



**I-7052(D)**

**M-7052(D)**

8-ch Isolated (Wet) DI Module



**I-7053(D)-FG**

**M-7053(D)**

16-ch Non-isolated (Dry) DI Module

## Features

- I-7052(D)/M-7052(D)
  - 8 Sink- or Source-type Digital Inputs (6 Independent and 2 Common Ground Channels)
  - High Intra-module Isolation Voltage
- I-7053(D)\_FG/M-7053(D)\_FG
  - 16 Source-type Digital Inputs
  - Long Effective Distance
- All Channels Can be Used as 16-bit Counters
- Built-in Dual Watchdog



## Introduction

The I-7052 offers 6 fully independent channels and 2 common ground channels for digital input. The differential inputs feature channel-to-channel Photocoupler isolation. In addition, you can choose either sink- or source-type input via wire connections. All channels are able to be used as 16-bit counters. The I-7052D has 8 LED indicators for DI channel status monitoring. 4 kV ESD protection and 5000 V<sub>rms</sub> intra-module isolation are standard. The M-7052 has the same hardware specifications as the I-7052, but provides additional support for the Modbus RTU protocol as well as the DCON protocol.

The I-7053-FG features a long effective distance measurement for dry contact digital input of up to 500 meters. The I-7053\_FG supports source-type input. All 16 channels are also able to be used as 16-bit counters, each of which are non-isolated. The I-7053D-FG has 16 LED indicators for channel status monitoring. The M-7053 has the same hardware specifications as the I-7053-FG, but provides additional support for the Modbus RTU protocol as well as the DCON protocol.

## System Specifications

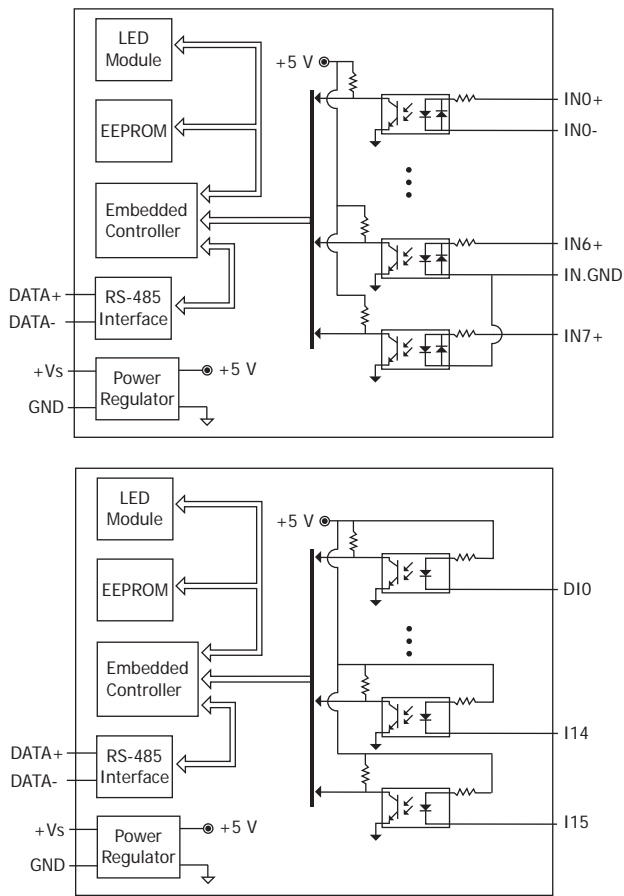
Model	I-7000 M-7000	7052	7053-FG 7053	7052D	7053D-FG 7053D
<b>CPU Module</b>					
Watchdog Timer	Module, Communication (Programmable)				
<b>Display</b>					
Type	-		I/O LED Indicator		
<b>Isolation</b>					
Intra-module Isolation	5000 V <sub>rms</sub>				
<b>EMS Protection</b>					
EFT (IEC 61000-4-4)	±4 kV for Power Line				
ESD (IEC 61000-4-2)	±4 kV Contact for Each Terminal ±8 kV Air for Random Point				
<b>LED Indicators</b>					
Status	1 x Power and Communication		8 x DI		16 x DI
<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	0.2 W	0.7 W	0.6 W	0.9 W	

