DATA SHEET

AI845

ABB Ability™ System 800xA® hardware selector

The AI845 Analog Input Module for single or redundant applications. The module has 8 channels. Each channel can be either a voltage or current input when MTU TU844 or TU845 is used, when other MTUs are used all channels become voltage or current inputs.

The voltage and current input is able to withstand an overvoltage or undervoltage of at least 11 V d.c. The input resistance for voltage input is greater than 10 M ohm and the input resistance for current input is 250 ohm.

The module distributes the external HART compatible transmitter supply to each channel. This adds a simple connection to distribute the supply to 2-wire or 3-wire transmitters. The transmitter power is supervised and current limited.

Features and benefits

- 8 channels for 0...20 mA, 4...20 mA, 0...5 V or 1...5 V d.c., single ended unipolar inputs
- Single or redundant operation
- 1 group of 8 channels isolated from ground
- 12 Bit resolution
- Current limited transmitter supply per channel
- Advanced on-board diagnostics
- HART pass-through communication

General info	
Article number	3BSE023675R1
Type	Analog Input
Signal specification	0..20mA, 4..20 mA, 0..5 V, 1..5 V
Number of channels	8
Signal type	Unipolar single ended
HART	Yes
SOE	No
Redundancy	Yes
High integrity	No
Intrinsic safety	No
Mechanics	S800

Detailed data	
Resolution	12 bit
Input impedance	10 MΩ (voltage input) 250 Ω (current input)
Isolation	Groupwise isolated from ground
Under/over range	0 / +15% (0..20 mA, 0..5 V), -12.5% / +15% (4..20 mA, 1..5 V)
Error	Max. 0.1%
Temperature drift	Max. 50 ppm/°C
Input filter (rise time 0-90%)	290 ms
Update cycle time	10 ms
Current limiting	Built in current limited transmitter power
Maximum field cable length	600 meters (656 yards)
Max input voltage (non destructive)	11 V d.c.
NMRR, 50Hz, 60Hz	> 40 dB
Rated insulation voltage	50 V
Dielectric test voltage	500 V a.c.
Power dissipation	3.5 W
Current consumption +5 V Modulebus	100 mA
Current consumption +24 V Modulebus	50 mA
Current consumption +24 V external	Max. 265 mA (22 mA + transmitter current * 1.32)

Diagnostics	
Front LED's	F(ault), R(un), W(arning)
Supervision	Module error: analog read back, reference voltage, internal power supply, checksum, watchdog and memory error Internal channel error: low pass filter´, multiplexer, test channel error External channel error: external power supply low, transmitter power, external shunt error
Status indication of supervision	Module Error, Module Warning, Channel error

Environment and certification	
CE mark	Yes
Electrical safety	EN 61010-1, UL 61010-1, EN 61010-2-201, UL 61010-2-201
Hazardous Location	C1 Div 2 cULus, C1 Zone 2 cULus, ATEX Zone 2
Marine certification	BV, DNV, LR
Temperature, Operating	0 to +55 °C (+32 to +131 °F), approvals are issued for +5 to +55 °C
Temperature, Storage	-40 to +70 °C (-40 to +158 °F)
Pollution degree	Degree 2, IEC 60664-1
Corrosion protection	ISA-S71.04: G3
Relative humidity	5 to 95 %, non-condensing
Max ambient temperature	55 °C (131 °F), for vertical mounting in compact MTU 40 °C (104 °F)
Protection class	IP20 according to IEC 60529
Mechanical operating conditions	IEC/EN 61131-2
EMC	EN 61000-6-4 and EN 61000-6-2
Overvoltage categories	IEC/EN 60664-1, EN 50178
Equipment class	Class I according to IEC 61140; (earth protected)
RoHS compliance	DIRECTIVE/2011/65/EU (EN 50581:2012)
WEEE compliance	DIRECTIVE/2012/19/EU

Compatibility	
Use with MTU	TU810, TU812, TU814, TU818, TU830, TU833, TU835, TU838, TU844, TU845, TU854
Keying code	CC

Dimensions	
Width	45 mm (1.77”)
Depth	102 mm (4.01”), 111 mm (4.37”) including connector
Height	119 mm (4.7”)
Weight	0.23 kg (0.51 lbs.)

Related products

	TU810V1		TU812V1
	TU814V1		TU830V1
	TU833		TU835V1
	TU838		TU844
	TU845		TU854

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