

ABB AI880A Manual

Brand	ABB
Product Series	ABB
Product Type	Analog Input

Description

The AI880A High Integrity Analog Input Module is designed for single and redundant configuration. The module has 8 current input channels. The input resistance is 250 ohm.

The module distributes the external transmitter supply to each channel. This adds a simple connection to distribute the supply to 2- or 3-wire transmitters. The transmitter power is supervised and current limited. All eight channels are isolated from the ModuleBus in one group. Power to the Module is generated from the 24 V on the ModuleBus.

The AI880A complies with the NAMUR recommendation NE43, and supports configurable over- and under range limits.

Features and benefits

8 channels for 0...20 mA, 4...20 mA, single ended unipolar inputs

Single or redundant configuration

1 group of 8 channels isolated from ground

12 bit resolution

Loop Supervised DI function

Configurable alarm limit for field power outputs

Configurable over/under range for current inputs

Current limited transmitter supply per channel

Advanced on-board diagnostics

Certified for SIL3 according to IEC 61508

Certified for Category 4 according to EN 954-1

Complies with the NAMUR recommendation NE43, and supports configurable over- and under range limits

HART pass-through communication (AI880A)

MTUs that match this product

,

TU834

General info

Article number 3BSE039293R1

Type Analog Input

Signal specification 0..20 mA, 4..20 mA

Number of channels 8

Signal type Unipolar single ended

HART Yes

SOE No

Redundancy Yes

High integrity Yes

Intrinsic safety No

Mechanics S800

Detailed data

Resolution 12 bit

Input impedance 250 Ω with shunt stick TY801 (at current input)

Isolation Groupwise isolated from ground

Under/over range Over range: +12% (0..20 mA), +15% (4..20 mA)

Error Max. 0.1%

Temperature drift Max. 50 ppm/°C

Input filter (rise time 0-90%) 190 ms (HW filter)

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 2.4 W

Current consumption +5 V Modulebus 45 mA

Current consumption +24 V Modulebus max 50 mA

Current consumption +24 V external 4 + transmitter current mA, max 260 mA

Diagnostics

Front LED's F(ault), R(un), W(arning)

Supervision Internal voltage, Field power input, Field power output per channel

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 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 TU834, TU844, TU845 or TU854

Keying code FD

Dimensions

Width 45 mm (1.77")

Depth 102 mm (4.01"), 111 mm (4.37") including connector

Height 119 mm (4.7")

Weight 0.15 kg (0.33 lbs.)