

# AI890

## ABB Ability™ System 800xA® 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                  |

| <b>Detailed data</b>               |  |
|------------------------------------|--|
| 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                  |

| <b>Diagnostics</b>               |   |
|----------------------------------|---|
| Front LED's                      | F(ault), R(un), W(arning)                   |
| Supervision                      | Internal process supply                     |
| Status indication of supervision | Module Error, Module Warning, Channel error |

| <b>Environment and certification</b> |  |
|--------------------------------------|--|
| 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   |

| <b>Compatibility</b> |              |
|----------------------|--------------|
| Use with MTU         | TU890, TU891 |
| Keying code          | AC           |

| <b>Dimensions</b> |  |
|-------------------|--|
| 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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