

AIS885

ABB Ability™ 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 AIS885 is an Analog Input Signal Conditioning Module (16-bit) for use in High Integrity applications (certified for SIL3) supporting 2/3/4-wire devices (1.2 amp) and HART communications.

Features and benefits

- Analog input for 2-wire, 3-wire or 4-wire field devices, powered by AIS885
- Signal range: 4...20 mA
- Can be used in hazardous areas
- Certified for Functional safety
- Field power sourced from the power injection
- Short circuit proof, configurable current limit 0.1 to 1.2 A
- Transmitter power current limited to 25 mA (for 2-wire field devices; input current limitation for SCM pin 2)
- 16 bit A/D converter resolution
- Galvanic isolation
- Protected against wrong wiring (± 35 V) between all terminals
- 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, under range, over range and device malfunction high detection
 - Internal power supervision
 - Power injection 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 | 3BSE080108R1 |
| Type | Analog Input Module, SIL3 |
| Number of channels | 1 |
| Signal specification | 4...20 mA 1.2 A field power |
| HART | Yes |
| Detailed HART information | HART v7, HART pass-through and HART variables to the application |
| SOE | N/A |
| Redundancy | Yes |
| Hot swap | Yes |
| High integrity | Yes |
| Intrinsic safety | No |
| Mechanics | Select I/O |

| Detailed data | |
|--|--|
| Supported field devices | 2-wire (loop powered transmitters), 3-wire (transmitters powered by SCM), 4-wire (transmitters powered by SCM) |
| Isolation | Galvanic isolation to system. Routine tested at factory with 3060 V DC. |
| Field power | Current limited (configurable) |
| 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 Internal hardware supervision Communication supervision Internal power supervision Power injection supervision |
| Calibration | Factory calibration |
| Power dissipation | 0.65 W |
| Installation in Hazardous Area/Locations | Yes/Yes (on IPA) |
| IS barrier | No |
| Field Input Robustness | ±35 V between all terminals |
| Input voltage range | 19.2...30 V |
| Input impedance | 250 ohm |

| 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 | Pollution Degree 2 acc. to IEC 60664-1 |
| Relative humidity | 5 to 95 %, non-condensation |
| Altitude | -1000 to 5000 m (restrictions apply) |
| Mechanical operating conditions | IEC 61131-2 |
| EMC | IEC/EN 61000-6-4, IEC/EN 61000-6-2 |
| Overvoltage categories | Category II acc. to IEC 60664-1 |
| Protection class | IP20 acc. to IEC 60529 |
| CE-marking | Yes |
| UKCA | Yes |
| Electrical Safety | IEC/EN 61010-1 UL 61010-1 CSA-C22.2 No. 61010-1-12 IEC/EN 61010-2-201 UL 61010-2-201 CSA C22.2 No. 61010-2-201 |
| Marine certification | DNV, ABS |
| Corrosive atmosphere | G3 |
| RoHS compliance | EU RoHS, UAE RoHS, CN RoHS |
| WEEE compliance | EU |
| Hazardous Area ATEX | II 3G Ex ec IIC T4 Gc |
| Hazardous Area IECEx | Available on IPA: II 3G Ex ec IIC T4 Gc |
| Hazardous Location US/CAN | Available on IPA: cULus CL I, ZN 2, AEx ec IIC T4 Gc, Ex ec IIC T4 Gc X CL I, DIV 2, Groups A-D T4 |
| Hazardous Area CCC | Ex ec IIC T4 Gc |
| Functional Safety | IEC 61508 Ed. 2, SIL 1-3 IEC 61511-1 IEC 62061 IEC 61131-2, IEC 61131-6 IEC 60204-1 NFPA 72, NFPA 79, NFPA 85, NFPA 86 EN ISO 14118 EN 50156-1 EN 298 EN 54-2, EN 54-2 A1 EN ISO 13850 |

| Dimensions | |
|-------------------------|---------|
| Width | 77.9 mm |
| Depth | 105 mm |
| Height | 9.8 mm |
| Weight (including base) | 73 g |

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