



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
CPU Module		
Watchdog Timer	Module, Communication (Programmable)	
Display		
Type	7041D/PD	I/O LED Indicator
Isolation		
Intra-module Isolation	3750 VDC	
EMS Protection		
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	
LED Indicators		
Status	1 x Power and Communication 7041D/PD: 14 x Digital Input	
COM Ports		
Ports	1 x RS-485	
Baud Rate	1200 ~ 115200 bps	
Data Format	(N, 8, 1)	
Protocol	DCON	Modbus RTU, DCON
Power		
Reverse Polarity Protection	Yes	
Input Range	+10 ~ +30 VDC	
Consumption	7041/41P: 0.2 W 7041D/PD: 1.0 W	
Mechanical		
Dimensions (mm)	72 x 123 x 35 (W x L x H)	
Installation	DIN-Rail Mounting	

Applications

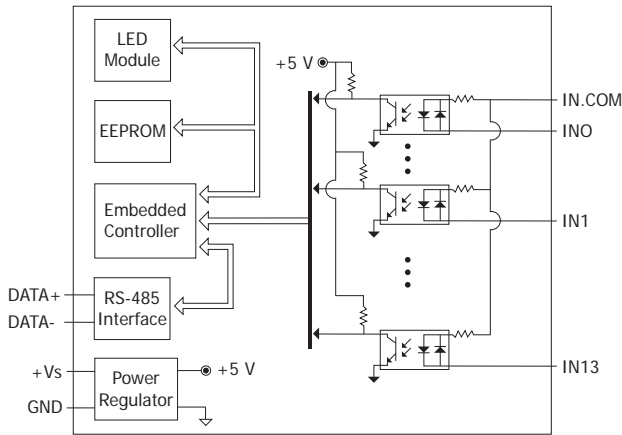
- All Types of ON/OFF Control
- Building Automation
- Industrial Automation
- Industrial Machinery
- Food and Beverage Systems
- Semiconductor Fab
- Control Systems

I/O Specifications

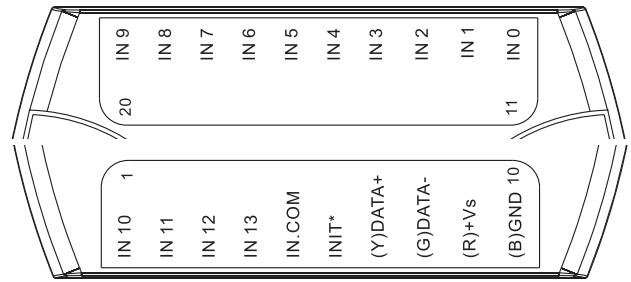
Model	I-7041 (D)	I-7041P (D)	M-7041 (D)	M-7041P (D)
Digital Input/Counter				
Channels	14			
Type	Wet Contact			
Sink/Source (NPN/PNP)	Sink/Source			
ON Voltage Level	+1 Max.	+11 Max.	+4 ~ 30	+19 ~ 30
OFF Voltage Level	+4 ~ 30	+19 ~ 30	+1 Max.	+11 Max.
Max. Counts	65535 (16-bit)			
Frequency	100 Hz			
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

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

Accessories

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

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