SG-3011H User Manual

Introduction

The SG-3011H is a thermocouple input signal conditioner. SG-3011H uses microprocessor-controlled high-resolution 24-bit dual-slope, integrating A/D converter to acquire thermocouple signal and cold junction compensation input. Temperature measurement is performed using the thermocouple linearization and cold junction compensation function. Thermocouple types J, K, T, E, R, S, B, N, C, L, M, L2 (DIN43710) are supported, and a 2 kHz sampling rate is provided for thermocouple input. The power supply that drives the module's input and output circuitry is internally isolated, enabling SG-3011H to offer true channel‐to‐channel isolation. It is easy to mount the SG-3011H on a standard DIN rail and can operate in environment with wide temperature range.

Specifications

Thermocouple Type:

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

Voltage Output:
- Unipolar: 0~10V
- Output impedance: <500Ω

Current Output:
- Current: 0~20mA
- Current load resistor:0~450Ω (Source)

General
- Three-way isolation: 1000 Vdc
- CJC offset adjustable
- Open thermocouple detection
- Accuracy: ±0.2% of full scale range
- Operating temperature range:-25℃～75℃
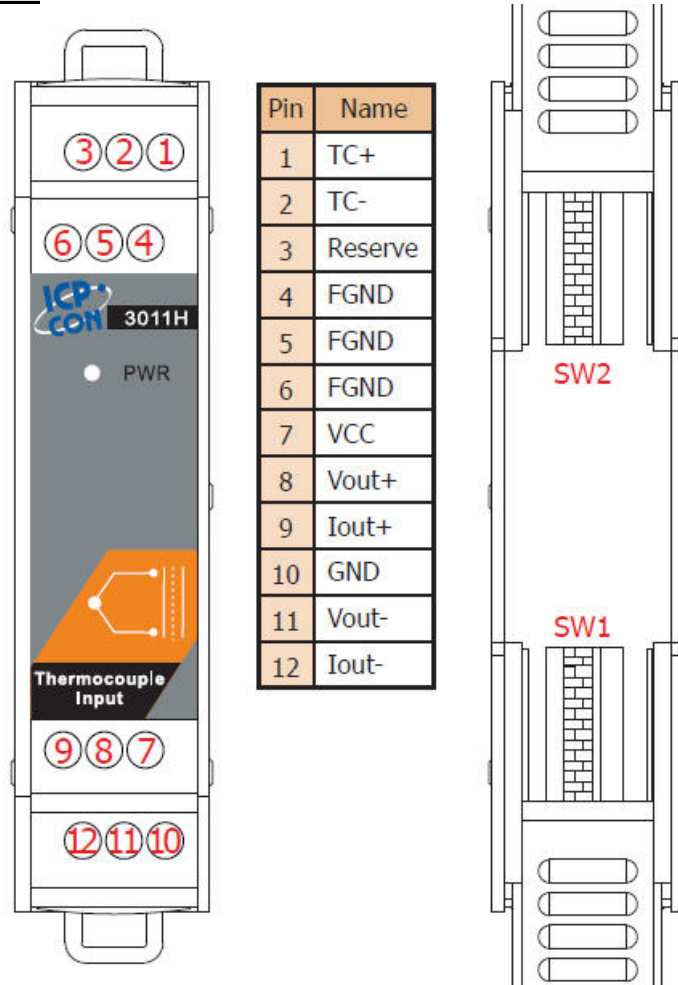- Storage temperature range:-30℃～85℃

