



7-ch Non-isolated DI and  
8-ch Non-isolated DO Module

### Features

- 7 Digital Inputs and 8 Digital Outputs
- I-7050(D), M-7050(D)
  - Sink-type Open Collector Output
- I-7050A(D)
  - Source-type Open Collector Output
- Digital Input Channels Can be Used as 16-bit Counters
- Configurable Power-on Value and Safe Value Settings
- Built-in Dual Watchdog



### Introduction

The I-7050 series of modules offers channels for digital input and 8 channels for digital output, each of which are non-isolated. The I-7050 supports sink-type output using an NPN open collector, and source-type input. All input channels are able to be used as 16-bit counters. There are also options to enable both power-on and safe values. The I-7050D has 15 LED indicators that can be used to monitor channel status. The M-7050 has the same hardware specifications as the I-7050, but provides additional support for the Modbus RTU protocol as well as the DCON protocol.

### System Specifications

Model	I-7050	I-7050D	I-7050A
	M-7050	M-7050D	I-7050AD
<b>CPU Module</b>			
Watchdog Timer	Module, Communication (Programmable)		
<b>Display</b>			
Type	7050D/AD: I/O LED Indicator		
<b>LED Indicators</b>			
Status	1 x Power and Communication 7050D/AD: 7 x DI, 8 x DO		
<b>COM Ports</b>			
Ports	1 x RS-485		
Baud Rate	1200 ~ 115200 bps		
Data Format	(N, 8, 1), (N, 8, 2), (E, 8, 1), (O, 8, 1)		
Protocol	I-7000: DCON M-7000: Modbus RTU, DCON		
<b>Power</b>			
Reverse Polarity Protection	Yes		
Input Range	+10 ~ +30 VDC		
Consumption	0.4 W	1.1 W	0.5 W 1.2 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		

### Applications

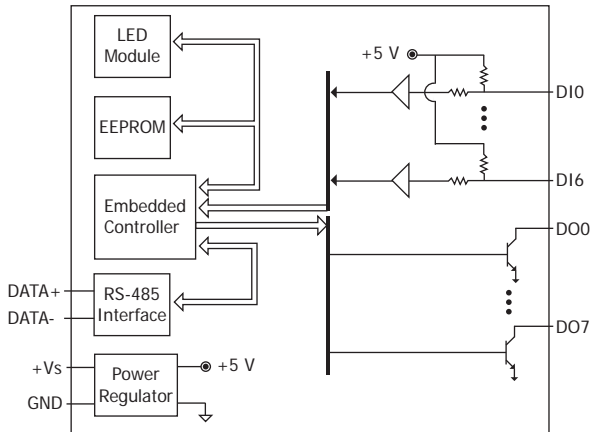
- Building Automation
- Factory Automation
- Machine Automation
- Remote Maintenance
- Remote Diagnosis
- Testing Equipment

### I/O Specifications

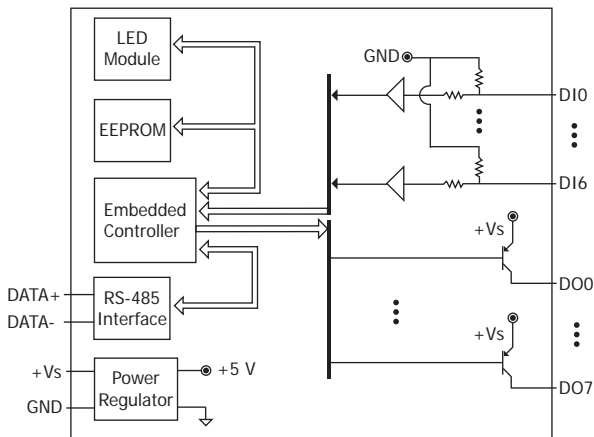
Model	I-7050	I-7050D	I-7050A
	M-7050	M-7050D	I-7050AD
<b>Digital Input/Counter</b>			
Channels	7		
Type	Dry Contact		Wet Contact
Sink/Source (NPN/PNP)	Source		Sink
ON Voltage Level	Open		+4 ~ +30 VDC
OFF Voltage Level	Close to GND		+1 VDC Max.
Max. Counts	65535 (16-bit)		
Frequency	100 Hz		
Min. Pulse Width	5 ms		
Effective Distance	500 m Max.		-
Input Impedance	100 kΩ		
<b>Digital Output</b>			
Channels	8		
Type	Open Collector		
Sink/Source (NPN/PNP)	Sink		Source
Load Voltage	+3.5 ~ +30 VDC		
Load Current	30 mA/channel		50 mA/channel
Power on Value	Programmable		
Safe Value	Programmable		

