



**I-7012(D)**

**I-7012F(D)**

1-ch AI Module

### Features

- Current and Voltage Inputs
- High Resolution: 16-bit
- 50 Hz Event Counter for Digital Input
- High/Low Alarm for Digital Output
- I-7012F(D)
  - 100 Hz High Sampling Rate
- Built-in Dual Watchdog



### Introduction

The I-7012 is an Analog Input module that is designed for both voltage and current input types. In addition, the module provides 1 Digital Input channel as a 50 Hz event counter and 2 Digital Output channels that can be used as a high/low alarm. The I-7012 also features 3000 VDC intra-module isolation. The I-7012F is an Analog Input module that is designed for both voltage and current input types. The sampling rate for the I-7012F is adjustable and can be switched between fast mode and normal mode depending on your requirements. In addition, the module provides 1 Digital Input channel as a 50 Hz event counter and 2 Digital Output channels that can be used as a high/low alarm. The I-7012F also features 3000 VDC intra-module isolation.

### Specifications

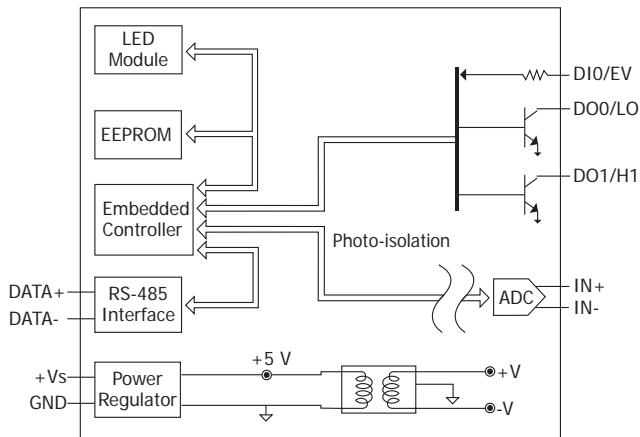
Model	I-7012	I-7012F
	I-7012D	I-7012FD
<b>CPU Module</b>		
Watchdog Timer	Module, Communication (Programmable)	
<b>Display</b>		
Type	7012D/FD	5-Digit 7 Segment LED Display
<b>Isolation</b>		
Intra-module Isolation	3000 VDC	
<b>EMS Protection</b>		
EFT (IEC 61000-4-4)	±4 kV to Power Line	
ESD (IEC 61000-4-2)	±2 kV Contact for Each Terminal	
Surge (IEC 61000-4-5)	±0.5 kV for Power Line	
<b>LED Indicators</b>		
Status	1 x Power and Communication	
<b>Analog Input</b>		
Channels	1 Differential	
Type	Voltage, Current	
Range	±150 mV, ±500 mV, ±1 V, ±5 V, ±10 V, ±20 mA (requires optional external 125 Ω resistor)	
Resolution	16-bit	
Accuracy	±0.05%	Normal Mode: ±0.05% Fast Mode: ±0.25%
Sampling Rate	10 Hz	Normal Mode: 10 Hz Fast Mode: 100 Hz
Input Impedance	20 MΩ	
Common Voltage Protection	±100 VDC	
Overvoltage Protection	±120 VDC	
<b>Digital Input/Counter</b>		
Channels	1	
Type	Dry Contact	
Sink/Source (NPN/PNP)	Source	
ON Voltage Level	Close to GND	

### Applications

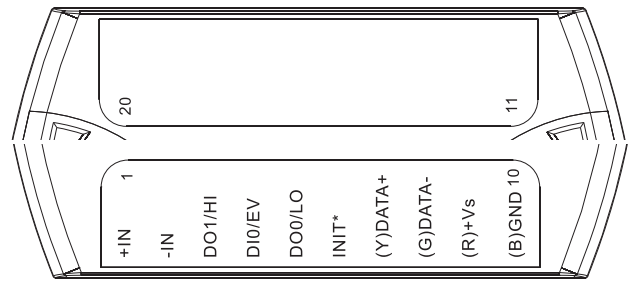
- Building Automation
- Factory Automation
- Machine Automation
- Remote Maintenance
- Remote Diagnosis
- Testing Equipment

Model	I-7012/F	I-7012D/FD
OFF Voltage Level	Open	
Max. Counts	65535 (16-bit)	
Frequency	50 Hz	
Input Impedance	3 kΩ	
Overvoltage Protection	±30 VDC	
<b>Digital Output</b>		
Channels	2	
Type	Open Collector	
Sink/Source (NPN/PNP)	Sink	
Load Voltage	+3.5 ~ +30 VDC	
Load Current	30 mA/Channel	
Power on Value	Programmable	
Safe Value	Programmable	
<b>COM Ports</b>		
Ports	1 x RS-485	
Baud Rate	1200 ~ 115200 bps	
Data Format	(N, 8, 1)	
Protocol	DCON	
<b>Power</b>		
Reverse Polarity Protection	Yes	
Input Range	+10 ~ +30 VDC	
Consumption	1.3 W	1.9 W
<b>Mechanical</b>		
Dimensions (mm)	72 x 123 x 35 (W x L x H)	
Installation	DIN-Rail Mounting	
<b>Environment</b>		
Operating Temperature	-25 ~ +75 °C	
Storage Temperature	-40 ~ +85 °C	
Humidity	10 ~ 95% RH, Non-condensing	

## Internal I/O Structure



## Pin Assignments



## Wire Connections

Voltage Input		Current Input	
		<p>Requires an Optional External 125 Ω Resistor</p>	
Digital Input/Counter	Readback as 1	Readback as 0	
Dry Contact	Open	Closed to GND	
Digital Output	ON State Readback as 1	OFF State Readback as 0	
Resistance Load			
Inductance Load			

## Ordering Information

<b>I-7012 CR</b>	1-ch AI Module using DCON Protocol (Blue Cover) (RoHS)
<b>I-7012-G CR</b>	1-ch AI Module using DCON Protocol (Gray Cover) (RoHS)
<b>I-7012D CR</b>	1-ch AI Module with LED Display using DCON Protocol (Blue Cover) (RoHS)
<b>I-7012F CR</b>	1-ch AI (Fast Sampling Version) Module using DCON Protocol (16-bit) (Blue Cover) (RoHS)
<b>I-7012FD CR</b>	1-ch AI (Fast Sampling Version) Module with LED Display using DCON Protocol (16-bit) (Blue Cover) (RoHS)

## Accessories

<b>tM-7520U CR</b>	Tiny Isolated RS-232 to RS-485 Converter (RoHS)	<b>I-7514U-G CR</b>	Isolated 4-channel RS-485 Repeater/Hub/Splitter (Gray Cover) (RoHS)
<b>tM-7561 CR</b>	Tiny USB to Isolated RS-485 Converter with CA-USB18 Cable (RoHS)	<b>SG-770 CR</b>	7/14 channel Surge Protector (RoHS)
<b>tM-SG4 CR</b>	RS-485 Pull-high/Pull-low and Termination Resistor Module (RoHS)	<b>SG-3000 Series</b>	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers