



ET-2228-16
PET-2228-16



ET-2228C-32
PET-2228C-32

Ethernet I/O Module with 16/32-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
- I/O Pair Connection (Push and Pull)
- Built-in I/O
 - (P)ET-2228-16: 16-ch AO
 - (P)ET-2228C-32: 32-ch Current Output



Introduction

(P)ET-2228-16 is a 16-channel analog output module that provides a variety of programmable output ranges, including 0 ~ 5 V, +/-5 V, 0 ~ 10 V, +/-10 V, 4 ~ 20 mA, 0 ~ 20 mA.

(P)ET-2228C-32 is a 32-channel current output module that provides an output range of 4 ~ 20 mA. 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 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. Additionally, the module provides EMS (EFT/ESD/Surge) protection and 3000 Vdc I/O isolation to enhance noise protection capabilities in industrial environments.

System Specifications

Model	ET-2228-16	PET-2228-16	ET-2228C-32	PET-2228C-32
Software				
Built-in Web Server	Yes			
CPU Module				
CPU	32-bit ARM			
Watchdog Timer	Module, Communication (Programmable)			
Isolation				
2-way Isolation	Ethernet	1500 Vdc	-	1500 Vdc
	I/O	3000 Vdc		
EMS Protection				
EFT (IEC 61000-4-4)	±4 kV for Power Line			
ESD (IEC 61000-4-2)	±3 kV Contact for Each Terminal ±8 kV Air for Random Point		±4 kV Contact for Each Terminal ±8 kV Air for Random Point	
Surge (IEC 61000-4-5)	±2 kV for Power Line		±1.5 kV for Power Line	
LED Indicators				
Status	Run, Ethernet	Run, Ethernet, PoE	Run, Ethernet	Run, Ethernet, PoE
Ethernet				
Ports	2 x RJ-45, 10/100 Base-Tx, Switch Ports			
PoE	-	Yes	-	Yes
LAN bypass	Yes			
Access Control	Password and IP Filter			
Protocol	Modbus TCP, Modbus UDP, MQTT, SNMP V2c			

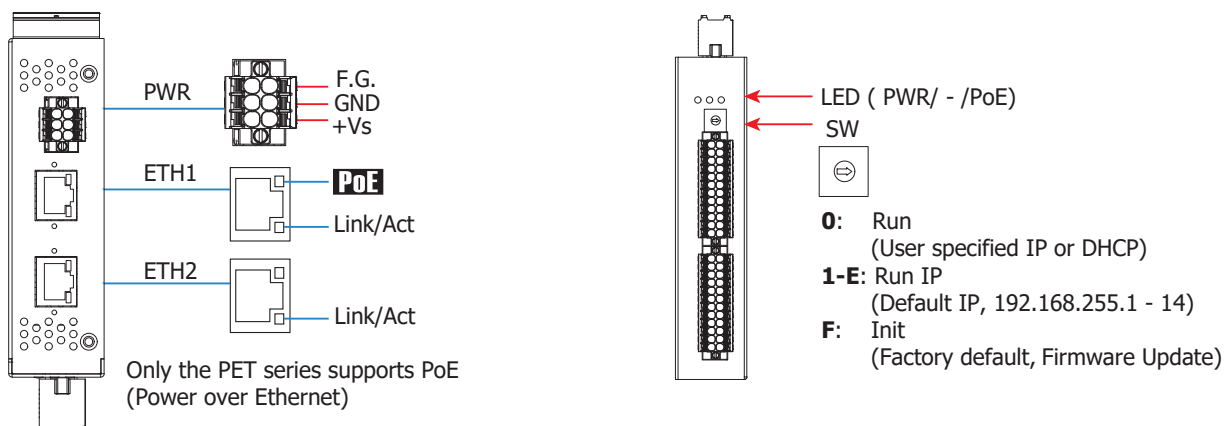
Model	ET-2228-16	PET-2228-16	ET-2228C-32	PET-2228C-32
Power				
Reverse Polarity Protection	Yes			
Consumption	9.8 W (max.)	10.2 W (max.)	16.1 W (max.)	16.4 W (max.)
Powered from PoE	-	IEEE 802.3af, Class3	-	IEEE 802.3at, Class4
Powered from Terminal Block	+10 ~ +48 Vdc			
Mechanical				
Casing	Metal			
Dimensions (mm)	31 x 159 x 137 (W x L x H)			
Installation	DIN-Rail Mounting / Wall mounting (Optional ASO-0015)			
Environment				
Operating Temperature	-25 ~ +75 °C			
Storage Temperature	-40 ~ +80 °C			
Humidity	10 ~ 90% RH, Non-condensing			

