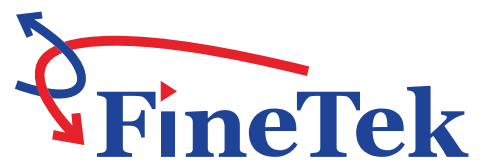




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## Safety Barrier



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# TX10 ISOLATED SAFETY BARRIER

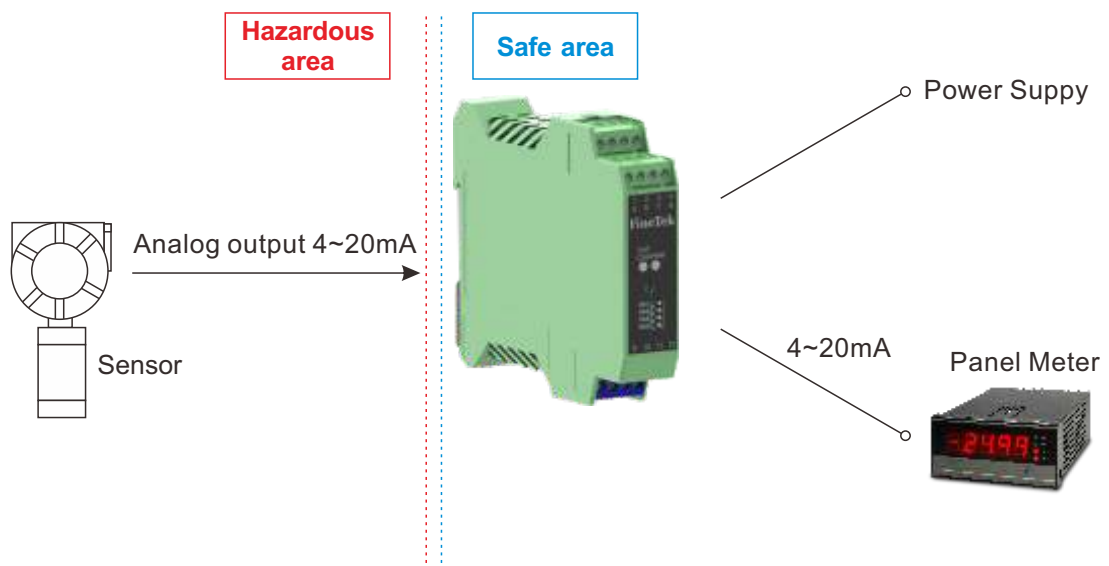
## OPERATING PRINCIPLE

Isolated safety barrier provides power supply to transmitters located in hazardous zone and transmit isolated supply current signal to safe zone. Max. input 0~20mA which can be transformed to different analog outputs, such as 0~20mA / 4~20mA / 0~5V / 0~10V.


## FEATURES

- 1 current input port to connect with continuous current or current output products. Applicable for use in hazardous zone.
- 3 output ports - relay output, current output, and RS-485.
- LED indicator, user friendly.
- DIP switch for function selection.
- In house programming per customers' criteria.
- Self-test function for system function monitoring.
- Setting relay output as alarm for optional external sensing unit connection.
- Optional RS-485 interface enables easy system configuration & supply current data retrieve.
  - \* RS485(only for host communication) when multiple TX1 safety barriers operating parallelly, the max. quantity for parallel connection is 20 units.
- Product design complies with explosion proof standard.
- 2 dual-color LEDs
  - ▶ PWR LED: Green - Normal  
Red - Abnormal
  - ▶ OUT/CHK LED: Yellow - Relay activated  
Red (Flash) - Input current abnormal

