



## NPEXB-KM31

### Current Output Isolated Safety Barrier

#### → Introductions

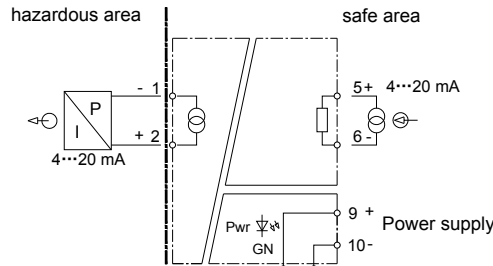
This isolated safety barrier transfers current signals from safe area into hazardous area. Digital HART signals may be superimposed on the analog values and are transferred bi-directionally. It can also be used to control field apparatus in hazardous area, for instance, I/P converter, valve positioner etc. The input, output, and power supply of safety barrier are galvanically isolated from each other. And the device was designed to be analogue circuits with various kinds of advantages, for instance, high accuracy, high reliability and quick step response etc. Besides, the LFD (line fault detection of field connections) function of output circuit is available.

#### → Mainly Technical Parameters

<b>Explosive-proof grade:</b>	Ex II (1) G [Ex ia Ga] IIC [Ex ia Ga] IIC
<b>Power supply</b>	Connection type: Terminals (9+, 10-) or DIN rail connector Rated operational voltage: 20 V DC~30 V DC
<b>Input</b>	Signal type: 4 mA~20 mA Input voltage drop: ≤ 1.2 V Overcurrent/voltage protection: yes
<b>Output</b>	Signal type: 4 mA~20 mA Load resistance: 100 Ω~600 Ω Max. output current: ≤ 32 mA
<b>Transmission characteristics</b>	Accuracy: ±0.1%F.S. (20 °C±2 °C) Min. controllable current: 10 μA Temperature drift: < 30 ppm/°C Response time: ≤ 2 ms Settling time: ≤ 20 ms Stability: 0.03% F.S. Repeatability: 0.02% F.S.
<b>Electromagnetic compatibility</b>	Accordance to IEC 61326-3-1
<b>Electrical isolation</b>	(1mA leakage current, 1 minute) Dielectric strength: ≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 1500 V AC (non-intrinsically safe side/ non-intrinsically safe side) Insulation coordination: ≥100 MΩ(Input/Output/Power supply)
<b>Explosive-proof number</b>	TUV 15 ATEX 7629 X EU IECEX TUR16.0005X IECEx
<b>U<sub>m</sub></b>	250 V
<b>Certified Ex parameters</b>	Terminals 1, 2

U <sub>o</sub>	25.2 V
I <sub>o</sub>	93 mA
P <sub>o</sub>	586 mW
C <sub>o</sub>	0.107 μF
L <sub>o</sub>	4.2 mH
<b>Ambient conditions</b>	
Operation temperature	-20 °C~+60 °C
Relative humidity	10%RH~90%RH (40°C)
Atmosphere pressure	80 kPa~106 kPa
Storage temperature	-40 °C~+80 °C
<b>Dimension</b>	12.8 mm × 100 mm × 117 mm
<b>Protection degree</b>	IP 20
<b>Power dissipation</b>	≤ 1.0 W (24 V DC, single output)

#### → Wiring diagram



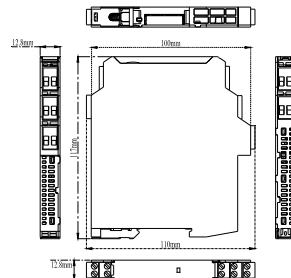
- Handheld HART communicator can't be operated both in safe area and hazardous area at the same time.
- Handheld HART communicator used in hazardous area must be approved by the relevant explosion-proof certification bodies.
- DIN rail power supply function is selectable at ordering.

#### → Output mode of the input fault

- When the detected output load is less than 80 Ω, the safety barrier judges that the field connection is short; and when the detected output load is greater than 6000 Ω, the safety barrier judges that the field connection is broken. In case that the output fault is detected, the input current of safety barrier is limited to within 1 mA and the output current value is limited to 3 mA.

