Analog Input Module
AI210

- Programmable Input Type
- 8 Analog Input Channels
- 4 Digital Input Channels
- 4 Digital Output Channels
- RS-232, RS-485 Isolated

Analog Input Module AI210 has 8 Analog Input, 4 Digital Input and 4 Digital output. In addition, Analog Input is programmable input, user can set to use with various kind of sensor such as Thermocouple, RTD and Voltage etc. AI210 provides RS-232 connector and RS-485 connector which suitable for developing PC software, PLC, and touch screen display.

AI210 provides RS-232 connector and RS-485 connector which suitable for developing PC software, PLC, and touch screen display. AI210 has MODBUS ASCII protocol, MODBUS RTU protocol, moreover DDE Server to connect with windows program. Data file can be converting to MS word or MS excel using utility program.

Connection via RS485
Specifications

Serial Interface
Serial Standards:
RS232 Connector RJ12 6 Pin
RS485 (Isolated) 2 Pin Terminal Block
Loading: RS485 Max 32 Unit
Distance:
RS232 Length 15 m.
RS485 Length 1 Km.
Protocol: MODBUS (ASCII, RTU), Wisco ASCII
Support Software: Citect, Wonderware, Lab View, Fix, Genesis, etc.

Serial Parameter
Baud Rate: 4800, 9600, 19200, 57600
Data Bits: 8
Stop Bits: 1
Parity: None

Analog Input
Number of Channel: 8 Channels up to 24 Channels (EX24 Module)
Input Type: Programmable Input
Input Range:
Thermocouple (R, S, K, E, J, T, B)
RTD (Cu10, PT100, PT1000)
Resistance (0 to 600 Ω, 0 to 1.2 KΩ, 0 to 4 KΩ)
Voltage mVDC (0 to 80, 0 to 150 mVDC)
Voltage (0 to 1, 0 to 5, 0 to 15, 0 to 30 VDC)
Current (4 to 20, 0 to 20, 0 to 40 mA)

ADC Resolution: 16 Bits
Isolation: Relay Isolated

Digital Input
Number of Channel: 4 Channels
Sensor Type: wet Contact (Opto Isolated)
wet Contact (DI to GND):
ON: 12 to 24 VDC
OFF: 0 to 3 VDC

Digital Output
Number of Channel: 4 Channels
Output Type: NPN Open Collector

Recording
Recording Interface: 1 Sec - 18 Hours (Programmable)
record Mode: Stop When Full or Roll Over
Data Format: Can be Exported to MS Excel

Power Requirements
Power Supply: 85 to 230 VAC
(12 to 35 VDC Optional)

Power Consumption
Standby: 280 mA @ 12 VDC (3.5 W)
Start Record: 350 mA @ 12 VDC (4.5 W)

Environmental Limits
Operating Temperature: 0 to 55 °C
Operating Humidity: 5 to 95% RH
Storage Temperature: 0 to 70 °C

Physical Characteristics
Dimension: W160 x H90 x D60 mm.
Mounting: DIN Rail

Warranty
Warranty Period: 5 Year
**Ordering Information:** Specify Power Supply  
Example: AI210/85-230VAC

**Package Checklist**
1. AI210  
2. RS-232 Cable  
3. Resistor 250 Ω  
5. CD Software

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### Table 1. Shown Accuracy and Resolution Each Input Type

<table>
<thead>
<tr>
<th>Input Type</th>
<th>Measuring Range</th>
<th>Resolution</th>
<th>Accuracy (%FS) @25 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermocouple</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>0 - 1700 °C</td>
<td>1 °C</td>
<td>± 0.2% (3.4 °C)</td>
</tr>
<tr>
<td>S</td>
<td>0 - 1700 °C</td>
<td>1 °C</td>
<td>± 0.2% (3.4 °C)</td>
</tr>
<tr>
<td>K</td>
<td>(-)250.0 - 1300.0 °C</td>
<td>0.1 °C</td>
<td>± 0.2% (2.6 °C)</td>
</tr>
<tr>
<td>E</td>
<td>0.0 - 1000.0 °C</td>
<td>0.1 °C</td>
<td>± 0.2% (2.0 °C)</td>
</tr>
<tr>
<td>J</td>
<td>(-)200.0 - 700.0 °C</td>
<td>0.1 °C</td>
<td>± 0.2% (1.4 °C)</td>
</tr>
<tr>
<td>T</td>
<td>(-)250.0 - 400.0 °C</td>
<td>0.1 °C</td>
<td>± 0.2% (0.8 °C)</td>
</tr>
<tr>
<td>B</td>
<td>0 - 1800 °C</td>
<td>1 °C</td>
<td>± 0.2% (3.6 °C)</td>
</tr>
<tr>
<td>R.T.D.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PT100</td>
<td>(-)200.0 - 800.0 °C</td>
<td>0.1 °C</td>
<td>± 0.2% (1.6 °C)</td>
</tr>
<tr>
<td>PT1000</td>
<td>(-)200.0 - 800.0 °C</td>
<td>0.1 °C</td>
<td>± 0.1% (0.8 °C)</td>
</tr>
<tr>
<td>Cu10</td>
<td>0 - 150 °C</td>
<td>1 °C</td>
<td>± 0.1% (1.5 °C)</td>
</tr>
<tr>
<td>R (Ohm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>600 Ω</td>
<td>0.00 - 600.00 Ω</td>
<td>0.01 Ω</td>
<td>± 0.01% (0.06 Ω)</td>
</tr>
<tr>
<td>1200 Ω</td>
<td>0.0 - 1200.0 Ω</td>
<td>0.1 Ω</td>
<td>± 0.02% (0.24 Ω)</td>
</tr>
<tr>
<td>4000 Ω</td>
<td>0.0 - 4000.0 Ω</td>
<td>0.1 Ω</td>
<td>± 0.02% (0.8 Ω)</td>
</tr>
<tr>
<td>Voltage (mV)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 - 80</td>
<td>0.000-80.000 mV</td>
<td>1 µV</td>
<td>± 0.1% (5µV)</td>
</tr>
<tr>
<td>0 - 150</td>
<td>0.00 - 150.00 mV</td>
<td>10 µV</td>
<td>± 0.02% (30µV)</td>
</tr>
<tr>
<td>Voltage (V)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 - 1</td>
<td>0.0000 - 1.0000 V</td>
<td>100 µV</td>
<td>± 0.05% (500µV)</td>
</tr>
<tr>
<td>0 - 5</td>
<td>0.000 - 5.000 V</td>
<td>0.001 V</td>
<td>± 0.04% (0.002 V)</td>
</tr>
<tr>
<td>0 - 10</td>
<td>0.000 - 10.000 V</td>
<td>0.001 V</td>
<td>± 0.02% (0.002 V)</td>
</tr>
<tr>
<td>0 - 30</td>
<td>0.00 - 30.00 V</td>
<td>10 mV</td>
<td>± 0.033% (10 mV)</td>
</tr>
<tr>
<td>Current (mA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 - 20</td>
<td>4.000 - 20.000 mA</td>
<td>1 µA</td>
<td>± 0.01% (5µA)</td>
</tr>
<tr>
<td>0 - 20</td>
<td>0.00 - 20.00 mA</td>
<td>0.01 mA</td>
<td>± 0.1% (0.02 mA)</td>
</tr>
<tr>
<td>0 - 40</td>
<td>0.00 - 40.00 mA</td>
<td>0.01 mA</td>
<td>± 0.05% (0.02 mA)</td>
</tr>
</tbody>
</table>