ABB ABB Series Service Manual

AI810

1. Description

The AI810 Analog Input Module has 8 channels. Each channel can be either a voltage or current input. The current input is able to handle a short circuit to the transmitter supply at least 30 V d.c without damage. Current limiting is performed with a PTC resistor. The input resistance of the current input is 250 ohm, PTC included.

3. Product Information

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The voltage input is able to withstand an over or undervoltage of at least 30 V d.c. Input resistance is 290k ohm. Transmitter supply can be connected to L1+, L1- and/or L2+, L2-.

Features and benefits

8 channels for 0...20 mA, 4...20 mA, 0...10 V or 2...10 V d.c., single ended unipolar inputs

1 group of 8 channels isolated from ground

12 Bit resolution

Input shunt resistors protected to 30 V by PTC resistor

Analog inputs are short circuit secured to ZP or +24 V

The input withstand HART communication.

MTUs that match this product TU810V1

General info

Article number 3BSE008516R1

Type Analog Input

Signal specification 0..20mA, 4..20mA, 0..10V, 2..10V

Number of channels 8

Signal type Unipolar single ended

HART No

SOE No

Redundancy No

High integrity No

Intrinsic safety No

Mechanics S800

Detailed data

Resolution 12 bit

Input impedance 290 kΩ (voltage input)

230 - 275 kΩ (current input)

Isolation Groupwise isolated from ground

Under/over range -5% / +15%

Error Max. 0.1%

Temperature drift Voltage: Typ. 70 ppm/°C Max. 100 ppm/°C; Current: Typ. 50 ppm/°C Max. 80 ppm/°C

Input filter (rise time 0-90%) 140 ms

Update cycle time 8 ms

Current limiting Transmitter power can be current limited by the MTU

Maximum field cable length 600 meters (656 yards)

Max input voltage (non destructive) 30 V d.c.

NMRR, 50Hz, 60Hz > 40 dB

Rated insulation voltage 50 V

Dielectric test voltage 500 V a.c.

Power dissipation 1.5 W

Current consumption +5 V Modulebus 70 mA

Current consumption +24 V Modulebus 40 mA

Current consumption +24 V external 0

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 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, 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, TU850

Keying code AE

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.)