## I/O Specifications

Model	I-7000 M-7000	7052(D)	7053-FG 7053D-FG 7053(D)
<b>Digital Input/Counter</b>			
Channels	8		16
Type	Wet Contact		Dry Contact
Sink/Source (NPN/PNP)	Sink/Source		Source
ON Voltage Level	+4 ~ +30 VDC		Open
OFF Voltage Level	+1 VDC Max.		Close to GND
Max. Counts	65535 (16-bit)		
Frequency	100 Hz		
Min. Pulse Width	5 ms		
Effective Distance	-		500 m Max.
Input Impedance	3 kΩ		-
Overvoltage Protection	±35 VDC		-
Channel-to-Channel Isolation	±2 kV for differential only		-

<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

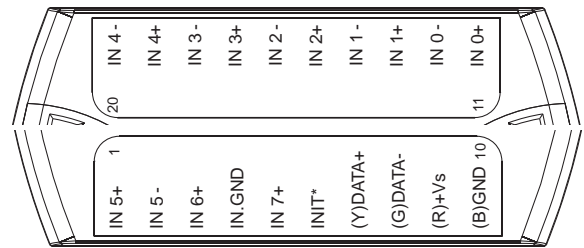
## Internal I/O Structure



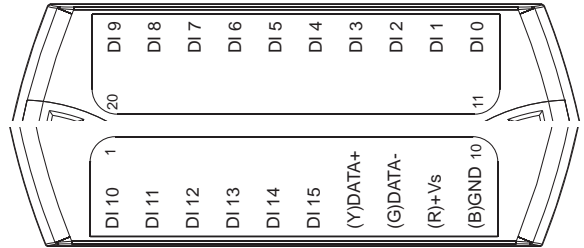
I-7053(D)-FG/M-7053(D)		
Digital Input /Counter	ON State Readback as 1	OFF State Readback as 0
	OPEN or <4 VDC	+3.5 ~ +30 VDC
Dry Contact		

## Pin Assignments

### I-7052(D)/M-7052(D)



### I-7053(D)-FG/M-7053(D)



## Wire Connections

I-7052(D)/M-7052(D)		
Digital Input /Counter	ON State Readback as 1	OFF State Readback as 0
Wet Contact	+4 ~ +30 VDC	Open or +1 VDC Max.
(Sink) Channel 0 to 5		
(Source) Channel 0 to 5		
(Sink) Channel 6 to 7		

## Ordering Information

<b>I-7052 CR</b>	8-ch Isolated (Wet) DI Module with DCON Protocol (Blue Cover) (RoHS)
<b>I-7052D CR</b>	8-ch Isolated (Wet) DI Module with LED Display using DCON Protocol (Blue Cover) (RoHS)
<b>I-7052D-G CR</b>	8-ch Isolated (Wet) DI Module with LED Display using DCON Protocol (Gray Cover) (RoHS)
<b>M-7052-G CR</b>	8-ch Isolated (Wet) DI Module using DCON and Modbus Protocols (Gray Cover) (RoHS)
<b>M-7052D-G CR</b>	8-ch Isolated (Wet) DI Module with LED Display, using DCON and Modbus Protocols (Gray Cover) (RoHS)
<b>I-7053-FG CR</b>	16-ch Non-isolated (Dry) DI Module using DCON Protocol (Blue Cover) (RoHS)
<b>I-7053-FG-G CR</b>	16-ch Non-isolated (Dry) DI Module using DCON Protocol (Gray Cover) (RoHS)
<b>I-7053D-FG CR</b>	16-ch Non-isolated (Dry) DI Module using DCON Protocol (Blue Cover) (RoHS)
<b>I-7053D-FG-G CR</b>	16-ch Non-isolated (Dry) DI Module with LED Display using DCON Protocol (Gray Cover) (RoHS)
<b>M-7053-G CR</b>	16-ch Non-isolated (Dry) DI Module using DCON and Modbus Protocols (Gray Cover) (RoHS)
<b>M-7053D-G CR</b>	16-ch Non-isolated (Dry) DI Module with LED Display, using DCON and Modbus Protocols (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