



**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
<b>Communication</b>				
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)			
<b>LED Indicators/Display</b>				
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	-			
<b>Isolation</b>				
Intra-module Isolation, Field-to-Logic	3750 Vdc			
<b>EMS Protection</b>				
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)	-			
<b>Power</b>				
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
<b>Mechanical</b>				
Dimensions (L x W x H)	123 mm x 72 mm x 35 mm			
Installation	DIN-Rail or Wall Mounting			
<b>Environment</b>				
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.

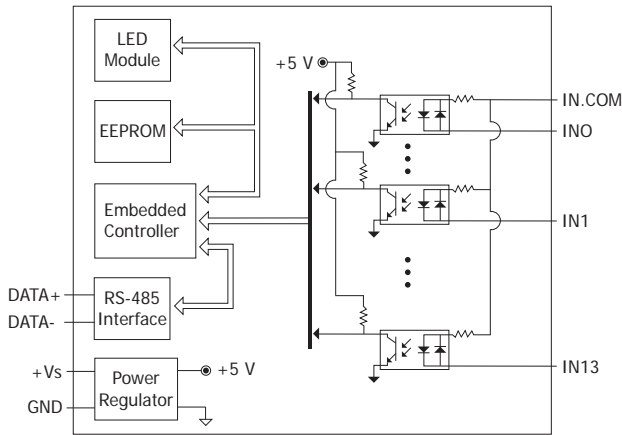
## Applications

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

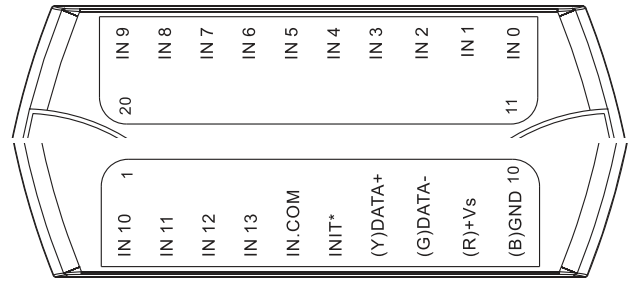
## I/O Specifications

Model	I-7041	M-7041	I-7041P	M-7041P	
	I-7041D	M-7041D	I-7041PD	M-7041PD	
<b>Digital Input/Counter</b>					
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
<b>I-7041(D)</b>	OPEN or <1 Vdc	+4 ~ 30 Vdc
<b>I-7041P(D)</b>	OPEN or <11 Vdc	+19 ~ +30 Vdc
Sink		
<b>I-7041(D)</b>	OPEN or <1 Vdc	+4 ~ 30 Vdc
<b>I-7041P(D)</b>	OPEN or <11 Vdc	+19 ~ +30 Vdc
Source		

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

## Ordering Information

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