



ET-2218CI-4



ET-2218CI

Ethernet I/O Module with 4/8-ch High Speed Thermocouple Input

Features

- Web Server for Configuration
- Support Modbus TCP/UDP, MQTT, and SNMP V2c Protocols
- 2-port Ethernet Switch (LAN bypass) for Daisy-chain Wiring
- Supports Firmware Update via Ethernet
- 100Hz High-speed Sampling Rate for each Channel
- Open Wire Detection
- 3000 Vdc Channel-to-Channel Isolation
- Built-in I/O
 - ET-2218CI-4: 4-ch Thermocouple Input
 - ET-2218CI: 8-ch Thermocouple Input
- Individual Channel Configuration



Introduction

ET-2218CI-4/ET-2218CI is a 4/8-channel a thermocouple input module with channel-to-channel isolation that provides 100Hz high speed measurement and open wire detection for each channel. The module supports a variety of thermocouple input types, including Type J, K, T, E, R, S, B, N, C, L, M, and LDIN43710, and Features an automatic cold-junction compensation function for all channels. The module includes a built-in 2-port Ethernet switch, facilitating a daisy-chain topology. This feature offers flexibility in device configuration, simplifies installation, and reduces infrastructure costs.

The module supports commonly used industrial protocols such as Modbus TCP and the emerging M2M (Machine-to-Machine) or IoT (Internet of Things) connectivity protocols like MQTT. It also provides EMS (EFT/ESD/Surge) protection and 3000 V_{DC} I/O isolation to enhance noise protection capabilities in industrial environments.

System Specifications

Model	ET-2218CI-4	ET-2218CI
Software		
Built-in Web Server	Yes	
CPU Module		
CPU	32-bit ARM	
Watchdog Timer	Module, Communication (Programmable)	
Isolation		
2-way Isolation	Ethernet: 1500 V _{dc} , I/O: 3000 V _{dc}	
EMS Protection		
EFT (IEC 61000-4-4)	±4 kV for Power Line	
ESD (IEC 61000-4-2)	±4 kV Contact for Each Terminal, ±8 kV Air for Random Point	
Surge (IEC 61000-4-5)	±2 kV for Power Line	
LED Indicators		
Status	Run, Ethernet	
System		
Real Time Clock	Yes	
Data Logger	Up to 480,000 (ET-2218CI-4) / 320,000 (ET-2218CI) records	
Ethernet		
Ports	2 x RJ-45, 10/100 Base-Tx, Switch Ports	
LAN bypass	Yes	

Model	ET-2218CI-4	ET-2218CI
Access Control	Password and IP Filter	
Protocol	Modbus TCP, Modbus UDP, MQTT, SNMP V2c	
Power		
Reverse Polarity Protection	Yes	
Consumption	3.6 W (max.)	5.4 W (max.)
Powered from Terminal Block	+10 ~ +48 VDC	
Mechanical		
Casing	Metal	
Dimensions (mm)	33 x 184 x 115 (W x L x H)	
Installation	DIN-Rail Mounting / Wall mounting (Optional ASO-0015)	
Ingress Protection Rating	IP30	
Environment		
Operating Temperature	-25 ~ +75 °C	
Storage Temperature	-40 ~ +80 °C	
Humidity	10 ~ 90% RH, Non-condensing	

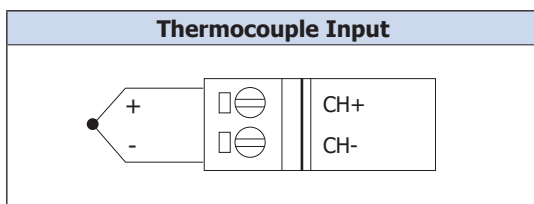
I/O Specifications

Model	ET-2218CI-4	ET-2218CI
Analog Input		
Channels	4	8
Sensor Type	Thermocouple (J, K, T, E, R, S, B, N, C, L, M, LDIN43710)	
Resolution	16-bit	
Accuracy	±0.1% FSR (25°C)	
Sampling Rate	Normal Mode	1.5 Hz (per channel)
	Fast Mode	100 Hz (per channel)
Oversvoltage Protection	30 VDC	
Individual Channel Configuration	Yes	
Channel-to-channel Isolation	3000 VDC	
Open Wire Detection	Yes	

Applications

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

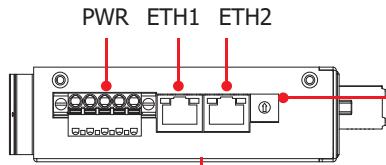
Wire Connections



Thermocouple Type

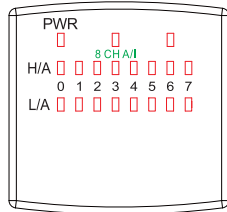
Type Code	Temperature Range
J	-210 ~ + 760 °C
K	-270 ~ + 1372 °C
T	-270 ~ + 400 °C
E	-270 ~ + 1000 °C
R	0 ~ + 1768 °C
S	0 ~ + 1768 °C
B	0 ~ + 1820 °C
N	-270 ~ + 1300 °C
C	0 ~ + 2320 °C
L	-200 ~ + 800 °C
M	-200 ~ + 100 °C
LDIN43710	-200 ~ + 900 °C

