



SW20XX-EX Isolating Switching Barrier

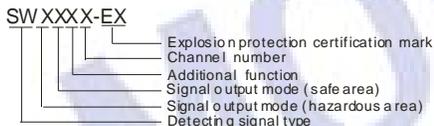
FEATURES

- Fitted devices: 1. NAMUR Sensors;
2. Mechanical Joints.
- Phase-angle and inverse control setting;
- Open circuit detection setting
- Respective Isolation(2,500VDC between Input/Output/Power source);
- Operation Temperature:-20℃~+60℃
- Reliable Performance (MTBF>1,000,000 Hours).

APPLICATIONS

This Isolation Switching Barrier can detect switch or approach switch's status in locations where hazardous exists; isolate, transmit and output it to safe area. Input and output can be set to inverse control. Approach switch open circuit detection function. Isolation between Input/Output/Power source.

MODEL SELECTION



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PRODUCT PROGRAM

Part number	Input(Power)		Output(Hazardous end)		Output (Safe end)	Channel numbers
	Voltage(VDC)		Voltage	Short Circuit Current		
	Typ	Range				
SW2001-EX	24	18-36	8 VDC	< 8 mA	Relay output	1
SW2002-EX					Relay output	2

ELECTRICAL CHARACTERISTICS

Common parameter	Operation voltage	18-36VDC
	Power consumption	About 2.0W (with relay output OFF)
	Power indicating	LED light (green) ON when operating
Hazardous Area	Input Signal	Switch status of NUMAR sensor, mechanical joint etc
	Output Voltage	8V (Open status)
	Short circuit current	<8mA
	Input switching frequency	<10Hz
	threshold	Typ:1.55mA (hysteresis:0.2mA)
Safe Area	Output signal	Relay output (1" ON" joint)
	Response time	<20ms
	driving capability	250VAC / 3A or 30VDC / 3A
	Load type	Resistive load

TRANSMISSION CHARACTERISTICS

Under phase-angle control (K1 "OFF")	Input loop current > 2.1mA, relay output close, channel indicator light (yellow) ON.
	Input loop current < 1.2mA, relay output open, channel indicator light (yellow) OFF.
Under inverse control (K1"ON")	Input loop current > 2.1mA, relay output close, channel indicator light (yellow) OFF.
	Input loop current < 1.2mA, relay output open, channel indicator light (yellow) ON.
Open detection function	Function when K3 is OFF
When connected with NAMUR sensor	Input loop current < 0.05mA, open circuit alarm, channel red indicator light ON.
When connected with common contact joint switch	To achieve open circuit detection function, a 10KΩ resistor must be connected to the switch in parallel.

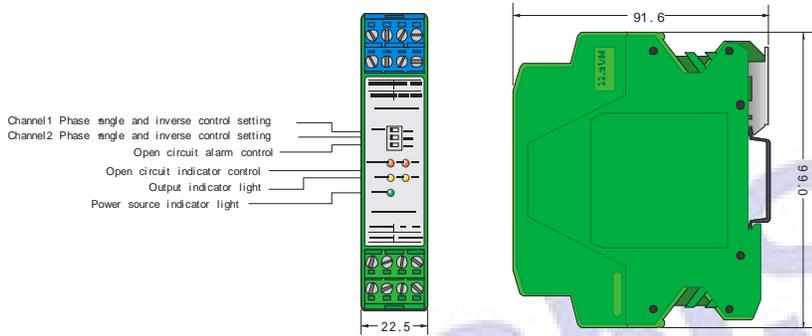
ISOLATION CHARACTERISTICS

Electrical isolation	Isolation between each part (Signal input end/Signal output end/Power source end)
Isolation strength	2.5KVDC (test for 1 minute, humidity < 70%)
Surge Resist	5KV 1.2/50us (Based on IEC255-4)
EMC	EN61326

