ABB AI830A Manual

Brand	ABB
Product Series	ABB
Product Type	Analog Input

Description

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

MTUs that match this product
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TU810V1

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 DIRECTIVE/2011/65/EU (EN 50581:2012)
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.)