

DC input operation type analog signal isolation safety barrier

——TAFxxx-EX-xx Series



DESCRIPTION

The standard current or voltage signal generated by PLC or DCS system from the safe area is transferred to dangerous area by this product for driving two-wire valve localizer, electrical converter etc.

One independent power supply is required. Moreover, within the product, power supply, input and output are mutually isolated.

Field devices connected and regions:

Two-wire valve localizer, electrical converter etc.

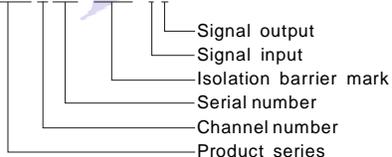
Zone 0, Zone 1, Zone 2, IIA, IIB, IIC, and hazardous area of T4-T6.

FEATURES

- Three-port isolation (input, output and power supply)
- High accuracy (0.1% F.S.)
- High linearity (0.1% F.S.)
- Isolation voltage (intrinsic safety and non-intrinsic safety: 2.5KVAC/60S)
- Low temperature drift(35PPM/°C)
- High reliability(MTBF>500,000 hours)

MODEL SELECTION

TAF100-EX-11



PRODUCT OVERVIEW

TAF	x	xx	-EX-	x	x	Description
Channels	1					1 input 1 output
	2					2 input 2 output
	6					1 input 2 output
Serial number		00				current signal input, current source or voltage source output
		40				voltage signal input, current source or voltage source output
Explosion mark			EX			Isolation barrier explosion symbol
Input signal				1		4~20mA
				2		0~20mA
				3		2~10V
				4		1~5V
				5		0~10V
				6		0~5V
Output signal				1		4~20mA
				2		0~20mA

Note: The input & output signal type should be given when purchasing. Of course full-custom products can be obtained here.

ELECTRICAL CHARACTERISTICS

Power Supply Data	Power Supply	18~30VDC (Typ. : 24VDC)
	Input Power	1 input & 1 output: about 2.0W 2 input & 2 output and 1 input & 2 output: about 4.0W
	Power Protection	Reverse protection, Over current protection
Safe Area	Input Signal	Refer to product overview
	Input Impedance	≤ 2V (current input) ≥ 10MΩ (voltage input)
Hazardous Area	Output Signal	Refer to product overview
	Load	≤ 500Ω (@maximum output current)

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TRANSMISSION CHARACTERISTICS

Offset	0.1%F.S.
Gain Error	0.1%F.S.
Accuracy	0.1%F.S.
Temperature Drift	0.0035%F.S./°C (-25°C ~ +71°C)

ISOLATION CHARACTERISTICS

Galvanic Isolation	Three-port isolation (input, output and power supply)
Isolation Voltage	2.5KVAC between intrinsically safe end and non-intrinsically safe end
	2.5KVDC between signal input end and power supply end

Test conditions: testing for 1minute, humidity < 70%, leakage current < 1mA

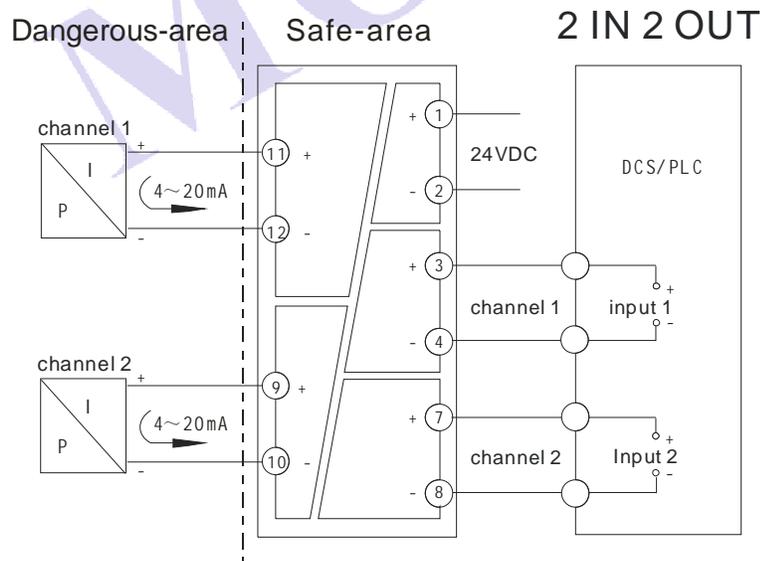
STANDARDS & CERTIFICATES

Explosion protection Certificate mark	[Exia]IIC
Explosion protection certification parameters	Between the pin 9 and 10, pin 11 and 12: Um=250Vrms Uo=26.5V Io= 90mA Po=596.3mW Co=0.07μF Lo=2.4mH
Explosion protection certification agency	CHINA NATIONAL QUALITY SUPERVISION AND TEST CENTRE FOR EXPLOSION PROTECTED ELECTRICAL PRODUCTS
Explosion qualified NO.	CNEx09.1825

OTHER CHARACTERISTICS

Ambient temperature	Operation temperature: -25°C ~ +71°C
	Transport and storage temperature: -50°C ~ +105°C
Package	35mm DIN-rail package: T-rail card package (DIN50022), pluggable connection pin, thickness 22.5mm, Plastic UL94-V0
Safety Class	IP20(IEC60529 / EN60529)
Weight	1 input & 1 output: about 100g
	1 input & 2 output, 1 input & 2 output : about 128g

APPLICATION CIRCUIT DIAGRAM



Note:

This diagram is for 2 input 2 output models only; Just channel 1 within inputs should be connected for 1 input 2 output models; Just channel 1 within inputs and outputs should be connected for 1 input 1 output models.

