



ET-2224CIS
PET-2224CIS

ET-2228CIS
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Ethernet I/O Module with 4/8-ch AO

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 Dual-watchdog
- Supports Over-value Protection Mechanism
- Supports Voltage/Current ADC Readback
- I/O Pair Connection (Push and Pull)
- Open Wire Detection for Current Outputs
- Built-in I/O
  - ☐ ET-2224CIS / PET-2224CIS: 4-ch AO
  - ☐ ET-2228CIS / PET-2228CIS: 8-ch AO
- 3000 VDC Channel-to-channel Isolation

Introduction

(P)ET-2224CIS/(P)ET-2228CIS is a 4/8-channel analog output module that Features channel-to-channel isolation, an output read-back function, and an over-value protection (OVP) mechanism. All analog output channels can be individually configured with output ranges, including 0 ~ 5 V, 0 ~ 10 V, 4 ~ 20 mA, and 0 ~ 20 mA. The module can be set as voltage or current outputs via the software. It offers configurable AO power-on value and safe value settings, as well as open wire detection for each 4 ~ 20 mA output channel.

The module complies with the RF (Radiated, radio-frequency) immunity of IEC 61000-4-3 standard and provides EMS (EFT/ESD/Surge) protection, and 3000 VDC I/O isolation to enhance noise protection capabilities in industrial environments. Note that the module will cease output when a voltage or current exceeds the specified OVP alarm value. Moreover, the module supports I/O pair-connection functionality, allowing the establishment of AI-to-AO pairing connections with the remote module via Ethernet. Once configured, remote AI data can be written to local AO channels in Pull mode via Modbus TCP.

(P)ET-2224CIS/(P)ET-2228CIS supports the MQTT protocol, serving as a publisher and subscriber of messages. When connected to an MQTT broker server, it can publish real-time statuses of I/O in the form of topics and receive messages from subscribed topics. If a disconnection occurs between the module and the broker during communication, its mechanism for reconnecting can automatically restore the connection. Additionally, its Keep-Alive interval mechanism ensures a continuous connection with the broker.

System Specifications

Model	ET-2224CIS	ET-2228CIS	PET-2224CIS	PET-2228CIS
Software				
Built-in Web Server	Yes			
CPU Module				
CPU	32-bit ARM			
Watchdog Timer	Module, Communication (Programmable)			
Isolation				
2-way Isolation	Ethernet: 1500 VDC I/O: 3000 VDC		I/O: 3000 VDC	
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, O/C, OVP (Note)		Run, Ethernet, PoE, O/C, OVP (Note)	

Note: The "**O/C**" LEDs on the front panel serve as **open-wire detection indicators** for current outputs, while the "**OVP**" LEDs serve as **over-value protection** (OVP) **alarm indicators** for voltage and current outputs.

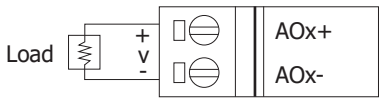
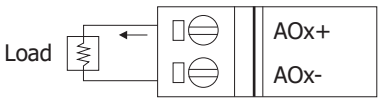
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Model	ET-2224CIS	ET-2228CIS	PET-2224CIS	PET-2228CIS
Ethernet				
Ports	2 x RJ-45, 10/100 Base-Tx, Switch Ports			
PoE	-		Yes	
LAN bypass	Yes			
Access Control	Password and IP Filter			
Protocol	Modbus TCP, Modbus UDP, MQTT, SNMP V2c			
Power				
Reverse Polarity Protection	Yes			
Consumption	6.3 W (max.)	10.9 W (max.)	6.9 W (max.)	11.7 W (max.)
Powered from PoE	-		IEEE 802.3af, Class3	
Powered from Terminal Block	+10 ~ +48 VDC			
Mechanical				
Casing	Metal			
Dimensions (mm)	33 x 184 x 129 (W x L x H)			
Installation	DIN-Rail Mounting / Wall mounting (Optional ASO-0015)			
Environment				
Operating Temperature	-25 ~ +75 ℃			
Storage Temperature	-40 ~ +80 ℃			
Humidity	0 ~ 90% RH, Non-condensing			

I/O Specifications

Model		ET-2224CIS PET-2224CIS	ET-2228CIS PET-2228CIS
Analog Output			
Channels		4	8
Range	Voltage	0 ~ +5 VDC, 0 ~ +10 VDC	
	Current	0 ~ 20 mA, 4 ~ 20 mA	
Resolution		12-bit	
Accuracy		±0.1% of FSR	
Short Circuit Protection		Yes	
DA Output Response Time		10 ms per channel	
Programmable Output Slope	Voltage	0.0625 ~ 512 V/Second	
	Current	0.125 ~ 1024 mA/Second	
Open Wire Detection		For 4 ~ 20 mA only	
Output Readback		Yes	
Voltage Output Capability		10 V @ 10 mA	
Current Load Resistance		500 Ω	
Individual Channel Configuration		Yes	
Channel-to-channel Isolation		3000 VDC	
Power-on Value		Programmable	
Safe Value		Programmable	

