

PRODUCT CATALOGUE & TECHNICAL BROCHURE

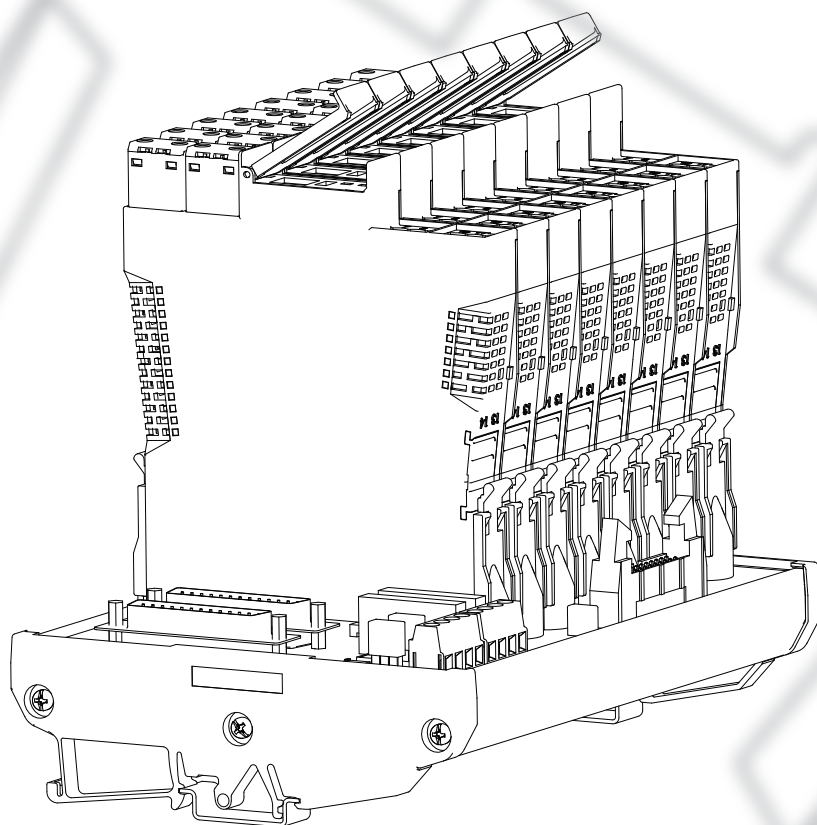
INDUSTRIAL INSTRUMENT VOLUME

Isolated safety barrier Isolator, etc.

English Version

Ver. 2022.05

H series



The latest technology H series isolated safety barrier



Core technology

- Programmable smart input
- Proprietary - cold terminal compensation
- Proprietary - Special magnetic material
- Proprietary - Explosion-proof core device
- Backplans bus output integration
Standard, custom backplans for easy wiring

Product types

- Input type:
 - Thermocouple, thermal resistance
 - Current, transmitter
 - Voltage, millivolt
 - Switching
 - Frequency
 - Resistance (potentiometer)
- Output type:
 - Current (sink/source)
 - Voltage, millivolt
 - Relay
- Connection mode:
 - Backplane, terminal
- PLC, DCS vendors:
 - Honeywell
 - Siemens
 - Emerson
 - Foxboro
 - Hima
 - Triconex
 - Supcon
 - HollySys

- Intrinsic Safety barrier National Standard Editor in chief
- SINOPEC Intrinsic Safety Barriers Framework Agreement Unit
- Integration of industrialization and informatization unit of MIIT
- Standardization demonstration intelligent factory of MIIT
- Jiangsu Province Surge Protective Device Engineering and Technology Research Center



About NewPwr

Nanjing New Power Electric Co.,Ltd. was founded in 2002, is the high-tech enterprise in Jiangsu Province. Our company is specialized in R&D, manufacturing intrinsic safety barrier, surge protective device etc, and is a member of the national industrial process measurement and automation Standardization Technical Committee (TC124), national industrial explosion-proof electrical equipment standardization technical committee (TC9). The company has more than 160 employees, 33000 square meters of two industrial parks. It is one of the main suppliers of technology and market in the field of industrial explosion-proof instrumentation in China, and enjoys a high reputation.

The company is the executive director unit of Chinese Instrument Association, the integration of industrialization and informatization unit of the MIIT, the standardization demonstration intelligent factory of MIIT, is the Jiangsu Province and Nanjing first demonstration of intelligent workshop. Due to the outstanding achievements of the company in recent years, since 2016, it has been awarded by Jiangsu provincial government as one of the "100 outstanding enterprise in Jiangsu Province", "50 outstanding Jiangsu Manufacturing Contributions Outstanding Enterprises", and "Jiangsu Science and Technology Little Giant Enterprise" honor.



Catalogue

H series isolated safety barrier

RTD、TC

NPEXA-H01 (1-channel, Output: 4 ~ 20mA)	01
NPEXA-H011 (1-channel, Output: 4 ~ 20mA)	02
NPEXA-H0D11 (2-channel, Output: 4 ~ 20mA)	03

TC

NPEXA-H11 (1-channel, Output: 4 ~ 20mA)	04
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NPEXA-H1D11 (2-channel, Output: 4 ~ 20mA)	06
NPEXA-H171 (1-channel, Output: 1:1mV、4 ~ 20mA)	07

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NPEXA-H211 (1-channel, Output: 4 ~ 20mA)	09
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TC & RTD Isolated Safety Barrier



NPEXA-H01

single input, single output

Input: TC or RTD
Output: 4 ~ 20 mA

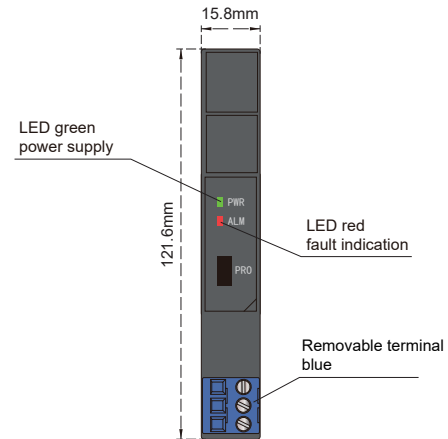
Temperature input safety barrier, it converts the thermocouple or thermal resistance signals from a hazardous area into current signals to a safe area by isolation. It has external cold junction compensation terminals. The input, output, and power supply are galvanically isolated from each other. A self-test feature is also available on this device. You can use PC or handheld programmer to modify parameters.

Technical data

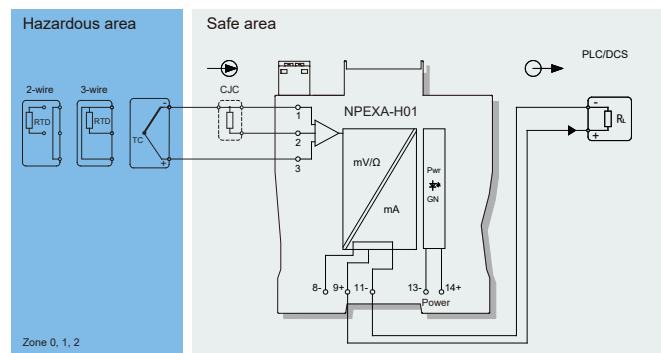
Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.0 W (24V DC, single output)
Input signal:	K, E, S, B, J, T, R, N, etc. Pt100, Cu100, Cu50, BA1, BA2, etc.
Line resistance:	≤ 20 Ω per line (RTD)
Output signal:	4 ~ 20 mA
Load resistance:	RL ≤ 500 Ω
Compensation accuracy:	1°C (Temperature compensation range: -20°C ~ +60°C)
Temperature drift:	0.01%F.S./°C
Response time:	≤ 1s
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (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 0 mA, the maximum output value would not exceed 22 mA)

Range and Conversion accuracy list (25°C±2°C, not contain cold junction compensation):

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.



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 2, 3):

Uo=7.3V, Io=27mA, Po=50mW

II C: Co=12μF, Lo=28mH

II B: Co=151μF, Lo=84mH

II A: Co=700μF, Lo=224mH

Model rules

NPEXA-H01
|
The output signal^{note1}

note1: Output signal

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

NPEXA-H011

single input, double output

Input: TC or RTD

Output: 4 ~ 20 mA

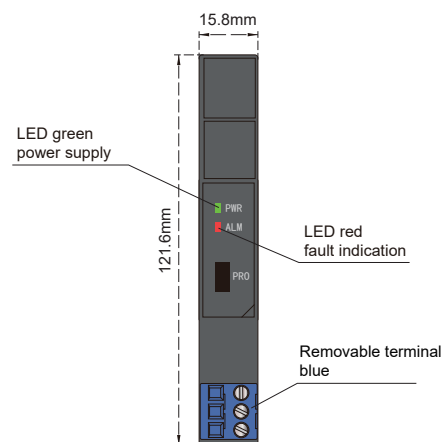
Temperature input safety barrier, it converts the thermocouple or thermal resistance signals from a hazardous area into current signals to a safe area by isolation. It has external cold junction compensation terminals. The input, output, and power supply are galvanically isolated from each other. A self-test feature is also available on this device. You can use PC or handheld programmer to modify parameters.

Technical data

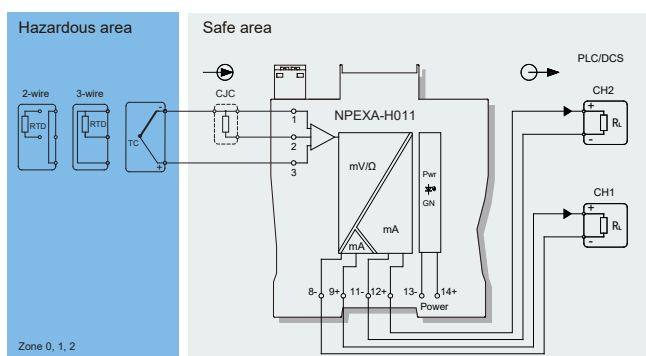
Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.5 W (24V DC, double output)
Input signal:	K, E, S, B, J, T, R, N, etc. Pt100, Cu100, Cu50, BA1, BA2, etc.
Line resistance:	≤ 20 Ω per line (RTD)
Output signal:	4 ~ 20 mA
Load resistance:	RL ≤ 500 Ω
Compensation accuracy:	1°C (Temperature compensation range: -20°C ~ +60°C)
Temperature drift:	0.01% F.S./°C
Response time:	≤ 1s
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (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 0 mA, the maximum output value would not exceed 22 mA)

Range and Conversion accuracy list (25°C±2°C, not contain cold junction compensation):

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.



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 2, 3):

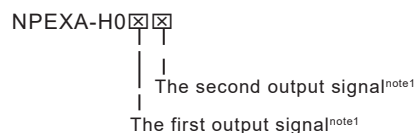
Uo=7.3V, Io=27mA, Po=50mW

II C: Co=12μF, Lo=28mH

II B: Co=151μF, Lo=84mH

II A: Co=700μF, Lo=224mH

Model rules



note1: Output signal

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

TC & RTD Isolated Safety Barrier



NPEXA-H0D11

double input, double output

Input: TC or RTD

Output: 4 ~ 20 mA

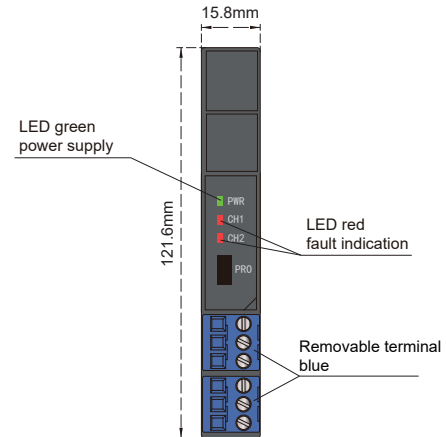
Temperature input safety barrier, it converts the thermocouple or thermal resistance signals from a hazardous area into current signals to a safe area by isolation. It has external cold junction compensation terminals. The input, output, and power supply are galvanically isolated from each other. A self-test feature is also available on this device. You can use PC or handheld programmer to modify parameters.

Technical data

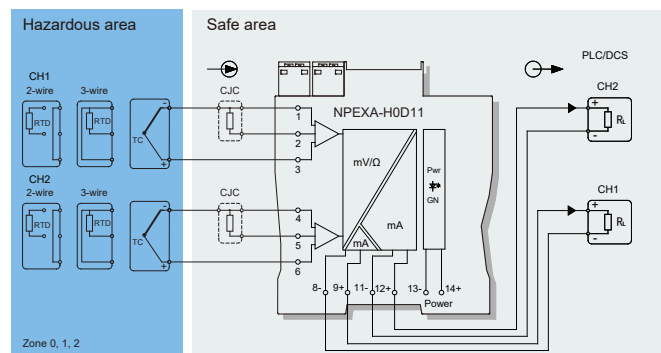
Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.5 W (24V DC, double output)
Input signal:	K, E, S, B, J, T, R, N, etc. Pt100, Cu100, Cu50, BA1, BA2, etc.
Line resistance:	≤ 20 Ω per line (RTD)
Output signal:	4 ~ 20 mA
Load resistance:	RL ≤ 500 Ω
Compensation accuracy:	1°C (Temperature compensation range: -20°C ~ +60°C)
Temperature drift:	0.01%F.S./°C
Response time:	≤ 1s
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (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 0 mA, the maximum output value would not exceed 22 mA)

Range and Conversion accuracy list (25°C±2°C, not contain cold junction compensation):

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.



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 2, 3; 4, 5, 6):

Uo=7.3V, Io=27mA, Po=50mW

II C: Co=12μF, Lo=28mH

II B: Co=151μF, Lo=84mH

II A: Co=700μF, Lo=224mH

Model rules

NPEXA-H0D11

The second output signal^{note1}

The first output signal^{note1}

note1: Output signal

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

NPEXA-H11

single input, single output

Input: TC

Output: 4 ~ 20 mA

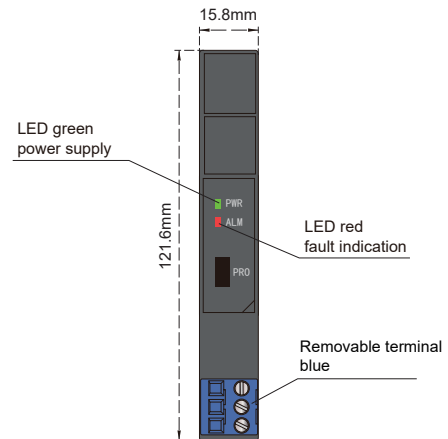
Temperature input safety barrier, it converts the thermocouple signals from a hazardous area into current signals to a safe area by isolation. It has external cold junction compensation terminals. The input, output, and power supply are galvanically isolated from each other. A self-test feature is also available on this device. You can use PC or handheld programmer to modify parameters.

Technical data

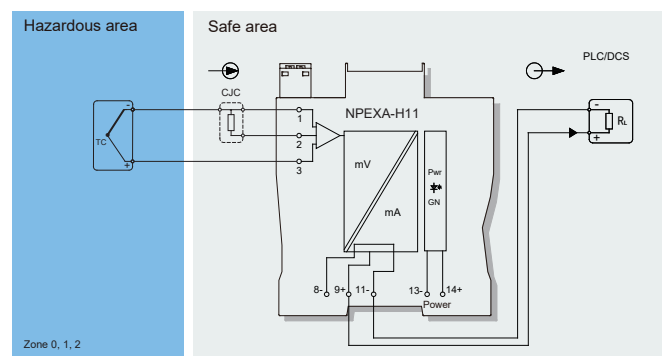
Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.0 W (24V DC, single output)
Input signal:	K, E, S, B, J, T, R, N, etc.
Output signal:	4 ~ 20 mA
Load resistance:	$R_L \leq 500 \Omega$
Compensation accuracy:	1°C (Temperature compensation range: -20°C ~ +60°C)
Temperature drift:	0.01%F.S./°C
Response time:	≤ 1s
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (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 0 mA, the maximum output value would not exceed 22 mA)

Range and Conversion accuracy list (25°C±2°C, not contain cold junction compensation):

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.



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 3):

Uo=7.3V, Io=27mA, Po=50mW

II C: Co=12μF, Lo=28mH

II B: Co=151μF, Lo=84mH

II A: Co=700μF, Lo=224mH

Model rules

NPEXA-H11

The output signal^{note1}

note1: Output signal

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

TC Isolated Safety Barrier

NPEXA-H111

single input, double output

Input: TC

Output: 4 ~ 20 mA



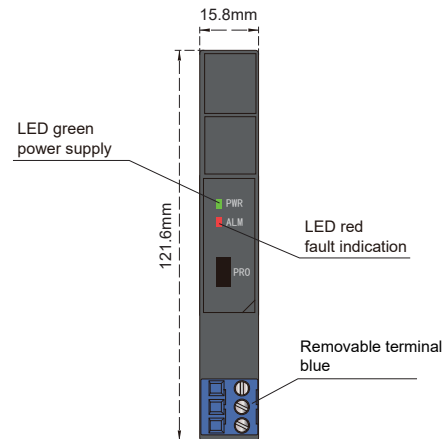
Temperature input safety barrier, it converts the thermocouple signals from a hazardous area into current signals to a safe area by isolation. It has external cold junction compensation terminals. The input, output, and power supply are galvanically isolated from each other. A self-test feature is also available on this device. You can use PC or handheld programmer to modify parameters.

Technical data

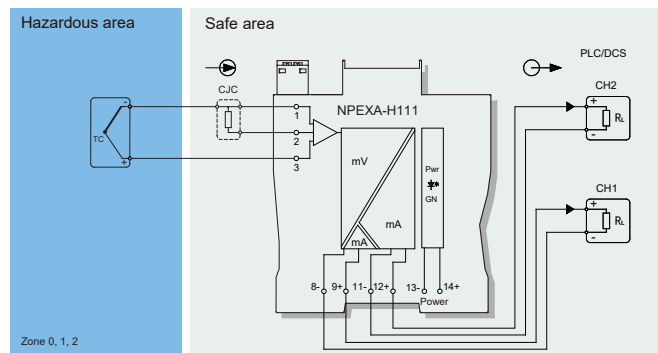
Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.5 W (24V DC, double output)
Input signal:	K, E, S, B, J, T, R, N, etc.
Output signal:	4 ~ 20 mA
Load resistance:	$R_L \leq 500 \Omega$
Compensation accuracy:	1°C (Temperature compensation range: -20°C ~ +60°C)
Temperature drift:	0.01%F.S./°C
Response time:	≤ 1s
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (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 0 mA, the maximum output value would not exceed 22 mA)

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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.



