



## I-8017HW-G I-8017HCW-G I-8017DW-G

8-channel Analog Input Module

### 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



### Introduction

The I-8017HW, I-8017DW and I-8017HCW are high performance Analog Input Module. Up to 16 single-ended or 8 differential input channels are provided with 14-bit of resolution and 90 kS/s sampling rate. Each channel can be configured to an individual input range of  $\pm 10$  VDC,  $\pm 5$  VDC,  $\pm 2.5$  VDC,  $\pm 1.25$  VDC or  $\pm 20$  mA. The modules also provide  $\pm 4$  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  $125 \Omega$  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.



I-8017DW, I-8040W, I-8040PW, I-8041W, I-8041AW, I-8041PW, I-8042W, I-87017DW, I-87024DW, I-87028CDW, I-87040W, I-87040PW, I-87041W, I-87041PW and I-87042W with DN-37-381-A & DB37 Male to Female Cable (Optional)

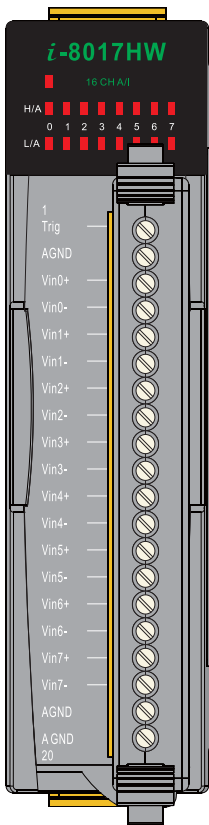
### System Specifications

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 Status Indicator		
<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 (W x L x H)	30 mm x 115 mm x 102 mm	30 mm x 114 mm x 85 mm	
I/O Connector	20 Pin Terminal Block	D-Sub 37 Pin	
<b>Environment</b>			
Operating Temperature	$-25 \sim +75$ °C		
Storage Temperature	$-40 \sim +85$ °C		
Humidity	10 ~ 90% RH, Non-condensing		

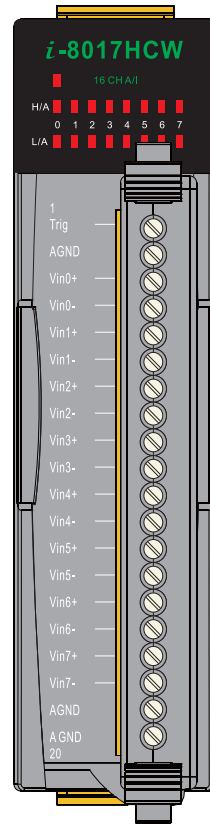
### I/O Specifications

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

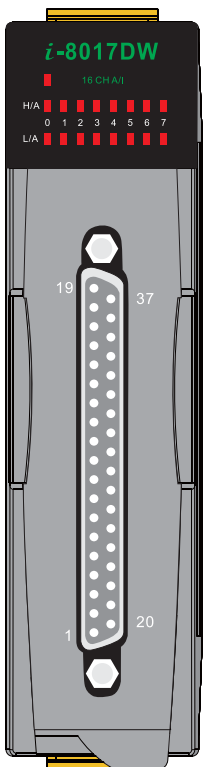
## Pin Assignments



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

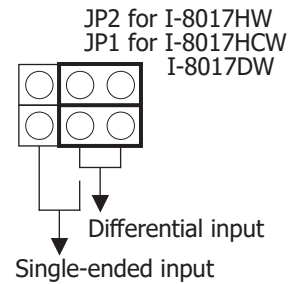


Terminal No.	Pin Assignment	
	Differentia	Single-ended
01	Trig	Trig
02	AGND	AGND
03	Vin0+	Vin0
04	Vin0-	Vin8
05	Vin1+	Vin1
06	Vin1-	Vin9
07	Vin2+	Vin2
08	Vin2-	Vin10
09	Vin3+	Vin3
10	Vin3-	Vin11
11	Vin4+	Vin4
12	Vin4-	Vin12
13	Vin5+	Vin5
14	Vin5-	Vin13
15	Vin6+	Vin6
16	Vin6-	Vin14
17	Vin7+	Vin7
18	Vin7-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

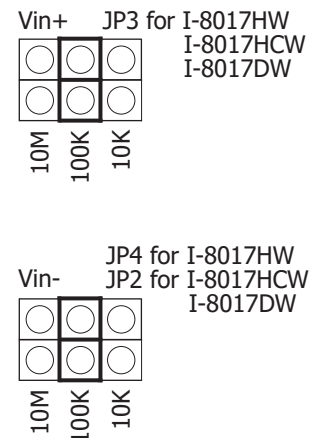


Pin Assignment		Terminal No.	Pin Assignment		
Differentia	Single-ended		Differentia	Single-ended	
AGND	AGND	19	37	BK Sensor	BK Sensor
Trig	Trig	18	36	-	-
AI7-	AI15	17	35	-	-
AI7+	AI17	16	34	-	-
AI6-	AI14	15	33	-	-
AI6+	AI6	14	32	-	-
AI5-	AI13	13	31	-	-
AI5+	AI5	12	30	-	-
AI4-	AI12	11	29	-	-
AI4+	AI4	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			

