

AI06

ABB Ability™ Symphony® Plus Hardware Selector



The AI06 Universal Analog Input module processes up to 8 high-level, CH-2-CH isolated, analog input field signals. Each channel is independently configurable for high-level (4 to 20 mA or 1 to +5 VDC), RTD, mV, and TC analog input signal ranges. FC 221 (I/O Device Definition) sets AI module operating parameters and each input channel is configured using FC 222 (Analog Input CH) to set individual input channel parameters such as engineering units, High/Low alarm limits, etc.

Each input channel has a dedicated A/D converter that provides 24-bit resolution with polarity. The AI05 module will update all 8 input channels in 100 msec.

In current mode, the AI06 module provides short circuit protection by limiting current to a maximum of 96 mA. The AI06 module will also detect an open circuit in less than 400 msec.

Features and benefits

- 8 independently configurable channels supporting:
- Hi Lvl: 4 to 20 mADC, 0/1... +5 VDC, or -10/0...+10 VDC
- TC types: E, J, K, R, S, T, B, L, N (14 & 28 AWG), U, Chinese TC types: E & S
- mV Ranges: 0 to 100 mV or -100 to +100 mV
- RTDs: 100 Ω Platinum U.S. Lab & Industry Std., 100 Ω Platinum European Std., 120 Ω Nickel, Chinese 53 Ω Copper, 10 Ω Copper
- A/D resolution is 24-Bit
- A/D update of all 8 Channels in 100 msec
- Accuracy from is $\pm 0.03\%$ to ± 0.1 of Full Scale Range (FSR)

General info	
Article number	8VZZ002136R01 (AI06)
Type	Analog Input
Signal specification	Hi Lvl: 4...20 mA, 0/1...+5 VDC, -10/0...+10 VDCmV: -100/0...+100mV Thermocouple: Type B, E, J, K, L, N(14 or 28 AWG), R, S, T, U or Chinese E, S RTD: 100 Ω Platinum U.S. & Euro Std, 120 Ω Nickel, Chinese 53 Ω Copper, and 10 Ω Copper
Life cycle status	ACTIVE
Number of channels	8
Signal type	Universal AI: High Level, mV, TC, and RTD
HART	No
SOE	No
Redundancy	No
Form factor	Standard (190 mm)
Mounting	Horizontal Row or Vertical Column
MTBF (per MIL-HDBK-217-FN2)	PR A: 187,592 Hours
MTTR (Hours)	1 Hours

Detailed data

Module power requirements	24 VDC ± 10%, 100 mA typical, 125 mA max
Module power connection	POWER TB on cHBX01L or VBX01T
Field IO power	20 mA/channel @ 24 VDC ±10%
Overvoltage category	Category I for power, inputs or outputs. Tested according to EN 61010-1
Max field cable length	600 meters (1968 feet)
Number of Channels	8 independently configurable AI channels
Signal ranges and types	Analog Inputs: High Level: 4...20 mA, 0/1...+5 VDC, -10/0...+10 VDCmV: -100/0...+100mV Thermocouple: Type B, E, J, K, L, N(14 or 28 AWG), R, S, T, U or Chinese E, S RTD: 100 Ω Platinum U.S. Lab & Industry Std., 100 Ω European Std, 120 Ω Nickel, Chinese 53 Ω Copper, and 10 Ω Copper
TC Cold Junction Compensation	± 0.5 °C Reference Accuracy
Input Impedance	Current: 10 MΩ minimum (mV & TC), 250 Ω (4 to 20 mA) Voltage: 100 kΩ minimum (V, mA)
Output load	0 to 750 Ω Current mode, minimum 22kΩ voltage mode
A/D Conversion	1 dedicated A/D converter for each channel
A/D Resolution	24-Bits with Polarity
A/D Update rate	100 msec for all 8 channels
Accuracy, FSR	Current Mode: ± 16 μA (± 0.1% of FSR, where FSR = 16 mA) Voltage Mode: ± 8 mV (0 ± 0.04% of FSR, FSR = 20 VDC) RTD: ± 0.25 Ω (0 ± 0.05% of FSR, FSR = 500 Ω) mV: ± 0.06 mV (0 ± 0.03% of FSR, FSR = 200 mV)
Temp effect on accuracy	±0.003% of FSR per °C maximum, from 0 to 70°C
Field signal to Logic isolation	Galvanically isolated, 1500 V up to 1 minute
Channel isolation	Individual CH-2-CH isolated, 1500 V up to 1 minute
Open circuit detection time	400 msec, when in current mode
Short circuit protection	Max 96 mA (in current mode only)
Normal mode noise rejection	-80 dB minimum
Common mode noise rejection	-120 dB minimum