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 3):

Uo=7.3V, Io=27mA, Po=50mW

II C: Co=12μF, Lo=28mH

II B: Co=151μF, Lo=84mH

II A: Co=700μF, Lo=224mH

Model rules

NPEXA-H111

The second output signal^{note1}
The first output signal^{note1}

note1: Output signal

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

NPEXA-H1D11

double input, double output

Input: TC

Output: 4 ~ 20 mA

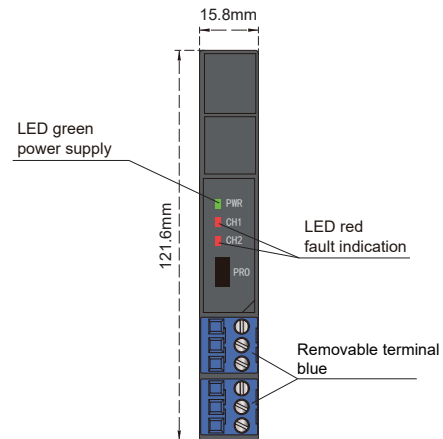
Temperature input safety barrier, it converts the thermocouple signals from a hazardous area into current signals to a safe area by isolation. It has external cold junction compensation terminals. The input, output, and power supply are galvanically isolated from each other. A self-test feature is also available on this device. You can use PC or handheld programmer to modify parameters.

Technical data

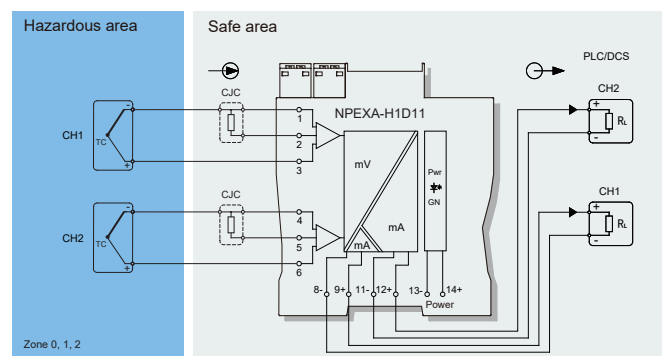
Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.5 W (24V DC, double output)
Input signal:	K, E, S, B, J, T, R, N, etc.
Output signal:	4 ~ 20 mA
Load resistance:	$R_L \leq 500 \Omega$
Compensation accuracy:	1°C (Temperature compensation range: -20°C ~ +60°C)
Temperature drift:	0.01%F.S./°C
Response time:	≤ 1s
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (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 0 mA, the maximum output value would not exceed 22 mA)

Range and Conversion accuracy list (25°C±2°C, not contain cold junction compensation):

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.



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 3; 4, 6):

Uo=7.3V, Io=27mA, Po=50mW

II C: Co=12μF, Lo=28mH

II B: Co=151μF, Lo=84mH

II A: Co=700μF, Lo=224mH

Model rules

NPEXA-H1D11

The second output signal^{note1}

The first output signal^{note1}

note1: Output signal

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

TC Isolated Safety Barrier

NPEXA-H171

single input, double output

Input: TC

Output: 1:1 mV, 4 ~ 20 mA



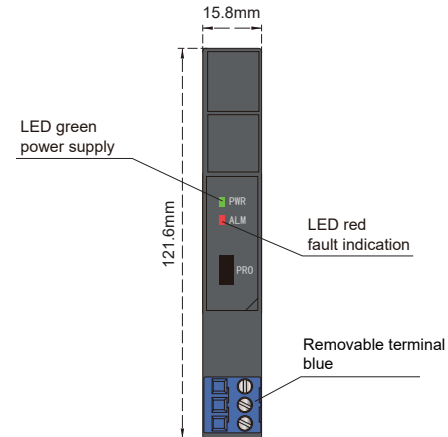
Temperature input safety barrier, it converts the thermocouple signals from a hazardous area into 1:1mV and current signals to a safe area by isolation. It has external cold junction compensation terminals. The input, output, and power supply are galvanically isolated from each other. You can use PC or handheld programmer to modify parameters.

Technical data

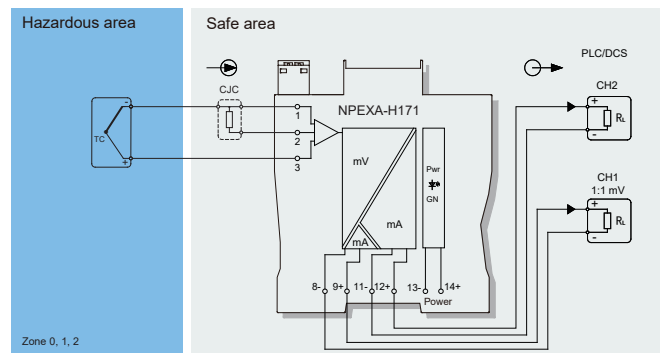
Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.5 W (24V DC, double output)
Input signal:	0 ~ 100 mV
Output signal:	Output1: 1:1 mV Output2: 4 ~ 20 mA
Load resistance:	Output1: $R_L \geq 10k\Omega$ Output2: $R_L \leq 500\Omega$
Compensation accuracy:	1°C (Temperature compensation range: -20°C ~ +60°C)
Temperature drift:	0.01%F.S./°C
Response time:	≤ 1s
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (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 0 mA, the maximum output value would not exceed 22 mA)

Range and Conversion accuracy list (25°C±2°C, not contain cold junction compensation):

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.



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 3):

Uo=7.3V, Io=27mA, Po=50mW

II C: Co=12μF, Lo=28mH

II B: Co=151μF, Lo=84mH

II A: Co=700μF, Lo=224mH

Model rules

NPEXA-H171

The output signal^{note1}

note1: Output signal

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

NPEXA-H21

single input, single output

Input: RTD

Output: 4 ~ 20 mA

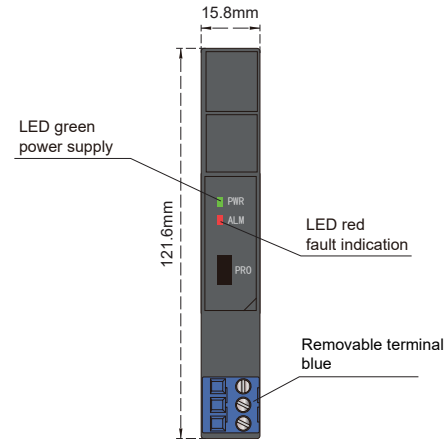
Temperature input safety barrier, it converts the thermal resistance signals from a hazardous area into current signals to a safe area by isolation. The input, output, and power supply are galvanically isolated from each other. A self-test feature is also available on this device. You can use PC or handheld programmer to modify parameters.

Technical data

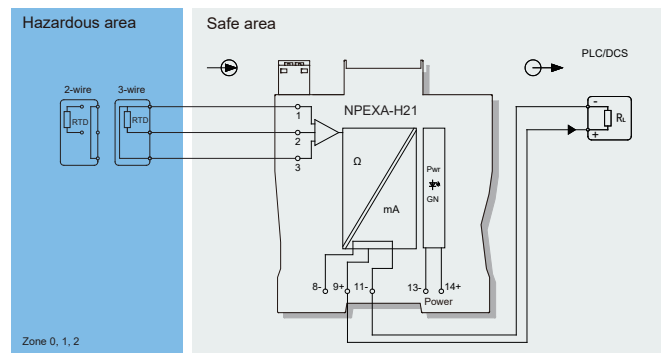
Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.0 W (24V DC, single output)
Input signal:	Pt100, Cu100, Cu50, BA1, BA2, etc.
Line resistance:	$\leq 20 \Omega$ per line (RTD)
Output signal:	4 ~ 20 mA
Load resistance:	$R_L \leq 500 \Omega$
Temperature drift:	0.01% F.S./°C
Response time:	$\leq 1s$
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 M Ω (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (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 0 mA, the maximum output value would not exceed 22 mA)

Range and Conversion accuracy list

Type	Range	Min.span/Accuracy	
Pt100	-200°C~+850°C	<100°C, $\pm 0.1^\circ\text{C}$	$\geq 100^\circ\text{C}$, $\pm 0.1\%$ F.S.
Cu50	-50°C~+150°C	<100°C, $\pm 0.1^\circ\text{C}$	$\geq 100^\circ\text{C}$, $\pm 0.1\%$ F.S.
Cu100	-50°C~+150°C	<100°C, $\pm 0.1^\circ\text{C}$	$\geq 100^\circ\text{C}$, $\pm 0.1\%$ F.S.



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 2, 3):

Uo=7.3V, Io=27mA, Po=50mW

II C: Co=12 μ F, Lo=28mH

II B: Co=151 μ F, Lo=84mH

II A: Co=700 μ F, Lo=224mH

Model rules

NPEXA-H21

The output signal^{note1}

note1: Output signal

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

RTD Isolated Safety Barrier

NPEXA-H211

single input, double output

Input: RTD

Output: 4 ~ 20 mA



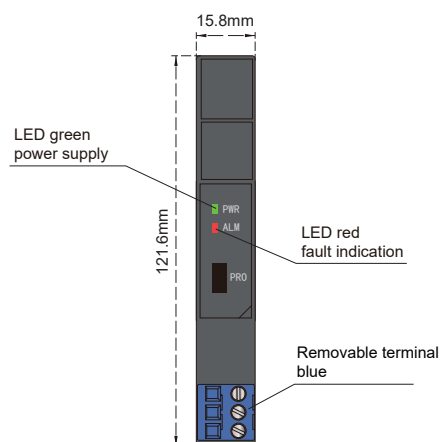
Temperature input safety barrier, it converts the thermal resistance signals from a hazardous area into current signals to a safe area by isolation. The input, output, and power supply are galvanically isolated from each other. A self-test feature is also available on this device. You can use PC or handheld programmer to modify parameters.

Technical data

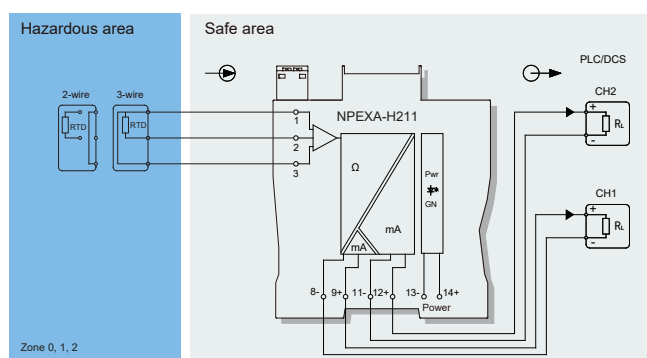
Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.5 W (24V DC, double output)
Input signal:	Pt100, Cu100, Cu50, BA1, BA2, etc.
Line resistance:	≤ 20 Ω per line (RTD)
Output signal:	4 ~ 20 mA
Load resistance:	RL ≤ 500 Ω
Temperature drift:	0.01%F.S./°C
Response time:	≤ 1s
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (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 0 mA, the maximum output value would not exceed 22 mA)

Range and Conversion accuracy list

Type	Range	Min.span/Accuracy	
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.



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 2, 3):

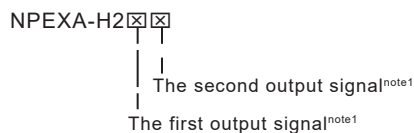
Uo=7.3V, Io=27mA, Po=50mW

II C: Co=12μF, Lo=28mH

II B: Co=151μF, Lo=84mH

II A: Co=700μF, Lo=224mH

Model rules



note1: Output signal

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

NPEXA-H2D11

double input, double output

Input: RTD

Output: 4 ~ 20 mA

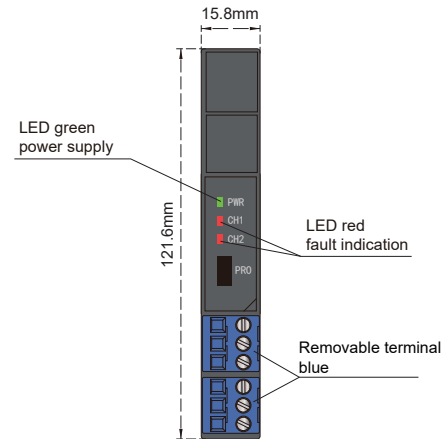
Temperature input safety barrier, it converts the thermal resistance signals from a hazardous area into current signals to a safe area by isolation. The input, output, and power supply are galvanically isolated from each other. A self-test feature is also available on this device. You can use PC or handheld programmer to modify parameters.

Technical data

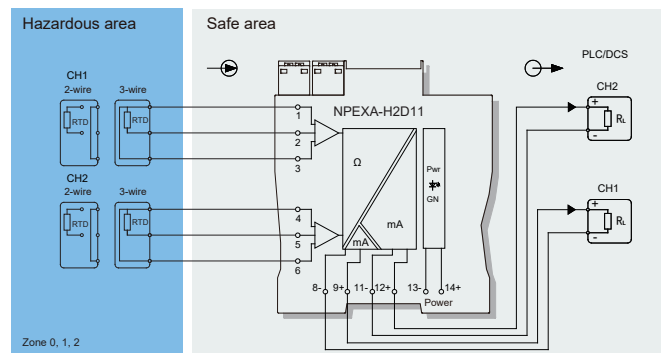
Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.5 W (24V DC, double output)
Input signal:	Pt100, Cu100, Cu50, BA1, BA2, etc.
Line resistance:	$\leq 20 \Omega$ per line (RTD)
Output signal:	4 ~ 20 mA
Load resistance:	$R_L \leq 500 \Omega$
Temperature drift:	0.01% F.S./°C
Response time:	$\leq 1s$
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 M Ω (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (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 0 mA, the maximum output value would not exceed 22 mA)

Range and Conversion accuracy list

Type	Range	Min.span/Accuracy	
Pt100	-200°C~+850°C	<100°C, $\pm 0.1^\circ\text{C}$	$\geq 100^\circ\text{C}$, $\pm 0.1\%$ F.S.
Cu50	-50°C~+150°C	<100°C, $\pm 0.1^\circ\text{C}$	$\geq 100^\circ\text{C}$, $\pm 0.1\%$ F.S.
Cu100	-50°C~+150°C	<100°C, $\pm 0.1^\circ\text{C}$	$\geq 100^\circ\text{C}$, $\pm 0.1\%$ F.S.



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 2, 3; 4, 5, 6):

Uo=7.3V, Io=27mA, Po=50mW

II C: Co=12 μ F, Lo=28mH

II B: Co=151 μ F, Lo=84mH

II A: Co=700 μ F, Lo=224mH

Model rules

NPEXA-H2D11

The second output signal^{note1}
The first output signal^{note1}

note1: Output signal

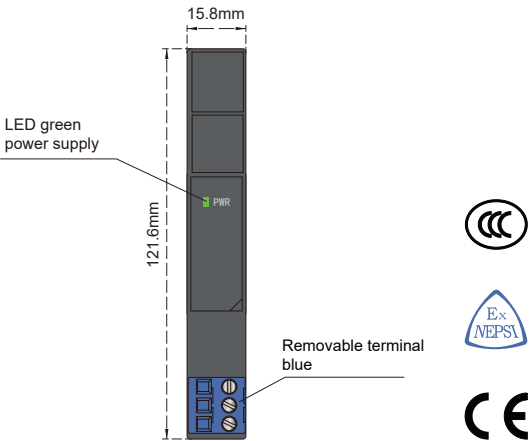
Number	Output
1	4~20mA
2	1~5V
3	0~10mA
4	0~5V
5	0~10V
6	0~20mA

AI Isolated Safety Barrier

NPEXA-HM31 single input, single output

Input: 4 ~ 20 mA
Output: 4 ~ 20 mA

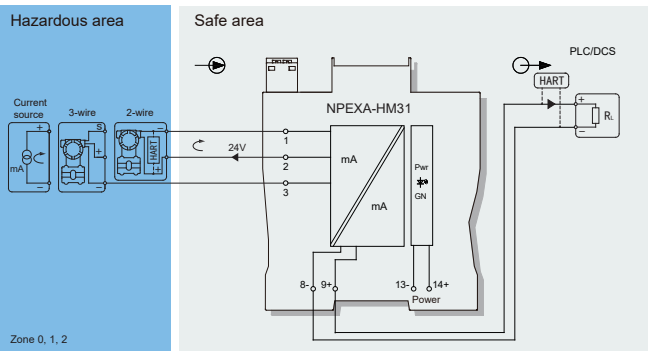
This isolated safety barrier detects loop current and converts it from a hazardous area into current signals to a safe area by isolation, and also provides transmitters with power in the hazardous area. It allows transmission of HART communication signals. The input, output, and power supply are galvanically isolated from each other.



Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.3 W (24V DC, single output)
Input signal:	4 ~ 20mA, HART
Input resistance:	approx. 75 Ω
Available voltage:	open-circuit voltage ≤ 26 V voltage: ≥ 15.5 V at 20 mA
Output signal:	4 ~ 20mA, HART
Load resistance:	RL ≤ 450Ω
Accuracy:	± 0.1%F.S.
Temperature drift:	0.005%F.S./°C
Response time:	≤ 2ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

Wiring diagram



Explosive-proof parameters

National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI)
Explosive-proof grade: [Ex ia Ga] II C
Um: 250 V
Certified parameters (Terminals 1, 3):
Uo=5V
II C: Co=70μF
II B: Co=700μF
II A: Co=700μF
Certified parameters (Terminals 2, 3):
Uo=28V, Io=93mA, Po=651mW
II C: Co=0.08μF, Lo=4mH
II B: Co=0.6μF, Lo=12mH
II A: Co=2.1μF, Lo=32mH

Other ordering information

Type	Input	Output1	Output2	Power supply
NPEXA-HM32	4 ~ 20mA	1 ~ 5V	-----	backplane mounting
NPEXA-HM35	0 ~ 20mA	0 ~ 10V	-----	backplane mounting

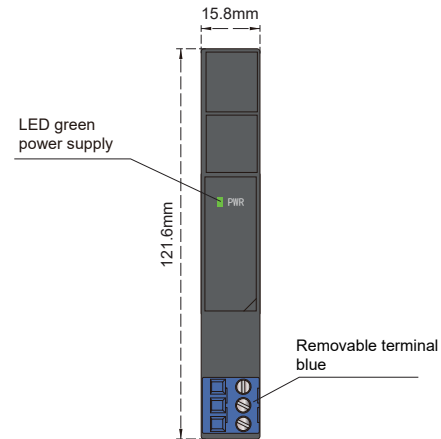
NPEXA-HM311

single input, double output

Input: 4 ~ 20 mA

Output: 4 ~ 20 mA

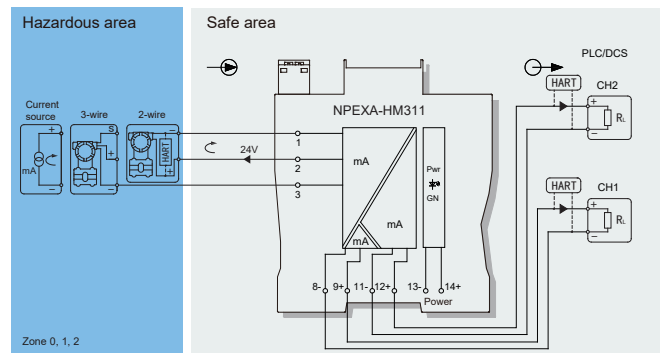
This isolated safety barrier detects loop current and converts it from a hazardous area into current signals to a safe area by isolation, and also provides transmitters with power in the hazardous area. It allows transmission of HART communication signals. The input, output, and power supply are galvanically isolated from each other.



Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.8 W (24V DC, double output)
Input signal:	4 ~ 20mA, HART
Input resistance:	approx. 75 Ω
Available voltage:	open-circuit voltage ≤ 26 V voltage: ≥ 15.5 V at 20 mA
Output signal:	4 ~ 20mA, HART
Load resistance:	RL ≤ 450Ω
Accuracy:	± 0.1%F.S.
Temperature drift:	0.005%F.S./°C
Response time:	≤ 2ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 3):

Uo=5V

II C: Co=70μF

II B: Co=700μF

II A: Co=700μF

Certified parameters (Terminals 2, 3):

Uo=28V, Io=93mA, Po=651mW

II C: Co=0.08μF, Lo=4mH

II B: Co=0.6μF, Lo=12mH

II A: Co=2.1μF, Lo=32mH

Other ordering information

Type	Input	Output1	Output2	Power supply
NPEXA-HM312	4 ~ 20mA	4 ~ 20mA	1 ~ 5V	backplane mounting
NPEXA-HM322	4 ~ 20mA	1 ~ 5V	1 ~ 5V	backplane mounting
NPEXA-HM355	0 ~ 20mA	0 ~ 10V	0 ~ 10V	backplane mounting

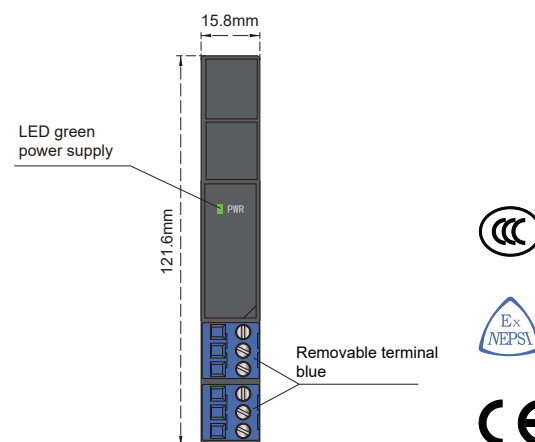
AI Isolated Safety Barrier

NPEXA-HM3D11 double input, double output

Input: 4 ~ 20 mA

Output: 4 ~ 20 mA

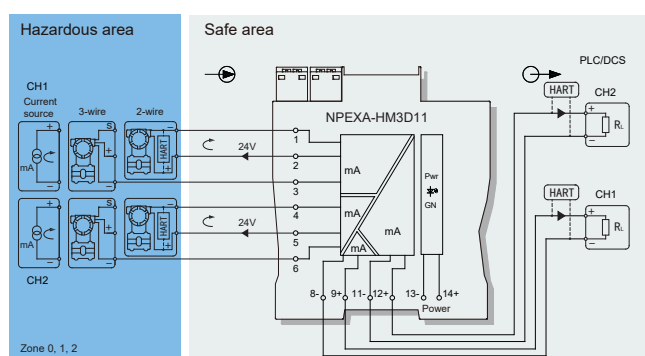
This isolated safety barrier detects loop current and converts it from a hazardous area into current signals to a safe area by isolation, and also provides transmitters with power in the hazardous area. It allows transmission of HART communication signals. The input, output, and power supply are galvanically isolated from each other.



Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	2.5 W (24V DC, double output)
Input signal:	4 ~ 20mA, HART
Input resistance:	approx. 75 Ω
Available voltage:	open-circuit voltage ≤ 26 V voltage: ≥ 15.5 V at 20 mA
Output signal:	4 ~ 20mA, HART
Load resistance:	RL ≤ 450Ω
Accuracy:	± 0.1%F.S.
Temperature drift:	0.005%F.S./°C
Response time:	≤ 2ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 3; 4, 6):

Uo=5V

II C: Co=70μF

II B: Co=700μF

II A: Co=700μF

Certified parameters (Terminals 2, 3; 5, 6):

Uo=28V, Io=93mA, Po=651mW

II C: Co=0.08μF, Lo=4mH

II B: Co=0.6μF, Lo=12mH

II A: Co=2.1μF, Lo=32mH

Other ordering information

Type	Input	Output1	Output2	Power supply
NPEXA-HM3D22	4 ~ 20mA	1 ~ 5V	1 ~ 5V	backplane mounting
NPEXA-HM3D55	0 ~ 20mA	0 ~ 10V	0 ~ 10V	backplane mounting

NPEXA-HM31S

single input, single output

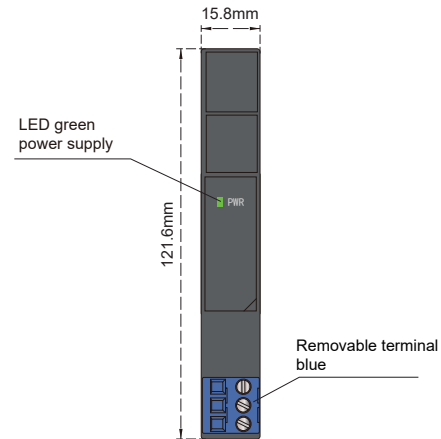
Input: 4 ~ 20 mA

Output: 4 ~ 20 mA (sink mode)

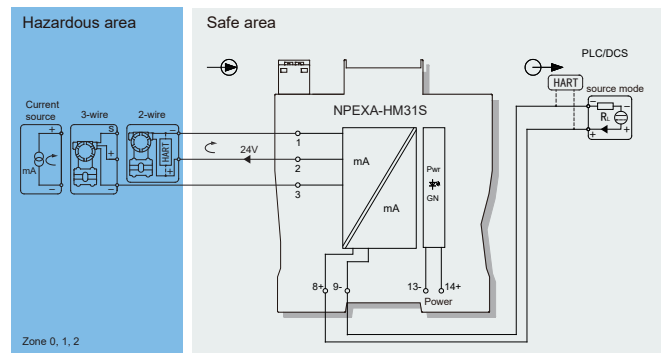
This isolated safety barrier detects loop current and converts it from a hazardous area into current (sink) signals to a safe area by isolation, and also provides transmitters with power in the hazardous area. It allows transmission of HART communication signals. The input, output, and power supply are galvanically isolated from each other.

Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.0 W (24V DC, single output)
Input signal:	4 ~ 20mA, HART
Input resistance:	approx. 75 Ω
Available voltage:	open-circuit voltage ≤ 26 V voltage: ≥ 15.5 V at 20 mA
Output signal:	4 ~ 20mA (sink), HART
Load resistance:	$R_L \leq [(U-3)/0.02]\Omega$; U: Loop power supply
Accuracy:	± 0.1%F.S.
Temperature drift:	0.005%F.S./°C
Response time:	≤ 2ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 3):

Uo=5V

II C: Co=70μF

II B: Co=700μF

II A: Co=700μF

Certified parameters (Terminals 2, 3):

Uo=28V, Io=93mA, Po=651mW

II C: Co=0.08μF, Lo=4mH

II B: Co=0.6μF, Lo=12mH

II A: Co=2.1μF, Lo=32mH

AI Isolated Safety Barrier

NPEXA-HM31S1S single input, double output

Input: 4 ~ 20 mA

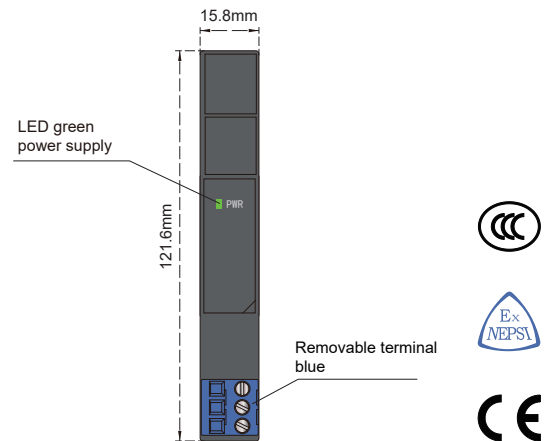
Output: 4 ~ 20 mA (sink mode)

This isolated safety barrier detects loop current and converts it from a hazardous area into current (sink) signals to a safe area by isolation, and also provides transmitters with power in the hazardous area. It allows transmission of HART communication signals. The input, output, and power supply are galvanically isolated from each other.

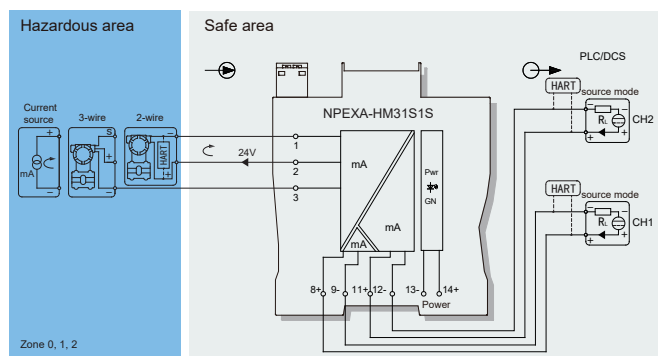


Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.2 W (24V DC, double output)
Input signal:	4 ~ 20mA, HART
Input resistance:	approx. 75 Ω
Available voltage:	open-circuit voltage ≤ 26 V voltage: ≥ 15.5 V at 20 mA
Output signal:	4 ~ 20mA (sink), HART
Load resistance:	$R_L \leq [(U-3)/0.02]\Omega$; U: Loop power supply
Accuracy:	$\pm 0.1\%$ F.S.
Temperature drift:	0.005%F.S./ $^{\circ}\text{C}$
Response time:	≤ 2 ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 M Ω (Input /Output/Power supply)
Operation temperature:	-20 $^{\circ}\text{C}$ ~ +60 $^{\circ}\text{C}$
Storage temperature:	-40 $^{\circ}\text{C}$ ~ +80 $^{\circ}\text{C}$
Dimension:	15.8 mm (W) $\times$ 121.6 mm (H) $\times$ 104.8 mm (D)



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 3):

Uo=5V

II C: Co=70 μ F

II B: Co=700 μ F

II A: Co=700 μ F

Certified parameters (Terminals 2, 3):

Uo=28V, Io=93mA, Po=651mW

II C: Co=0.08 μ F, Lo=4mH

II B: Co=0.6 μ F, Lo=12mH

II A: Co=2.1 μ F, Lo=32mH

NPEXA-HM3D1S1S double input, double output

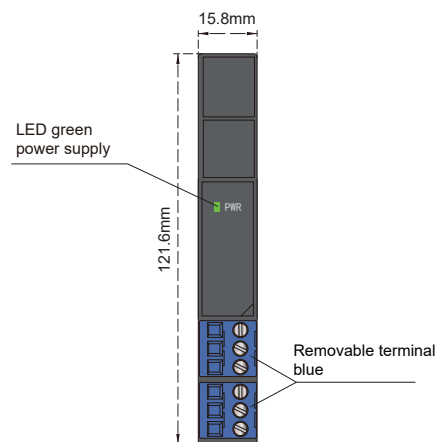
Input: 4 ~ 20 mA

Output: 4 ~ 20 mA (sink mode)

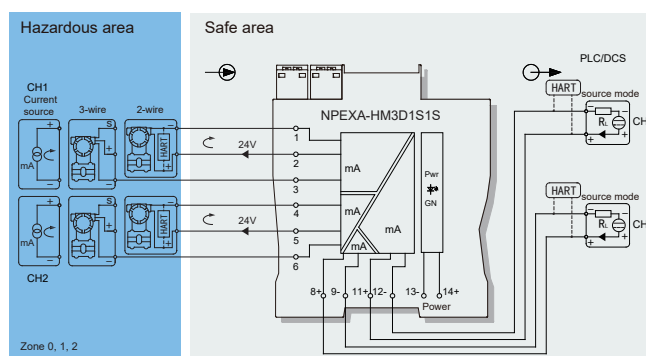
This isolated safety barrier detects loop current and converts it from a hazardous area into current (sink) signals to a safe area by isolation, and also provides transmitters with power in the hazardous area. It allows transmission of HART communication signals. The input, output, and power supply are galvanically isolated from each other.

Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.5 W (24V DC, double output)
Input signal:	4 ~ 20mA, HART
Input resistance:	approx. 75 Ω
Available voltage:	open-circuit voltage ≤ 26 V voltage: ≥ 15.5 V at 20 mA
Output signal:	4 ~ 20mA (sink), HART
Load resistance:	$R_L \leq [(U-3)/0.02]\Omega$; U: Loop power supply
Accuracy:	$\pm 0.1\%$ F.S.
Temperature drift:	0.005%F.S./ $^{\circ}$ C
Response time:	≤ 2 ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 M Ω (Input /Output/Power supply)
Operation temperature:	-20 $^{\circ}$ C ~ +60 $^{\circ}$ C
Storage temperature:	-40 $^{\circ}$ C ~ +80 $^{\circ}$ C
Dimension:	15.8 mm (W) $\times$ 121.6 mm (H) $\times$ 104.8 mm (D)



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 3; 4, 6):

Uo=5V

II C: Co=70 μ F

II B: Co=700 μ F

II A: Co=700 μ F

Certified parameters (Terminals 2, 3; 5, 6):

Uo=28V, Io=93mA, Po=651mW

II C: Co=0.08 μ F, Lo=4mH

II B: Co=0.6 μ F, Lo=12mH

II A: Co=2.1 μ F, Lo=32mH

AO Isolated Safety Barrier

NPEXB-HM31

single input, single output

Input: 4 ~ 20 mA

Output: 4 ~ 20 mA

Accepts 4~20mA signal from safe area to drive executive mechanisms in hazardous area. It allows transmission of HART communication signals. The input, output, and power supply are galvanically isolated from each other. The LFD function of output short-circuit/line-break can be closed by the DIP switch on the front side.

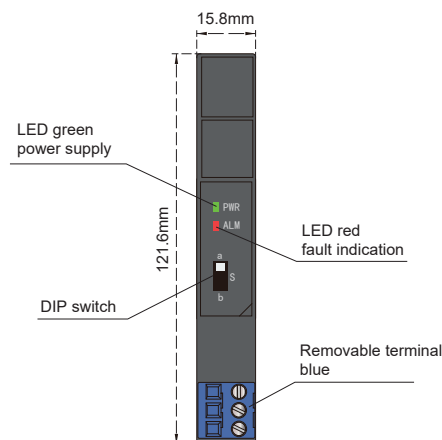


Technical data

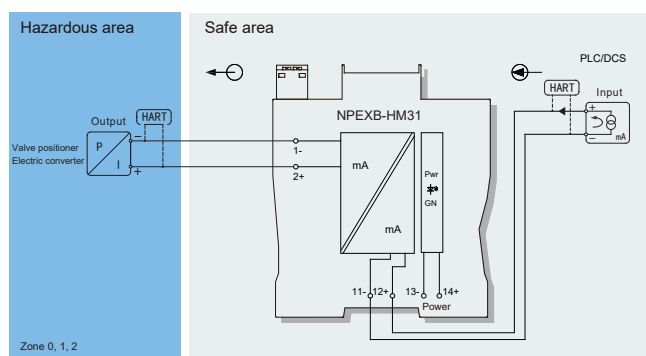
Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	< 1.5 W (24V DC, single output)
Input signal:	4 ~ 20mA, HART
Input voltage drop:	< 1.2V
Line Failure state:	When the output load resistance was detected less than 80Ω, the output is in the fault of short circuit. When the output load resistance was detected more than 6000Ω, the output is in the fault of line breakage. If the output is in the fault, the input current value is limited to within 1mA and the output current value is limited to 3mA.
Output signal:	4 ~ 20mA, HART
Load resistance:	80Ω ~ 800Ω
Accuracy:	± 0.1%F.S.
Temperature drift:	0.005%F.S./°C
Response time:	≤ 2ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

DIP switch settings

Switch	State	a	b
S		The LFD function of output short-circuit/line-break off	The LFD function of output short-circuit/line-break on



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 2):

Uo=28V, Io=93mA, Po=651mW

II C: Co=0.08μF, Lo=4mH

II B: Co=0.6μF, Lo=12mH

II A: Co=2.1μF, Lo=32mH

NPEXB-HM3D11 double input, double output

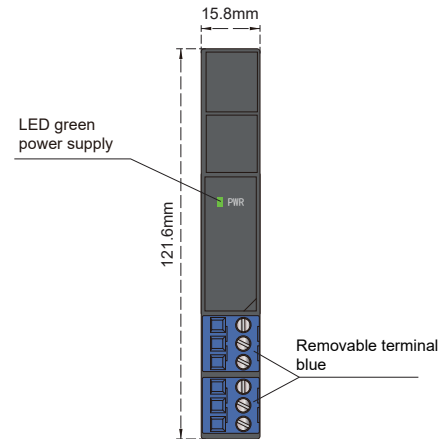
Input: 4 ~ 20 mA

Output: 4 ~ 20 mA

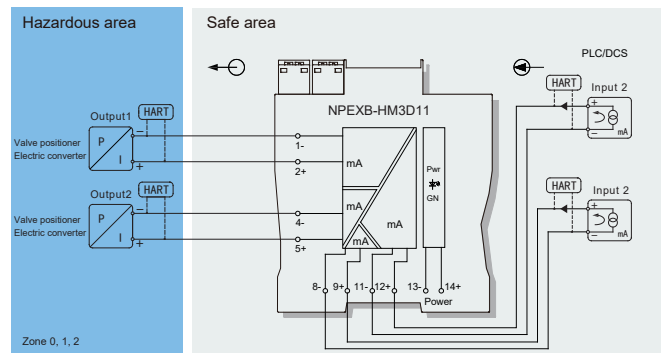
Accepts 4~20mA signal from safe area to drive executive mechanisms in hazardous area, It allows transmission of HART communication signals. The input, output, and power supply are galvanically isolated from each other.

Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	< 2.0 W (24V DC, double output)
Input signal:	4 ~ 20mA, HART
Input voltage drop:	< 1.2V
Output signal:	4 ~ 20mA, HART
Load resistance:	$R_L \leq 800\Omega$
Accuracy:	$\pm 0.1\%F.S.$
Temperature drift:	$0.005\%F.S./^{\circ}C$
Response time:	$\leq 2ms$
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 M Ω (Input /Output/Power supply)
Operation temperature:	-20 $^{\circ}C$ ~ +60 $^{\circ}C$
Storage temperature:	-40 $^{\circ}C$ ~ +80 $^{\circ}C$
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

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

$U_o=28V$, $I_o=93mA$, $P_o=651mW$

II C: $C_o=0.08\mu F$, $L_o=4mH$

II B: $C_o=0.6\mu F$, $L_o=12mH$

II A: $C_o=2.1\mu F$, $L_o=32mH$

Voltage Isolated Safety Barrier

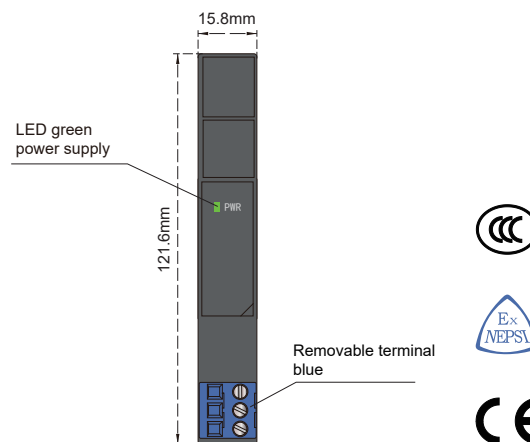
NPEXA-HM41

single input, single output

Input: 1 ~ 5 V

Output: 4 ~ 20 mA

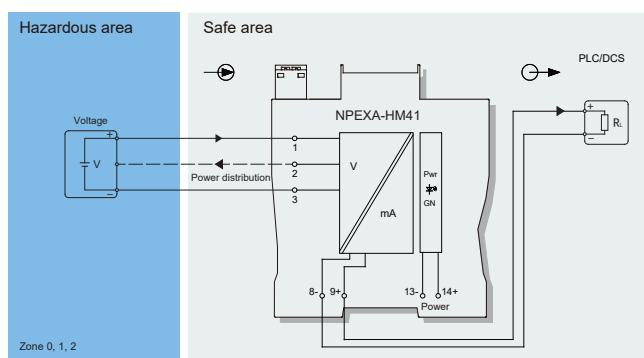
This isolated safety barrier detects loop voltage and converts it from a hazardous area into current signals to a safe area by isolation, and also provides transmitters with power in the hazardous area. The input, output, and power supply are galvanically isolated from each other.



Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.3 W (24V DC, single output)
Input signal:	1 ~ 5V
Input resistance:	≥ 1MΩ
Available voltage:	open-circuit voltage ≤ 26 V voltage: ≥ 15.5 V at 20 mA
Output signal:	4 ~ 20mA
Load resistance:	$R_L \leq 450\Omega$
Accuracy:	± 0.1%F.S.
Temperature drift:	0.005%F.S./°C
Response time:	≤ 2ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 3):

Uo=5V, Io=1mA, Po=2mW

II C: Co=70μF, Lo=999mH

II B: Co=700μF, Lo=999mH

II A: Co=700μF, Lo=999mH

Certified parameters (Terminals 2, 3):

Uo=28V, Io=93mA, Po=651mW

II C: Co=0.08μF, Lo=4mH

II B: Co=0.6μF, Lo=12mH

II A: Co=2.1μF, Lo=32mH

Other ordering information

Type	Input	Output1	Output2	Power supply
NPEXA-HM42	1 ~ 5V	1 ~ 5V	-----	backplane mounting
NPEXA-HM45	0 ~ 5V	0 ~ 10V	-----	backplane mounting

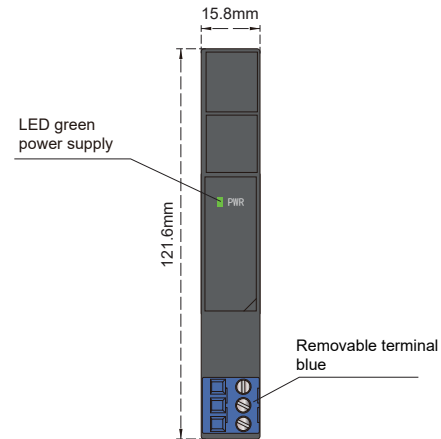
NPEXA-HM411

single input, double output

Input: 1 ~ 5 V

Output: 4 ~ 20 mA

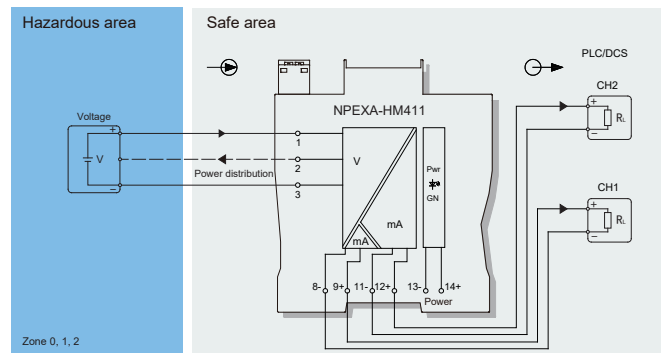
This isolated safety barrier detects loop voltage and converts it from a hazardous area into current signals to a safe area by isolation, and also provides transmitters with power in the hazardous area. The input, output, and power supply are galvanically isolated from each other.



Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.8 W (24V DC, double output)
Input signal:	1 ~ 5V
Input resistance:	$\geq 1\text{M}\Omega$
Available voltage:	open-circuit voltage $\leq 26\text{ V}$ voltage: $\geq 15.5\text{ V}$ at 20 mA
Output signal:	4 ~ 20mA
Load resistance:	$R_L \leq 450\Omega$
Accuracy:	$\pm 0.1\%\text{F.S.}$
Temperature drift:	$0.005\%\text{F.S.}/^\circ\text{C}$
Response time:	$\leq 2\text{ms}$
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	$\geq 2500\text{ V AC}$ (intrinsically safe side / non-intrinsically safe side) $\geq 500\text{ V AC}$ (Power supply side /non-intrinsically safe side)
Insulation resistance:	$\geq 100\text{ M}\Omega$ (Input /Output/Power supply)
Operation temperature:	$-20^\circ\text{C} \sim +60^\circ\text{C}$
Storage temperature:	$-40^\circ\text{C} \sim +80^\circ\text{C}$
Dimension:	15.8 mm (W) $\times$ 121.6 mm (H) $\times$ 104.8 mm (D)

Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 3):

$U_o=5\text{V}$, $I_o=1\text{mA}$, $P_o=2\text{mW}$

II C: $C_o=70\mu\text{F}$, $L_o=999\text{mH}$

II B: $C_o=700\mu\text{F}$, $L_o=999\text{mH}$

II A: $C_o=700\mu\text{F}$, $L_o=999\text{mH}$

Certified parameters (Terminals 2, 3):

$U_o=28\text{V}$, $I_o=93\text{mA}$, $P_o=651\text{mW}$

II C: $C_o=0.08\mu\text{F}$, $L_o=4\text{mH}$

II B: $C_o=0.6\mu\text{F}$, $L_o=12\text{mH}$

II A: $C_o=2.1\mu\text{F}$, $L_o=32\text{mH}$

Other ordering information

Type	Input	Output1	Output2	Power supply
NPEXA-HM412	1 ~ 5V	4 ~ 20mA	1 ~ 5V	backplane mounting
NPEXA-HM422	1 ~ 5V	1 ~ 5V	1 ~ 5V	backplane mounting
NPEXA-HM455	0 ~ 10V	0 ~ 10V	0 ~ 10V	backplane mounting

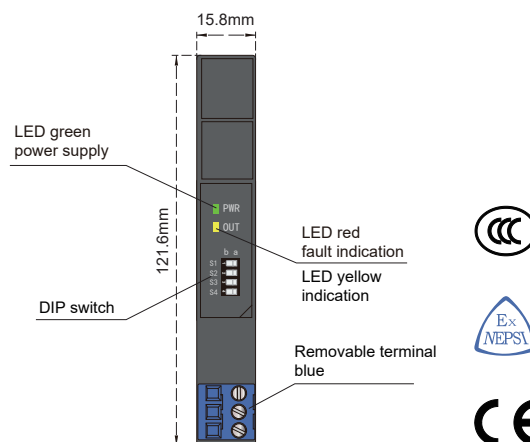
DI Isolated Safety Barrier

NPEXA-H511 single input, single output

Input: dry contact or proximity switch

Output: relay

This isolated safety barrier converts switch or proximity detector signals (dry contact or NAMUR) from a hazardous area into relay signals to a safe area. The normal output state and line fault detection function can be set with the DIP switch on the front side. The input, output, and power supply are galvanically isolated from each other.



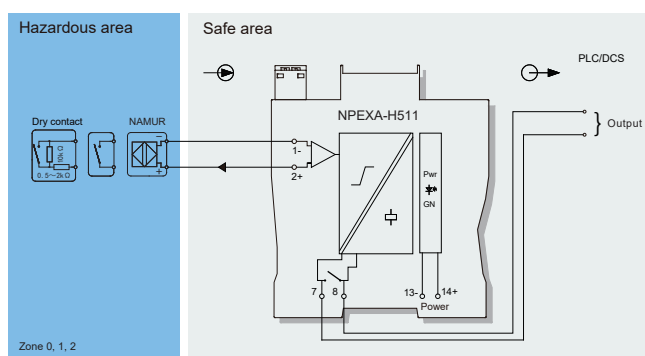
Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	≤ 1.0W
Input signal:	Dry contact or NAMUR
Switching trigger point:	Input signal>2.1mA, signal "1", the yellow LED is always bright Input signal<1.2mA, signal "0", the yellow LED goes out
Open-circuit voltage:	Approx. 8.2V
Short-circuit current:	Approx. 8mA
output signal:	Relay contact
Load capacity:	0.5A/35V DC
LFD function:	When input current≤80μA, considers the input line breakage, the output relay de-energized; If input current≥6mA, considers the input circuit short-circuit, the output relay de-energized, the red LED flashing.
Relay mechanical life:	>100000 switching cycles
Switch frequency:	< 10Hz
Energized/De-energized delay:	< 20ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

DIP switch settings

Switch	State	a	b
S1		Normal mode	Inverted mode
S2		LFD on	LFD off

Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 2):

Uo=10.5V, Io=11.3mA, Po=29.7mW

II C: Co=0.97μF, Lo=100mH

II B: Co=11μF, Lo=300mH

II A: Co=52μF, Lo=700mH

NPEXA-H5111

single input, double output

Input: dry contact or proximity switch

Output: relay

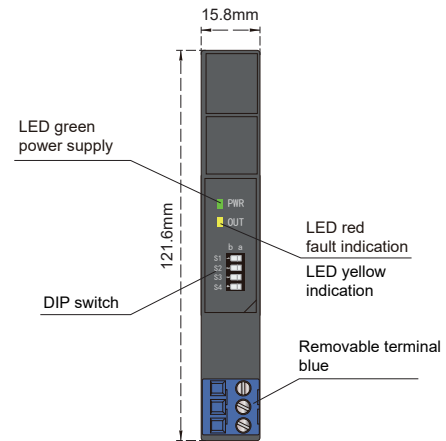
This isolated safety barrier converts switch or proximity detector signals (dry contact or NAMUR) from a hazardous area into relay signals to a safe area. Operation mode, the second output function (as a relay output or a fault output) and the input circuit fault detection function can be set with the DIP switch on the front side. The input, output, and power supply are galvanically isolated from each other.

Technical data

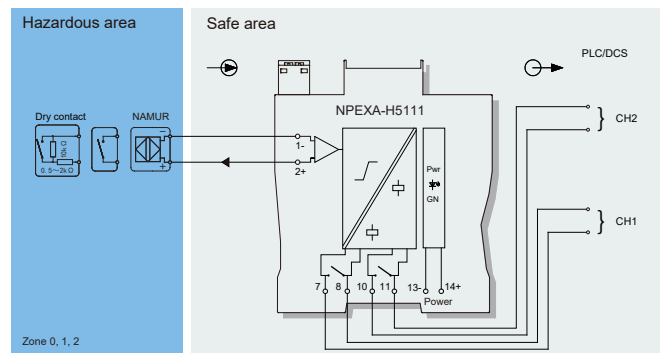
Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	≤ 1.0W
Input signal:	Dry contact or NAMUR
Switching trigger point:	Input signal>2.1mA, signal "1", the yellow LED is always bright Input signal<1.2mA, signal "0", the yellow LED goes out
Open-circuit voltage:	Approx. 8.2V
Short-circuit current:	Approx. 8mA
output signal:	Relay contact
Load capacity:	0.5A/35V DC
LFD function:	When input current≤80μA, considers the input line breakage, the output relay de-energized; If input current≥6mA, considers the input circuit short-circuit, the output relay de-energized, the red LED flashing.
Relay mechanical life:	>100000 switching cycles
Switch frequency:	< 10Hz
Energized/De-energized delay:	< 20ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

DIP switch settings

Switch	State	a	b
S1		Output1 normal mode	Output1 inverted mode
S2		LFD on	LFD off
S3		Output2 normal mode	Output2 as fault signal output
S4		Output2 relay energized if fault	Output2 relay de-energized if fault



Wiring diagram



Explosive-proof parameters

National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI)
 Explosive-proof grade: [Ex ia Ga] II C
 Um: 250 V
 Certified parameters (Terminals 1, 2):
 Uo=10.5V, Io=11.3mA, Po=29.7mW
 II C: Co=0.97μF, Lo=100mH
 II B: Co=11μF, Lo=300mH
 II A: Co=52μF, Lo=700mH

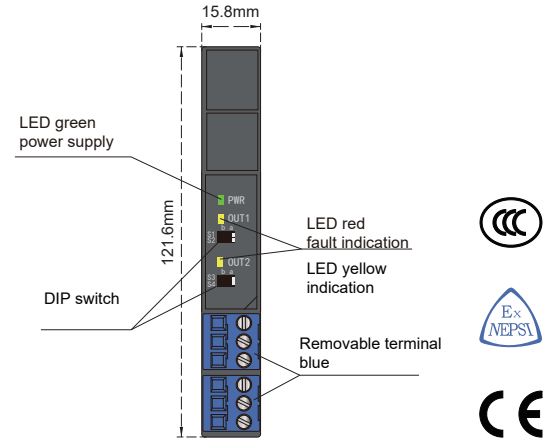
DI Isolated Safety Barrier

NPEXA-H5D111 double input, double output

Input: dry contact or proximity switch

Output: relay

This isolated safety barrier converts switch or proximity detector signals (dry contact or NAMUR) from a hazardous area into relay signals to a safe area. Operation mode, the input circuit fault detection function can be set with the DIP switch on the front side. The input, output, and power supply are galvanically isolated from each other.



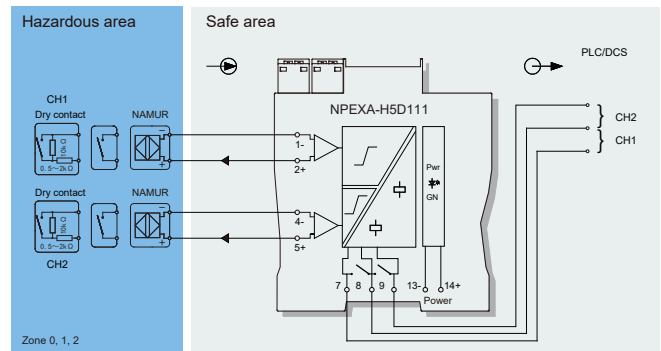
Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	≤ 1.0W
Input signal:	Dry contact or NAMUR
Switching trigger point:	Input signal>2.1mA, signal "1", the yellow LED is always bright Input signal<1.2mA, signal "0", the yellow LED goes out
Open-circuit voltage:	Approx. 8.2V
Short-circuit current:	Approx. 8mA
output signal:	Relay contact
Load capacity:	0.5A/35V DC
LFD function:	When input current≤80μA, considers the input line breakage, the output relay de-energized; If input current≥6mA, considers the input circuit short-circuit, the output relay de-energized, the red LED flashing.
Relay mechanical life:	>100000 switching cycles
Switch frequency:	< 10Hz
Energized/De-energized delay:	< 20ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

DIP switch settings

Switch	State	a	b
S1		Output1 normal mode	Output1 inverted mode
S2		Output1 LFD on	Output1 LFD off
S3		Output2 normal mode	Output2 inverted mode
S4		Output2 LFD on	Output2 LFD off

Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

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

Uo=10.5V, Io=11.3mA, Po=29.7mW

II C: Co=0.97μF, Lo=100mH

II B: Co=11μF, Lo=300mH

II A: Co=52μF, Lo=700mH

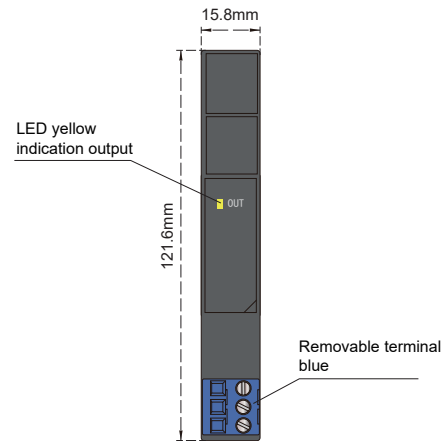
NPEXB-H511L

single input, single output

Input: wet contact

Output: 35mA

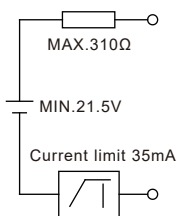
By switch signal controlling, transfers the digital signals (wet contact) from safe area into current signals to hazardous area, and drives field device like intrinsically safe valves, audible alarms, etc. The input, output are galvanically isolated from each other.



