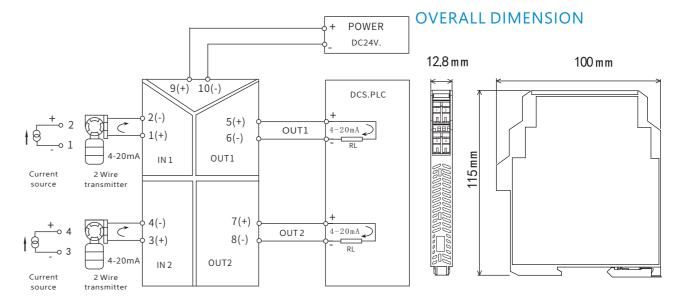
Working temperature range: -20~+55 °C

Electromagnetic compatibility: In accordance with GB/T 18268 (IEC61326-1)

Suitable for on-site equipment: Two wire transmitter, current source.



WIRING DIAGRAM



Note:

When connecting the input terminal to a two wire transmitter, it is necessary to turn the input signal selection switch below the end cover to the P position; When connecting the current source signal to the input terminal, the switch needs to be turned to the I position.

Protection parameters:

- ◆ Power on impact protection, power on slow start>20ms
- ◆ Power supply reverse connection protection, reverse connection voltage < -40V
- ◆ Distribution protection, distribution output clamp current 28mA (± 4mA)
- ◆ Output protection, output clamp current 25mA (± 1mA)

Port Misconnection and Surge Protection:

A. Between the two ports of the power input output circuit, it can withstand an external circuit voltage of $<\pm\,24V$

B. Short circuit, open circuit, and undamaged caused by incorrect connection between input output power supply. Can withstand external voltage of 2500V (1 minute without damage)

THS-TP Series Universal Signal Isolator (intelligent)

- The THS-TP series universal signal input isolator is used for current, voltage millivolts, thermal resistors, thermocouples, potentiometers, and other signal inputs. After isolation, it outputs standard current/voltage signals to the control room, PLC, DCS, display instruments, etc. It can also provide power distribution for on-site transmitters.
- Distribution, current, voltage, millivolts, thermal resistance, thermocouples, potentiometers, and other signal inputs can be switched through different wiring methods. The signal type, measurement range, alarm parameters, etc. can be programmed through PC software.
- High reliable isolation of input, output, and power supply three ports; DIN rail independent installation method; 12.8mm ultra-thin shell, using the latest energy-saving circuit, with minimal temperature rise, suitable for dense installation of guide rails.energy-saving circuit, with almost no heat dissipation and minimal temperature rise, making it

Selecti	on Tabl	е		
THS-TP	Х	Х	Х	INSTRUCTIONS
Channel	1			1 IN 1 OUT
Channel	2			1 IN 2 OUT
Input Signal		U		General Signal (Including signals such as power distribution, current, voltage, millivolts, thermal resistance, thermocouples, potentiometers, etc.) Note: When ordering, it is necessary to indicate the signal type and range
Output Signal			1	4-20mA
			2	0-20mA
Output Signal		4	0-5V	
			6	0-10V

Product Selection

THS-TPXX

Eg: THS-TP2U1/PT100,0-100

2 IN 2 OUT, input signal PT100 (0-100 °C), output 4-20mA

MAIN TECHNICAL PARAMETERS

Input

Input signal: PT100, Cu50, Ni1000 and other thermal resistors

B, E, J, K, N, R, S, T, etc thermocouple

Voltage (range: 0-10V)

Millivolts (range: -100mV~+100mV)

Current source (range: 0-20mA)

Transmitter (power distribution), (range: 0-20mA)

Resistance, potentiometer (maximum range 0-5K)

Distribution voltage: $\geq 21V$

Measurement range: Depends on the type of sensor used

Output

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

Output load resistance: RL $\leq 350~\Omega$ (output is current signal)

 $RL \ge 10K\Omega$ (output is voltage signal)

General Technical Parameters

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

Consumption current: ≤ 50mA (1 IN 1 OUT, 24V power supply, 20mA output)

≤ 70mA (one in two out, 24V power supply, 20mA output)

Basic accuracy: 0.2% F.S Response time: ≤ 1s

Insulation strength: 1500V AC/1min (between input, output, and power supply)
Insulation resistance: $\geq 100M \Omega$ (between input, output, and power supply)

Working temperature range: -20~+55 °C

Electromagnetic compatibility: In accordance with GB/T 18268 (IEC61326-1)

