

I-7060(D)

M-7060(D)

M-7060P

M-7060PD

4-channel Isolated Digital Input and 4-channel Relay Output Module

Features

- I-7060(D)/M-7060(D)
 - 2 Form A and 2 Form C Signal Relay Output
 - ± 2 kV EFT protection for Power Line
- M-7060P(D)
 - 2 Form A and 2 Form C Power Relay Output
 - ± 4 kV EFT protection for Power Line
 - ± 3 kV Surge protection for Power Line
- Sink- and Source-type for Digital Input
- Digital Input Channels can be used as 16-bit Counters
- Configurable Power-on Value Settings
- Configurable Safe Value Settings
- Dual Watchdog
- Wide Operating Temperature Range: $-25 \sim +75^{\circ}\text{C}$



Introduction

The 7060 series provides 4 digital input channels, 2 Form A and 2 Form C signal relay output channels, while the M-7060P provides 4 digital input channels, 2 Form A and 2 Form C power relay output channels. All digital input channels can be used as 16-bit counters. In addition, the digital input channels can be selected either as sink- or source-type via wire connections. The "D" versions of the 7060 series provide eight LED indicators that can be used to monitor the status of the digital input and relay output. The "M" versions of the 7060 series support both the Modbus RTU and DCON protocols, which can be configured via software. There are also options for configuring power-on and safe values. 4 kV ESD protection and 3750 Vdc intra-module isolation are also provided to enhance noise protection capabilities in industrial environments. The 7060 series is the ideal solution for small signal switching applications, while the M-7060P is the perfect solution for high power applications.

System Specifications

Model	I-7060	M-7060	M-7060P
	I-7060D	M-7060D	M-7060PD
Communication			
Interface	RS-485 Modbus RTU, DCON		
Format	(N, 8, 1), (N, 8, 2), (E, 8, 1), (O, 8, 1)		
Baud Rate	1200 ~ 115200 bps		
Protocol	DCON	Modbus RTU, DCON	
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)		
LED Indicators/ Display			
System LED Indicator	Yes, 1 LED as Power/Communication Indicator		
I/O LED Indicators	-	-	-
	Yes, 8 LEDs as Digital Input/Relay Output Indicators		
7-Segment LED Display	-		
Isolation			
Intra-module Isolation, Field-to-Logic	3750 VDC		
EMS Protection			
ESD (IEC 61000-4-2)	±4 kV Contact for each Terminal		
	±8 kV Air for Random Point		
EFT (IEC 61000-4-4)	±2 kV for Power Line		±4 kV for Power Line
Surge (IEC 61000-4-5)	-		±3 kV for Power Line
Power			
Reverse Polarity Protection	Yes		
Input Range	10 ~ 30 Vdc		
Consumption	1 W	1 W	1.4 W
	1.4 W	1.4 W	1.8 W
Mechanical			
Dimensions (W x L x H)	72 mm x 123 mm x 35 mm		
Installation	DIN-Rail or Wall Mounting		
Environment			
Operating Temperature	-25 ~ +75°C		
Storage Temperature	-40 ~ +85°C		
Humidity	10 ~ 95% RH, Non-condensing		

