



## I-87042W

16-channel Isolated Digital Input &  
16-channel Isolated Digital Output Module

### Introduction

I-87042W offers 16 channels for digital input and 16 channels for digital output. Each of which features Photo-couple isolation. I-87042W supports sink type output with short-circuits protection. There are option for Power-on value and safe value for your consideration. About Input, you can chose sink type or source type input by wire connection. All channels are able to be used as 16-bit counter. I-87042W also has 32 LED indicators for channel status. 4 kV ESD protection and 3750 V<sub>DC</sub> intra-module isolation are standard.

### System Specifications

Communication	
Interface	RS-485
Format	N, 8, 1
Baud Rate	1200 ~ 115200 bps
Protocol	DCON
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)
Safe Value (When Host Fail or Communication Fail)	Yes
Power-on Preset Value	Yes
LED Indicator/Display	
System LED Indicator	1 LED as Power/Communication Indicator
I/O LED Indicator	32 LEDs as Digital Input and Output Indicators
Isolation	
Intra-Module Isolation, Field-to-Logic	3750 V <sub>DC</sub>
EMS Protection	
ESD (IEC 61000-4-2)	4 kV Contact for Each Terminal ±8 kV Air for Random Point
Power	
Power Consumption	1.25 W , +/- 5% For Hardware
Mechanical	
Dimensions (W x L x H)	30 mm x 85 mm x 115 mm
Environment	
Operating Temperature	-25 ~ +75°C
Storage Temperature	-40 ~ +85°C
Humidity	10 ~ 95% RH, Non-condensing

### Features

- Digital Input for Sink Type or Source Type
- Digital Outputs for Sink Type
- Power-on Value Setting
- Safe Value Setting
- Photocouple Isolation
- 4 kV ESD Protection
- 3750 V<sub>DC</sub> Intra-module Isolation
- RoHS Compliance
- Wide Operating Temperature Range: -25°C ~ +75°C



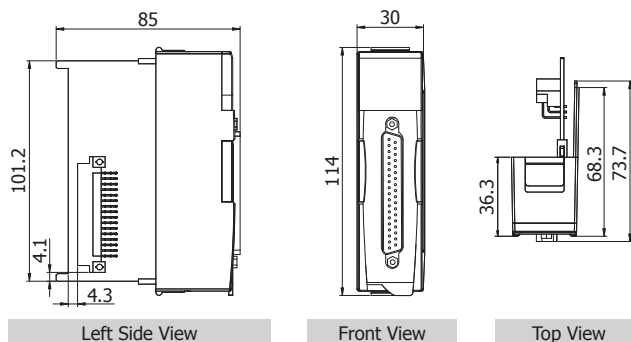
### Applications

- Industrial Automation
- Industrial Machinery
- Building Automation
- Food and Beverage Systems
- Semiconductor Fabrication
- Control Systems

### I/O Specifications

Digital Input	
Channels	16
Type	One common for all Inputs
Sink /Source (NPN /PNP)	Sink, Source
On Voltage Level	+3.5 V <sub>DC</sub> ~ 30 V <sub>DC</sub>
Off Voltage Level	+1 V <sub>DC</sub> Max.
Input Impedance	3 KΩ
Counter (100 Hz, 16-bit)	Yes
Channel to Channel Isolation	Yes
Digital Output	
Channels	16
Type	Open Collector
Sink /Source (NPN /PNP)	Sink
Load Voltage	+5 V <sub>DC</sub> ~ +30 V <sub>DC</sub>
Max. Load Current	100 mA/Channel
Overload Protection	Yes
Short Circuit Protection	-
Power-on Value	Yes
Safe Value	Yes

### Dimensions (Units: mm)



## Wire Connections

Select Type		
Source Type	Sink Type	
JP3	JP3	
EXT.PWR	DI.COM	EXT.GND
EXT.PWR	DI.COM	EXT.GND