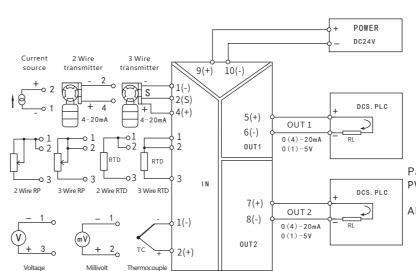


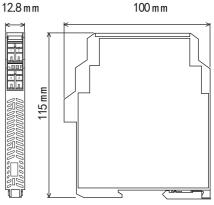
OVERALL DIMENSION

ALM Red signal indicator light Green power indicator light



WIRING DIAGRAM





Panel Description:

PWR: Power indicator light (green), constantly on during operation.

ALM: Input signal status indicator light (red).
Flashing when signal is open or short
circuited; It often lights up when the range
is exceeded, but does not light up when the
signal is normal.

THS-TP2XX 1 IN 2 OUT

Note

THS-TP1XX only includes input and output part 1

THS-WY Series Passive Isolator

- The THS-WY series passive isolator is a signal isolator with 4-20mA current signal input and 4-20mA current signal output, which takes power from the input signal and does not require additional power supply.
- Internally, efficient magnetoelectric isolation technology and magnetic power compensation technology are adopted, greatly improving the load capacity and transmission accuracy of passive isolation. It has the characteristics of high accuracy, high linearity, extremely low temperature drift, and short response time.
- DIN rail independent installation method; The 12.8mm ultra-thin shell adopts the latest energy-saving circuit, with almost no heat dissipation and minimal temperature rise, making it suitable for dense installation of guide rails.

Selection	on Tabl	e		
THS-WY	Х	Х	Х	INSTRUCTIONS
	1			1 IN 1 OUT
Channel	2			1 IN 2 OUT
	5			2 IN 2 OUT
Input Signal 0			4-20mA	
Output Signal			1	4-20mA
lote: Custome	ers need to det	ermine the inn	ut signal form and outpu	t signal form when placing an order. If there are special needs, they can customize it

Product Selection

THS-WYXXX

Eg: THS-WY101, 1 IN 1 OUT, Both input and output are 4-20mA

MAIN TECHNICAL PARAMETERS

Input

Input signal: 4-20mA Voltage drop: ≤ 2V (20mA)

Input impedance: 100Ω +output load resistance

Output

Output signal: 4-20mA

Output load resistance: RL $\leq 750~\Omega$ (indicator light off)

 $RL \le 650 \Omega$ (indicator light on)

General Technical Parameters

Number of channels: 1 IN 1 OUT (THS-I101) 2 IN 2 OUT(THS-I501)

Basic accuracy: ± 0.1% F.S

Temperature drift: Typical value $\leq \pm 0.005FS/^{\circ}C$

Response time: ≤ 10 mS (0-90%) (TYP) Impact of load change: ± 0.05 %

Insulation strength: 2500V AC/1 minute (between input and output)

Insulation resistance: $\geq 100M \Omega$ (between input and output)

Working temperature range: -20~+55 °C

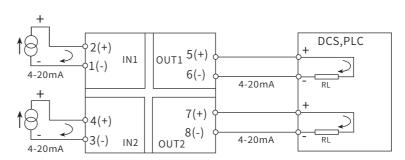
Electromagnetic compatibility: In accordance with GB/T 18268 (IEC61326-1)



WIRING DIAGRAM

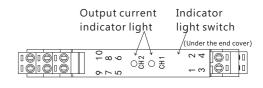
+ DCS,PLC + DCS,PLC + + DCS,PLC + 4-20mA

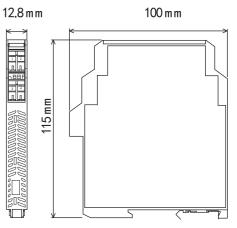
THS-WY101 1IN 1 OUT

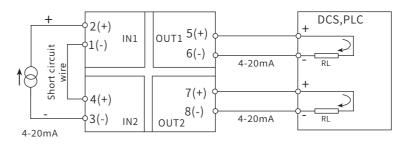


THS-WY501 2 IN 2 OUT

OVERALL DIMENSION







THS-WY201

Change from 2 IN 2 OUT to 1 IN 1 OUT connection method

THS-F Series Frequency Signal Isolator

- Isolate and convert industrial site frequency signals into standard signals such as 4-20mA and 0-5V.
- DIN rail independent installation method

