

TC & RTD Isolated Barrier



NPEXA-K01

Single input, single output

Input: TC, RTD
Output: 4 ~ 20 mA

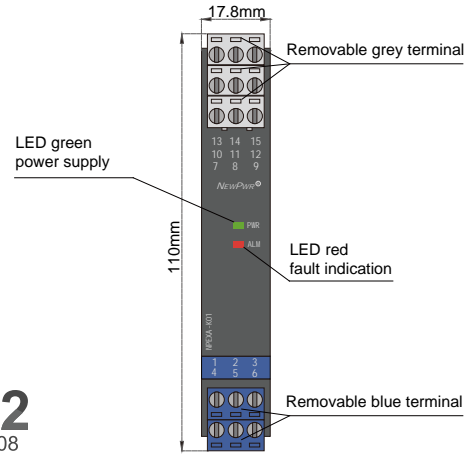
Temperature input isolated barrier, it converts the thermocouple or thermal resistance signals from a hazardous area into 4~20mA signals to a safe area by isolation. It has external cold junction compensation terminals. It needs an independent power supply. The input, output, and power supply are galvanically isolated from each other.

Parameters

- Power supply: 20V DC ~ 30V DC (Reverse power protection)
- Power dissipation: ≤ 1.1W
- Input signal: K, E, S, B, J, T, R, N, etc.
Pt100, Cu100, Cu50, etc.
- Line resistance: ≤ 20 Ω per line (RTD)
- Output signal: 4 ~ 20mA
- Load resistance: RL ≤ 500Ω
- Compensation accuracy: 1°C (Temperature compensation range: -20°C ~ +60°C)
- Temperature drift: 30ppm/°C
- Response time: ≤ 800ms
- Electromagnetic compatibility: IEC 61326-3-1
- Dielectric strength: ≥ 3000V AC (intrinsically safe side / non-intrinsically safe side)
≥ 1500V AC (Power supply / non-intrinsically safe side)
- Insulation resistance: ≥ 100MΩ (Input /Output/Power supply)
- Operation temperature: -20°C ~ +60°C
- Storage temperature: -40°C ~ +80°C
- Dimension: 17.8mm (W) × 110mm (H) × 117mm (D)
- Safe state: Output signal < 3.6mA or > 21.5mA

Range and Conversion accuracy list

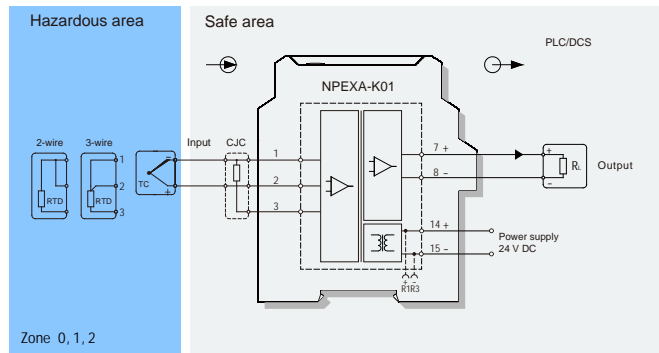
Type	Range	Min.span/Accuracy	
K	-200°C ~ +1372°C	< 300°C, ±0.3°C	≥ 300°C, ±0.1% F.S.
E	-100°C ~ +1000°C	< 300°C, ±0.3°C	≥ 300°C, ±0.1% F.S.
J	-100°C ~ +1200°C	< 300°C, ±0.3°C	≥ 300°C, ±0.1% F.S.
N	-200°C ~ +1300°C	< 300°C, ±0.3°C	≥ 300°C, ±0.1% F.S.
S	-50°C ~ +1768°C	< 500°C, ±0.5°C	≥ 500°C, ±0.1% F.S.
R	-50°C ~ +1768°C	< 500°C, ±0.5°C	≥ 500°C, ±0.1% F.S.
T	-20°C ~ +400°C	< 300°C, ±0.3°C	≥ 300°C, ±0.1% F.S.
B	+400°C ~ +1820°C	< 500°C, ±0.5°C	≥ 500°C, ±0.1% F.S.
PT100	-200°C ~ +850°C	< 100°C, ±0.1°C	≥ 100°C, ±0.1% F.S.
Cu50	-50°C ~ +150°C	< 100°C, ±0.1°C	≥ 100°C, ±0.1% F.S.
Cu100	-50°C ~ +150°C	< 100°C, ±0.1°C	≥ 100°C, ±0.1% F.S.



SIL2
IEC 61508



Wiring diagram



Explosive-proof parameters

- Safety Integrity Level (SIL): SIL2, SC2 according to IEC 61508
- National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI)
- Ex marking: [Ex ia Ga] IIC
- Um: 250V
- Certified parameters (Terminals 1, 2, 3):
Uo=7.3V, Io=16mA, Po=30mW
- II C: Co=7μF, Lo=97mH
- II B: Co=149μF, Lo=291mH
- II A: Co=700μF, Lo=776mH