Diagnostics

Front plate LED's	STATUS LEDs: R (Run) and F (Fault) + 1 thru 8
Local availability	Mini USB connection on module front plate
Remote availability	HN800 device diagnostics via SPE

Environment and certification	
Temperature, Operating	-40 to +70 °C Tested according to IEC/EN 60068-2-1, IEC/EN 60068-2-2
Temperature, Storage	-40 to +85 °C Tested according to MIL-STD-810G
Relative humidity	20% to 95% @ 40°C non-condensing. Tested according to IEC/EN 60068-2-78, IEC/EN 61298-3
Vibration (operational sinusoidal)	5 to 60 Hz 0.137 mm (0.0054 in.), 60 to 150 Hz 1.0 G. Tested according to IEC/EN 60068-2-6
Vibration (transportation)	10 to 500 Hz. Tested according to MIL-STD-810G
Shock (storage)	15 G, 11 msec. Tested according to IEC/EN 60068-2-27
Drop	100 mm. Tested according to IEC/EN 60068-2-31
Protection class	IP20 according to EN 60529, IEC 529
Altitude (operational)	Sea level to 3,048 meters (10,000 ft.) Tested according to MIL-STD-810G
Altitude (storage)	Sea level to 12,192 meters (40,000 ft.) Tested according to MIL-STD-810G
Air quality	ISA S71.04 G1, ISA S71.04 G3 compliant versions SPCxxxA are also available
ESD immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-2, Severity level 3
Surge immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-5, Severity level 3
Electrical fast transient immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-4, Severity level 3
Radiated RFI immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-3, Severity level 3
Conducted Immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-6, Severity level 3
Magnetic field immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-8, Severity level 4
Radiated emission	Tested according to IEC/EN 61000-6-4, CISPR 11 + A1, CISPR 16-1-1, Group 1, Class A, ISM equipment according to IEC/EN 61000-6-2, IEC/EN 61000-4-6, Severity level 3
Conducted emission	Tested according to IEC/EN 61000-6-4, CISPR 11 + A1, CISPR 16-1-1, Group 1, Class A, ISM equipment
Voltage dips and interruption immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-11
CSA non-hazardous locations	Certified for use as process control equipment in an ordinary (non-hazardous) location
CSA hazardous, nonincendive locations	Class I, Division 2, Groups A, B, C, D
CE Mark	CE Mark EMC directive 2004/108/EC & Low Voltage Directive 2006/95/EC
RoHS compliance	RoHS Directive 2015/863
WEEE compliance	DIRECTIVE/2012/19/EU

Compatibility

Use with MTU	HBS01-UAI, VBS01-UAI
Module keying code for base	slot #1 = 06, slot #2 = 18

Dimensions

Width	27 mm
Depth	106 mm
Height	190 mm
Weight	240 g

solutions.abb.com/symphonyplus
solutions.abb.com/controlsystems

800xA and Symphony Plus is a registered trademark of ABB. All rights to other trademarks reside with their respective owners.

We reserve the right to make technical changes to the products or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not assume any responsibility for any errors or incomplete information in this document.

We reserve all rights to this document and the items and images it contains. The reproduction, disclosure to third parties or the use of the content of this document – including parts thereof – are prohibited without ABB's prior written permission.

Copyright© 2025 ABB All rights reserved