



## I-9017 I-9017C-15

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

### Introduction

The I-9017 is a high performance Analog Input module with 14 bits of resolution and a sampling rate of up to 90 kS/s. The I-9017 provides up to 16 single-ended or 8 differential input channels, which is selectable via a jumper setting. The I-9017 has qualification for 4 kV ESD protection as well as 2500 VDC intra-module isolation.

The I-9017-15/I-9017C-15 is a high performance Analog Input module with 14 bits of resolution and a sampling rate of up to 90 kS/s. The I-9017-15 provides up to 30 single-ended or 15 differential input channels, which is selectable via a jumper setting. The I-9017C-15 provides up to 15 differential input channels for current measurement. Both the two modules have qualification for 4 kV ESD protection as well as 2500 VDC intra-module isolation.

### Applications

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

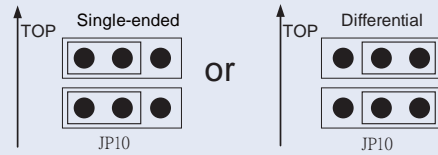
### System Specifications

Model	I-9017	I-9017-15	I-9017C-15
<b>LED Display</b>			
System LED Indicator	1 LED as Power Indicator		
I/O LED Indicator	16 LED as Status Indicator	-	
<b>Isolation</b>			
Intra-module Isolation, Field-to-Logic	2500 VDC		
EMS Protection			
ESD (IEC 61000-4-2)	±4 kV Contact for each Terminal; ±8 kV Air for Random Point		
<b>Power</b>			
Power Consumption	2 W Max.		
<b>Mechanical</b>			
Dimensions (W x L x H)	31 mm x 134 mm x 144 mm		
<b>Environment</b>			
Operating Temperature	-25 ~ +75 °C		
Storage Temperature	-40 ~ +85 °C		
Humidity	10 ~ 90% RH, Non-condensing		

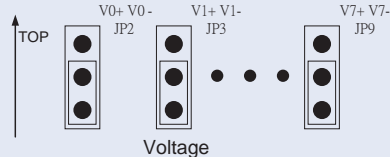
### Features

#### I-9017

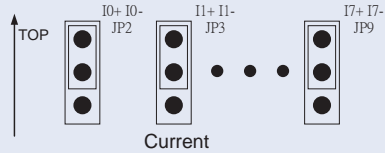
- 16 Single-ended/8 Differential Input Channels Jumper Selectable (JP10)



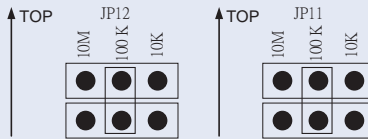
- Input Voltage Range: ±1.25 V, ±2.5 V, ±5 V, ±10 V Jumper Selectable (JP2 ~ JP9)



- Input Current Range: 0 mA ~ ±20 mA Jumper Selectable (JP2 ~ JP9)



- Input Impedance 20 K, 200 K, 20 M Jumper Selectable (JP12, JP11)



#### I-9017-15

- 30 Single-ended/15 Differential Input Channels (jumper selectable)
- Input Range: ±1.25 V, ±2.5 V, ±5 V, ±10 V, ±20 mA

