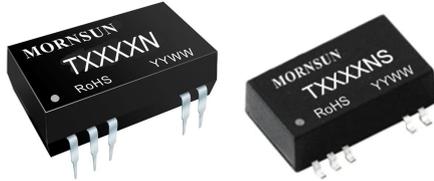


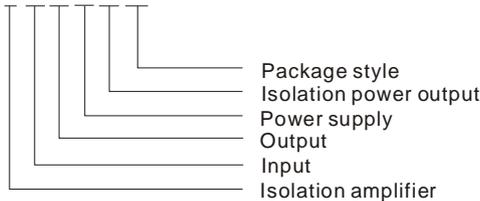
# MORNSUN®

## Signal Miniature Package Amplifier —TxxxxN/NS SERIES



### PART NUMBER SYSTEM

TXXXXN



### FEATURES

- | Four-port Isolation (input, output, power supply and isolation power output)
- | 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°C ~ 71°C)
- | High reliability(MTBF>500,000 hours)

### GENERAL DESCRIPTION

TxxxxN series ---is a high integration, high efficiency linear active isolation amplifier module, with voltage/ current signal input and voltage/ current signal output. In the three-wire and four-wire applications, our products of miniature package largely predigest customers' design and helpfully improve the using room ratio of PCB. Adopting electromagnetism isolation technology, it is available to keep higher accuracy and extremely lower temperature drift more 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.

### SELECTION GUIDE

Model	Input	Output	Power Supply	Isolation Power Output	Channels
T1130N	4~20mA	4~20mA	24V	NONE	1
<del>T1133N/NS</del>	<del>4~20mA</del>	<del>4~20mA</del>	<del>24V</del>	<del>24V</del>	<del>4</del>
<del>T2230N/NS</del>	<del>0~20mA</del>	<del>0~20mA</del>	<del>24V</del>	<del>NONE</del>	<del>4</del>
T2233N/NS	0~20mA	0~20mA	24V	NONE	1
T2250N/NS	0~20mA	0~20mA	12V	NONE	1
T6130N/NS	0~5V	4~20mA	24V	NONE	1
T5130N/NS	0~10V	4~20mA	24V	NONE	1
<del>T5530N/NS</del>	<del>0~10V</del>	<del>0~10V</del>	<del>24V</del>	<del>NONE</del>	<del>4</del>
<del>T6530N/NS</del>	<del>0~5V</del>	<del>0~10V</del>	<del>24V</del>	<del>NONE</del>	<del>4</del>
<del>T6630N/NS</del>	<del>0~5V</del>	<del>0~5V</del>	<del>24V</del>	<del>NONE</del>	<del>4</del>

Note:1. We could also offer customer design for special input and output.  
2. Models listed with strike-through text have been officially discontinued.

### ELECTRICAL CHARACTERISTICS

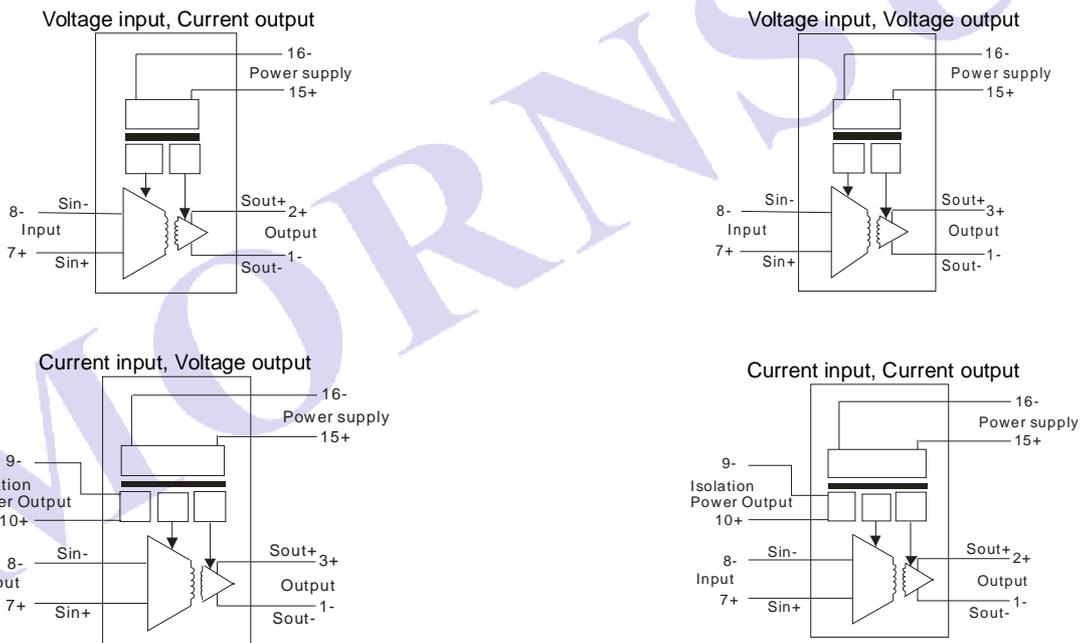
Power SupplyParameter	Power Supply	(Nominal Power Supply)±5%	
	Power Consumption	≤2W	
	Power Protection	Reverse protection	
Isolation Power Output Parameter	Output Voltage	(Nominal) ±10%	
	Output Current	≤25mA	
Input Parameter	Input Signal	See product program	
	Input Impedance	Voltage input	≥10MΩ (@ maximum input)
		Current input	250mV (@20mA input)
	Overload	Voltage input	≤30V
Current input		≤50mA	
Output Parameter	Output Signal	See product program	
	Load Capacity	Current output	≤500Ω (@ 20mA output)
		Voltage output	≥2kΩ (@ Max output)

