



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 for Digital Input
- High/Low Alarm for Digital Output
- 3000 V_{DC} Intra-Module Isolation
- Dual Watchdog
- Wide Operating Temperature Range: -25 ~ +75°C



Introduction

The "P" version is another milestone in the development of I-7016 and a testament to excellence by ICP DAS R&D team. I-7016P is specifically designed for long-distance strain gauge measurement. It provides 1-channel digital input as 50 Hz event counter and 4-channel digital output as high/low alarm. I-7016P also features 3000 V_{DC} intra-module isolation.

Applications

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

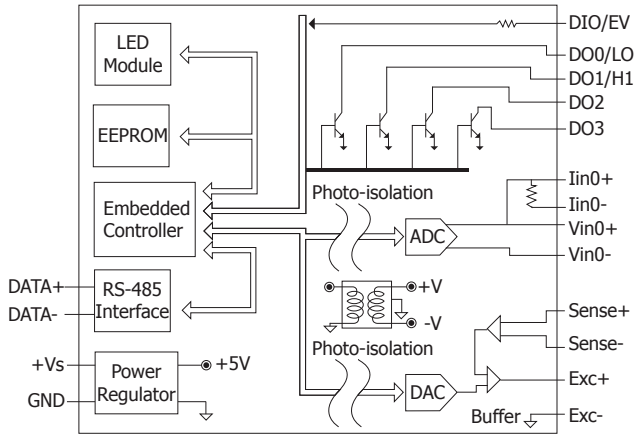
I/O Specifications

| Models | I-7016P | I-7016PD |
|----------------------------------|---------------------------|----------|
| Strain Gauge Input | | |
| Channels | 1 | |
| Wiring | 6 Wire | |
| Sensor Type | Full-Bridge | |
| Resolution | 16-bit | |
| Accuracy | +/-0.05% | |
| Sampling Rate | 10 Hz | |
| Input Impedance | 20 MΩ | |
| Individual Channel Configuration | - | |
| Overvoltage Protection | +/-5 V _{DC} | |
| Open Wire Detection | - | |
| Long Distance Measurement | Yes | |
| 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 | |

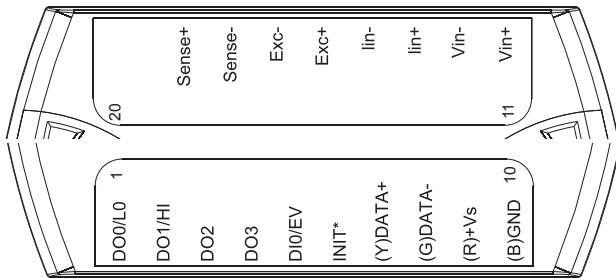
System Specifications

| Models | I-7016P | I-7016PD |
|--|---|----------|
| Communication | | |
| Interface | RS-485 | |
| Format | N, 8, 1 | |
| Baud Rate | 1200 ~ 115200 bps | |
| Protocol | 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 |
| Isolation | | |
| Intra-Module Isolation, Field-to-Logic | 3000 V _{DC} | |
| EMS Protection | | |
| 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 | |
| Power | | |
| Reverse Polarity Protection | Yes | |
| Input Range | 10 ~ 30 V _{DC} | |
| Consumption | 1.3 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 | |

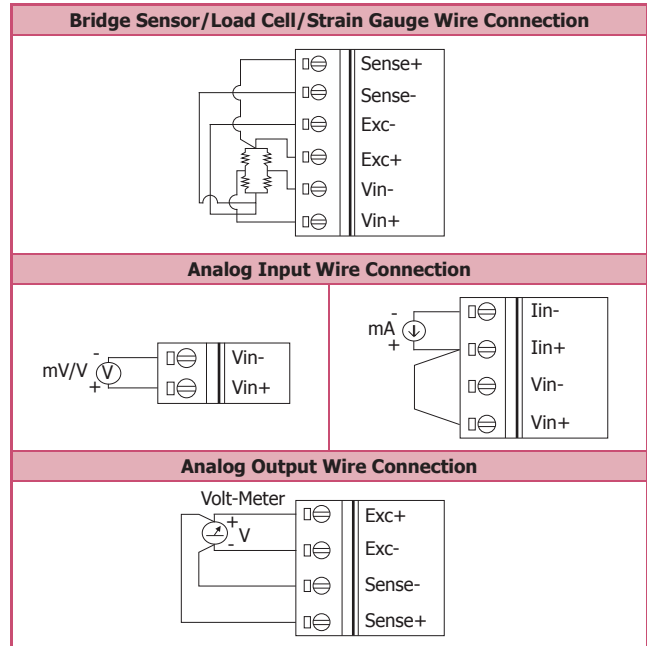
Internal I/O Structure



Pin Assignments



Wire Connections



| Digital Input/Counter | Readback as 1 | Readback as 0 |
|-----------------------|----------------------------|----------------------------|
| | +3.5 ~ +50 V _{DC} | OPEN or <4 V _{DC} |
| Sink | | |
| Source | +3.5 ~ +50 V _{DC} | OPEN or <4 V _{DC} |
| | | |
| 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 with 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 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 |