

DIS850

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

The DIS850 is a Digital Input Signal Conditioning Module for use in intrinsically safe applications (Zone 0) supporting 2-wire NAMUR field devices with Sequence of Events (SOE).

Features and benefits

- Digital input for 2-wire field devices (NAMUR proximity switches and contacts according to EN 60947-5-6)
- Can be used in hazardous areas providing IS signals up to Zone 0
- Channel to channel galvanic isolation
- Configurable software signal filter 0...100 ms
- Protected against wrong wiring
- Diagnostics:
 - Loop supervision (open circuit and short circuit)
 - Hardware error supervision
 - Communication supervision
 - Internal power supervision
- Sequence of Events (SoE)
- DIS850 supports both Normally Open (NO) and Normally Closed (NC) 24 V loops
- 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 | 3BSE078774R1 |
| Type | Digital Input Module - IS |
| Number of channels | 1 |
| Signal specification | NAMUR (2-wire) 0... 8.4 mA 9.3 V DC |
| HART | N/A |
| SOE | Yes |
| Redundancy | No |
| Hot swap | Yes |
| High integrity | No |
| Intrinsic safety | Yes |
| Mechanics | Select I/O |

| Detailed data | |
|--|---|
| Supported field devices | 2-wire (NAMUR proximity switch), Voltage-free contact |
| Isolation | Galvanic isolation to system and between each channel (including field power). Routine tested at factory with 3060 VDC. |
| Field power | Current limited |
| Diagnostics | Loop supervision (short circuit and open circuit) Internal hardware supervision Communication supervision Internal power supervision |
| Calibration | Factory calibration |
| Power dissipation | 0.4 W |
| Installation in Hazardous Area/Locations | Yes/Yes (on IPA) |
| IS barrier | Yes |
| Input voltage range | 19.2 ... 30 V |

| 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 3 (1) G II 3G (1D) Ex ec [ia Ga] IIC T4 Gc Ex ec [ia IIIC Da] IIC T4 Gc Ex ic ec [ia Ga] IIC T4 Gc Ex ic ec [ia IIIC Da] IIC T4 Gc |
| Hazardous Area IECEx | Available on IPA: II 3 (1) G II 3G (1D) Ex ec [ia Ga] IIC T4 Gc Ex ec [ia IIIC Da] IIC T4 Gc Ex ic ec [ia Ga] IIC T4 Gc Ex ic ec [ia IIIC Da] IIC T4 Gc |
| Hazardous Location US/CAN | Available on IPA: cULus CL I, ZN2, Ex ec [ia Ga] IIC T4 Gc X Ex ec [ia IIIC Da] IIC T4 Gc X CL I, ZN 2, AEx ec [ia Ga] IIC T4 Gc AEx ec [ia IIIC Da] IIC T4 Gc CL I, DIV 2, Groups A-D T4 Provides I.S. circuits for CL I, Zn 0, Gp IIC, Zn 20 Gp IIIC or CL I, DIV 1, Gps A, B, C, D: CL II, Gps E, F, G: CL III |
| Hazardous Area CCC | Ex ec [ia Ga] IIC T4 Gc Ex ec [ia IIIC Da] IIC T4 Gc Ex ic ec [ia Ga] IIC T4 Gc Ex ic ec [ia IIIC Da] IIC T4 Gc |

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

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