



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 ~ +75°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 | | |

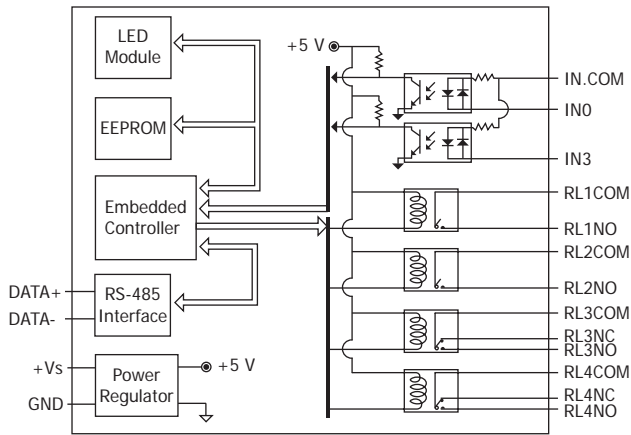
Applications

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

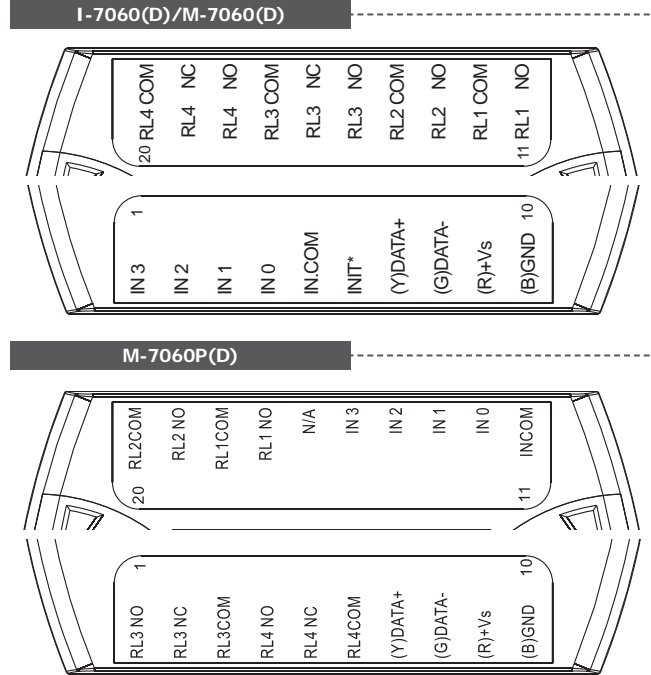
I/O Specifications

| Model | I-7060 | M-7060 | M-7060P |
|------------------------------|----------------------------|---------------------------------|---------------------------------|
| | I-7060D | M-7060D | M-7060PD |
| Relay Output | | | |
| Channels | 4 (Form A x 2, Form C x 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 |
| 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



Pin Assignments






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 | | |

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) |

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) |

| | | |
|---|----------------|--|
|  | I-7514U CR | 4-channel RS-485 Hub (RoHS) |
|  | SG-770 CR | 7-channel Differential or 14-channel Single-ended Surge Protector (RoHS) |
|  | SG-3000 Series | Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input transformers |

2
3

RS-485 Remote I/O Modules

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