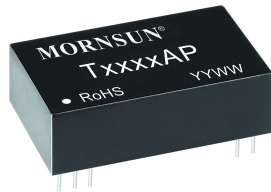


Active high precision signal conditioning module
positive and negative signal input &
positive signal output



RoHS

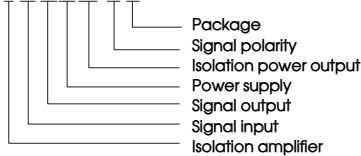


FEATURES

- Four-port isolation (signal input, signal output, power input and isolation power output are mutually isolated)
- High accuracy (0.1% F.S.)
- High linearity (0.1% F.S.)
- Isolation voltage(2.5KVDC/60S)
- Extremely low temperature coefficient (35PPM/°C)
- Operating temperature range: -25°C to +71°C
- High reliability (MTBF >500,000 hours)

PART NUMBER SYSTEM

TxxxxAP



The TxxxxAP series are a high integration and efficiency active signal conditioning modules, with positive and negative signal input & positive signal output. These modules, with a high efficient isolated micro-power source built-in, can provide energy for inner signal processing circuit and an isolation power out for front-end circuit. The product greatly simplifies the design of the user in the applications of three-wire and four-wire, also it improves the using room ratio of PCB. Adopting electromagnetism isolation technology, it is available to keep higher accuracy and extremely lower temperature drift more than optocoupler isolation. These modules have four-port isolation (input, output, power supply and isolation power output).

Selection Guide

Part No.	Power Supply input (VDC)	Input Signal	Output Signal	Isolation Power Output (VDC)
T5130AP	24V	±10V	4~20mA	None
T5530AP	24V	±10V	0~10V	None
T5533AP	24V	±10V	0~10V	24V
T5650AP	12V	±10V	0~5V	None
T6130AP	24V	±5V	4~20mA	None
T6630AP	24V	±5V	0~5V	None
T6633AP	24V	±5V	0~5V	24V

Notes: We could also offer customer design for special input and output as follow:

Power supply: 24/15/12VDC
Input signal: 0~±5V/±10V
Output signal: 0~5V/10V/0/4~20 mA
Isolation power output: 24/15/12/5VDC.

Input Specifications

Item	Operating Conditions	Value
Power input	Input voltage	(Nominal value of power supply input) ±5%
	Input power	Single output & Isolation Power Output full load ≤2W
	Power supply protection	Anti-reverse protection
Single Input	Input signal	Reference selection guide
	Input impedance	In case of max. input of voltage signal ≥10MΩ
	Overload	In case of voltage signal input -15V<Vin<15V

Output Specifications

Item	Operating Conditions		Value
Isolation Power Output	Output Voltage	Output current of isolated power supply full loads	(Nominal value)±10%
	Output current		≤25mA
Single Output	Output signal		Reference selection guide
	Load capacity	Voltage output	≥2KΩ
		Current output	≤500Ω

Transmission Specifications

Item	Operating Conditions	Value
Zero Offset		0.1%F.S.
Signal Precision		0.1%F.S.
Temperature Coefficient	Operating temperature range: -25 to +71℃	0.0035%F.S./℃

General Specifications

Item	Operating Conditions	Value
Electric Isolation		Four-port isolation (signal input, signal output, power input and isolation power output are mutually isolated)
Degree of Isolation	testing for 1 minute, leakage current <1mA, humidity <70%	2.5KVDC (Between input signal ground and output signal ground) (note: isolated power supply provided; the isolation voltage between the port of isolated power supply and the input port is 500VDC)
Insulation Resistance		100MΩ, 500VDC (signal input port, signal output port, power supply port and isolation power output port)
Operating Temperature		-25 ~ +71℃
Transportation and Storage Temperature		-50 ~ +105℃
Application Environment		The presence of dust, fierce vibration,impulsion and corrosive gas may cause damage to the product.

Physical Specifications

Casing Material	Black flame-retardant and heat-resistant plastic
Package	DIP24
Weight	10.5g(typ.)
Cooling method	Free air convection

EMC Specifications

EMS	ESD	IEC/EN61000~4~2	Contact ±4KV	(see Fig. 2 for recommended circuit)	perf. Criteria B
	EFT	IEC/EN61000~4~4	Power supply port ±2KV	(see Fig. 2 for recommended circuit)	perf. Criteria B
		IEC/EN61000~4~4	Other ports ±1KV	(see Fig. 2 for recommended circuit)	perf. Criteria B
	Surge	IEC/EN61000~4~5	Power supply ports ±1KV	(see Fig. 2 for recommended circuit)	perf. Criteria B
IEC/EN61000~4~5		Other ports ±1KV (line to ground)	(see Fig. 2 for recommended circuit)	perf. Criteria B	

Application Precautions

1. Please read the instructions carefully before use; contact our technical directly if you have any problem.
2. Do not use the product in hazardous areas.
3. Use DC power supply for the product and 220V AC power supply is prohibited.
4. Do not dismantle and assemble the product without permission to avoid failure or malfunction of equipment.

