



**I-87018W**      **I-87018RW**  
8-channel Thermocouple Input Module

### Introduction

I-87018W features current input, voltage input as well as thermocouple input. There are 8-channel available for your consideration. I-87018W also features 3000 Vdc intra-module isolation.

I-87018RW is an analog input module with an extremely excellent protection mechanism where Overvoltage Protection is up to 240 Vrms. Its input type includes current, voltage as well as thermocouple. Naturally, I-87018RW is an upgraded version of I-87018W; the only difference is that the I-87018RW is much more suitable for critically harsh environment! Moreover, a newly-added feature for open thermocouple detection makes I-87018RW more sweet than ever. I-87018RW also has qualification for 4 KV ESD protection and 3000 Vdc intra-module isolation.

### Applications

Building Automation, Factory Automation, Machine Automation, Remote Maintenance, Remote Diagnosis, Testing Equipment.

### System Specifications

Models	I-87018W	I-87018RW
<b>Communication</b>		
Interface	RS-485	
Format	N, 8, 1	
Baud Rate	1200 ~ 115200 bps	
Protocol	DCON	
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)	
<b>LED Indicator/Display</b>		
System LED Indicator	1 LED as Power/Communication Indicator	
I/O LED Indicator	-	16 LEDs as High/Low Alarm Signals
<b>Isolation</b>		
Intra-Module Isolation, Field-to-Logic	3000 Vdc	
<b>EMS Protection</b>		
ESD (IEC 61000-4-2)	4 kV Contact for Each Terminal	
	8 kV Air for Random Point	
<b>Power</b>		
Power Consumption	0.8 W Max.	0.6 W Max.
<b>Mechanical</b>		
Dimensions (W x L x H)	30 mm x 102 mm x 115 mm	
<b>Environment</b>		
Operating Temperature	-25 ~ +75°C	
Storage Temperature	-40 ~ +85°C	
Humidity	10 ~ 95% RH, Non-condensing	

### Features

- Current Input, Voltage Input and Thermocouple Input
- High Resolution: 16-bit
- 3000 Vdc Intra-module Isolation
- RoHS Compliant
- Wide Operating Temperature Range: -25 ~ +75°C



### I/O Specifications

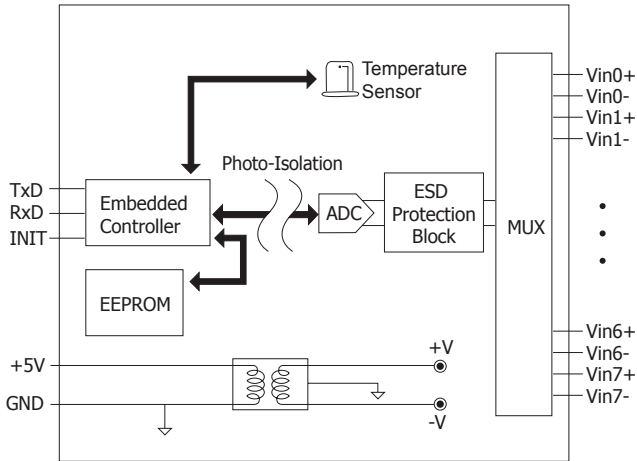
Models	I-87018W	I-87018RW
<b>Analog Input</b>		
Channels	8	
Wiring	Differential	
Sensor Type	+/- 15 mV, +/- 50 mV, +/- 100 mV, +/- 500 mV, +/- 1 Vdc, +/- 2.5 Vdc	
	-20 mA ~ +20 mA (Requires Optional External 125 Ω Resistor)	
	Thermocouple (J, K, T, E, R, S, B, N, C, L, M, L <sub>DIN43710</sub> )	
Resolution	16-bit	
Accuracy	+/- 0.1% of FSR	
Sampling Rate	10 Hz (Total)	
-3dB Bandwidth	15.7 Hz	
Zero Drift	+/- 0.5 μV/°C	+/- 10 μV/°C
Span Drift	+/- 25 ppm/°C	
Common Mode Rejection	150 dB	
Normal Mode Rejection	100 dB	
Input Impedance	>400 kΩ	
Open Wire Detection	-	Yes
Overvoltage Protection	-35 Vdc ~ +35 Vdc	240 Vrms

Note: We recommend to choose I-87018Z for accurate thermocouple measurement.

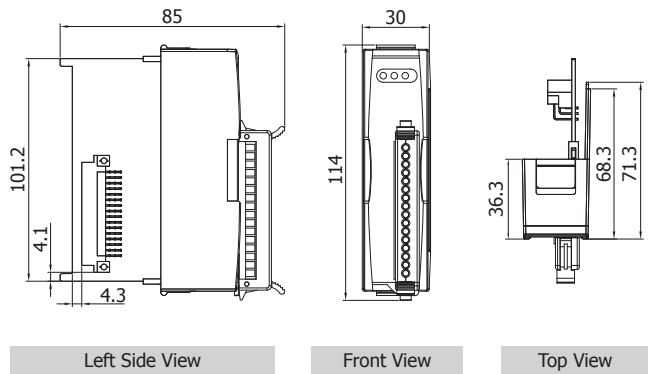
### Thermocouple type

Type	Range°C
J	-210 ~ +760
K	-270 ~ +1372
T	-270 ~ +400
E	-270 ~ +1000
R	0 ~ +1768
S	0 ~ +1768
B	0 ~ +1820
N	-270 ~ 1300
C	0 ~ 2320
L	-200 ~ +800
M	-200 ~ +100
L <sub>DIN43710</sub>	-200 ~ +900

### Internal I/O Structure



### Dimensions (Units: mm)



### Wire Connections

**Voltage Input Wire Connection**

**Current Input Wire Connection**

125 Ω

Note: When connecting to a current source, an optional external 125 Ω resistor is required.

**Thermocouple Input Wire Connection**

### Pin Assignments

Terminal No.	Pin Assignment
01	Vin0+
02	Vin0-
03	Vin1+
04	Vin1-
05	Vin2+
06	Vin2-
07	Vin3+
08	Vin3-
09	Vin4+
10	Vin4-
11	Vin5+
12	Vin5-
13	Vin6+
14	Vin6-
15	Vin7+
16	Vin7-

### Ordering Information

<b>I-87018W-G CR</b>	8-channel Thermocouple Input Module (Gray Cover) (RoHS)
<b>I-87018RW-G CR</b>	8-channel Thermocouple Input Module (Gray Cover) (RoHS)

### Accessories

	125Ω, 0.1% DIP Resistors	use for current type of I-87017/I-87018 series
	SG-770 CR	7 channel differential or 14 channel single-ended surge protector (RoHS)
	SG-3000 series	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input