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CONNECTION

1. Removable terminal;
2. Cross-section of wiring:0.5mm²~2.5 mm²;
3. The length of bare wire is about 8mm, locked up by the M3 bolt.

Application in intrinsically safe explosion protection system

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

Selection guidelines for intrinsically safe explosion protection system

1. The explosion protection grade of the barrier must be not less than that of intrinsically safe explosion protection device in spot.
2. Take inconsideration of hazardous end output resistance and loop resistance make sure the barrier output voltage meets the minimum operation voltage requirement of intrinsically safe device in spot.
3. The safety parameters about intrinsically safe end meets:
Uo ≤ UI, Io ≤ Iin, Po ≤ Pin
Co ≥ Cin, Lo ≥ Lin
4. Select suitable safety barrier which matches the intrinsically safe device in spot according to the power polarity, signal type and transmission mode about the device.
5. Much more protection is required, which can avoid the influence of the leakage current generated by safety barrier on intrinsically safe device in spot.
6. The wires leading to dangerous field should be constrained in blue intrinsically safe wires, and its copper cross-section should be more than 0.5mm²; Insulation intensity should be more than 500VDC.

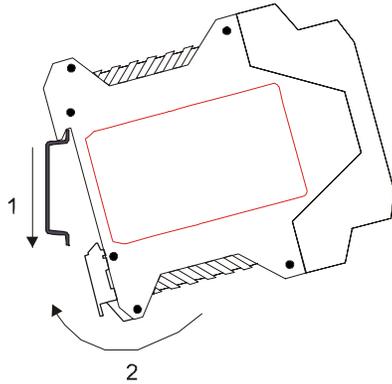
Operation notes

1. Please read the user manual carefully before using. If any question 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.

INSTALLATION

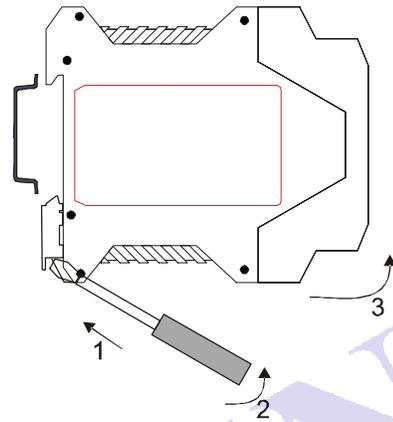
DIN35mm standard rail installation:

1. Upside of the instrument card in the rail;
2. Push underside of the instrument into the rail.

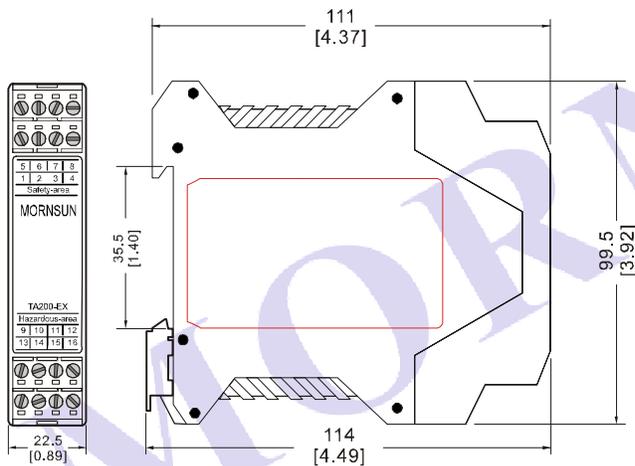


DISASSEMBLY

1. Use a screwdriver (Width of edge $\leq 6\text{mm}$), cut in the metal card lock from the underside;
2. Boost up the screwdriver and prize the metal card lock downwards;
3. Pull the instrument out of the rail.

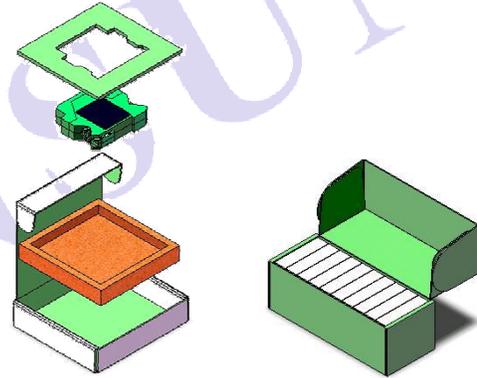


PACKAGING DIMENSION



Unit: mm[inch]
Tolerance: $\pm 0.5\text{mm}$

PACKAGING DIAGRAM



Small white packaging box dimensions:
L*W*H=163*150*35mm
Packaging quantity: 1pcs
Inner packaging box dimensions:
L*W*H=430*175*160mm
Packaging quantity: 10 pcs
Outer packaging box dimensions:
L*W*H=560*450*520mm
Packaging quantity: 90pcs