

# Frequency Isolated Barrier

## NPEXA-C61P2

Single input, single output

## NPEXA-C611P2

Single input, double outputs

Input: frequency

Output: 4 ~ 20 mA

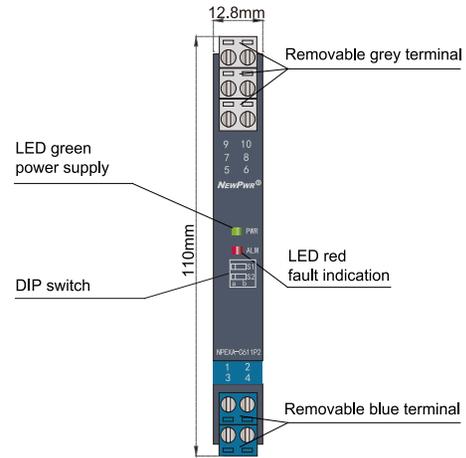
Frequency input isolated barrier, it converts the frequency signals from a hazardous area into 4~20mA signals to a safe area by isolation. The input, output, and power supply are galvanically isolated from each other. Calibrate the apparatus or modify parameters by using a handheld programmer.

### Parameters

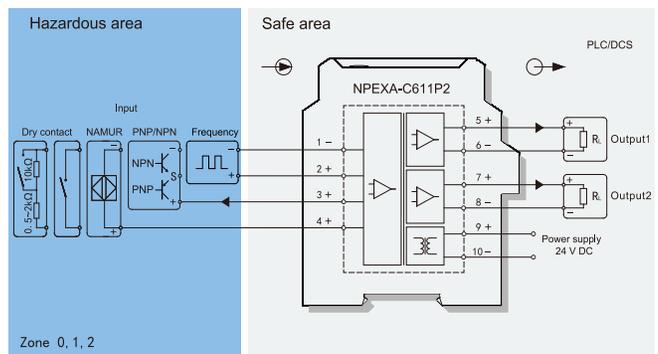
|                                |  |           |  |         |  |              |  |
|--------------------------------|--|-----------|--|---------|--|--------------|--|
| Power supply:                  | 18V DC ~ 60V DC (Reverse power protection)   |           |  |         |  |              |  |
| Power dissipation:             | 1.6W (single output)<br>2W (double outputs)  |           |  |         |  |              |  |
| Input signal:                  | <table border="0"> <tr> <td>Frequency</td> <td>                     Min. Input amplitude: <math>1V_{p-p}</math><br/>                     Max. Input voltage: <math>30V_{p-p}</math><br/>                     Frequency range: 0Hz~100kHz<br/>                     Pulse width: <math>\geq 5\mu s</math> </td> </tr> <tr> <td>PNP/NPN</td> <td>                     Distribution voltage: 24V<br/>                     Current: <math>\leq 20mA</math><br/>                     Frequency range: 0Hz~100kHz                 </td> </tr> <tr> <td>NAMUR switch</td> <td>                     Distribution voltage: approx.8.2V<br/>                     Short-circuit current: approx.8mA<br/>                     Frequency range: 0Hz~10kHz                 </td> </tr> </table> | Frequency | Min. Input amplitude: $1V_{p-p}$<br>Max. Input voltage: $30V_{p-p}$<br>Frequency range: 0Hz~100kHz<br>Pulse width: $\geq 5\mu s$ | PNP/NPN | Distribution voltage: 24V<br>Current: $\leq 20mA$<br>Frequency range: 0Hz~100kHz | NAMUR switch | Distribution voltage: approx.8.2V<br>Short-circuit current: approx.8mA<br>Frequency range: 0Hz~10kHz |
| Frequency                      | Min. Input amplitude: $1V_{p-p}$<br>Max. Input voltage: $30V_{p-p}$<br>Frequency range: 0Hz~100kHz<br>Pulse width: $\geq 5\mu s$   |           |  |         |  |              |  |
| PNP/NPN                        | Distribution voltage: 24V<br>Current: $\leq 20mA$<br>Frequency range: 0Hz~100kHz   |           |  |         |  |              |  |
| NAMUR switch                   | Distribution voltage: approx.8.2V<br>Short-circuit current: approx.8mA<br>Frequency range: 0Hz~10kHz   |           |  |         |  |              |  |
| Resolution ratio:              | Input frequency < 1kHz: 0.01Hz<br>1kHz $\leq$ Input frequency < 10kHz: 0.1Hz<br>Input frequency $\geq$ 10kHz: 1Hz  |           |  |         |  |              |  |
| Distribution voltage:          | 24V DC, $\geq 16V$ at 20mA   |           |  |         |  |              |  |
| Output signal:                 | 4 ~ 20mA   |           |  |         |  |              |  |
| Load resistance:               | $R_L \leq 550\Omega$   |           |  |         |  |              |  |
| Accuracy:                      | 0.1%F.S.   |           |  |         |  |              |  |
| Temperature drift:             | 30ppm/ $^{\circ}C$   |           |  |         |  |              |  |
| Response time:                 | $\leq 500ms$   |           |  |         |  |              |  |
| Electromagnetic compatibility: | IEC 61326-3-1  |           |  |         |  |              |  |
| Dielectric strength:           | $\geq 3000V$ AC (intrinsically safe side / non-intrinsically safe side)<br>$\geq 1500V$ AC (Power supply/non-intrinsically safe side)  |           |  |         |  |              |  |
| Insulation resistance:         | $\geq 100M\Omega$ (Input /Output/Power supply)   |           |  |         |  |              |  |
| Operation temperature:         | $-20^{\circ}C \sim +60^{\circ}C$   |           |  |         |  |              |  |
| Storage temperature:           | $-40^{\circ}C \sim +80^{\circ}C$   |           |  |         |  |              |  |
| Dimension:                     | 12.8mm (W) $\times$ 110mm (H) $\times$ 117mm (D)   |           |  |         |  |              |  |
| Fault states:                  | Input signal state indicator (red), it is remain bright when input over-range. it is flicker when input breakage.  |           |  |         |  |              |  |

#### DIP switch settings

| DIP switch S1 | DIP switch S2 | Input signal |
|---------------|---------------|--------------|
| a             | a             | Frequency    |
| a             | b             | NPN          |
| b             | a             | PNP          |
| b             | b             | NAMUR switch |



### Wiring diagram



### Explosive-proof parameters

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

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

Um: 250V

Certified parameters (Terminals 1, 2/4):

Uo=10.5V, Io=11.4mA, Po=30mW

IIC: Co=2.3 $\mu$ F, Lo=100mH

IIIC(IIB): Co=16.6 $\mu$ F, Lo=999mH

Certified parameters (Terminals 1, 3):

Uo=27.3V, Io=92mA, Po=628mW

IIC: Co=0.08 $\mu$ F, Lo=4mH

IIIC(IIB): Co=0.68 $\mu$ F, Lo=12.6mH

### Model rules

NPEXA-C6   P2

PB: BUS powered  
 Default: Terminals powered  
 The second output signal<sup>note1</sup>  
 Default: null  
 The first output signal<sup>note1</sup>

note1: output signal

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