



**I-7016P**

**I-7016PD**

1-channel Strain Gauge Input Module

**Features**

- Long-distance Strain Gauge Measurement
- High Resolution: 16-bit
- Excitation Voltage Output : 0 ~ +10 V
- 50 Hz Event Counter (Digital Input)
- High/Low Alarm (Digital Output)
- 3000 Vdc Intra-module Isolation
- Dual Watchdog
- Wide Operating Temperature Range: -25 to +75°C



**Introduction**

The "P" version of the I-7016 module is another milestone in the development of the I-7016 series, and is a testament to excellence by the R&D team at ICP DAS. The I-7016P is specifically designed for long-distance strain gauge measurement, and provides 1 Digital Input channel as a 50 Hz event counter and 4 Digital Output channels that can act as high or low alarms. The I-7016P also features 3000 VDC intra-module isolation.

**Applications**

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

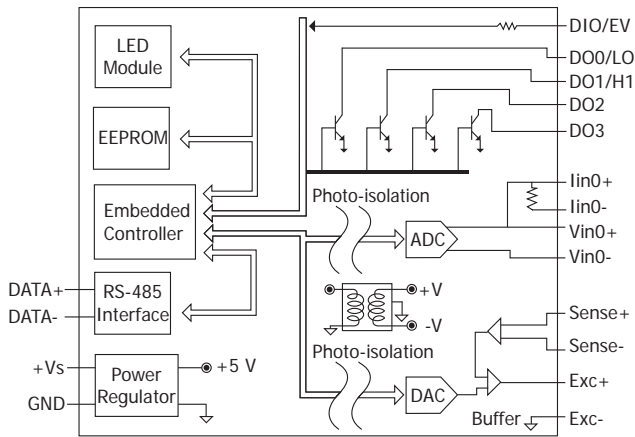
**I/O Specifications**

Model	I-7016P	I-7016PD
<b>Strain Gauge Input</b>		
Channels	1	
Wiring	6-wire	
Sensor Types	Full-Bridge	
Resolution	16-bit	
Accuracy	±0.05% of FSR	
Sampling Rate	10 Hz	
Input Impedance	20 MΩ	
Individual Channel Configuration	-	
Overvoltage Protection	±5 Vdc	
Open Wire Detection	-	
Long Distance Measurement	Yes	
<b>Excitation Voltage Output</b>		
Channels	1	
Range	0 ~ +10 V	
Max. Load Current	40 mA	
Resolution	16-bit	
Accuracy	±0.05%	
Power-on Value	Yes	
<b>Digital Input</b>		
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 Vdc	
<b>Digital Output</b>		
Channels	4	
Type	Open Collector	
Sink/Source (NPN/PNP)	Sink	
Load Voltage	+3.5 ~ +50 Vdc	
Max. Load Current	30 mA/Channel	
Power-on Value	Yes	
Safe Value	Yes	

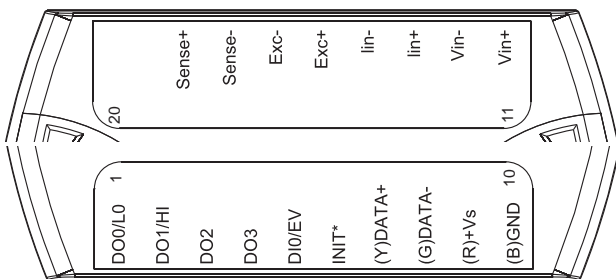
**System Specifications**

Model	I-7016P	I-7016PD
<b>Communication</b>		
Interface	RS-485	
Bias Resistor	No (Usually supplied by the RS-485 Master. Alternatively, add a tM-SG4 or SG-785.)	
Format	N, 8, 1	
Baud Rate	1200 to 115200 bps	
Protocol	DCON	
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)	
<b>LED Indicators/Display</b>		
System LED Indicator	Yes, 1 as Power/Communication Indicator	
I/O LED Indicators	-	
7-segment LED Display	-	Yes
<b>Isolation</b>		
Intra-module Isolation, Field-to-Logic	3000 Vdc	
<b>EMS Protection</b>		
ESD (IEC 61000-4-2)	4 kV Contact for each Terminal	
	8 kV Air for Random Point	
EFT (IEC 61000-4-4)	±4 kV for Power Line	
<b>Power</b>		
Reverse Polarity Protection	Yes	
Input Range	+10 ~ +30 Vdc	
Consumption	1.3 W	
<b>Mechanical</b>		
Dimensions (L x W x H)	123 mm x 72 mm x 35 mm	
Installation	DIN-Rail or Wall Mounting	
<b>Environment</b>		
Operating Temperature	-25 to +75°C	
Storage Temperature	-40 to +85°C	
Humidity	10 to 95% RH, Non-condensing	

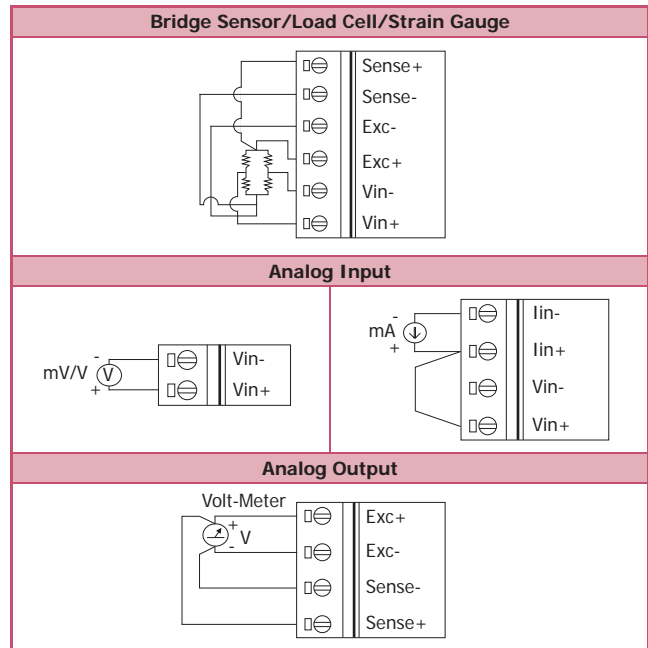
### Internal I/O Structure



### Pin Assignments



### Wire Connections



Digital Input/Counter	Readback as 1	Readback as 0
	+3.5 ~ +50 VDC	OPEN or < +4 VDC
Sink		
	+3.5 ~ +50 VDC	OPEN or < +4 VDC
Source		
Output Type	ON State Readback as 1	OFF State Readback as 0
Resistance Load		
Inductance Load		

### Ordering Information

I-7016P CR	1-channel Strain Gauge Input Module using the DCON Protocol (6-wire) (Blue Cover) (RoHS)
I-7016PD CR	I-7016P with 7-segment LED Display (6-wire) (Blue 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 Bias 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 Input Transformers