Selection	on Tabl	е		
THS-F X		Х	Х	INSTRUCTIONS
	1			1 IN 1 OUT
Channel				
		Α		0-60Hz
		В		45-55Hz
Input S	iignal	С		0-1KHz
		D		0-10KHz
E		E		Customer customization
Output Signal			1	4-20mA
			2	0-20mA
			5	0-5V
			7	0-10V

Product Selection

THS-F1XX

Eg: THS-F1D1, 1 IN 1 OUT, input 0-10KHz, output 4-20mA

MAIN TECHNICAL PARAMETERS

Input

Signal type: Pulse square wave or sine wave

Frequency range: 1Hz-100KHz (signals below 1Hz are treated as 0Hz and cut off)

Customizable 0.1Hz-100KHz

Level: $VL \le 1V$; $4V \le VH \le 12V$ (customizable) Distribution voltage: $24V \pm 2V$ or $12V \pm 1V$

Distribution power: < 0.8W

Output

Output signal: 4-20mA; 0-20mA; 0-5V; 0-10V $Output \ load \ resistance: RL \leq 500 \ \Omega \ (when \ the \ output \ is \ a \ current \ signal) \\ RL \geq 10K \ \Omega \ (when \ outputting \ is \ a \ voltage \ signal)$

General Technical Parameters

Power supply: DC24V Voltage range: DC20-40V

Consumption current: ≤ 50 mA (1 IN 1 OUT, 24V power supply, 20mA output)

Basic accuracy: 0.1% F.S

Temperature drift: 0.005% F.S./°C (-20 °C to+55 °C)

Response time: $\leq 0.5S (0-90\%) (TYP)$

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

Insulation resistance: $\geq 100 M~\Omega$ (between input, output, and power supply)

Working temperature range: -20~+55 °C

Electromagnetic compatibility: In accordance with GB/T 18268 (IEC61326-1)

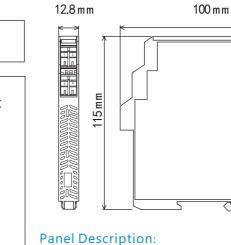
Applicable on-site equipment: Frequency signal source



OVERALL DIMENSION

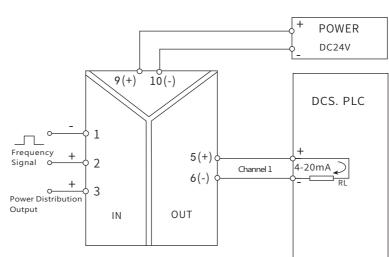
PWR Green power indicator light





PWR: The power indicator light (green) is constantly on during operation.

WIRING DIAGRAM



THS-F1X1 1 IN 1 OUT

THS-TR Series Thermal Resistance Temperature Isolation Transmitter

- Receive thermal resistance signals from the site, transmit them through isolation, output standard current/voltage signals to the control room, PLC, DCS, and display instruments.
- The signal type, measurement range, alarm parameters, etc. can be programmed through PC software.
- High reliable isolation of input, output, and power supply three ports; DIN rail independent installation method.

Selection	on Tabl	е		
THS-TR X		Х	Х	INSTRUCTIONS
Channel	1			1 IN 1 OUT
Channel	2			1 IN 2 OUT
C5		C5		Cu50(-50~+150°C)
		C1		Cu100(-50~+150°C)
Innut Si	Input Signal			Pt100(-200~+850°C)
ii ipat si	griar	P2		Pt1000(-200~+250°C)
		N1		Ni100(-60~+180°C)
N2		N2		Ni1000(-60~+150°C)
			1	4-20mA
			2	0-20mA
Output Signal		4	0-5V	
		6	0-10V	

Product Selection

THS-TRX

Eg: THS-TR1P11/0-100, input signal PT100 (0-100 °C), output DC 4-20mA

MAIN TECHNICAL PARAMETERS

Input

Input signals: PT100, Cu50, Ni1000 and other thermal resistance signals Allowable line resistance: \leq 22 Ω

Output

Output signal: 4-20mA; 0-20mA; 0-5V; 0-10V $\label{eq:continuous} Output \ load\ resistance: RL \leq 500\ \Omega\ (when\ the\ output\ is\ a\ current\ signal)$ $RL \geq 10K\ \Omega\ (when\ outputting\ is\ a\ voltage\ signal)$