#### I-9017C-15

- 15 Differential Input Channels
- Input Range: ±20 mA

#### 14-bit 100 KHz AD Converter

#### A/D Trigger Mode: Polling, Interrupt

#### 4 kV ESD Protection

#### Wide Operating Temperature Range: -25 to +75 °C

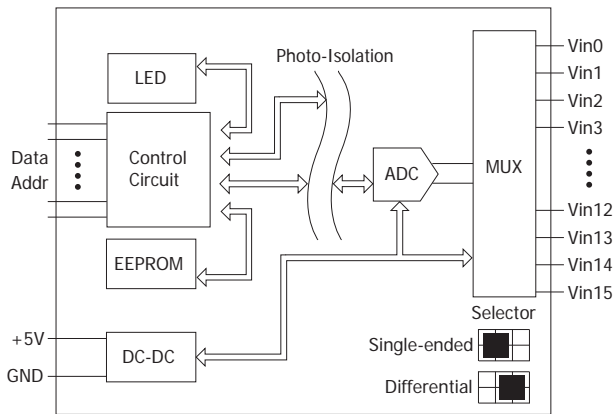


## I/O Specifications

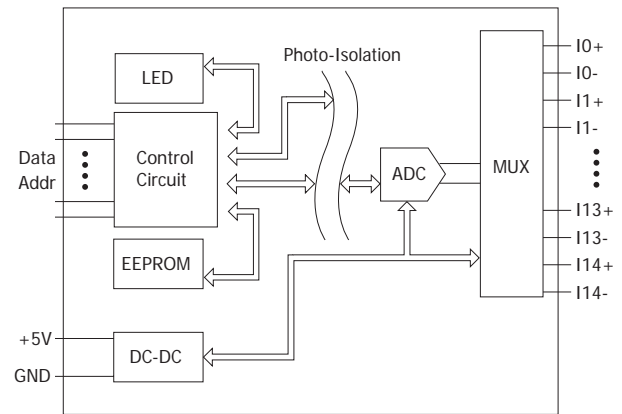
Model	I-9017	I-9017-15	I-9017C-15
<b>Analog Input</b>			
Channels	16-ch Single-ended/8-ch Differential	30-ch Single-ended/15-ch Differential	15-ch Differential
Voltage Input Range	$\pm 1.25, \pm 2.5, \pm 5 \text{ V}, \pm 10 \text{ V}$		-
Current Input Range	-20 mA ~ +20 mA	-20 mA ~ +20 mA (Requires Optional External 125 $\Omega$ Resistor)	-20 mA ~ +20 mA
Resolution	14-bit		
Sample Rate	Single Channel Polling Mode: 90K S/s Single Channel Interrupt Mode: 50K S/s 16-channel Scan Mode: 16 K S/s	Single Channel Polling Mode: 90K S/s Single Channel Interrupt Mode: 50K S/s 15-channel Scan Mode: 16 K S/s	
Accuracy	$\pm 0.1\%$ of FSR		
Bandwidth	100 KHz		
Zero Drift	$\pm 0.1 \text{ uV}/^\circ\text{C}$		
Span Drift	$\pm 10 \text{ ppm}/^\circ\text{C}$		
Input Impedance	20 K, 200 K, 20 M (Jumper Selectable)		125 $\Omega$

