



## ACTIVE HIGH PRECISION ISOLATION AMPLIFIER

MILLIVOLT-CLASS POSITIVE AND NEGATIVE SIGNAL INPUT & POSITIVE AND NEGATIVE SIGNAL OUTPUT

RoHS

### DESCRIPTION

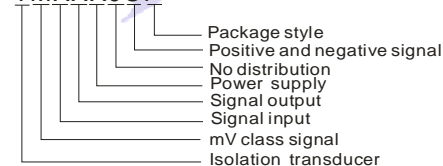
The TM\_CP series isolation amplifier modules have a millivolt-class positive and negative signal input and positive and negative signal output. These modules, with a high efficiency micro-power source built-in, can provide power for signal processing circuit. In the three-wire and four-wire transmitter applications, our products make customers' design simple and helpfully improve the room-using ratio of PCB. Adopting electromagnetism isolation technology, it is available to keep higher accuracy and extremely lower temperature drift than photocoupler isolation. These modules have three-port isolation(input, output and power supply),and the isolation voltage between them is up to 2.5kVDC.

### FEATURES

- Three-port isolation(Input, output and power supply )
- High accuracy (0.1% F.S.)
- High linearity (0.1% F.S.)
- Isolation voltage(2.5kVDC/60s)
- Extremely low temperature drift (35PPM/°C)
- Industry standard(Operating Temperature Range: -25 ~ 71°C)
- High reliability(MTBF>500,000 hours)

### MODEL SELECTION

TMXXX0CP



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### PRODUCT PROGRAM

Part Number	Power Supply	Input	Output	Channels
TM4530CP	24V	±50mV	±10V	1
TM4630CP	24V	±50mV	±5V	1
TM5530CP	24V	±75 mV	±10V	1
TM5630CP	24V	±75mV	±5V	1
TM6530CP	24V	±100 mV	±10V	1
TM6630CP	24V	±100 mV	±5V	1

Note: We could also offer customer design for special input and output as follow:  
Power supply:24/15/12VDC;  
Input signal:0~±10/±20/±30/±50/±75/±100mV;  
Output signal: 0~±5V/±10V.

### ELECTRICAL CHARACTERISTICS

Parameter	Specification
Power Supply Parameter	Power supply (Nominal power supply) ±5%
	Input consumption ≤1W
	Power protection Reverse protection
Input Parameter	Input signal See product program
	Input Impedance ≥10MΩ (@max input signal)
	Overload ≤10V
Output Parameter	Output signal See product program
	Load capacity ≥2kΩ (@ ±10V output)

### TRANSMISSION CHARACTERISTICS

Zero Offset	0.1%F.S.
Gain Error	0.1%F.S.
Temperature Drift	≥50mV: 0.0035%F.S./°C; <50mV: 0.0050%F.S./°C (-25 ~ +71°C)

### ISOLATION CHARACTERISTICS

Galvanic Isolation	Three-port isolation (Input, output and power supply )
Isolation Voltage	2.5kVDC (tested for 1 minute, leakage current<1mA and humidity < 70%)
Insulation Resistance	100MΩ, 500VDC(between input, output and power supply )

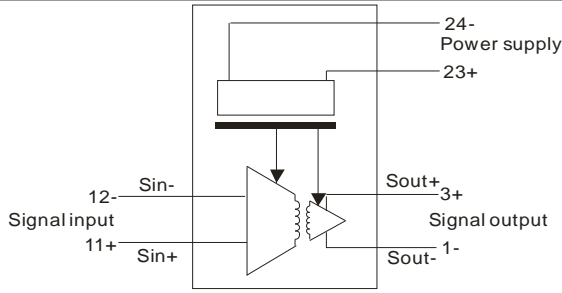
### OTHER CHARACTERISTICS

Ambient temperature	Operation temperature: -25 ~ +71°C
	Transport and Storage temperature: -50 ~ +105°C
Package	DIP24
Weight	About 10g
Application environment	No dust, fierce vibration, impulsion and corrosive gas

Note:

1. All specifications measured at T<sub>A</sub>=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
2. Only typical models listed, specifications of custom product may be different. Please contact our service people directly for certain conditions;
3. In this datasheet, all the test methods of indications are based on corporate standards.

