



Features

- Current Input, Voltage Input and Thermocouple Input
- Overvoltage Protection is up to 240 V_{rms}
- Individual Channel Configuration
- Open Thermocouple Detection
- 4 kV ESD Protection
- 3000 V_{DC} Intra-Module Isolation
- Dual Watchdog
- Wide Operating Temperature Range: -25 ~ +75°C



Introduction

The "Z" version is another milestone in the development of I-7018 and a testament to excellence by ICP DAS R&D team. I-7018Z is specifically designed for extremely accurate thermocouple measurement. It features automatic cold-junction compensation for each channel. Current input and voltage input are supported. Another feature is that ten of its input channels can individually be configured with different kinds of analog input. I-7018Z also has open thermocouple detection and many protection mechanisms.

Applications

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

System Specifications

Models	I-7018Z	M-7018Z
Communication		
Interface	RS-485	
Format	(N, 8, 1) (N, 8, 2) (E, 8, 1) (O, 8, 1)	
Baud Rate	1200 ~ 115200 bps	
Protocol	DCON	Modbus RTU, 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	-	
Isolation		
Intra-Module Isolation, Field-to-Logic	3000 V _{DC}	
EMS Protection		
ESD (IEC 61000-4-2)	+/-4 kV	
EFT (IEC 61000-4-4)	+/-4 kV	
Power		
Reverse Polarity Protection	Yes	
Input Range	10 ~ 30 V _{DC}	
Consumption	1.1 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	

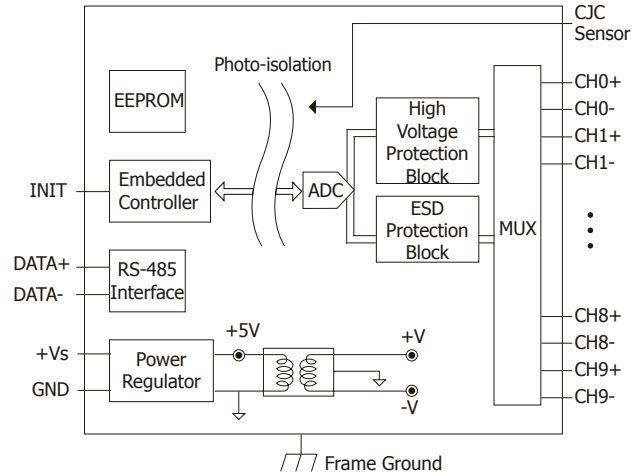
I/O Specifications

Models	I-7018Z	M-7018Z
Analog Input		
Channels	10	
Wiring	Differential	
Sensor Type	Thermocouple	J, K, T, E, R, S, B, N, C, L, M, L _{DIN43710}
	Voltage	+/-1.5 mV, +/-50 mV, +/-100 mV, +/-500 mV, +/-1 V, +/-2.5 V
	Current	+/-20 mA, 0 ~ 20 mA, 4 ~ 20 mA (requires optional external 125 Ω resistor)
Resolution	16-bit	
Accuracy	0.1%	
Sampling Rate	10 Hz	
Input Impedance	> 400 kΩ	
Common Voltage Protection	+/-200 V _{DC}	
Individual Channel Configuration	Yes	
Overvoltage Protection	240 V _{rms}	
Open Wire Detection (for thermocouple only)	Yes	
Temperature Outputs Consistency	Yes	
Stable Temperature Output in the Field	Yes	

Thermocouple Type

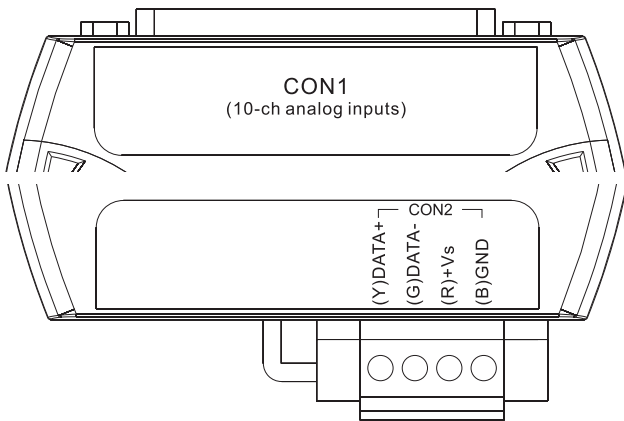
Type Code	Thermocouple Type	Temperature Range
0E	Type J	-210 ~ +760°C
0F	Type K	-270 ~ +1372°C
10	Type T	-270 ~ +400°C
11	Type E	-270 ~ +1000°C
12	Type R	0 ~ +1768°C
13	Type S	0 ~ +1768°C
14	Type B	0 ~ +1820°C
15	Type N	-270 ~ +1300°C
16	Type C	0 ~ +2320°C
17	Type L	-200 ~ +800°C
18	Type M	-200 ~ +100°C
19	Type L-DIN43710	-200 ~ +900°C

