

# PTRVB 4-FI /BU - Potential distributors



3270221

<https://www.phoenixcontact.com/us/products/3270221>

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Potential distributors, with option to supply up to 6 mm<sup>2</sup>, nom. voltage: 250 V, nominal current: 17.5 A, connection method: Push-in connection, Rated cross section: 1.5 mm<sup>2</sup>, cross section: 0.14 mm<sup>2</sup> - 2.5 mm<sup>2</sup>, Feed-in stage, Rated cross section: 4 mm<sup>2</sup>, cross section: 0.2 mm<sup>2</sup> - 6 mm<sup>2</sup>, mounting: NS 35/7,5, NS 35/15, color: gray, color of connection elements: blue

## Your advantages

- High contact quality thanks to push-in technology as a replacement for Wire-Wrap®, TERMI-POINT®, etc.
- Tool-free wiring in a confined space thanks to compact size
- Distributor terminal block in blue for 24 V DC power supplies
- Bridgeable potential distributor with option to supply up to 6 mm<sup>2</sup>

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 3270221       |
| Packing unit                         | 10 pc         |
| Minimum order quantity               | 10 pc         |
| Sales key                            | BE62          |
| Product key                          | BE6211        |
| GTIN                                 | 4055626186375 |
| Weight per piece (including packing) | 20.5 g        |
| Weight per piece (excluding packing) | 20.57 g       |
| Customs tariff number                | 85369010      |
| Country of origin                    | PL            |

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## Technical data

### Product properties

|                       |                       |
|-----------------------|-----------------------|
| Product type          | Potential distributor |
| Number of positions   | 2                     |
| Number of connections | 13                    |
| Number of rows        | 4                     |
| Potentials            | 1                     |

### Insulation characteristics

|                      |     |
|----------------------|-----|
| Overvoltage category | III |
|----------------------|-----|

### Electrical properties

|                                                 |        |
|-------------------------------------------------|--------|
| Rated surge voltage                             | 4 kV   |
| Maximum power dissipation for nominal condition | 0.56 W |

### Connection data

|                                 |                     |
|---------------------------------|---------------------|
| Service Entrance                | yes                 |
| Number of connections per level | 4                   |
| Nominal cross section           | 1.5 mm <sup>2</sup> |

### Level 1+2+3 above 1

|                                                                   |                                                                     |
|-------------------------------------------------------------------|---------------------------------------------------------------------|
| Connection method                                                 | Push-in connection                                                  |
| Stripping length                                                  | 8 mm ... 10 mm                                                      |
| Connection in acc. with standard                                  | IEC 60947-7-1                                                       |
| Conductor cross-section rigid                                     | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>                        |
| Cross section AWG                                                 | 26 ... 14 (converted acc. to IEC)                                   |
| Conductor cross-section flexible                                  | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>                        |
| Conductor cross-section, flexible [AWG]                           | 26 ... 16 (converted acc. to IEC)                                   |
| Conductor cross-section flexible (ferrule without plastic sleeve) | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>                        |
| Flexible conductor cross-section (ferrule with plastic sleeve)    | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>                        |
| Nominal cross section                                             | 1.5 mm <sup>2</sup>                                                 |
| Nominal current                                                   | 17.5 A (with 1.5 mm <sup>2</sup> conductor cross-section)           |
| Maximum load current                                              | 24 A (per chamber with 2.5 mm <sup>2</sup> conductor cross-section) |
| Maximum total current                                             | 37 A (per potential distributor)                                    |
| Nominal voltage                                                   | 250 V                                                               |

### Feed-in stage

|                                  |                                                                                                             |
|----------------------------------|-------------------------------------------------------------------------------------------------------------|
| Note                             | Only the "CRIMPFOX 6" crimping pliers may be used for crimping with 6 mm <sup>2</sup> stranded and ferrule. |
| Stripping length                 | 10 mm ... 12 mm                                                                                             |
| Connection in acc. with standard | IEC 60947-7-1                                                                                               |
| Conductor cross-section rigid    | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>                                                                   |
| Cross section AWG                | 24 ... 10 (converted acc. to IEC)                                                                           |
| Conductor cross-section flexible | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>                                                                   |

