

AOS880

Compact Product Suite 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 AOS880 is an Analog Output Signal Conditioning Module (16-bit) for use in High Integrity applications (certified for SIL3) supporting 2-wire devices and HART communications.

Features and benefits

- Analog output for 2-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
- Configurable output rise/fall times (down to 1ms; with HART down to 20 ms)
- Safe state shutdown (0 V) in case of internal failures or lost communication.)
- Protected against wrong wiring
- Configurable software filter
- Diagnostics:
 - Loop supervision (open circuit and short circuit)
 - Hardware error supervision
 - Communication supervision
 - 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	3BSE074055R1
Type	Analog Output Module - SIL3
Number of channels	1
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
Isolation	Galvanic isolation to system and between each channel (including field power). Routine tested at factory with 3060 VDC.
Field power	Current limited
Accuracy	0.1 %
Resolution	16-bit D/A converter
Diagnostics	Loop supervision (short circuit and open circuit) Internal hardware supervision Communication supervision Internal power supervision
Calibration	Factory calibration
Power dissipation	0.6 W (at 20 mA and 750 Ω load)
Installation in Hazardous Area/Locations	Yes/Yes
IS barrier	No
Output load. Max inductor time constant (L/R)	Supported load range: 50..750 ohm at 23mA, 50..863 ohm at 20mA
Field Input Robustness	±35 V between all terminals

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 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
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

—
solutions.abb/compactproductsuite
solutions.abb/controlsystems

—
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