

AI893

ABB Ability™ System 800xA® hardware selector



The AI893 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.

The module can be configured for either 2 or 3-wire RTD sensors or for TC sensors. In TC mode, channel 8 be used for Cold Junction (ambient) temperature measurements, thus serving as CJ-channel for channel 1...7. The junction temperature may be measured locally on the MTUs screw terminals, or on a connection unit distant from the device. The cold junction temperature is measured with a 3-wire Pt 100 sensor. Alternatively, a fix junction temperature for the module may be set by the user (as parameter). Channel 8 may be used in the same manner as channel 1-7 when no CJ-temperature measurement is needed.

TU890 and TU891 Compact MTU can be used with this module and it enables three wire connection to the process devices without additional terminals. TU890 for Ex applications and TU891 for non Ex applications.

Features and benefits

- 8 differential input channels for 2 or 3-wire RTD and Thermocouple.
- 1 group of 8 channels isolated from ground.
- 15 Bit + sign resolution.
- Ex certified inputs.

General info

| | |
|----------------------|--------------|
| Article number | 3BSC690141R1 |
| Type | Analog Input |
| Signal specification | RTD or TC |
| Number of channels | 8 |
| Signal type | Differential |
| HART | No |
| SOE | No |
| Redundancy | No |
| High integrity | No |
| Intrinsic safety | Yes |
| Mechanics | S800 |

| Detailed data | |
|------------------------------------|---|
| Resolution | 15 bit + sign |
| Input impedance | >10 MΩ |
| Isolation | Groupwise isolated from ground |
| Error | TC/mV: <20 μV ; RTD (0-400 Ω): <0.1 Ω ; RTD (0-4000 Ω): <1 Ω |
| Temperature drift | TC/mV: <20 μV/10°C ; RTD (0-400 Ω): <0.1 Ω/10°C ; RTD (0-4000 Ω): <1 Ω/10°C |
| Update cycle time | (no of active channels) x 125 + 125 ms |
| Common mode voltage input | +/- 5V |
| CMRR, 50Hz, 60Hz | >100 dB |
| NMRR, 50Hz, 60Hz | >80 dB |
| Rated insulation voltage | 50 V |
| Dielectric test voltage | 500 V a.c. |
| Power dissipation | 0.5 W |
| Current consumption +5 V Modulebus | Typ. 90 mA, Max. <125 mA |

| Diagnostics | |
|--------------------|-------------------------------------|
| Front LED's | F(ault), R(un), W(arning) |
| Supervision | Open circuit, Short circuit for RTD |

| 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 | - |
| 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 | BA |

Intrinsic Safety parameters

| | |
|-------------------------|------|
| U0 (Groups CENELEC USA) | IIC |
| I0 (Groups CENELEC USA) | IIB |
| P0 (Groups CENELEC USA) | IIA |
| U0 - C0 (uF) | 1.41 |
| U0 -L0 (mH) | 88 |
| U0 -L/R (uH/O) | 586 |
| I0 - C0 (uF) | 9 |
| I0 -L0 (mH) | 352 |
| I0 -L/R (uH/O) | 2347 |
| P0 - C0 (uF) | 36 |
| P0 -L0 (mH) | 706 |
| P0 -L/R (uH/O) | 4707 |

Dimensions

| | |
|--------|--|
| Width | 45 mm (1.77") |
| Depth | 102 mm (4.01"), 111 mm (4.37") including connector |
| Height | 119 mm (4.7") |
| Weight | 0.16 kg (0.35 lbs.) |

Related products



TU890



TU891

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