I-9018/S1 | I-9018-16/S1

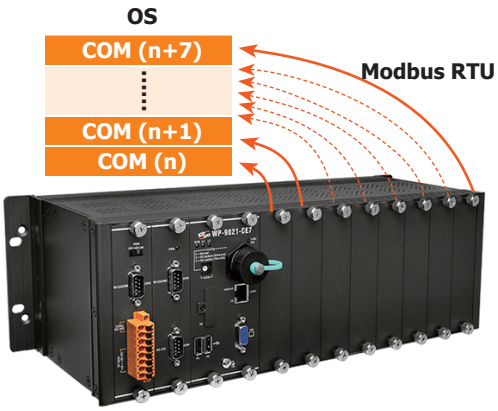
8/16-Channel High Speed Thermocouple Input Module

Features

- 8/16-channel thermocouple input
- Open wire detection
- Individual channel configuration
- 100 Hz high-speed sampling rate for each channel
- Modbus RTU protocol
- 921k bps UART communication
- Each module occupies one COM port
- COM port driver available on PACs with Windows 10 IoT, WES7, WinCE 6.0, WinCE 7.0, Linux

Introduction

The I-9018/S1, I-9018-16/S1 is an 8, 16-channel thermocouple input module. Each channel provides 100 Hz high-speed sampling rate and supports various thermocouple input types, including J, K, T, E, R, S, B, N, and C. , L, M and LDIN43710. It features automatic cold-junction compensation for each channel and supports open thermocouple detection and 30VDC overvoltage protection.



System Specifications

Model	I-9018/S1	I-9018-16/S1
COM Port		
Ports	RS-232	
Data Format	N, 8, 1	
Baud Rate	921600 bps	
Protocol	Modbus RTU	
LED Indicators		
System LED Indicator	1	
I/O LED Indicator	16	32
Isolation		
Intra-module Isolation, Field-to-Logic	3000 VDC	
EMS Protection		
ESD (IEC 61000-4-2)	±4 kV Contact for Each port, ±8 kV Air for Random Poin	
Power		
Consumption	0.3 W	0.4 W
Mechanical		
Dimensions (W x L x H, unit: mm)	I-9018W: 31 x 134 x 134, CN-1825M: 35 x 80 x 28	I-9018W-16: 31 x 134 x 134, CN-1826M: 57 x 88 x 28
Environment		
Operating Temperature	-25 ~ +75 °C	
Storage Temperature	-40 ~ +85 °C	
Humidity	10 ~ 95 % RH, Non-condensing	

I/O Specifications

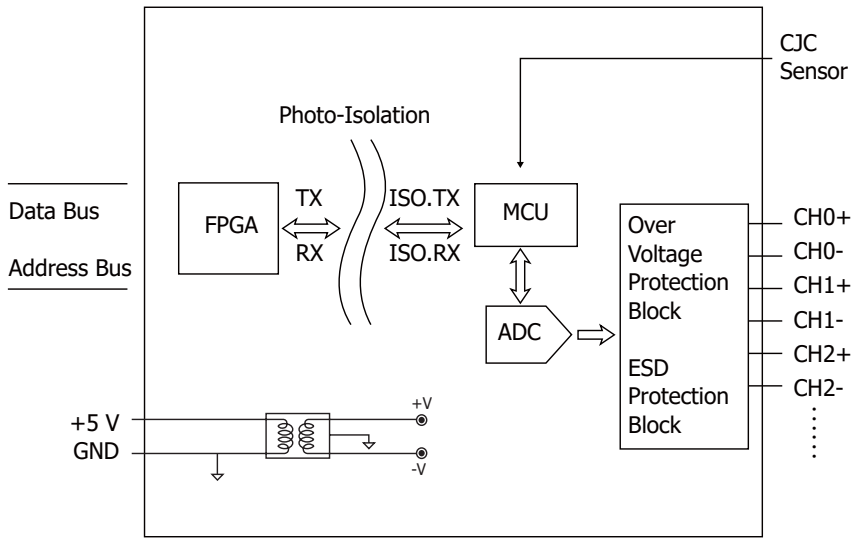
Model	I-9018/S1	I-9018-16/S1
Analog Input		
Channels	8	16
Sensor Type	Thermocouple (J, K, T, E, R, S, B, N, C, L, M, LDIN43710)	
Resolution	16-bit	
Accuracy	±0.1 % of FSR	
Sampling Rate	100 Hz (per channel)	
Input Impedance	> 400 MΩ	
Individual Channel Configuration	Yes	
Open Wire Detection	Yes	
Overvoltage Protection	30 V	
CN-1825M/CN-1826M		
Wire Strip Length	4 ~ 5 mm	
Wire Range	15 ~ 24 AWG	