## Internal I/O Structure

I-9017/I-9017-15

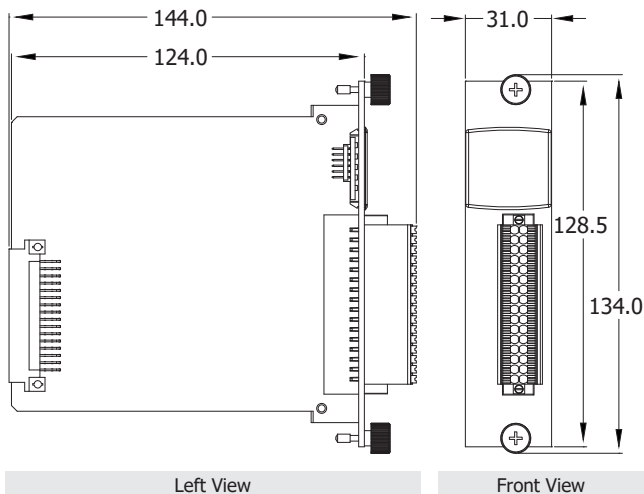


I-9017C-15

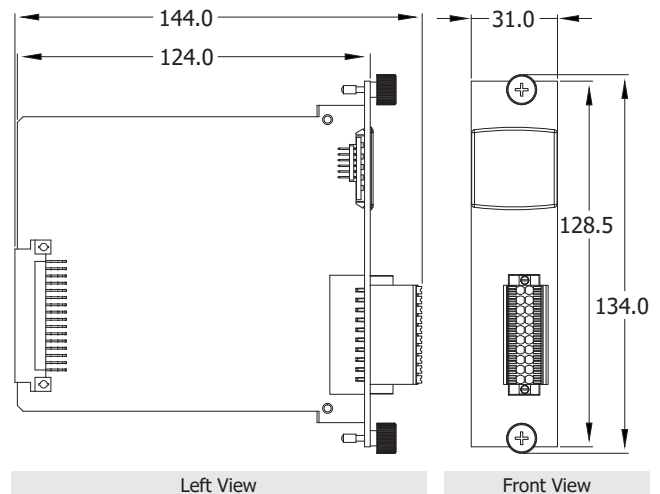


## Dimensions (Units: mm)

I-9017-15/I-9017C-15



I-9017



## Wire Connections

**I-9017**

Input Type	Differential
Input Wiring	
Voltage	
Current	
Input Type	Single-ended
Input Wiring	
Voltage	
Current	

**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.

**I-9017-15**

Input Type	Differential
Voltage	
Current	
Input Type	Single-ended
Voltage	
Current	

**I-9017C-15**

Input Type	Differential
Current	

## Ordering Information

<b>I-9017 CR</b>	14-bit, 90 K sampling rate, 16/8-channel analog input module (RoHS)
<b>I-9017-15 CR</b>	14-bit, 90 K sampling rate, 30/15-channel analog input module (RoHS)
<b>I-9017C-15 CR</b>	14-bit, 90 K sampling rate, 15-channel analog input module (RoHS)

## Pin Assignments

**I-9017**

Pin Assignment		Terminal No.	Pin Assignment		
Differential	Single-ended		Differential	Single-ended	
Trig+	Trig+	1	11	Trig-	Trig-
V0+(I0+)	Vin0	2	12	V0-(I0-)	Vin8
V1+(I1+)	Vin1	3	13	V1-(I1-)	Vin9
V2+(I2+)	Vin2	4	14	V2-(I2-)	Vin10
V3+(I3+)	Vin3	5	15	V3-(I3-)	Vin11
V4+(I4+)	Vin4	6	16	V4-(I4-)	Vin12
V5+(I5+)	Vin5	7	17	V5-(I5-)	Vin13
V6+(I6+)	Vin6	8	18	V6-(I6-)	Vin14
V7+(I7+)	Vin7	9	19	V7-(I7-)	Vin15
AGND	AGND	10	20	AGND	AGND

**I-9017-15**

Pin Assignment		Terminal No.	Pin Assignment		
V0+	Vin0		01	17	V0 -
V1+	Vin1	02	18	V1 -	Vin16
V2+	Vin2	03	19	V2 -	Vin17
V3+	Vin3	04	20	V3 -	Vin18
V4+	Vin4	05	21	V4 -	Vin19
V5+	Vin5	06	22	V5 -	Vin20
V6+	Vin6	07	23	V6 -	Vin21
V7+	Vin7	08	24	V7 -	Vin22
V8+	Vin8	09	25	V8 -	Vin23
V9+	Vin9	10	26	V9 -	Vin24
V10+	Vin10	11	27	V10 -	Vin25
V11+	Vin11	12	28	V11 -	Vin26
V12+	Vin12	13	29	V12 -	Vin27
V13+	Vin13	14	30	V13 -	Vin28
V14+	Vin14	15	31	V14 -	Vin29
AGND	AGND	16	32	AGND	AGND

**I-9017C-15**

Pin Assignment	Terminal No.	Pin Assignment
I0+	01	I0 -
I1+	02	I1 -
I2+	03	I2 -
I3+	04	I3 -
I4+	05	I4 -
I5+	06	I5 -
I6+	07	I6 -
I7+	08	I7 -
I8+	09	I8 -
I9+	10	I9 -
I10+	11	I10 -
I11+	12	I11 -
I12+	13	I12 -
I13+	14	I13 -
I14+	15	I14 -
AGND	16	AGND