

I-7016(D)



M-7016(D)

2-ch 4-wire Strain Gauge Input Module



I-7016P(D)

1-ch 6-wire Strain Gauge Input Module

Features

- Long-distance Strain Gauge Measurement
  - Only for I-7016P(D)
- 1 or 2 Strain Gauge Measurement
- High Resolution: 16-bit
- Excitation Voltage Output: 0 ~ +10 V
- 50 Hz Event Counter for Digital Input
- High/Low Alarm for Digital Output
- Linear Mapping Function
- Built-in Dual Watchdog

Introduction

The I-7016 series modules are designed not only to process data from weighing sensors or strain gauges but also to provide linear mapping functionality. By using user-defined mapping tables, the measured data can be directly converted into weight. This series supports full-bridge strain gauges and offers 1-ch or 2-ch strain gauge input with configurable ranges, 1-ch excitation voltage output, 1-ch digital input that can function as a general input or a 50 Hz event counter, and 4-ch digital output that can be used for general output or high/low alarms. Additionally, the I-7016P(D) modules are specifically designed for long-range strain gauge measurements and provide 3000 VDC internal isolation, ensuring enhanced safety and reliability.

Specifications

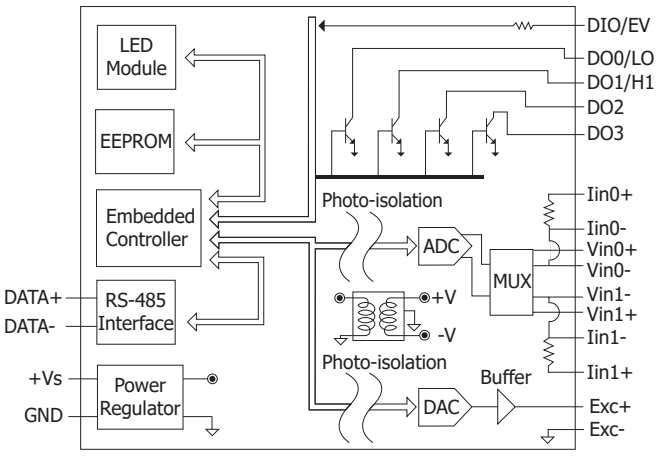
Model	I-7016 M-7016	I-7016D M-7016D	I-7016P	I-7016PD
CPU Module				
Watchdog Timer	Module, Communication (Programmable)			
Display				
5-Digit 7 Segment LED	-	Yes	-	Yes
Isolation				
Intra-module Isolation	1500 VDC		3000 VDC	
EMS Protection				
EFT (IEC 61000-4-4)	±4 kV for Power Line			
ESD (IEC 61000-4-2)	±4 kV Contact for Each Terminal			
	±8 kV Air for Random Point			
LED Indicators				
Status	1 x Power and Communication			
Digital Input/Counter				
Channels	1			
Type	Dry Contact			
Sink/Source (NPN/PNP)	Source			
ON Voltage Level	Close to GND			
OFF Voltage Level	Open			
Max. Counts	65535 (16-bit)			
Frequency	50 Hz			
Input Impedance	3 kΩ			
Overvoltage Protection	±30 VDC			
Digital Output				
Channels	4			
Type	Open Collector			
Sink/Source (NPN/PNP)	Sink			
Load Voltage	+3.5 ~ +50 VDC			
Load Current	30 mA/channel			
Power on Value	Programmable			
Safe Value	Programmable			

