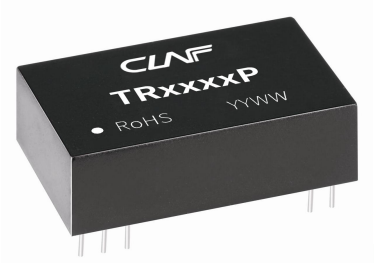
Descriptions

Signal conditioning modules



RoHS

3 Years Warranty

CE Report EN62368-1

UKCA Report BS EN62368-1

Features

- Four-port isolation (signal input, signal output, power input and power output terminals are all isolated from each other)
- High accuracy of 0.1% Full Scale
- Isolation test voltage 2.5kVDC (60s)
- Low temperature coefficient 50ppm/℃
- Industrial grade operating temperature from -40℃ to +85℃
- Low ripple & noise 30mVp-p
- ESD protection to IEC/EN61000-4-2, Contact ±4kV with performance Criteria B

Applications

- PLC
- DCS
- MCU

Selection Guide

Certification	Part No.	Power Supply input Typ. (VDC)	Input Signal	Output Signal	Isolation Power Output (VDC)
--	TR1130P	24	4-20mA	4-20mA	None
	TR1133P	24	4-20mA	4-20mA	24
	TR2230P	24	0-20mA	0-20mA	None
	TR2233P	24	0-20mA	0-20mA	24
EN/BS EN	TR5530P	24	0-10V	0-10V	None

Notes: *Product images are for reference only; the actual product shall prevail.

Specifications

Product Specifications	Item		Operating Conditions	Min.	Typ.	Max.	Unit
Input Specifications	Power Input	Input voltage		Typ.-5%	Typ.	Typ.+5%	VDC
		Input power	Isolation signal power at full load	--	--	2.0	W
		Power supply protection		Input reverse polarity protection			
	Signal Input	Input signal		See selection guide			
		Input impedance	In case of max. input of current signal	--	--	250	mV
			In case of max. input of voltage signal	10	--	--	MΩ
		Over range	In case of current signal input	--	--	50	mA
			In case of voltage signal input	--	--	30	V
Output Specifications	Isolation Power Output	Output voltage	Isolated power output at full load	Typ.-10%	Typ.	Typ.+10%	
		Output current		--	--	25	mA
		Short circuit protection	Ta=25℃	Continuous short-circuit protection (except 24V input part)			
	Signal Output	Output signal		See selection guide			
		Load capacity	In case of max. output of voltage signal	2	--	--	kΩ
			In case of max. output of current signal	--	--	500	Ω
		Ripple & Noise	20MHz Bandwidth	--	30	--	mVp-p
Transmission Specifications	Signal Precision		Ta=25℃	-0.1% FS	--	+0.1% FS	--
	Power Regulation		Power supply input Typ. ±5%	-0.05% FS	--	+0.05% FS	
	Load Regulation		Change from no-load to full load	-0.05% FS	--	+0.05% FS	
	Temperature Coefficient		Operating temperature from -40℃ to +85℃	--	--	50	ppm/℃
	Band Width			2	--	--	kHz
	Response Time			--	--	1	ms
General Specifications	Electric Isolation			Four-port isolation (signal input, signal output, power input and isolation power output are all isolated from each other)			
	Isolation Voltage		Electric Strength Test for 1 minute with a leakage current <1mA, humidity <70%RH	2.5	--	--	kVDC
	Isolation Resistance		500VDC	100	--	--	MΩ
	Operating Temperature			-40	--	+85	℃
	Transportation and Storage Temperature			-40	--	+85	
	Case Temperature Rise		Ta=25℃	--	--	30	
	Application Environment			The presence of dust and corrosive gas may cause damage to the product			
Mechanical Specifications	Case Material		Black plastic, flame-retardant and heat-resistant				
	Package		DIP24				
	Weight		11.5g(Typ.)				
	Cooling Method		Free air convection				

Electromagnetic Compatibility (EMC)

Immunity (EMS)	ESD	IEC/EN61000-4-2	Contact ±4kV	perf. Criteria B
	EFT	IEC/EN61000-4-4	Power supply port ±2kV (see Fig. 3 for recommended circuit)	perf. Criteria B
		IEC/EN61000-4-4	Other ports ±1kV (see Fig. 3 for recommended circuit)	perf. Criteria B
	Surge	IEC/EN61000-4-5	Power supply port ±1kV (see Fig. 3 for recommended circuit)	perf. Criteria B
		IEC/EN61000-4-5	Other ports ±1kV (line to ground) (see Fig. 3 for recommended circuit)	perf. Criteria B

Characteristic Curve

1. Carefully read and follow the instructions before use; contact our technical support if you have any question;
2. Do not use the product in hazardous areas;
3. Use only DC power supply source for this product. 220 VAC power supply is prohibited;
4. It is strictly forbidden to disassemble the product privately in order to avoid product failure or malfunction.