Supply Voltage
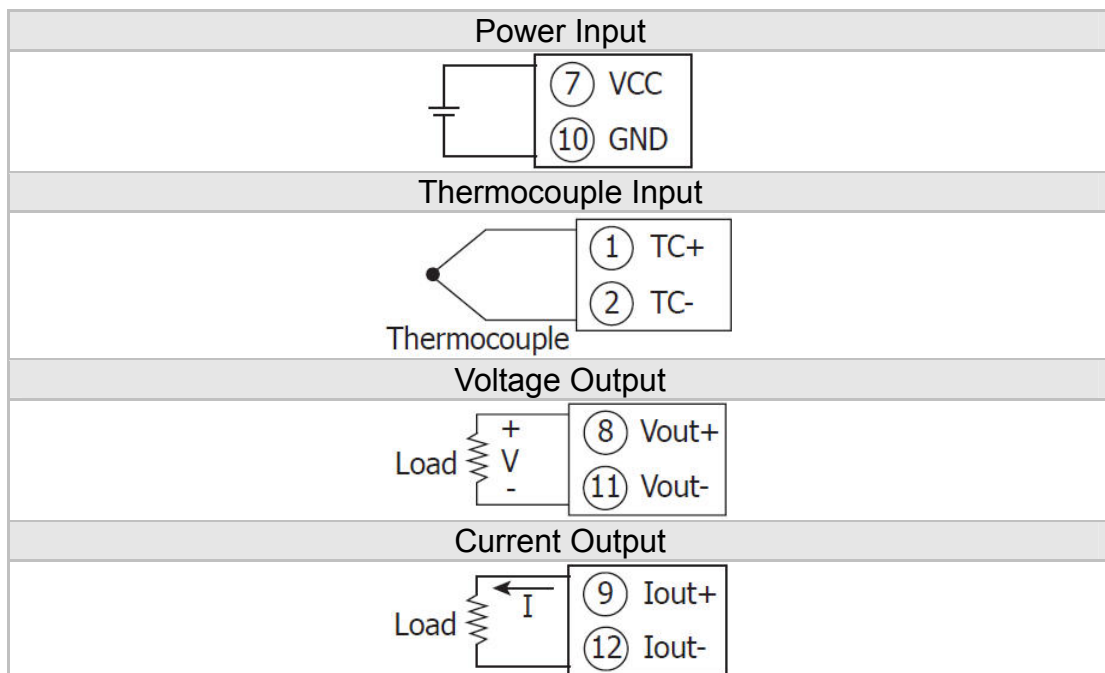- Input range: 10～30 Vdc

Configuration

"Switch Configuration" shows the switch positions used to configure the input and output range. The I/O configuration switches are located inside the module and can be accessed by removing the DIN-rail bracket covers.
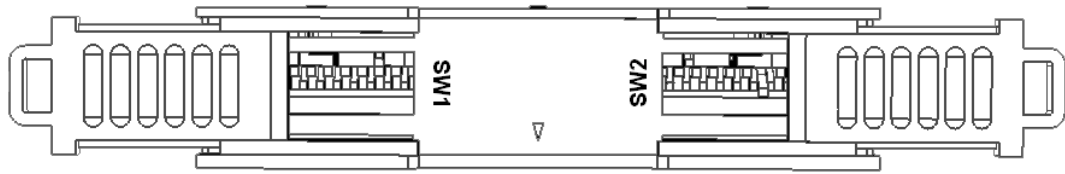
PIN Assignment