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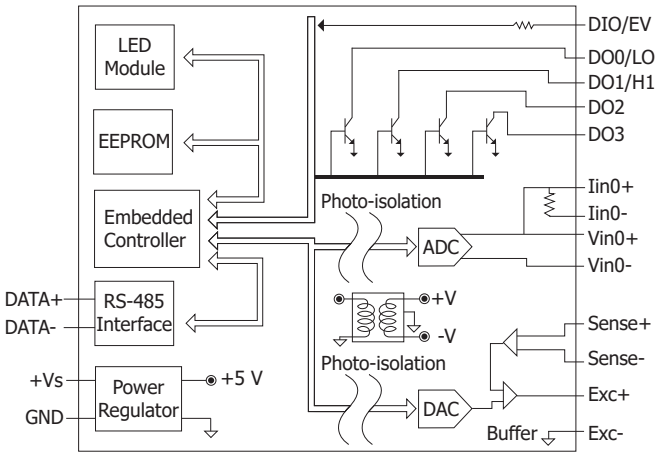
Model		I-7016 M-7016	I-7016D M-7016D	I-7016P	I-7016PD
Strain Gauge, Load Cell Input					
Channels		2		1	
Type		Full-Bridge Strain Gauge, Voltage, Current			
Range		Voltage: ±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, and ±2.5 V Current: ±20 mA			
Wiring		4-wire		6-wire	
Accuracy		±0.05% of FSR			
Resolution		16-bit			
Sampling Rate		1-ch Mode: 10 Hz 2-ch Mode: 2 Hz (total)		10 Hz	
Impedance		20 MΩ			
Long Distance Measurement		Yes			
Overvoltage Protection		±5 VDC			
Excitation Voltage Output					
Channels		1			
Range		0 ~ +10 V			
Resolution		16-bit			
Accuracy		±0.05% of FSR			
Max. Load Current		40 mA			
Power on Value		Programmable			
COM Ports					
Ports		1 x RS-485			
Baud Rate		1200 ~ 115200 bps			
Data Format	I-7000	(N, 8, 1)			
	M-7000	(N, 8, 1) (N, 8, 2) (E, 8, 1) (O, 8, 1)		-	
Protocol	I-7000	DCON			
	M-7000	Modbus RTU, DCON			
Power					
Reverse Polarity Protection		Yes			
Input Range		+10 ~ +30 VDC			
Consumption		2.4 W	3.0 W	1.3 W	
Mechanical					
Dimensions (mm)		72 x 123 x 35 (W x L x H)			
Installation		DIN-Rail Mounting			
Environment					
Operating Temperature		-25 ~ +75 °C			
Storage Temperature		-40 ~ +85 °C			
Humidity		10 ~ 95% RH, Non-condensing			

Internal I/O Structure

I-7016(D), M-7016(D)



I-7016P(D)



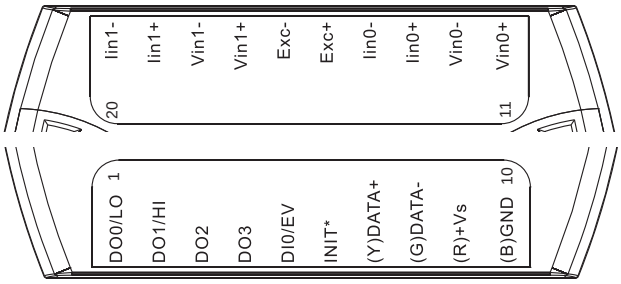
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Applications

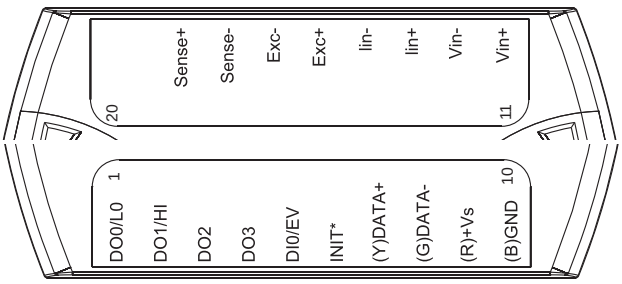
- Building Automation
- Factory Automation
- Machine Automation
- Remote Maintenance
- Remote Diagnosis
- Testing Equipment

Pin Assignments

I-7016(D), M-7016(D)

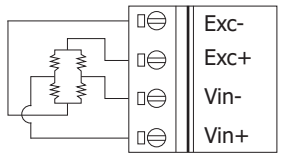
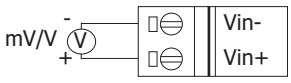
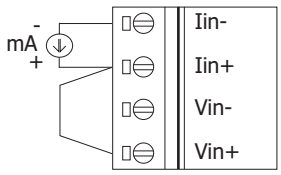
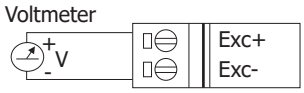


