



I-7016(D) M-7016(D)
2-channel Strain Gauge Input Module

Features

- 2-channel Strain Gauge Measurement
- High Resolution: 16-bit
- Excitation Voltage Output: 0 ~ 10V
- 50 Hz Event Counter for Digital Input
- High/Low Alarm for Digital Output
- Linear Mapping Function
- 3000 V_{dc} Intra-Module Isolation
- Dual Watchdog
- Wide Operating Temperature Range: -25 ~ +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-7016 is definitely your NO.1 choice! It not only processes the data from load cells or strain gauges but also features linear mapping that converts the data into weight directly by user-defined correspondent table. I-7016 supports full-bridge strain gauge are providing 2 analog input channels, 1 excitation voltage output channel, 2 digital input channels and 2 digital output channels module. It provides programmable input range (+/-15 mV, +/-50 mV, +/-100 mV, +/-500 mV, +/-1 V, and +/-2.5 V) and each analog input is allowed to be configured individually. Excitation voltage output can be in the range of 0 ~ 10 V with a 40 mA driving efficiency. Digital outputs can also be set as alarm outputs. M-7016 supports Modbus RTU and DCON protocols which can be configured via software and all hardware specifications are the same as I-7016.

System Specifications

Models	I-7016	I-7016D	M-7016	M-7016D
Communication				
Interface	RS-485			
Format	(N, 8, 1) (N, 8, 2) (E, 8, 1) (O, 8, 1)	N, 8, 1		
Baud Rate	1200 ~ 115200 bps			
Protocol	DCON		Modbus RTU, DCON	
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)			
LED Indicator/Display				
System LED Indicator	Yes, 1 LED as Power/Communication Indicator			
I/O LED Indicator	-			
7-Segment LED Display	-	Yes	-	Yes
Isolation				
Intra-Module Isolation, Field-to-Logic	1500 V _{dc}			
EMS Protection				
ESD (IEC 61000-4-2)	-			
EFT (IEC 61000-4-4)	-			
Power				
Reverse Polarity Protection	Yes			
Input Range	10 ~ 30 V _{dc}			
Consumption	2.4 W	3.0 W	2.4 W	3.0 W
Mechanical				
Dimensions (W x L x H)	72 mm x 123 mm x 35 mm			
Installation	DIN-Rail or Wall Mounting			
Environment				
Operating Temperature	-25 ~ +75°C			
Storage Temperature	-40 ~ +85°C			
Humidity	10 ~ 95% RH, Non-condensing			

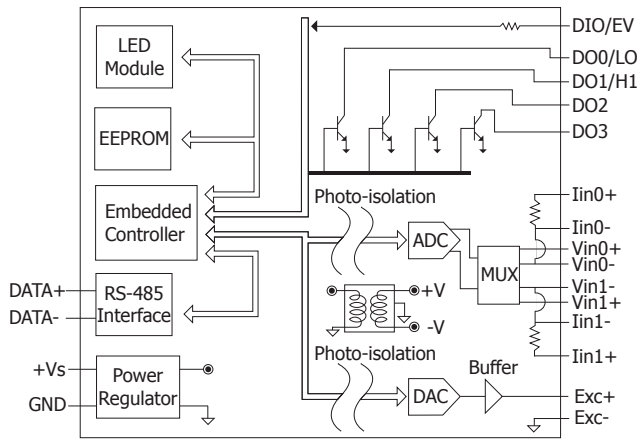
Applications

Building Automation, Factory Automation, Machine Automation, Remote Maintenance, Remote Diagnosis, Testing Equipment.

