

Passive self-powered isolated transmitter
Current signal input & Current signal output



Patent Protection

CE Report RoHS

EN62368-1

T1100L-F is two-wire self-powered signal conditioning module. The module powering the front-end equipment through the back-stage current loop collection mode and transmitting the 4-20mA input current signal to an industry standard isolated 4-20mA output current. The module also offers an isolated micro-power which can be used for the peripheral devices. This accurate isolated voltage signal to 4-20mA current conversion can be used in a variety of analog instrument input ports such as PLC and DCS systems, or similar. In addition, this module has extremely small SIP9 form factor with excellent temperature drift characteristics of less than 35PPM / °C across the entire -25 °C to +71 °C operating temperature range. This module adopts unique electromagnetic isolation mode that allows it to withstand 3kVDC isolation test voltage between input and output.

FEATURES

- Self-powered, over-current protection
- High accuracy of 0.3% Full Scale
- High linearity of 0.1% Full Scale
- Isolation test voltage 3kVDC for 60s
- Extremely low temperature coefficient of 35PPM/°C
- Industrial grade (Operating ambient temperature range -25 °C to +71 °C)
- High reliability with MTBF >500,000 hours

Selection Guide

Certification	Part No.	Loop Power Supply Voltage	Input Signal	Output Signal	Channels	Package
EN	T1100L-F	10-24V	4-20mA	4-20mA	1	SIP12

Input Specifications

Item	Operating Conditions	Value
Signal Input	Input signal	4-20mA
	Maximum continuous over range	≤30mA (with Over-current Protection)
	Voltage drop-out @20mA	5V (Typ.) @20mA

Output Specifications

Item	Operating Conditions	Value
Signal Output	Output signal	4-20mA
	Load capacity	$RL \leq (V_{in} - 7)/0.02$, 800 Ω (Max.)
	Load Regulation	0.1% Full scale/100 Ω

Note: *The typical output precision under different load conditions can be seen in the product characteristic curve diagram.

Transmission Specifications

Item	Operating Conditions	Value
Zero Offset	250 Ω /0.01uF	0.3%FS (Typ.)
Signal Precision	250 Ω /0.01uF	0.3%FS (Typ.)
Temperature Coefficient	Operating temperature range: -25 °C to +71 °C	0.0035%FS/°C

Note: *The typical output precision under different power supply conditions can be seen in the product characteristic curve diagram.

General Specifications

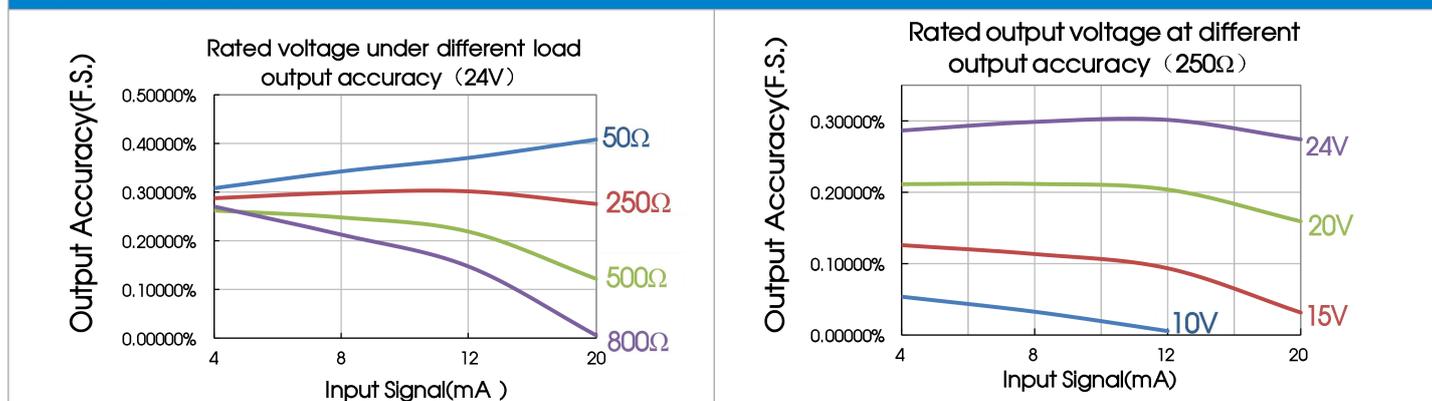
Item	Operating Conditions	Value
Electric Isolation		Two-port isolation (signal input and signal output)
Isolation Test	Electric strength test for 1 minute with a leakage current of <1mA, humidity <70%RH	3kVDC

Insulation Resistance	At 500VDC (signal input and signal output)	100M Ω
Operating Temperature		-25 $^{\circ}$ C to +71 $^{\circ}$ C
Transportation and Storage Temperature		-50 $^{\circ}$ C to +105 $^{\circ}$ C
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	SIP12
Weight	8.0g (Typ.)
Cooling Method	Free air convection

Product Characteristic Curve



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

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

See *Application Notes for Isolated Transmitter* for details.

