



ET-7018Z
PET-7018Z
ET-7218Z
PET-7218Z

thernet I/O Module with 10-ch Thermocouple Input, 6/3-ch DO

Features

- Built-in Web Server
- Web HMI
- Support for both Modbus TCP and Modbus UDP Protocols
- Communication Access Control
- 2-port Ethernet Switch (LAN bypass) for Daisy-chain Wiring
- Dual Watchdog
- I/O Pair Connection
- Built-in I/O
  - Thermocouple/Voltage/Current Input: 10 Channels
  - DO: 6/3 Channels

Introduction

The ET-7018Z, PET-7018Z, ET-7218Z, and PET-7218Z modules are designed for high-precision thermocouple measurement. Each input channel provides automatic cold-junction compensation to ensure consistent and stable temperature readings in the field. The modules include open thermocouple detection as well as EMS (EFT/ESD/Surge) protection. In addition to supporting multiple thermocouple input types, every input channel can also be individually configured for current or voltage input, delivering optimal flexibility for a wide range of application requirements. This series also offers digital output channels, each equipped with short-circuit and overload protection.

System Specifications

Model	ET-7018Z	PET-7018Z	ET-7218Z	PET-7218Z
Software				
Built-in Web Server	Yes			
CPU Module				
Watchdog Timer	Module, Communication (Programmable)			
2-Way Isolation				
Ethernet	1500 VDC	-	1500 VDC	-
I/O	2500 VDC			
EMS Protection				
EFT (IEC 61000-4-4)	±4 kV for Power Line		±2 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)	±0.5 kV for Power Line		±2 kV for Power Line	
LED Indicators				
Status	Run, Ethernet	Run, Ethernet, PoE	Run, Ethernet, I/O	Run, Ethernet, I/O, PoE
Ethernet				
Ports	1 x RJ-45, 10/100 Base-TX		2 x RJ-45, 10/100 Base-TX, Swtich Ports	
PoE	-	Yes	-	Yes
LAN bypass	-		Yes	
Access Control	ID, Password and IP Filter			
Protocol	Modbus TCP, Modbus UDP			
Power				
Reverse Polarity Protection	Yes			
Consumption	2.0 W (max.)	3.0 W (max.)	3.1 W (max.)	3.3 W (max.)
Powered from PoE	-	IEEE 802.3af, Class1	-	IEEE 802.3af, Class1
Powered from Terminal Block	+10 ~ +30 VDC	+12 ~ +48 VDC		
Mechanical				
Dimensions (mm)	72 x 123 x 35 (W x L x H)		76 x 120 x 42 (W x L x H)	
Installation	DIN-Rail Mounting			

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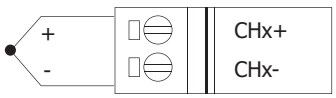
Environment	
Operating Temperature	25 ~ +75 ℃
Storage Temperature	-30 ~ +80 ℃
Humidity	10 ~ 90% RH, Non-condensing

I/O Specifications

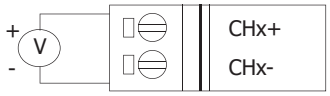
Model	ET-7018Z	PET-7018Z	ET-7218Z	PET-7218Z
Analog Input				
Channels	10 (Differential)			
Type	Thermocouple, Voltage, Current			
Stable and Consistent Temperature Output	Yes			
Range	Thermocouple (J, K, T, E, R, S, B, N, C, L, M, and $L_{DIN43710}$)			
	±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5 V			
	±20 mA, 0 ~ 20 mA, 4 ~ 20 mA (Requires Optional External 125 Ω Resistor)			
Resolution	16-bit			
Accuracy	±0.1% of FSR or better			
Sampling Rate	10 Hz (total channels)			
Input Impedance	>300 kΩ			
Over Voltage Protection	240 V_{rms}			
Individual Channel Configuration	Yes			
Open Wire Detection	Yes			
Virtual Channel to Channel Isolation	±400 V_{DC}			
Digital Output				
Channels	6		3	
Type	Isolated Open Collector			
Sink/Source (NPN/PNP)	Sink			
Load Voltage	+5 ~ +50 V_{DC}			
Load Current	700 mA/channel		650 mA/channel	
Overvoltage Protection	+60 V_{DC}			
Overload Protection	1.4 A			
Short-circuit Protection	Yes			
Power on Value	Programmable			
Safe Value	Programmable			

