

AIS850

System 800xA hardware selector



Select I/O is an Ethernet networked, single channel granular I/O system for the ABB Ability™ System 800xA automation platform. Select I/O helps decouple project tasks, minimizes the impact of late changes and supports standardization of I/O cabinetry ensuring automation projects are delivered on-time and under budget. A Signal Conditioning Module (SCM) performs the necessary signal conditioning and powering of the connected field device for one I/O channel.

The AIS850 is an Analog Input Signal Conditioning Module (16bit) for use in intrinsically safe applications (Zone 0) supporting 2-wire devices and HART communications.

Features and benefits

- Analog input for 2-wire field devices
- Signal range: 4...20 mA and 0...20 mA
- Can be used in hazardous areas providing intrinsically safe signals up to Zone 0
- Transmitter power current limited to 25 mA
- 16 bit A/D converter resolution
- Channel to channel galvanic isolation
- Hardware filter, rise time 1 ms
- Software filter configurable through parameters
- Diagnostics:
 - Loop supervision (open circuit and short circuit)
 - Internal hardware supervision
 - Communication supervision
 - Device malfunction low, underrange, overrange and device malfunction high detection
 - Internal power supervision
- LED indicators:
 - Status (S)
 - Primary (P)
- Single loop granularity - each SCM handles a single channel
- Supports hot swap
- Mechanical locking slider which turns off field device power and/or output before removal
- Field disconnect function which can galvanically separate the field loop wiring from the SCM during commissioning and maintenance
- All SCMs have electronic current limitation
- Mechanical keying to prevent insertion of wrong module type after commissioning
- 24V DC powered through Modulebus
- Configurable through parameters
- LED indicators on the SCM indicate the operational state of the module.

| General info | |
|---------------------------|--|
| Article number | 3BSE078770R1 |
| Type | Analog Input Module - IS |
| Signal specification | 4...20 mA 0...20 mA |
| HART | Yes |
| Detailed HART information | HART v7, HART pass-through and HART variables to the application |
| SOE | N/A |
| Hot swap | Yes |
| High integrity | No |
| Intrinsic safety | Yes |
| Mechanics | Select I/O |

| Detailed data | |
|-------------------------------------|--|
| Supported field devices | 2-wire (loop powered transmitters) |
| Isolation | Galvanic isolation to system and between each channel (including field power). Routine tested at factory with 3060 V DC. |
| Field power | Current limited to 25 mA |
| Accuracy | 0.1 % |
| Resolution | 16 bit A/D converter |
| Diagnostics | Loop supervision (open circuit and short circuit) Device malfunction low, under-range, over-range and device malfunction high detection Internal hardware supervision Communication supervision Internal power supervision |
| Calibration | Factory calibration |
| Power dissipation | 0.61 W at 20 mA |
| Installation in Hazardous Locations | ATEX II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II 3 (1) G Ex ic ec [ia Ga] IIC T4 Gc II 3 G (1 D) Ex ec [ia IIIC Da] IIC T4 Gc II 3 G (1 D) Ex ic ec [ia IIIC Da] IIC T4 Gc IECEX (pending) Ex ec [ia Ga] IIC T4 Gc Ex ic ec [ia Ga] IIC T4 Gc Ex ec [ia IIIC Da] IIC T4 Gc Ex ic ec [ia IIIC Da] IIC T4 Gc cULus (pending) |
| IS barrier | Yes |
| Field Input Robustness | ±35 V between all terminals |
| Input voltage range | 19.2...30 V |
| Input impedance | 300 Ω |

| Environment and certification | |
|--------------------------------------|---|
| Temperature, Operating | -40°C (-40°F) to +70°C (158°F) |
| Temperature, Storage | -40°C (-40°F) to +85°C (185°F) |
| Pollution degree | Degree 2, IEC 60664-1 |
| Relative humidity | 5 to 95 % no condensation |
| Altitude | -1000 to 3000 m, (-100 ... 2000 m for Zone 2/Class I Div 2) |
| Mechanical operating conditions | IEC 61131-2 |
| EMC | IEC/EN 61000-6-4, IEC/EN 61000-6-2 |
| Overvoltage categories | Category II |
| Protection class | IP20 according to IEC 60529 |
| CE-marking | Yes |
| Electrical Safety | IEC/EN 61010-1, IEC/EN 61010-2-201, UL 61010-1, UL 61010-2-201, CSA-C22.2 No. 61010-1-12, CSA C22.2 No. 61010-2-201 |
| Hazardous Area | EN 60079-0, EN60079-7, EN60079-11 |
| Marine certification | DNV-GL, ABS |
| Corrosive atmosphere | G3 (ISA-S71.04) |
| RoHS compliance | DIRECTIVE/2011/65/EU (EN 50581:2012) |
| WEEE compliance | DIRECTIVE/2012/19/EU |

| Dimensions | |
|-------------------------|--------------------|
| Width | 77.9 mm (3.06 in.) |
| Depth | 105 mm (4.13 in.) |
| Height | 9.8 mm (0.39 in.) |
| Weight (including base) | 73 g (0.16 lbs) |

solutions.abb/800xA
solutions.abb/controlsystems

800xA is a registered or pending trademark of ABB. All rights to other trademarks reside with their respective owners.

We reserve the right to make technical changes to the products or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not assume any responsibility for any errors or incomplete information in this document.

We reserve all rights to this document and the items and images it contains. The reproduction, disclosure to third parties or the use of the content of this document – including parts thereof – are prohibited without ABB's prior written permission.

Copyright© 2022 ABB All rights reserved