Internal I/O Structure



Pin Assignments

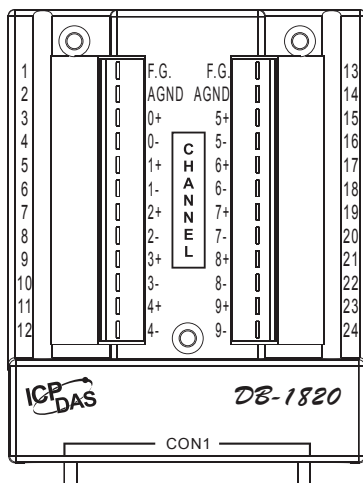
I-7018Z/M-7018Z



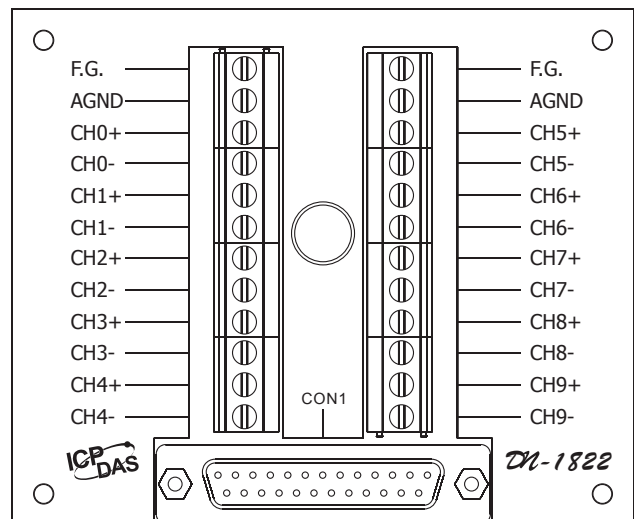
CON1			
Pin Assignment	Terminal	No.	Pin Assignment
+5V	01	14	AGND
CJC	02	15	CH 0+
CH 0-	03	16	CH 1+
CH 1-	04	17	CH 2+
CH 2-	05	18	CH 3+
CH 3-	06	19	CH 4+
CH 4-	07	20	CH 5+
CH 5-	08	21	CH 6+
CH 6-	09	22	CH 7+
CH 7-	10	23	CH 8+
CH 8-	11	24	CH 9+
CH 9-	12	25	N.C.
N.C.	13	Shield	F.G.