Wire Connections

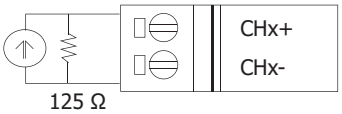
Thermocouple Input (Default)



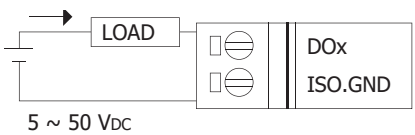
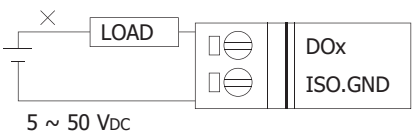
Voltage Input (Default)



Current Input



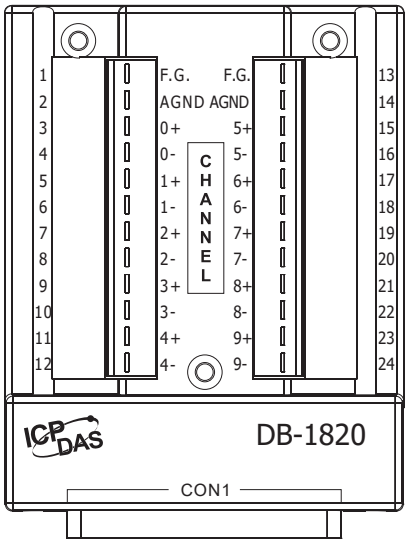
Note: When connecting to a current source, an optional external 125 Ω resistor is required.

Digital Output	ON State, Readback as 1	OFF State, Readback as 0
Open Collector (Sink)		

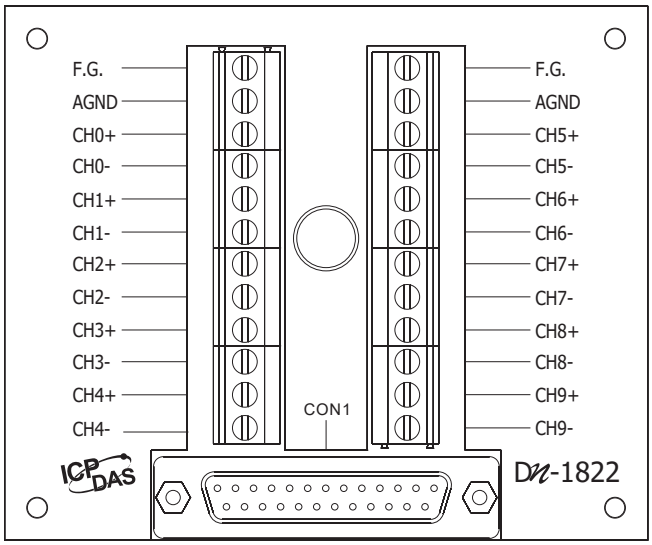
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Pin Assignments