Pin Assignments



Port			
SW		0: Run	User specified IP or DHCP
		1-E: Run IP	Default IP, 192.168.255.1 - 14)
		F: Init	Factory default, Firmware Update
PWR		+Vs	ETH1
		GND	
		N/A	ETH2
		F.G.	
			Link/Act
			Link/Act

LED Indicators (PWR, H/A, L/A)

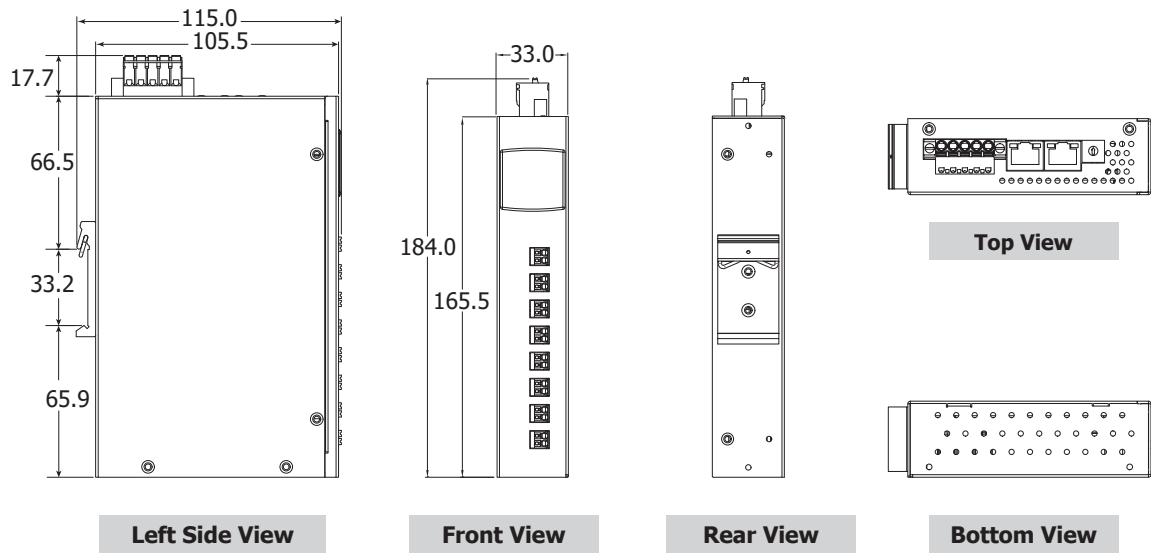


Note: When the measured temperature exceeds the maximum value of the specified range or if the channel is disconnected, the "H/A" LED on the front panel will lights up. If it drops below the lower limit, the "L/A" LED will lights up. For example, Type M, -200 ~ 100 °C .

ET-2218CI-4		
Terminal No.		Pin Assignment
	01	CH0+
	02	CH0-
	03	
	04	
	05	CH1+
	06	CH1-
	07	
	08	
	09	
	10	
	11	CH2+
	12	CH2-
	13	
	14	
	15	CH3+
	16	CH3-

ET-2218CI		
Terminal No.		Pin Assignment
	01	CH0+
	02	CH0-
	03	CH1+
	04	CH1-
	05	CH2+
	06	CH2-
	07	CH3+
	08	CH3-
	09	CH4+
	10	CH4-
	11	CH5+
	12	CH5-
	13	CH6+
	14	CH6-
	15	CH7+
	16	CH7-

Dimensions (Units: mm)

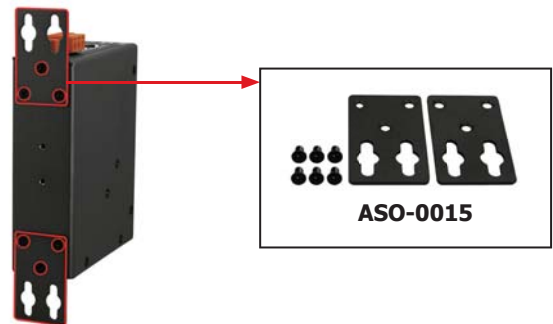


Ordering Information

ET-2218CI-4 CR	Ethernet I/O Module with 2-port Ethernet Switch, 4-ch High Speed Thermocouple Input, 100 S/s with Channel-to-Channel Isolation (RoHS)
ET-2218CI CR	Ethernet I/O Module with 2-port Ethernet Switch, 8-ch High Speed Thermocouple Input, 100 S/s with Channel-to-Channel Isolation (RoHS)

Accessories

ASO-0015 CR	Wall Mount Kit (W: 28 mm) (RoHS)
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(P)ET-2200 + ASO-0015