

AIS880

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 AIS880 is an Analog Input Signal Conditioning Module (16 bit) for use in High Integrity applications (certified for SIL3) supporting 2/4-wire devices and HART communications.

Features and benefits

- Analog input for 2-wire or external powered 4-wire field devices
- Signal range: 4...20 mA
- Can be used in hazardous areas
- Certified for Functional safety
- Transmitter power current limited to 30 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)
 - Hardware error 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	3BSE074053R1
Type	Analog Input
Signal specification	4-20 mA
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 and 4-wire devices (external power required for 4-wire devices)
Isolation	Galvanic isolation to system and between each channel (including field power). Routine tested at factory with 3060 VDC.
Field power	Current limited to 30 mA
Accuracy	0.1 %
Resolution	16-bit A/D converter
Diagnostics	- Loop supervision (short circuit and open circuit) - Under range and over range Device Malfunction - Low and Device Malfunction High - Internal hardware supervision - Communication supervision - Internal power supervision
Calibration	Factory calibration
Power dissipation	0.62 W at 20 mA
Installation in Hazardous Locations	ATEX – II 3G Ex nA/eC IIC T4 Gc Class I, Zone 2, IIC T4 Class I, Div 2, Groups A, B, C, D T4 Non-incendive or non-arcing field wiring acc. to Division model
IS barrier	No
Field Input Robustness	±35 V between all terminals
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	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, IEC 60664-1
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, EN60079-15, UL 12.12.01 / CSA C22.2 No. 213-17
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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