



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: ± 1.25 V, ± 2.5 V, ± 5 V, ± 10 V, ± 20 mA
 - I-9014C: ± 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

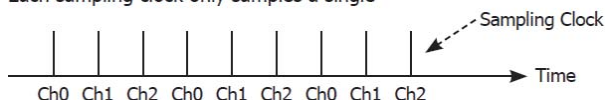
The I-9014/I-9014C is a high performance Analog Input module. The I-9014 provides up to 16 single-ended or 8 differential input channels, while the I-9014C provides up to 8 differential input channels. Both modules feature 16-bit resolution, 250 kS/s sampling rate, and a 4 k sample FIFO buffer, as well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

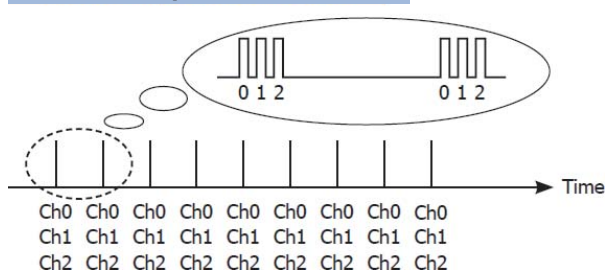
The Magic Scan function on the I-9014/I-9014C module can be operated in two ways. The first is a standard scan and the other is a Virtual Sample and Hold function. The cost of almost all AI Cards is high if it includes a Sample and Hold function, but ICP DAS can now offer a low-cost alternative.

Standard Mode

Each sampling clock only samples a single

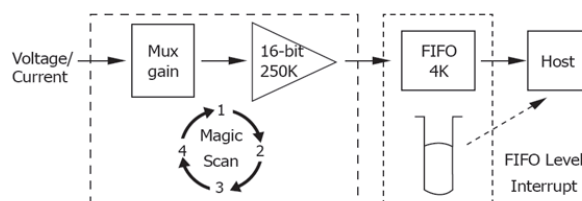


Virtual Sample and Hold Mode



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

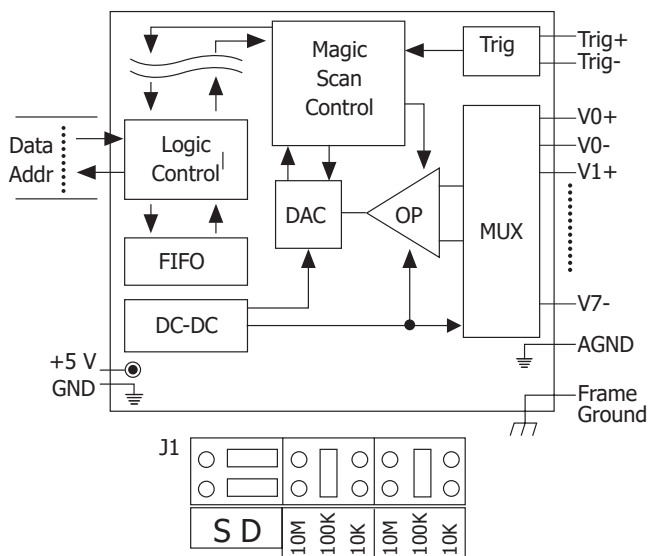
System Specifications

| Model | I-9014 | I-9014C |
|--|------------------------------|---------|
| LED Display | | |
| System LED Indicator | Yes | |
| Isolation | | |
| Intra-module Isolation, Field-to-Logic | 2500 VDC | |
| Power | | |
| Consumption | 2.5 W Max. | |
| Mechanical | | |
| Dimensions (W x L x H) | 31 mm x 134 mm x 144 mm | |
| Environment | | |
| Operating Temperature | -25 ~ +75 °C | |
| Storage Temperature | -40 ~ +85 °C | |
| Humidity | 10 ~ 90 % RH, Non-condensing | |

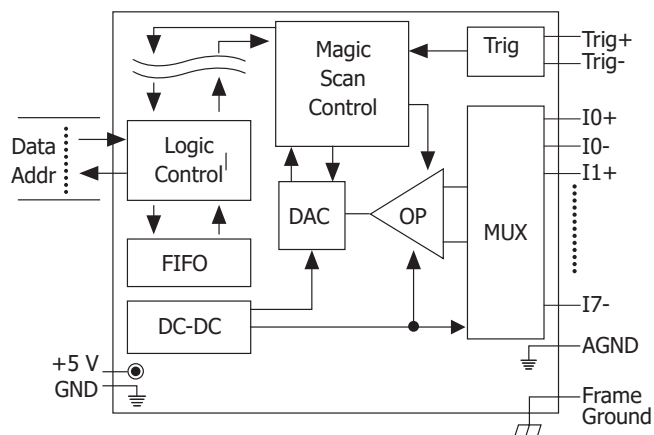
| Model | I-9014 | | I-9014C |
|------------------------|--------------|---|---------|
| Analog Input | | | |
| Channel | Single-ended | 16 | - |
| | Differential | 8 | |
| Input Range | Voltage | ±1.25 V, ±2.5 V, ±5 V, ±10 V | - |
| | Current | -20 ~ +20 mA (I-9014 requires Optional External 125 Ω Resistor) | |
| 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 Ω |

Internal I/O Structure

I-9014



I-9014C

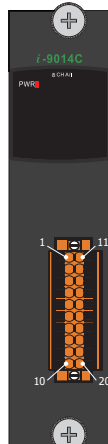


Pin Assignments



| 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. |



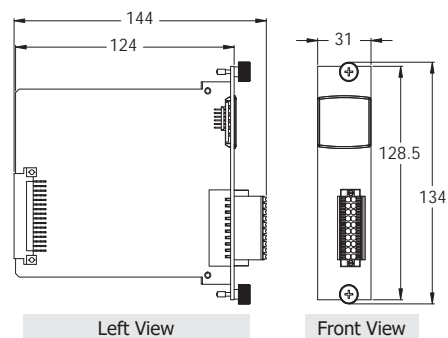
| I-9014C | | Differential | |
|----------------|--------------|--------------|----------------|
| Pin Assignment | Terminal No. | | Pin Assignment |
| Trig+ | 01 | 11 | Trig- |
| I0+ | 02 | 12 | I0- |
| I1+ | 03 | 13 | I1- |
| I2+ | 04 | 14 | I2- |
| I3+ | 05 | 15 | I3- |
| I4+ | 06 | 16 | I4- |
| I5+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

Wire Connections

| I-9014 | | |
|------------|----------------------|---------------------|
| Input Type | Differential | Singled-ended |
| Voltage | mV/V Vin+ Vin- | mV/V Vin AGND |
| Current | Vin+ Vin- 125Ω | Vin AGND 125Ω |

| I-9014C | |
|------------|--------------|
| Input Type | Differential |
| Current | I+ I- |

Dimensions (Units: mm)



Ordering Information

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