



## Features

- 8 Differential/16 Single-ended Analog Inputs
- Voltage or Current Input
- 14-bit 100 KHz AD Converter
- Internal/External Trigger
- Individual Channel Configuration
- $\pm 4$  kV ESD Protection
- 2500 VDC Intra-module Isolation
- Wide Operating Temperature Range:  $-25$  to  $+75^{\circ}\text{C}$



## Introduction

The I-8017HW, I-8017DW and I-8017HCW are high performance analog input modules. Up to 16 single-ended or 8 differential input channels are provided with 14 bits of resolution and 90 kS/s sampling rate. Each channel can be configured to an individual input range of  $\pm 10\text{V}$ ,  $\pm 5\text{V}$ ,  $\pm 2.5\text{V}$ ,  $\pm 1.25\text{V}$  or  $\pm 20$  mA. The modules also provide 4 kV ESD protection as well as 2500 VDC intra-module isolation.

All the three modules can be used to measure voltage and current source. On the I-8017HW, an external 125 ohm resistor is needed to measure current source, while on the I-8017DW and I-8017HCW, an internal resistor is jumper-selectable for differential current input. The jumper is factory default setting for voltage measurement on the I-8017DW, and is setting for current measurement on the I-8017HCW.

## Applications

- High speed data acquisition system
- Process monitor and control
- Vibration analysis
- Digital pattern generator from digital I/O port

## System Specifications

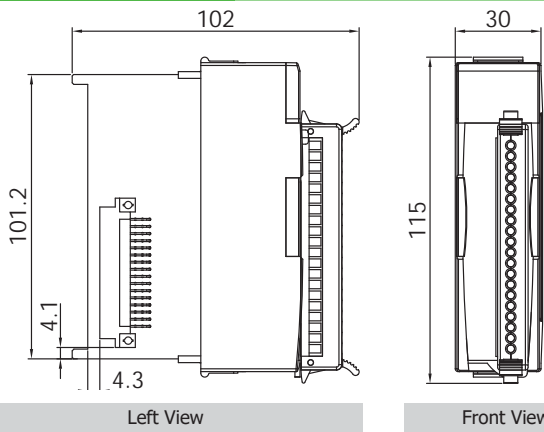
Model	I-8017HW	I-8017HCW	I-8017DW
<b>LED Indicators/Display</b>			
System LED Indicator	1 LED as Power Indicator		
I/O LED Indicator	16 LEDs as User-defined Indicators		
<b>Isolation</b>			
Intra-module Isolation, Field-to-Logic	2500 VDC		
<b>EMS Protection</b>			
ESD (IEC 61000-4-2)	$\pm 4$ kV Contact for each Terminal		
<b>Power</b>			
Power Consumption	2 W Max.		
<b>Mechanical</b>			
Dimensions (L x W x H)	102 mm x 30 mm x 115 mm		
I/O Connector	20 Pin Terminal Block	D-sub 37 Pin	
<b>Environment</b>			
Operating Temperature	$-25 \sim +75^{\circ}\text{C}$		
Storage Temperature	$-30 \sim +80^{\circ}\text{C}$		
Humidity	10 ~ 90% RH, Non-condensing		