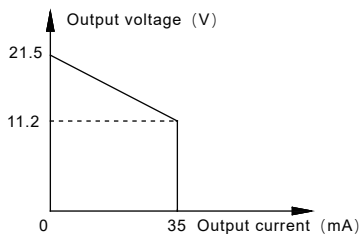
Technical data

Loop Powered:	20 V DC~30 V DC (Reverse power protection)
Power dissipation:	≤ 1.4W
Input signal:	wet contact
Output voltage:	> 11.2V DC
Open-circuit voltage:	21.5V DC
Output current:	≤ 35mA

Output equivalent circuit

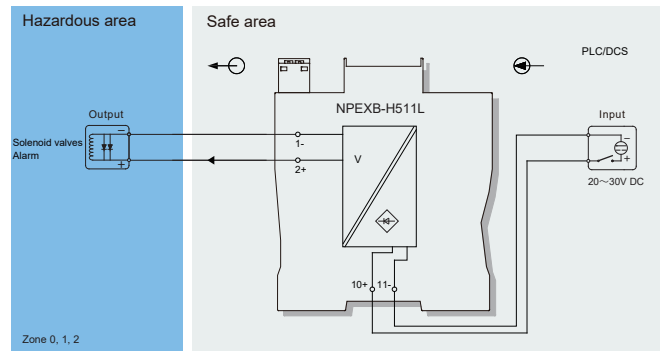


Output characteristics diagram



Response time:	< 20ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 2):

Uo=25.2V, Io=85mA, Po=536mW

II C: Co=0.107μF, Lo=4.9mH

II B: Co=0.82μF, Lo=12.6mH

II A: Co=2.9μF, Lo=33.6mH

DO Isolated Safety Barrier

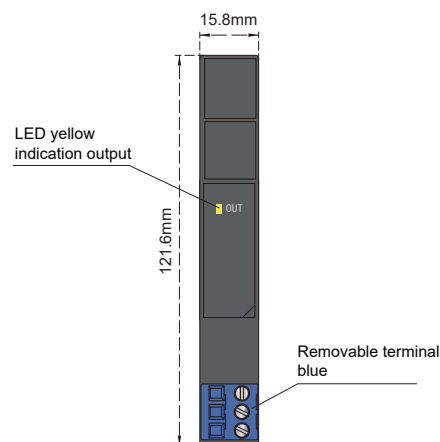
NPEXB-H512L

single input, single output

Input: wet contact

Output: 45mA

By switch signal controlling, transfers the digital signals (wet contact) from safe area into current signals to hazardous area, and drives field device like intrinsically safe valves, audible alarms, etc. The input, output are galvanically isolated from each other.

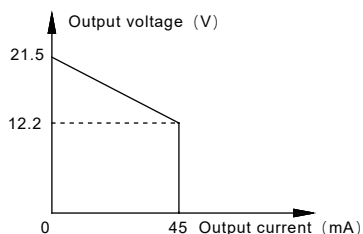
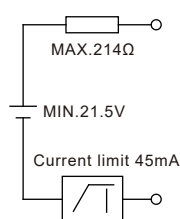


Technical data

Loop Powered:	20 V DC~30 V DC (Reverse power protection)
Power dissipation:	≤ 1.6W
Input signal:	wet contact
Output voltage:	> 12.2V DC
Open-circuit voltage:	21.5V DC
Output current:	≤ 45mA

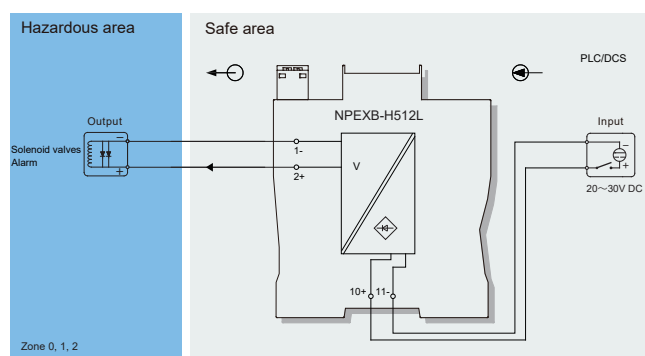
Output equivalent circuit

Output characteristics diagram



Response time:	< 20ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 2):

Uo=25.2V, Io=125mA, Po=790mW

II C: Co=0.107μF, Lo=1.5mH

II B: Co=0.82μF, Lo=4.5mH

II A: Co=2.9μF, Lo=12mH

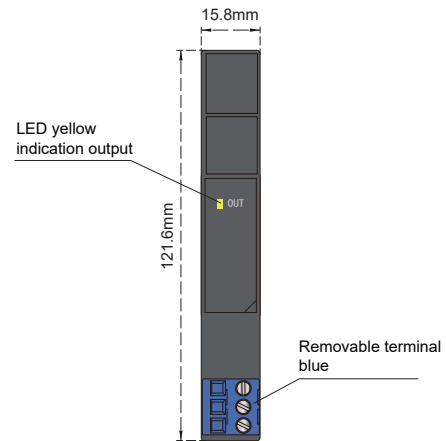
NPEXB-H513L

single input, single output

Input: wet contact

Output: 60mA

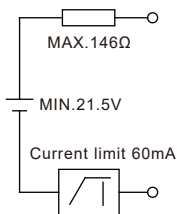
By switch signal controlling, transfers the digital signals (wet contact) from safe area into current signals to hazardous area, and drives field device like intrinsically safe valves, audible alarms, etc. The input, output are galvanically isolated from each other.



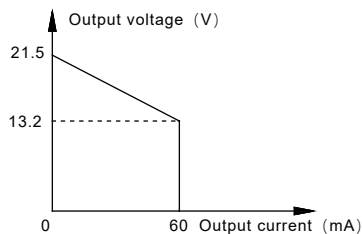
Technical data

Loop Powered:	20 V DC~30 V DC (Reverse power protection)
Power dissipation:	≤ 2.2W
Input signal:	wet contact
Output voltage:	> 13.2V DC
Open-circuit voltage:	21.5V DC
Output current:	≤ 60mA

Output equivalent circuit

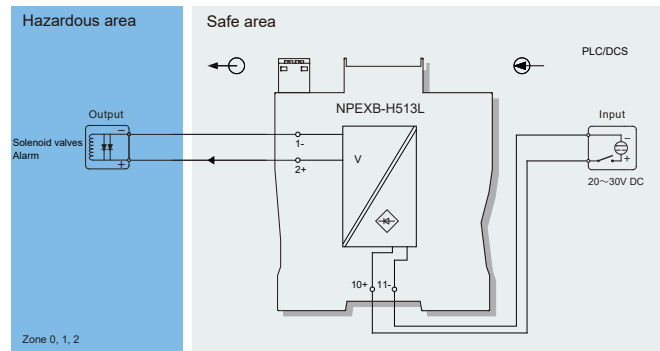


Output characteristics diagram



Response time:	< 20ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II B

Um: 250 V

Certified parameters (Terminals 1, 2):

Uo=25.2V, Io=190mA, Po=1190mW

II B: Co=0.82μF, Lo=3.9mH

II A: Co=2.9μF, Lo=10.4mH

Frequency Isolated Safety Barrier

NPEXA-H61P1 NPEXA-H611P1

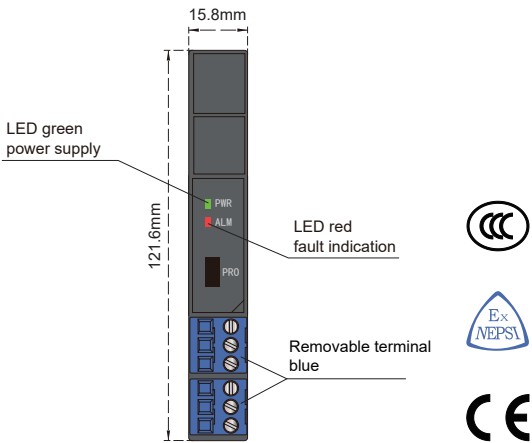
Single input, single output
Single input, double output

Input: Frequency
Output: 4 ~ 20 mA

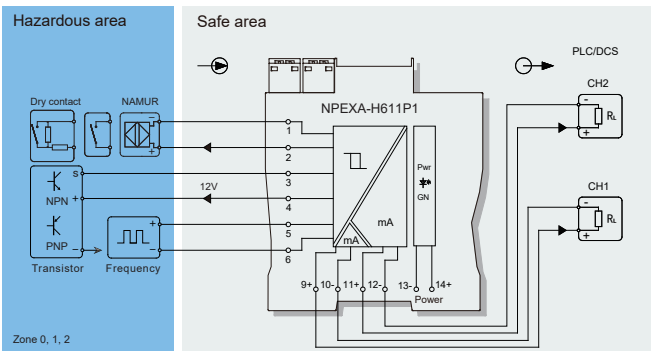
This isolated safety barrier converts the frequency signals from a hazardous area into current or voltage signals to a safe area by isolation. The input, output, and power supply are galvanically isolated from each other. A self-test feature is also available on this device. You can use PC or handheld programmer to modify parameters.

Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	0.8 W (24V DC, single output) 1.8 W (24V DC, double output)
Input signal:	Frequency Max. Input voltage: 30V Min. Input amplitude: 2V Frequency range: 0.1Hz~100kHz PNP/NPN Distribution voltage: 12V Current: ≤ 20mA Frequency range: 0.1Hz~10kHz NAMUR switch Distribution voltage: approx.8.2V Short-circuit current: approx.8mA Frequency range: 0.1Hz~10kHz
Output signal:	4 ~ 20 mA
Load resistance:	RL ≤ 500 Ω
Accuracy:	± 0.1%F.S.
Temperature drift:	≤ 0.01%F.S./°C
Response time:	≤ 500ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)
Fault states:	Input signal state indicator (red), it is remain bright when input over-range. it is flicker when input breakage.



Wiring diagram



Explosive-proof parameters

National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI)
Explosive-proof grade: [Ex ia Ga] II C
Um: 250 V
Certified parameters (Terminals 1, 2):
Uo=10.5V, Io=13mA, Po=35mW, Co=1.68μF, Lo=100mH
Certified parameters (Terminals 5, 6):
Uo=10.5V, Io=6mA, Po=16mW, Co=1.68μF, Lo=700mH
Certified parameters (Terminals 3, 4, 6):
Uo=15.8V, Io=107mA, Po=423mW, Co=0.478μF, Lo=1.8mH

Model rules

NPEXA-H61P1
The second output signal^{note1}
Default: null
The first output signal^{note1}

note1 : Output signal

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

NPEXA-H61P2

Single input, single output

NPEXA-H611P2

Single input, double output

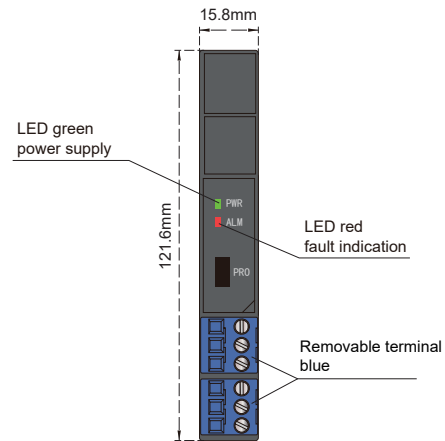
Input: Frequency

Output: 4 ~ 20 mA

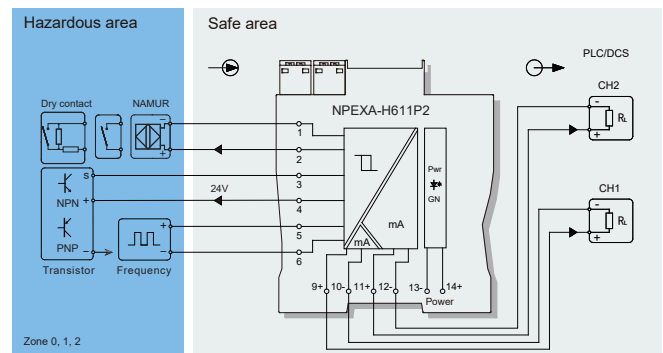
This isolated safety barrier converts the frequency signals from a hazardous area into current or voltage signals to a safe area by isolation. The input, output, and power supply are galvanically isolated from each other. A self-test feature is also available on this device. You can use PC or handheld programmer to modify parameters.

Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	0.8 W (24V DC, single output) 1.8 W (24V DC, double output)
Input signal:	Frequency Max. Input voltage: 30V Min. Input amplitude: 2V Frequency range: 0.1Hz~100kHz PNP/NPN Distribution voltage: 12V Current: ≤ 20mA Frequency range: 0.1Hz~10kHz NAMUR switch Distribution voltage: approx.8.2V Short-circuit current: approx.8mA Frequency range: 0.1Hz~10kHz
Output signal:	4 ~ 20 mA
Load resistance:	RL ≤ 500 Ω
Accuracy:	± 0.1%F.S.
Temperature drift:	≤ 0.01%F.S./°C
Response time:	≤ 500ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)
Fault states:	Input signal state indicator (red), it is remain bright when input over-range. it is flicker when input breakage.



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 2):

Uo=10.5V, Io=13mA, Po=35mW, Co=1.68μF, Lo=100mH

Certified parameters (Terminals 5, 6):

Uo=10.5V, Io=6mA, Po=16mW, Co=1.68μF, Lo=700mH

Certified parameters (Terminals 3, 4, 6):

Uo=28V, Io=93mA, Po=651mW, Co=0.08μF, Lo=4.2mH

Model rules

NPEXA-H61P2

The second output signal^{note1}

Default: null

The first output signal^{note1}

note1: Output signal

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

Frequency Isolated Safety Barrier

NPEXA-H61A1P1

Single input, double output

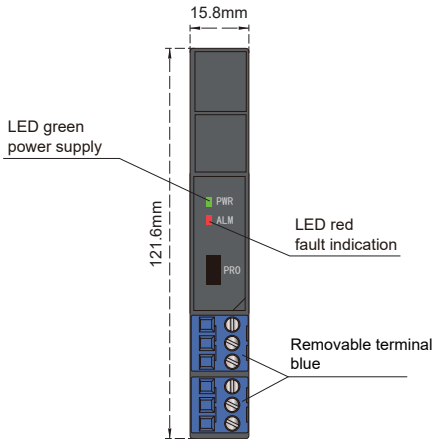
Input: Frequency

Output: 4 ~ 20 mA, relay

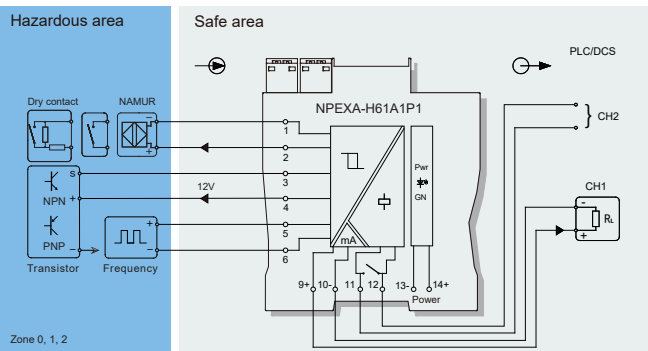
This isolated safety barrier converts the frequency signals from a hazardous area into current or voltage signals to a safe area by isolation, a relay alarm output. The input, output, and power supply are galvanically isolated from each other. A self-test feature is also available on this device. You can use PC or handheld programmer to modify parameters.

Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.8 W (24V DC, double output)
Input signal:	Frequency Max. Input voltage: 30V Min. Input amplitude: 2V Frequency range: 0.1Hz~100kHz PNP/NPN Distribution voltage: 12V Current: ≤ 20mA Frequency range: 0.1Hz~10kHz NAMUR switch Distribution voltage: approx.8.2V Short-circuit current: approx.8mA Frequency range: 0.1Hz~10kHz
Output signal:	Output1: 4 ~ 20 mA Output2: relay contact
Load capacity:	Output1: $R_L \leq 500 \Omega$ Output2: 0.5A/35V DC
Accuracy:	$\pm 0.1\%F.S.$
Temperature drift:	$\leq 0.01\%F.S./^{\circ}C$
Response time:	$\leq 500ms$
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	$\geq 2500 V AC$ (intrinsically safe side / non-intrinsically safe side) $\geq 500 V AC$ (Power supply side /non-intrinsically safe side)
Insulation resistance:	$\geq 100 M\Omega$ (Input /Output/Power supply)
Operation temperature:	$-20^{\circ}C \sim +60^{\circ}C$
Storage temperature:	$-40^{\circ}C \sim +80^{\circ}C$
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)
Fault states:	Input signal state indicator (red), it is remain bright when input over-range. it is flicker when input breakage.



