



## I-9014

250 kS/s, 16-bit, 16/8-channel  
Voltage/Current Input Module

## I-9014C

250 kS/s, 16-bit, 8-channel  
Current Input Module

### Features

- Input Type
  - I-9014: 16 single-ended/8 differential input channels
  - I-9014C: 8 differential input channels
- Input Range
  - I-9014:  $\pm 1.25$  V,  $\pm 2.5$  V,  $\pm 5$  V,  $\pm 10$  V,  $\pm 20$  mA
  - I-9014C:  $\pm 20$  mA
- 16-bit, 250 kHz ADC converter
- 4 K-samples FIFO buffer
- External trigger mode: post-trigger
- Internal/external trigger start
- Magic Scan



### Introduction

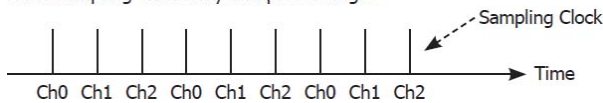
The I-9014/I-9014C is a high performance Analog Input module. The I-9014 provides up to 16 single-ended or 8 differential input channels, while the I-9014C provides up to 8 differential input channels. Both modules feature 16-bit resolution, 250 kS/s sampling rate, and a 4 k sample FIFO buffer, as well as providing 2500 VDC isolation protection.

The I-9014/I-9014C module contains an impressive scan function called Magic Scan, which is able to improve many of the functions and meet the demands of high-end users. Magic Scan function can scan the individual input channels at different input range and when performing single channel scan, the sampling rate can be maintained at 250 kS/s.

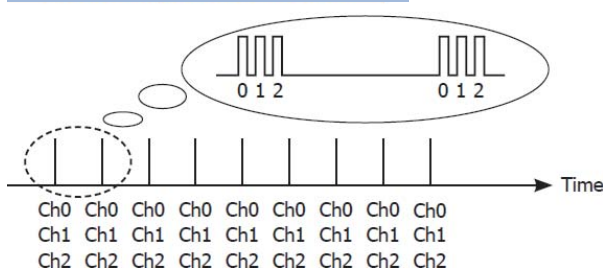
The Magic Scan function on the I-9014/I-9014C module can be operated in two ways. The first is a standard scan and the other is a Virtual Sample and Hold function. The cost of almost all AI Cards is high if it includes a Sample and Hold function, but ICP DAS can now offer a low-cost alternative.

#### Standard Mode

Each sampling clock only samples a single

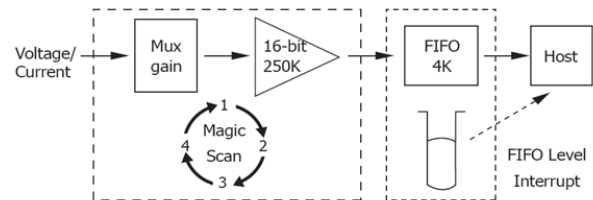


#### Virtual Sample and Hold Mode



The I-9014/I-9014C module includes a 4 k sample onboard FIFO buffer for A/D conversion. The new FIFO technology uses a trigger interrupt signal, meaning that if the sampled count is higher than the pre-defined FIFO level, an interrupt signal will notify the host.

With the Magic Scan function and 4 k FIFO buffer, the I-9014/I-9014C can easily implement high-accuracy, high-speed and time-critical data acquisition applications.



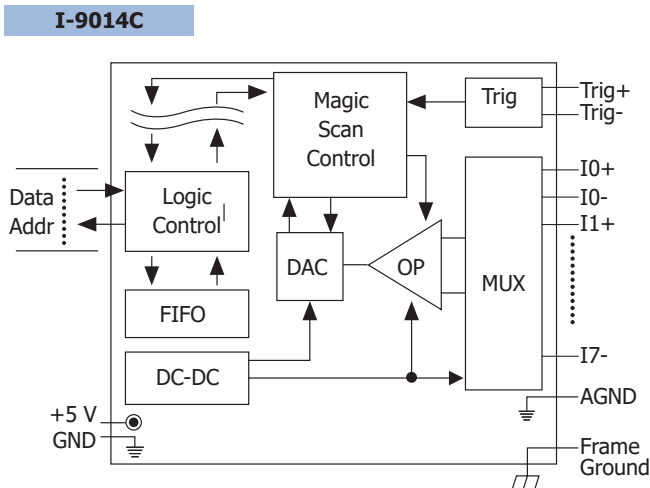
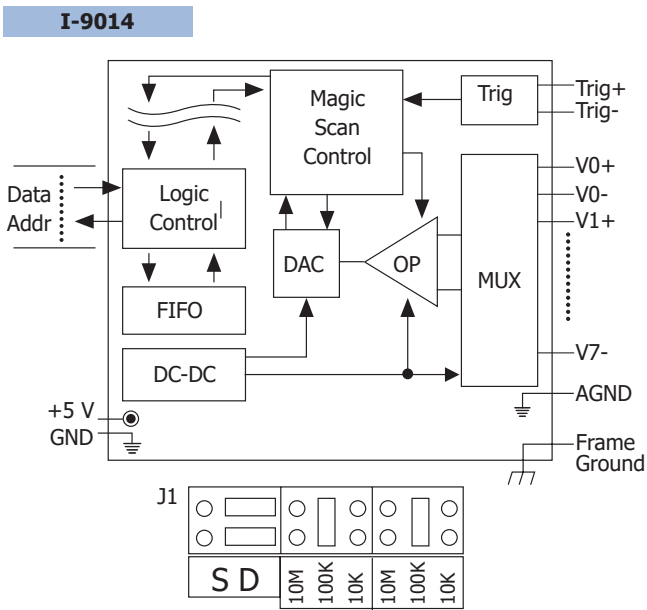
### I/O Specifications

