



## I-87046W-G

16-channel Non-isolated Digital Input Module  
for Long-distance Measurement

### Introduction

The I-87046W is a 16-channel Digital Input module that can be used for long-distance measurement, with an effective distance of up to 500 meters for dry contact connections. All channels can be used as 16-bit counters and 4 kV ESD protection is provided. The I-87046W also includes 16 LED indicators that can be used to monitor the status of the Digital Input channels.

### 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),<br>Communication (Programmable) |
| LED Indicators/Display                    |  |
| System LED Indicators                     | Yes, 1 as Power/Communication Indicator                    |
| I/O LED Indicators                        | 16 as High/Low Alarm Signals                               |
| Isolation                                 |  |
| Intra-module Isolation,<br>Field-to-Logic | -  |
| EMS Protection                            |  |
| ESD (IEC 61000-4-2)                       | ±4 kV Contact for each Terminal                            |
|   | ±8 kV Air for Random Point                                 |
| Power                                     |  |
| Power Consumption                         | 1.0 W Max.   |
| Mechanical                                |  |
| Dimensions (L × W × H)                    | 115 mm × 30 mm × 102 mm                                    |
| Environment                               |  |
| Operating Temperature                     | -25 to +75°C   |
| Storage Temperature                       | -40 to +85°C   |
| Humidity                                  | 10 to 95% RH, Non-condensing                               |

### Features

- 16-channel Digital Input
- Dry Contact Digital Input Channels
- Long-distance Measurement
- All Channels can be used as 16-bit Counters
- ±4 kV ESD Protection
- All Channels Non-isolated
- RoHS Compliant
- Wide Operating Temperature Range: -25 to +75°C



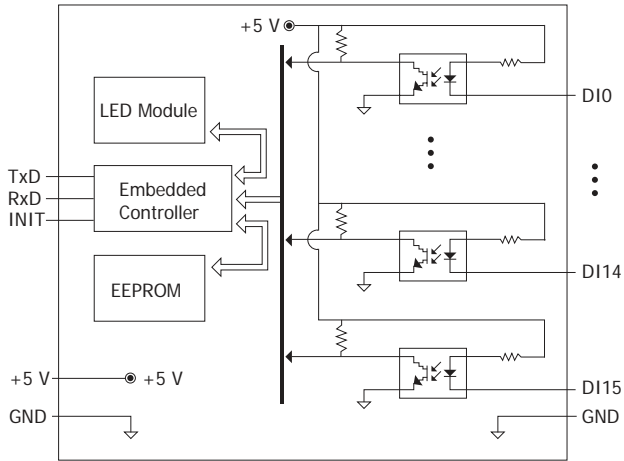
### Applications

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

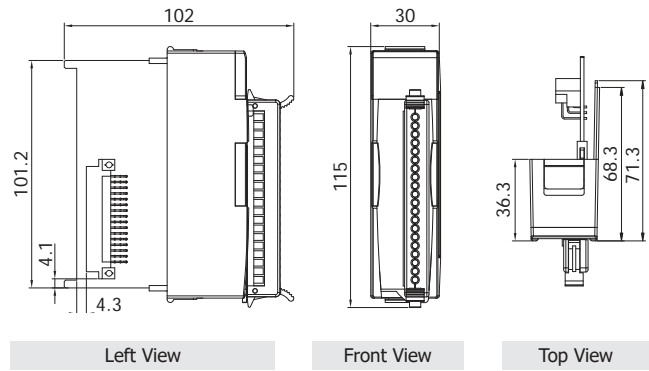
### I/O Specifications

| Digital Input                      |                      |                |
|------------------------------------|----------------------|----------------|
| Channels                           | 16                   |                |
| Type                               | Dry                  |                |
| Sink/Source (NPN/PNP)              | Sink, Source         |                |
| ON Voltage Level                   | Close to GND         |                |
| OFF Voltage Level                  | Open                 |                |
| Counters                           | Channels             | 16             |
|                                    | Max. Count           | 16-bit (65535) |
|                                    | Max. Input Frequency | 100 Hz         |
|                                    | Min. Pulse Width     | 5 ms           |
| Channel-to-Channel Isolation       | -                    |                |
| Low Pass Filter                    | Yes                  |                |
| Effective Distance for Dry Contact | 500 m Max.           |                |

## Internal I/O Structure



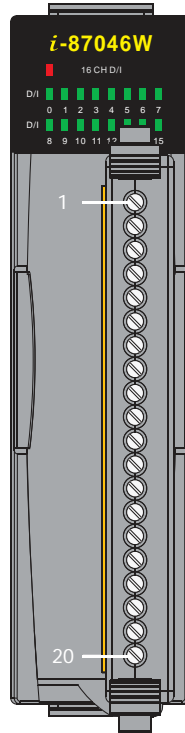
## Dimensions (Units: mm)



## Wire Connections

| Digital Input/Counter | ON State Readback as 1     | OFF State Readback as 0 |
|-----------------------|----------------------------|-------------------------|
|                       | Close to GND (+1 VDC Max.) | OPEN (+4 VDC ~ +30 VDC) |
| Dry Contact           |                            |                         |

## Pin Assignments



| Terminal No. | Pin Assignment |
|--------------|----------------|
| 01           | DI0            |
| 02           | DI1            |
| 03           | DI2            |
| 04           | DI3            |
| 05           | DI4            |
| 06           | DI5            |
| 07           | DI6            |
| 08           | DI7            |
| 09           | DI8            |
| 10           | DI9            |
| 11           | DI10           |
| 12           | DI11           |
| 13           | DI12           |
| 14           | DI13           |
| 15           | DI14           |
| 16           | DI15           |
| 17           | GND            |
| 18           | GND            |
| 19           | GND            |
| 20           | GND            |

## Ordering Information

|                   |  |
|-------------------|--|
| <b>I-87046W-G</b> | 16-channel Non-isolated Digital Input Module using the DCON Protocol (Gray Cover) (RoHS) |
|-------------------|--|

## Accessories

|  |           |  |
|--|-----------|--|
|  | SG-770 CR | 7-channel Differential or 14-channel Single-ended Surge Protector (RoHS) |
|--|-----------|--|