General Technical Parameters

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

Consumption current: ≤ 50mA (1 IN 1 OUT, 24V power supply, 20mA output)

≤ 70mA (1 IN 2 OUT, 24V power supply, 20mA output)

Over limit alarm: below the lower temperature limit, output 3.8 mA, (at 4-20 mA output)

Above the upper temperature limit, output 20.5mA

Wire breakage alarm: Output 22mA (users can set specific values as alarm values within the range of 0-22mA)

Basic accuracy: 0.2% F.S

Temperature drift: 0.005% F.S./°C (-20 °C to +55 °C)

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

Insulation resistance: $\geq 100M \Omega$ (between input, output, and power supply)

Working temperature range: -20~+55 °C

Electromagnetic compatibility: In accordance with GB/T 18268 (IEC61326-1)

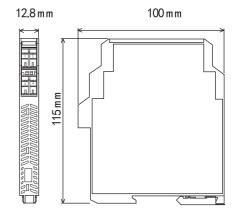
Applicable on-site equipment: Two wire and three wire thermal resistors



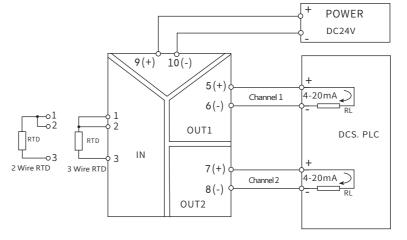
OVERALL DIMENSION

ALM Red signal indicator light PWR Green power indicator light





WIRING DIAGRAM



THS-TR2XX1 1 IN 2 OUT

Note:THS-TR1XX1 1 IN 1 OUT only includes channel 1 part

Note: When inputting the signal of a two wire heating resistor, terminals 1 and 2 must be short circuited.

When inputting the signal of the three wire heating resistor, it is necessary to ensure that the resistance values of the three wires are equal as much as possible.

Panel Description:

PWR: Power indicator light (green), constantly on during operation.

ALM: Input signal status indicator light (red).
Flashing when signal is open or short
circuited; It often lights up when the range
is exceeded, but does not light up when the
signal is normal.

THS-TC Series Thermocouple Temperature Isolation Transmitter

- Receive thermocouple signals from the site, isolate and transmit standard current/voltage signals to the control room, PLC, DCS, and display instruments.
- The signal type, measurement range, alarm parameters, etc. can be programmed through PC software.
- High reliable isolation of input, output, and power supply three ports; DIN rail independent installation method.

Selecti	on Tabl	е		
THS-TC	THS-TC X		Х	INSTRUCTIONS
Channel	1			1 IN 1 OUT
Charline	2			1 IN 2 OUT
	В			400~+1820°C
		E		-100∼+1000°C
		J		-100∼+1200°C
Input Si	ianal	K		-180∼+1372°C
input si	igi iai	N		-180∼+1300°C
		R		-50∼+1768°C
	S T			-50∼+1768°C
				-200∼+400°C
			1	4-20mA
Outnut Cianal			2	0-20mA
Out	Output Signal		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

THS-TCX

Eg: THS-TC1K1/0-500, input signal K-type thermocouple (0-500 $^{\circ}$ C), output DC 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 $^{\circ}$ C $^{\sim}$ +60 $^{\circ}$ C Compensation method: Internal compensation Cold end compensation accuracy: \pm 1 $^{\circ}$ C

Output

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

Output load resistance: RL \leq 500 Ω (when the output is a current signal)

 $RL \ge 10K \Omega$ (when outputting as a voltage signal)

General Technical Parameters

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

Consumption current: ≤ 50mA (1 IN 1 OUT, 24V power supply, 20mA output)

≤ 70mA (1 IN 2 OUT, 24V power supply, 20mA output)

Over limit alarm: below the lower temperature limit, output 3.8mA, (at 4-20mA output)

Above the upper temperature limit, output 20.5mA

Break even alarm: Output 22mA (users can set specific values as alarm values within the range of 0-22mA)

Basic accuracy: 0.2% F.S. (excluding cold end compensation error)

Temperature drift: 0.005% F.S./°C (-20 °C to+55 °C)

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

Insulation resistance: $\geq 100M \Omega$ (between input, output, and power supply)

Working temperature range: -20~+55 °C

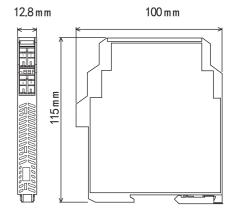
Electromagnetic compatibility: In accordance with GB/T 18268 (IEC61326-1)

Applicable on-site equipment: Thermocouples

OVERALL DIMENSION

ALM Red signal indicator light PWR Green power indicator light





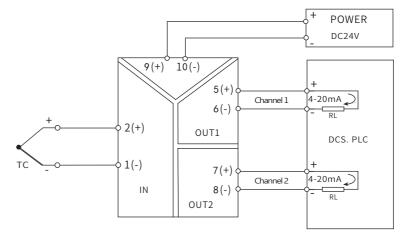
Panel Description:

PWR: Power indicator light (green), constantly on during operation.