## I/O Specifications

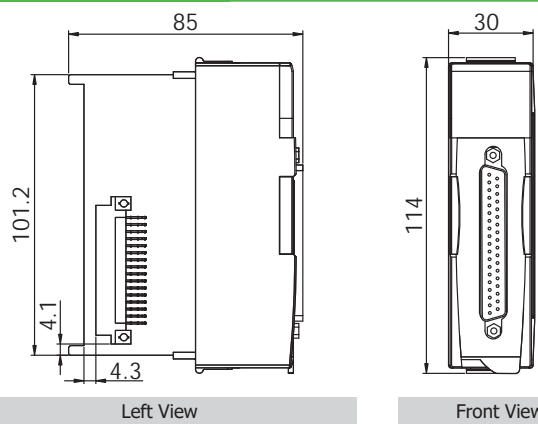
Model	I-8017HW	I-8017HCW	I-8017DW
<b>Analog Input</b>			
Channels	16-ch Single-ended/ 8-ch Differential		
Types	V, mA		
Input Range	$\pm 10$ V, $\pm 5$ V, $\pm 2.5$ V, $\pm 1.25$ V, $\pm 20$ mA		
Current Input Range $\pm 20$ mA	Requires Optional External 125 $\Omega$ Resistor	Jumper Selectable	
Resolution	14-bit		
Sample Rate	Single Channel Polling Mode : 90K S/s Single Channel Interrupt Mode: 50K S/s 8 channel Scan Mode : 16 K S/s		
Accuracy	$\pm 0.1\%$ of FSR		
Zero Drift	$\pm 0.1$ $\mu\text{V}/^{\circ}\text{C}$		
Span Drift	$\pm 10$ ppm/ $^{\circ}\text{C}$		
Input Bandwidth	100 KHz		
Input Impedance	20 K, 200 K, 20 M (Jumper Selectable)		
Individual Channel Configuration	Yes		

