



14-ch Isolated DI Module

### Features

- Sink- or Source-type Digital Input
- Photocoupler Isolation
- All Channels Can be Used as 16-bit Counters
- Built-in Dual Watchdog



### Introduction

The I-7041 and I-7041P provide 14 channels for digital input, each of which features photocoupler 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-7041/41P I-7041D/41PD	M-7041/41P M-7041D/41PD
<b>CPU Module</b>		
Watchdog Timer	Module, Communication (Programmable)	
<b>Display</b>		
Type	7041D/PD	I/O LED Indicator
<b>Isolation</b>		
Intra-module Isolation	3750 VDC	
<b>EMS Protection</b>		
EFT (IEC 61000-4-4)	±2 kV for Power Line	
ESD (IEC 61000-4-2)	±4 kV Contact for Each Terminal ±8 kV Air for Random Point	
<b>LED Indicators</b>		
Status	1 x Power and Communication 7041D/PD: 14 x Digital Input	
<b>COM Ports</b>		
Ports	1 x RS-485	
Baud Rate	1200 ~ 115200 bps	
Data Format	(N, 8, 1)	
Protocol	DCON	Modbus RTU, DCON
<b>Power</b>		
Reverse Polarity Protection	Yes	
Input Range	+10 ~ +30 VDC	
Consumption	7041/41P: 0.2 W 7041D/PD: 1.0 W	
<b>Mechanical</b>		
Dimensions (mm)	72 x 123 x 35 (W x L x H)	
Installation	DIN-Rail Mounting	

### Applications

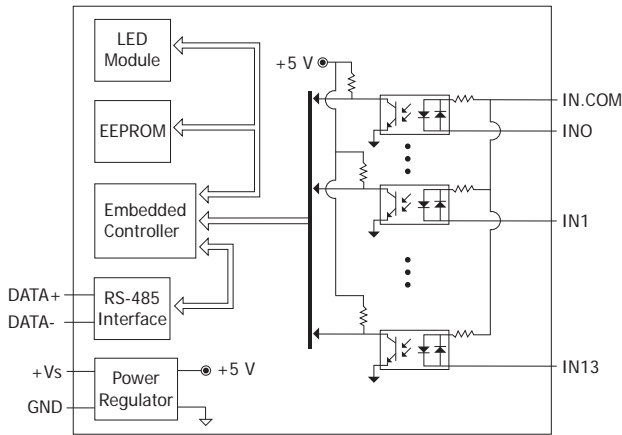
- All Types of ON/OFF Control
- Building Automation
- Industrial Automation
- Industrial Machinery
- Food and Beverage Systems
- Semiconductor Fab
- Control Systems

### I/O Specifications

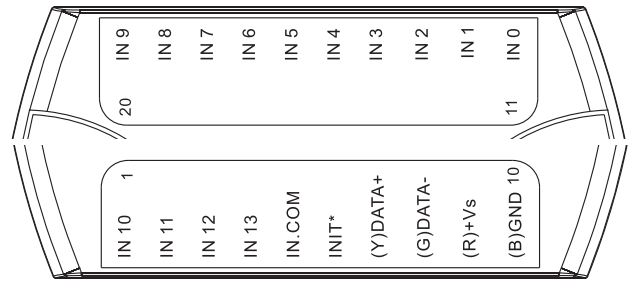
Model	I-7041 (D)	I-7041P (D)	M-7041 (D)	M-7041P (D)
<b>Digital Input/Counter</b>				
Channels	14			
Type	Wet Contact			
Sink/Source (NPN/PNP)	Sink/Source			
ON Voltage Level	+1 Max.	+11 Max.	+4 ~ 30	+19 ~ 30
OFF Voltage Level	+4 ~ 30	+19 ~ 30	+1 Max.	+11 Max.
Max. Counts	65535 (16-bit)			
Frequency	100 Hz			
Min. Pulse Width	5 ms			
Input Impedance	3 kΩ			
Overvoltage Protection	±35 VDC			

Environment	
Operating Temperature	-25 ~ +75°C
Storage Temperature	-40 ~ +85°C
Humidity	10 ~ 95% RH, Non-condensing

## 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

<b>I-7041 CR</b>	14-ch Isolated (Wet, 4~30 VDC) DI Module using DCON Protocol (Blue Cover) (RoHS)
<b>I-7041-G CR</b>	14-ch Isolated (Wet, 4~30 VDC) DI Module using DCON Protocol (Gray Cover) (RoHS)
<b>I-7041D CR</b>	14-ch Isolated (Wet, 4~30 VDC) DI Module with LED Display using DCON Protocol (Blue Cover) (RoHS)
<b>I-7041P-G CR</b>	14-ch Isolated (Wet, 19~30 VDC) DI Module using DCON Protocol (Gray Cover) (RoHS)
<b>I-7041PD-G CR</b>	14-ch Isolated (Wet, 19~30 VDC) DI Module with LED Display using DCON Protocol (Gray Cover) (RoHS)
<b>M-7041-G CR</b>	14-ch Isolated (Wet, 4~30 VDC) DI Module using DCON and Modbus Protocols (Gray Cover) (RoHS)
<b>M-7041D-G CR</b>	14-ch Isolated (Wet, 4~30 VDC) DI Module with LED Display, using DCON and Modbus Protocols (Gray Cover) (RoHS)
<b>M-7041P-G CR</b>	14-ch Isolated (Wet, 19~30 VDC) DI Module using DCON and Modbus Protocols (Gray Cover) (RoHS)
<b>M-7041PD-G CR</b>	14-ch Isolated (Wet, 19~30 VDC) DI Module with LED Display, using DCON and Modbus Protocols (Gray Cover) (RoHS)

## Accessories

<b>tM-7520U CR</b>	Tiny Isolated RS-232 to RS-485 Converter (RoHS)
<b>tM-7561 CR</b>	Tiny USB to Isolated RS-485 Converter with CA-USB18 Cable (RoHS)
<b>tM-SG4 CR</b>	RS-485 Pull-high/Pull-low and Termination Resistor Module (RoHS)

<b>I-7514U-G CR</b>	Isolated 4-channel RS-485 Repeater/Hub/Splitter (Gray Cover) (RoHS)
<b>SG-770 CR</b>	7/14 channel Surge Protector (RoHS)
<b>SG-3000 Series</b>	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers