

SG-3011-G/SG-3011H-G

Thermocouple Input Signal Conditioner

Features

- Configurable for a Wide Range of Thermocouple Types
- Adjustable CJC Offset
- Open Thermocouple Detection
- Three-way Isolation: 1000 VDC
- High-speed Response Time: 0.5 ms (SG-3011H)

Introduction

The SG-3011/SG-3011H module is a thermocouple input signal conditioner that uses a microprocessor-controlled high-resolution 24-bit integrated A/D converter to acquire the thermocouple signal and the cold junction compensation input. Temperature measurement is performed using the thermocouple linearization and cold junction compensation function. The range of thermocouple types supported by the SG-3011/SG-3011H module include J, K, T, E, R, S, B, N, C, L, M, L2 (DIN43710). The response time for the SG-3011 module is 100 ms. the response time for the SG-3011H is switch selectable and can be set to either 0.5 ms or 100 ms. The power supply that drives the input and output circuitry in the module is internally isolated, enabling the SG-3011/SG-3011H to offer true channel-to-channel isolation. The SG-3011/SG-3011H module is easily mounted on a standard DIN rail, and the module can operate in harsh environments with a wide temperature range.

Applications

- Building Automation
- Factory Automation
- Machine Automation
- Remote Maintenance
- Remote Diagnosis
- Testing Equipment

System Specifications

Model Name	SG-3011	SG-3011H
Isolation		
Three-way Isolation	1000 VDC	
Power		
Reverse Polarity Protection	Yes	
Input Range	+10 ~ +30 VDC	
Consumption	1.44 W	
Mechanical		
Dimensions (W x L x H)	25 mm x 114 mm x 70 mm	
Environment		
Operating Temperature	-25 ~ +75 °C	
Storage Temperature	-40 ~ +85 °C	
Humidity	10 ~ 95% RH, Non-condensing	

Thermocouple Type

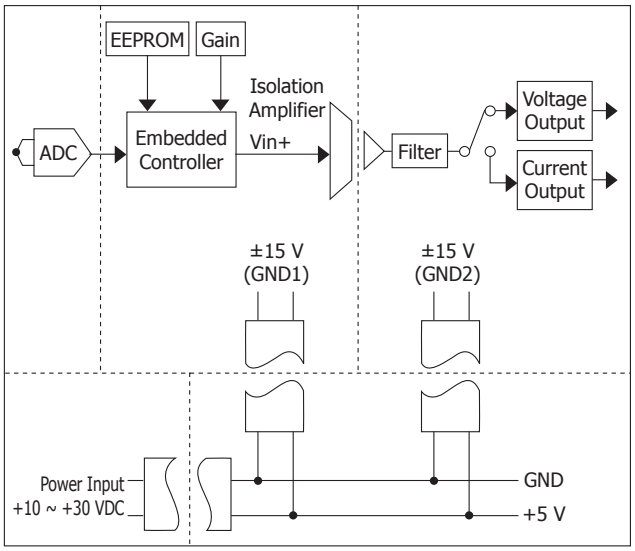
Type	Temperature Range (°C)	
	SG-3011	SG-3011H
J	-40 ~ +760	-40 ~ +760, -210 ~ +760
K	0 ~ +1000	0 ~ +1000, -270 ~ +1372
T	-100 ~ +400	-100 ~ +400, -270 ~ +400
E	0 ~ +1000	0 ~ +1000, -270 ~ +1000
R	+500 ~ +1750	
S	+500 ~ +1750	
B	+500 ~ +1800	
N	-100 ~ +1300	
C	0 ~ +2000	
L	-200 ~ +800	
M	-200 ~ +100	
L2 (DIN 43710)	-200 ~ +900	