TRANSMISSION CHARACTERISTICS	
Zero Offset	0.1%F.S.
Gain Error	0.1%F.S.
Temperature Drift	0.0035%F.S./°C (-25°C to +71°C)

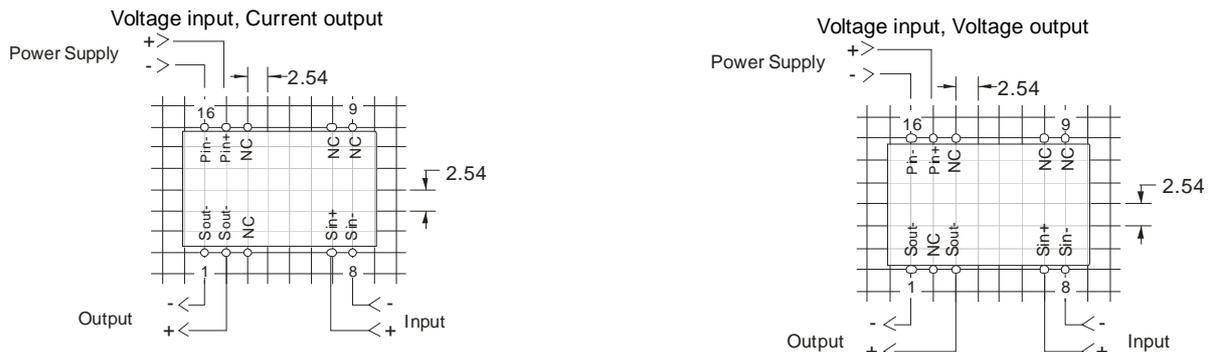
ISOLATION CHARACTERISTICS		
Galvanic Isolation	Voltage input	Four-port Isolation (signal input, signal output, power supply and isolation power output)
	Current input	Four-port isolation (Between input, output, power supply and Isolation Power output)
Isolation Voltage		2.5kVDC (Tested for 1 minute and leakage current < 1mA, humidity < 70%) (Note: It is 500VDC between signal input and isolation power out)
Insulation Resistance	Voltage input	100MΩ, 500VDC (Between signal input, signal output and power supply)
	Current input	100MΩ, 500VDC (Between signal input, signal output, power supply and isolation power output)

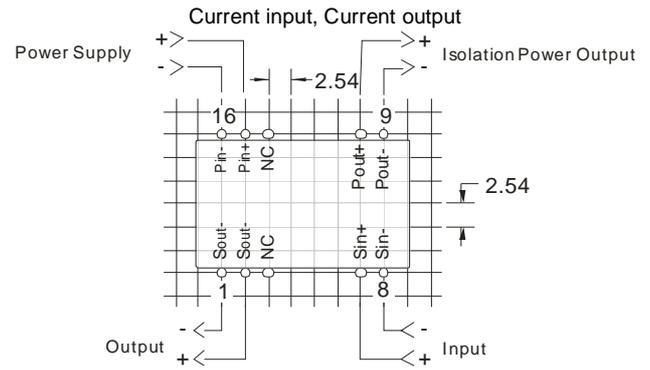
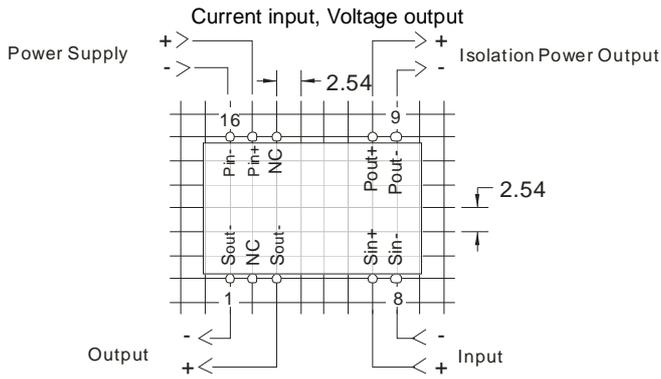
OTHER CHARACTERISTICS	
Ambient temperature	Operation temperature:-25°C ~ +71°C
	Transport and storage temperature:-50°C ~ +105°C
Package	DIP16/SOIC16
Weight	About 6g
Application environment	No dust, fierce vibration, impulsion and corrosive gas
Note: 1. All specifications measured at TA=25°C, humidity<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.	

