

mV-level signal conditioning module



RoHS

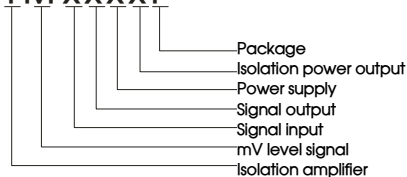


FEATURES

- Input, output and power supply are mutually isolated from each other
- High accuracy (0.1% F.S.)
- High linearity (0.1% F.S.)
- Extremely low temperature coefficient (50PPM/°C)
- Operating temperature range: -25 to +71°C
- High reliability (MTBF >500,000 hours)

PART NUMBER SYSTEM

TMxxxxP



TMxxxxP series are mV-level signal conditioning modules can receive the mV-voltage signal input from the field, and transmit a standard output signal to the control room or DCS after isolated. With characteristics of high output accuracy, good linearity and low temperature drift, it needs an independent power supply. These modules have three-port isolation(input, output and power supply).

Selection Guide

Part No.	Power Supply input (VDC)	Input Signal	Output Signal	Isolation Power Output (VDC)
TM1130P	24	0~10 mV	4~20mA	None
TM3130P	24	0~30mV	4~20mA	None
TM4130P	24	0~50mV	4~20mA	None
TM4150P	12	0~50mV	4~20mA	None
TM5230P	24	0~75mV	0~20mA	None
TM6130P	24	0~100mV	4~20mA	None
TM2550P	12	0~20mV	0~10V	None
TM2650P	12	0~20mV	0~5V	None
TM3650P	12	0~30mV	0~5V	None
TM4530P	24	0~50mV	0~10V	None
TM4630P	24	0~50mV	0~5V	None
TM4650P	12	0~50mV	0~5V	None
TM4660P	5	0~50mV	0~5V	None
TM4S50P-2.5	12	0~50mV	0~2.5V	None
TM5530P	24	0~75mV	0~10V	None
TM5630P	24	0~75mV	0~5V	None
TM5650P	12	0~75mV	0~5V	None
TM6530P	24	0~100mV	0~10V	None
TM6630P	24	0~100mV	0~5V	None
TM6650P	12	0~100mV	0~5V	None
TM6S50P-3.3	12	0~100mV	0~3.3V	None
TM2S60P-2.5	5	0~20mV	0~2.5V	None
TM5130P	24	0~75mV	4~20mA	None
TM6660P	5	0~100mV	0~5V	None

Notes: Customization products are available if required.

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Power input	Input voltage	-5%(Nominal value)	Nominal value	+5%(Nominal value)	VDC
	Input power	Signal full load	--	1	W
	Power supply protection	Anti-reverse protection			
Signal input	Input signal	Reference selection guide			
	Input impedance	10			MΩ
	Overload	--	--	5	V

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Signal output	Output signal	Reference selection guide				
	Load capacity	Voltage output	2	--	--	KΩ
		Current output	--	--	500	Ω

Transmission Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Signal Precision	Ta=25℃	-0.1%F.S.	--	+0.1%F.S.	--
Temperature Coefficient	Operating temperature range: -25 to +71℃	--	--	50	PPM/℃

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Electric Isolation		Input, output and power supply are mutually isolated from each other			
Isolation voltage	Testing for 1 minute, leakage current <1mA, humidity <70%	2.5	--	--	KVDC
Insulation Resistance	500VDC	100	--	--	MΩ
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	10g(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 ±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 support 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 dismount 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

See *Application Notes for Isolated Transmitter* for details.

Design Reference

1. Typical application circuit

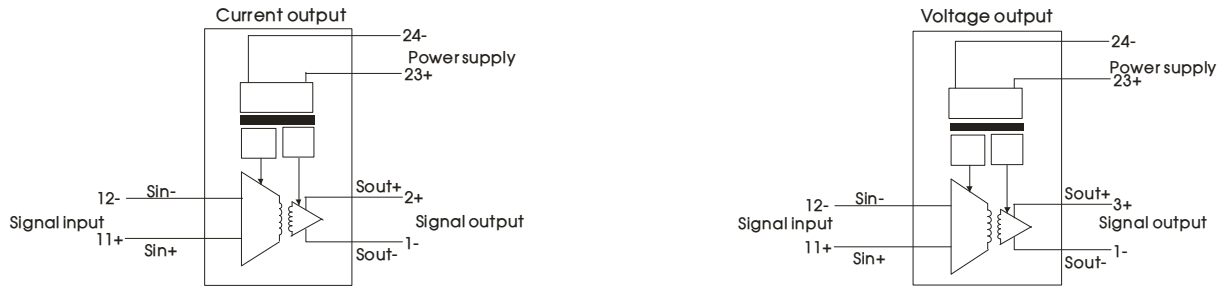


Fig.1

2. Recommended EMC circuit

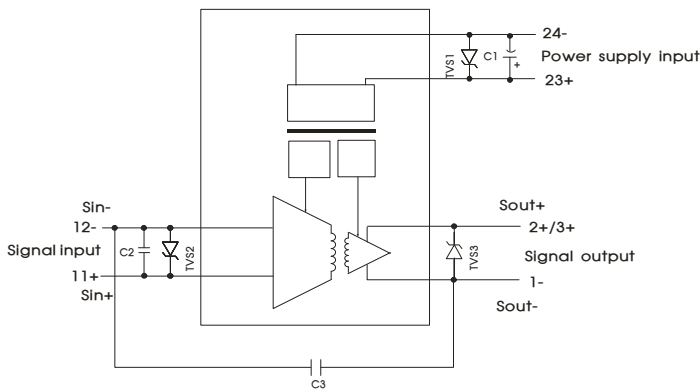


Fig.2

Components	Recommended parameters
TVS1	SMCJ30A
TVS2	SMBJ5A
TVS3	SMBJ15A
C1	220 μ F/35V
C2	1 μ F/50V
C3	2200pF/400VAC