Design Reference

1. Wiring diagram for product application

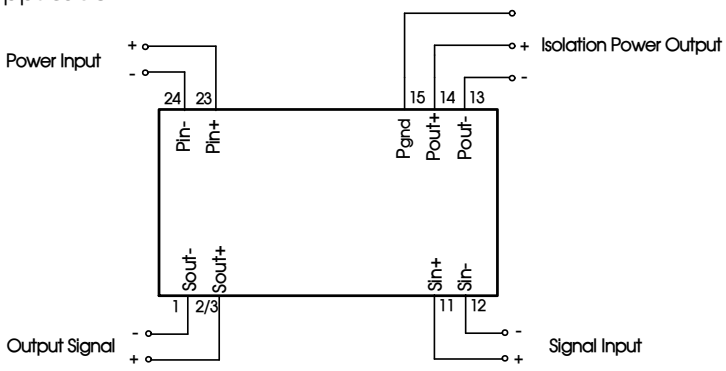


Fig. 1

Notes :

①For modules with no isolation power output, Pin no. 13, 14 and 15 are not connected (NC).

②For the isolated bi-polar power modules, Pin 13 (Pout-) is isolated negative power output, Pin 14 (Pout+) is isolated positive power output and Pin 15 is reference ground.

③For isolation single power modules, Pin 13 (Pout-) is the isolated negative power output, Pin 14 (Pout+) is the isolation positive power output and Pin 15 is NC.

2. Schematic diagram of signal input and signal output(Ideal state)

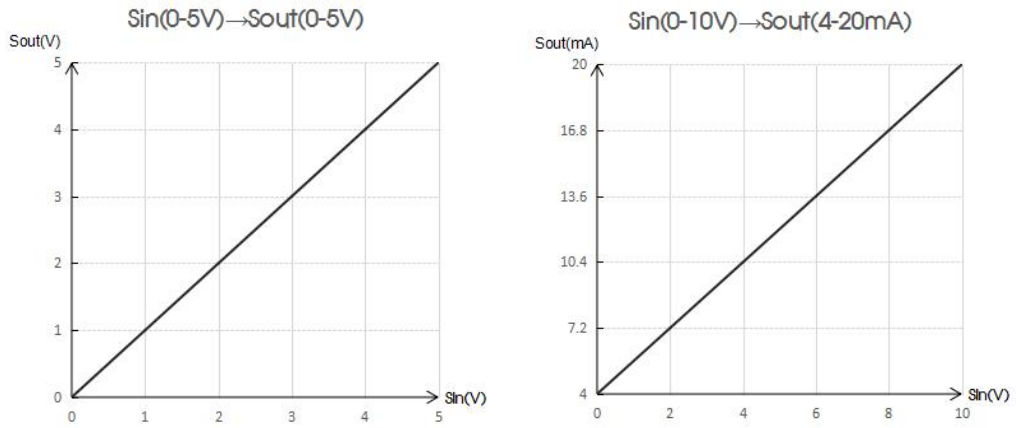


Fig. 2

3. EMC compliance recommended circuit

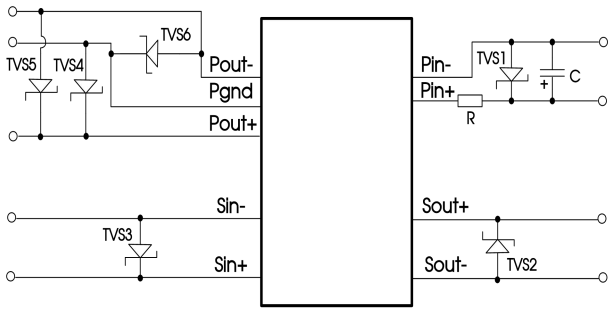


Fig. 3

Component	Recommended part
TVS1	SMCJ30A
TVS2	SMBJ15A
TVS3	SMBJ15A
TVS4	SMBJ15A
TVS5	SMBJ28A
TVS6	SMBJ15A
R	2Ω/1W
C	220uF/35V