Wiring diagram



Explosive-proof parameters

National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI)
Explosive-proof grade: [Ex ia Ga] II C
Um: 250 V
Certified parameters (Terminals 1, 2):
 $U_o=10.5V$, $I_o=13mA$, $P_o=35mW$, $C_o=1.68\mu F$, $L_o=100mH$
Certified parameters (Terminals 5, 6):
 $U_o=10.5V$, $I_o=6mA$, $P_o=16mW$, $C_o=1.68\mu F$, $L_o=700mH$
Certified parameters (Terminals 3, 4, 6):
 $U_o=15.8V$, $I_o=107mA$, $P_o=423mW$, $C_o=0.478\mu F$, $L_o=1.8mH$

Model rules

NPEXA-H61A1P1

The output signal^{note1}

note1: Output signal

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

NPEXA-H61A1P2

Single input, double output

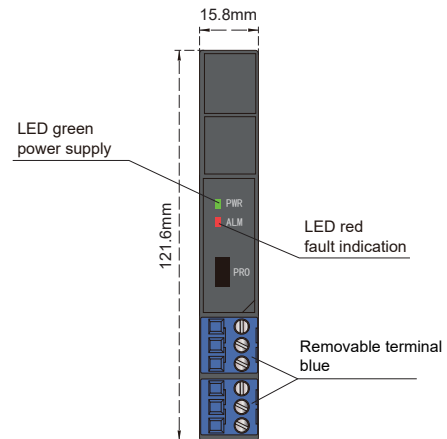
Input: Frequency

Output: 4 ~ 20 mA, relay

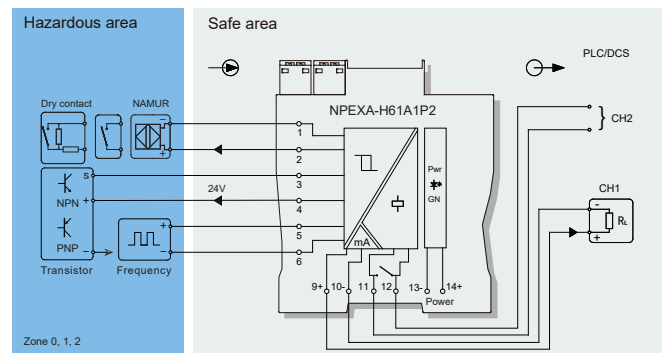
This isolated safety barrier converts the frequency signals from a hazardous area into current or voltage signals to a safe area by isolation, a relay alarm output. The input, output, and power supply are galvanically isolated from each other. A self-test feature is also available on this device. You can use PC or handheld programmer to modify parameters.

Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.8 W (24V DC, double output)
Input signal:	Frequency Max. Input voltage: 30V Min. Input amplitude: 2V Frequency range: 0.1Hz~100kHz PNP/NPN Distribution voltage: 12V Current: ≤ 20mA Frequency range: 0.1Hz~10kHz NAMUR switch Distribution voltage: approx.8.2V Short-circuit current: approx.8mA Frequency range: 0.1Hz~10kHz
Output signal:	Output1: 4 ~ 20 mA Output2: relay contact
Load capacity:	Output1: RL ≤ 500 Ω Output2: 0.5A/35V DC
Accuracy:	± 0.1%F.S.
Temperature drift:	≤ 0.01%F.S./°C
Response time:	≤ 500ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side) ≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)
Fault states:	Input signal state indicator (red), it is remain bright when input over-range. it is flicker when input breakage.



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 2):

Uo=10.5V, Io=13mA, Po=35mW, Co=1.68μF, Lo=100mH

Certified parameters (Terminals 5, 6):

Uo=10.5V, Io=6mA, Po=16mW, Co=1.68μF, Lo=700mH

Certified parameters (Terminals 3, 4, 6):

Uo=28V, Io=93mA, Po=651mW, Co=0.08μF, Lo=4.2mH

Model rules

NPEXA-H61A1P2

The output signal^{note1}

note1: Output signal

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

Frequency Isolated Safety Barrier

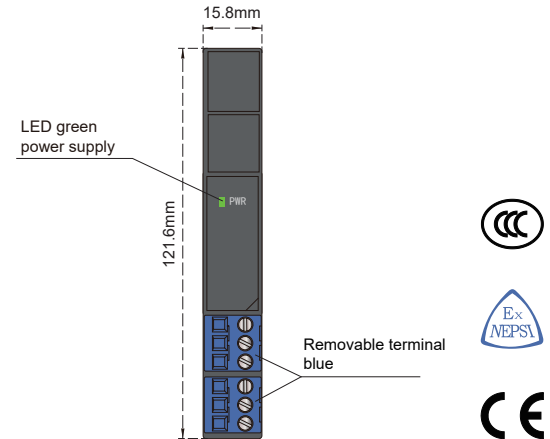
NPEXA-H67P1

Single input, single output

Input: Frequency

Output: 1:1

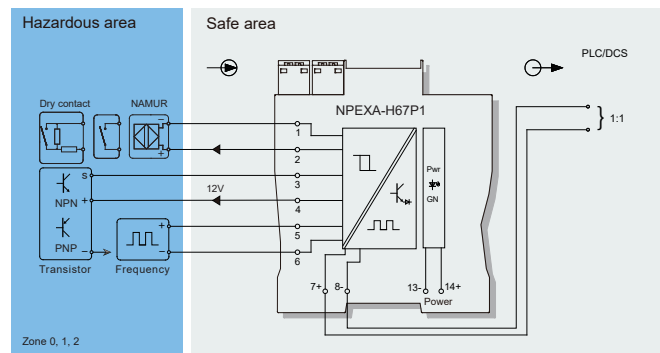
This isolated safety barrier converts the frequency signals from a hazardous area to a safe area by isolation. The input, output, and power supply are galvanically isolated from each other.



Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	0.8 W (24V DC, single output)
Input signal:	Frequency
	Max. Input voltage: 30V
	Min. Input amplitude: 2V
	Frequency range: 0.1Hz~100kHz
	Distribution voltage: 12V
	Current: ≤ 20mA
	Frequency range: 0.1Hz~10kHz
	Distribution voltage: approx.8.2V
	Short-circuit current: approx.8mA
	Frequency range: 0.1Hz~10kHz
Output signal:	Open collector
	High level: Vcc (≤ 30V)
	Low level: ≤ 2V
	drive current: ≤ 10mA
	Emitter follower
	High level: Vcc-2V
	Low level: ≤ 0.5V
	drive current: ≤ 10mA
	Logic level
	High level: 9V ≤ VH ≤ 12V
	Low level: VL ≤ 2V
	Load resistance: ≥ 1kΩ
Accuracy:	± 0.1%F.S.
Temperature drift:	≤ 0.01%F.S./°C
Response time:	≤ 500ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 2500 V AC (intrinsically safe side / non-intrinsically safe side)
	≥ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 2):

Uo=10.5V, Io=13mA, Po=35mW, Co=1.68μF, Lo=100mH

Certified parameters (Terminals 5, 6):

Uo=10.5V, Io=6mA, Po=16mW, Co=1.68μF, Lo=700mH

Certified parameters (Terminals 3, 4, 6):

Uo=15.8V, Io=107mA, Po=423mW, Co=0.478μF, Lo=1.8mH

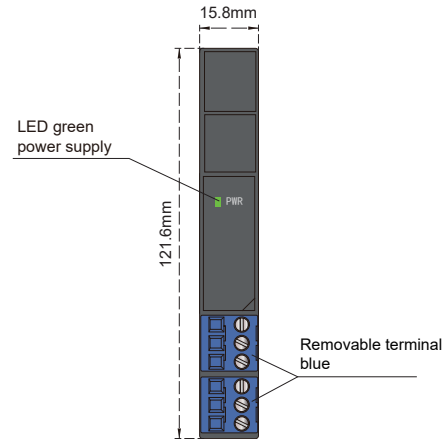
NPEXA-H67P2

Single input, single output

Input: Frequency

Output: 1:1

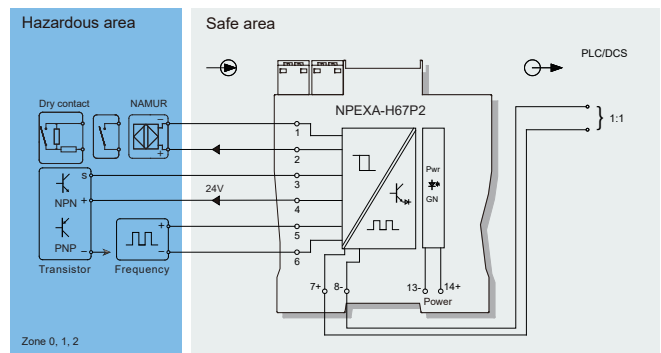
This isolated safety barrier converts the frequency signals from a hazardous area to a safe area by isolation. The input, output, and power supply are galvanically isolated from each other.



Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	0.8 W (24V DC, single output)
Input signal:	Frequency Max. Input voltage: 30V Min. Input amplitude: 2V Frequency range: 0.1Hz~100kHz PNP/NPN Distribution voltage: 24V Current: ≤ 20mA Frequency range: 0.1Hz~10kHz NAMUR switch Distribution voltage: approx.8.2V Short-circuit current: approx.8mA Frequency range: 0.1Hz~10kHz
Output signal:	Open collector High level: $V_{CC} (\leq 30V)$ Low level: $\leq 2V$ drive current: $\leq 10mA$ Emitter follower High level: $V_{CC}-2V$ Low level: $\leq 0.5V$ drive current: $\leq 10mA$ Logic level High level: $9V \leq V_H \leq 12V$ Low level: $V_L \leq 2V$ Load resistance: $\geq 1k\Omega$
Accuracy:	$\pm 0.1\%F.S.$
Temperature drift:	$\leq 0.01\%F.S./^{\circ}C$
Response time:	$\leq 500ms$
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	$\geq 2500 V AC$ (intrinsically safe side / non-intrinsically safe side) $\geq 500 V AC$ (Power supply side /non-intrinsically safe side)
Insulation resistance:	$\geq 100 M\Omega$ (Input /Output/Power supply)
Operation temperature:	$-20^{\circ}C \sim +60^{\circ}C$
Storage temperature:	$-40^{\circ}C \sim +80^{\circ}C$
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 2):

$U_o=10.5V$, $I_o=13mA$, $P_o=35mW$, $C_o=1.68\mu F$, $L_o=100mH$

Certified parameters (Terminals 5, 6):

$U_o=10.5V$, $I_o=6mA$, $P_o=16mW$, $C_o=1.68\mu F$, $L_o=700mH$

Certified parameters (Terminals 3, 4, 6):

$U_o=28V$, $I_o=93mA$, $P_o=651mW$, $C_o=0.08\mu F$, $L_o=4.2mH$

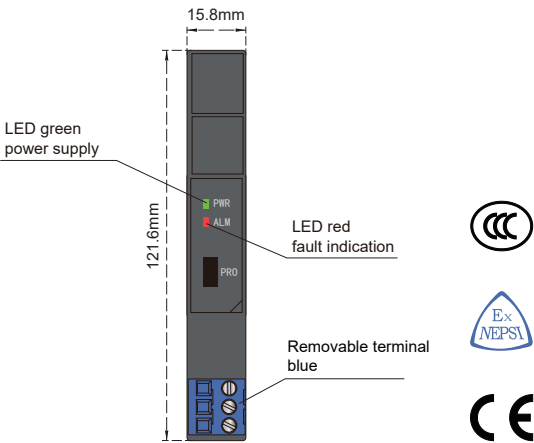
Potentiometer Isolated Safety Barrier

NPEXA-H911 single input, double output
Input: potentiometer
Output: 4 ~ 20 mA

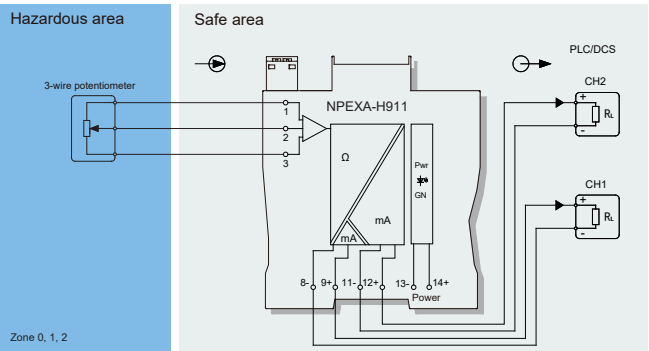
This isolated safety barrier converts the 3-wire potentiometer signals from a hazardous area into current signals to a safe area by isolation. The input, output, and power supply are galvanically isolated from each other. You can use handheld programmer to modify parameters or to calibrate the apparatus.

Technical data

- Power supply: 18 V DC~32 V DC (Reverse power protection)
Power dissipation: 1.5 W (24V DC, double output)
Input signal: 3-wire potentiometer: 0 Ω ~ 10 kΩ
Output signal: 4 ~ 20 mA
Load resistance: $R_L \leq 500 \Omega$
Accuracy: $\pm 0.1\% \text{F.S.}$
Temperature drift: $0.01\% \text{F.S./}^\circ\text{C}$
Response time: $\leq 1\text{ s}$
Electromagnetic compatibility: IEC 61326-3-1
Dielectric strength: $\geq 2500 \text{ V AC}$ (intrinsically safe side / non-intrinsically safe side)
 $\geq 500 \text{ V AC}$ (Power supply side /non-intrinsically safe side)
Insulation resistance: $\geq 100 \text{ M}\Omega$ (Input /Output/Power supply)
Operation temperature: $-20^\circ\text{C} \sim +60^\circ\text{C}$
Storage temperature: $-40^\circ\text{C} \sim +80^\circ\text{C}$
Dimension: 15.8 mm (W) × 121.6 mm (H) × 104.8 mm (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 0 mA, the maximum output value would not exceed 22 mA)



Wiring diagram



Explosive-proof parameters

National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI)
Explosive-proof grade: [Ex ia Ga] II C
Um: 250 V
Certified parameters (Terminals 1, 2, 3):
Uo=7.3V, Io=27mA, Po=50mW
II C: Co=12μF, Lo=28mH
II B: Co=151μF, Lo=84mH
II A: Co=700μF, Lo=224mH

Model rules

NPEXA-H911
The second output signal^{note1}
The first output signal^{note1}

note1: Output signal

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

NPEXA-H9D11

double input, double output

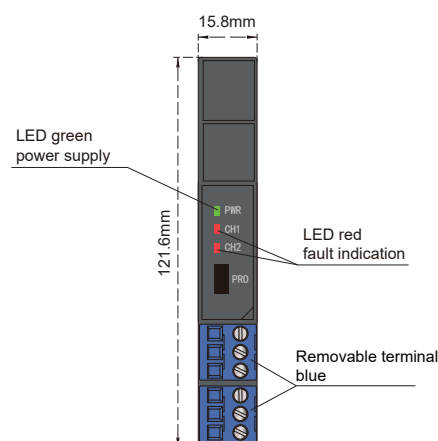
Input: potentiometer

Output: 4 ~ 20 mA

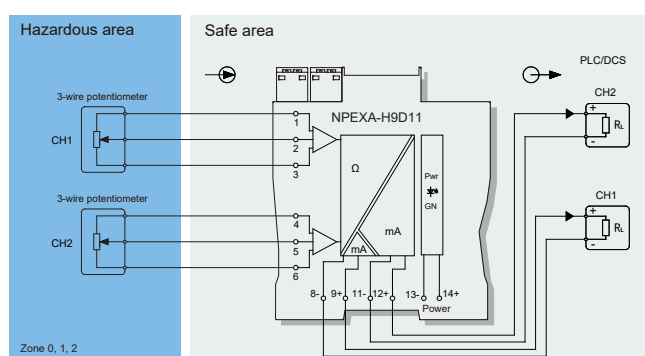
This isolated safety barrier converts the 3-wire potentiometer signals from a hazardous area into current signals to a safe area by isolation. The input, output, and power supply are galvanically isolated from each other. You can use handheld programmer to modify parameters or to calibrate the apparatus.

Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.5 W (24V DC, double output)
Input signal:	3-wire potentiometer: 0 Ω ~ 10 k Ω
Output signal:	4 ~ 20 mA
Load resistance:	RL $\leq$ 500 Ω
Accuracy:	$\pm$ 0.1%F.S.
Temperature drift:	0.01%F.S./ $^{\circ}$ C
Response time:	$\leq$ 1s
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	$\geq$ 2500 V AC (intrinsically safe side / non-intrinsically safe side) $\geq$ 500 V AC (Power supply side /non-intrinsically safe side)
Insulation resistance:	$\geq$ 100 M Ω (Input /Output/Power supply)
Operation temperature:	-20 $^{\circ}$ C ~ +60 $^{\circ}$ C
Storage temperature:	-40 $^{\circ}$ C ~ +80 $^{\circ}$ C
Dimension:	15.8 mm (W) $\times$ 121.6 mm (H) $\times$ 104.8 mm (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 0 mA, the maximum output value would not exceed 22 mA)



Wiring diagram



Explosive-proof parameters

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

Explosive-proof grade: [Ex ia Ga] II C

Um: 250 V

Certified parameters (Terminals 1, 2, 3; 4, 5, 6):

Uo=7.3V, Io=27mA, Po=50mW

II C: Co=12 μ F, Lo=28mH

II B: Co=151 μ F, Lo=84mH

II A: Co=700 μ F, Lo=224mH

Model rules

NPEXA-H9D11

The second output signal^{note1}
The first output signal^{note1}

note1: Output signal

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

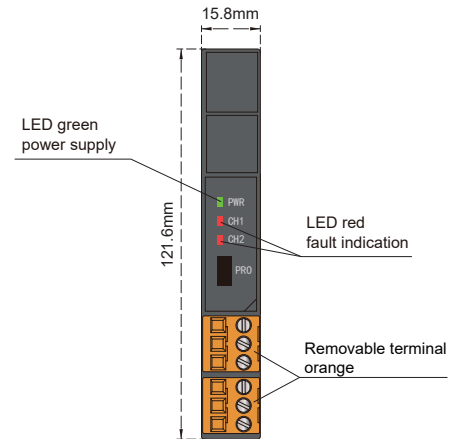
Temperature Transmitter

NPWD-H1D
NPWD-H11D
NPWD-HD11D

single input, single output
 single input, double output
 double input, double output

Input: TC or RTD
 Output: 4 ~ 20 mA

This temperature transmitter converts the thermocouple or thermal resistance signals to current or voltage signals. It has external cold junction compensation terminals. The input, output, and power supply are galvanically isolated from each other. A self-test feature is also available on this device. You can use PC or handheld programmer to modify parameters.



Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.0 W (24V DC, single output) 1.5 W (24V DC, double output)
Input signal:	K, E, S, B, J, T, R, N, etc Pt100, Cu100, Cu50, BA1, BA2, etc
Line resistance:	≤ 20 Ω per line (RTD)
Output signal:	0/4 ~ 20mA; 0 ~ 10mA 0/1 ~ 5V; 0 ~ 10V
Load resistance:	0/4 ~ 20mA: $R_L \leq 500\Omega$; 0 ~ 10mA: $R_L \leq 1k\Omega$ 0/1 ~ 5V: $R_L \geq 1M\Omega$; 0 ~ 10V: $R_L \geq 2M\Omega$
Compensation accuracy:	1°C (Temperature compensation range: -20°C ~ +60°C)
Temperature drift:	0.01%F.S./°C
Response time:	≤ 1s
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 1500 V AC (Input/Output) ≥ 500 V AC (Power supply/Output)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (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 0 mA, the maximum output value would not exceed 22 mA).

