

TC Isolated Barrier

NPEXA-C1D11

Double inputs, double outputs

Input: TC

Output: 4 ~ 20 mA

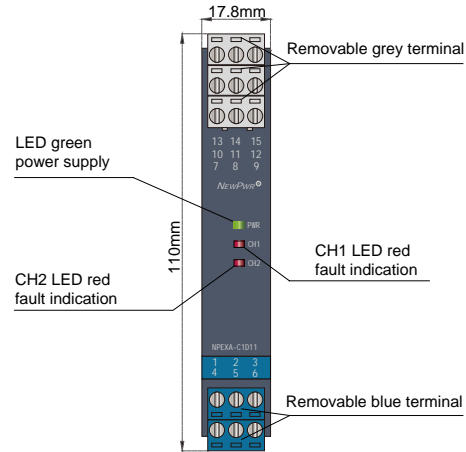
Temperature input isolated barrier, it converts the thermocouple signals from a hazardous area into 4~20mA signals to a safe area by isolation. It has external cold junction compensation terminals. It needs an independent power supply. The input, output, and power supply are galvanically isolated from each other. The self-test function is also available on this device. Calibrate the apparatus or modify parameters by using a handheld programmer.

Parameters

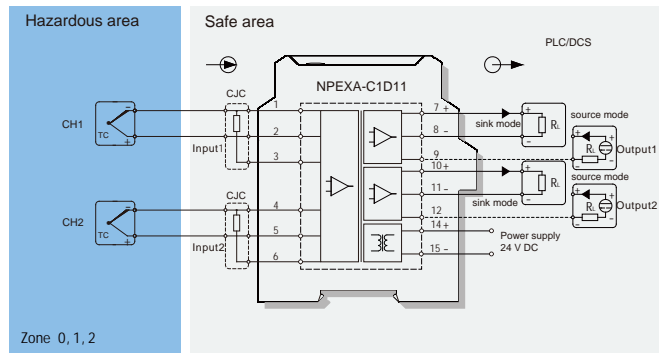
- Power supply: 18V DC ~ 60V DC (Reverse power protection)
- Power dissipation: 1.2W
- Input signal: K, E, S, B, J, T, R, N, etc.
- Output signal: 4 ~ 20mA (sink/source)
- Load resistance: source: $R_L \leq 550\Omega$ sink: $R_L < [(U-3)/0.02]\Omega$;
U: Loop power supply
- Compensation accuracy: 1°C (Temperature compensation range: -20°C ~ +60°C)
- Temperature drift: 30ppm/°C
- Response time: $\leq 500\text{ms}$
- Electromagnetic compatibility: IEC 61326-3-1
- Dielectric strength: $\geq 3000\text{V AC}$ (intrinsically safe side / non-intrinsically safe side)
 $\geq 1500\text{V AC}$ (Power supply / non-intrinsically safe side)
- Insulation resistance: $\geq 100\text{M}\Omega$ (Input /Output/Power supply)
- Operation temperature: -20°C ~ +60°C
- Storage temperature: -40°C ~ +80°C
- Dimension: 17.8mm (W) × 110mm (H) × 117mm (D)
- Output states: Whatever input fault status (except breakage), the output follows the input within measuring range. And the maximum value would not exceed the 110% of the upper limit of the measuring range (e.g. When the output signal type is 0 ~ 20 mA, the minimum output value may be 0mA, the maximum output value would not exceed 22mA)

Range and Conversion accuracy list

Type	Range	Min.span/Accuracy	
K	-200°C ~ +1372°C	< 300°C, $\pm 0.3^\circ\text{C}$	$\geq 300^\circ\text{C}$, $\pm 0.1\%$ F.S.
E	-100°C ~ +1000°C	< 300°C, $\pm 0.3^\circ\text{C}$	$\geq 300^\circ\text{C}$, $\pm 0.1\%$ F.S.
J	-100°C ~ +1200°C	< 300°C, $\pm 0.3^\circ\text{C}$	$\geq 300^\circ\text{C}$, $\pm 0.1\%$ F.S.
N	-200°C ~ +1300°C	< 300°C, $\pm 0.3^\circ\text{C}$	$\geq 300^\circ\text{C}$, $\pm 0.1\%$ F.S.
S	-50°C ~ +1768°C	< 500°C, $\pm 0.5^\circ\text{C}$	$\geq 500^\circ\text{C}$, $\pm 0.1\%$ F.S.
R	-50°C ~ +1768°C	< 500°C, $\pm 0.5^\circ\text{C}$	$\geq 500^\circ\text{C}$, $\pm 0.1\%$ F.S.
T	-20°C ~ +400°C	< 300°C, $\pm 0.3^\circ\text{C}$	$\geq 300^\circ\text{C}$, $\pm 0.1\%$ F.S.
B	+400°C ~ +1820°C	< 500°C, $\pm 0.5^\circ\text{C}$	$\geq 500^\circ\text{C}$, $\pm 0.1\%$ F.S.



Wiring diagram



Explosive-proof parameters

National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI)

Ex marking: [Ex ia Ga] IIC
[Ex ia Da] IIIC

Um: 250V

Certified parameters (Terminals 1, 2; 4, 5):

$U_o=8.7\text{V}$, $I_o=33\text{mA}$, $P_o=72\text{mW}$

IIC: $C_o=5\mu\text{F}$, $L_o=28\text{mH}$

IIIC(IIB): $C_o=49\mu\text{F}$, $L_o=84\text{mH}$

Model rules

NPEXA-C1D

- PB: BUS powered
- Default: Terminals powered
- The second output signal^{note1}
- The first output signal^{note1}

note1: output signal

Number	Output signal
1	4~20mA
2	1~5V
3	0~10mA
4	0~5V
5	0~10V
6	0~20mA