

I-87018PW/S

8-Channel Thermocouple Input Module

Features

- 8-channel thermocouple input
- Open thermocouple detection
- Individual channel configuration
- Temperature Output Consistency
- Stable Temperature Output in the Field
- 240 Vrms Overvoltage Protection
- 4 kV ESD Protection
- 3000 VDC Intra-module Isolation, Field-to-Logic

Introduction

The I-87018PW/S is an 8-channel thermocouple input module. The analog input range is software selectable and supports +/-15 mV, +/-100 mV, +/-500 mV, +/-1 V, +/-2.5 V, 0 ~ +20 mA, +4 ~ +20 mA or +/-20 mA, and thermocouples of type J, K, T, E, R, S, B, N, C, L, M, and LDIN43710. It features automatic cold-junction compensation for each channel, and supports open thermocouple detection.

System Specifications

COM Port	
Ports	RS-485
Data Format	N, 8, 1
Baud Rate	1200 ~ 115200 bps
Protocol	DCON
CPU Module	
Dual Watchdog Timer	Module (1.6 Seconds), Communication (Programmable)
LED Indicators	
System LED Indicator	1
I/O LED Indicator	16
Isolation	
Intra-module Isolation, Field-to-Logic	3000 VDC
EMS Protection	
ESD (IEC 61000-4-2)	±4 kV Contact for Each port, ±8 kV Air for Random Poin
Power	
Consumption	0.7 W
Mechanical	
Dimensions (W x L x H, unit: mm)	I-87018PW: 30 x 85 x 114, CN-1824: 43 x 83 x 29
Environment	
Operating Temperature	-25 ~ +75 °C
Storage Temperature	-40 ~ +85 °C
Humidity	10 ~ 95 % RH, Non-condensing

I/O Specifications

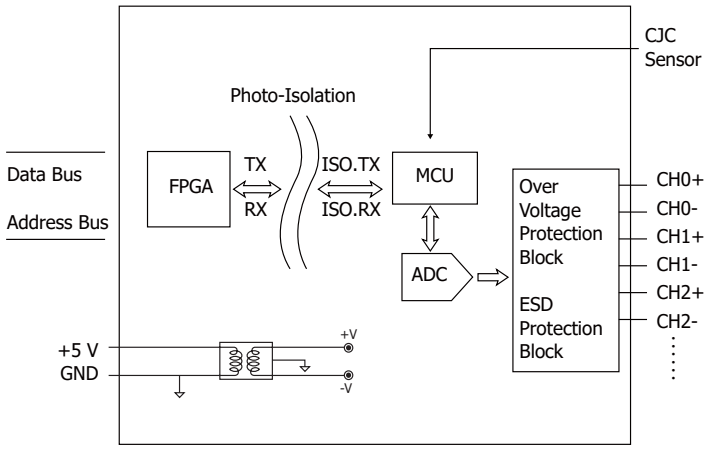
Analog Input		
Channels		8
Wiring		Differential
Sensor Type	Voltage	±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 VDC, ±2.5 VDC
	Current	±20 mA, 0 ~ +20 mA, +4 ~ +20 mA (Requires Optional External 125 Ω Resistor)
	Thermocouple	Thermocouple (J, K, T, E, R, S, B, N, C, L, M, LDIN43710)
Resolution		16-bit
Accuracy		±0.1 % of FSR
Sampling Rate		10 Hz (Total)
-3dB Bandwidth		15.7 Hz
Zero Drift		±0.5 μV/°C
Span Drift		±25 ppm/°C
Common Mode Rejection		150 dB
Normal Mode Rejection		100 dB
Input Impedance		> 400 MΩ
Individual Channel Configuration		Yes
Open Wire Detection		Yes
Overvoltage Protection		240 Vrms
CN-1824		
Wire Strip Length		4 ~ 5 mm
Wire Range		16 ~ 24 AWG

