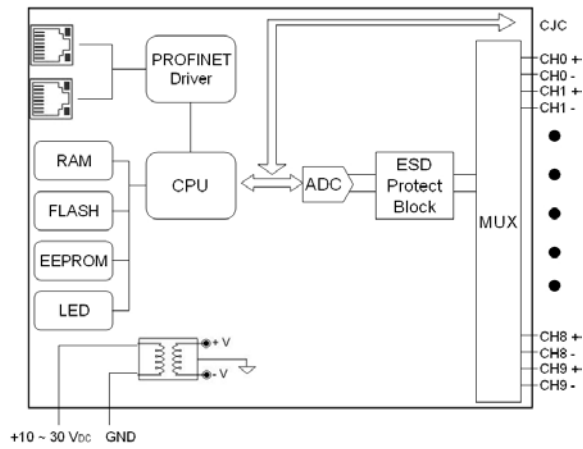# PFN-2019
PROFINET I/O Module

▣ Features

- Protocol: PROFINET IO Device
- PROFINET Conformance Class B and RT Class 1
- Cyclic Time: 1ms (min)
- Generic GSDML File Provided (Version 2.25)
- 16-bits resolution & 10Hz sample rate
- Supports thermocouple devices with J,K,T,E,R,S,B,N,C
- 4 kV Contact ESD protection for any terminal
- The operating temperature range is -25°C~+75°C
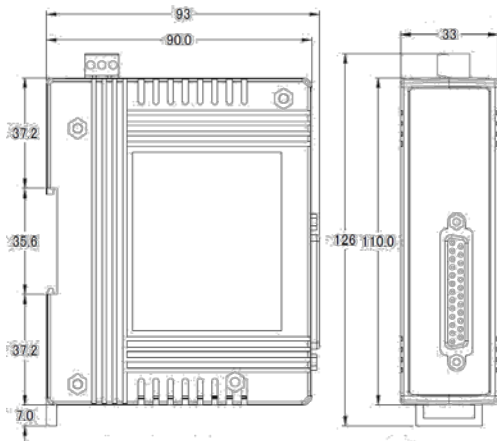
◾ Introduction

The PFN-2019 is one of the PROFINET IO series products produced by ICP DAS. It provides the PROFINET IO communication protocol with any PROFINET IO controllers. It has 10-channel universal analog input with voltage and current input types. It provides extremely accurate thermocouple measurement and automatically cold-junction compensation for each channel. You can access and configure it by using the GSDML file in any PROFINET Engineering tool.
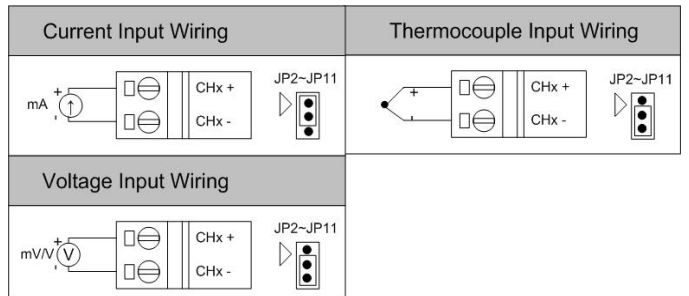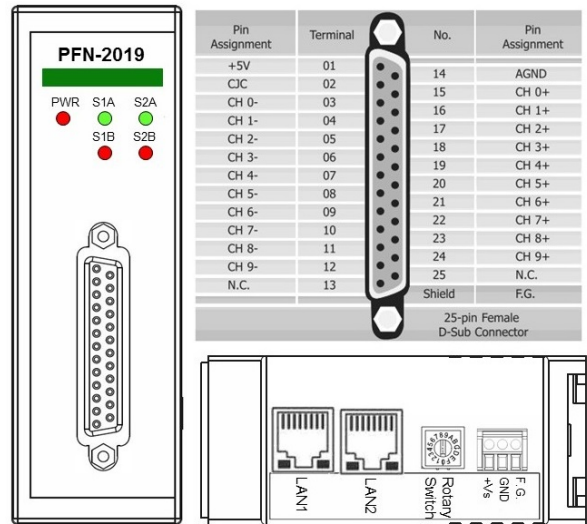
◾ Internal I/O Structure

◾ I/O Pin & Wire Connection

Pin Assignment	Terminal	No.	Pin Assignment
+5V	01	14	AGND
CJC	02	15	CH 0+
CH 0-	03	16	CH 1+
CH 1-	04	17	CH 2+
CH 2-	05	18	CH 3+
CH 3-	06	19	CH 4+
CH 4-	07	20	CH 5+
CH 5-	08	21	CH 6+
CH 6-	09	22	CH 7+
CH 7-	10	23	CH 8+
CH 8-	11	24	CH 9+
CH 9-	12	25	N.C.
N.C.	13	Shield	F.G.

25-pin Female D-Sub Connector

◾ Dimensions (Units: mm)

Current Input Wiring

Thermocouple Input Wiring

Voltage Input Wiring

☰ Hardware Specifications

Hardware	
CPU	32-bit CPU Core
RAM/Flash/EEPROM	32 MB / 4 MB / 8 KB
Watchdog	CPU built-in
ESD Protection	4 kV class A
PROFINET Interface	
Protocol	PROFINET IO Device
Conformance Classes	Class B
Services	RTC, RTA, CL-RPC, DCP, LLDP, I&M
Cycle Time	1 ms (min)
Ethernet Interface	
Controller	10/100Base-TX Ethernet Controller (Auto-negotiating, Auto_MDIX)
Connector	RJ-45 x 2 (LED indicators) , Integrated 2-Port Switch
Services	ICMP, IGMP, ARP, DHCP, TELNET, TFTP, SNMP, VLAN Priority Tagging
Analog Input	
Channels	10 channel differential
Input Range	+/-15mV, +/-50mV, +/-100mV, +/-500mV, +/-1V, +/-2.5V, +/-5V, +/-10V +/-20mA, 0~20mA, 4~20mA (Jumper Selectable), Thermocouple Type: J, K, T, E, R, S, B, N, C
Resolution	16 bit
Sample Rate	10 Hz (Total)
Accuracy	+/- 0.1% of FSR
Open Wire Detection	Yes
LED	
Round LED	PWR LED, S1A LED, S1B LED, S2A LED, S2B LED
Power	
Power supply	Unregulated +10 ~ +30 VDC
Protection	Power reverse polarity protection, Over-voltage brown-out protection
Power Consumption	5W
Mechanism	
Installation	DIN-Rail
Dimensions	33 mm x 93 mm x 126 mm (W x L x H)
Environment	
Operating Temp.	-25 ~ 70 ℃
Storage Temp.	-30 ~ 80 ℃
Humidity	10 ~ 90% RH, non-condensing

☰ Application

☰ Ordering Information

PFN-2019/S CR	PROFINET I/O Module (10-channel Universal Analog Input Module) (RoHS) include PFN-2019 module and a DB-1820 daughter board