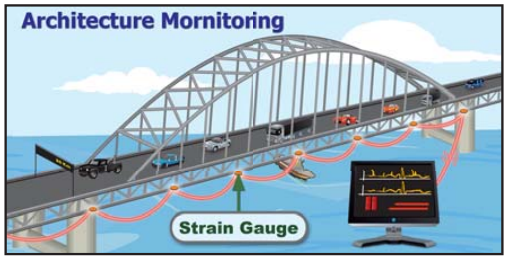
RS-485 Remote I/O Modules

Strain Gauge Introduction

A strain gauge is a resistive sensor. The measurement of strain is usually made using a Wheatstone bridge circuit with excitation voltage. The variation in strain can be calculated based on the measured voltage. The resistance of the gauge varies when the gauge is compressed or stretched. With the characteristic, it can be applied to measure stress or the growth of the crack or movement in buildings, foundations, and other structures to ensure the safety.

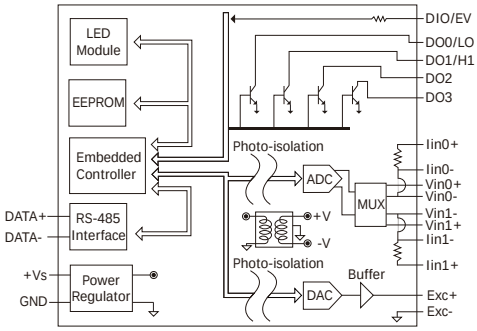
Applications



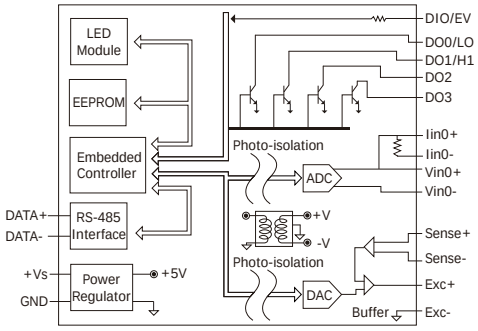
Strain Gauge Input Module (General Grade)		
Model Name	I-7016(D) M-7016(D)	I-7016P(D)
Pictures		
Strain Gauge Input		
Channel	2	1
Wiring	4 wire	6 wire
Sensor Type	Full-Bridge	
Resolution	16-bit	
Accuracy	+/-0.05%	
Sampling Rate	2/10 Hz	10 Hz
Input Impedance	20 MΩ	
Individual Channel Configuration	-	
Overvoltage Protection	+/-5 V_{DC}	
Open Wire Detection	-	
Long Distance Measurement	-	Yes
Excitation Voltage Output		
Channel	1	
Range	0 ~ 10 V	
Max. Load Current	40 mA	
Resolution	16-bit	
Accuracy	+/-0.05%	
Power-on Value	Yes	
Digital Input		
Channel	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		
Channel	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	
System		
Dual Watchdog	Yes	
ESD (IEC 61000-4-2)	-	
EFT (IEC 61000-4-4)	-	
Intra-Module Isolation, Field-to-Logic	3000 V_{DC}	
Power Input	10 ~ 30 V_{DC}	
Power Consumption	2.4 W; 3.0 W for (D) version	2.4 W; 3.0 W for (D) version

Internal I/O Structure

I-7016(D)/M-7016(D)

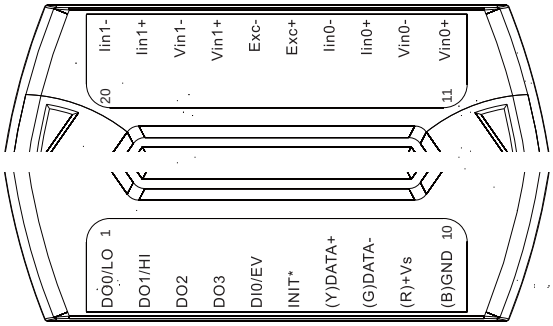


I-7016P(D)



Pin Assignments

I-7016(D)/M-7016(D)



I-7016P(D)