



## Features

- Sink- or Source-type Digital Input
- Photocouple Isolation
- All Channels can be used as 16-bit Counters
- $\pm 4$  kV ESD Protection
- 3750 Vdc Isolation Voltage
- Dual Watchdog
- Wide Operating Temperature Range:  $-25 \sim +75^{\circ}\text{C}$



## 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			

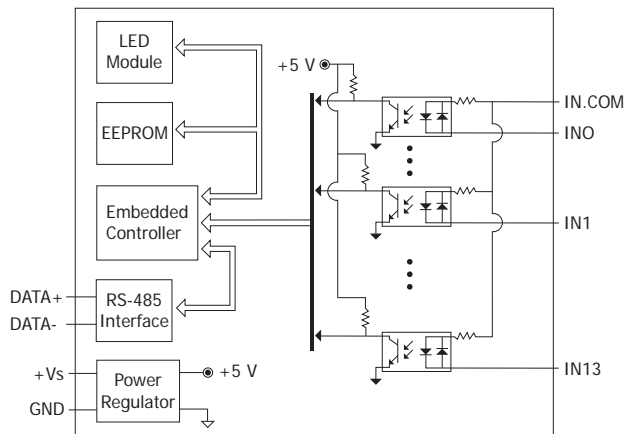
## Applications

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

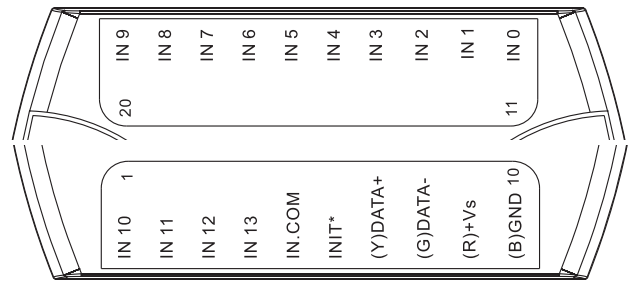
## I/O Specifications

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.	+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 K $\Omega$			
Channel-to-Channel Isolation		-			
Overvoltage Protection		$\pm 35$ 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 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