



Digital Input & Digital Output

RS-485 Remote I/O Modules



I-87054W

8-channel Isolated Digital Input and
8-channel Isolated Digital Output Module

Introduction

The I-87054W module offers 8 isolated Digital Input channels and 8 isolated Digital Output channels. Either sink- or source-type Digital Input can be selected via the wire connections, and all Digital Input channels are also able to be used as 16-bit counters. The I-87054W supports sink-type output with short circuit protection. The I-87054W includes 16 LED indicators that can be used to monitor the status of the Digital Input and Digital Output channels, and options are available for configuring both power-on and safe values. 4 kV ESD protection and 3750 Vdc intra-module isolation are provided as standard.

I-87KW Series

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) |
| 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, Field-to-Logic | 3750 Vrms |
| EMS Protection | |
| ESD (IEC 61000-4-2) | ±4 kV Contact for each Terminal ±8 kV Air for Random Point |
| Power | |
| Power Consumption | 0.7 W Max. |
| Mechanical | |
| Dimensions (L x W x H) | 115 mm x 30 mm x 102 mm |
| Environment | |
| Operating Temperature | -25 to +75°C |
| Storage Temperature | -40 to +85°C |
| Humidity | 10 to 95% RH, Non-condensing |

I-87054W

Features

- 8-channel Isolated Digital Input and 8-channel Isolated Digital Output
- Sink-type Digital Output Channels with Overload Protection
- All Digital Input Channels can be used as 16-bit Counters
- Short-circuit and Overcurrent Protection
- 4 kV ESD Protection
- 3750 Vdc Intra-module Isolation
- Configurable Power-on Value
- Configurable Safe Value
- RoHS Compliant
- Wide Operating Temperature Range: -25 to +75°C



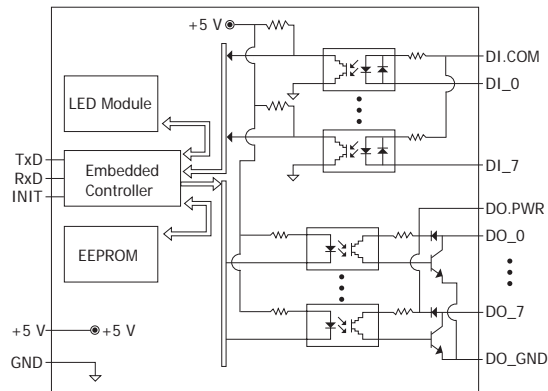
Applications

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

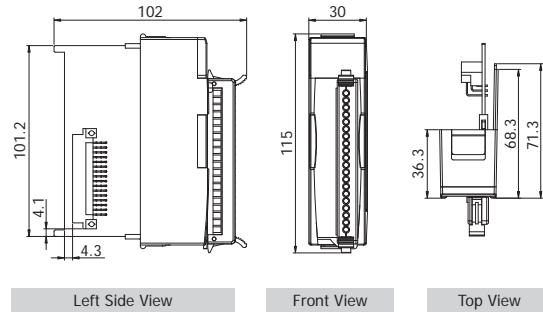
I/O Specifications

| Digital Input | | |
|--|----------------------|------------------|
| Channels | 8 | |
| Type | Wet Contact | |
| Sink/Source (NPN/PNP) | Sink, Source | |
| ON Voltage Level | +3.5 Vdc ~ +50 Vdc | |
| OFF Voltage Level | +1 Vdc Max. | |
| Input Impedance | 10 kΩ, 0.66 W | |
| Counters | Channels | 8 |
| | Max. Count | 16-bit (65535) |
| | Max. Input Frequency | 100 Hz |
| | Min. Pulse Width | 5 ms |
| Channel-to-Channel Isolation | | Yes |
| Low Pass Filter | | Yes |
| Effective Distance for Dry Contact | | - |
| Digital Output | | |
| Channels | | 8 |
| Type | | Open Collector |
| Sink/Source (NPN/PNP) | | Sink |
| Load Voltage | | +5 Vdc ~ +50 Vdc |
| Max. Load Current | | 700 mA/channel |
| Overvoltage Protection | | 60 Vdc |
| Overload Protection | | Yes |
| Short-circuit and Overcurrent Protection | | Yes, 1.4 A |
| Power-on Value | | Yes |
| Safe Value | | Yes |

Internal I/O Structure



Dimensions (Units: mm)



Wire Connections

| Digital Input/Counter | ON State Readback as 1 | OFF State Readback as 0 |
|----------------------------------|------------------------|-------------------------|
| Sink | | |
| Source | | |
| Output Type | ON State Readback as 1 | OFF State Readback as 0 |
| Digital Output (Resistance Load) | | |
| Digital Output (Inductive Load) | | |

Pin Assignments

| Terminal No. | Pin Assignment |
|--------------|----------------|
| 01 | DI.COM |
| 02 | DI0 |
| 03 | DI1 |
| 04 | DI2 |
| 05 | DI3 |
| 06 | DI4 |
| 07 | DI5 |
| 08 | DI6 |
| 09 | DI7 |
| 10 | DO0 |
| 11 | DO1 |
| 12 | DO2 |
| 13 | DO3 |
| 14 | DO4 |
| 15 | DO5 |
| 16 | DO6 |
| 17 | DO7 |
| 18 | DO_GND |
| 19 | DO_GND |
| 20 | DO.PWR |

Ordering Information

| | |
|------------|---|
| I-87054W-G | 8-channel Isolated Digital Input and 8-channel Isolated Digital Output Module using the DCON Protocol (Gray Cover) (RoHS) |
|------------|---|

Accessories

| | |
|----------------|--|
| RM-104/108/116 | 4/8/16-channel 16 A Power Relay Board, 1 Form C |
| RM-204/208/216 | 4/8/16-channel 8 A Power Relay Board, 2 Form C |
| DN-SSR4 | 4-channel 1A Solid-state Relay Board, 1 Form A |
| RM-22.22 | 1-channel 20 A Power Relay for Direct 35 mm Rail (EN 50022) Mounting, 2 Form A |
| SG-770 CR | 7-channel Differential or 14-channel Single-ended Surge Protector (RoHS) |