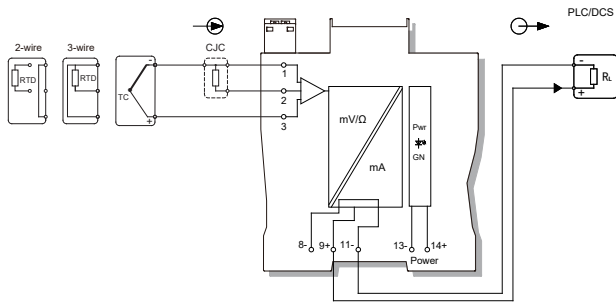
Range and Conversion accuracy list (25°C±2°C, not contain cold junction compensation):

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.

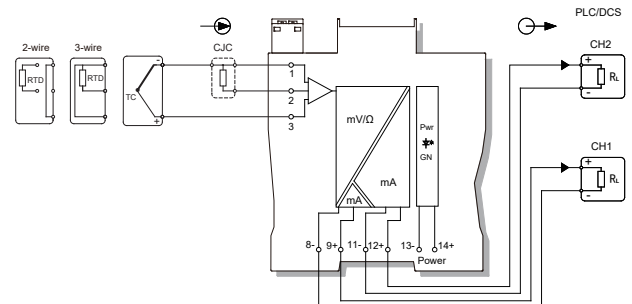
Model rules

Model					Description
NPWD-H	□	□	□	□	Temperature transmitter
Channel					Single as default
	D				Double channel
Output1	1				4~20mA
	2				1~5V
	3				0~10mA
	4				0~5V
	5				0~10V
	6				0~20mA
Output2					None as default
	1				4~20mA
	2				1~5V
	3				0~10mA
	4				0~5V
	5				0~10V
	6				0~20mA
Power supply		D			24V DC
Input signal					thermocouple or thermal resistance input
		.TC			thermocouple input
		.RTD			thermal resistance input

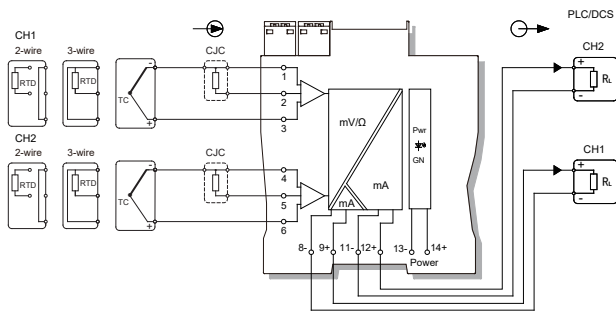
Wiring diagram



24V DC, single input, single current / voltage output



24V DC, single input, double current / voltage output

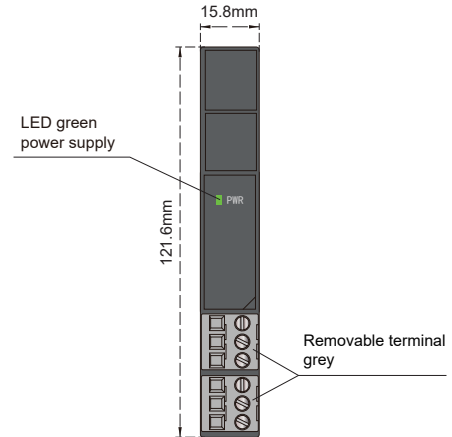


24V DC, double input, double current / voltage output

NPGL-HM11D single input, single output
NPGL-HM111D single input, double output
NPGL-HMD111D double input, double output

Input: 4 ~ 20 mA
 Output: 4 ~ 20 mA

This isolator converts the current or voltage signals to current or voltage signals. It allows transmission of HART communication signals. The input, output, and power supply are galvanically isolated from each other.



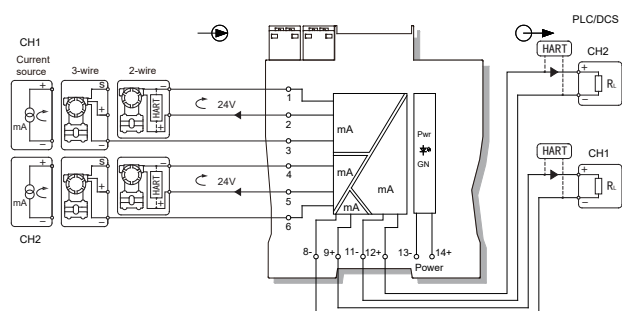
Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	≤ 1.3 W (24V DC, single input single output) ≤ 1.8 W (24V DC, single input double output) ≤ 2.5 W (24V DC, double input double output)
Input signal:	Current: 0/4 ~ 20mA; 0 ~ 10mA Voltage: 0/1 ~ 5V; 0 ~ 10V
Input resistance:	Current: approx. 50 Ω Voltage: ≥ 1MΩ
Available voltage:	open-circuit voltage: ≤ 27 V voltage: ≥ 22 V at 20 mA
Output signal:	Sink mode: 4 ~ 20mA Current: 0/4 ~ 20mA; 0 ~ 10mA Voltage: 0/1 ~ 5V; 0 ~ 10V
Load resistance:	Sink mode: $R_L \leq [(U-3)/0.02]\Omega$; U: Loop power supply 0/4 ~ 20mA: $R_L \leq 450\Omega$; 0 ~ 10mA: $R_L \leq 900\Omega$ 0/1 ~ 5V: $R_L \geq 1M\Omega$; 0 ~ 10V: $R_L \geq 2M\Omega$
Accuracy:	± 0.1%F.S.
Temperature drift:	0.005%F.S./°C
Response time:	≤ 2ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 1500 V AC (Input/Output) ≥ 500 V AC (Power supply/Output)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

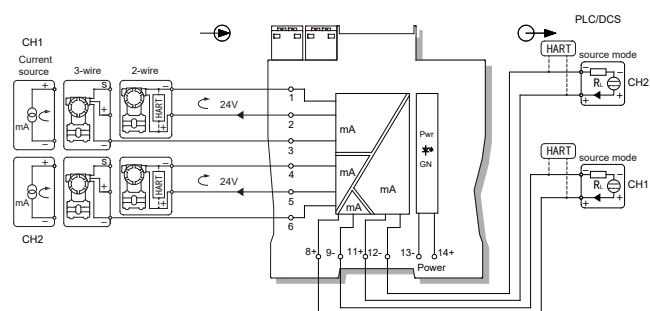
Model rules

Model					Description
NPWD-HM	□	□	□	□	Isolator
Channel					Single as default
	D				Double channel
Input	1				4~20mA
	2				1~5V
	3				0~10mA
	4				0~5V
	5				0~10V
	6				0~20mA
Output1	1				4~20mA
	1S				Output sink mode: 4~20mA
	2				1~5V
	3				0~10mA
	4				0~5V
	5				0~10V
Output2	6				0~20mA
					None as default
	1				4~20mA
	1S				Output sink mode: 4~20mA
	2				1~5V
	3				0~10mA
Power supply	4				0~5V
	5				0~10V
	6				0~20mA
	D				24V DC

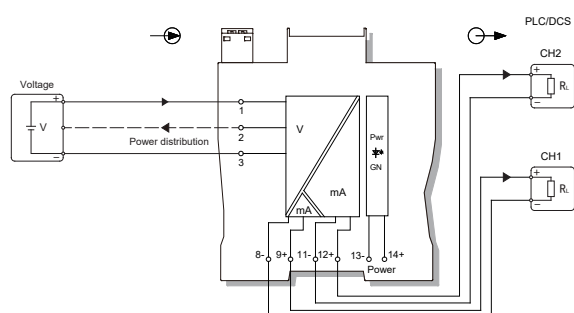
Wiring diagram



24V DC, double current input, double source current output



24V DC, double current input, double sink current output

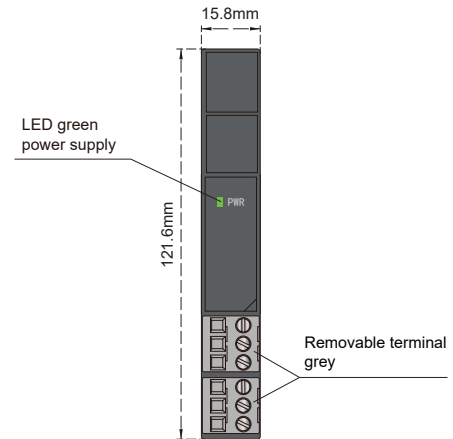


24V DC, single voltage input, double current / voltage output

NPGLB-HM11D single input, single output
NPGLB-HMD111D double input, double output

Input: 4 ~ 20 mA
 Output: 4 ~ 20 mA

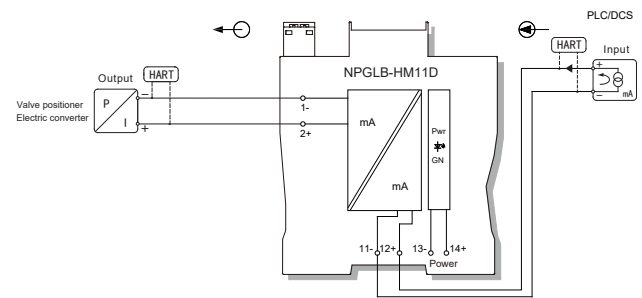
This isolator converts the current signals to current signals. It allows transmission of HART communication signals. The input, output, and power supply are galvanically isolated from each other.



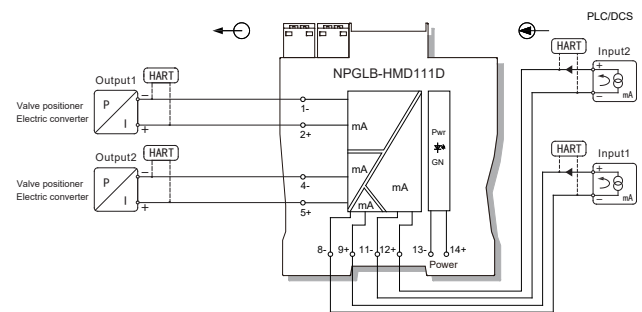
Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	< 1.5 W (24V DC, single input single output) < 2 W (24V DC, double input double output)
Input signal:	4 ~ 20mA, HART
Input voltage drop:	< 1.2V
Output signal:	4 ~ 20mA, HART
Load resistance:	$R_L \leq 800\Omega$
Accuracy:	$\pm 0.1\%F.S.$
Temperature drift:	0.005%F.S./°C
Response time:	$\leq 2ms$
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 1500 V AC (Input/Output) ≥ 500 V AC (Power supply/Output)
Insulation resistance:	≥ 100 M Ω (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

Wiring diagram



24V DC, single input, single output



24V DC, double input, double output

NPGLK-H11D

Single input, single output

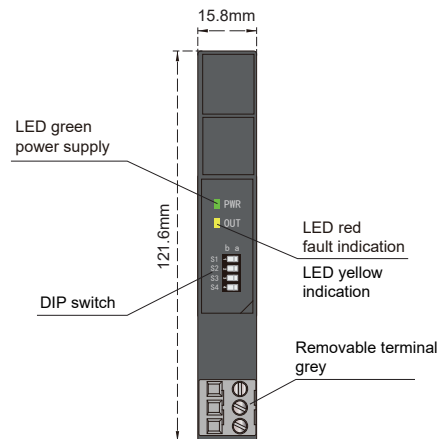
NPGLK-H111D

Single input, double output

Input: dry contact or proximity switch

Output: relay

This type of isolator converts the digital signals (dry contact or proximity switch) to relay contact. Operation mode, the second output function (as a relay output or a fault output) and the input circuit fault detection function can be set with the DIP switch on the front side. The input, output, and power supply are galvanically isolated from each other.



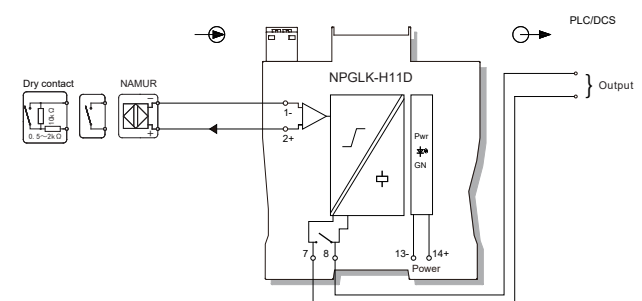
Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	≤ 1.0W
Input signal:	Dry contact or NAMUR
Switching trigger point:	Input signal>2.1mA, signal "1", the yellow LED is always bright Input signal<1.2mA, signal "0", the yellow LED goes out
Open-circuit voltage:	Approx. 8.2V
Short-circuit current:	Approx. 8mA
output signal:	Relay contact
Load capacity:	0.5A/35V DC
LFD function:	When input current≤80μA, considers the input line breakage, the output relay de-energized; If input current≥6mA, considers the input circuit short-circuit, the output relay de-energized, the red LED flashing.
Relay mechanical life:	>100000 switching cycles
Switch frequency:	< 10Hz
Energized/De-energized delay:	< 20ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 1500 V AC (Input/Output) ≥ 500 V AC (Power supply/Output)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

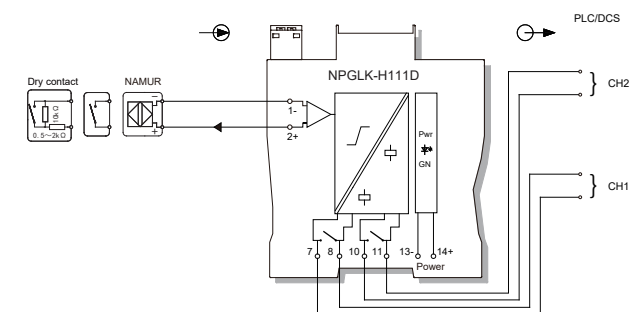
DIP switch settings

Switch	State	a	b
S1		Output1 normal mode	Output1 inverted mode
S2		LFD on	LFD off
S3		Output2 follow output1	Output2 as fault signal output
S4		Output2 relay energized if fault	Output2 relay de-energized if fault

Wiring diagram



24V DC, single input, single output



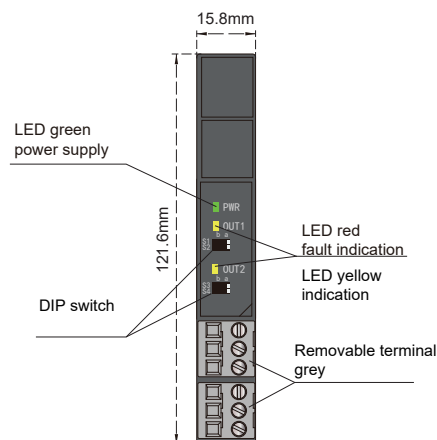
24V DC, double input, double output

NPGLK-HD111D double input, double output

Input: dry contact or proximity switch

Output: relay

This isolator converts the digital signals (dry contact or proximity switch) to relay signals. Operation mode, the input circuit fault detection function can be set with the DIP switch on the front side. The input, output, and power supply are galvanically isolated from each other.



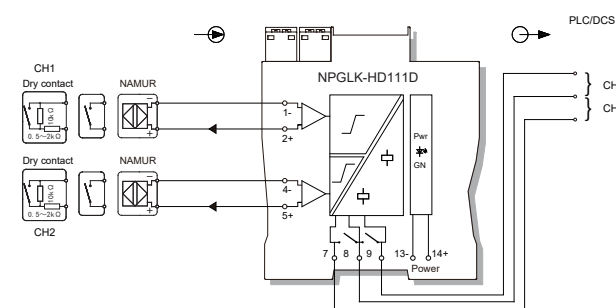
Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	≤ 1.0W
Input signal:	Dry contact or NAMUR
Switching trigger point:	Input signal>2.1mA, signal "1", the yellow LED is always bright Input signal<1.2mA, signal "0", the yellow LED goes out
Open-circuit voltage:	Approx. 8.2V
Short-circuit current:	Approx. 8mA
output signal:	Relay contact
Load capacity:	0.5A/35V DC
LFD function:	When input current≤80μA, considers the input line breakage, the output relay de-energized; If input current≥6mA, considers the input circuit short-circuit, the output relay de-energized, the red LED flashing.
Relay mechanical life:	>100000 switching cycles
Switch frequency:	< 10Hz
Energized/De-energized delay:	< 20ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 1500 V AC (Input/Output) ≥ 500 V AC (Power supply/Output)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)

DIP switch settings

Switch	State	a	b
S1		Output1 normal mode	Output1 inverted mode
S2		Output1 LFD on	Output1 LFD off
S3		Output2 normal mode	Output2 inverted mode
S4		Output2 LFD on	Output2 LFD off

Wiring diagram



24V DC, double input, double output

NPFC-H1D

Single input, single output

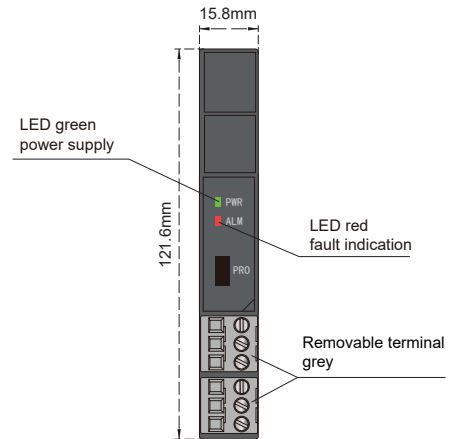
NPFC-H11D

Single input, double output

Input: Frequency

Output: 4 ~ 20 mA

This frequency transmitter converts the frequency signals to current or voltage signals. The input, output, and power supply are galvanically isolated from each other. A self-test feature is also available on this device. You can use PC or handheld programmer to modify parameters.