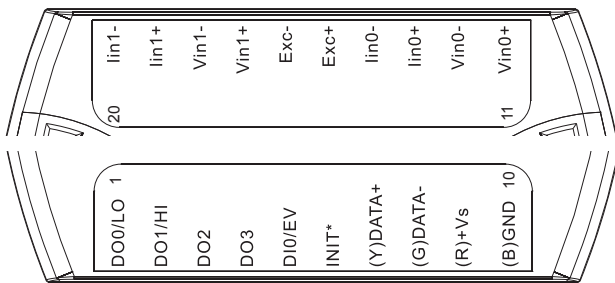
I/O Specifications

Models	I-7016	I-7016D	M-7016	M-7016D
Strain Gauge Input				
Channels	2			
Wiring	4 Wire			
Sensor Type	Full-Bridge			
Resolution	16-bit			
Accuracy	+/-0.05%			
Sampling Rate	2/10 Hz			
Input Impedance	20 MΩ			
Individual Channel Configuration	-			
Overvoltage Protection	+/-5 V _{dc}			
Open Wire Detection	-			
Long Distance Measurement	-			
Excitation Voltage Output				
Channels	1			
Range	0 ~ 10 V			
Max. Load Current	40 mA			
Resolution	16-bit			
Accuracy	+/-0.05%			
Power-on Value	Yes			
Digital Input				
Channels	1			
Contact	Dry			
Sink/Source (NPN/PNP)	Source			
On Voltage Level	Close to GND			
Off Voltage Level	Open			
Counter (50 Hz, 16-bit)	Yes			
Input Impedance	3 KΩ			
Overvoltage Protection	+/-30 V _{dc}			
Digital Output				
Channels	4			
Type	Open Collector			
Sink/Source (NPN/PNP)	Sink			
Load Voltage	+3.5 ~ 50 V _{dc}			
Max. Load Current	30 mA/Channel			
Power-on Value	Yes			
Safe Value	Yes			

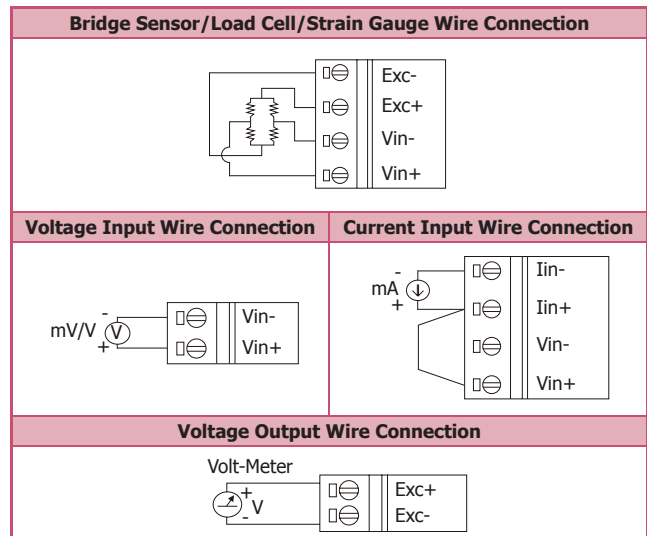
Internal I/O Structure



Pin Assignments



Wire Connections



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

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

Ordering Information

I-7016 CR	2-channel Strain Gauge Input Module with DCON Protocol (Blue Cover) (RoHS)
I-7016D CR	I-7016 with 7-Segment LED Display (Blue Cover) (RoHS)
I-7016D-G CR	I-7016 with 7-Segment LED Display (Gray Cover) (RoHS)
M-7016-G CR	2-channel Strain Gauge Input Module with DCON and Modbus Protocol (Gray Cover) (RoHS)
M-7016D-G CR	M-7016 with 7-Segment LED Display (Gray Cover) (RoHS)

Accessories

	tM-7520U CR	RS-232 to RS-485 converter (RoHS)
	tM-7561 CR	USB to RS-485 converter (RoHS)
	tM-SG4 CR	RS-485 Pull-high/Pull-low and Termination Resistor Module (RoHS)
	I-7514U CR	4-channel RS-485 Hub (RoHS)
	SG-770 CR	7 channel differential or 14 channel single-ended surge protector (RoHS)
	SG-3000 series	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Inputs