

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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