

DIS890

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 DIS890 is a Digital Input Signal Conditioning Module for use in High Integrity (certified for SIL3) and intrinsically safe applications (Zone0) 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 up to Zone 0
- Field device power output current limited to 30 mA
- 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)
- DIS890 supports both Normally Open (NO) and Normally Closed (NC) 24 V loops and both will confirm to SIL3
- 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	3BSE077763R1
Type	Digital Input Module - IS, SIL3
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	Yes
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 V DC.
Field power	Current limited
Resolution	16-bit A/D converter
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
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

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