

**I-7012(D)**

**I-7012F(D)**

1-channel Analog Input Module

### Features

- Current Input, Voltage Input
- High Resolution: 16-bit
- High/Low Alarm for Digital Output
- 50 Hz Event Counter for Digital Input
- 100 Hz High Sampling Rate
- 3000 V<sub>DC</sub> Intra-Module Isolation
- Dual Watchdog
- Wide Operating Temperature Range: -25 ~ +75°C



### Introduction

I-7012 is an analog input module. Its input type includes both voltage and current. Besides, it provide 1-channel digital input as 50 Hz event counter and 2-channel digital output as high/low alarm. I-7012 also features 3000 V<sub>DC</sub> intra-module isolation.

I-7012F is an analog input module. Its input type includes both voltage and current. The sampling rate of I-7012F is changeable; there are fast mode and normal mode for your consideration. Besides, it provide 1-channel digital input as 50 Hz event counter and 2-channel digital output as high/low alarm. I-7012F also features 3000 V<sub>DC</sub> intra-module isolation.

### Applications

Building Automation, Factory Automation, Machine Automation, Remote Maintenance, Remote Diagnosis, Testing Equipment.

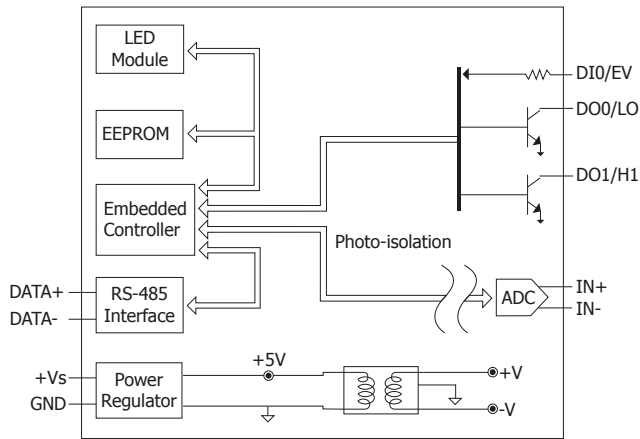
### System Specifications

Models	I-7012	I-7012D	I-7012F	I-7012FD
<b>Communication</b>				
Interface	RS-485			
Format	N, 8, 1			
Baud Rate	1200 ~ 115200 bps			
Protocol	DCON		Modbus RTU, DCON	
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)			
<b>LED Indicator/Display</b>				
System LED Indicator	Yes, 1 LED as Power/Communication Indicator			
I/O LED Indicator	-			
7-Segment LED Display	-	Yes	-	Yes
<b>Isolation</b>				
Intra-Module Isolation, Field-to-Logic	3000 V <sub>DC</sub>			
<b>EMS Protection</b>				
ESD (IEC 61000-4-2)	+/-2 kV			
EFT (IEC 61000-4-4)	-			
<b>Power</b>				
Reverse Polarity Protection	Yes			
Input Range	10 ~ 30 V <sub>DC</sub>			
Consumption	1.3 W	1.9 W	1.3 W	1.9 W
<b>Mechanical</b>				
Dimensions (W x L x H)	72 mm x 123 mm x 35 mm			
Installation	DIN-Rail or Wall Mounting			
<b>Environment</b>				
Operating Temperature	-25 ~ +75°C			
Storage Temperature	-40 ~ +85°C			
Humidity	10 ~ 95% RH, Non-condensing			

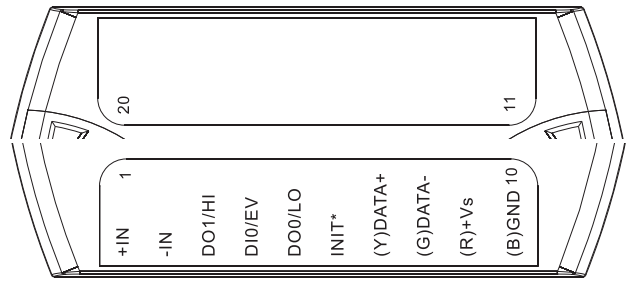
### I/O Specifications

Models	I-7012	I-7012D	I-7012F	I-7012FD
<b>Analog Input</b>				
Channels	1			
Wiring	Differential			
Input Range	+/-150 mV, +/-500 mV, +/-1 V, +/-5 V, +/-10 V, +/-20 mA (requires optional external 125 Ω resistor)			
Resolution	16-bit		12/16-bit	
Accuracy	Normal Mode	0.1%		
	Fast Mode	-	0.5%	
Sampling Rate	Normal Mode	10 Hz		
	Fast Mode	-	100 Hz	
Input Impedance	20 M			
Common Voltage Protection	+/-10 V <sub>DC</sub>			
Individual Channel Configuration	-			
Overvoltage Protection	+/-15 V <sub>DC</sub>			
<b>Digital Input</b>				
Channels	1			
Contact	Dry			
Sink/Source (NPN/PNP)	Source			
On Voltage Level	Close to GND			
Off Voltage Level	Open			
Counter (50 Hz, 16-bit)	Yes			
Input Impedance	3 kΩ			
Overvoltage Protection	+/-30 V <sub>DC</sub>			
<b>Digital Output</b>				
Channels	2			
Type	Open Collector			
Sink/Source (NPN/PNP)	Sink			
Load Voltage	3.5 ~ 30 V <sub>DC</sub>			
Max. Load Current	30 mA/Channel			
Power-on Value	Yes			
Safe Value	Yes			

### Internal I/O Structure



### Pin Assignments



### Wire Connections

Voltage Input Wire Connection	Current Input Wire Connection
	<p>Requires 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-channel Analog Input Module with DCON Protocol (Blue Cover) (RoHS)
<b>I-7012-G CR</b>	1-channel Analog Input Module with DCON Protocol (Gray Cover) (RoHS)
<b>I-7012D CR</b>	I-7012 with 7-Segment LED Display (Blue Cover) (RoHS)
<b>I-7012F CR</b>	1-channel High Speed Analog Input Module with DCON Protocol (12-bit/16-bit) (Blue Cover) (RoHS)
<b>I-7012FD CR</b>	I-7012 with 7-Segment LED Display (12-bit/16-bit) (Blue Cover) (RoHS)

### Accessories

	tM-7520U CR	RS-232 to RS-485 converter (RoHS)
	tM-7561 CR	USB to RS-485 converter (RoHS)
	tM-SG4 CR	RS-485 Pull-high/Pull-low and Termination Resistor Module (RoHS)

	I-7514U CR	4-channel RS-485 Hub (RoHS)
	SG-770 CR	7 channel differential or 14 channel single-ended surge protector (RoHS)
	SG-3000 series	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Inputs