



I-7041(D)

M-7041(D)

I-7041P(D)

M-7041P(D)

14-channel Isolated Digital Input Module

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 to +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

System Specifications

| Model | I-7041 | M-7041 | I-7041P | M-7041P |
|----------------------------------------|------------------------------------------------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|
| | I-7041D | M-7041D | I-7041PD | M-7041PD |
| Communication | | | | |
| Interface | RS-485 | | | |
| Bias Resistor | No (Usually supplied by the RS-485 Master. Alternatively, add a tM-SG4 or SG-785.) | | | |
| Format | N, 8, 1 | | | |
| Baud Rate | 1200 to 115200 bps | | | |
| Protocol | DCON | | Modbus RTU, DCON | |
| Dual Watchdog | Yes, Module (1.6 Seconds), Communication (Programmable) | | | |
| LED Indicators/Display | | | | |
| System LED Indicator | Yes, 1 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 (L x W x H) | 123 mm x 72 mm x 35 mm | | | |
| Installation | DIN-Rail or Wall Mounting | | | |
| Environment | | | | |
| Operating Temperature | -25 to +75°C | | | |
| Storage Temperature | -40 to +85°C | | | |
| Humidity | 10 to 95% RH, Non-condensing | | | |

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.

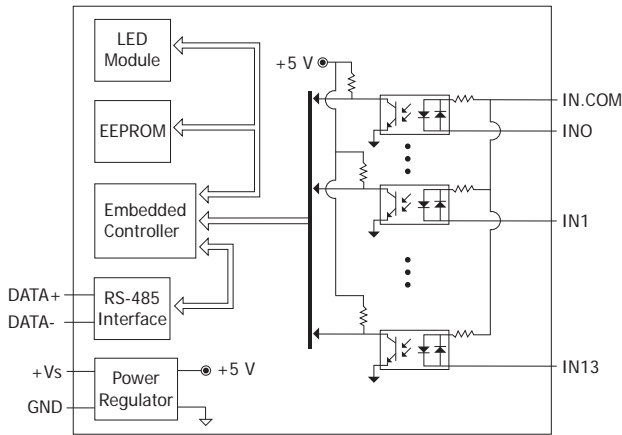
Applications

- 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. | +19 ~ 30 Vdc |
| | OFF Voltage Level | +4 ~ 30 Vdc | +1 Vdc Max. | +19 ~ 30 Vdc | +11 Vdc Max. |
| 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 | +4 ~ 30 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 | OPEN or <1 Vdc |
| M-7041P(D) | +19 ~ +30 Vdc | OPEN or <11 Vdc |
| Source | | |

Ordering Information

| | |
|----------------------|--------------------------------------------------------------------------------------------------|
| I-7041 CR | 14-channel Isolated Digital Input Module using the DCON Protocol (Blue Cover) (RoHS) |
| I-7041-G CR | 14-channel Isolated Digital Input Module using the 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 using the 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 using the DCON and Modbus Protocols (Gray Cover) (RoHS) |
| M-7041P-G CR | 14-channel Isolated Digital Input Module using the 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 |