## Internal I/O Structure

### I-7050(D)/M-7050(D)



### I-7050A/I-7050AD

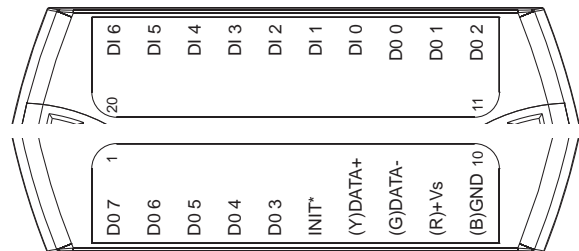


## Wire Connections

I-7050(D)/M-7050(D)		
Digital Input/Counter	ON State Readback as 1	OFF State Readback as 0
Dry Contact	Close to GND (+1 VDC Max.) 	OPEN (+4 VDC ~ +30 VDC) 
Output Type	ON State Readback as 1	OFF State Readback as 0
Resistance Load		
Inductance Load		

I-7050A/M-7050AD	
Digital Input	
Digital Output	

## Pin Assignments



## Ordering Information

<b>I-7050 CR</b>	7-ch Non-isolated (Dry) DI and 8-ch Non-isolated (Sink, NPN) DO Module using DCON Protocol (Blue Cover) (RoHS)
<b>I-7050-G CR</b>	7-ch Non-isolated (Dry) DI and 8-ch Non-isolated (Sink, NPN) DO Module using DCON Protocol (Gray Cover) (RoHS)
<b>M-7050-G CR</b>	7-ch Non-isolated (Dry) DI and 8-ch Non-isolated (Sink, NPN) DO Module using DCON and Modbus Protocols (Gray Cover) (RoHS)
<b>I-7050D CR</b>	7-ch Non-isolated (Dry) DI and 8-ch Non-isolated (Sink, NPN) DO Module with LED Display using DCON Protocol (Blue Cover) (RoHS)
<b>I-7050D-G CR</b>	7-ch Non-isolated (Dry) DI and 8-ch Non-isolated (Sink, NPN) DO Module with LED Display using DCON Protocol (Gray Cover) (RoHS)
<b>M-7050D-G CR</b>	7-ch Non-isolated (Dry) DI and 8-ch Non-isolated (Sink, NPN) DO Module with LED Display, using DCON and Modbus Protocols (Gray Cover) (RoHS)
<b>I-7050A CR</b>	7-ch Non-isolated (Wet) DI and 8-ch Non-isolated (Source, PNP) DO Module using DCON Protocol (Blue Cover) (RoHS)
<b>I-7050AD CR</b>	7-ch Non-isolated (Wet) DI and 8-ch Non-isolated (Source, PNP) DO Module with LED Display using DCON Protocol (Blue Cover) (RoHS)
<b>I-7050AD-G CR</b>	7-ch Non-isolated (Wet) DI and 8-ch Non-isolated (Source, PNP) DO Module with LED Display using DCON Protocol (Gray Cover) (RoHS)

## Accessories

<b>tM-7520U CR</b>	<b>tM-7561 CR</b>	<b>tM-SG4 CR</b>	<b>I-7514U CR</b>	<b>SG-770 CR</b>	<b>SG-3000 Series</b>
RS-232 to RS-485 Converter (RoHS)	USB to RS-485 Converter (RoHS)	RS-485 Bias and Termination Resistor Module (RoHS)	4-channel RS-485 Hub (RoHS)	7/14 channel Surge Protector (RoHS)	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers