

AOS880

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 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 |
| 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 ESD valve positioner |
| 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 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 | Supported load range: 50..750 ohm at 23mA, 50..863 ohm at 20mA |

| 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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