

AIS850

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 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, under range, over range, 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
Number of channels	1
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
Redundancy	No
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 Area/Locations	Yes/Yes (on IPA)
IS barrier	Yes
Input impedance	300 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 3 (1) G II 3G (1D) Ex ec [ia Ga] IIC T4 Gc Ex ec [ia IIIC Da] IIC T4 Gc Ex ic ec [ia Ga] IIC T4 Gc Ex ic ec [ia IIIC Da] IIC T4 Gc
Hazardous Area IECEx	Available on IPA: II 3 (1) G II 3G (1D) Ex ec [ia Ga] IIC T4 Gc Ex ec [ia IIIC Da] IIC T4 Gc Ex ic ec [ia Ga] IIC T4 Gc Ex ic ec [ia IIIC Da] IIC T4 Gc
Hazardous Location US/CAN	Available on IPA: cULus CL I, ZN2, Ex ec [ia Ga] IIC T4 Gc X Ex ec [ia IIIC Da] IIC T4 Gc X CL I, ZN 2, AEx ec [ia Ga] IIC T4 Gc AEx ec [ia IIIC Da] IIC T4 Gc CL I, DIV 2, Groups A-D T4 Provides I.S. circuits for CL I, Zn 0, Gp IIC, Zn 20 Gp IIIC or CL I, DIV 1, Gps A, B, C, D: CL II, Gps E, F, G: CL III
Hazardous Area CCC	Ex ec [ia Ga] IIC T4 Gc Ex ec [ia IIIC Da] IIC T4 Gc Ex ic ec [ia Ga] IIC T4 Gc Ex ic ec [ia IIIC Da] IIC T4 Gc

Dimensions

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

solutions.abb/800xA
solutions.abb/controlsystems

800xA and Symphony Plus is a registered 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© 2025 ABB All rights reserved