Design Reference

1. Schematic diagram

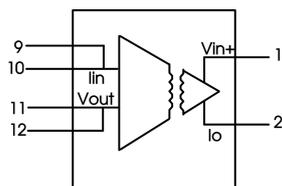


Fig. 1

2. Signal input and output correspondence diagram(Ideal state)

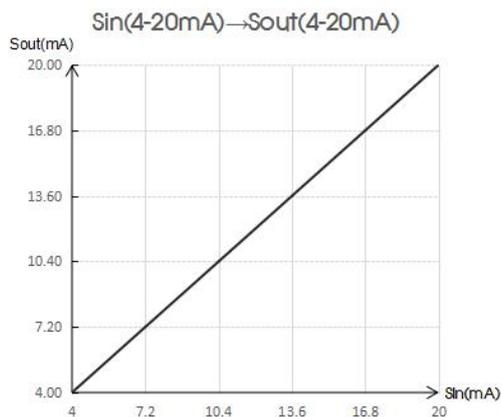


Fig. 2

3. Wiring diagram

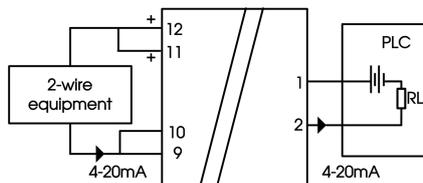
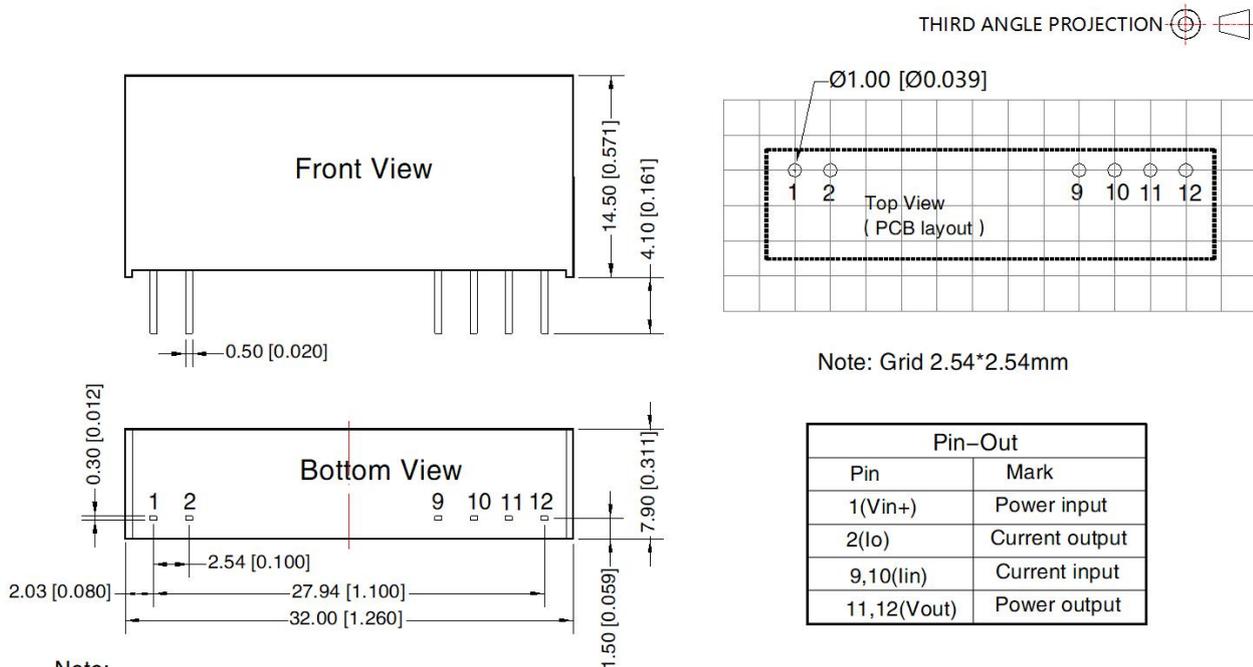


Fig. 3

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

Dimensions and Recommended Layout



Pin-Out	
Pin	Mark
1(Vin+)	Power input
2(Io)	Current output
9,10(Iin)	Current input
11,12(Vout)	Power output

Note:
 Unit: mm[inch]
 Pin section tolerances: $\pm 0.10[\pm 0.004]$
 General tolerances: $\pm 0.50[\pm 0.020]$

Notes:

- For additional information on Product Packaging please refer to www.mornsun-power.com. The Packaging bag number: 58210017;
- Unless otherwise specified, parameters in this datasheet were measured under the conditions of $T_a=25^\circ\text{C}$, humidity<75%RH with nominal input voltage and rated output load;
- All index testing methods in this datasheet are based on company corporate standards;
- 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;
- We can provide product customization service, please contact our technicians directly for specific information;
- Products are related to laws and regulations: see "Features" and "EMC";
- 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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