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 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 I-7041D	M-7041 M-7041D	I-7041P I-7041PD	M-7041P 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			

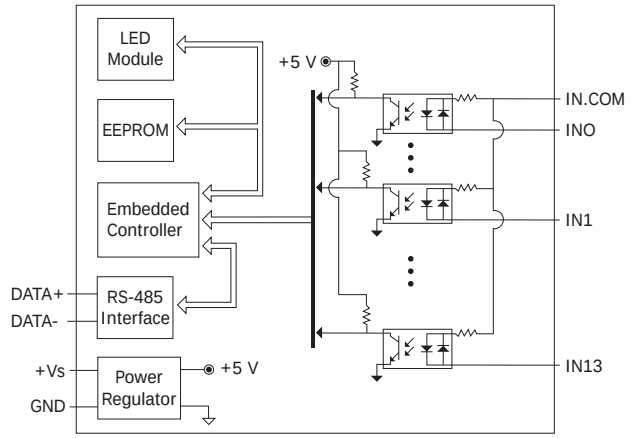
Applications

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

I/O Specifications

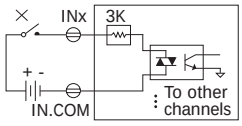
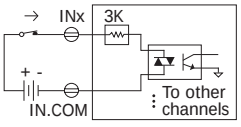
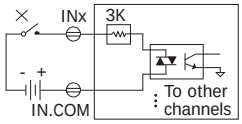
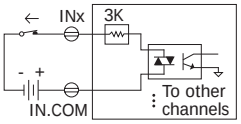
Model		I-7041 I-7041D	M-7041 M-7041D	I-7041P I-7041PD	M-7041P M-7041PD
Digital Input/Counter					
Channels		14			
Type	Dry Contact	-			
	Wet Contact	Sink/Source			
Wet Contact	ON Voltage Level	+1 VDC Max.	+4 ~ 30 VDC	+11 VDC Max.	+19 ~ 30 VDC
	OFF Voltage Level	+4 ~ 30 VDC	+1 VDC Max.	+19 ~ 30 VDC	+11 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			

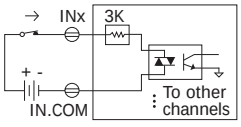
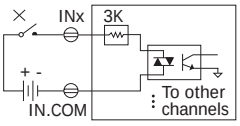
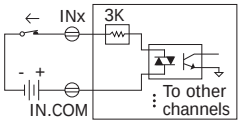
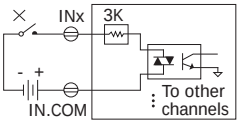
Internal I/O Structure



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