

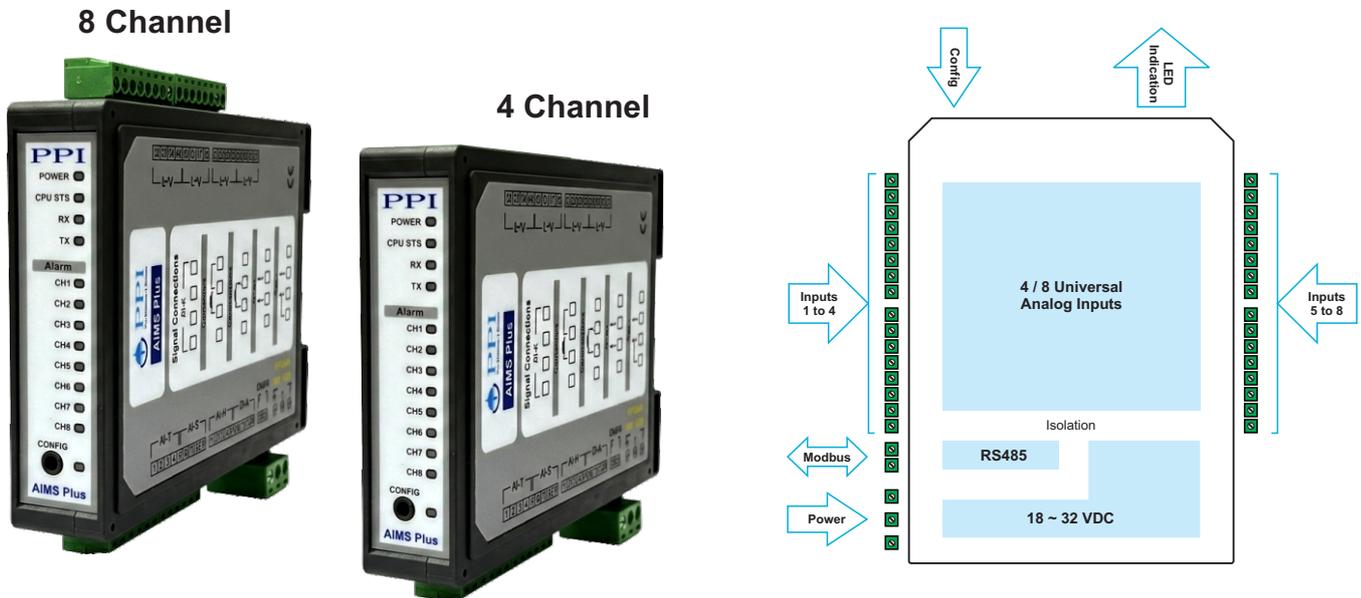
# Analog Input Module +

## AIMS Plus

Enhanced Features :  
 Programmable Channel Sampling Rate  
 Support for Pt1000 Sensor

**Process Precision Instruments**  
 Vasai Road (E), Dist. Palghar - 401210,  
 Maharashtra, India

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### Salient Features

- 4 or 8 Analog Input Channels
- Input Type Versions : Universal, DC V/mA, Pt100, Thermocouples
- 16 Bit Sigma-Delta ADC ( $\pm 32,768$  Counts)
- Selectable Channel Update Rates : 45 mS, 79 mS, 146 mS
- Automatic CJC for Thermocouple & LRC for RTD Inputs
- User Settable Scalable Range for DC V/mV/mA Inputs
- 4 Programmable Soft Alarms for each Channel with LED Indicators
- Process Values Available as both 16-Bit Signed Integer & 32-Bit Single Precision Float
- Three-way Isolation Eliminates Potential Ground Loops between Power, Inputs and RS485 Serial Port
- 2-wire, Half-Duplex, Start-Stop Synchronized RS485 Serial Port
- Industry Standard MODBUS RTU Protocol with Programmable ID, Baud Rate & Parity
- Compact DIN-Rail Mount Enclosure : 22.5(W) X 101(H) X 119(D), mm
- Wide Supply Voltage Range : 18 ~ 32 VDC (24 VDC Nominal)
- Free PC Tool for Easy Configuration and Parameter Settings

### Versions

<b>AIMS Plus-4U / 8U</b>	Each Channel Independently Configurable for Thermocouples, RTDs, Volts, mV, and mA (No Jumper Settings)
<b>AIMS Plus-4D / 8D</b>	Each Channel Independently Configurable for DC V / mA (No Jumper Settings)
<b>AIMS Plus-4P / 8P</b>	All Channels RTD Pt100 (2 / 3-Wire)
<b>AIMS Plus-4T / 8T</b>	Each Channel Independently Configurable for Thermocouples / mV (No Jumper Settings)