ALM: Input signal status indicator light (red).
Flashing when signal is open or short
circuited; It often lights up when the range
is exceeded, but does not light up when the
signal is normal.

Anhui Taihua instrument Co., LTD

WIRING DIAGRAM



THS-TC2XX1 1 IN 2 OUT

Note: THS-TC1XX0 1 IN 1 OUT only includes channel 1 part

THS-AC Series AC Signal Isolation Transmitter

- The THS-AC series AC signal isolation transmitter outputs standard current/voltage signals to the control room, PLC, DCS, and display instruments through isolation and transmission of AC current signals with effective values of 0-5A and AC voltage signals with effective values of 0-500V.
- Internally, efficient optical and magnetic isolation technology is adopted, and the input, output, and power supply are isolated from each other, with strong anti-interference ability. It has the characteristics of high accuracy, high linearity, extremely low temperature drift, and short response time.
- DIN rail independent installation method; 12.8mm ultra-thin shell, using the latest energy-saving circuit, with minimal temperature rise, suitable for dense installation of guide rails.

HS-AC	Χ	Χ	Х	INSTRUCTIONS
	1			1 IN 1 OUT
Channel	2			1 IN 2 OUT
	3			2 IN 2 OUT
А				O-1A AC
		В		0-2A AC
		С		O-5A AC
Input Si	ianal	D		0-50V AC
ii iput si	yı aı	E		0-100V AC
		F		0-250V AC
		Z		Customer customization
			1	4-20mA
			2	0-20mA
Output Signal			4	0-5V
			6	0-10V

Product Selection

THS-ACXXXXX

Eg: THS-AC5C1F4, 2 IN 2 OUT, first channel: input 0-5A, output 4-20mA, Second circuit: input 0-250V, output 0-5V The first input terminal adopts perforated input, with an aperture of 5mm, and can only input AC current; The second input terminal adopts wiring terminals, which can input AC current and AC voltage. To avoid terminal heating, the first perforated input method should be preferred for high current input

MAIN TECHNICAL PARAMETERS

Input

Input current range: AC 0-5A, AC 0-100mA Input voltage range: AC 0-500V, AC 0-100mV Frequency range: 40Hz-60Hz

Output

Output signal: 4-20mA; 0-20mA; 0-5V; 0-10V $\label{eq:continuous} \mbox{Output load resistance: RL} \leq 500 \ \Omega \ (\mbox{when the output is a current signal})$ $\mbox{RL} \geq 10K \ \Omega \ (\mbox{when outputting is a voltage signal})$

General Technical Parameters

Power supply: DC24V Voltage range: DC20-40V

Rated power consumption: ≤ 1W (1 IN 1 OUT, DC24V power supply, 20mA output)

Basic accuracy: ≤ 0.5% F.S

Temperature drift: 0.02% F.S./°C (-20 °C to +55 °C)

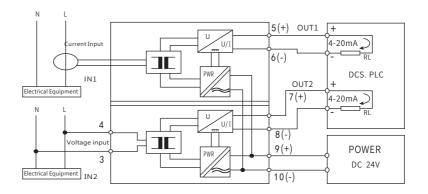
Response time: ≤ 400 mS (0-90%) (TYP)

Insulation strength: 2000V AC/1min (between input, output, and power supply) Insulation resistance: \geq 100M Ω (between input, output, and power supply)



WIRING DIAGRAM

OVERALL DIMENSION



THS-AC5XXXX 2 IN 2 OUT

Note:

THS-AC1XXXX 1 IN 1 OUT, only includes input 1 and output 1 parts THS-AC2XXXX 1 IN 2 OUT, input only includes channel 1 input

This wiring diagram is for reference only. As the product upgrades, the wiring method may be changed in the future. The specific drawings on the user manual provided with the product shall prevail.

