



I-87016W-G

2-channel Isolated Strain Gauge Input Module

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!

Applications

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

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)
Safe Value (When Host Fail or Communication Fail)		Yes
Power-on Preset Value		Yes
LED Indicators/Display		
System LED Indictors		Yes, 1 as Power/Communication Indicator
I/O LED Indicators		4 as Digital Input/Digital Output status Indicators
Isolation		
Intra-module Isolation, Field-to-Logic		3000 Vdc
EMS Protection		
ESD (IEC 61000-4-2)		±4 kV Contact for each Terminal ±8 kV Air for Random Point
Power		
Power	Typical	1.1 W
Consumption	Maximum	2.5 W
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

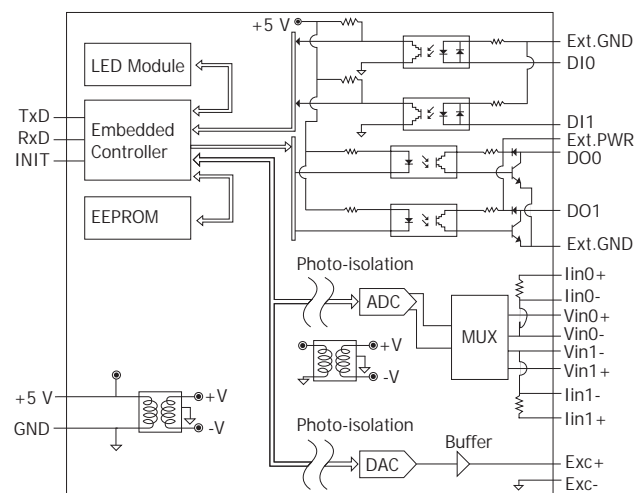
- Strain Gauge Measurement
- High Resolution: 16-bit
- Excitation Voltage Output : 0 ~ 10 V
- Individual Channel Configuration
- 2-channel Digital Inputs
- 2-channel Digital Outputs
- 3000 Vdc Intra-module Isolation
- RoHS Compliant
- Wide Operating Temperature Range: -25 to +75°C



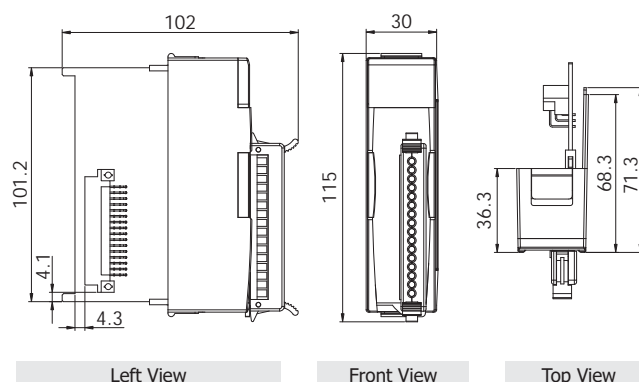
I/O Specifications

Analog Input		
Channels		2
Range		±15 mV, ±50 mV, ±100 mV,±500 mV, ±1 VDC, ±2.5 VDC -20 mA ~ +20 mA (No External Resistor Required)
Strain Gauge Type		Full-bridge, Half-bridge, and Quarter-bridge
Resolution		16-bit
Individual Channel Configuration		Yes
Accuracy		±0.05% of FSR (Voltage), ±0.1% of FSR (Current)
Sampling Rate		10 Hz (Total)
-3dB Bandwidth		15.7 Hz (10 Hz mode)
Common Mode Rejection		150 dB min.
Normal Mode Rejection		100 dB
Input Impedance		> 400 kΩ (Voltage), 125 Ω (Current)
Overvoltage Protection		30 Vdc
Long-distance Strain Gauge Measurement		Yes
Individual Channel Configurable		Yes
Excitation Voltage Output		
Channels		1
Range		0 ~ +10 VDC
Resolution		16-bit
Max. Output Load current		80 mA
Accuracy		±0.05% of FSR
Output Capacity		10 VDC @ 80 mA
Drift		±50 ppm/°C
Digital Input		
Channels		2
Contact		Wet
Sink/Source (NPN/PNP)		Sink
ON Voltage Level		+3.5 VDC ~ 50 VDC
OFF Voltage Level		+1 VDC Max.
Input Impedance		10 kΩ, 0.66 W
Event Counter	Channels	2
	Max. Input Frequency	50 Hz
	Min. Pulse Width	10 ms
Channel-to-Channel Isolation		Yes
Digital Output		
Channels		2
Type		Open Collector
Sink/Source (NPN/PNP)		Sink
Load Voltage		+3.5 VDC ~ 50 VDC
Max. Load Current		700 mA/channel
External Power Reversed Protection and Short Circuit Protection		Yes
Overheating Protection		Yes

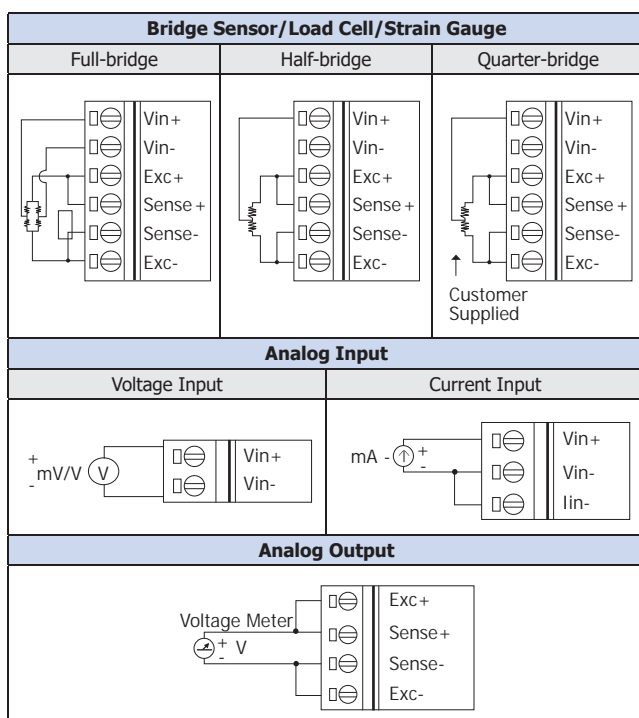
Internal I/O Structure



Dimensions (Units: mm)



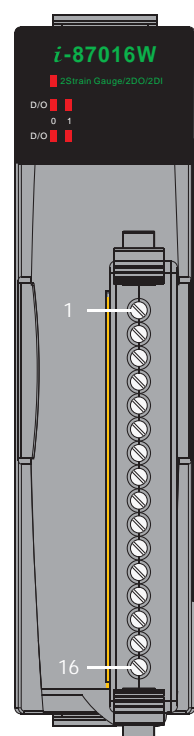
Wire Connections



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

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

Pin Assignments



Terminal No.	Pin Assignment
01	Vin0+
02	Vin0-
03	lin0-
04	Vin1+
05	Vin1-
06	lin1-
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

Excitation Voltage

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

Ordering Information

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

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