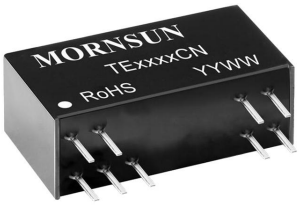
Signal conditioning modules
TExxxxCN Series

MORNSUN®

Active high precision signal conditioning module



3 years Warranty

CE Report EN62368-1

RoHS

FEATURES

- Two-port isolation (signal input and signal output)
- High accuracy of 0.1% Full Scale
- High linearity of 0.1% Full Scale
- Isolation test voltage 2kVAC for 60s
- Low ripple & noise: ≤35mVpp, 20MHz
- Extremely low temperature coefficient of ≤50PPM/℃
- Industrial grade operating temperature range from -40℃ to +85℃
- Compact DIP18 package, size 26 x 9.5 x 12.5mm
- ESD protection (IEC/EN61000-4-2 Contact ±4kV with performance perf. Criteria B)

TExxxxCN series are analog signal isolation modules with incoming positive/negative signal input and transformed positive/negative signal output. They are equipped with an efficient built-in micro-power source that supplies additionally power to the internal input signal circuitry. The adopted electromagnetic isolation technology has a better performance, a much higher accuracy and a lower temperature drift in comparison with photo/opto-coupler isolators. This type of product has in addition to low temperature drift and high linearity, a low power consumption and low ripple & noise. They have a two-terminal isolation from signal input to signal output/power input.

Selection Guide

Certification	Model	Power Supply Input Typ. (VDC)	Input Signal	Output Signal	Isolated Power Output (VDC)
EN	TE5540CN	15VDC	±10V	±10V	None
	TE5550CN	12VDC	±10V	±10V	None
	TE6640CN	15VDC	±5V	±5V	None
	TE6650CN	12VDC	±5V	±5V	None
--	TE5540CN-G	15VDC	±10V	±10V	None
--	TE5550CN-G	12VDC	±10V	±10V	None

Input Specifications

Item		Operating Conditions	Min.	Typ.	Max.	Unit
Power Input	Input Voltage		Typ.-5%	Typ.	Typ.+5%	VDC
	Input Power	Signal full load	--	--	1.0	W
Signal Input	Input Signal		See selection guide			
	Input Impedance	In case of max. input of voltage signal	10	--	--	MΩ
	Over Range	Maximum continuous over range	-15	--	+15	V

Output Specifications

Item		Operating Conditions	Min.	Typ.	Max.	Unit
Output Signal	Output Signal		See selection guide			
	Load Capacity	Voltage output	2	--	--	kΩ
	Ripple & Noise	20MHz bandwidth	--	--	35	mVpp

Transmission Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
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 range from -40℃ to +85℃	--	--	50	PPM/℃

Bandwidth		2	--	--	kHz
Response time		--	--	1	ms

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Electric Isolation		Isolated between the signal input and the signal output.			
Isolation Test	Electric strength test for 1 minute with a leakage current <1mA, humidity <70%	2	--	--	kVAC
Insulation Resistance	At 500VDC	100	--	--	MΩ
Operating Temperature		-40	--	+85	℃
Transportation and Storage Temperature		-40	--	+85	℃
Case Temperature Rise	Ta=25℃	--	--	30	℃
Safety Standard		EN62368-1 (Report)			
Safety Class		CLASS III			
Application Environment		The presence of dust, severe vibration, shock and corrosive gas may cause damage to the product.			

Mechanical Specifications

Case Material	Black plastic, flame-retardant heat- resistant
Package	DIP18
Weight	5.8g(Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

Immunity	ESD	IEC/EN61000-4-2	Contact ±4kV	perf. Criteria B
	EFT	IEC/EN61000-4-4	Signal Input port ±1kV (see Fig. 2 for recommended circuit)	perf. Criteria B
	Surge	IEC/EN61000-4-5	Signal Input port ±1kV(line to ground) (see Fig. 2 for recommended circuit)	perf. Criteria B
Note: The electrostatic discharge of TE5540CN-G and TE5550CN-G is contact ±2kV				

Application Precautions

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. 220VAC power supply is prohibited;
4. It is strictly forbidden to disassemble the product privately in order to avoid product failure or malfunction;
5. 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.