#### → Dimension

Width × height × depth: 12.8 mm × 100 mm × 117 mm

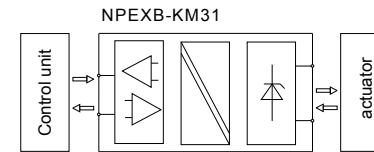


#### → Applications

This apparatus is used for transmitting signals between field devices and a process control system/control system. It is suitable for the connection of field devices used in potentially explosive atmospheres to protect intrinsically safe circuits of hazardous area by current and voltage limitation, and established an electromagnetic separation between the potentially explosive atmospheres and the safe areas in a system.

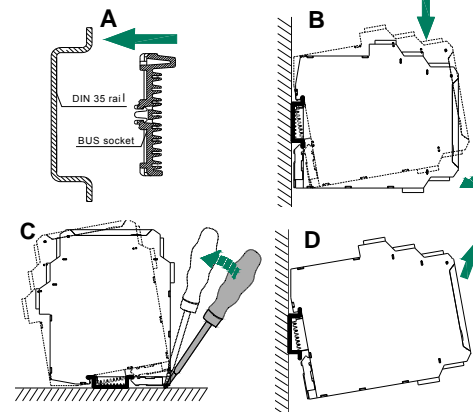
The apparatus can convert the current signal into a current / voltage signal, and then transmit the output signal to the connected field actuator.

If parameters of connected field device need to be set, a handheld HART communicator connected to field cable is necessary.



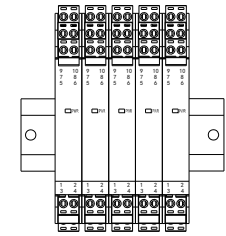
#### → Installation

- The apparatus can be installed on the DIN 35 mm standard rail which is corresponding to DIN IEC 60715. The must be snapped onto the rail, and never slanted or tipped to the side.
- Installation and removing steps are as follows:



- Snap the BUS socket on the DIN 35 rail, as figure A;
  - Snap metal lock onto mounting rail, then rotate the safety barrier, as figure B, press down the safety barrier onto mounting rail, make sure that the BUS connector pins of safety barrier and BUS socket are in close contact;
  - Pry the metal lock off the rail with screwdriver as arrow shown, pull downward the springs, and rotate the safety barrier;
  - Remove the safety barrier as arrow shows.
- In order to facilitate the heat of the apparatus, Please

mounted it vertically if possible.



Vertically installation

#### → Light indication

- PWR: Power indicator light shows green, it means work normally.

#### → Precautions

- The Isolated Safety Barriers was constructed in protection degree IP 20 and must therefore be protected from undesirable ambient conditions (water, small foreign objects). It is suitable for installed in control room or high density field cabinet, convenient for installation and displacement.
- The devices were designed for use in pollution degree 2 and overvoltage category III as per IEC/EN 60664-1. If used in areas with higher pollution degree, the devices need to be protected accordingly.
- Installation position shall not be affected by strong mechanical vibration, impact and electromagnetic induction from signal terminal and power supply, should conformity with the requirements on electromagnetic interference resistance of products in Class 3 industrial field atmosphere stipulated in IEC 61000-4, and the atmosphere shall be free from gases that are corrosive to metal and plastic components.
- The apparatus must be installed, connected and adjusted by qualified personnel in non-hazardous area according with the instruction manual.
- If faults cannot be eliminated, the apparatus must be taken out of operation and protected from being placed in service again inadvertently. Devices must only be repaired directly by the manufacturer. Tampering with the apparatus is dangerous and therefore forbidden.
- The operator must strictly comply with the relevant local safety standards and guidelines.

#### → Supplements

- If there is any content difference between the specification and the website or sample, the instructions shall prevail. We reserve the rights to change or update the product information without prior noticing the users.