



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 correspondent 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

Applications

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

I/O Specifications

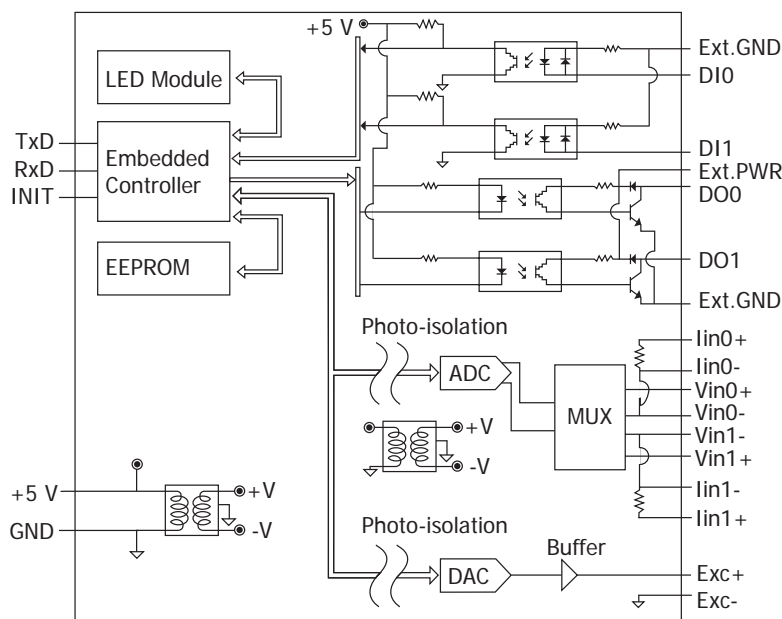
Strain Gauge		
Channels	2	
Range	Voltage	±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 VDC, ±2.5 VDC
	Current	-20 mA ~ +20 mA (No External Resistor Required)
Wiring	Full-bridge, Half-bridge, and Quarter-bridge	
Accuracy	Voltage	±0.05 % of FSR
	Current	±0.01 % of FSR
Resolution	16-bit	
Sampling Rate	10 Hz (Total)	
-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	

I/O Specifications

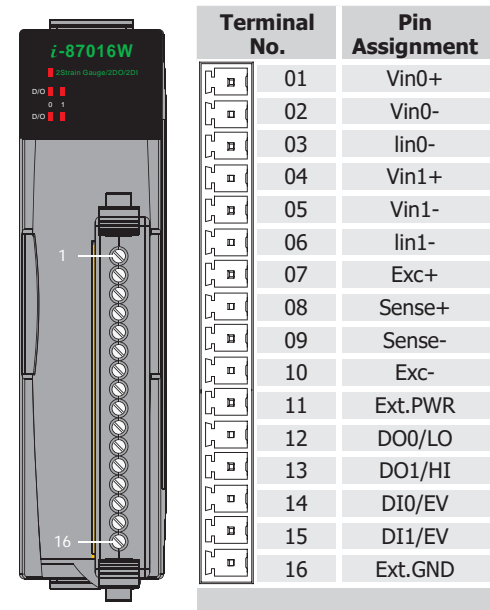
Digital Input/Counter	
Channel	2
Type	Wet
Sink/Source (NPN/PNP)	Sink
ON Voltage Level	+3.5 ~ 50 VDC
OFF Voltage Level	+1 VDC Max.
Frequency	50 Hz Max.
Min. Pulse Width	10 ms
Input Impedance	10 K Ω , 0.66 W
Channel-to-Channel Isolation	Yes

