



I-87040W-G I-87040PW-G

32-channel Isolated Digital Input Module with
16-bit Counters

Introduction

The I-87040W/I-87040PW offer 32 channels for digital input, each of which features photocouple isolation. Either sink- or source-type input can be selected via wire connections. All channels are able to be used as 16-bit counters and 32 LED indicators that can be used for monitoring DI channel status are also provided, together with 4 kV ESD protection and 3750 Vdc intra-module isolation. Paired with a daughter board such as the DN-37-381-A, wiring is easier than ever. The I-87040PW is suitable for +24 Vdc digital input systems and provides noise protection capabilities that enhance noise immunity in industrial environments. ICP DAS recommends selecting the "p" version of the digital input module for industrial use.

System Specifications

Model	I-87040W	I-87040PW
Communication		
Interface	RS-485	
Format	N, 8, 1	
Baud Rate	1200 to 115200 bps	
Protocol	DCON	
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)	
LED Indicators/Display		
System LED Indictors	Yes, 1 as Power/Communication Indicator	
I/O LED Indicators	32 as Digital Input Indicators	
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	
Power		
Power Consumption	1.6 W Max.	
Mechanical		
Dimensions (W × L × H)	30 mm × 114 mm × 85 mm	
Environment		
Operating Temperature	-25 to +75°C	
Storage Temperature	-40 to +85°C	
Humidity	10 to 95% RH, Non-condensing	

Features

- Sink- or Source-type Digital Inputs
- Photocouple Isolation
- All Channels can be used as 16-bit Counters
- Optional Daughter board connectivity
- 4 kV ESD Protection
- 3750 Vdc Intra-module Isolation
- D-sub DB37 Wiring
- Dual Watchdog



I-8017DW, I-8040W, I-8040PW,
I-8041W, I-8041AW, I-8041PW, I-8042W,
I-87017DW, I-87024DW, I-87028CDW,
I-87040W, I-87040PW, I-87041W, I-87041PW and I-87042W
with DN-37-381-A & DB37 Male to Female Cable
(Optional)

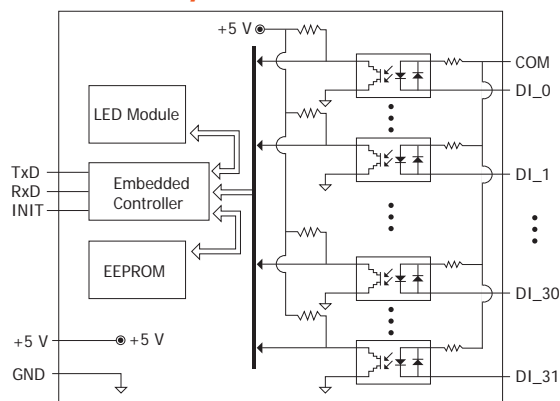
Applications

- Building Automation
- Factory Automation
- Machine Automation
- Remote Maintenance
- Remote Diagnosis
- Testing Equipment

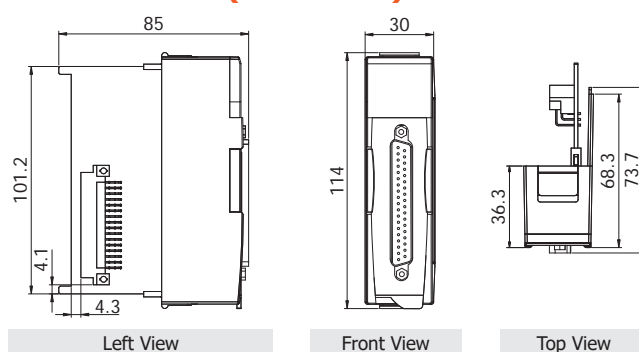
I/O Specifications

Model	I-87040W	I-87040PW
Digital Input		
Channels	32	
Type	Wet	
Sink/Source (NPN/PNP)	Sink, Source	
ON Voltage Level	+3.5 VDC ~ +30 Vdc	+19 VDC ~ +30 VDC
OFF Voltage Level	+1 Vdc Max.	+11 VDC Max.
Input Impedance	4.7 kΩ, 0.25 W	
Counters	Channels	32
	Max. Count	16-bit (65535)
	Max. Input Frequency	100 Hz
	Min. Pulse Width	5 ms
Channel-to-Channel Isolation		
Overvoltage Protection		
Low Pass Filter		
Effective Distance for Dry Contact		

Internal I/O Structure



Dimensions (Units: mm)



Pin Assignments

Pin Assignment	Terminal	No.	Pin Assignment
COM	19	37	COM
NC	18	36	NC
NC	17	35	DI_31
DI_15	16	34	DI_30
DI_14	15	33	DI_29
DI_13	14	32	DI_28
DI_12	13	31	DI_27
DI_11	12	30	DI_26
DI_10	11	29	DI_25
DI_9	10	28	DI_24
DI_8	09	27	DI_23
DI_7	08	26	DI_22
DI_6	07	25	DI_21
DI_5	06	24	DI_20
DI_4	05	23	DI_19
DI_3	04	22	DI_18
DI_2	03	21	DI_17
DI_1	02	20	DI_16
DI_0	01		

32 CH D/I

D/I

0 1 2 3 4 5 6 7

8 9 10 11 12 13 14 15

16 17 18 19 20 21 22 23

24 25 26 27 28 29 30 31

19

37

1

20

37-pin Male D-Sub Connector

Wire Connections

I-87040W		
Digital Input/Counter	ON State Readback as 1	OFF State Readback as 0
Sink	+4 ~ +30 VDC	OPEN or < +1 VDC
Source	+4 ~ +30 VDC	OPEN or < +1 VDC

I-87040PW		
Digital Input/Counter	ON State Readback as 1	OFF State Readback as 0
Sink	+19 ~ +30 VDC	OPEN or < +11 VDC
Source	+19 ~ +30 VDC	OPEN or < +11 VDC

Ordering Information

I-87040W-G CR	32-ch Isolated DI (Wet, 3.5 ~ 30 VDC) Module (Gray Cover) (RoHS)
I-87040PW-G CR	32-ch Isolated DI (Wet, 19 ~ 30 VDC) Module (Gray Cover) (RoHS)

Accessories

	DN-37-A CR	Female DB37 to Screw Terminal Board (Pitch= 5.08 mm) with DIN-rail Mounting (RoHS) Include: CA-3710A (DB37 Male to Female Cable, 90°, 1 M)
	DN-37-381-A CR	Female DB37 to Screw Terminal Board (Pitch=3.81 mm) with DIN-rail Mounting (RoHS) Include: CA-3710A (DB37 Male to Female Cable, 90°, 1 M)
	CA-3705A CR CA-3710A CR CA-3715A CR	DB37 Male to Female Cable, 90°, 0.5 M/1 M/1.5 M (RoHS)
	CA-3710AM CR CA-3720AM CR CA-3730AM CR CA-3750AM CR CA-37100AM CR	DB37 Male to Female, with Molded Cable, 45°, 1 M/2 M/3 M/5 M/10 M (RoHS)