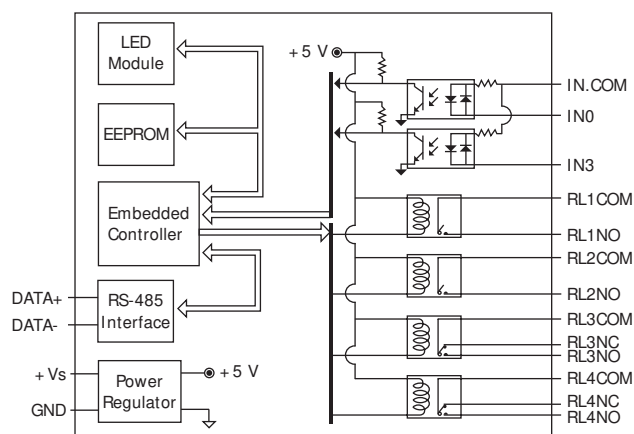
Applications

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

I / O Specifications

Model		I-7060	M-7060	M-7060P
		I-7060D	M-7060D	M-7060PD
Relay Output				
Channels		4 (Form A × 2, Form C × 2)		
Relay Type		Signal Relay		Power Relay
Form A Relay	Contact Rating	0.6 A @ 125 VAC 2 A @ 30 Vdc		16A @ 250 VAC 10 A @ 30 Vdc
	Min. Contact Load	10 uA @ 10 mV		100 mA @ 6 V
	Contact Material	Gold-plated silver		Silver Tin Alloy
	Operate Time	3 ms		10 ms
	Release Time	2 ms		5 ms
	Mechanical Endurance	1 x 10 ⁸ ops.		1 x 10 ⁷ ops.
	Electrical Endurance	5 x 10 ⁵ ops.		1 x 10 ⁵ ops.
Form C Relay	Contact Rating	0.6 A @ 125 VAC 2 A @ 30 Vdc		NO:10 A @ 250 VAC NC:6 A @ 250 VAC
	Min. Contact Load	10 uA @ 10 mV		100 mA @ 6V
	Contact Material	Gold-plated silver		Silver Tin Alloy
	Operate Time	3 ms		10 ms
	Release Time	2 ms		5 ms
	Mechanical Endurance	1 x 10 ⁸ ops.		1 x 10 ⁷ ops.
	Electrical Endurance	5 x 10 ⁵ ops.		1 x 10 ⁵ ops.
Surge Strength		1500 Vdc		2500 Vdc
Power-on Value		Yes		
Safe Value		Yes		
Digital Input/ Counter				
Channels		4		
Type	Dry Contact	-		
	Wet Contact	Sink/Source		
On Voltage Level		+1 Vdc Max.		+4 Vdc Max.
Off Voltage Level		+4 ~ 30 Vdc		+10 ~50 Vdc
Counters	Max. Count	65535 (16-bit)		
	Max. Input Frequency	100 Hz		
	Min. Pulse Width	5 ms		
Input Impedance		3 kΩ		10 kΩ
Overvoltage Protection		±35 Vdc		±70 Vdc




Internal I / O Structure



Wire Connections

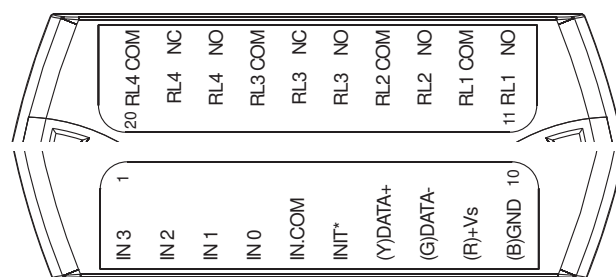
Digital Input/ Counter	ON State Readback as 1	OFF State Readback as 0
I-7060(D)/ M-7060(D)	OPEN or <1 VDC	+4 ~ +30 VDC
M-7060P(D)	OPEN or <4 VDC	+10 ~ +50 VDC
Sink		
Source		
Output Type	ON State Readback as 1	OFF State Readback as 0
Relay Output in RL1 and RL2		
Relay Output in RL3 and RL4		

Accessories

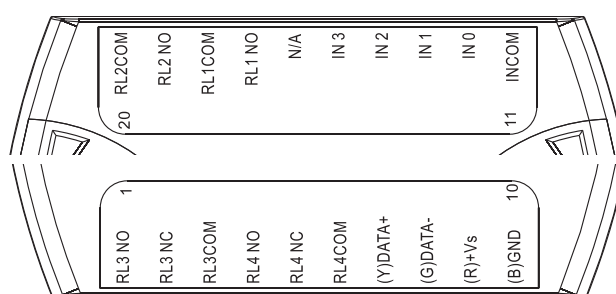
	tM-7520U CR	RS-232 to RS-485 Converter (RoHS)
	tM-7561 CR	USB to RS-485 Converter (RoHS)
	tM-SG4 CR	RS-485 Bias and Termination Resistor Module (RoHS)

Pin Assignments

I-7060(D)/ M-7060(D)



M-7060P(D)



Ordering Information

I-7060 CR	4-channel Isolated Digital Input and 4-channel Relay Output Module using the DCON Protocol (Blue Cover) (RoHS)
I-7060-G CR	4-channel Isolated Digital Input and 4-channel Relay Output Module using the DCON Protocol (Gray Cover) (RoHS)
I-7060D CR	I-7060 with LED Display (Blue Cover) (RoHS)
I-7060D-G CR	I-7060-G with LED Display (Gray Cover) (RoHS)
M-7060-G CR	4-channel Isolated Digital Input and 4-channel Relay Output Module using the DCON and Modbus Protocols (Gray Cover) (RoHS)
M-7060D-G CR	M-7060-G with LED Display (Gray Cover) (RoHS)
M-7060P-G CR	4-channel Isolated Digital Input and 4-channel Relay Output Module using the DCON and Modbus Protocols (Gray Cover) (RoHS)
M-7060PD-G CR	M-7060P-G with LED Display (Gray Cover) (RoHS)

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RS-485 Remote I/O Modules

I-7060/I-7060D/M-7060(D)/M-7060P(D)