Thermocouple Type

Type Code	Temperature Range
J	-210 ~ + 760 °C
K	-270 ~ + 1372 °C
T	-270 ~ + 400 °C
E	-270 ~ + 1000 °C
R	0 ~ + 1768 °C
S	0 ~ + 1768 °C

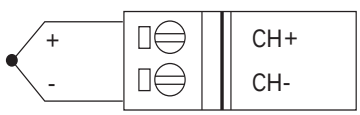
Type Code	Temperature Range
B	0 ~ + 1820 °C
N	-270 ~ + 1300 °C
C	0 ~ + 2320 °C
L	-200 ~ + 800 °C
M	-200 ~ + 100 °C
LDIN43710	-200 ~ + 900 °C

Internal I/O Structure



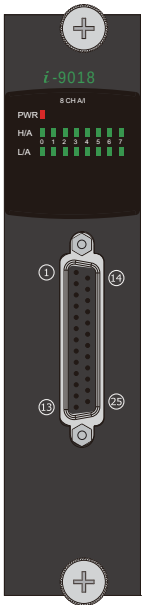
Wire Connections

Thermocouple Input

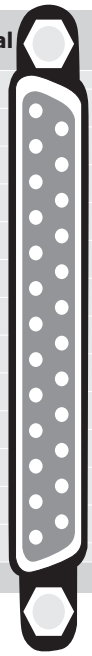


Pin Assignments

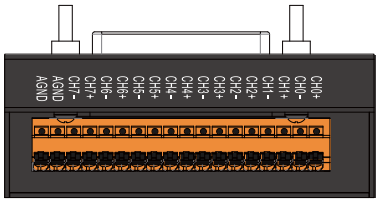
I-9018

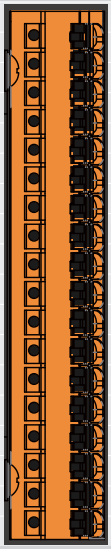


Pin Assignment	Terminal		No.	Pin Assignment
+3.3 V	01			
N.C.	02		14	GND
CH 0-	03		15	CH 0+
CH 1-	04		16	CH 1+
CH 2-	05		17	CH 2+
CH 3-	06		18	CH 3+
CH 4-	07		19	CH 4+
CH 5-	08		20	CH 5+
CH 6-	09		21	CH 6+
CH 7-	10		22	CH 7+
N.C.	11		23	N.C.
SCL	12		24	SDA
AGND	13		25	AGND

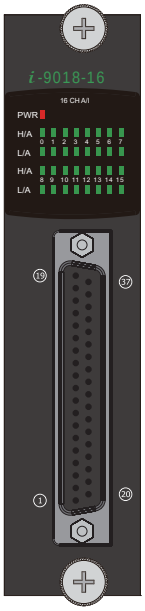


CN-1825M

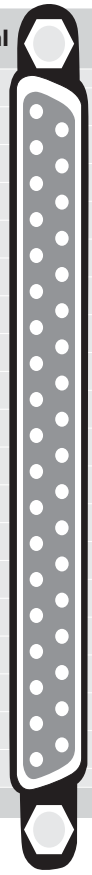


Terminal No.		Pin Assignment
	01	CH 0+
	02	CH 0-
	03	CH 1+
	04	CH 1-
	05	CH 2+
	06	CH 2-
	07	CH 3+
	08	CH 3-
	09	CH 4+
	10	CH 4-
	11	CH 5+
	12	CH 5-
	13	CH 6+
	14	CH 6-
	15	CH 7+
	16	CH 7-
	17	AGND
	18	AGND

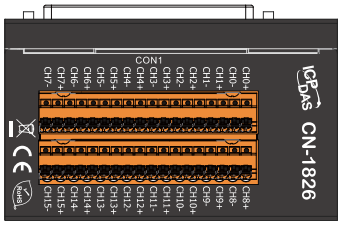
I-9018-16

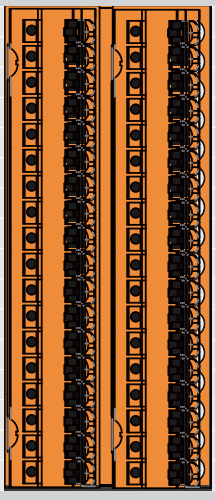


Pin Assignment	Terminal		No.	Pin Assignment
+3.3 V	01			
N.C.	02		20	GND
CH 0-	03		21	CH 0+
CH 1-	04		22	CH 1+
CH 2-	05		23	CH 2+
CH 3-	06		24	CH 3+
CH 4-	07		25	CH 4+
CH 5-	08		26	CH 5+
CH 6-	09		27	CH 6+
CH 7-	10		28	CH 7+
SCL	11		29	SDA
CH 8-	12		30	CH 8+
CH 9-	13		31	CH 9+
CH 10-	14		32	CH 10+
CH 11-	15		33	CH 11+
CH 12-	16		34	CH 12+
CH 13-	17		35	CH 13+
CH 14-	18		36	CH 14+
CH 15-	19		37	CH 15+



