I-87054W

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

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

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.

Applications

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

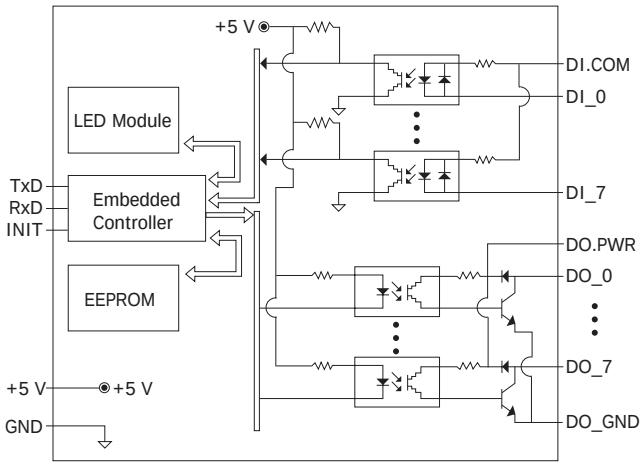
System Specifications

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 Indictors	Yes, 1 as Power/Communication Indicator
I/O LED Indicators	16 as High/Low Alarm Signals
Isolation	
Intra-module Isolation, Field-to-Logic	3750 V_{rms}
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

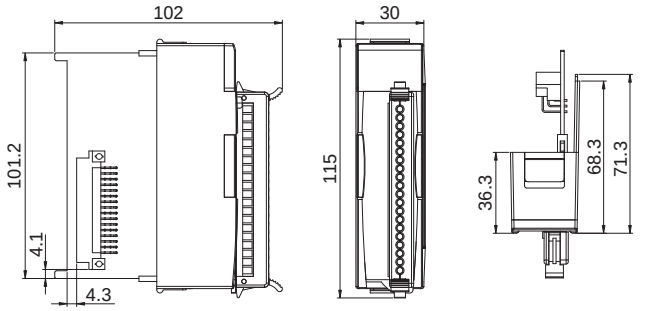
I/O Specifications

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

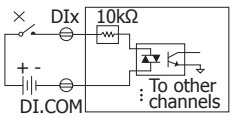
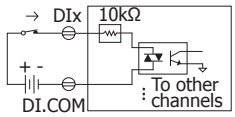
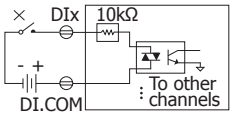
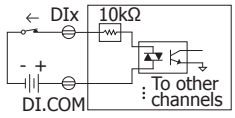


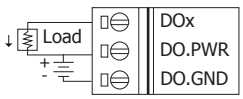
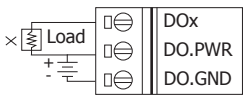
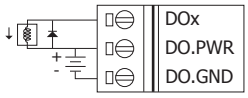
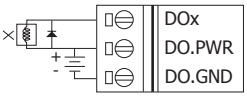
Dimensions (Units: mm)



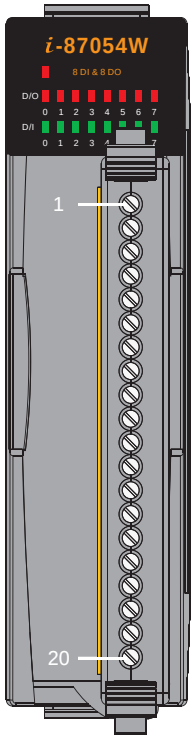
Left Side View | Front View | Top View

Wire Connections

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

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)