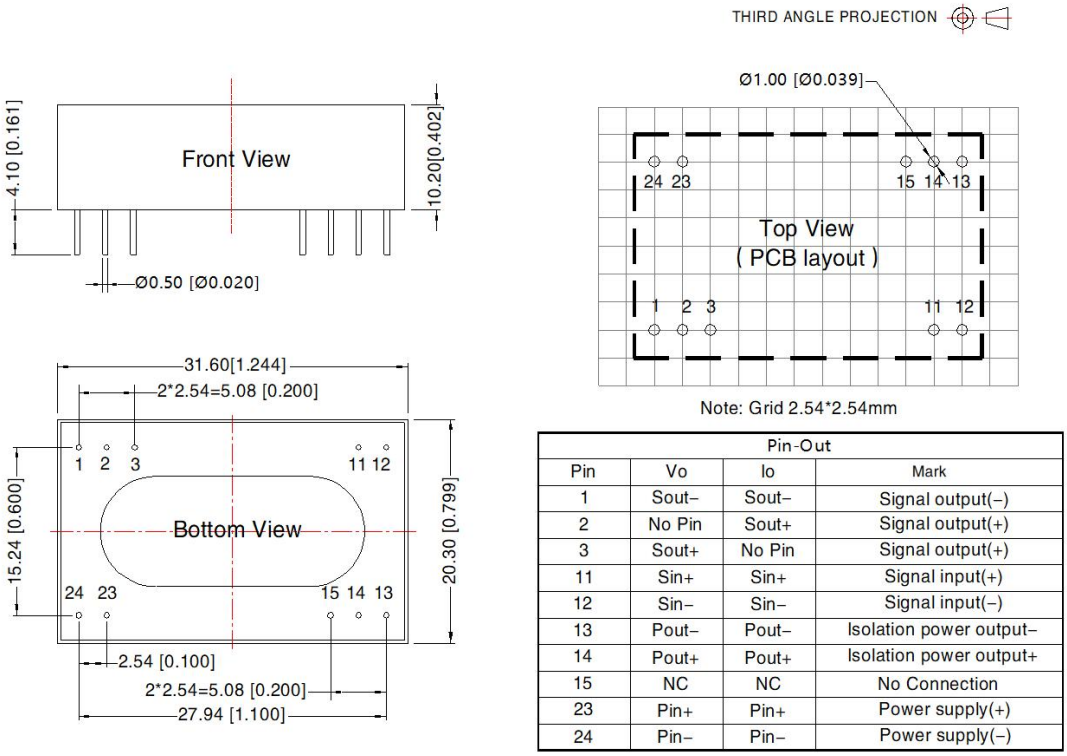
Notes :

①The product is not connected with resistance R, instead of wire.

②For the isolated bi-polar power modules, Pin 13 (Pout-) is isolated negative power output, Pin 14 (Pout+) is isolated positive power output and Pin 15 is reference ground.

③For isolation single power modules, Pin 13 (Pout-) is the isolated negative power output, Pin 14 (Pout+) is the isolation positive power output and Pin 15 is NC, therefore NO need for TVS4 and TVS6.

Dimensions and Recommended



Note: Grid 2.54*2.54mm

Pin-Out			
Pin	Vo	Io	Mark
1	Sout−	Sout−	Signal output(−)
2	No Pin	Sout+	Signal output(+)
3	Sout+	No Pin	Signal output(+)
11	Sin+	Sin+	Signal input(+)
12	Sin−	Sin−	Signal input(−)
13	Pout−	Pout−	Isolation power output−
14	Pout+	Pout+	Isolation power output+
15	NC	NC	No Connection
23	Pin+	Pin+	Power supply(+)
24	Pin−	Pin−	Power supply(−)

NC: No connection

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

Notes:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75%RH with nominal input voltage and rated output load;
2. All index testing methods in this datasheet are based on company corporate standards;
3. The above are the performance indicators of the product models listed in this datasheet. Some indicators of non-standard models will exceed the above requirements;
4. Products are related to laws and regulations: see "Features" and "EMC";
5. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
6. The image certification marks are for reference only; please refer to the selection table for actual specifications. Certification is based on the physical mark or packaging label.