## SCHEMATIC DIAGRAM



# TX10 SPECIFICATION

<p><b>Dimensions</b> (Unit: mm)</p>		
<p><b>Certification</b></p>	<p> NEPSI Ex-proof GYB14.1529 Ex ia Ga IIC Intrinsic safety GB3836.1-2010GB3836.4-2010、GB3836.20-2010</p>	
<p><b>Model No.</b></p>	<p><b>TX100R</b></p>	<p><b>TX101F</b></p>
<p><b>Supply voltage</b></p>	<p>20~35 Vdc</p>	<p>20~250 Vdc/Vac, 50/60 Hz</p>
<p><b>Power supply protection</b></p>	<p>Power supply reverse protection</p>	<p>Non-directionality input</p>
<p><b>Current consumption</b></p>	<p>&lt; 100 mA @24 V, Load 20mA</p>	<p>&lt; 200 mA @24 V, Load 20mA</p>
<p><b>Hazardous Zone</b></p>		
<p><b>Input</b></p>	<p>0~20/4~20</p>	
<p><b>Open loop supply voltage</b></p>	<p>&lt; 28 Vdc</p>	
<p><b>Distribution supply voltage</b></p>	<p>&gt; 15 Vdc (Load 20 mA)</p>	
<p><b>Safe Zone</b></p>		
<p><b>Output</b></p>	<p>Current: 0~20/4~20 mA    Load resistance: &lt;550 ohm or Voltage: 0~5/0~10V    Load resistance: &lt;20k ohm</p>	
<p><b>Response time</b></p>	<p>&lt; 5 ms</p>	
<p><b>Accuracy</b></p>	<p>0.1 % F.S., 0.5% @ &lt;0.3V (20°C)</p>	
<p><b>Temp. coefficient</b></p>	<p>&lt; 2.0μA/°C (25°C~60°C); &lt; 3.0μA/°C (-20°C~25°C)</p>	
<p><b>Isolation</b></p>	<p>2500Vac : Current leakage &lt; 1mA : 1min. 1. Intrinsic end &amp; Non-Intrinsic end 2. Non-Intrinsic end power supply &amp; output</p>	
<p><b>Ambient temp.</b></p>	<p>-20~60 °C</p>	
<p><b>Applicable zone</b></p>	<p>Zone 0, Zone 1, Zone 2, IIA, IIB, IIC T4~T6</p>	
<p><b>External equipments</b></p>	<p>1. 2-Wire transmitter    2. 3-Wire transmitter    3. Current output transmitter</p>	

# INTRINSICAL SAFETY PARAMETERS

## Transmitter (2 wire type)

Max. Voltage input $U_i$ (V)	Max. Current input $I_i$ (mA)	Max.Power input $P_i$ (mW)	Max. internal equivalent parameter	
			$C_i$ ( $\mu$ F)	$L_i$ (mH)
20	120	—	0	0
Max. Voltage output $U_o$ (V)	Max. Current output $I_o$ (mA)	Max.Power output $P_o$ (mW)	Max. external parameter	
			$C_o$ ( $\mu$ F)	$L_o$ (mH)
5.355	—	—	See below table	
Gas group	Max. External parameter			
	$C_o$ ( $\mu$ F)		$L_o$ (mH)	
II C	65		—	
II B	1000		—	
II A	1000		—	

## Transmitter (3 wire type)

Max. Voltage output $U_o$ (V)	Max. Current output $I_o$ (mA)	Max.Power output $P_o$ (mW)	Max. internal equivalent parameter	
			$C_i$ (nF)	$L_i$ ( $\mu$ H)
28	93	651	0	0
Gas group	Max. External parameter			
	$C_o$ ( $\mu$ F)		$L_o$ (mH)	
II C	0.083		4.2	
II B	0.65		12.6	
II A	2.15		33.6	

