

Analog Input Module

AIMS-8U / AIMS-8D / AIMS-8P / AIMS-8T
AIMS-4U / AIMS-4D / AIMS-4P / AIMS-4T

4 / 8 Channels
 DIN-Rail Mount
 MODBUS over Serial

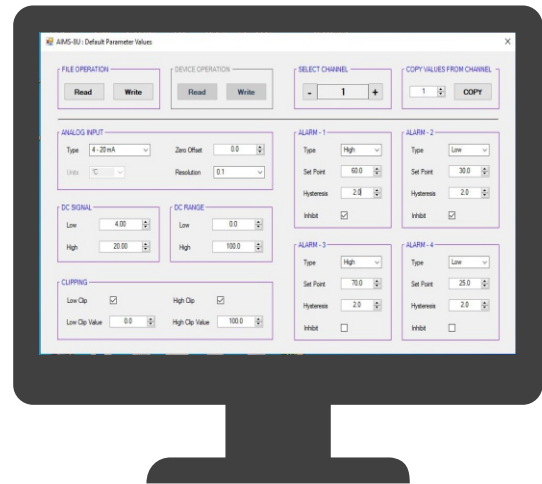
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AIMS-8X

AIMS-4X

Configuration Tool



Salient Features

- 4 (AIMS-4X) or 8 (AIMS-8X) Analog Input Channels
- Input Type Versions : Universal, DC V/mA, Pt100, Thermocouples
- 16 Bit Sigma-Delta ADC ($\pm 32,768$ Counts)
- 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
- Fast Channel Update Rate
- 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

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

General Information

Product Type	4 / 8 Channel DIN-Rail Analog Input Module MODBUS over RS485 Serial Interface
Ordering Code	AIMS-XY : X = 4 (4 Channel), 8 (8 Channel) Y = U (Universal), D (DC V/mA), P (Pt100), T (Thermocouple/mV)
Quantity	1 Unit
Accessories	(Optional) USB to RS485 Converter
Similar Modules	AOMS-4U, AOMS-8U DIMS-8, DIMS-16 DOMS-12

Analog Input Module

Channel Specifications

Number of Channels	4 / 8
Input Types	Thermocouples : J, K, T, R, S, B, N RTD : Pt100, 3-Wire DC mV : 0 to 80 mV DC Volts : 0 to 1.25V, 0 to 5V, 1 to 5V, 0 to 10V DC mA : 0-20 mA, 4-20 mA
Accuracy	For Thermocouples & RTD : $\pm 0.25\%$ of reading $\pm 1^\circ\text{C}$ For DC Linear Volts / Current : $\pm 0.25\%$ of reading ± 1 LSC
Resolution	For Thermocouples & RTD : 0.1°C For DC Linear Volts / Current : 0.001 / 0.01 / 0.1 / 1 Counts
Corrections	<ul style="list-style-type: none"> Cold-Junction Compensation for Thermocouples (Accuracy Better than $\pm 0.5^\circ\text{C}$) Lead Resistance Compensation for RTD (Upto 22 Ohms in each lead)
Range	Thermocouple & RTD Pt100 : Refer Table-1 DC Volts / Current : -30000 to +30000 Counts
Zero Offset	User Adjustable over Full Range for Each Channel
ADC	16 Bit ($\pm 32,768$ Counts), Sigma-Delta ($\Sigma\Delta$)
Sampling Time	Version U : 250mS Per Channel (4 Samples per Second) Version D : 100mS Per Channel (10 Samples per Second) Version P : 333mS Per Channel (3 Samples per Second) Version T : 100mS Per Channel (10 Samples per Second)
Input Resistance	> 10 MOhm
Common Mode Rejection	> 140dB at 50/60 Hz
Input Protection	ESD : 8KV EFT : 2KV Surge : 1KV
Input Conditioning	First Order Analog R-C Low-Pass Filter
Isolation	Three-way Isolation Eliminates Potential Ground Loops between Power, Inputs & RS485 Serial Port 1500VAC for 1 second or 250VAC continuous

Alarms

Numbers	4, Independent for Each Channel
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
Max. Units per Loop	31
Max. Distance	1200 Meters

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Power Supply

Type	Switch Mode (SMPS)
Power Requirement	18 ~ 32 VDC, nominal 24 VDC @ 300mA Max. Note : In case of looping multiple modules on one power source, make sure that the power source is capable of supplying minimum 300mA current per module.
Consumption	7 VA Max @ 24 VDC

Physical

Mounting	DIN-Rail
Overall Dimensions	22.5(W) X 101(H) X 119(D), mm
Terminals	Screw Type, Pluggable
Weight	400 gm, Appx.

