DATA SHEET

AIS890
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 AIS890 is an Analog Input Signal Conditioning Module (16 bit) for use in High Integrity (certified for SIL3) and 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
- Can be used in hazardous areas providing IS signals up to Zone 0
- Certified for Functional safety
- Transmitter power current limited to 25 mA
- 16 bit A/D converter resolution
- Channel to channel galvanic isolation
- Hardware filter, rise time 1ms
- Software filter configurable through parameters
- Protected against wrong wiring
- 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
- Support of HART field devices (up to HART application layer rev. 7):
  - HART Pass-Through
  - Cyclic read of up to two HART Device Variables
  - HART Device Validation
- 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
- Certified for SIL3

General info	
Article number	3BSE074063R1
Type	Analog Input Module - IS, SIL3
Signal specification	4-20 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	Yes
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 (short circuit and open circuit) - Device malfunction low, underrange, overrange and device malfunction high detection - Internal hardware supervision - Communication supervision - Internal power supervision
Calibration	Factory calibration
Power dissipation	0.63 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
Functional Safety	IEC 61508 (SIL3), IEC 62061 (SIL3), IEC 60204-1, EN 50156-1, IEC 61511-1, EN ISO 13850, NFPA 72, NFPA 85
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 61010-2-201, UL 61010-2-201, 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)

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