AI890
Freelance hardware selector

The AI890 Analog Input Module has 8 channels. The module includes Intrinsic Safety protection components on each channel for connection to process equipment in hazardous areas without the need for additional external devices.

Each channel can be either a current input or power and monitor a two-wire process transmitter. The current input is for externally powered transmitters. The input voltage drop of the current input is typically 3 V, PTC included. The transmitter supply for each channel can provide at least 15 V at a 20 mA loop current to power Ex-certified process transmitters and is limited to 23 mA in overload conditions. All eight channels are isolated from the ModuleBus and power supply in one group. Power to the input stages is converted from the 24 V on the power supply connections.

TU890 and TU891 Compact MTU can be used with this module and it enables two wire connections to the process devices without additional terminals. TU890 for Ex applications and TU 891 for non-Ex applications.

Features and benefits

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

• 1 group of 8 channels isolated from ground.

• Power and monitor for Ex certified two-wire transmitters.

• Non energy-storing analog inputs for externally powered sources.

General info	
Article number	3BSC690071R1
Type	Analog Input
Signal specification	0…20 mA
Number of channels	8
Signal type	Unipolar single ended
HART	No
SOE	No
Redundancy	No
High integrity	No
Intrinsic safety	Yes
Mechanics	S800

Detailed data

Resolution	12 bit
Isolation	Group wise isolated from ground
Under/over range	0 / 22 mA
Error	Max. 0.1%
Temperature drift	Typ. 50 ppm/°C Max. 100 ppm/°C
Input filter (rise time 0-90%)	75 ms
Update cycle time	5 ms
Current limiting	Built in current limited transmitter power
CMRR, 50Hz, 60Hz	>80 dB
NMRR, 50Hz, 60Hz	>20 dB
Rated insulation voltage	50 V
Dielectric test voltage	500 V a.c.
Power dissipation	1.5 W
Current consumption +5 V Modulebus	Typ. 70 mA, Max. 150 mA
Current consumption +24 V external	Typ. 220 mA, Max. <300 mA

Diagnostics

Front LED's	F(ault), R(un), W(arning)
Supervision	Internal process supply
Status indication of supervision	Module Error, Module Warning, Channel error

Environment and certification

CE mark	Yes
Electrical safety	EN 61010-1, EN 61010-2-201
Hazardous Location	ATEX/IECEx Zone 2 with interface to Zone 0, cFMus C1, Div 2/Zone 2 with interface to C1, C2, C3 Div 1/Zone 0
Marine certification	ABS, BV, DNV, LR
Temperature, Operating	0 to +55 °C (+32 to +131 °F)
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	TU890, TU891
Keying code	AC

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.)

Related products

TU890

TU891

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solutions.abb/controlsystems