### General Information

<b>Product Type</b>	4 / 8 Channel DIN-Rail Analog Input Module MODBUS over RS485 Serial Interface
<b>Ordering Code</b>	AIMS Plus-XY : X = 4 (4 Channel), 8 (8 Channel) Y = U (Universal), D (DC V/mA), P (Pt100), T (Thermocouple/mV)
<b>Quantity</b>	1 Unit
<b>Accessories</b>	(Optional) Isolated USB to RS485 Converter
<b>Similar Modules</b>	AOMS-4U, AOMS-8U DIMS-8, DIMS-16 DOMS-8, DOMS-16

# Analog Input Module

## Channel Specifications

Number of Channels	4 / 8		
Input Types	Thermocouples	: J, K, T, R, S, B, N, E	
	RTDs	: 2 / 3-Wire Pt100, Pt1000	
	DC mV	: 0 to 80 mV, 0 to 160 mV	
	DC Volts	: 0 to 1.25V, 0 to 5V, 1 to 5V, 0 to 10V	
	DC mA	: 0 to 20 mA, 4 to 20 mA	
Accuracy	<b>Thermocouples</b>	: ± 0.2% of reading for J, K, T, E (Excluding CJC) ± 0.4% of reading for R, S, B, N (Excluding CJC)	
	CJC	: ± 1.5 °C (Specified over 18 to 37 °C)	
	RTDs	: ± 0.2% of reading.	
	Lead Resistance Compensation	: Maximum 5Ω per Lead for 3-wire RTD.	
	<b>DC Linear mV / V / mA</b>	: ± 0.1% of reading	
Thermal Drift	0.01% of Span per °C		
Resolution	Thermocouples & RTDs	: 0.1 °C	
	DC Linear mV / V / mA	: 0.0001 / 0.001 / 0.01 / 0.1 / 1 Counts	
Range	Thermocouple & RTDs	: Refer Table-1	
	DC Linear mV / V / mA	: -30000 to +30000 Counts	
Zero Offset	User Adjustable over Full Range for Each Channel		
ADC	16 Bit (± 32,768 Counts), Sigma-Delta (ΣΔ)		
Sampling Time	User Settable as : • 45 mS per Channel (22 Samples per Second) • 79 mS per Channel (12 Samples per Second) • 146 mS per Channel (7 Samples per Second)		
Input Resistance	> 1 MΩ for RTDs / Thermocouples / mV / V Input 249 Ω Precision Shunt for mA Input		
Common Mode Rejection	> 100dB at 50/60 Hz		
Input Protection	ESD : 8KV	EFT : 2KV	Surge : 1KV
Input Conditioning	First Order Analog R-C Low-Pass Filter + Programmable IIR Digital Filter		

## Alarms

Numbers	4, Independent for Each Channel with Front LED Indicators		
Programmable Parameters	Type	: Process Low, Process High	
	Setpoint	: Adjustable over Full Range	
	Hysteresis	: 1 to 3000 Unit Counts	
	Inhibit	: No, Yes	

## Serial Communication

Port	RS485, 2-wire, Half Duplex, Start-Stop Synchronized		
Protocol	MODBUS RTU		
Baud Rate	Settable : 2400, 4800, 9600, 19200, 38400, 57600		
Parity	Settable : None, Even, Odd		
Protection	ESD : 8KV	EFT : 2KV	Surge : 1KV
Indication	Green (Transmit) & Red (Receive) LED Indicators on Front		
Max. Units per Loop	31		
Max. Distance	1200 Meters		

## Power Supply & Isolation

Type	Switch Mode (SMPS)
Power Requirement	18 ~ 32 VDC, nominal 24 VDC @ <b>60mA Max.</b> <b>Note</b> : In case of looping multiple modules on one power source, make sure that the power source is capable of supplying minimum 60mA current per module.
Isolation	1500VAC for 1 second or 250VAC continuous Three-way Isolation between Power, Inputs & RS485 Serial Port

## Physical

Mounting	DIN-Rail
Overall Dimensions	22.5(W) X 106(H) X 117(D), mm
Terminals	Screw Type, Pluggable
Weight	400 gm, Appx.

