



I-7016(D)

M-7016(D)

2-ch 4-wire Strain Gauge Input Module

Features

- 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

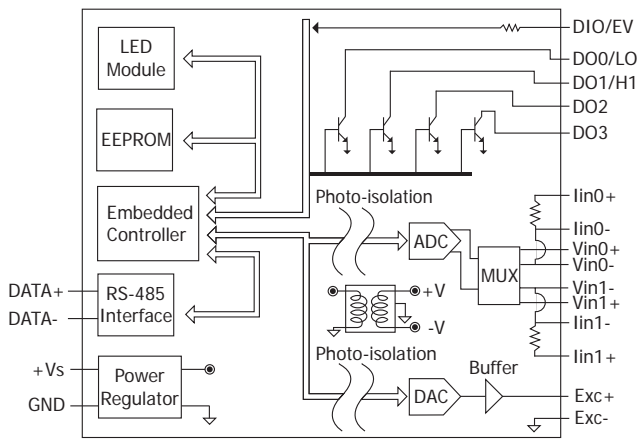
Not only can the I-7016 process data from a load cell or a strain gauge, it also features linear mapping that can be used to directly convert the resulting data into weight via a user-defined correspondent table. The I-7016 supports full-bridge strain gauges and provides 2 Analog Input channels, 1 excitation voltage output channel, 1 Digital Input channels and 4 Digital Output channels. The module provides a programmable input range (± 15 mV, ± 50 mV, ± 100 mV, ± 500 mV, ± 1 V, and ± 2.5 V) and each Analog Input channel can be individually configured. Excitation voltage output can be in the range of 0 ~ +10 V, with a 40 mA driving efficiency. Digital Output channels can also be set as high or low alarm outputs. The M-7016 supports both the Modbus RTU and DCON protocols, which can be configured via software, and all hardware specifications are the same as the I-7016.

Specifications

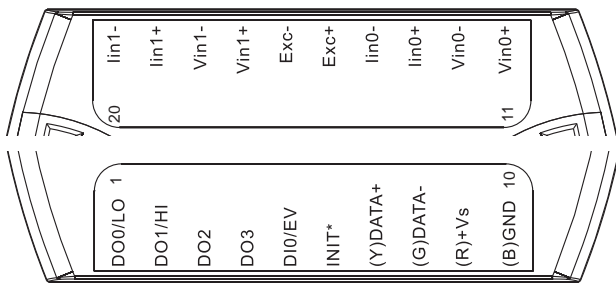
Model	I-7016 M-7016	I-7016D M-7016D
CPU Module		
Watchdog Timer	Module, Communication (Programmable)	
Display		
Type	-	5-Digit 7 Segment LED Display
Isolation		
Intra-module Isolation	1500 VDC	
LED Indicators		
Status	1 x Power and Communication	
Digital Input/Counter		
Channels	1	
Type	Dry Contact	
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 k Ω	
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	
Strain Gauge, Load Cell Input		
Channels	2	
Type	Strain Gauge	
Wiring	Full-Bridge	

Model	I-7016 M-7016	I-7016D M-7016D
Accuracy	$\pm 0.05\%$ of FSR	
Resolution	16-bit	
Sampling Rate	10 Hz for 1-channel mode or 2 Hz (total) for 2-channel mode	
Impedance	20 M Ω	
Overvoltage Protection	± 5 VDC	
Excitation Voltage Output		
Channels	1	
Range	0 ~ +10 V	
Resolution	16-bit	
Accuracy	$\pm 0.05\%$ 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	(N, 8, 1) (N, 8, 2) (E, 8, 1) (O, 8, 1)	
Protocol	DCON Modbus RTU, DCON	
Power		
Reverse Polarity Protection	Yes	
Input Range	+10 ~ +30 VDC	
Consumption	2.4 W	3.0 W
Mechanical		
Dimensions (mm)	123 x 72 x 35 (W x L x H)	
Installation	DIN-Rail Mounting	
Environment		
Operating Temperature	-25 ~ +75 $^{\circ}$ C	
Storage Temperature	-40 ~ +85 $^{\circ}$ C	
Humidity	10 ~ 95% RH, Non-condensing	

Internal I/O Structure



Pin Assignments









Applications

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

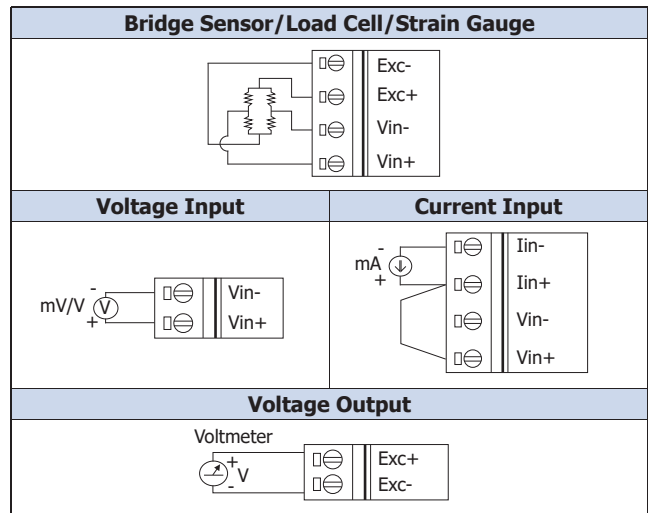
Ordering Information



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)





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	 7/14 channel Surge Protector (RoHS)
SG-3000 Series	 Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers

Wire Connections



DI/Counter	Readback as 1	Readback as 0
	Open	Closed to GND
Dry Contact	 DI0/EV (B)GND	 DI0/EV (B)GND

Output Type	ON State Readback as 1	OFF State Readback as 0
Resistance Load	 DOx (B)GND	 DOx (B)GND
Inductance Load	 DOx (B)GND	 DOx (B)GND