I/O Specifications

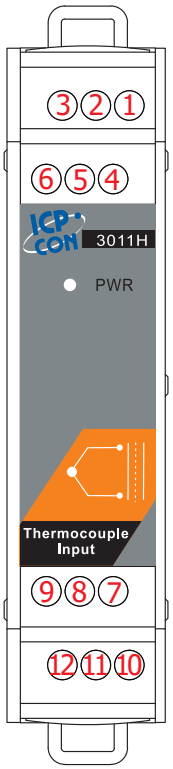
Model Name	SG-3011	SG-3011H
Analog Input		
Channels	1	
Type	J, K, T, E, R, S, B, N, C, L, M, L2	
Resolution	24-bit	
Accuracy	±0.2% of FSR	±0.1% of FSR
Input Impedance	1.8 MΩ	1.6 MΩ
Offset Mode	Adjustable CJC Offset	
Response Time	100 ms	0.5 ms or 100 ms (Switch Selectable)
Open Thermocouple Detection	Yes	
Analog Output		
Channels	1	
Type	0 ~ 10 VDC, 0 ~ 20 mA	
Resolution	12-bit	
Accuracy	±0.1% of FSR	
Current Load Resistance	<50 Ω	

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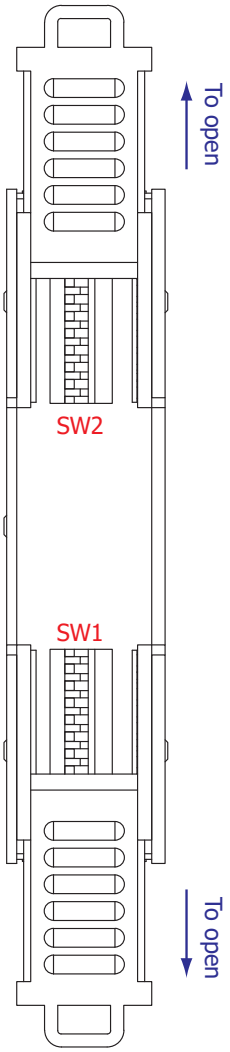
Internal I/O Structure



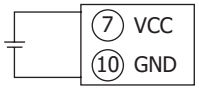
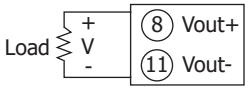
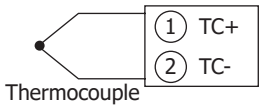
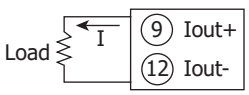
PIN Assignments



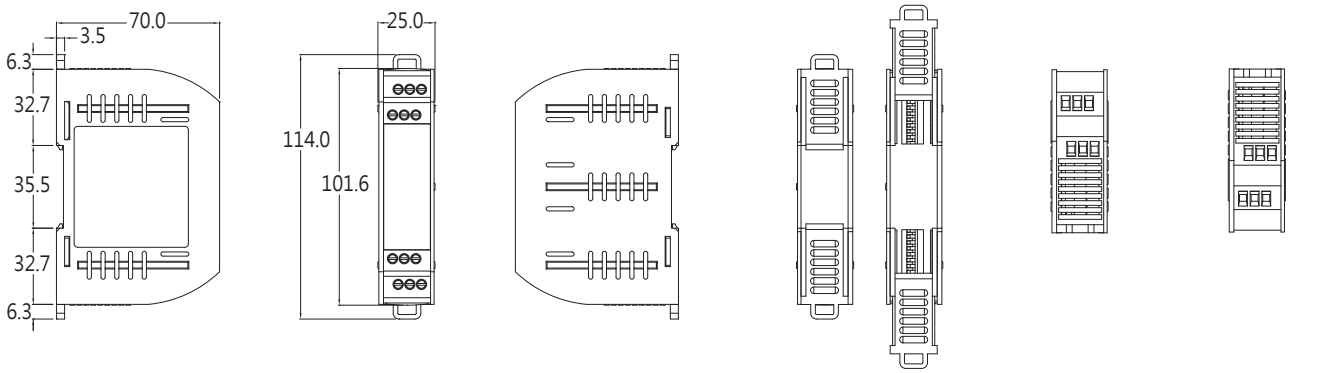
Pin	Name
1	TC+
2	TC-
3	Reserve
4	FGND
5	FGND
6	FGND
7	VCC
8	Vout+
9	Iout+
10	GND
11	Vout-
12	Iout-



Wire Connections

Power Input	Voltage Output
	
Thermocouple Input	**Current Output**
	

Dimensions (Units: mm)



Left View | Front View | Right View | Rear View | Top View | Bottom View

Ordering Information

SG-3011-G CR	Thermocouple Input Signal Conditioner (RoHS)
SG-3011H-G CR	Thermocouple Input Signal Conditioner with High-speed Response Time (RoHS)

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