## Environmental

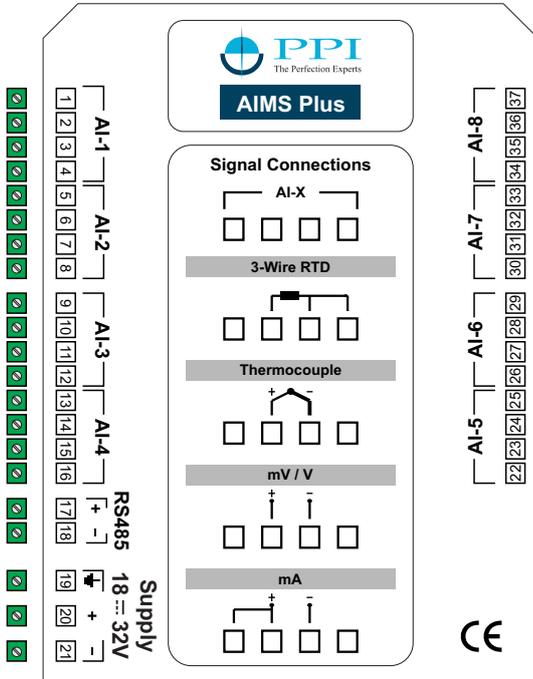
Operating Ambient	0 to 55°C & 5 to 90%RH Non-condensing
Storage Temperature	-10 to +70°C
Atmospheres	Not Suitable for use in Corrosive or Explosive Atmospheres. The Panel in which the Instrument is Mounted must be free of Electrically Conductive Pollution.

**TABLE 1**

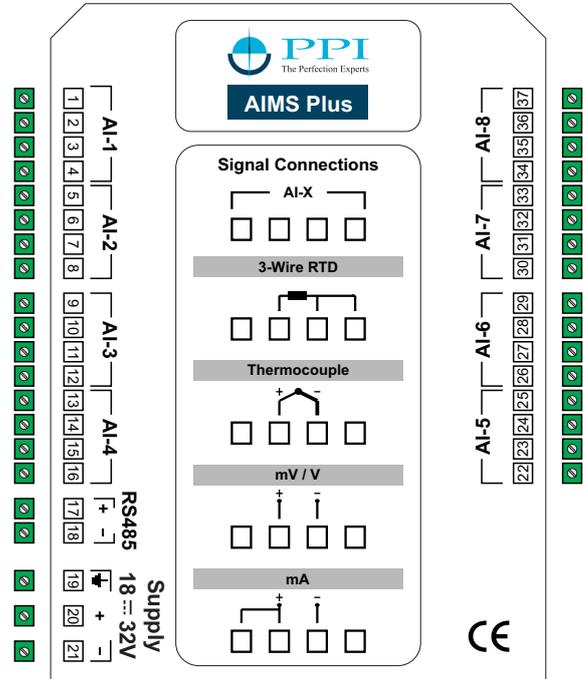
Input Type	Range (Min. to Max.)
2 / 3-wire, RTD Pt100	-199.9 to +850.0 °C / -328.0 to +1562.0 °F
2 / 3-wire, RTD Pt1000	-199.9 to +850.0 °C / -328.0 to +1562.0 °F
Type J Thermocouple (Fe-K)	0.0 to +960.0°C / +32.0 to +1760.0°F
Type K Thermocouple (Cr-Al)	-200.0 to +1376.0°C / -328.0 to +2508.0°F
Type T Thermocouple (Cu-Con)	-200.0 to +387.0°C / -328.0 to +728.0°F
Type R Thermocouple (Pt / Pt-Rh13%)	0.0 to +1771.0°C / +32.0 to +3219.0°F
Type S Thermocouple (Pt / Pt-Rh10%)	0.0 to +1768.0°C / +32.0 to +3214.0°F
Type B Thermocouple (Pt-Rh6% / Pt-Rh30%)	0.0 to +1826.0°C / +32.0 to +3318.0°F
Type N Thermocouple (NiCrSi / NiSi)	0.0 to +1314.0°C / +32.0 to +2397.0°F
Type E Thermocouple (NiCr / Con)	-200.0 to +1000.0°C / -328.0 to +1832.0°F

## Terminations

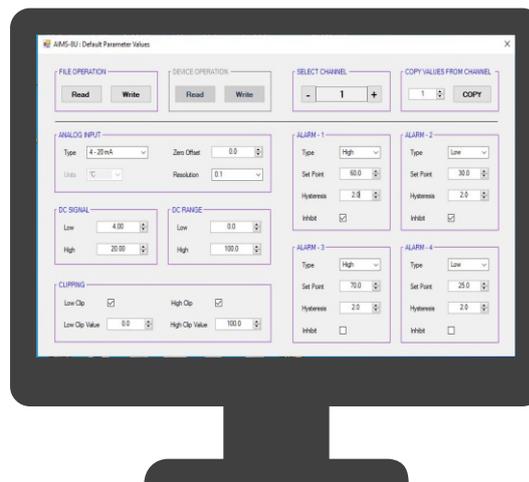
4 Channel Module



8 Channel Module



## Configuration Tool



## Process Precision Instruments (An ISO 9001 : 2008 Company)

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