3. Application circuit diagram

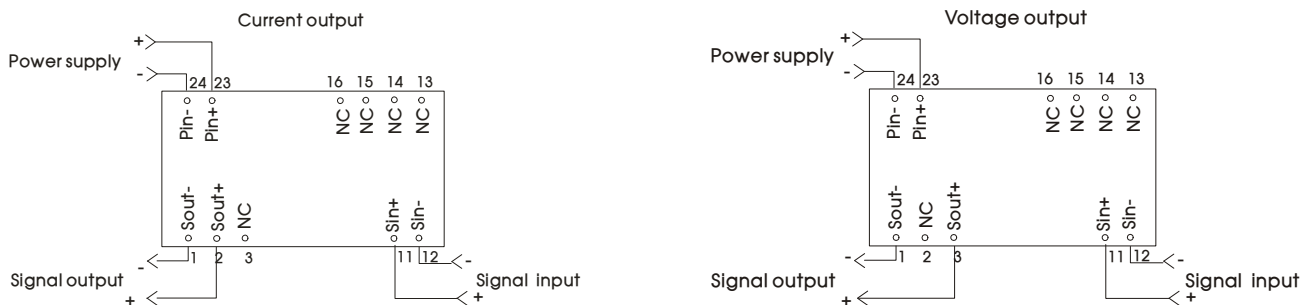
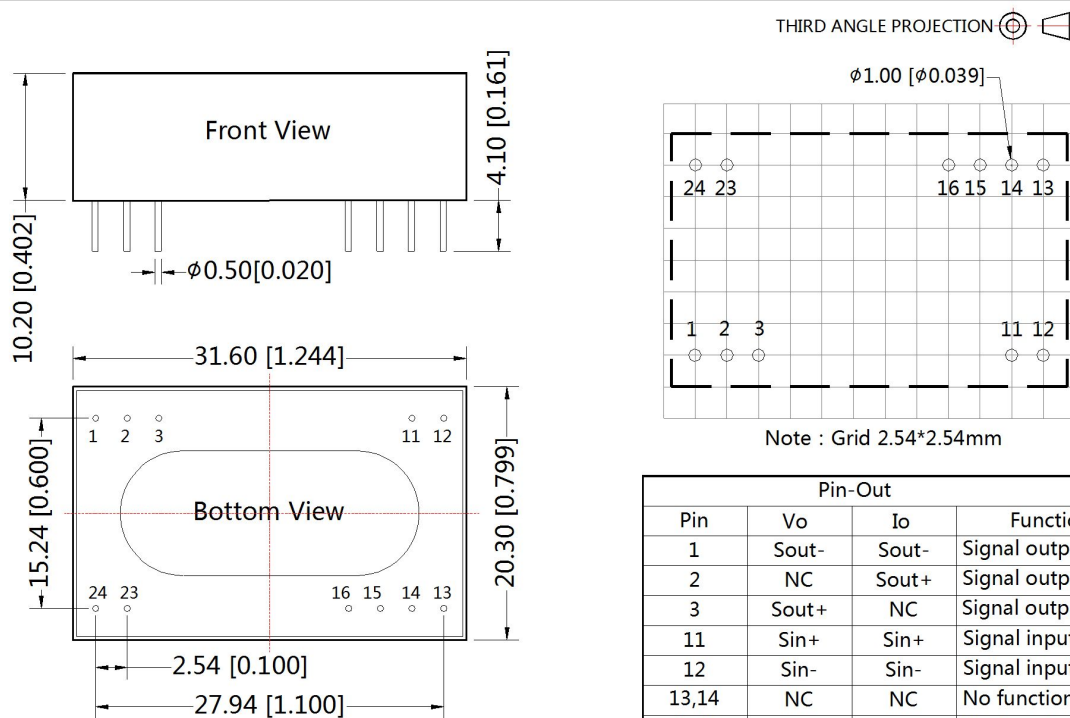


Fig.3

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

Dimensions and Recommended Layout



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

Pin-Out			
Pin	Vo	Io	Function
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(-)
13,14	NC	NC	No function pin
15,16	NC	NC	No function pin
23	Pin+	Pin+	Power supply(+)
24	Pin-	Pin-	Power supply(-)

NC:Not available for electrical connection

Notes:

1. Packing Information please refer to 'Product Packing Information'. Packing bag number: 58210008;
2. Unless otherwise specified, data in this datasheet should be tested under the conditions of $T_a=25^\circ\text{C}$, humidity<75% when inputting nominal voltage and outputting rated load;
3. All index testing methods in this datasheet are based on our Company's corporate standards;
4. The performance indexes of the product models listed in this datasheet are as above, but some indexes of non-standard model products will exceed the above-mentioned requirements, and please directly contact our technician for specific information;
5. We can provide product customization service;
6. Specifications of this product are subject to changes without prior notice.

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