

Features

- I-7018BL
 - Open Thermocouple Detection
- I-7018P
 - Additional Thermocouple Types, L and M
- 8-channel Differential or 6-channel Differential and 2-channel Single-ended Analog Input
- Current, Voltage or Thermocouple Input
- High Resolution: 16-bit
- 3000 Vdc Intra-module Isolation
- Dual Watchdog
- RoHS Compliant
- Wide Operating Temperature Range: -25 to +75°C



Introduction

The I-7018P is an Analog Input module that features current and voltage input, as well as thermocouple input. The I-7018BL is a thermocouple input module. Both of the modules provide 8-channel differential or 6-channel differential and 2-channel single ended input that can be selected via a jumper, and all channels can be configured for the same input type. Note that an optional external 125 Ω resistor is required for current input. The modules also feature 3000 VDC intra-module isolation as well as ±35 VDC overvoltage protection. The I-7018BL provides thermocouple open wire detection and the I-7018P provides support for two additional thermocouple types, L and M.

Applications

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

System Specifications

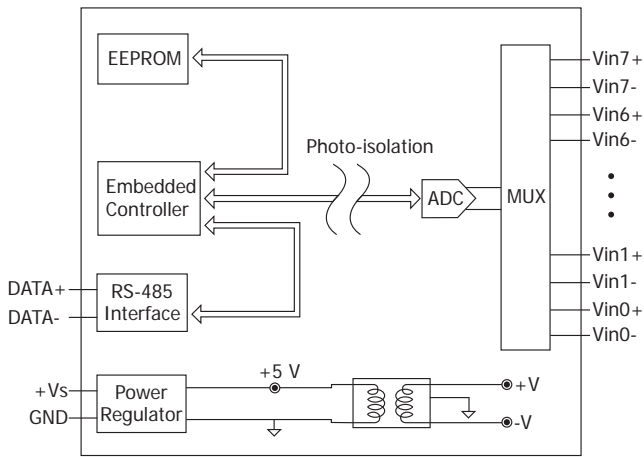
| Model | I-7018BL | I-7018P |
|--|--|---------|
| Communication | | |
| Interface | RS-485 | |
| Bias Resistor | No (Usually supplied by the RS-485 Master. Alternatively, add a tM-SG4 or SG-785.) | |
| Format | (N, 8, 1) (N, 8, 2) (E, 8, 1) (O, 8, 1) | |
| Baud Rate | 1200 to 115200 bps | |
| Protocol | DCON | |
| Dual Watchdog | Yes, Module (1.6 Seconds), Communication (Programmable) | |
| LED Indicators/Display | | |
| System LED Indicator | Yes, 1 as Power/Communication Indicator | |
| I/O LED Indicators | - | |
| 7-segment LED Display | - | |
| Isolation | | |
| Intra-module Isolation, Field-to-Logic | 3000 Vdc | |
| EMS Protection | | |
| ESD (IEC 61000-4-2) | ±2 kV Contact for each Terminal | |
| EFT (IEC 61000-4-4) | ±4 kV to Power Line | |
| Surge (IEC 61000-4-5) | ±0.5 kV for Power Line | |
| Power | | |
| Reverse Polarity Protection | Yes | |
| Input Range | +10 ~ +30 Vdc | |
| Consumption | 1.0 W | |
| Mechanical | | |
| Dimensions (L x W x H) | 123 mm x 72 mm x 35 mm | |
| Installation | DIN-Rail or Wall Mounting | |
| Environment | | |
| Operating Temperature | -25 to +75°C | |
| Storage Temperature | -40 to +85°C | |
| Humidity | 10 to 95% RH, Non-condensing | |