I/O Specifications

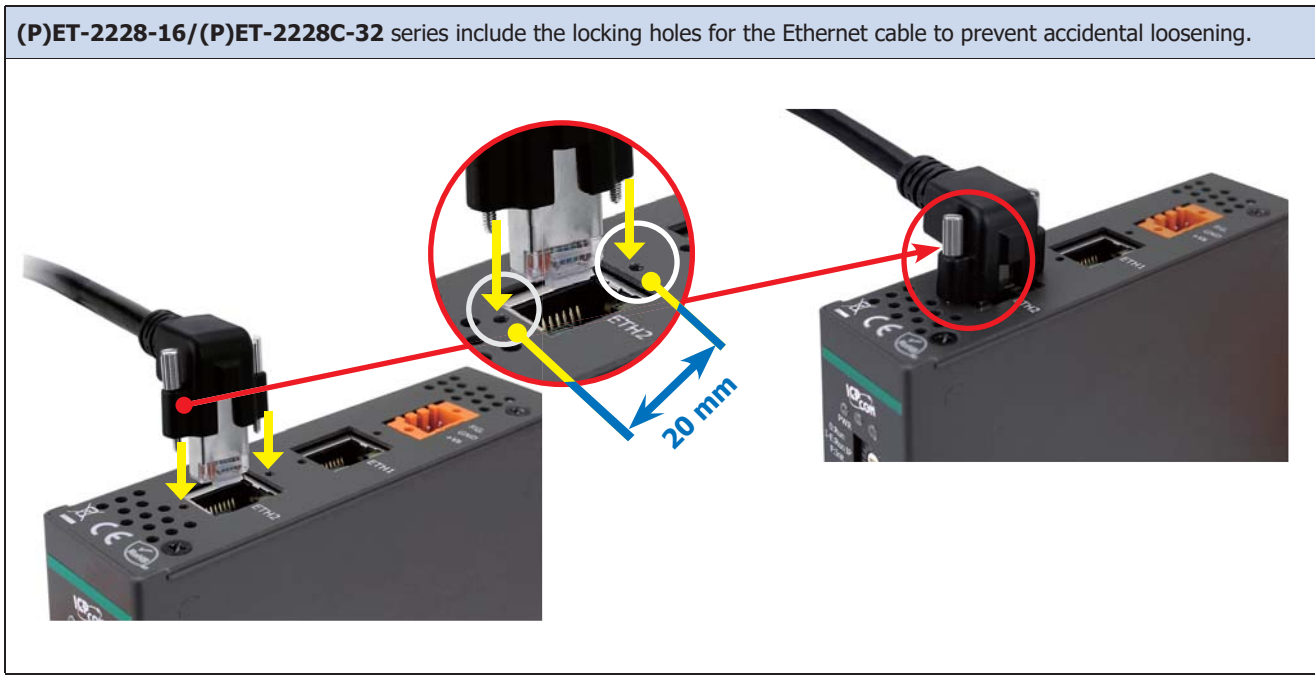
Model	(P)ET-2228-16	(P)ET-2228C-32
Analog Output		
Channels	16	32
Type	Voltage	0 ~ +5 V _{DC} , ±5 V _{DC} , 0 ~ +10 V _{DC} , ±10 V _{DC}
	Current	0 ~ 20 mA, 4 ~ 20 mA
Refresh Rate	0.25 ms (per channel)	0.125 ms (per channel)
Resolution	12-bit	
Accuracy	±0.1% of FSR	
Open Wire Detection	For 4 ~ 20 mA only	
Voltage Output Capability	10 V @ 10 mA	-
Current Load Resistance	500 Ω	
Individual Channel Configuration	Yes	
Power-on Value	Programmable	
Safe Value	Programmable	

