

DIS890

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	NAMUR Input (EN 60947-5-6)
Signal specification	0...8.4 mA 9.3 V DC (open-circuit voltage)
HART	N/A
SOE	Yes
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 Locations	ATEX II 3 (1) G Ex ec [ia Ga] IIC T4 Gc II 3 (1) G Ex ic ec [ia Ga] IIC T4 Gc II 3 G (1 D) Ex ec [ia IIIC Da] IIC T4 Gc II 3 G (1 D) Ex ic ec [ia IIIC Da] IIC T4 Gc IECEx (pending) Ex ec [ia Ga] IIC T4 Gc Ex ic ec [ia Ga] IIC T4 Gc Ex ec [ia IIIC Da] IIC T4 Gc Ex ic ec [ia IIIC Da] IIC T4 Gc cULus (pending)
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
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, EN60079-11
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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