



I-97019/S

8-channel Thermocouple Input Module, Include CN-1824M

Features

- 8-channel Analog Input
- Current, Voltage and Thermocouple Input
- Individual Channel Configuration
- Open Thermocouple Detection
- Temperature Output Consistency
- Stable Temperature Output in the Field
- 240 Vrms Overvoltage Protection
- 3000 VDC Intra-module Isolation



Introduction

The I-97019 is a 8-channel universal Analog Input module with an RS-485 interface that is especially designed for extremely accurate thermocouple measurement and features automatic coldjunction compensation for each channel to ensure temperature output consistency and stable temperature output in the field.

The innovative design of the enhanced model ensures that thermocouple measurement is more accurate than with the earlier design. Besides the thermocouple inputs, the I-97019 also supports voltage and current input. The voltage input range can be from ± 15 mV to ± 10 V. Up to 8 different types of Analog Input can be connected to a single module. Overvoltage protection of up to 240 Vrms is provided. The module also features per-channel open wire detection for the thermocouple and +4 to +20 mA input channels.

System Specifications

LED Display	
Status	1 x Power and Communication
Isolation	
Intra-module Isolation, Field-to-Logic	3000 VDC
EMS Protection	
ESD (IEC 61000-4-2)	± 4 kV Contact for Each Terminal ± 8 kV Air for Random Point
COM Ports	
Ports	1 x RS-485
Baud Rate	1200 ~ 115200 bps
Data Format	N, 8, 1
Protocol	DCON
Power	
Consumption	0.6 W Max.
Mechanical	
Dimensions (W x L x H)	I-97019 : 31 mm x 134 mm x 134 mm CN-1824M : 28 mm x 36 mm x 80 mm
Environment	
Operating Temperature	-25 ~ +75 °C
Storage Temperature	-40 ~ +85 °C
Humidity	10 ~ 90 % RH, Non-condensing

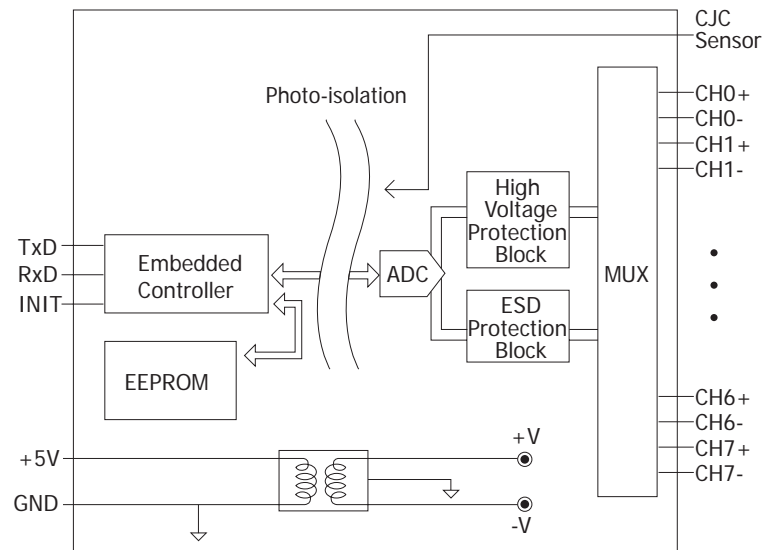
I/O Specifications

Analog Input		
Channels	8	
Sensor Type	Thermocouple	J, K, T, E, R, S, B, N, C, L, M, LDIN43710
	Voltage	± 15 mV, ± 50 mV, ± 100 mV, ± 500 mV, ± 1 V, ± 2.5 V, ± 5 V, ± 10 V
	Current	± 20 mA, 0 ~ 20 mA, 4 ~ 20 mA
Temperature Output Consistency	Yes	
Stable Temperature Output in the Field	Yes	
Range	± 15 mV, ± 50 mV, ± 100 mV, ± 500 mV, ± 1 V, ± 2.5 V, ± 20 mA, 0 ~ 20 mA, 4 ~ 20 mA	
Resolution	16-bit	
Accuracy	$\pm 0.1\%$ of FSR	
Sampling Rate	10 Hz (Total)	
Input Impedance	> 400 k Ω	
Common Voltage Protection	± 200 VDC	
Overvoltage Protection	240 Vrms	
Individual Channel Configuration	Yes	
Open Wire Detection	Yes	

RTD Type Settings (TT)

Type Code	RTD Type	Temperature Range
0E	J	-210 ~ +760 °C
0F	K	-270 ~ +1372 °C
10	T	-270 ~ +400 °C
11	E	-270 ~ +1000 °C
12	R	0 ~ +1768 °C
13	S	0 ~ +1768 °C
14	B	0 ~ +1820 °C
15	N	-270 ~ +1300 °C
16	C	0 ~ +2320 °C
17	L	-200 ~ +800 °C
18	M	-200 ~ +100 °C
19	LDIN43710	-200 ~ +900 °C