After-sales service

1. Ex-factory inspection and quality control have been strictly conducted for the product; if there occurs abnormal operation or possibility of failure of internal module, please contact the local representative or our technical support.
2. The warranty period for the product is 3 years as calculated from the date of delivery. If any quality problem occurs under normal use within the warranty period, the product can be repaired or changed for free.

Applied circuit

Please refer to Isolated Transmitter application notes.

Design Reference

1. Wiring diagram for product application

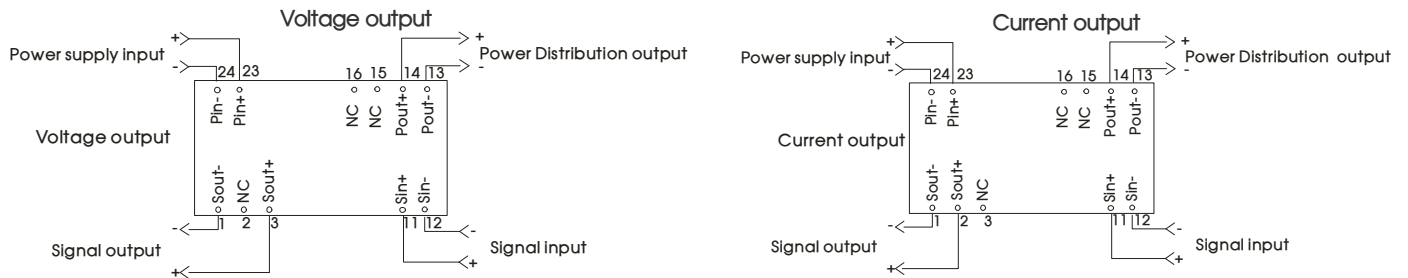


Fig. 1

2. EMC solution-recommended circuit

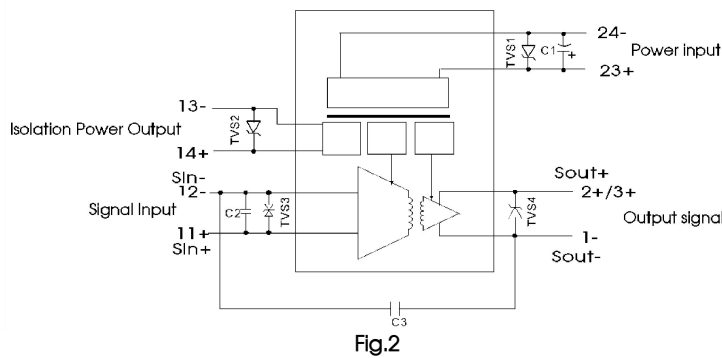


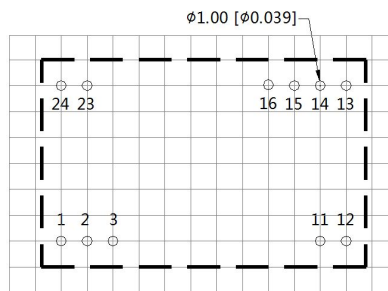
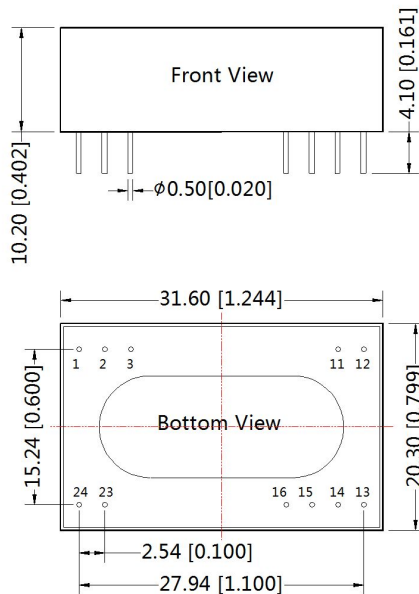
Fig.2

Components	Recommended parameters
TVS1	SMCJ30A
TVS2	SMBJ30A
TVS3	SMBJ15CA
TVS4	SMBJ15A
C1	220μF/35V
C2	1μF/50V
C3	2200pF/400VAC

3. For more information please find the application notes on www.mornsun-power.com

Dimensions and Recommended Layout

THIRD ANGLE PROJECTION 



Note : Grid 2.54*2.54mm

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

Note:
Unit :mm[inch]
Pin diameter tolerances :±0.10[±0.004]
General tolerances:±0.50[±0.020]

NC:Not available for electrical connection

- Note:
1. Packing information please refer to Product Packing Information which can be downloaded from www.mornsun-power.com. Packing bag number: 58210008;
 2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity<75% with nominal input voltage and rated output load;
 3. All index testing methods in this datasheet are based on our Company's corporate standards;
 4. The performance parameters of the product models listed in this manual are as above, but some parameters of non-standard model products may exceed the requirements mentioned above. Please contact our technicians directly for specific information;
 5. We can provide product customization service;
 6. Specifications are subject to changes without prior notice.

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