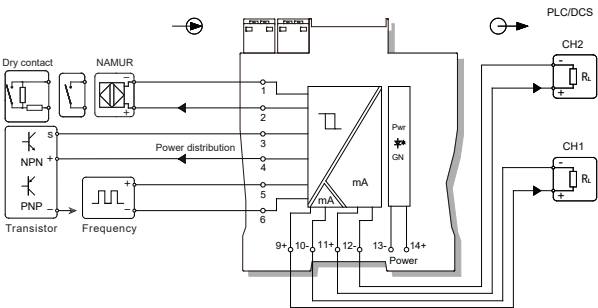
Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	0.8 W (24V DC, single output) 1.8 W (24V DC, double output)
Input signal:	Frequency Max. Input voltage: 30V_{pp} Min. Input amplitude: 2V Frequency range: 0.1Hz~100kHz PNP/NPN Distribution voltage: 12V or 24V Current: ≤ 20mA Frequency range: 0.1Hz~10kHz NAMUR switch Distribution voltage: approx.8.2V Short-circuit current: approx.8mA Frequency range: 0.1Hz~10kHz
Output signal:	Current: 0/4 ~ 20mA; 0 ~ 10mA Voltage: 0/1 ~ 5V; 0 ~ 10V relay contact
Load resistance:	0/4 ~ 20mA: R_L ≤ 500Ω; 0 ~ 10mA: R_L ≤ 1kΩ 0/1 ~ 5V: R_L ≥ 1MΩ; 0 ~ 10V: R_L ≥ 2MΩ relay contact: 0.5A/35V DC
Accuracy:	± 0.1%F.S.
Temperature drift:	≤ 0.01%F.S./°C
Response time:	≤ 500ms
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 1500 V AC (Input/Output) ≥ 500 V AC (Power supply/Output)
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)
Fault states:	Input signal state indicator (red), it is remain bright when input over-range. it is flicker when input breakage.

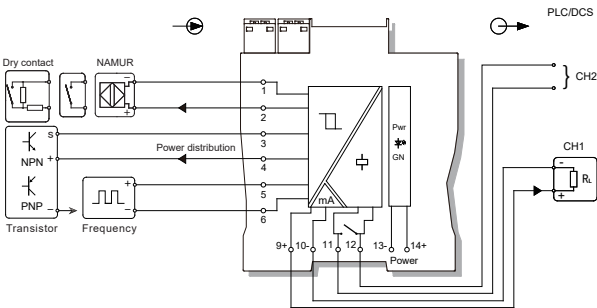
Model rules

Model			Description
NPFC-H	□	□	Frequency transmitter
Output1	1		4~20mA
	2		1~5V
	3		0~10mA
	4		0~5V
	5		0~10V
	6		0~20mA
Output2			None as default
	1		4~20mA
	2		1~5V
	3		0~10mA
	4		0~5V
	5		0~10V
	6		0~20mA
	A		relay contact output
Power supply			D 24V DC

Wiring diagram



24V DC, single input, double current / voltage output



24V DC, single input, single current and single relay contact output

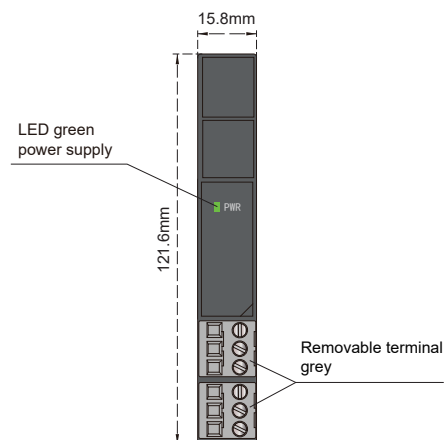
NPFR-H1D

Single input, single output

Input: Frequency

Output: 1:1

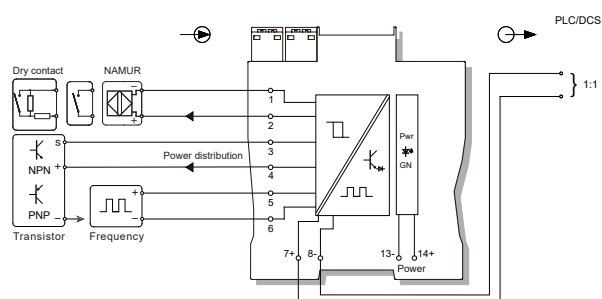
This pulse isolator converts the frequency signals to 1:1 frequency signals. The input, output, and power supply are galvanically isolated from each other.



Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)		
Power dissipation:	0.8 W (24V DC, single output)		
Input signal:	Frequency	Max. Input voltage: 30V _{pp} Min. Input amplitude: 2V Frequency range: 0.1Hz~100kHz	
	PNP/NPN	Distribution voltage: 24V Current: ≤ 20mA Frequency range: 0.1Hz~10kHz	
	NAMUR switch	Distribution voltage: approx.8.2V Short-circuit current: approx.8mA Frequency range: 0.1Hz~10kHz	
	Open collector	High level: Vcc (≤ 30V) Low level: ≤ 2V drive current: ≤ 10mA	
		Emitter follower	High level: Vcc-2V Low level: ≤ 0.5V drive current: ≤ 10mA
			Logic level
	Accuracy:	± 0.1%F.S.	
	Temperature drift:	≤ 0.01%F.S./°C	
	Response time:	≤ 500ms	
	Electromagnetic compatibility:	IEC 61326-3-1	
Dielectric strength:	≥ 1500 V AC (Input/Output) ≥ 500 V AC (Power supply/Output)		
Insulation resistance:	≥ 100 MΩ (Input /Output/Power supply)		
Operation temperature:	-20°C ~ +60°C		
Storage temperature:	-40°C ~ +80°C		
Dimension:	15.8 mm (W) × 121.6 mm (H) × 104.8 mm (D)		

Wiring diagram

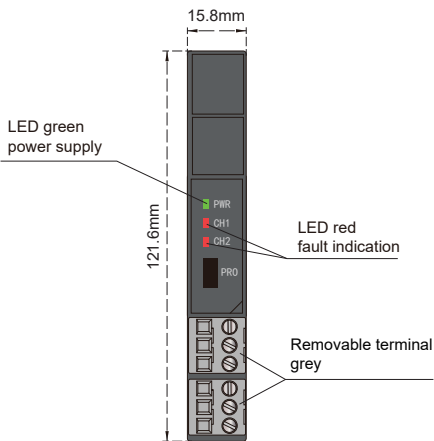


24V DC, single input, single 1:1 output

Potentiometer Transmitter

NPPT-H1D	single input, single output
NPPT-H11D	single input, double output
NPPT-HD11D	double input, double output
Input: potentiometer	
Output: 4 ~ 20 mA	

This potentiometer transmitter converts the 3-wire potentiometer signals to current or voltage signals. The input, output, and power supply are galvanically isolated from each other. You can use handheld programmer to modify parameters or to calibrate the apparatus.



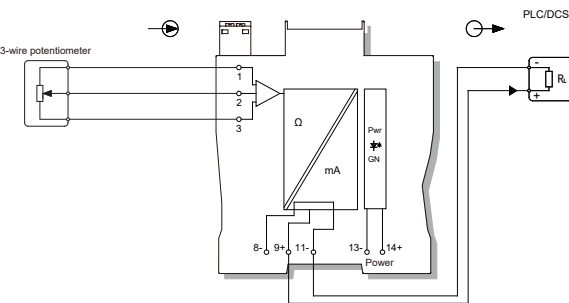
Technical data

Power supply:	18 V DC~32 V DC (Reverse power protection)
Power dissipation:	1.0 W (24V DC, single output) 1.5 W (24V DC, double output)
Input signal:	3-wire potentiometer: 0 Ω ~ 10 k Ω
Output signal:	Current: 0/4 ~ 20mA; 0 ~ 10mA Voltage: 0/1 ~ 5V; 0 ~ 10V
Load resistance:	0/4 ~ 20mA: $R_L \leq 500\Omega$; 0 ~ 10mA: $R_L \leq 1k\Omega$ 0/1 ~ 5V: $R_L \geq 1M\Omega$; 0 ~ 10V: $R_L \geq 2M\Omega$
Accuracy:	$\pm 0.1\%$ F.S.
Temperature drift:	0.01%F.S./ $^{\circ}C$
Response time:	$\leq 1s$
Electromagnetic compatibility:	IEC 61326-3-1
Dielectric strength:	≥ 1500 V AC (Input/Output) ≥ 500 V AC (Power supply/Output)
Insulation resistance:	≥ 100 M Ω (Input /Output/Power supply)
Operation temperature:	-20 $^{\circ}C$ ~ +60 $^{\circ}C$
Storage temperature:	-40 $^{\circ}C$ ~ +80 $^{\circ}C$
Dimension:	15.8 mm (W) $\times$ 121.6 mm (H) $\times$ 104.8 mm (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 0 mA, the maximum output value would not exceed 22 mA)

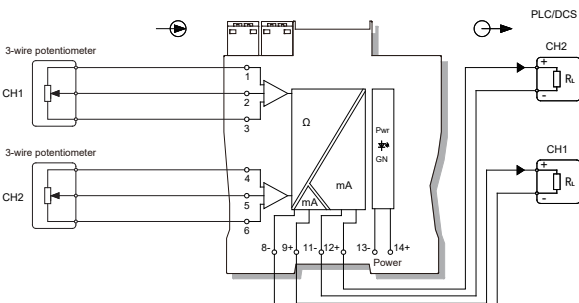
Model rules

Model				Description
NPPT-H	☐	☐	☐	Potentiometer transmitter
Channel	☐	☐	☐	Single as default
	D	☐	☐	Double channel
Output1	1	☐	☐	4~20mA
	2	☐	☐	1~5V
	3	☐	☐	0~10mA
	4	☐	☐	0~5V
	5	☐	☐	0~10V
	6	☐	☐	0~20mA
Output2		☐	☐	None as default
	1	☐	☐	4~20mA
	2	☐	☐	1~5V
	3	☐	☐	0~10mA
	4	☐	☐	0~5V
	5	☐	☐	0~10V
	6	☐	☐	0~20mA
Power supply				D 24V DC

Wiring diagram



24V DC, single input, single current / voltage output



24V DC, double input, double current / voltage output

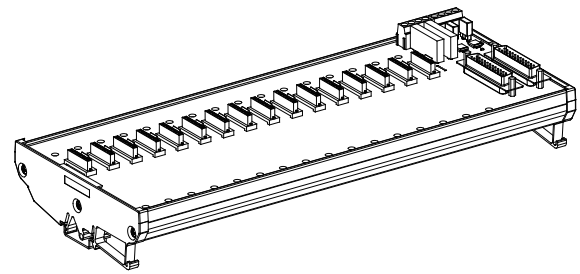
NPDB series backplane

8/16pcs installation
Redundant power supply
De-energized alarm output

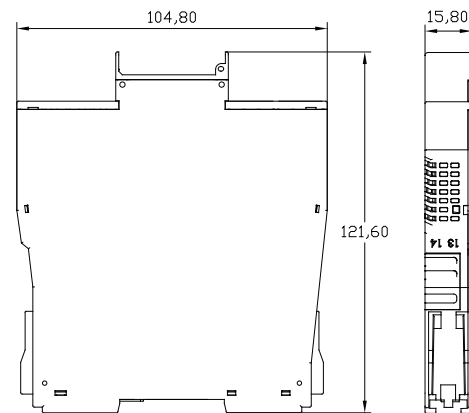
This backplane can be interfaced with all kinds of DCS systems and has fast connection design. It support for multiple channel signal transmission, the backplane integrated redundant power supplies and has a fault alarm output function.

Technical data

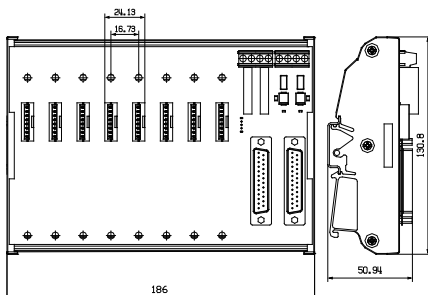
Power supply:	18 V DC~32 V DC (redundant power supply)
Rated current:	2A
Fault output:	relay contact
Output state:	NC (energized), NO (de-energized)
Interface:	DB25, DB37, etc.
Pin out	Refer to pin-out table
Operation temperature:	-20°C ~ +60°C
Storage temperature:	-40°C ~ +80°C
Dimension:	8pcs: 186 mm (W) × 130mm (H) × 51 mm (D) 16pcs: 319 mm (W) × 130mm (H) × 51 mm (D)
Installtion:	DIN rail



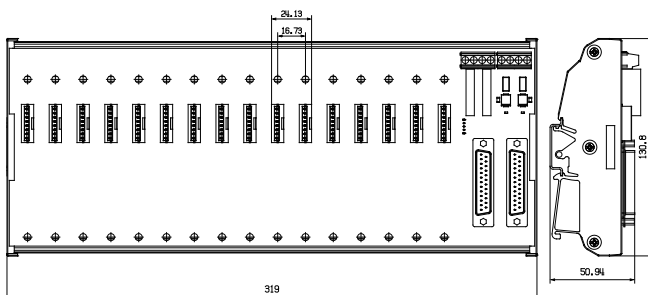
Module dimensions



Backplane dimensions

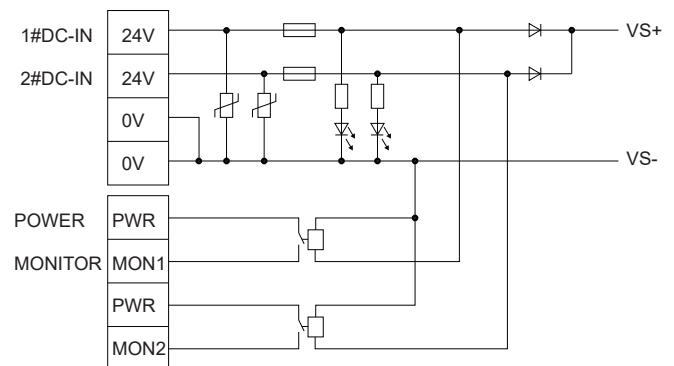


8pcs: 186 mm (W) × 130mm (H) × 51 mm (D)



8pcs: 319 mm (W) × 130mm (H) × 51 mm (D)

Schematic diagram



Describe

1#DC-IN	Supply+(24V)	Supply 1+
2#DC-IN	Supply+(24V)	Supply 2+
0V	Supply-(0V)	Supply 1-
0V	Supply-(0V)	Supply 2-
POWER MONITOR	Two relay fault alarm outputs	Energized, NC De-energized, NO

Backplane model

Standard backplanes models			
Backplane model no.	Number of modules	Product model no.	Cable model no.
NPDB-8/16AIAO-M	8pcs	NPEXA-H0D11、NPEXA-H1D11、NPEXA-H2D11、NPEXA-HM3D11、NPEXB-HM3D11、NPWD-HD11D、NPWD-HD11D.TC、NPWD-HD11D.RTD、NPGL-HMD111D、NPGLB-HMD111D	NPXL-8/16AI-M-XXX/XXXX、NPXL-8/16AO-M-XXX/XXXX
NPDB-8/8AIAO-M	8pcs	NPEXA-H01、NPEXA-H11、NPEXA-H21、NPEXA-HM31、NPEXB-HM31、NPWD-H1D、NPWD-H1D.TC、NPWD-H1D.RTD、NPGL-HM11D、NPGLB-HM11D	NPXL-8/8AI-M-XXX/XXXX、NPXL-8/8AO-M-XXX/XXXX
NPDB-16/16AIAO-M	16pcs		NPXL-16/16AI-M-XXX/XXXX、NPXL-16/16AO-M-XXX/XXXX
NPDB-8/16DI-M	8pcs	NPEXA-H5D111、NPGLK-HD111D	NPXL-8/16DI-M-XXX/XXXX
NPDB-16/32DI-M	16pcs		NPXL-16/32DI-M-XXX/XXXX
NPDB-16/16DI-M	16pcs	NPEXA-H511、NPEXA-H5111、NPGLK-H11D、NPGLK-H111D	NPXL-16/16DI-M-XXX/XXXX
NPDB-16/16DO-M	16pcs	NPEXB-H511L、NPEXB-H512L、NPEXB-H513L	NPXL-16/16DO-M-XXX/XXXX

Custom backplanes models			
Backplane model no.	Number of modules	Product model no.	Cable model no.
NPDB-8/16AI-XX	8pcs	NPEXA-H0D11、NPEXA-H1D11、NPEXA-H2D11、NPEXA-HM3D11 NPWD-HD11D、NPWD-HD11D.TC、NPWD-HD11D.RTD、NPGL-HMD111D	Custom cable
NPDB-8/16AO-XX	8pcs	NPEXB-HM3D11、NPGLB-HMD111D	
NPDB-8/8AIAO-XX	8pcs	NPEXA-H01、NPEXA-H11、NPEXA-H21、NPEXA-HM31、NPEXB-HM31、	
NPDB-16/16AIAO-XX	16pcs	NPWD-H1D、NPWD-H1D.TC、NPWD-H1D.RTD、NPGL-HM11D、NPGLB-HM11D	
NPDB-8/16DI-XX	8pcs	NPEXA-H5D111、NPGLK-HD111D	
NPDB-16/32DI-XX	16pcs		
NPDB-16/16DI-XX	16pcs	NPEXA-H511、NPEXA-H5111、NPGLK-H11D、NPGLK-H111D	
NPDB-16/16DO-XX	16pcs	NPEXB-H511L、NPEXB-H512L、NPEXB-H513L	

Backplane model rules

Model								Description
NPDB -	□	/	□	□	□	-	□	Backplane
Number of modules	8							8pcs
	16							16pcs
Channel	8							8channel
	16							16channel
	32							32channel
Input signal	AI							Analog input
	AO							Analog output
	DI							Digital input
	DO							Digital output
	AIAO							Analog input/output
	DIDO							Digital input/output
HART interface								None as default
		H						HART interface
System vendors								M Standard
								HW Honeywell
								YK Yokogawa
								SU Supcon
								HLS HollySys
								SND Schneider

Cable model rules

Model										Description
NPXL -	□	/	□	□	□	-	□	-	□	/□ Cable
Number of modules	8									8pcs
	16									16pcs
Channel	8									8channel
	16									16channel
	32									32channel
Signal type	AI									Analog input
	AO									Analog output
	DI									Digital input
	DO									Digital output
	H									HART signal
	AIAO									Analog input/output
	DIDO									Digital input/output
System vendors							M			Standard
							HW			Honeywell
							YK			Yokogawa
							SU			Supcon
							HLS			HollySys
							SND			Schneider
Cable length										010 1.0m
										015 1.5m
										020 2.0m
										025 2.5m
Custom code										Custom cable