25-pin Female D-Sub Connector

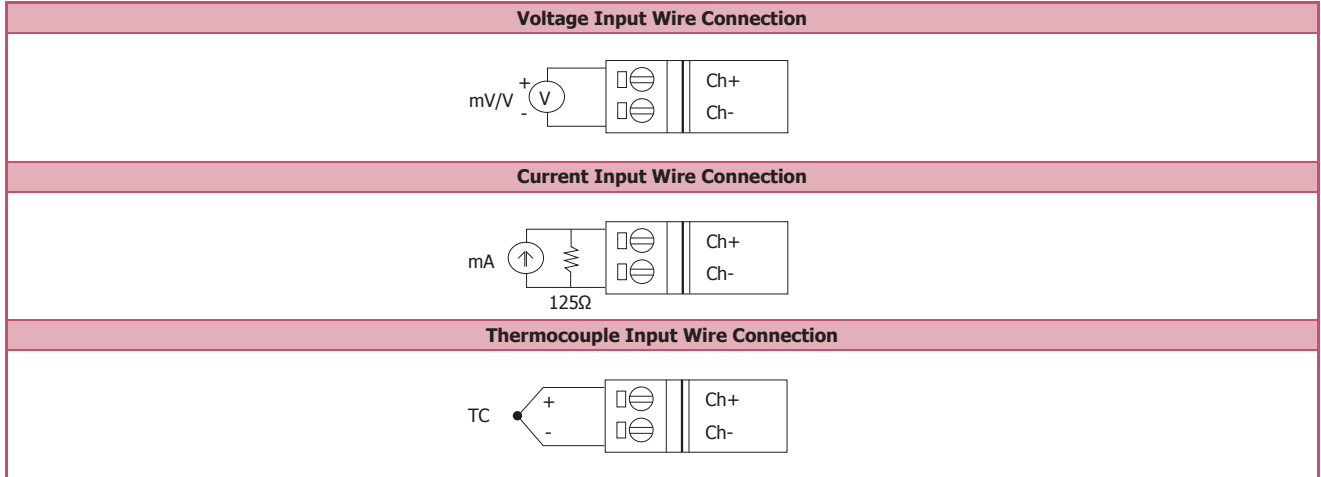
DB-1820



DN-1822

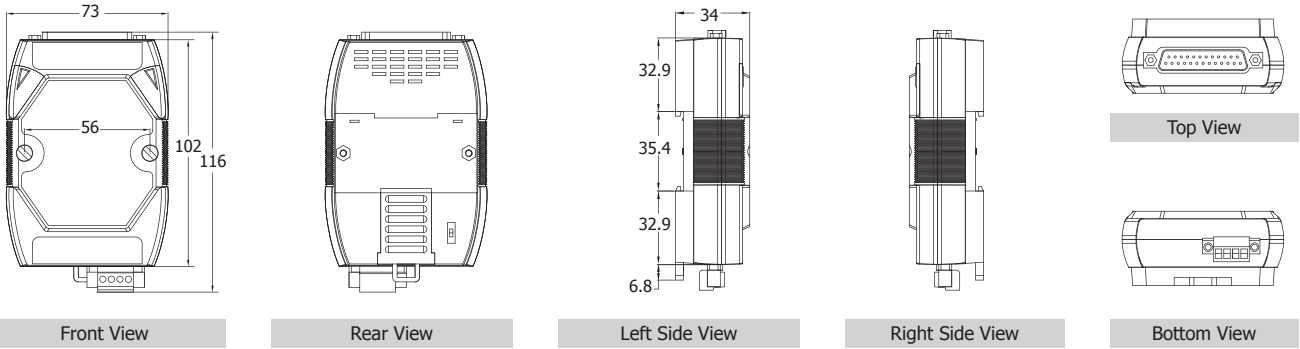


Wire Connections

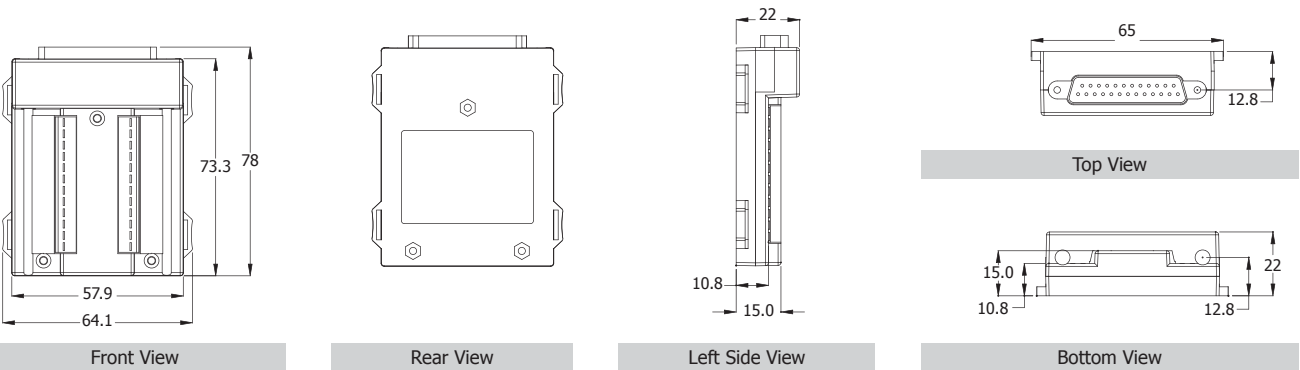


Dimensions (Units: mm)