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Thermocouple Type

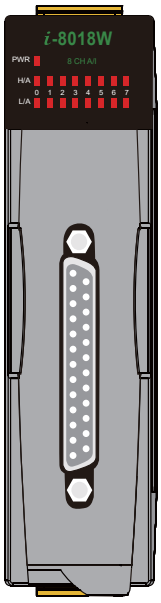
Type Code	Temperature Range
J	-210 ~ + 760 °C
K	-270 ~ + 1372 °C
T	-270 ~ + 400 °C
E	-270 ~ + 1000 °C
R	0 ~ + 1768 °C
S	0 ~ + 1768 °C
B	0 ~ + 1820 °C
N	-270 ~ + 1300 °C
C	0 ~ + 2320 °C
L	-200 ~ + 800 °C
M	-200 ~ + 100 °C
LDIN43710	-200 ~ + 900 °C

Internal I/O Structure

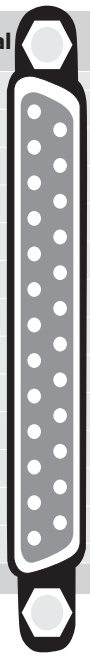


Pin Assignments

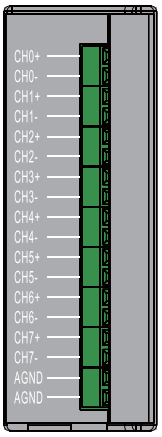
I-87018PW



Pin Assignment	Terminal No.	No.	Pin Assignment
+3.3 V	01	14	GND
CJC	02	15	CH 0+
CH 0-	03	16	CH 1+
CH 1-	04	17	CH 2+
CH 2-	05	18	CH 3+
CH 3-	06	19	CH 4+
CH 4-	07	20	CH 5+
CH 5-	08	21	CH 6+
CH 6-	09	22	CH 7+
CH 7-	10	23	N.C.
N.C.	11	24	N.C.
N.C.	12	25	N.C.
N.C.	13		



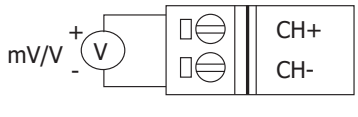
CN-1824

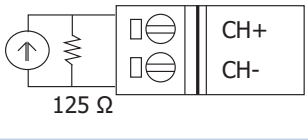


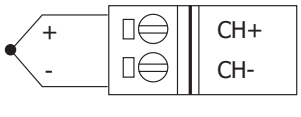
Terminal No.	Pin Assignment
01	CH 0+
02	CH 0-
03	CH 1+
04	CH 1-
05	CH 2+
06	CH 2-
07	CH 3+
08	CH 3-
09	CH 4+
10	CH 4-
11	CH 5+
12	CH 5-
13	CH 6+
14	CH 6-
15	CH 7+
16	CH 7-
17	AGND
18	AGND

Wire Connections

Voltage Input	Current Input	Thermocouple Input
	Note: When connecting to a current source, an optional external 125 Ω resistor is required	



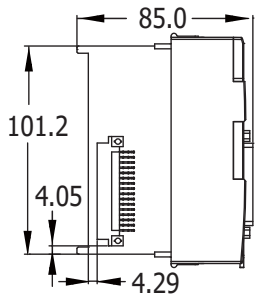




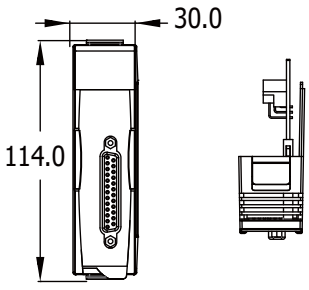
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Dimensions (Unit: mm)

I-87018PW



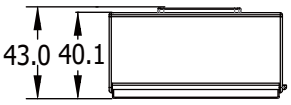
Left View



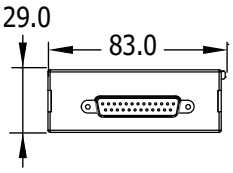
Front View

Top Veiw

CN-1824



Left View



Front View

Accessories

	2AB125R CR	125 Ω, 0.1 % DIP Resistor used for Current Type Input Modules

Ordering Information

I-87018PW/S-G CR

8-channel Thermocouple Input Module (RoHS)

Includes CN-1824 Daughter Board

I-87018PW/S CR = I-87018PW Connects CN-1824 Directly



I-87018PW/S =  **I-87018W** +  **CN-1824**

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