Wire Connections

Voltage Output	Current Output
	

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Appearance



LED Indicators
(PWR, Act/ETH1, PoE, O/C, OVP)

(Only PET series support PoE)

Port		
	PWR	+Vs GND N/A N/A F.G.
	ETH1	PoE Link/Act
	ETH2	Link/Act
SW1	0: Run 1-E: Run IP F: Init	User specified IP or DHCP Default IP, 192.168.255.1 - 14) Factory default, Firmware Update

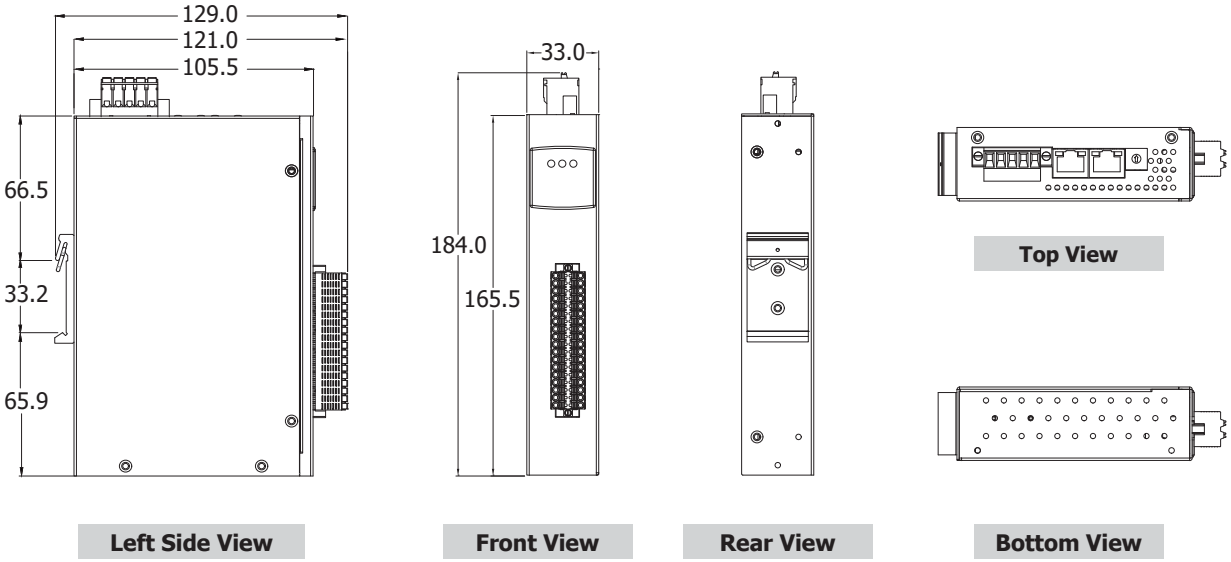
Pin Assignments

Pin Assignment	(P)ET-2224CIS			Pin Assignment
AO0-	02		01	AO0+
	04		03	
	06		05	
	08		07	
AO1-	10		09	AO1+
	12		11	
	14		13	
	16		15	
AO2-	18		17	AO2+
	20		19	
	22		21	
	24		23	
	26		25	
	28		27	
AO3-	30		29	AO3+
	32		31	
	34		33	
	36		35	

Pin Assignment	(P)ET-2228CIS			Pin Assignment
AO0-	02		01	AO0+
	04		03	
AO1-	06		05	AO1+
	08		07	
AO2-	10		09	AO2+
	12		11	
AO3-	14		13	AO3+
	16		15	
AO4-	18		17	AO4+
	20		19	
	22		21	
AO5-	24		23	AO5+
	26		25	
	28		27	
AO6-	30		29	AO6+
	32		31	
	34		33	
AO7-	36		35	AO7+

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Dimensions (Units: mm)



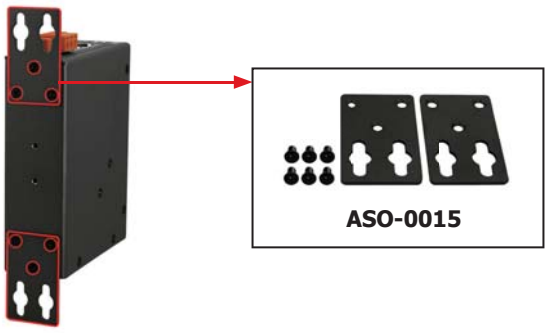
Left Side View | Front View | Rear View | Top View | Bottom View

Ordering Information

ET-2224CIS CR	Ethernet I/O Module with 2-port Ethernet Switch, 4-ch AO with Over-value Protection (RoHS)
PET-2224CIS CR	PoE I/O Module with 2-port Ethernet Switch, 4-ch AO with Over-value Protection (RoHS)
ET-2228CIS CR	Ethernet I/O Module with 2-port Ethernet Switch, 8-ch AO with Over-value Protection (RoHS)
PET-2228CIS CR	PoE I/O Module with 2-port Ethernet Switch, 8-ch AO with Over-value Protection (RoHS)

Accessories

ASO-0015 CR	Wall Mount Kit (W: 28 mm) (RoHS)



(P)ET-2000+ASO-0015

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