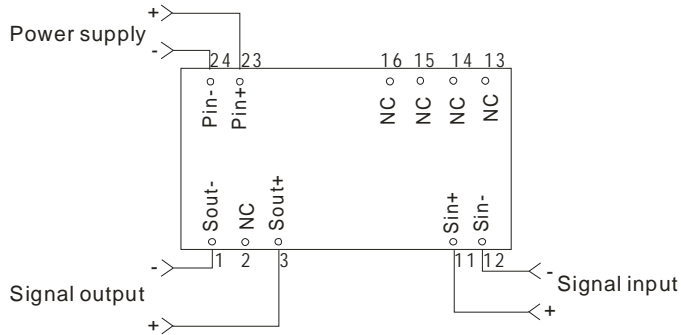
## SCHEMATIC DIAGRAM



## APPLICATION NOTE

1. Please read instruction book carefully before using the product. If you have any question, please contact with our technical support.
2. Please don't install in the dangerous zone.
3. The power supply is DC power source, It is forbidden to use 220VAC power supply.
4. Don't divide the product privately in case the equipments ineffective or go wrong.

## APPLICATION CIRCUIT DIAGRAM



## AFTER SERVICE

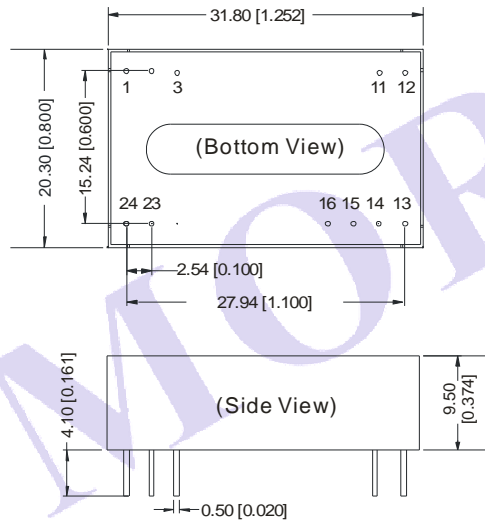
1. Products are carefully inspected and controlled before going out from our factory. If they operated abnormally or there were anything wrong in the inner parts, please contact with our agents near you or technical support in our company as soon as possible.
2. 3 years warranty since the delivery date. During the period of quality guarantee, our company will repair or change free of charge if product has any quality problem in the process of normally using.

## APPLICATION CIRCUITS

See A GUIDE TO INSTRUMENTATION ISOLATION AMPLIFIERS for more detail.

## PACKAGING SIZE AND PIN CONNECTION

### MECHANICAL DIMENSIONS



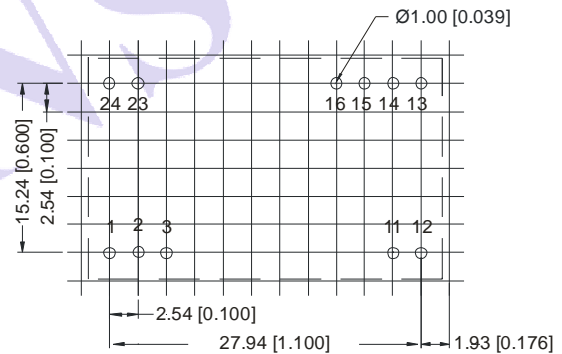
Note:  
Unit: mm[inch]  
Pinsection tolerances:  $\pm 0.10\text{mm}[\pm 0.004\text{inch}]$   
General tolerances:  $\pm 0.25\text{mm}[\pm 0.010\text{inch}]$

#### FOOTPRINT DETAIL

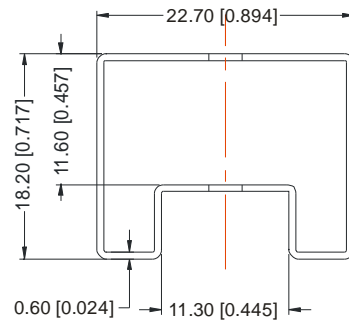
Pin	Sign	Function
1	Sout-	Signal output(-)
2	NC	No function pin
3	Sout+	Signal output(+)
11	Sin+	Signal input(+)
12	Sin-	Signal input(-)
13,14	NC	No function pin
15,16	NC	No function pin
23	Pin+	Power supply(+)
24	Pin-	Power supply(-)

NC: No connection, or the module will be damaged.

### RECOMMENDED FOOTPRINT



### TUBE OUTLINE DIMENSIONS



Note:  
Unit : mm[inch]  
General tolerances:  $\pm 0.50\text{mm}[\pm 0.020\text{inch}]$

L=530mm[20.866inch] pcs/tube : 15  
L=220mm[8.661inch] pcs/tube : 6pcs