



14-bit, 90 kS/s Sampling Rate Analog Input Module

Introduction

The I-8017HCW, I-8017HW, and I-8017DW is a 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 ± 10 VDC, ± 5 VDC, ± 2.5 VDC, ± 1.25 VDC or ± 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 Ω resistor is needed to measure current source.

On the I-8017HCW and I-8017DW, an internal resistor is jumper-selectable for differential current input. The jumper is factory default setting for voltage measurement on the I-8017HCW and I-8017DW.

Applications

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

I/O Specifications

Model	I-8017HCW	I-8017HW	I-8017DW
Analog Input			
Channels	16, Single-ended/ 8, Differential		
Range	Voltage	± 10 VDC, ± 5 VDC, ± 2.5 VDC, ± 1.25 VDC	
	Current	-20 mA ~ +20 mA (Requires Optional External 125 Ω Resistor)	-20 mA ~ +20 mA, 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	0.01 % of FSR		
Bandwidth	100 kHz		
Zero Drift	± 0.1 μ V/ $^{\circ}$ C		
Span Drift	± 10 ppm/ $^{\circ}$ C		
Input Impedance	20 K, 200 K, 20 M (Jumper Selectable)		

Features

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



System Specifications

Model	I-8017HCW	I-8017HW	I-8017DW
LED Display			
System LED Indicator	1 LED as Power Indicator		
I/O LED Indicator	16 LEDs as I/O Status Indicator		
Isolation			
Intra-module Isolation, Field-to-Logic	2500 VDC		
EMS Protection			
ESD (IEC 61000-4-2)	±4 kV Contact for each Terminal		
Power			
Consumption	2 W Max.		
Mechanical			
Dimensions (W x L x H, Unit:mm)	30 x 115 x 102		30 x 114 x 85
I/O Connector	20 Pin Terminal Block		D-Sub 37 Pin
Environment			
Operating Temperature	-25 ~ +75 °C		
Storage Temperature	-40 ~ +85 °C		
Humidity	10 ~ 90 % RH, Non-condensing		

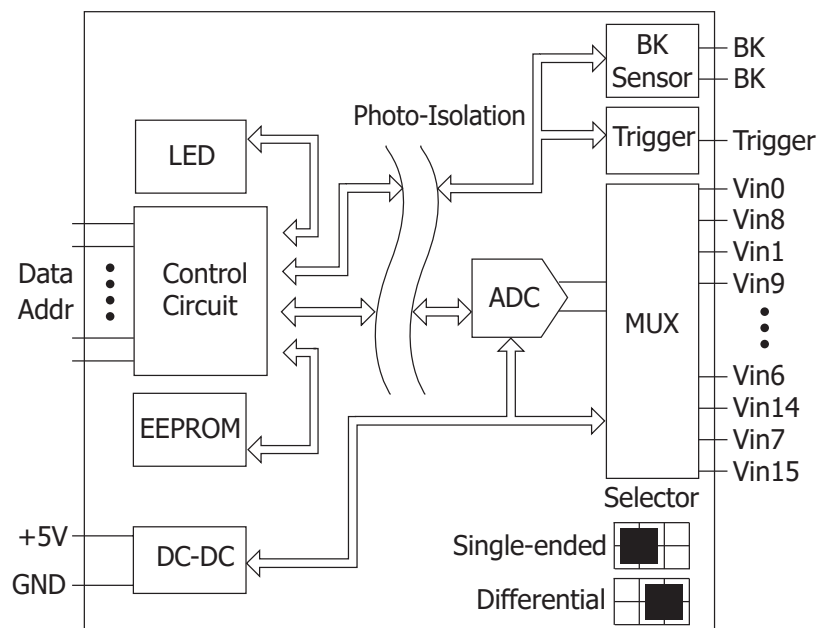
Pin Assignments

Internal I/O Structure

I-8017HCW/I-8017HW

Terminal No.	Pin Assignment	
	Differential	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

(*)Trig :: Reserve, no actually use yet."

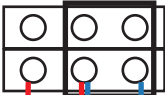


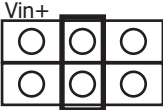
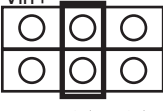
I-8017DW

Pin Assignment		Terminal No.	Pin Assignment	
Differential	Single-ended		Differential	Single-ended
AGND	AGND	19		
Trig	Trig	18		
AI7-	AI15	17		
AI7+	AI17	16		
AI6-	AI14	15		
AI6+	AI6	14		
AI5-	AI13	13		
AI5+	AI5	12		
AI4-	AI12	11		
AI4+	AI4	10		
AI3-	AI11	09		
AI3+	AI3	08		
AI2-	AI10	07		
AI2+	AI2	06		
AI1-	AI9	05		
AI1+	AI1	04		
AI0-	AI8	03		
AI0+	AI0	02		
BK Sensor*	BK Sensor*	01		

BK Sensor*:
Check the cable
is disconnected or not.

Jumper Selection

Input Type Selection		
I-8017HW	JP2	 Differential Input Single-ended Input
I-8017HCW	JP1	
I-8017DW		

Input Impedance Selection		
I-8017HW	JP3	 Vin+ 10M 100K 10K
I-8017HCW		
I-8017DW		
I-8017HW	JP4	 Vin+ 10M 100K 10K
I-8017HCW	JP2	
I-8017DW		

Wire Connections

Input Type	Single-ended		Differential	
	I-8017HCW/I-8017HW	I-8017DW	I-8017HCW/I-8017DW	I-8017HW
Voltage				
Current				

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

Dimensions (unit: mm)

I-8017HCW/I-8017HW			I-8017DW		
Left View	Front View	Top View	Left View	Front View	Top View

Accessories

I-8017DW	
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/CA-3715A CR	
	DB37 Male to Female Cable, 90°, 0.5 M/1 M/1.5 M (RoHS)
CA-3710AM/CA-3720AM/CA-3730AM/CA-3750AM/CA-37100AM 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)

I-8017DW	
2AB125R	
	125 Ω, 0.1% DIP Resistor used for Current Type Input Modules

Ordering Information

I-8017HW-G CR	16/8-Channel Analog Input Module, 14-bit, 90 kS/s, Non-resistor (RoHS)
I-8017HCW-G CR	16/8-Channel Analog Input Module, 14-bit, 90 kS/s (RoHS)
I-8017DW-G CR	16/8-Channel Analog Input Module, 14-bit, 90 kS/s, DB37 (Famle) (RoHS)