



Features

- Sink- or Source-type Digital Input
- Photocouple Isolation
- All Channels can be used as 16-bit Counters
- ±4 kV ESD Protection
- 3750 Vdc Isolation Voltage
- Dual Watchdog
- Wide Operating Temperature Range: -25 ~ +75°C



Introduction

The I-7041 and I-7041P provide 14 channels for digital input, each of which features photocouple isolation. In addition, either sink- or source-type digital input can be selected via wire connections, and all channels are able to be used as 16-bit counters. The I-7041D and I-7041PD include 14 LED indicators that can be used for DI channel status monitoring. 4 kV ESD protection and 3750 VDC intra-module isolation are standard. The hardware specifications for the M-7041 and M-7041P are the same as for the I-7041 and I-7041P, and support both the Modbus RTU and DCON protocols, which can be configured via software. ICPDAS recommends selecting the "P" version of the digital input module for industrial use.

System Specifications

| Model | I-7041 | M-7041 | I-7041P | M-7041P |
|--|---|--|--|--|
| | I-7041D | M-7041D | I-7041PD | M-7041PD |
| Communication | | | | |
| Interface | RS-485 | | | |
| Format | N, 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, 14 LEDs as Digital Input Indicators | Yes, 14 LEDs as Digital Input Indicators | Yes, 14 LEDs as Digital Input Indicators | Yes, 14 LEDs as Digital Input 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 | | | |
| Surge (IEC 61000-4-5) | - | | | |
| Power | | | | |
| Reverse Polarity Protection | Yes | | | |
| Input Range | 10 ~ 30 Vdc | | | |
| Consumption | 0.2 W | 0.2 W | 0.2 W | 0.2 W |
| | 1.0 W | 1.0 W | 1.0 W | 1.0 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 | | | |

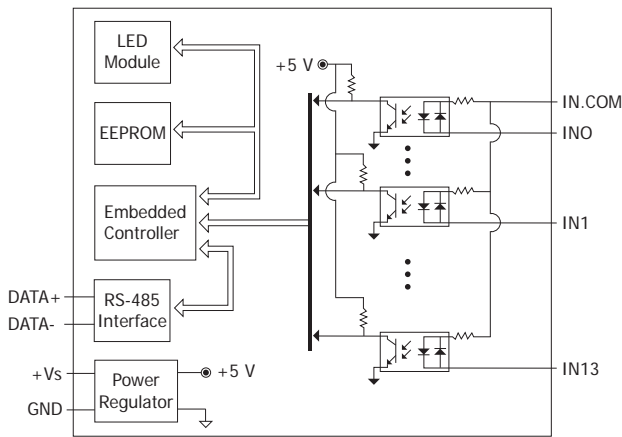
Applications

- All Types of On/Off Control
- Industrial Automation
- Industrial Machinery
- Building Automation
- Food and Beverage Systems
- Semiconductor Fabrication
- Control Systems

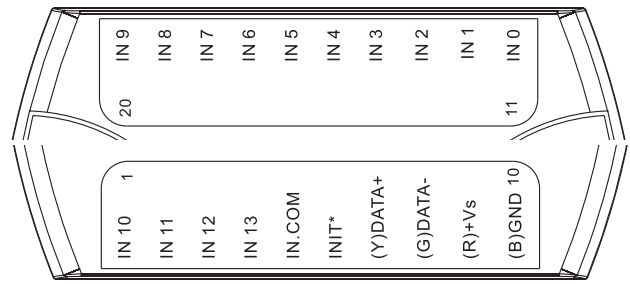
I/O Specifications

| Model | I-7041 | M-7041 | I-7041P | M-7041P |
|------------------------------|------------------------------------|----------------|-------------|--------------|
| | I-7041D | M-7041D | I-7041PD | M-7041PD |
| Digital Input/Counter | | | | |
| Channels | 14 | | | |
| Type | Dry Contact | - | | |
| | Wet Contact | Sink/Source | | |
| Wet Contact | On Voltage Level | +1 Vdc Max. | +4 ~ 30 Vdc | +11 Vdc Max. |
| | Off Voltage Level | +4 ~ 30 Vdc | +1 Vdc Max. | +19 ~ 30 Vdc |
| Dry Contact | On Voltage Level | - | | |
| | Off Voltage Level | - | | |
| | Effective Distance for Dry Contact | - | | |
| Counters | Max. Count | 65535 (16-bit) | | |
| | Max. Input Frequency | 100 Hz | | |
| | Min. Pulse Width | 5 ms | | |
| Input Impedance | 3 KΩ | | | |
| Channel-to-Channel Isolation | - | | | |
| Overvoltage Protection | ±35 Vdc | | | |

Internal I/O Structure



Pin Assignments



Wire Connections

| Digital Input/Counter | ON State Readback as 1 | OFF State Readback as 0 |
|-----------------------|------------------------|-------------------------|
| I-7041(D) | OPEN or <1 Vdc | +4 ~ 30 Vdc |
| I-7041P(D) | OPEN or <11 VDC | +19 ~ +30 VDC |
| Sink | | |
| | I-7041(D) | OPEN or <1 Vdc |
| I-7041P(D) | OPEN or <11 VDC | +19 ~ +30 VDC |
| Source | | |

| Digital Input/Counter | ON State Readback as 1 | OFF State Readback as 0 |
|-----------------------|------------------------|-------------------------|
| M-7041(D) | +4 ~ 30 VDC | OPEN or <1 VDC |
| M-7041P(D) | +19 ~ +30 VDC | OPEN or <11 VDC |
| Sink | | |
| | M-7041(D) | +4 ~ 30 VDC |
| M-7041P(D) | +19 ~ +30 VDC | OPEN or <11 VDC |
| Source | | |

Ordering Information

| | |
|---------------|---|
| I-7041 CR | 14-channel Isolated Digital Input Module with DCON Protocol (Blue Cover) (RoHS) |
| I-7041-G CR | 14-channel Isolated Digital Input Module with DCON Protocol (Gray Cover) (RoHS) |
| I-7041D CR | I-7041 with LED Display (Blue Cover) (RoHS) |
| I-7041P-G CR | 14-channel Isolated Digital Input Module with DCON Protocol (Gray Cover) (RoHS) |
| I-7041PD-G CR | I-7041P with LED Display (Gray Cover) (RoHS) |
| M-7041-G CR | 14-channel Isolated Digital Input Module with DCON and Modbus Protocols (Gray Cover) (RoHS) |
| M-7041P-G CR | 14-channel Isolated Digital Input Module with DCON and Modbus Protocols (Gray Cover) (RoHS) |
| M-7041D-G CR | M-7041 with LED Display (Gray Cover) (RoHS) |
| M-7041PD-G CR | M-7041P 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 |

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RS-485 Remote I/O Modules

I-7041(P)/I-7041(P)D/M-7041(P)/M-7041(P)D