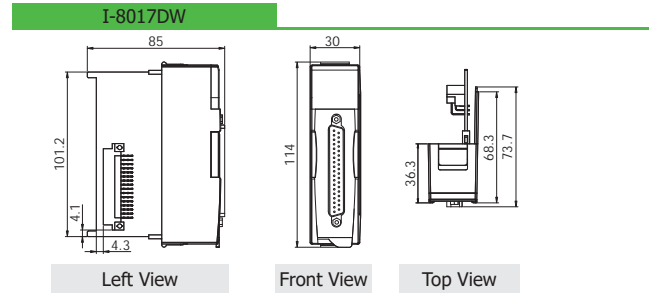
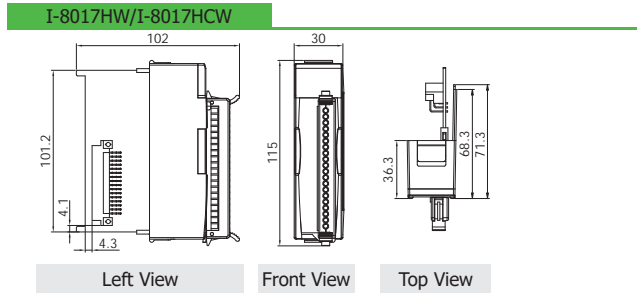
### Input Type Select



### Input Impedance Select



## Dimensions (Units: mm)

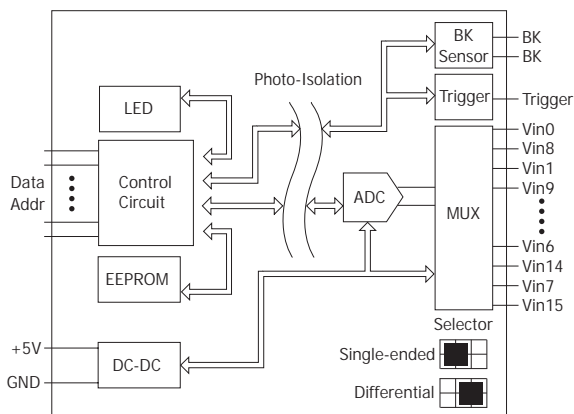


## Wire Connections

I-8017HW		
Input Type	Differential	Single-ended
Voltage Input Wiring		
Current Input Wiring		
<b>Note:</b> When connecting to a current source, an optional external 125 Ω resistor is required.		

I-8017HCW, I-8017DW		
Input Type	Differential	Single-ended
Voltage Input Wiring		
Current Input Wiring		
<b>Note:</b> 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 Ω resistor is required.		

## Internal I/O Structure



## Ordering Information

<b>I-8017HW-G CR</b>	8/16-ch AI Module with 20-Pin Terminal Block (Current Input Mode: Requires Optional External 125 Ω Resistor) (Gray Cover) (RoHS)
<b>I-8017DW-G CR</b>	8/16-ch Analog Input Module with DB37 Connector (Current Input Mode: Jumper Select) (Gray Cover) (RoHS) Includes CA-4002F (DB37 connector Female with plastic cover)
<b>I-8017HCW-G CR</b>	8/16-ch Analog Input Module with 20-pin Terminal Block (Current Input Mode: Jumper Select) (Gray Cover) (RoHS)

## Accessories

I-8017HW-G CR		
	2AB125R	125 Ω, 0.1% DIP Resistor used for Current Type Input Modules
I-8017DW-G CR		
	DN-37-A CR	Female DB37 to Screw Terminal Board (Pitch=5.08 mm) with DIN-rail Mounting (RoHS) Include: CA-3710A (DB37 Male to Female Cable, 90°, 1 M)
	DN-37-381-A CR	Female DB37 to Screw Terminal Board (Pitch=3.81 mm) with DIN-rail Mounting (RoHS) Include: CA-3710A (DB37 Male to Female Cable, 90°, 1 M)
	CA-3705A CR CA-3710A CR CA-3715A CR	DB37 Male to Female Cable, 90°, 0.5 M/1 M/1.5 M (RoHS)
	CA-3710AM CR CA-3720AM CR CA-3730AM CR CA-3750AM CR CA-37100AM CR	DB37 Male to Female, with Molded Cable, 45°, 1 M/2 M/3 M/5 M/10 M (RoHS)