



I-87042W-G

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 Vdc intra-module isolation are standard.

Applications

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

System Specifications

| 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) |
| Safe Value (When Host Fail or Communication Fail) | Yes |
| Power-on Preset Value | Yes |
| LED Indicators/Display | |
| System LED Indicators | Yes, 1 as Power/Communication Indicator |
| I/O LED Indicators | 32 as Digital Input and Output 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 | 1.25 W ,±5% For Hardware |
| 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

- 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 Vdc Intra-module Isolation



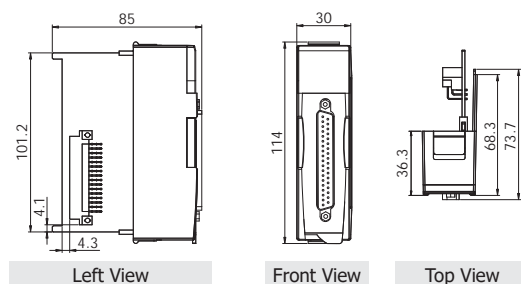
I-87042W and I-87042W
with DN-8K16P16R &
DB37 Male to Female Cable
(Optional)

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)

I/O Specifications

| Digital Input | |
|------------------------------|---------------------------|
| Channels | 16 |
| Type | One common for all Inputs |
| Sink/Source (NPN/PNP) | Sink, Source |
| ON Voltage Level | +3.5 VDC ~ 30 VDC |
| OFF Voltage Level | +1 VDC 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 VDC ~ +30 VDC |
| Max. Load Current | 100 mA/Channel |
| Overload Protection | Yes |
| Short Circuit Protection | - |
| Power-on Value | Yes |
| Safe Value | Yes |

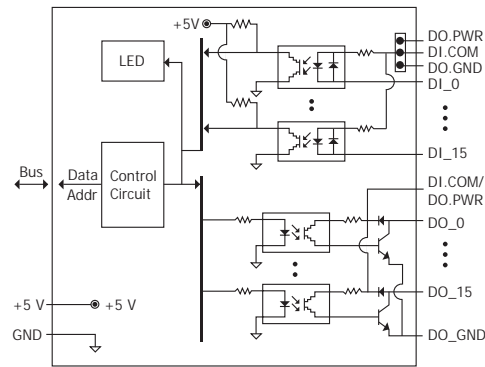
Dimensions (Units: mm)



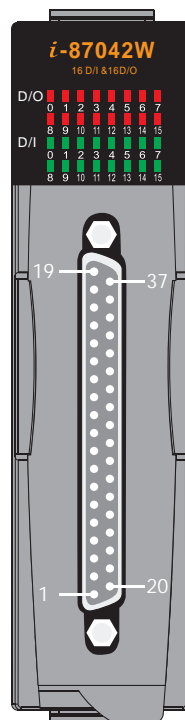
Wire Connections

| Select Type | | |
|-------------------------|----------------------------------|------------------------------------|
| Source Type | Sink Type | |
| | | |
| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
| Relay Contact (Sink) | Relay ON | Relay OFF |
| TTL/CMOS Logic (Sink) | Voltage > +3.5 V | Voltage < +1 V |
| NPN Output (Sink) | Open Collector ON | Open Collector OFF |
| PNP Output (Sink) | Open Collector ON | Open Collector OFF |
| Input Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
| Relay Contact (Source) | Relay ON | Relay OFF |
| TTL/CMOS Logic (Source) | Voltage > +3.5 V | Voltage < +1 V |
| NPN Output (Source) | Open Collector ON | Open Collector OFF |
| PNP Output (Source) | Open Collector ON | Open Collector OFF |
| Output Type | ON State LED ON Readback as 1 | OFF State LED OFF Readback as 0 |
| Drive Relay | Relay ON | Relay OFF |
| 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-ch Isolated DI & 16-channel Isolated DO (Sink, NPN) Module (Gray Cover) (RoHS) Includes CA-4002F (DB37 connector Female with plastic cover) |
|----------------------|---|

Accessories

| | | |
|--|---|--|
| | DN-8K16P16R CR | 16-channel digital input terminal and 16-channel relay output board Female DB37 to Screw Terminal Board (Pitch= 3.81 mm) with DIN-rail Mounting (RoHS) Include: CA-3705A (DB37 Male to Female Cable, 90°, 50 CM) |
| | 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) |