**Dimensions (Units: mm)**

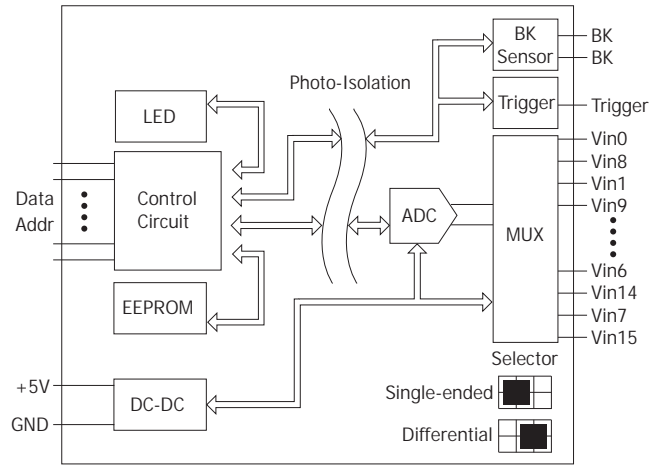
I-8017HW/I-8017HCW



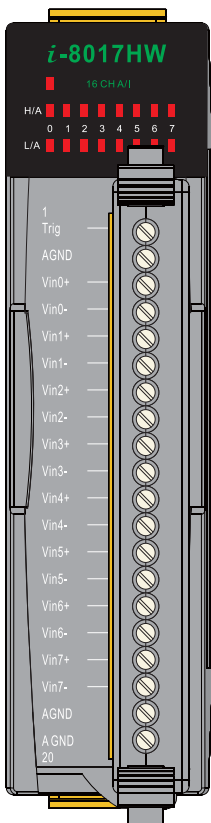
I-8017DW



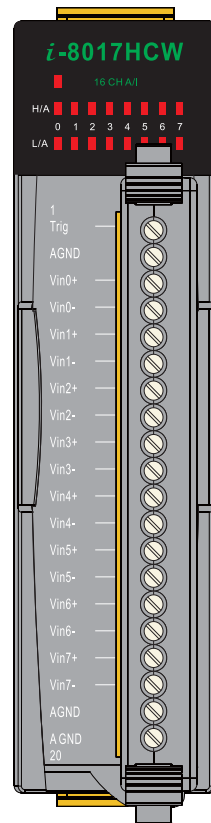
**Internal I/O Structure**



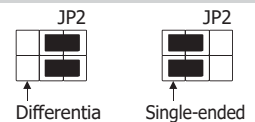
**Pin Assignments**



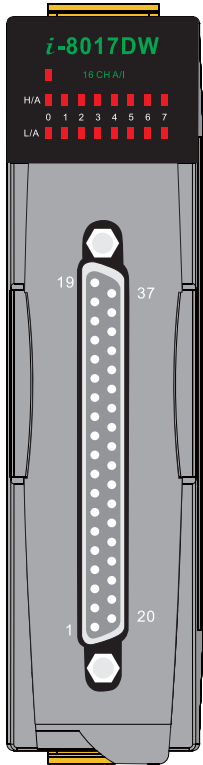
Terminal No.	Pin Assignment	
	Differentia	Single-ended
01	Trig	Trig
02	AGND	AGND
03	Vin0+	Vin0
04	Vin0-	Vin8
05	Vin1+	Vin1
06	Vin1-	Vin9
07	Vin2+	Vin2
08	Vin2-	Vin10
09	Vin3+	Vin3
10	Vin3-	Vin11
11	Vin4+	Vin4
12	Vin4-	Vin12
13	Vin5+	Vin5
14	Vin5-	Vin13
15	Vin6+	Vin6
16	Vin6-	Vin14
17	Vin7+	Vin7
18	Vin7-	Vin15
19	AGND	AGND
20	AGND	AGND



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05	Vin1+	Vin1
06	Vin1-	Vin9
07	Vin2+	Vin2
08	Vin2-	Vin10
09	Vin3+	Vin3
10	Vin3-	Vin11
11	Vin4+	Vin4
12	Vin4-	Vin12
13	Vin5+	Vin5
14	Vin5-	Vin13
15	Vin6+	Vin6
16	Vin6-	Vin14
17	Vin7+	Vin7
18	Vin7-	Vin15
19	AGND	AGND
20	AGND	AGND



## Pin Assignments



Pin Assignment		Terminal No.	Pin Assignment		
Differential	Single-ended		Differential	Single-ended	
AGND	AGND	19	37	BK Sensor	BK Sensor
Trig	Trig	18	36	-	-
AI7-	AI15	17	35	-	-
AI7+	AI17	16	34	-	-
AI6-	AI14	15	33	-	-
AI6+	AI6	14	32	-	-
AI5-	AI13	13	31	-	-
AI5+	AI5	12	30	-	-
AI4-	AI12	11	29	-	-
AI4+	AI4	10	28	-	-
AI3-	AI11	09	27	-	-
AI3+	AI3	08	26	-	-
AI2-	AI10	07	25	-	-
AI2+	AI2	06	24	-	-
AI1-	AI9	05	23	-	-
AI1+	AI1	04	22	-	-
AI0-	AI8	03	21	AGND	AGND
AI0+	AI0	02	20	AGND	AGND
BK Sensor	BK Sensor	01			

## Wire Connections

Input Type	I-8017HW	
	Differential	Single-ended
Voltage Input Wiring		
Current Input Wiring		

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

Input Type	I-8017HCW, I-8017DW	
	Differential	Single-ended
Voltage Input Wiring		
Current Input Wiring		

**Note:** Differential Input Type : Current Input Wiring need to jumper at current input. Single-ended Input Type : Current Input Wiring need to jumper at voltage input ,an options external 125 Ohm resistor is required.

## Ordering Information

I-8017HW CR	8-channel Analog Input Module (Gray Cover) (RoHS)
I-8017DW CR	8-channel Analog Input Module (Gray Cover) (RoHS)
I-8017HCW CR	8-channel Analog Input Module (Gray Cover) (RoHS)

## Accessories

DN-843V-600V CR	3-channel 600 Vdc Voltage Attenuator with non-isolation (RoHS)
DN-843VI-600V	3-channel 600 Vdc Voltage Attenuator with Channel-to-channel Isolation (RoHS)
DN-848VI-10V/80V/150V	8-channel 10/80/150 Vdc Voltage Attenuator with Channel-to-channel Isolation
DN-843I-CT-1/10/20/50	3-channel 1/10/20/50 A Current Transformer (RoHS)
125Ω, 0.1% DIP Resistors	External resistor used for Current Type Input Modules

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
DN-37 Series	I/O Connector Block with DIN-Rail Mounting and 37-pin D-sub Connector (pitch: 5.08 mm)
DN-37-381 Series	I/O Connector Block with DIN-Rail Mounting and 37-pin D-sub Connector (pitch: 3.81 mm)
CA-3705A/3710A/3715A	Male-Female D-sub cable 0.5/1/1.5 M