

I-87019PW/S

8-channel Universal Analog Input Module
with High Overvoltage Protection

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-87019PW is a 8-channel universal analog input module with an RS-485 interface that is a specially 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-87019PW also supports voltage and current inputs. The voltage input range can be form ±15 mV to ±10 V, and the current input range can be either +4 ~ +20 mA, 0 ~ +20 mA, or ±20 mA. Up to 10 analog inputs of diff erent types 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 thermocouple and +4 ~ +20 mA inputs.

System Specifications

COM Port	
Ports	RS-485
Data Format	N, 8, 1; N, 8, 2; E, 8, 1; O, 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
Isolation	
Intra-module Isolation, Field-to-Logic	3000 VDC
EMS Protection	
ESD (IEC 61000-4-2)	±4 kV Contact for Each port
Power	
Consumption	1.3 W Max.
Mechanical	
Dimensions (W x L x H, unit: mm)	I-87019PW: 30 x 86 x 114, CN-1824: 43 x 83 x 29
Environment	
Operating Temperature	-25 ~ +75 °C
Storage Temperature	-40 ~ +85 °C
Humidity	10 ~ 90 % RH, Non-condensing
CN-1824	
Wire Strip Length	4 ~ 5 mm
Wire Range	16 ~ 24 AWG

I/O Specifications

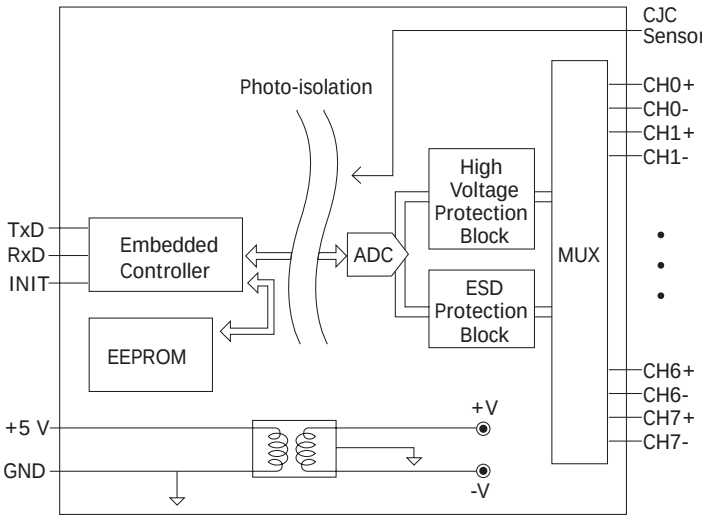
Analog Input		
Channels		8
Wiring		Differential
Sensor Type	Voltage	±15 mV, ±50 mV, ±100 mV, ±150 mV, ±500 mV, ±1 V, ±2.5 V, ±5 V,±10 V
	Current	-20 mA ~ +20 mA, 0 ~ 20 mA, 4 ~ 20 mA (Jumper Selectable)
	Thermocouple	Thermocouple (J, K, T, E, R, S, B, N, C, L, M, LDIN43710)
Resolution		16-bit
Accuracy		±0.1 % of FSR
Sampling Rate		10 Samples/Second (Total)
-3dB Bandwidth		15.7 Hz
Zero Drift		±20 μV/°C
Span Drift		±25 ppm/°C
Common Mode Rejection		86 dB
Normal Mode Rejection		100 dB
Input Impedance	Voltage	> 400 kΩ
	Current	125 Ω
Individual Channel Configuration		Yes
Open Thermocouple Detection		Yes
Overvoltage Protection		240 Vrms

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Thermocouple Type

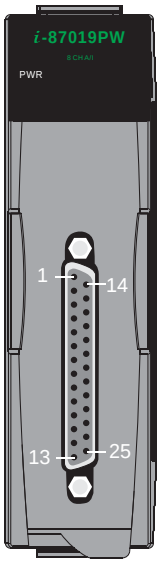
Type Code	Temperature Range
J	-210 ~ + 760 °C
K	-270 ~ + 1372 °C
T	-270 ~ + 400 °C
E	-270 ~ + 1000 °C
R	0 ~ + 1768 °C
S	0 ~ + 1768 °C
B	0 ~ + 1820 °C
N	-270 ~ + 1300 °C
C	0 ~ + 2320 °C
L	-200 ~ + 800 °C
M	-200 ~ + 100 °C
LDIN43710	-200 ~ + 900 °C

Internal I/O Structure



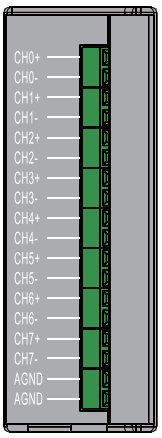
Pin Assignments

I-87019PW



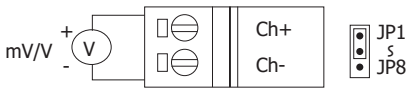
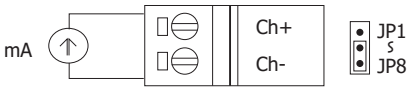
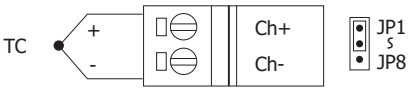
Pin Assignment	Terminal No.	No.	Pin Assignment
+5 V	01		
CJC	02	14	AGND
CH 0-	03	15	CH 0+
CH 1-	04	16	CH 1+
CH 2-	05	17	CH 2+
CH 3-	06	18	CH 3+
CH 4-	07	19	CH 4+
CH 5-	08	20	CH 5+
CH 6-	09	21	CH 6+
CH 7-	10	22	CH 7+
N.C.	11	23	N.C.
N.C.	12	24	N.C.
N.C.	13	25	N.C.

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

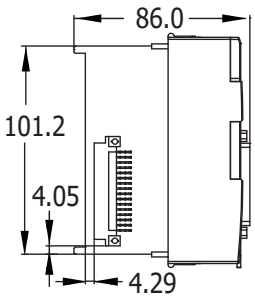
Wire Connections

Voltage Input	Current Input	Thermocouple Input
		

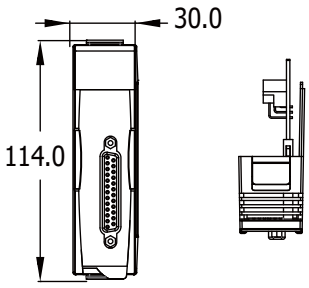
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Dimensions (Unit: mm)

I-87019PW



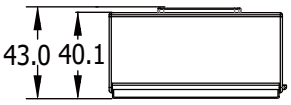
Left View



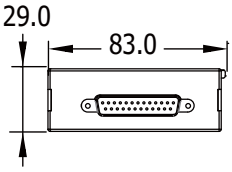
Front View

Top Veiw

CN-1824



Left View



Front View

Accessories

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

Ordering Information

I-87019PW/S-G CR

8-channel Universal Analog Input Module (RoHS)

Includes CN-1824 Daughter Board

I-87019PW/S CR = I-87019PW Connects CN-1824 Directly



I-87019PW/S =  **I-87019W** +  **CN-1824**

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