DATA SHEET

AIS810

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.\r\nA Signal Conditioning Module (SCM) performs the necessary signal conditioning and powering of the connected field device for one I/O channel.

The AIS810 is an Analog Input Signal Conditioning Module (16-bit) 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 and 0...20 mA
- Can be used in hazardous areas
- 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
- Configurable software filter
- Diagnostics:
  - Loop supervision (open circuit and short circuit)
  - Hardware error supervision
  - Communication supervision
  - Device malfunction low, under range, over range and device malfunction high detection
  - Internal power supervision
- Support of HART field devices (up to HART application layer revision7):
  - 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.

General info	
Article number	3BSE078762R1
Type	Analog Input Module
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	Yes
Hot swap	Yes
High integrity	No
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 (open circuit and short circuit) Device malfunction low, under-range, over-range, 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 Area/Locations	Yes/Yes
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	Pollution Degree 2 acc. to IEC 60664-1
Relative humidity	5 to 95 %, non-condensing
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 nA IIC T4 Gc II 3G Ex ec IIC T4 Gc II 3G Ex ic nA IIC T4 Gc II 3G Ex ic ec IIC T4 Gc
Hazardous Area IECEx	Available on IPA: II 3G Ex nA IIC T4 Gc II 3G Ex ec IIC T4 Gc II 3G Ex ic nA IIC T4 Gc II 3G Ex ic ec IIC T4 Gc
Hazardous Location US/CAN	cULus CL I, ZN 2, AEx ec IIC T4 Gc, Ex ec IIC T4 Gc X CL I, ZN 2, AEx nA IIC T4 Gc, Ex nA IIC T4 Gc X Non-incendive use for CL I, DIV 2, Groups A-D T4
Hazardous Area CCC	Ex ec IIC T4 Gc Ex ec ic IIC T4 Gc

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

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