I/O Specifications

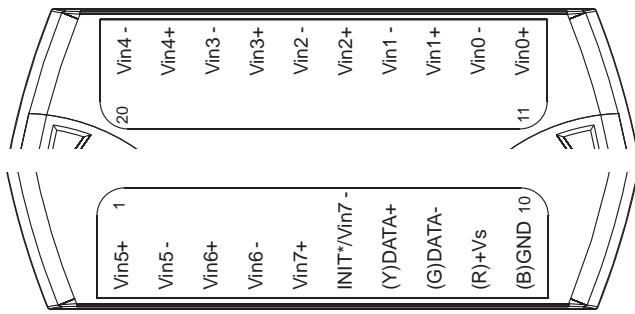
| Model | I-7018BL | I-7018P | |
|---|--|---------------------------|---|
| Analog Input | | | |
| Channels | Differential and Single-ended, or Differential | | |
| Wiring | Differential | | |
| Sensor Types | Thermocouple | J, K, T, E, R, S, B, N, C | J, K, T, E, R, S, B, N, C, L, M |
| | Voltage | - | ±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5 V |
| | Current | - | ±20 mA (requires an optional external 125 Ω resistor) |
| Resolution | 16-bit | | |
| Accuracy | 0.15% of FSR | 0.1% of FSR | |
| Sampling Rate | 10 Hz | | |
| Input Impedance | > 400 kΩ | | |
| Common Voltage Protection | ±15 VDC | | |
| Individual Channel Configuration | - | | |
| Overvoltage Protection | ±35 Vdc | ±80 Vdc | |
| Open Wire Detection (for thermocouple only) | Yes | - | |
| Temperature Outputs Consistency | - | | |
| Stable Temperature Output in the Field | - | | |

Note: For highly-accurate thermocouple measurement, ICP DAS recommends selecting the I-7018Z/I-7019Z module, which features automatic cold-junction compensation for each channel, ensuring consistent and stable temperature output.

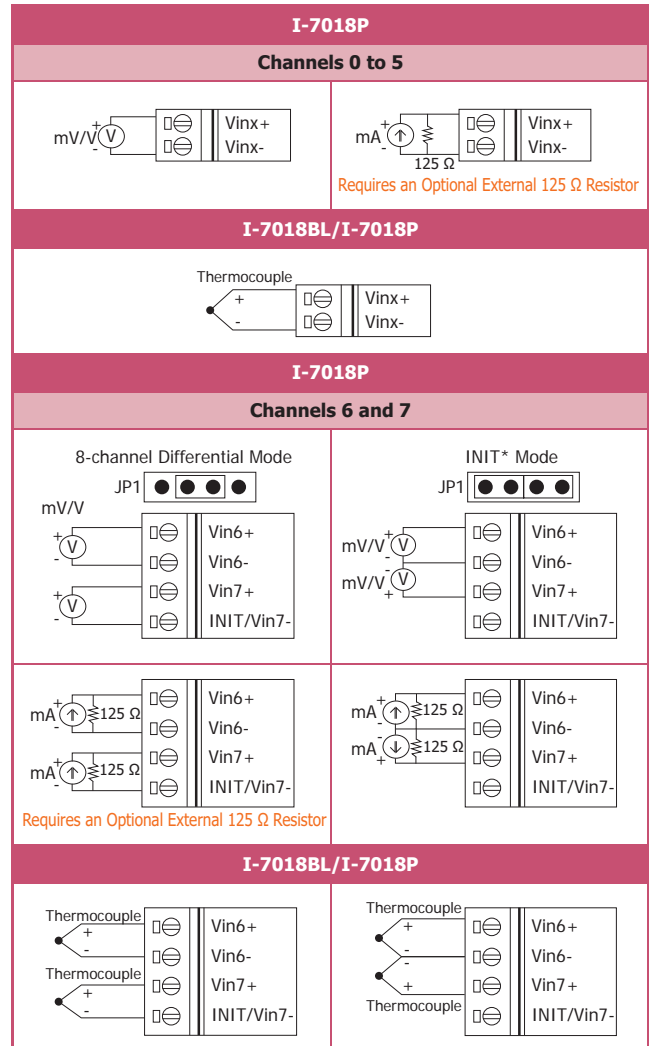
Internal I/O Structure



Pin Assignments



Wire Connections



Note: To access the jumpers, the cover must be opened.

Ordering Information

| | |
|---------------------|---|
| I-7018BL CR | 8-channel Thermocouple Input Module using the DCON Protocol (Blue Cover) (RoHS) |
| I-7018P CR | 8-channel Analog Input Module using the DCON Protocol (Blue Cover) (RoHS) |
| I-7018P-G CR | 8-channel Analog Input Module using the DCON Protocol (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 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 |
| | 125Ω, 0.1% DIP Resistor | 125Ω External Resistor for use with Current input on I-7011/I-7012/I-7017/I-7018 series modules |

I-7018BL/I-7018P