# FUNCTION SETTING

## Current Mode

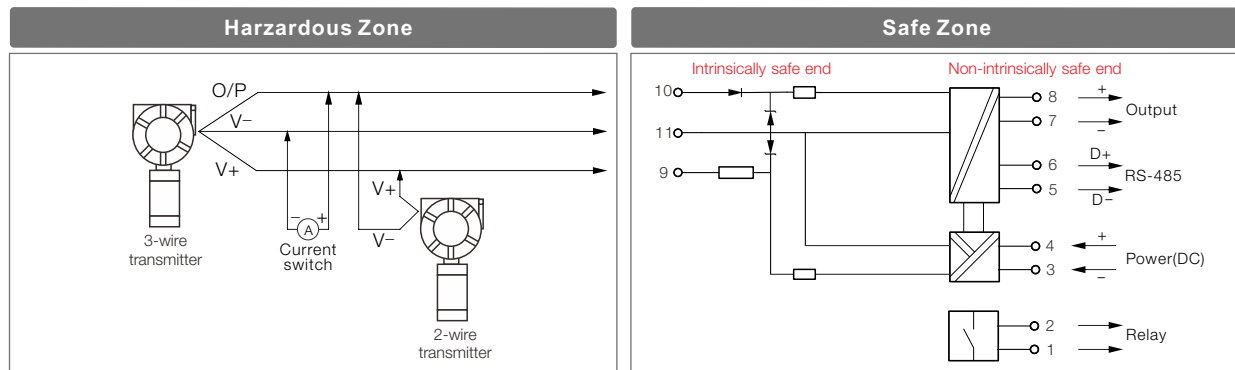
DIP	Action mode	Description	DIP switch position
SW1	Working mode	Continous current output	I
SW2	Analog output mode	Increment : 0~20mA/4~20mA/0~5V/0~10V	I
		Decrement 20~0mA/20~4mA/5~0V/10~0V	II
SW3	Relay action	ON, as value setted	I
		ON, as value setted	II
SW4	Relay output mode	Boot mode	I
		Alarm mode	II

## Switch Mode

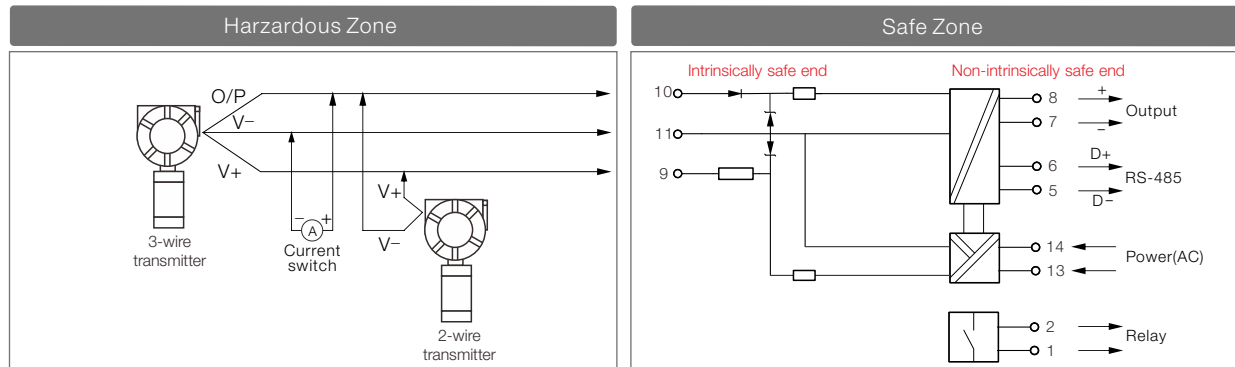
DIP	Action mode	Description	DIP switch position
SW1	Working mode	Current output for switch	II
SW2	Relay action	ON, as $\geq$ value setted	I
		ON, as $\leq$ value setted	II
SW3	Delay time setting	NO time delay	I
		5 second delay	II
SW4	Relay output mode	Boot mode	I
		Alarm mode	II