After-sales service

1. Factory inspection and quality control are strictly enforced before shipping any product; please contact your local representative or our technical support if you experience any abnormal operation or possible failure of the module;
2. The products have a 3-year warranty period, from the date of shipment. The product will be repaired or exchanged free of charge within the warranty period for any quality problem that occurs under normal use.

Applied circuit

Please refer to Isolated Transmitter Application Notes.

Design Reference

1. Wiring diagram for product application

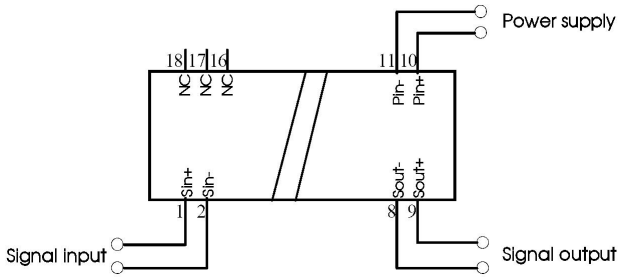


Fig. 1

Notes: NC: Not available for electrical connection

2. EMC compliance circuit

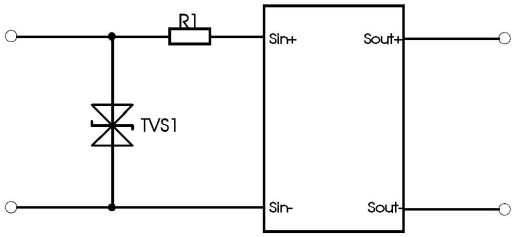


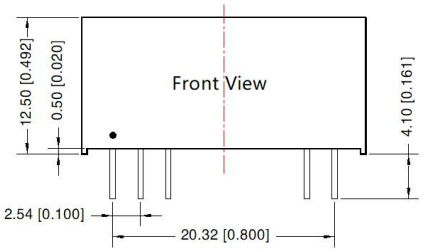
Fig. 2

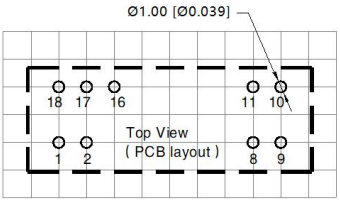
Component	Recommended part, value
R1	12Ω/2W
TVS1	SMBJ15CA

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

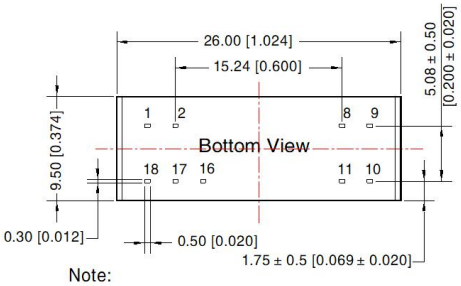
Dimensions and Recommended Layout

THIRD ANGLE PROJECTION





Note: Grid 2.54*2.54mm



Note:
Unit: mm[inch]
Pin section tolerances: ±0.10[±0.004]
General tolerances: ±0.25[±0.010]

Pin-Out		
1	Sin+	Signal input(+)
2	Sin−	Signal input(−)
8	Sout−	Signal output(−)
9	Sout+	Signal output(+)
10	Pin+	Power input(+)
11	GND	GND
Others：NC		

NC: No connection

Notes:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. The Packaging bag number: 58240002;
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. For details, please contact our technical staff;
4. We can provide product customization service;
5. Products are related to laws and regulations: see "Features" and "EMC";
6. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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