



## I-7011(D) I-7011P(D) M-7011(D)

1-ch Thermocouple Input Module

### Features

- 1 Analog Input
- I-7011P(D)
  - Additional Thermocouple Types, L and M
- Current, Voltage, and Thermocouple Inputs
- Open Thermocouple Detection
- High Resolution: 16-bit
- 50 Hz Event Counter for Digital Input
- High/Low Alarm for Digital Output
- Built-in Dual Watchdog



### Introduction

The I-7011 series of modules feature current and voltage input, as well as thermocouple input. The module provides 1-channel Analog Input, 1-channel Digital Input that functions as a 50 Hz event counter, and 2-channel Digital Output that can be used as a high/low alarm. It also features open wire detection for the thermocouple input, and 3000 VDC intra-module isolation. M-7011 supports both the Modbus RTU and DCON protocols, which can be configured via software, and all hardware specifications are the same as the I-7011.

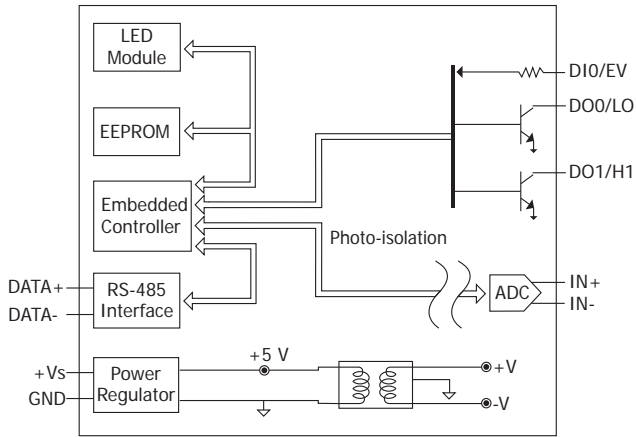
### System Specifications

Model	I-7011	I-7011P	M-7011
	I-7011D	I-7011PD	M-7011D
<b>CPU Module</b>			
Watchdog Timer	Module, Communication (Programmable)		
<b>Display</b>			
Type	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>COM Ports</b>			
Ports	1 x RS-485		
Baud Rate	1200 ~ 115200 bps		
Data Format	(N, 8, 1)		
Protocol	DCON		Modbus RTU, DCON
<b>Power</b>			
Reverse Polarity Protection	Yes		
Input Range	+10 ~ +30 VDC		
Consumption	0.9 W		
	1.5 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		

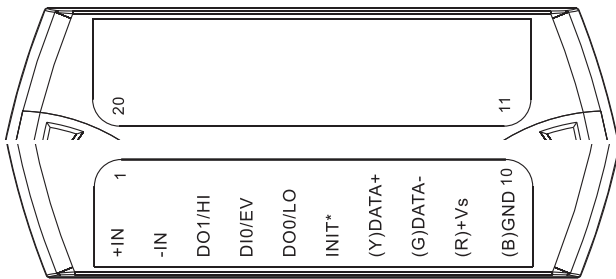
### I/O Specifications

Model	I-7011(D), M-7011(D)	
	I-7011P(D)	
<b>Analog Input</b>		
Channels	1 Differential	
Type	Voltage, Current, Thermocouple	
Sensor Type	Thermocouple	J, K, T, E, R, S, B, N, C
		J, K, T, E, R, S, B, N, C, L, M
Range	Voltage	±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5 V, ±20 mA (requires optional external 125 Ω resistor)
	Current	
Resolution	16-bit	
Accuracy	±0.1% of FSR	
Sampling Rate	10 Hz (Total)	
Input Impedance	> 400 kΩ	
Common Voltage Protection	±5 VDC	
Overvoltage Protection	±5 VDC	
Open Wire Detection	For Thermocouple Only	
<b>Digital Input/Counter</b>		
Channels	1	
Type	Dry Contact	
Sink/Source (NPN/PNP)	Source	
ON Voltage Level	Close to GND	
OFF Voltage Level	Open	
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	

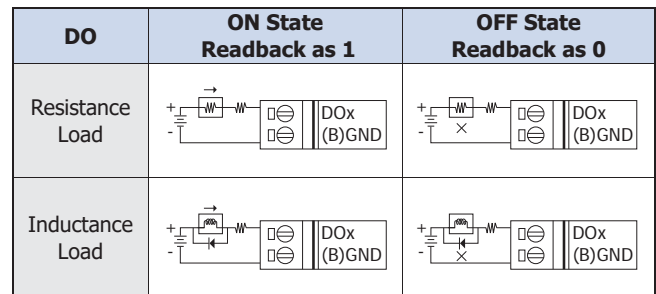
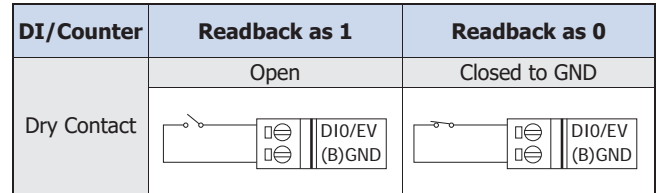
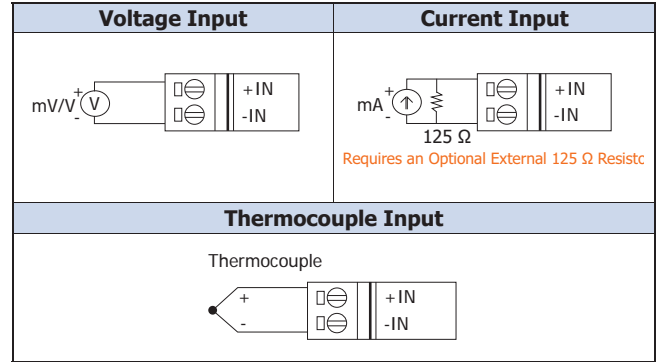
## Internal I/O Structure



## Pin Assignments



## Wire Connections



## Ordering Information

<b>I-7011 CR</b>	1-ch Thermocouple Input Module using DCON Protocol (Blue Cover) (RoHS)
<b>I-7011D CR</b>	1-ch Thermocouple Input Module with LED Display using DCON Protocol (Blue Cover) (RoHS)
<b>I-7011P CR</b>	1-ch Thermocouple Input Module using DCON Protocol (Blue Cover) (RoHS)
<b>I-7011PD CR</b>	1-ch Thermocouple Input Module with LED Display using DCON Protocol (Blue Cover) (RoHS)
<b>M-7011-G CR</b>	1-ch Thermocouple Input Module using DCON and Modbus Protocols (Gray Cover) (RoHS)
<b>M-7011D-G CR</b>	1-ch Thermocouple Input Module with LED Display, using DCON and Modbus Protocols (Gray Cover) (RoHS)

## Accessories

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