

## 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-7018BL and I-7018P are Analog Input modules that feature current and voltage input, as well as thermocouple input. 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

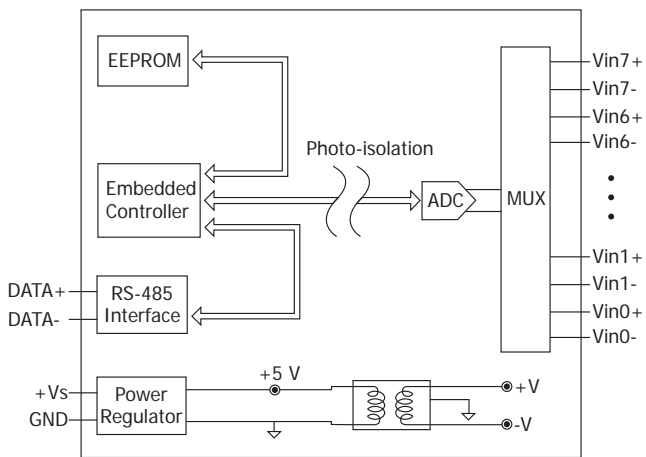
Model	I-7018BL	I-7018P
<b>Communication</b>		
Interface	RS-485	
Bias Resistor	No (Usually supplied by the RS-485 Master. Alternatively, add a tM-SG4 or SG-785.)	
Format	(N, 8, 1) (N, 8, 2) (E, 8, 1) (O, 8, 1)	
Baud Rate	1200 to 115200 bps	
Protocol	DCON	
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)	
<b>LED Indicators/Display</b>		
System LED Indicator	Yes, 1 as Power/Communication Indicator	
I/O LED Indicators	-	
7-segment LED Display	-	
<b>Isolation</b>		
Intra-module Isolation, Field-to-Logic	3000 Vdc	
<b>EMS Protection</b>		
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	
<b>Power</b>		
Reverse Polarity Protection	Yes	
Input Range	+10 ~ +30 Vdc	
Consumption	1.0 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	

## I/O Specifications

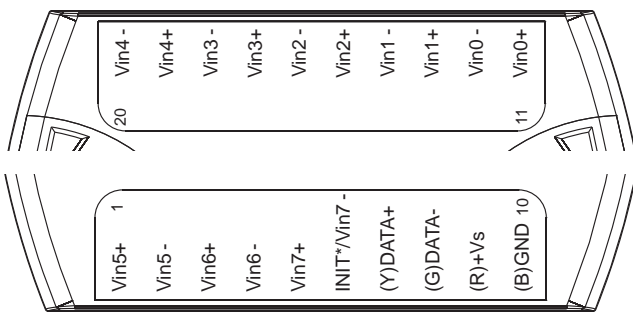
Model	I-7018BL	I-7018P	
<b>Analog Input</b>			
Channels	Differential and Single-ended, or Differential		
Wiring	Differential		
Sensor Types	Thermocouple	J, K, T, E, R, S, B, N, C	J, K, T, E, R, S, B, N, C, L, M
	Voltage	±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5 V	
	Current	±20 mA (requires an optional 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.

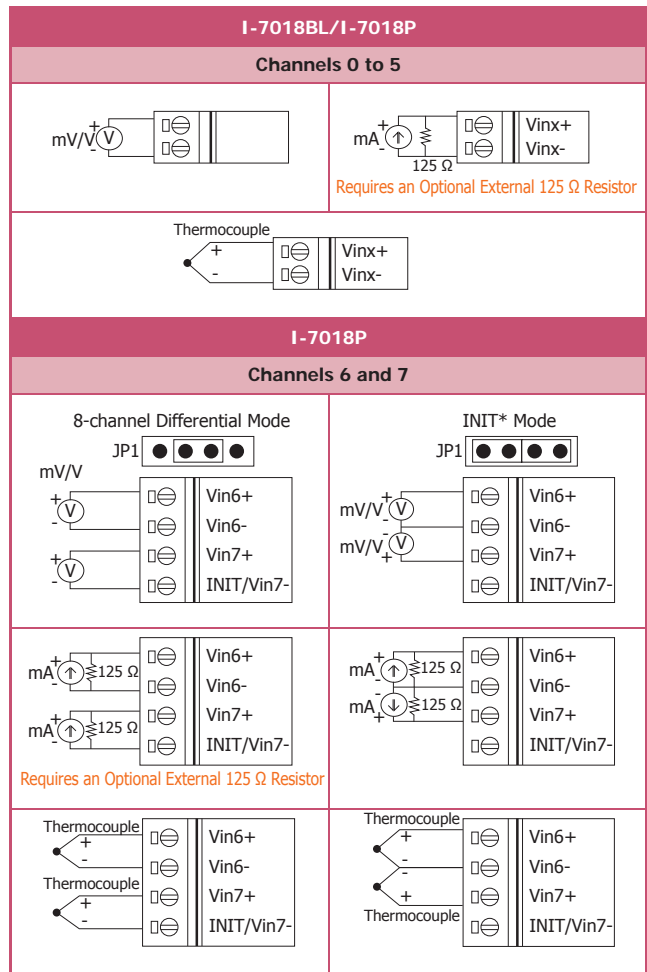
## Internal I/O Structure



## Pin Assignments



## Wire Connections



## Ordering Information

I-7018BL CR	8-channel Analog Input Module using the DCON Protocol (Blue Cover) (RoHS) `5ft` Bc`%% - \$`
I-7018P CR	8-channel Analog Input Module using the DCON Protocol (Blue Cover) (RoHS) `5ft` Bc`%% , \$`
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
	125 Ω, 0.1% DIP Resistor	125 Ω External Resistor for use with Current input on I-7011/I-7012/I-7017/I-7018 series modules