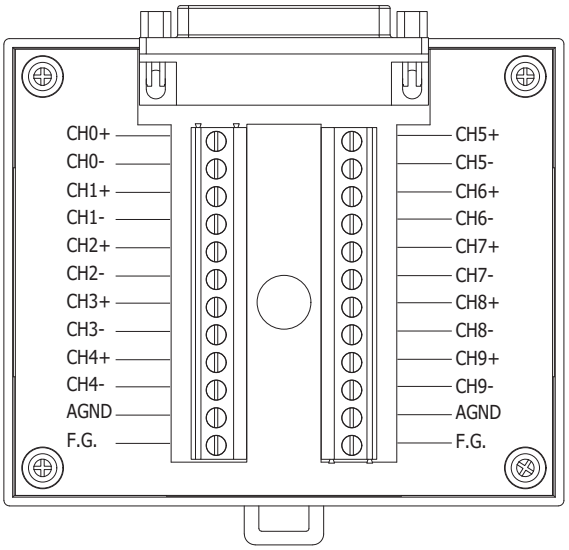
DB-1820

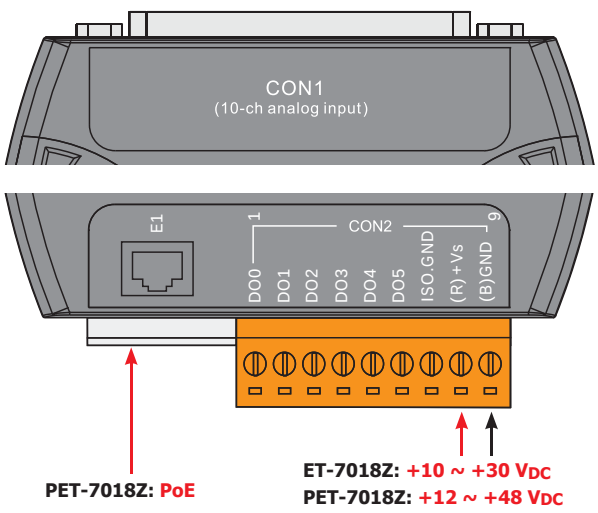


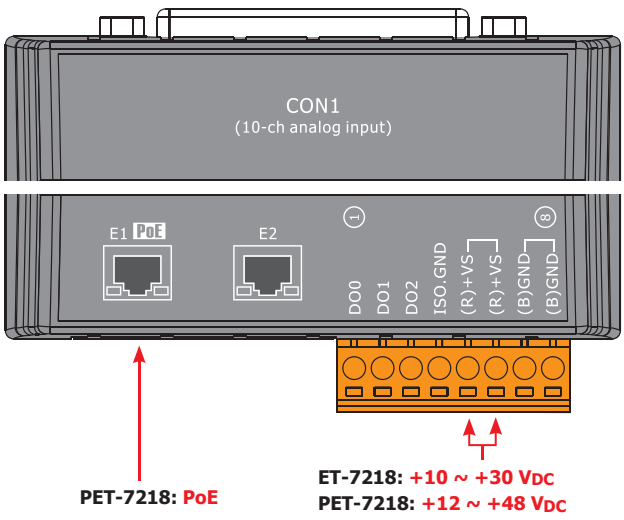
DN-1822



DN-1823



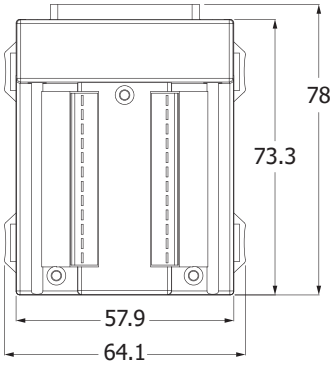




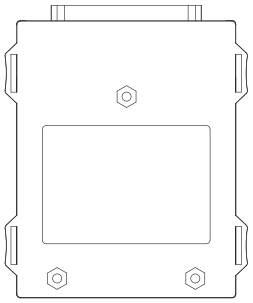
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Dimensions (Units: mm)