Environmental

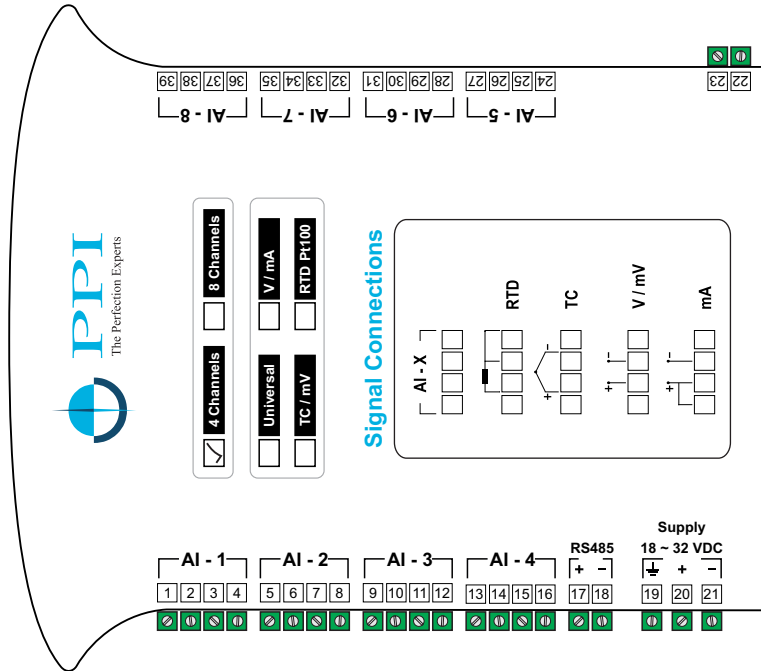
Operating Ambient	0 to 55°C & 5 to 90%RH Non-condensing
Storage Temperature	-10 to +70°C
Atmospheres	Not Suitable for use in Corrosive or Explosive Atmospheres. The Panel in which the Instrument is Mounted must be free of Electrically Conductive Pollution.

Table 1 : Temperature Ranges for Thermocouples & RTD

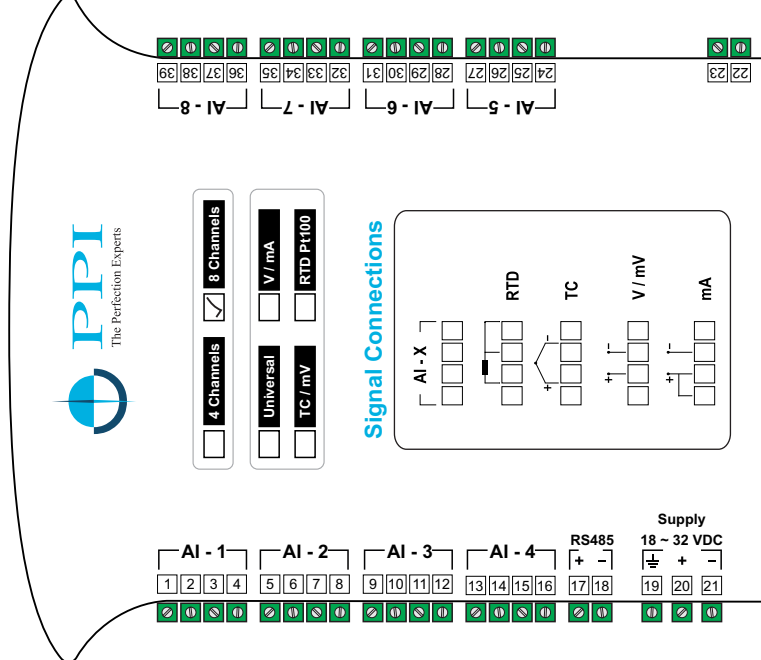
Input Type	Range (Min. to Max.)
Type J Thermocouple (Fe-K)	0 to +960.0°C / +32.0 to +1760.0°F
Type K Thermocouple (Cr-Al)	-200.0 to +1376.0°C / -328.0 to +2508.0°F
Type T Thermocouple (Cu-Con)	-200.0 to +387.0°C / -328.0 to +728.0°F
Type R Thermocouple (Pt/Pt-Rh13%)	0 to +1771.0°C / +32.0 to +3219.0°F
Type S Thermocouple (Pt/Pt-Rh10%)	0 to +1768.0°C / +32.0 to +3214.0°F
Type B Thermocouple	0 to +1826.0°C / +32.0 to +3218.0°F
Type N Thermocouple	0 to +1314.0°C / +32.0 to +2397.0°F
3-wire, RTD Pt100	-199.0 to +600.0°C / -328.0 to +1112.0°F

Terminations

4 Channel Module



8 Channel Module



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