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

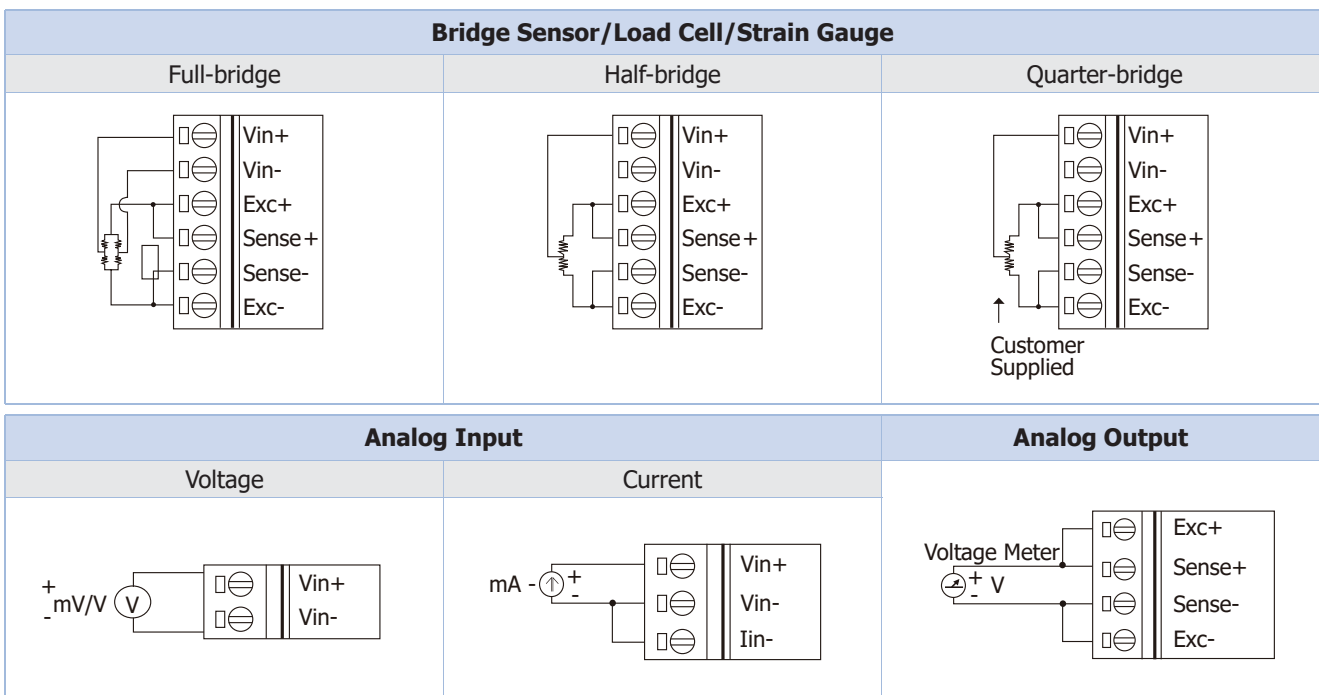
Internal I/O Structure



Internal I/O Structure



Wire Connections



Wire Connections

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

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

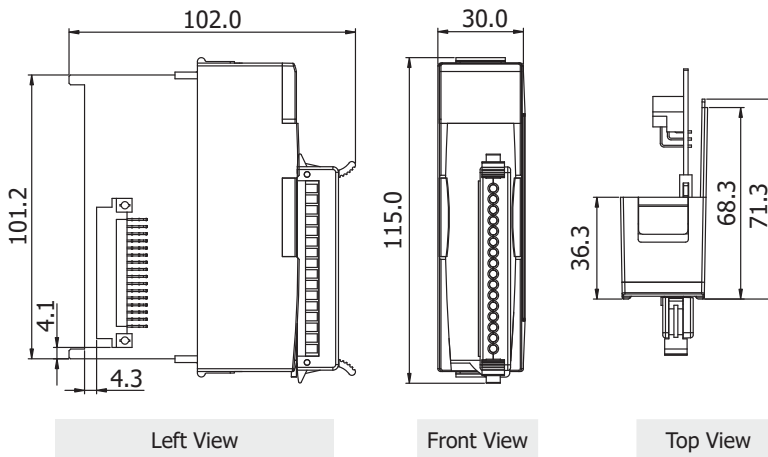
Accessories

SG-770 CR



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

Dimensions (Unit: mm)



Ordering Information

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