

I-87016W

2-channel Isolated Strain Gauge Input Module

Features

- 2-channel Digital Inputs
- 2-channel Digital Outputs
- Strain Gauge Measurement
- High Resolution: 16-bit
- Excitation Voltage Output : 0 ~ 10 V
- Individual Channel Configuration
- 3000 VDC Intra-module Isolation
- Wide Operating Temperature Range: -25 to +75°C

Introduction

Around our surroundings, there are numerous examples of converting force into a measurable electrical output; In most cases, we need a strain gauge or a load cell. But the question is that how do we deal with these electrical outputs.
I-87016W is definitely your NO.1 choice! It not only processes the data from load cells or strain gauges, but also features linear mapping that generates intuitive and synchronic results for you; by user-defined corespondent table, I-87016W converts the data into weight directly!

System Specifications

COM Ports	
Port	RS-485
Data Format	N, 8, 1
Baud Rate	1200 ~ 115200 bps
Protocol	DCON
CPU Module	
Dual Watchdog	Module (1.6 Seconds), Communication (Programmable)
LED Indicators	
System LED Indicator	1
I/O LED Indicator	4
Isolation	
Intra-module Isolation, Field-to-Logic	3000 VDC
EMS Protection	
ESD (IEC 61000-4-2)	±4 kV Contact for Each port; ±8 kV Air for Random Point
Power	
Consumption	typical: 1.1 W; Maximum: 2.5 W
Mechanical	
Dimensions (W x L x H)	30 mm x 115 mm x 102 mm
Environment	
Operating Temperature	-25 ~ +75 °C
Storage Temperature	-40 ~ +85 °C
Humidity	10 ~ 95 % RH, Non-condensing

I/O Specifications

Strain Gauge		
Channels		2
Range	Voltage	±15 mV, ±50 mV, ±100 mV,±500 mV, ±1 VDC, ±2.5 VDC
	Current	-20 mA ~ +20 mA (No External Resistor Required)
Wiring		Full-bridge, Half-bridge, and Quarter-bridge
Accuracy	Voltage	±0.05 % of FSR
	Current	±0.01 % of FSR
Resolution		16-bit
Sampling Rate		10 Hz (Total)
-3dB Bandwidth		15.7 Hz (10 Hz mode)
Common Mode Rejection		150 dB min.
Normal Mode Rejection		100 dB
Impedance	Voltage	>400 kΩ
	Current	125 kΩ
Overvoltage Protection		30 VDC
Long-distance Measurement		Yes
Individual Channel Configurable		Yes
Excitation Voltage Output		
Channels		1
Range		0 ~ +10 VDC
Resolution		16-bit
Accuracy		±0.05% of FSR
Max. Output Load current		80 mA
Output Capacity		10 VDC @ 80 mA
Drift		±50 ppm/°C

Applications

- Industrial Automation
- Industrial Machinery
- Building Automation
- Semiconductor Fabrication
- Control Systems

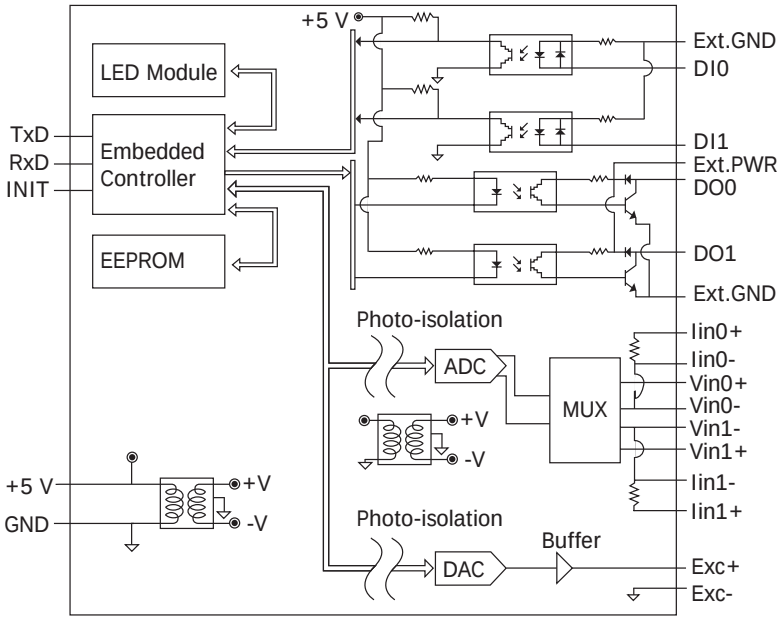
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I/O Specifications

