

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

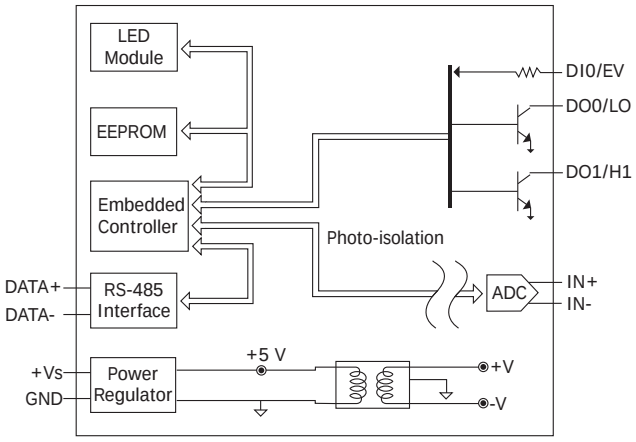
Model	I-7011 I-7011D	I-7011P I-7011PD	M-7011 M-7011D
CPU Module			
Watchdog Timer	Module, Communication (Programmable)		
Display			
Type	-		
	5-Digit 7 Segment LED Display		
Isolation			
Intra-module Isolation	3000 VDC		
EMS Protection			
EFT (IEC 61000-4-4)	±4 kV to Power Line		
ESD (IEC 61000-4-2)	±2 kV Contact for Each Terminal		
Surge (IEC 61000-4-5)	±0.5 kV for Power Line		
LED Indicators			
Status	1 x Power and Communication		
COM Ports			
Ports	1 x RS-485		
Baud Rate	1200 ~ 115200 bps		
Data Format	(N, 8, 1)		
Protocol	DCON		Modbus RTU, DCON
Power			
Reverse Polarity Protection	Yes		
Input Range	+10 ~ +30 VDC		
Consumption	0.9 W		
	1.5 W		
Mechanical			
Dimensions (mm)	72 x 123 x 35 (W x L x H)		
Installation	DIN-Rail Mounting		
Environment			
Operating Temperature	-25 ~ +75 °C		
Storage Temperature	-40 ~ +85 °C		
Humidity	10 ~ 95% RH, Non-condensing		

I/O Specifications

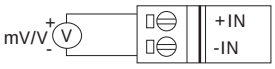
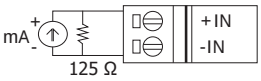
Model		I-7011(D), M-7011(D) I-7011P(D)
Analog Input		
Channels		1 Differential
Type		Voltage, Current, Thermocouple
Sensor Type	Thermocouple	J, K, T, E, R, S, B, N, C
		J, K, T, E, R, S, B, N, C, L, M
Range	Voltage	±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5 V, ±20 mA (requires optional external 125 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
Digital Input/Counter		
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
Digital Output		
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

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

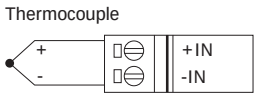
Internal I/O Structure

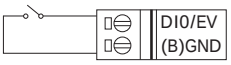
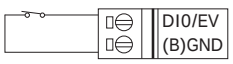


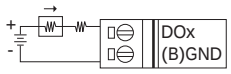
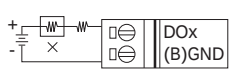
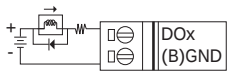
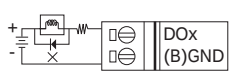
Wire Connections

Voltage Input	Current Input
	 Requires an Optional External 125 Ω Resistc

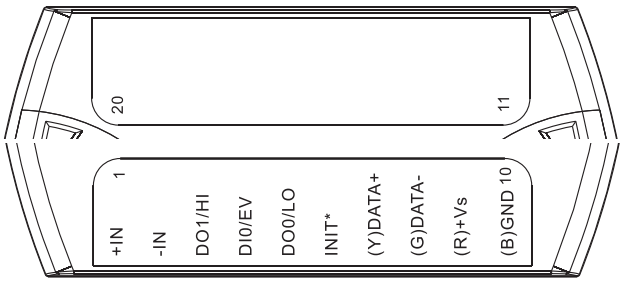
Thermocouple Input



DI/Counter	Readback as 1	Readback as 0
	Open	Closed to GND
Dry Contact		

DO	ON State Readback as 1	OFF State Readback as 0
Resistance Load		
Inductance Load		

Pin Assignments



Ordering Information

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

Accessories

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

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000