## WIRING

### TX100R



### TX101F



# MODEL NUMBER / ORDER CODE COMPARISON TABLE

## ORDERING INFORMATION

Model Number	Order Code
TX100R	TXX1017BB
TX101F	TXX1007BC

TXX 1 ⑤⑥⑦⑧-⑨⑩⑪⑫⑬

⑤ ⑥ **Model**

- 00: Standard(W45.2×H113.6×D99)
- 01: Economic(W22.6×H113.6×D99)

⑦ ⑧ **Certification**

- 00: None
- 7B: NEPSI-Exia

⑨ **Power supply**

- B: DC 20~35 Vdc
- C: AC 20~250 Vac

⑩ **Input**

- A: 4~20mA
- B: 0~20mA

⑪ **Output 1**

- A: 4~20 mA
- B: 0~20 mA
- C: 0~5 V
- D: 0~10 V

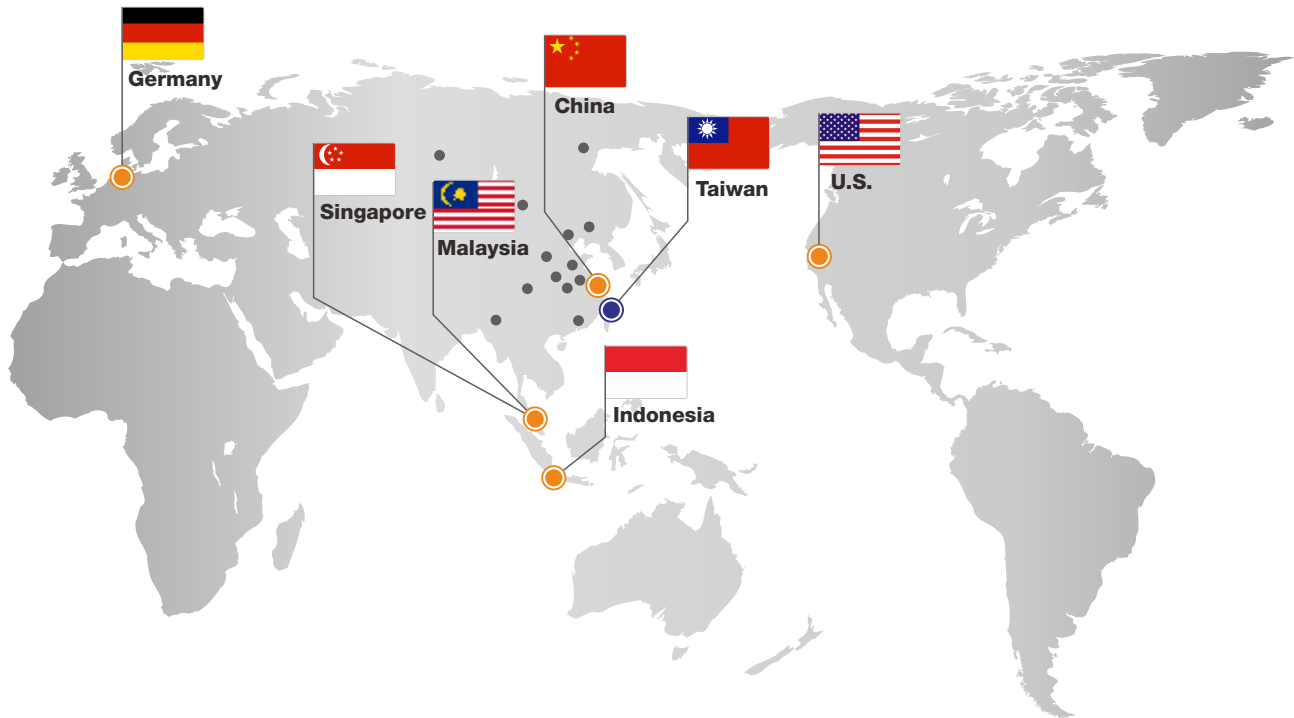
⑫ **Output 2**

- 0: None
- A: RS485

⑬ **Output 3**

- 0: None
- C: Relay

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