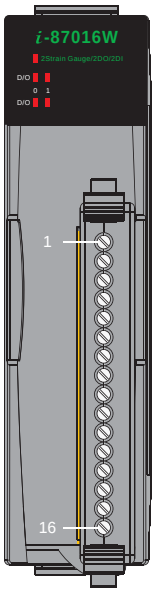
Digital Input/Counter	
Channel	2
Type	Wet
Sink/Source (NPN/PNP)	Sink
ON Voltage Level	+3.5 ~ 50 VDC
OFF Voltage Level	+1 VDC Max.
Frequency	50 Hz Max.
Min. Pulse Width	10 ms
Input Impedance	10 KΩ, 0.66 W
Channel-to-Channel Isolation	Yes

Digital Output	
Channel	2
Type	Open Collector
Sink/Source (NPN/PNP)	Sink
Load Voltage	+3.5 ~ 50 VDC
Load Current	700 mA/Channel
Short-circuit Protection	Yes
Power on Value	Yes
Safe Value	Yes

Internal I/O Structure



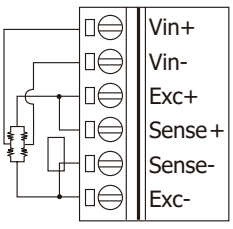
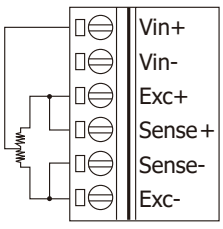
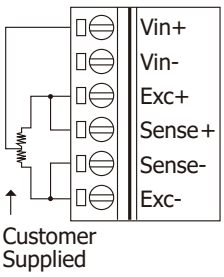
Internal I/O Structure

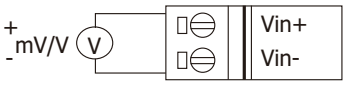
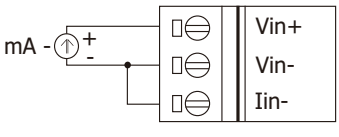
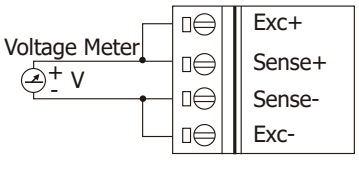


Terminal No.	Pin Assignment
01	Vin0+
02	Vin0-
03	Iin0-
04	Vin1+
05	Vin1-
06	Iin1-
07	Exc+
08	Sense+
09	Sense-
10	Exc-
11	Ext.PWR
12	DO0/LO
13	DO1/HI
14	DI0/EV
15	DI1/EV
16	Ext.GND

Wire Connections

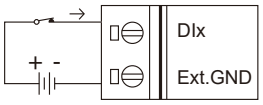
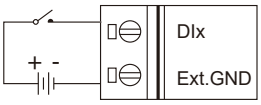
Bridge Sensor/Load Cell/Strain Gauge

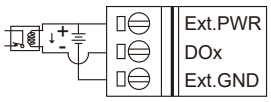
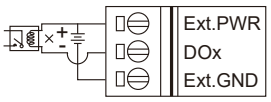
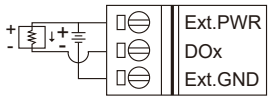
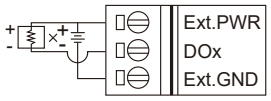
Full-bridge	Half-bridge	Quarter-bridge
		

Analog Input		Analog Output
Voltage	Current	
		

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Wire Connections

Digital Input/ Counter	ON State Readback as 1	OFF State Readback as 0
Sink	+10 ~ +50 VDC	OPEN or < +4 VDC
		

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

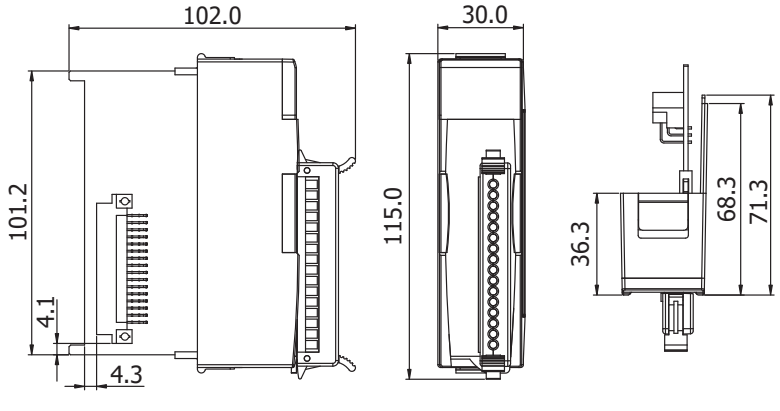
Excitation Voltage

Strain Gauge	120 R
	350 R
Quarter-bridge	9.0 V
	10 V
Half-bridge	9.0 V
	10 V
Full-bridge	4.5 V
	10 V

Accessories

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

Dimensions (Unit: mm)



Left View | Front View | Top View

Ordering Information

I-87016W-G CR	2-channel Isolated Strain Gauge Input Module (RoHS)

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