



## I-9012

200 kS/s, 16-bit 8 channels  
Simultaneously Sampled Analog Input Module

### Features

- 16-bit AD Converter
- Simultaneous Sampling
- 200 kHz sample rate for a single channel
- 8 KB FIFO
- 4 kV ESD Protection
- 2500 VDC Intra-module Isolation
- Wide Operating Temperature Range: -25 to +75 °C



### Introduction

The I-9012 is a high-performance Analog Input module that provides 16-bit resolution and a sampling rate of up to 200 kS/s per channel. The I-9012 provide eight input channels, and the input range is programmable to  $\pm 5$  V or  $\pm 10$  V. The Trigger Output and the Trigger Input Pin cloud allow a multitude of I-9012 modules to be simultaneously sampled. The module also provides 4 kV ESD protection and 2500 VDC intra-module isolation.

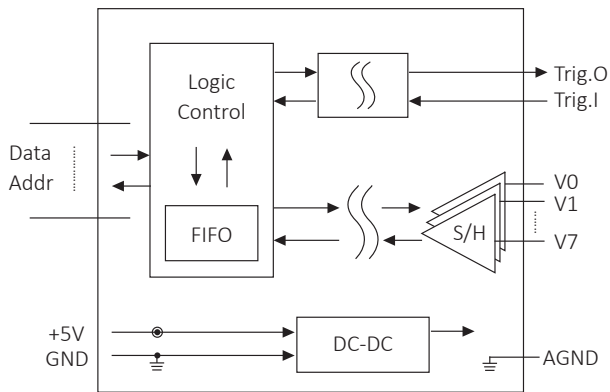
### System Specifications

| LED Display                            |   |
|--|---|
| System LED Indicator                   | 1 LED as Power Indicator  |
| I/O LED Indicator                      | Yes   |
| Isolation                              |   |
| Intra-module Isolation, Field-to-Logic | 2500 VDC  |
| EMS Protection                         |   |
| ESD (IEC 61000-4-2)                    | $\pm 4$ kV Contact for each Terminal<br>$\pm 8$ kV Air for Random Point |
| Power                                  |   |
| Power Consumption                      | 1 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   |

### I/O Specifications

| Analog Input    |  |                                  |
|-----------------|--|----------------------------------|
| Channels        | 8-ch single-ended  |                                  |
| Input Range     | $\pm 5$ V, $\pm 10$ V  |                                  |
| Resolution      | 16-bit   |                                  |
| Sample Rate     | Single Channel Pacer Internal Mode: 200 kS/s<br>Single Channel Pacer External Mode: 200 kS/s<br>Single Channel Polling Mode: 40 kS/s |                                  |
| FIFO            | 8 KB   |                                  |
| Accuracy        | 0.05 % of FSR @ 25 °C  |                                  |
| AD Trigger Mode | Polling  | Software Trigger                 |
|                 | Pacer  | Internal Clock<br>External Clock |
| Trigger Output  |  |                                  |
| Frequency Range | 16 Hz to 200 kHz   |                                  |
| Compatibility   | 5 V/TTL  |                                  |
| Output Type     | Pluse  |                                  |
| Pluse Width     | 100 ns/10 MHz  |                                  |
| Trigger Input   |  |                                  |
| Frequency Range | 1 Hz to 200 KHz  |                                  |
| Trig Edge       | Falling Edge   |                                  |
| High Logic      | < 5 V  |                                  |
| Low Logic       | > 0.8 V  |                                  |

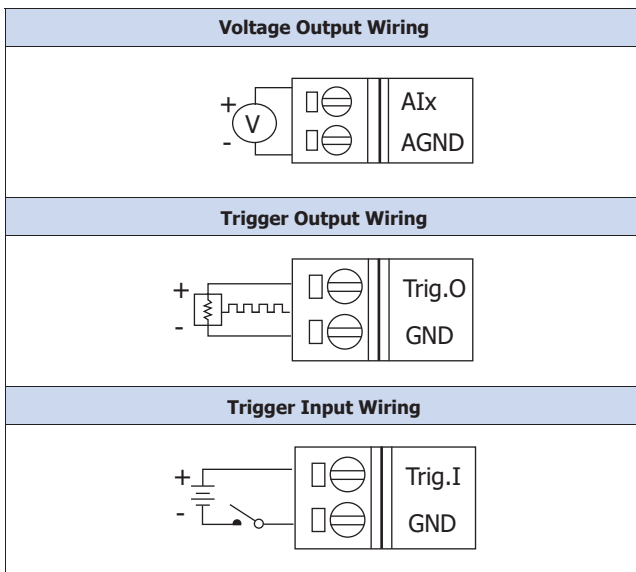
## Internal I/O Structure



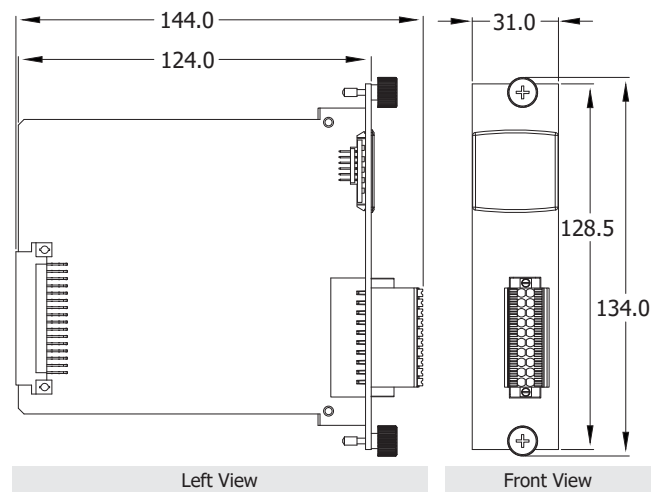
## Pin Assignments

| Pin Assignment | Terminal No. | Pin Assignment |
|----------------|--------------|----------------|
| Trig. O        | 01           | 11 GND         |
| Trig. I        | 02           | 12 GND         |
| AI0            | 03           | 13 AGND        |
| AI1            | 04           | 14 AGND        |
| AI2            | 05           | 15 AGND        |
| AI3            | 06           | 16 AGND        |
| AI4            | 07           | 17 AGND        |
| AI5            | 08           | 18 AGND        |
| AI6            | 09           | 19 AGND        |
| AI7            | 10           | 20 AGND        |

## Wire Connections



## Dimensions (Units: mm)



## Ordering Information

|                  |   |
|------------------|---|
| <b>I-9012 CR</b> | 200 kS/s, 16-bit 8 channels Simultaneously Sampled Analog Input Module (RoHS) |
|------------------|---|