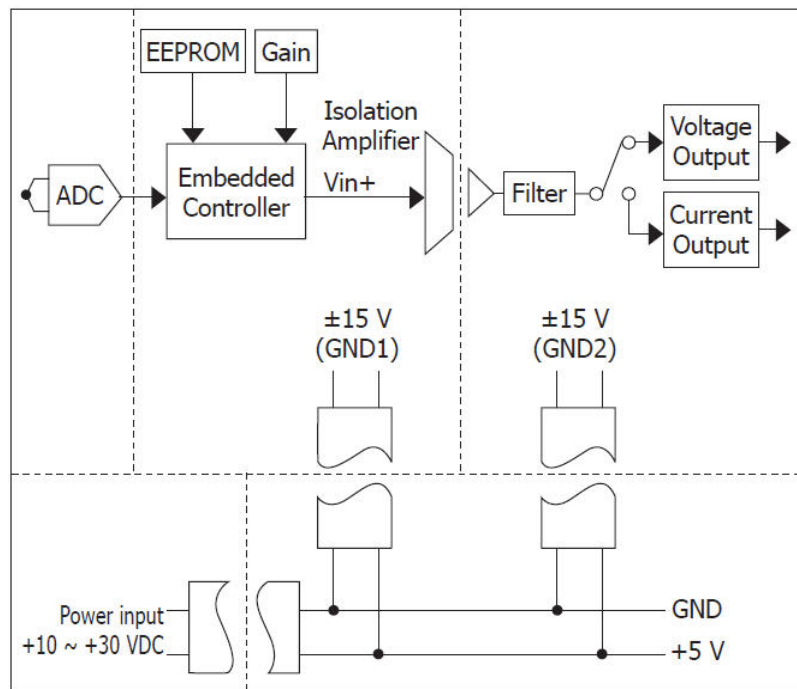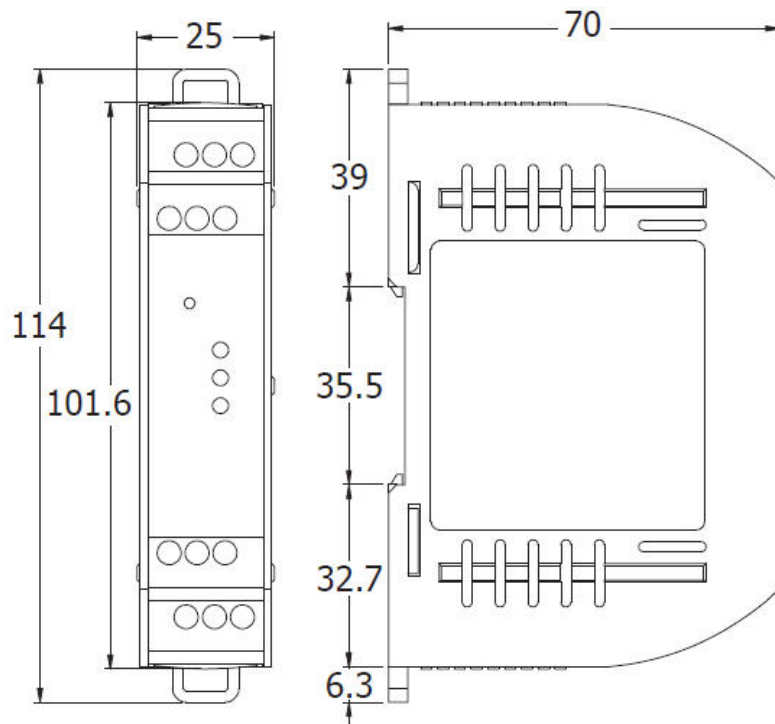| Pin	Name
1	TC+
2	TC-
3	Reserve
4	FGND
5	FGND
6	FGND
7	VCC
8	Vout+
9	Iout+
10	GND
11	Vout-
12	Iout-

ICP CON 3011H
PWR
Thermocouple Input

SW2

SW1

Wire Connection

Power Input		
	⑦ VCC	
	⑩ GND	

Thermocouple Input		
Thermocouple	① TC+	
	② TC-	

Voltage Output		
Load V	⑧ Vout+	
	⑪ Vout-	

Current Output		
Load I	⑨ Iout+	
	⑫ Iout-	

Switch Configuration

SG-3011H Configuration		SW1-1	■ Open TC:10V/20mA						
			□ Open TC: 0V/ 0mA						
		SW1-8	■ 10 Hz Sampling Rates						
			□ 2000Hz Sampling Rates						

Switch Setting: ■ON □OFF		Type Switch (SW1-)				CJC Offset Switch (SW2-)								CJC Offset(℃)
TC Type	TC Range(℃)	2	3	4	5	1	2	3	4	5	6	7	8	
J	-40~+760	□	□	□	□	■	■	■	■	■	■	■	■	25.4
K	0~+1000	■	□	□	□	■	■	■	■	■	■	■	□	25.2
T	-100~+400	□	■	□	□	•					•			•
E	0~+1000	■	■	□	□	•					•			•
R	+500~+1750	□	□	■	□	■	□	□	□	□	□	■	■	0.6
S	+500~+1750	■	□	■	□	■	□	□	□	□	□	■	□	0.4
B	+500~+1800	□	■	■	□	■	□	□	□	□	□	□	■	0.2
N	-100~+1300	■	■	■	□	■	□	□	□	□	□	□	□	0.0
C	0~+2000	□	□	□	■	□	■	■	■	■	■	■	■	-0.2
L	-200~+800	■	□	□	■	□	■	■	■	■	■	■	□	-0.4
M	-200~+100	□	■	□	■	□	■	■	■	■	■	□	■	-0.6
L2 (DIN43710)	-200~+900	■	■	□	■	□	■	■	■	■	■	□	□	-0.8
J	-210 ~ +760	□	□	■	■	•					•			•
K	-270 ~ +1372	■	□	■	■	•					•			•
T	-270 ~ +400	□	■	■	■	□	□	□	□	□	□	□	■	-25.4
E	-270 ~ +1000	■	■	■	■	□	□	□	□	□	□	□	□	-25.6

Block Diagram

Dimensions

Technical Service

Please E-mail your problem description to service@icpdas.com when you have any questions.
More detail information: www.icpdas.com