### SCHEMATIC DIAGRAM



### APPLICATION CIRCUIT 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. The power supply of this product should be DC power source. It is forbidden to use 220VAC power supply
3. Do not reverse the positive and negative pole of power supply and signal input.

## AFTER SERVICE

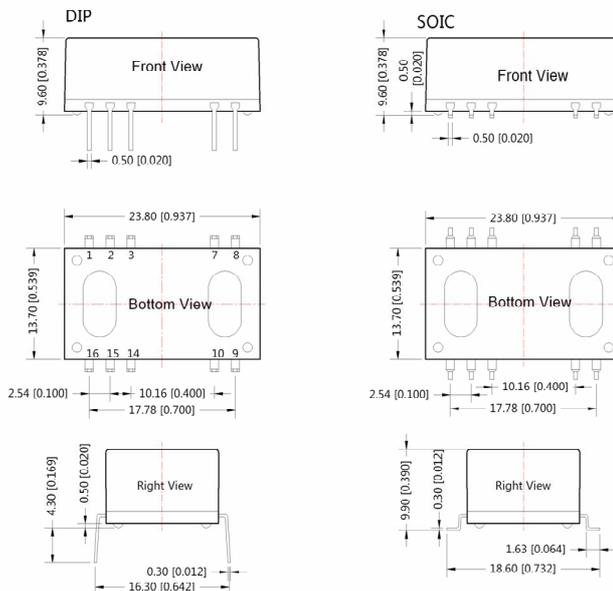
1. Products are carefully inspected and controlled before going out from our factory. If they operated abnormally or there were anything wrong in the inner parts, please contact with our agents near you or technical support in our company as soon as possible.
2. 3 years warranty since the delivery date. 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.

## OUTLINE DIMENSIONS, RECOMMENDED FOOTPRINT & PACKAGING

### MECHANICAL DIMENSIONS



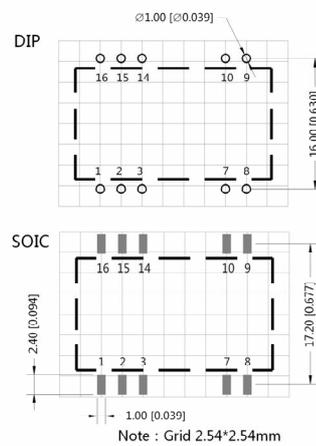
PIN CONNECTION			
Pin	Voltage signal input Function	Pin	Current signal input Function
1(Sout-)	Signal output(-)	1(Sout-)	Signal output(-)
2(Sout+)	Signal output(+)(Current output)	2(Sout+)	Signal output(+)(Current output)
3(Sout+)	Signal output(+)(Voltage output)	3(Sout+)	Signal output(+)(Voltage output)
7(Sin+)	Signal input(+)	7(Sin+)	Signal input(+)
8(Sin-)	Signal input(-)	8(Sin-)	Signal input(-)
9	NC	9(Pout-)	Isolation power out(-)
10	NC	10(Pout+)	Isolation power out(+)
15(Pin+)	Power supply(+)	15(Pin+)	Power supply(+)
16(Pin-)	Power supply(-)	16(Pin-)	Power supply(-)
Others	NC	Others	NC

Note:  
Unit :mm[inch]  
Pin diameter tolerances :±0.1mm[±0.004inch]  
General tolerances :±0.25mm[±0.010inch]

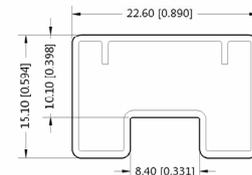
Note :  
NC: No connection,  
or the module will be damaged.

THIRD ANGLE PROJECTION

### RECOMMENDED FOOTPRINT DETAILS



### TUBE PACKAGING DIMENSIONS



Note :  
Unit:mm[inch] : ±0.5mm[±0.02inch]  
L=530mm[20.866inch] Tube Quantity: 21 PCS  
L=220mm[8.661inch] Tube Quantity: 8 PCS  
Inner carton(S): L\*W\*H=255\*170\*80 mm;  
Outer carton(S): L\*W\*H=375\*280\*270mm, 6 inner cartons(S);  
Inner carton(L): L\*W\*H=580\*200\*100mm;  
Outer carton(L): L\*W\*H=600\*215\*220mm, 2 inner cartons(L);  
Outer carton(L): L\*W\*H=600\*215\*325mm, 3 inner cartons(L);

## MORNSUN Science & Technology Co.,Ltd.

Address: No. 5, Kehui St. 1, Kehui development center, Science Ave., Guangzhou Science City, Luogang district, Guangzhou, P.R.China.

Tel: 86-20-38601850

Fax: 86-20-38601272

E-mail: [info@mornsun.cn](mailto:info@mornsun.cn)

<http://www.mornsun-power.com>

The copyright and authority for the interpretation of the products are reserved by MORNSUN