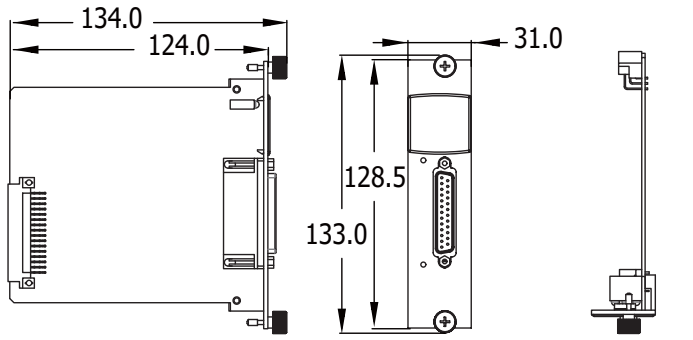
CN-1826M



Pin Assignment	Terminal No.			Pin Assignment
CH 0+	01		17	CH 8+
CH 0-	02		18	CH 8-
CH 1+	03		19	CH 9+
CH 1-	04		20	CH 9-
CH 2+	05		21	CH 10+
CH 2-	06		22	CH 10-
CH 3+	07		23	CH 11+
CH 3-	08		24	CH 11-
CH 4+	09		25	CH 12+
CH 4-	10		26	CH 12-
CH 5+	11		27	CH 13+
CH 5-	12		28	CH 13-
CH 6+	13		29	CH 14+
CH 6-	14		30	CH 14-
CH 7+	15		31	CH 15+
CH 7-	16		32	CH 15-

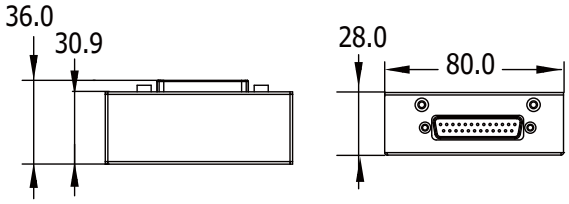
Dimensions (Unit: mm)

I-9018



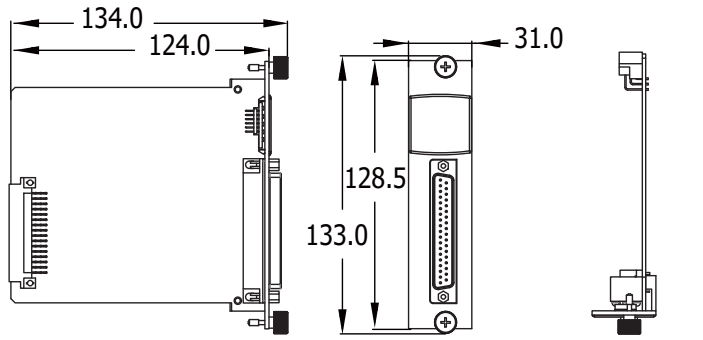
Left View | Front View | Top Veiw

CN-1825M



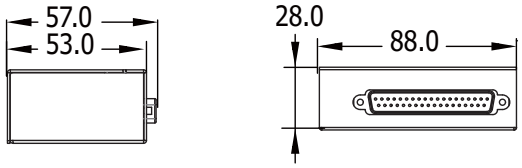
Left View | Front View

I-9018-16



Left View | Front View | Top Veiw

CN-1826M



Left View | Front View

Ordering Information

I-9018/S1 CR

8-channel High Speed Thermocouple Input Module (RoHS)

Includes CN-1825M Daughter Board

I-9018/S1 CR = I-9018 Connects CN-1825M Directly

I-9018/S = I-9018 + CN-1825M

I-9018/S-16 CR

16-channel High Speed Thermocouple Input Module (RoHS)

Includes CN-1826M Daughter Board

I-9018-16/S1 CR = I-9018-16 Connects CN-1826M Directly

I-9018-16/S = I-9018-16 + CN-1826M