DATA SHEET

AI830A

ABB Ability™ System 800xA® hardware selector

The AI830/AI830A RTD Input Module has 8 channels for measurement of temperature with resistive elements (RTDs). With 3-wire connections. All the RTDs must be isolated from ground.

The AI830/AI830A can be used with Pt100, Cu10, Ni100, Ni120 or resistive sensors. Linearization and conversion of the temperature to Centigrade or Fahrenheit is performed on the module.

Every channel can be individually configured. The MainsFreq parameter is used to set mains frequency filter cycle time. This will give a notch filter at the frequency specified (50 Hz or 60 Hz).

Features and benefits

- 8 channels for RTD (Pt100, Cu10, Ni100 and Ni120 and resistor) inputs
- 3-wire connection to RTDs
- 14 Bit resolution
- Inputs are monitored for open-circuit, shortcircuit and has a input grounded sensor

General info	
Article number	3BSE040662R1
Type	Analog Input
Signal specification	3-wire RTD: Pt100, Cu10, NI100, Ni120 and resistive potentiometer
Number of channels	8
Signal type	See table in S800 Modules and Termination Units, 3BSE020924
HART	No
SOE	No
Redundancy	No
High integrity	No
Intrinsic safety	No
Mechanics	S800

Detailed data	
Resolution	See table in S800 Modules and Termination Units, 3BSE020924-xxx
Isolation	Groupwise isolated from ground
Error	Error dependent of the field cable resistance: Rerr = R* (0.005 + ΔR/100) Terr°C = Rerr / (R0 * TCR) Terr°F = Terr°C * 1.8
Temperature drift	See table in S800 Modules and Termination Units, 3BSE020924-xxx
Update cycle time	150 + 95 * (number of active channels) ms
CMRR, 50Hz, 60Hz	>120 dB (at 10Ω load)
NMRR, 50Hz, 60Hz	>60 dB
Rated insulation voltage	50 V
Dielectric test voltage	500 V a.c.
Power dissipation	1.6 W
Current consumption +5 V Modulebus	70 mA
Current consumption +24 V Modulebus	50 mA
Current consumption +24 V external	0

Diagnostics	
Front LED’s	F(ault), R(un), W(arning)
Supervision	Open-circuit, short-circuit, reference channel, internal power supply
Status indication of supervision	Module Error, Module Warning, Channel error (8)

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	ABS, 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	EU RoHS, UAE RoHS, CN RoHS
WEEE compliance	DIRECTIVE/2012/19/EU

Compatibility	
Use with MTU	TU810, TU812, TU814, TU830, TU833
Keying code	AF

Dimensions	
Width	45 mm (1.77”)
Depth	102 mm (4.01”), 111 mm (4.37”) including connector
Height	119 mm (4.7”)
Weight	0.22 kg (0.49 lbs.)

Related products

	TU810V1		TU812V1
	TU814V1		TU830V1
	TU833		

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