Appearance

▼ ET-2228-16 / PET-2228-16 / ET-2228C-32 / PET-2228C-32



Ethernet Cable Locking Hole

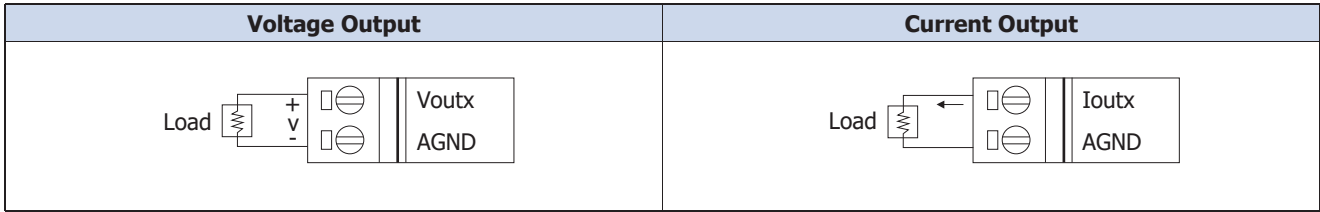


Pin Assignments

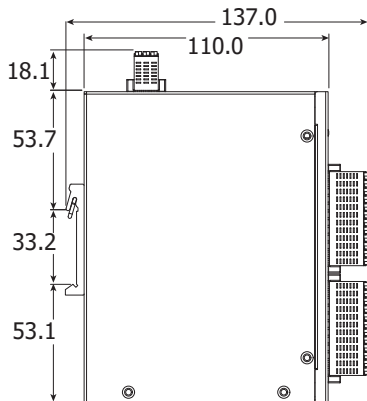
ET-2228-16/PET-2228-16				
Pin Assignment	Terminal No.		Pin Assignment	
Iout 0	1		2	Vout 0
Iout 1	3		4	Vout 1
Iout 2	5		6	Vout 2
Iout 3	7		8	Vout 3
Iout 4	9		10	Vout 4
Iout 5	11		12	Vout 5
Iout 6	13		14	Vout 6
Iout 7	15		16	Vout 7
AGND	17		18	AGND
AGND	19		20	AGND
AGND	21		22	AGND
AGND	23		24	AGND
Iout 8	25		26	Vout 8
Iout 9	27		28	Vout 9
Iout 10	29		30	Vout 10
Iout 11	31		32	Vout 11
Iout 12	33		34	Vout 12
Iout 13	35		36	Vout 13
Iout 14	37		38	Vout 14
Iout 15	39		40	Vout 15
AGND	41		42	AGND
AGND	43		44	AGND
AGND	45		46	AGND
AGND	47		48	AGND

ET-2228C-32/PET-2228C-32				
Pin Assignment	Terminal No.		Pin Assignment	
Iout 0	1		2	Iout 8
Iout 1	3		4	Iout 9
Iout 2	5		6	Iout 10
Iout 3	7		8	Iout 11
Iout 4	9		10	Iout 12
Iout 5	11		12	Iout 13
Iout 6	13		14	Iout 14
Iout 7	15		16	Iout 15
AGND	17		18	AGND
AGND	19		20	AGND
AGND	21		22	AGND
AGND	23		24	AGND
Iout 16	25		26	Iout 24
Iout 17	27		28	Iout 25
Iout 18	29		30	Iout 26
Iout 19	31		32	Iout 27
Iout 20	33		34	Iout 28
Iout 21	35		36	Iout 29
Iout 22	37		38	Iout 30
Iout 23	39		40	Iout 31
AGND	41		42	AGND
AGND	43		44	AGND
AGND	45		46	AGND
AGND	47		48	AGND

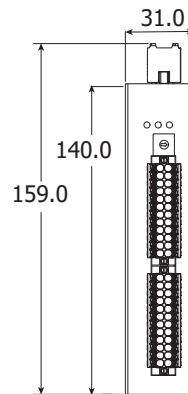
Wire Connections



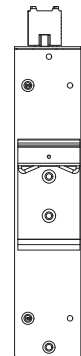
Dimensions (Units: mm)



Left Side View



Front View



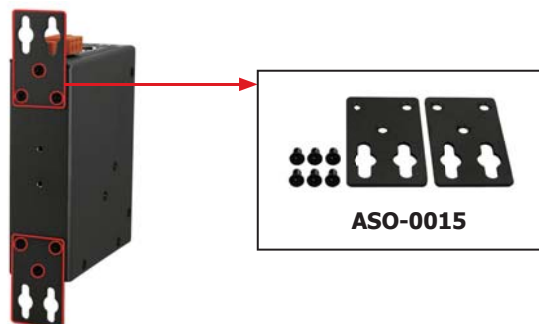
Rear View

Ordering Information

ET-2228-16 CR	Ethernet I/O Module with 2-port Ethernet Switch, 16-ch AO (RoHS)
PET-2228-16 CR	PoE I/O Module with 2-port Ethernet Switch, 16-ch AO (RoHS)
ET-2228C-32 CR	Ethernet I/O Module with 2-port Ethernet Switch, 32-ch Current Output (RoHS)
PET-2228C-32 CR	PoE I/O Module with 2-port Ethernet Switch, 32-ch Current Output (RoHS)

Accessories

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