STANDARDS AND CERTIFICATIONS	
Explosion protection certification mark	[Exia]IIC
Explosion protection certification parameters	Um=250Vrms、Uo=10.5V、Io=14mA Po=37mW、Co=1.6uF、Lo=150mH
Certified by: CHINA NATIONAL QUALITY SUPERVISION AND TEST CENTRE FOR EXPLOSION PROTECTED ELECTRICAL PRODUCTS No.:CNEx08.0003	

OTHER CHARACTERISTICS	
Ambient temperature	Operation temperature:-20~+60℃
	Transport and Storage temperature:-40~+85℃
Package	35mm DIN Rail package: T type DIN Rail (DIN50022), 4x 4 terminals plug and pull connector, thickness 22.5mm, anti-flaming material UL94-V0
Protection Grade	IP20(IEC60529 / EN60529)
Weight	About 66g

PACKAGING SIAE AND TERMINAL DESCRIPTION



Safe area : Hazardous area :

1: channel1 output (-) 13: channel1 input (-)

2: channel output (+) 14: channel1 input (+)

3: input of power source (-)

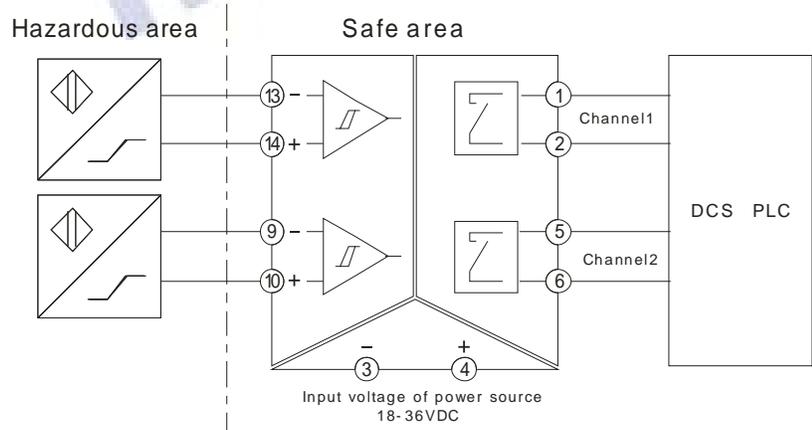
4: input of power source (+)

5: channel2 output (-) 9: channel2 input (-)

6: channel2 output (+) 10: channel2 input (+)

Unit: mm.
Tolerance ± 0.5mm
Note: In single channel model channel 2 is invalid

APPLICATION CIRCUIT DIAGRAM



Note: In single model, channel 2 is invalid.

APPLICATION IN INTRINSICALLY SAFE EXPLOSION PROTECTION SYSTEM

In intrinsic safety explosion protection systems, isolating barrier belongs to affiliated device. It is installed at safe area, as a connection between intrinsic safety devices in the hazardous area and non-intrinsic safety devices in the safe area. By limiting the energy to a certain safe amount, it ensures the safety of in spot devices and people.

Selection regulations for intrinsic safety explosion protection system:

1. The explosion protection grade of the barrier must be equal to or higher than that of in spot intrinsic safety explosion protection device.
2. Take inconsideration of hazardous end output resistance and loop resistance, make sure the barrier's output voltage meets the minimum operation voltage requirement of in spot intrinsic safety device.
3. The safety parameters of Barrier's intrinsic safety end meets:
 $U_o \leq U_i$, $I_o \leq I_{in}$, $P_o \leq P_{in}$
 $C_o \geq C_{in}$, $L_o \geq L_{in}$
4. Select suitable Safety barrier which matches the in spot intrinsic safety device for the power's phase, signal type and transmission mode.
5. Apply necessary protections, avoid influence the in spot intrinsic safety device's operation from leakage current that generated by safety barrier.

Operation notes:

1. Please read the user manual carefully before using. If any questions please contact our technical support department.
2. Please do not use this product in hazardous area.
3. The power supply of this product should be 24VDC power source. It is forbidden to use 220VAC power supply.
4. To avoid invalid explosion protection function, or any failure, users disassemble this product is forbidden.

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