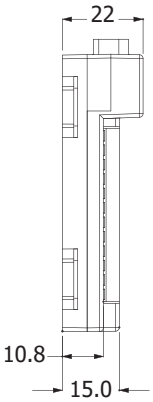
DB-1820



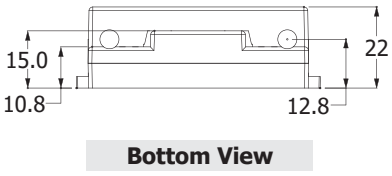
Front View



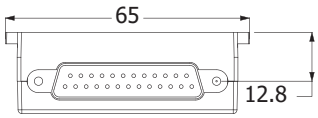
Rear View



Left View

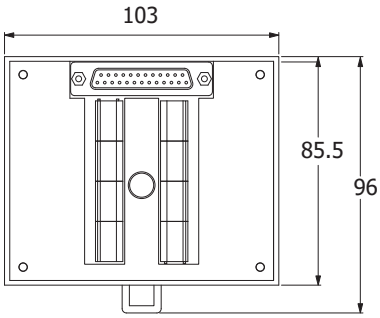


Bottom View

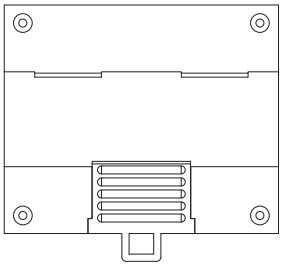


Top View

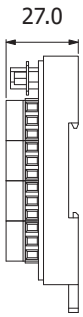
DN-1822



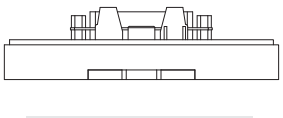
Front View



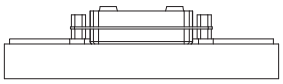
Rear View



Left View

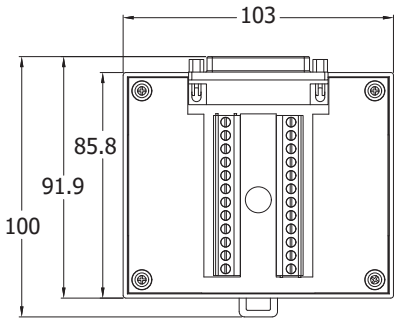


Bottom View

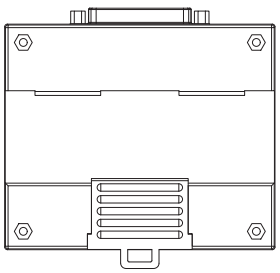


Top View

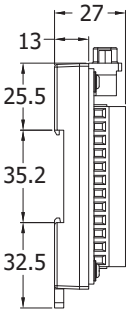
DN-1823



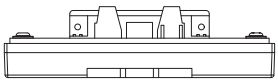
Front View



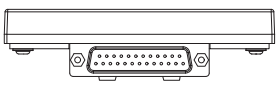
Rear View



Left View



Bottom View



Top View

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Ordering Information

ET-7018Z/S CR	Ethernet I/O Module with 10-ch Thermocouple Input, 6-ch DO (RoHS)	Includes DB-1820 Daughter Board
PET-7018Z/S CR	PoE I/O Module with 10-ch Thermocouple Input, 6-ch DO (RoHS)	
ET-7218Z/S CR	Ethernet I/O Module with 2-port Ethernet Switch, 10-ch Thermocouple Input, 3-ch DO (RoHS)	
PET-7218Z/S CR	PoE I/O Module with 2-port Ethernet Switch, 10-ch Thermocouple Input, 3-ch DO (RoHS)	
ET-7018Z/S2 CR	Ethernet I/O Module with 10-ch Thermocouple Input, 6-ch DO (RoHS)	Includes DN-1822 Daughter Board, CA-252518D-1 1.8 m Cable, 4PAPP-006-G
PET-7018Z/S2 CR	PoE I/O Module with 10-ch Thermocouple Input, 6-ch DO (RoHS)	
ET-7218Z/S2 CR	Ethernet I/O Module with 2-port Ethernet Switch, 10-ch Thermocouple Input, 3-ch DO (RoHS)	
PET-7218Z/S2 CR	PoE I/O Module with 2-port Ethernet Switch, 10-ch Thermocouple Input, 3-ch DO (RoHS)	
ET-7018Z/S3 CR	Ethernet I/O Module with 10-ch Thermocouple Input, 6-ch DO (RoHS)	Includes DN-1823 Daughter Board, CA-2525015D 15 cm Cable, 4PAPP-006-G
PET-7018Z/S3 CR	PoE I/O Module with 10-ch Thermocouple Input, 6-ch DO (RoHS)	
ET-7218Z/S3 CR	Ethernet I/O Module with 2-port Ethernet Switch, 10-ch Thermocouple Input, 3-ch DO (RoHS)	
PET-7218Z/S3 CR	PoE I/O Module with 2-port Ethernet Switch, 10-ch Thermocouple Input, 3-ch DO (RoHS)	

Front **Rear**



(P)ET-7018Z/S, (P)ET-7218Z/S: DB-1820
Connects to the (P)ET-7x18Z Directly



(P)ET-7018Z/S2, (P)ET-7218Z/S2: DN-1822
connects to the (P)ET-7x018Z/S2 via a 1.8 m long flex cable



(P)ET-7018Z/S3:
DN-1823
connects to the (P)ET-7018Z/S3
via a 15 cm long flex cable



(P)ET-7218Z/S3:
DN-1823
connects to the (P)ET-7218Z/S3
via a 15 cm long flex cable

Accessories



PET-7018Z/S +
CD-25015 +4PAPP-006-G



CD-25015



4PAPP-006-G



PET-7018Z/S +CD-2518D
PET-7218Z/S +CD-2518D



CD-2518D

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