Input Type	ON State LED ON Readback as 1 Relay ON	OFF State LED OFF Readback as 0 Relay OFF
Relay Contact (Sink)		
TTL/CMOS Logic (Sink)	Voltage > 3.5 V Logic Level Low Logic Power DI.COM/DO.GND DIx	Voltage < 1 V Logic Level High Logic Power DI.COM/DO.GND DIx
NPN Output (Sink)	Open Collector ON DI.COM/DO.GND DIx	Open Collector OFF DI.COM/DO.GND DIx
PNP Output (Sink)	Open Collector ON DI.COM/DO.GND DIx	Open Collector OFF DI.COM/DO.GND DIx

PNP Output

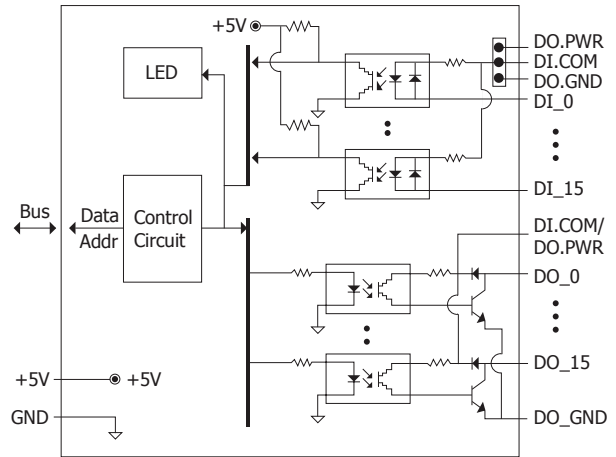
Input Type	ON State LED ON Readback as 1 Relay ON	OFF State LED OFF Readback as 0 Relay OFF
Relay Contact (Source)		
TTL/CMOS Logic (Source)	Voltage > 3.5 V Logic Power Logic Level Low DI.COM/DO.PWR DIx	Voltage < 1 V Logic Power Logic Level High DI.COM/DO.PWR DIx
NPN Output (Source)	Open Collector ON DI.COM/DO.PWR DIx	Open Collector OFF DI.COM/DO.PWR DIx
PNP Output (Source)	Open Collector ON DI.COM/DO.PWR DIx	Open Collector OFF DI.COM/DO.PWR DIx

(Source)

Output Type	ON State LED ON Readback as 1 Relay ON	OFF State LED OFF Readback as 0 Relay OFF
Drive Relay		
Resistance Load		

## Internal I/O Structure



## Pin Assignments

Pin Assignment	Terminal	No.	Pin Assignment
DI.COM/DO.PWR	19	37	DI.COM/DO.PWR
DO.GND	18	36	DO.GND
DO.GND	17	35	DO_15
DI_15	16	34	DO_14
DI_14	15	33	DO_13
DI_13	14	32	DO_12
DI_12	13	31	DO_11
DI_11	12	30	DO_10
DI_10	11	29	DO_9
DI_9	10	28	DO_8
DI_8	09	27	DO_7
DI_7	08	26	DO_6
DI_6	07	25	DO_5
DI_5	06	24	DO_4
DI_4	05	23	DO_3
DI_3	04	22	DO_2
DI_2	03	21	DO_1
DI_1	02	20	DO_0
DI_0	01		

37-pin Male D-Sub Connector

## Ordering Information

I-87042W-G CR	16-channel Isolated Digital Input & 16-channel Isolated Digital Output Module (Gray Cover) (RoHS)
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## Accessories

DN-8K16P16R	16 channel input terminals and 16 channel relay outputs board
DN-37-A	I/O Connector Block with DIN-Rail Mounting and 37-pin D-sub Connector (pitch:5.08 mm)
DN-37-381-A	I/O Connector Block with DIN-Rail Mounting and 37-pin D-sub Connector (pitch:3.81 mm)
CA-3705A	Male-Female D-sub Cable 0.5 M
CA-3710A	Male-Female D-Sub Cable 1M

CA-3715A	Male-Female D-Sub Cable 1.5M
SG-770 CR	7 channel differential or 14 channel single-ended surge protector (RoHS)
I-87042W + DN-8K16P16R	