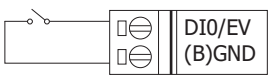
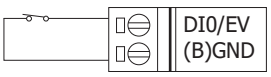
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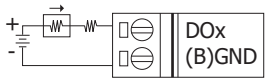
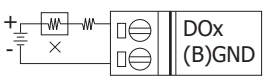
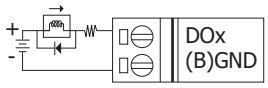
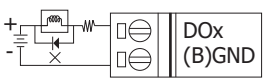


Wire Connections

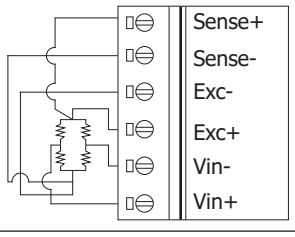
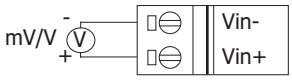
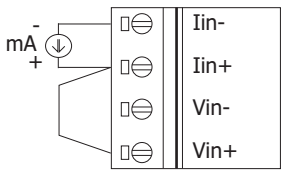
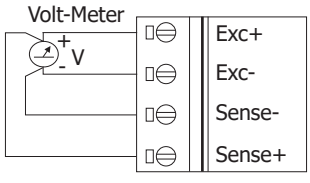
I-7016(D), M-7016(D)

Bridge Sensor/Load Cell/ Strain Gauge	Voltage Input	Current Input	Voltage Output
			

DI/Counter	Dry Contact
Readback as 1	Open 
Readback as 0	Closed to GND 

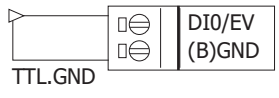
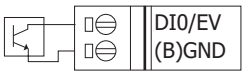
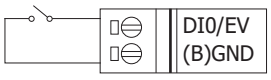
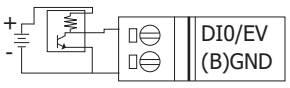
Output Type	ON State Readback as 1	OFF State Readback as 0
Resistance Load		
Inductance Load		

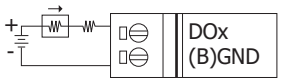
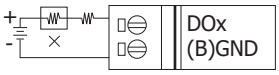
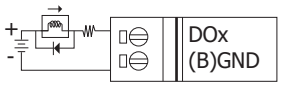
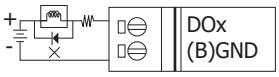
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Bridge Sensor/Load Cell/ Strain Gauge	Voltage Input	Current Input	Voltage Output
			

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I-7016P(D)

Digital Input/ Counter	Readback as 1	Readback as 0
Sink	+3.5 ~ +50 VDC	OPEN or < +4 VDC
		
Source	+3.5 ~ +50 VDC	OPEN or < +4 VDC
		

Output Type	ON State Readback as 1	OFF State Readback as 0
Resistance Load		
Inductance Load		

Ordering Information

I-7016 CR	2-ch 4-wire Strain Gauge Input Module using DCON Protocol (Blue Cover) (RoHS)
I-7016D CR	2-ch 4-wire Strain Gauge Input Module with LED Display using DCON Protocol (Blue Cover) (RoHS)
I-7016D-G CR	2-ch 4-wire Strain Gauge Input Module with LED Display using DCON Protocol (Gray Cover) (RoHS)
M-7016-G CR	2-ch 4-wire Strain Gauge Input Module using DCON and Modbus Protocols (Gray Cover) (RoHS)
M-7016D-G CR	2-ch 4-wire Strain Gauge Input Module with LED Display using DCON and Modbus Protocols (Gray Cover) (RoHS)
I-7016P CR	1-ch 6-wire Strain Gauge Input Module using DCON Protocol (Blue Cover) (RoHS)
I-7016PD CR	1-ch 6-wire Strain Gauge Input Module with LED Display using DCON Protocol (Blue Cover) (RoHS)

Accessories

tM-7520U CR 	Tiny Isolated RS-232 to RS-485 Converter (RoHS)
tM-7561 CR 	Tiny USB to Isolated RS-485 Converter with CA-USB18 Cable (RoHS)
tM-SG4 CR 	RS-485 Pull-high/Pull-low and Termination Resistor Module (RoHS)
I-7514U CR 	Isolated 4-channel RS-485 Repeater/Hub/Splitter (Gray Cover) (RoHS)
SG-770 CR 	7 or 14-channel Surge Protector (RoHS)
SG-3000 Series 	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers

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