DATA SHEET

AI820
Compact Product Suite hardware selector

The AI820 Analog Input Module has 4 differential, bipolar current/voltage inputs. Each channel can be either a voltage or current input. The current inputs can withstand an accidental maximum normal mode 30 V d.c. connection. To protect the current input circuit against dangerous input levels, that is, by accidentally connecting a 24 V source, the resistor rating of the 250W current sense resistors is about 5 Watts. This is intended only to temporarily protect one channel at a time.

The module distributes the external transmitter supply to each channel. This adds a simple connection (with extended MTUs) to distribute the supply to external 2 wire transmitters. There is no current limiting on the transmitter power terminals.

All 4 channels are isolated from the ModuleBus in one group. Power to the input stages is converted from the 24 V on the ModuleBus.

Features and benefits

- 4 channels for -20...+20 mA, 0...20 mA, 4...20 mA, -10...+10 V, 0...10 V, 2...10 V, -5...+5 V, 0...5 V, 1...5 V d.c. bipolar differential inputs
- One group of 4 channels isolated from ground
- 14 Bit resolution plus sign
- Input shunt resistors protected to 30 V d.c.
- The input withstand HART communication

General info	
Type	Analog Input
Signal specification	-20..+20 mA, 0(4)..20 mA, -10..+10 V, 0(2)..10 V
Article number	3BSE008544R1
Number of channels	4
Signal type	Bipolar differential
HART	No
SOE	No
Redundancy	No
High integrity	No
Intrinsic safety	No
Mechanics	S800

Detailed data	
Resolution	14 bit plus sign
Input impedance	200 kΩ ± 25% (voltage mode, common mode) 800 kΩ ± 25% (voltage mode, normal mode) 250 Ω (current input)
Isolation	Groupwise isolated from ground (RIV=50 V)
Under/over range	± 15%
Error	Max. 0.1%
Temperature drift	Voltage: Max. 70 ppm/°C Current: Max. 50 ppm/°C
Input filter (rise time 0-90%)	40 ms
Current limiting	Transmitter power can be current limited by the MTU
Maximum field cable length	600 meters (656 yards)
Dielectric test voltage	500 V a.c.
Power dissipation	1.7 W
Current consumption +5 V Modulebus	80 mA
Current consumption +24 V Modulebus	0
Current consumption +24 V external	70 mA

Diagnostics	
Front LED's	F(ault), R(un), W(arning)
Supervision	Internal Power Supply
Status indication of supervision	Module Error, Module Warning, Channel error

Environment and certification	
CE mark	Yes
Electrical safety	IEC 61131-2, UL 508
Hazardous Location	C1 Div 2 cULus, C1 Zone 2 cULus, ATEX Zone 2
Marine certification	ABS, BV, DNV-GL, LR, RS, CCS
Protection rating	IP20 according to IEC 60529
Corrosive atmosphere ISA-S71.04	G3
Climatic operating conditions	0 to +55 °C (Storage -40 to +70 °C), RH=5 to 95 % no condensation, IEC/EN 61131-2
Pollution degree	Degree 2, IEC 60664-1
Mechanical operating conditions	IEC/EN 61131-2
EMC	EN 61000-6-4, EN 61000-6-2
Overvoltage categories	IEC/EN 60664-1, EN 50178
Equipment class	Class I according to IEC 61140; (earth protected)
Max ambient temperature	55 °C (131 °F), for vertical mounting in compact MTU 40 °C (104 °F)
RoHS compliance	EN 50581:2012
WEEE compliance	DIRECTIVE/2012/19/EU

Compability	
Use with MTU	TU810, TU812, TU814, TU830, TU833
Keying code	BB

Intrinsic Safety parameters

Dimensions	
Width	45 mm (1.77")
Depth	102 mm (4.01"), 111 mm (4.37") including connector
Height	119 mm (4.7")
Weight	0.2 kg (0.44 lbs.)

Related products

	**TU814V1**		**TU810V1**
	**TU833**		**TU812V1**
	**TU830V1**		

—

www.abb.com/800xA
www.abb.com/controlsystems

—