### System Specifications

Model	I-9014	I-9014C
<b>LED Display</b>		
System LED Indicator	Yes	
<b>Isolation</b>		
Intra-module Isolation, Field-to-Logic	2500 VDC	
<b>Power</b>		
Consumption	2.5 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	

Model	I-9014	I-9014C	
<b>Analog Input</b>			
Channel	Single-ended	16	-
	Differential	8	
Input Range	Voltage	$\pm 1.25$ V, $\pm 2.5$ V, $\pm 5$ V, $\pm 10$ V	-
	Current	-20 ~ +20 mA (I-9014 requires Optional External 125 $\Omega$ Resistor)	
Resolution	16-bit		
Sample Rate	Single Channel Pacer Mode: 250 kS/s Single Channel Polling Mode: 45 kS/s 8 Channels Polling Mode: 25 kS/s		
FIFO Size	4 k words		
Accuracy	0.05 % of FSR		
Trigger Mode	Polling, Pacer (Magic Scan)		
Overvoltage protection	-45 ~ +60 VDC		
Input Impedance	20 K, 200 K, 20 M (Jumper Selectable)	125 $\Omega$	

## Internal I/O Structure



## Wire Connections

I-9014		
Input Type	Differential	Singled-ended
Voltage	mV/V	mV/V
Current	125Ω	125Ω

I-9014C	
Input Type	Differential
Current	

## Pin Assignments



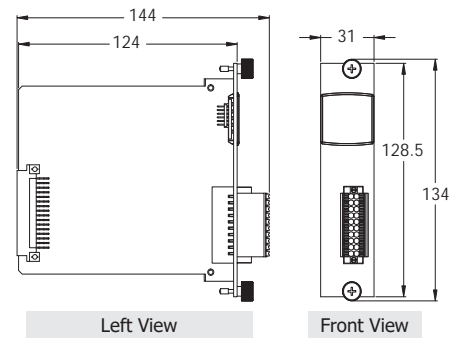
I-9014 Differential		
Pin Assignment	Terminal No.	Pin Assignment
Trig+	01	11 Trig-
V0+	02	12 V0-
V1+	03	13 V1-
V2+	04	14 V2-
V3+	05	15 V3-
V4+	06	16 V4-
V5+	07	17 V5-
V6+	08	18 V6-
V7+	09	19 V7-
AGND	10	20 F.G.

I-9014 Single-ended		
Pin Assignment	Terminal No.	Pin Assignment
Trig+	01	11 Trig-
V0	02	12 V8
V1	03	13 V9
V2	04	14 V10
V3	05	15 V11
V4	06	16 V12
V5	07	17 V13
V6	08	18 V14
V7	09	19 V15
AGND	10	20 F.G.



I-9014C Differential		
Pin Assignment	Terminal No.	Pin Assignment
Trig+	01	11 Trig-
I0+	02	12 I0-
I1+	03	13 I1-
I2+	04	14 I2-
I3+	05	15 I3-
I4+	06	16 I4-
I5+	07	17 I5-
V6+	08	18 I6-
I7+	09	19 I7-
AGND	10	20 F.G.

## Dimensions (Units: mm)



## Ordering Information

<b>I-9014 CR</b>	16-bit, 250 K sampling rate, 16/8-channel Analog Input Module (RoHS)
<b>I-9014C CR</b>	R 16-bit, 250 K sampling rate, 8-channel Analog Input Module (RoHS)