ABB ABB Series Service Manual

AI825

1. Description

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3. Product Information

The AI825 Analog Input Module has 4 individually galvanic isolated, bipolar current/voltage inputs. Each channel can be either a voltage or current input.

The module has a direct current input that withstand up to 6.3 V and a over voltage protected current input that withstand up to +30 V d.c. The current is limited by a PTC resistor.

Power to the input stages is converted from the 24 V on the ModuleBus.

Features and benefits

4 channels individually galvanic isolated inputs for +20 mA, 0...20 mA, 4...20 mA, +10 V, 0...10 V, 2...10 V

14 Bit resolution plus sign

Input shunt resistors protected to 30 V d.c.

The input withstands HART communication

MTUs that match this product

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TU811V1

General info

Article number 3BSE036456R1

Type Analog Input

Signal specification -20..+20 mA, 0(4)..20 mA, -10..+10 V, 0(2)..10V

Number of channels 4

HART No

SOE No

Redundancy No

High integrity No

Intrinsic safety No

Mechanics S800

Detailed data

Resolution 14 bit plus sign

Input impedance 10 MΩ (voltage input)

50 Ω (current input)

Isolation Individually isolated, channel-to-channel and to circuit common

Under/over range ± 15%

Error Max. 0.1%

Temperature drift Max. 47 ppm/°C (0..10V), Max. 34 ppm/°C (±10V), Max. 78 ppm/°C (0..20mA), Max. 57 ppm/°C (±20mA)

Input filter (rise time 0-90%) 115 ms (voltage input), 130 ms (current input)

Update cycle time < 10ms

Maximum field cable length 600 meters (656 yards)

CMRR, 50Hz, 60Hz 120 dB

NMRR, 50Hz, 60Hz > 40 dB at 50 Hz, >55 dB at 60 Hz

Rated insulation voltage 250 V

Dielectric test voltage 1900 V d.c. ch-ch, 3250 V d.c. ch-ground/system,

Power dissipation Typ. 2.5 W, Max. 3.2 W

Current consumption +5 V Modulebus Typ. 70 mA, Max. 100 mA

Current consumption +24 V Modulebus Typ. 90 mA, Max. 110 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 -

Marine certification -

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 TU811, TU813, TU831

Keying code DA

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.)