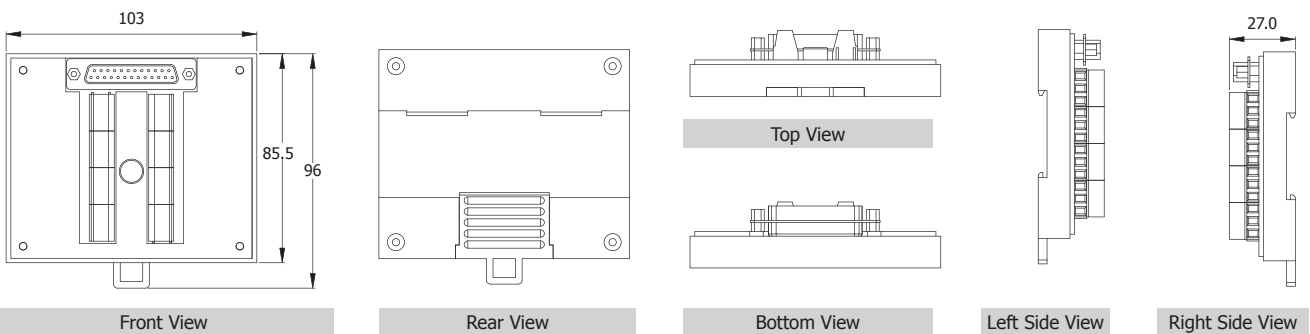
I- 7018Z/M- 7018Z



DB-1820



DN-1822



RS-485 Remote I/O Modules

I-7000 and M-7000 Modules




I-7018Z/M-7018Z





Ordering Information

I-7018Z-G/S CR	10-channel Thermocouple Input Module with DCON protocol (Gray Cover) (RoHS) Include I-7018Z Module and DB-1820 Daughter Board
I-7018Z-G/S2 CR	10-channel Thermocouple Input Module with DCON protocol (Gray Cover) (RoHS) Include I-7018Z Module, DN-1822 Daughter Board and 1.8 m Cable
M-7018Z-G/S CR	10-channel Thermocouple Input Module with DCON and Modbus Protocol (Gray Cover) (RoHS) Include M-7018Z Module and DB-1820 Daughter Board
M-7018Z-G/S2 CR	10-channel Thermocouple Input Module with DCON and Modbus Protocol (Gray Cover) (RoHS) Include M-7018Z Module, DN-1822 Daughter Board and 1.8 m Cable

 <p>I-7018Z-G/S = DB-1820 Connects to the I-7018Z Directly M-7018Z-G/S = DB-1820 Connects to the M-7018Z Directly</p>	 <p>I-7018Z-G/S2 = DN-1822 Connects to the I-7018Z Directly M-7018Z-G/S2 = DN-1822 Connects to the M-7018Z Directly</p>
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Suggested Accessories

	CD-2518D CR	25F-25M 1.8 m Cable with DIN-Rail Mount for the DB-1820 (RoHS)
	CD-25015 CR	25F-25M 15 cm Cable with DIN-Rail Mount for the DB-1820 (RoHS)
	4PAPP-006-G CR	Plastic Rack (RoHS)

 <p>I-7018Z-G/S + CD-25015 + 4PAPP-006-G M-7018Z-G/S + CD-25015 + 4PAPP-006-G</p>	 <p>CD-25015 15 cm Cable + DB-1820</p>  <p>4PAPP-006-G</p>	 <p>I-7018Z-G/S + CD-2518D M-7018Z-G/S + CD-2518D</p>	 <p>1.8 m Cable + DB-1820</p>
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Accessories

	tM-7520U CR	RS-232 to RS-485 converter (RoHS)		I-7514U CR	4-channel RS-485 Hub (RoHS)
	tM-7561 CR	USB to RS-485 converter (RoHS)		SG-770 CR	7 channel differential or 14 channel single-ended surge protector (RoHS)
	tM-SG4 CR	RS-485 Pull-high/Pull-low and Termination Resistor Module (RoHS)		SG-3000 series	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Inputs