Internal I/O Structure



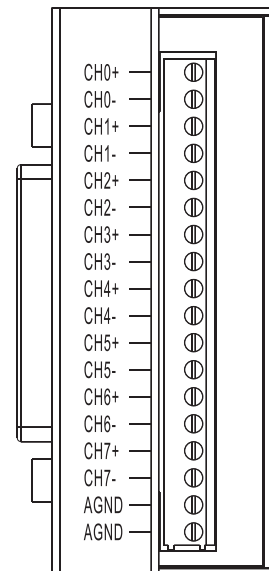
Pin Assignments

I-97019

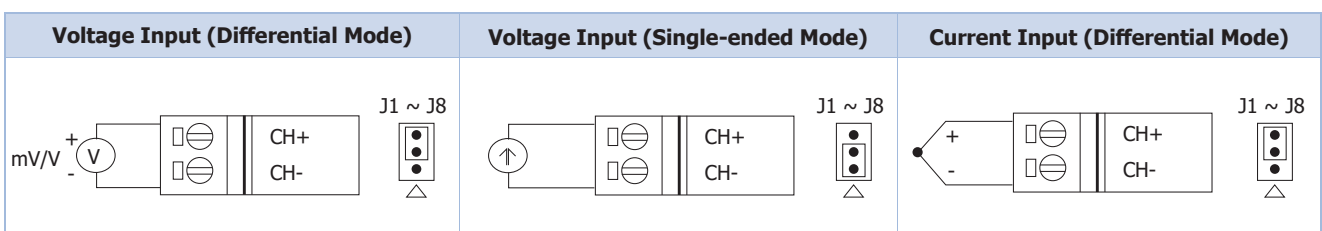
Pin Assignment	Terminal No.	Pin Assignment
+5V	1	AGND
CJC	2	CH 0+
CH 0-	3	CH 1+
CH 1-	4	CH 2+
CH 2-	5	CH 3+
CH 3-	6	CH 4+
CH 4-	7	CH 5+
CH 5-	8	CH 6+
CH 6-	9	CH 7+
CH 7-	10	N.C.
N.C.	11	N.C.
N.C.	12	AGND
AGND	13	Shield
		F.G.

25-pin Female D-sub Connector

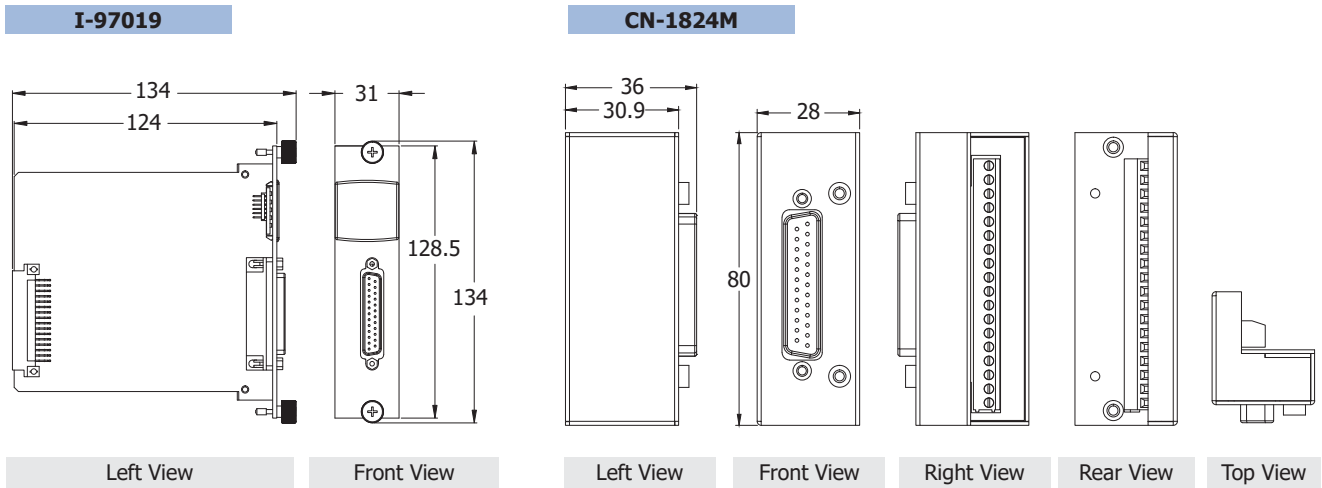
CN-1824M



Wire Connections



Dimensions (Units: mm)



Accessories

<p>SG-770 CR</p>	<p>7-channel Differential or 14-channel Single-ended Surge Protector (RoHS)</p>	<p>SG-3000 Series</p>	<p>Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Inputs</p>
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Ordering Information

I-97019/S CR

8-ch Thermocouple Input Module with High Voltage Protection (RoHS)
Includes CN-1824M Daughter Board

I-97019/S = I-97019 + CN-1824M

I-97019/S CR = I-97019 Connects CN-1824M Directly