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|                                                                   |                                                              |
|-------------------------------------------------------------------|--------------------------------------------------------------|
| Conductor cross-section, flexible [AWG]                           | 24 ... 10 (converted acc. to IEC)                            |
| Conductor cross-section flexible (ferrule without plastic sleeve) | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>                    |
| Flexible conductor cross-section (ferrule with plastic sleeve)    | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>                    |
| Nominal cross section                                             | 4 mm <sup>2</sup>                                            |
| Nominal current                                                   | 32 A (Supply, for 4 mm <sup>2</sup> conductor cross-section) |
| Maximum load current                                              | 37 A (Service Entrance)                                      |
| Nominal voltage                                                   | 250 V                                                        |

## Level 1+2+3 above 1 Connection cross sections directly pluggable

|                                                                   |                                              |
|-------------------------------------------------------------------|----------------------------------------------|
| Conductor cross-section rigid                                     | 0.34 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross-section, rigid [AWG]                              | 20 ... 14 (converted acc. to IEC)            |
| Conductor cross-section flexible (ferrule without plastic sleeve) | 0.34 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Flexible conductor cross-section (ferrule with plastic sleeve)    | 0.34 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |

## Feed-in stage Connection cross sections directly pluggable

|                                                                   |                                            |
|-------------------------------------------------------------------|--------------------------------------------|
| Conductor cross-section rigid                                     | 0.34 mm <sup>2</sup> ... 6 mm <sup>2</sup> |
| Conductor cross-section, rigid [AWG]                              | 24 ... 10 (converted acc. to IEC)          |
| Conductor cross-section flexible (ferrule without plastic sleeve) | 0.34 mm <sup>2</sup> ... 6 mm <sup>2</sup> |
| Flexible conductor cross-section (ferrule with plastic sleeve)    | 0.34 mm <sup>2</sup> ... 6 mm <sup>2</sup> |

## Dimensions

|                    |         |
|--------------------|---------|
| Width              | 8.3 mm  |
| Height             | 64 mm   |
| Depth on NS 35/7,5 | 55.5 mm |
| Depth on NS 35/15  | 63 mm   |

## Material specifications

|                                                                         |                 |
|-------------------------------------------------------------------------|-----------------|
| Color                                                                   | gray (RAL 7042) |
| Color of connection elements                                            | blue            |
| Flammability rating according to UL 94                                  | V0              |
| Insulating material group                                               | I               |
| Insulating material                                                     | PA              |
| Static insulating material application in cold                          | -60 °C          |
| Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) | 125 °C          |
| Relative insulation material temperature index (Elec., UL 746 B)        | 130 °C          |
| Fire protection for rail vehicles (DIN EN 45545-2) R22                  | HL 1 - HL 3     |
| Fire protection for rail vehicles (DIN EN 45545-2) R23                  | HL 1 - HL 3     |
| Fire protection for rail vehicles (DIN EN 45545-2) R24                  | HL 1 - HL 3     |
| Fire protection for rail vehicles (DIN EN 45545-2) R26                  | HL 1 - HL 3     |
| Calorimetric heat release NFPA 130 (ASTM E 1354)                        | 27,5 MJ/kg      |
| Surface flammability NFPA 130 (ASTM E 162)                              | passed          |
| Specific optical density of smoke NFPA 130 (ASTM E 662)                 | passed          |
| Smoke gas toxicity NFPA 130 (SMP 800C)                                  | passed          |

## Electrical tests

### Surge voltage test

|                       |             |
|-----------------------|-------------|
| Test voltage setpoint | 4.8 kV      |
| Result                | Test passed |

### Temperature-rise test

|                                                  |                                     |
|--------------------------------------------------|-------------------------------------|
| Requirement temperature-rise test                | Increase in temperature $\leq 45$ K |
| Result                                           | Test passed                         |
| Short-time withstand current 1.5 mm <sup>2</sup> | 0.18 kA                             |
| Short-time withstand current 2.5 mm <sup>2</sup> | 0.3 kA                              |
| Short-time withstand current 4 mm <sup>2</sup>   | 0.48 kA                             |
| Short-time withstand current 6 mm <sup>2</sup>   | 0.72 kA                             |
| Result                                           | Test passed                         |

### Power-frequency withstand voltage

|                       |             |
|-----------------------|-------------|
| Test voltage setpoint | 1.5 kV      |
| Result                | Test passed |

## Mechanical properties

### Mechanical data

|                 |     |
|-----------------|-----|
| Open side panel | Yes |
|-----------------|-----|

## Mechanical tests

### Mechanical strength

|        |             |
|--------|-------------|
| Result | Test passed |
|--------|-------------|

### Attachment on the carrier

|                         |             |
|-------------------------|-------------|
| DIN rail/fixing support | NS 35       |
| Test force setpoint     | 1 N         |
| Result                  | Test passed |

### Test for conductor damage and slackening

|                                |                               |
|--------------------------------|-------------------------------|
| Rotation speed                 | 10 rpm                        |
| Revolutions                    | 135                           |
| Conductor cross-section/weight | 0.14 mm <sup>2</sup> / 0.2 kg |
|                                | 1.5 mm <sup>2</sup> / 0.4 kg  |
|                                | 2.5 mm <sup>2</sup> / 0.7 kg  |
| Result                         | Test passed                   |

### Test for conductor damage and slackening

|                                |                              |
|--------------------------------|------------------------------|
| Rotation speed                 | 10 rpm                       |
| Revolutions                    | 135                          |
| Conductor cross-section/weight | 0.2 mm <sup>2</sup> / 0.2 kg |
|                                | 4 mm <sup>2</sup> / 0.9 kg   |

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|        |                            |
|--------|----------------------------|
|        | 6 mm <sup>2</sup> / 1.4 kg |
| Result | Test passed                |

## Environmental and real-life conditions

### Aging

|                    |             |
|--------------------|-------------|
| Temperature cycles | 192         |
| Result             | Test passed |

### Needle-flame test

|                  |             |
|------------------|-------------|
| Time of exposure | 30 s        |
| Result           | Test passed |

### Oscillation/broadband noise

|                        |                                                |
|------------------------|------------------------------------------------|
| Specification          | DIN EN 50155 (VDE 0115-200):2008-03            |
| Spectrum               | Long life test category 2, bogie-mounted       |
| Frequency              | $f_1 = 5 \text{ Hz}$ to $f_2 = 250 \text{ Hz}$ |
| ASD level              | 6.12 (m/s <sup>2</sup> ) <sup>2</sup> /Hz      |
| Acceleration           | 3.12g                                          |
| Test duration per axis | 5 h                                            |
| Test directions        | X-, Y- and Z-axis                              |
| Result                 | Test passed                                    |

### Shocks

|                                |                                     |
|--------------------------------|-------------------------------------|
| Specification                  | DIN EN 50155 (VDE 0115-200):2008-03 |
| Pulse shape                    | Half-sine                           |
| Acceleration                   | 30g                                 |
| Shock duration                 | 18 ms                               |
| Number of shocks per direction | 3                                   |
| Test directions                | X-, Y- and Z-axis (pos. and neg.)   |
| Result                         | Test passed                         |

### Ambient conditions

|                                          |                                                                           |
|------------------------------------------|---------------------------------------------------------------------------|
| Ambient temperature (operation)          | -60 °C ... 105 °C (max. short-term operating temperature RTI Elec.)       |
| Ambient temperature (storage/transport)  | -25 °C ... 60 °C (for a short time, not exceeding 24 h, -60 °C to +70 °C) |
| Ambient temperature (assembly)           | -5 °C ... 70 °C                                                           |
| Ambient temperature (actuation)          | -5 °C ... 70 °C                                                           |
| Permissible humidity (storage/transport) | 30 % ... 70 %                                                             |

## Standards and regulations

|                                  |               |
|----------------------------------|---------------|
| Connection in acc. with standard | IEC 60947-7-1 |
|                                  | IEC 60947-7-1 |

## Mounting

|               |           |
|---------------|-----------|
| Mounting type | NS 35/7,5 |
|---------------|-----------|

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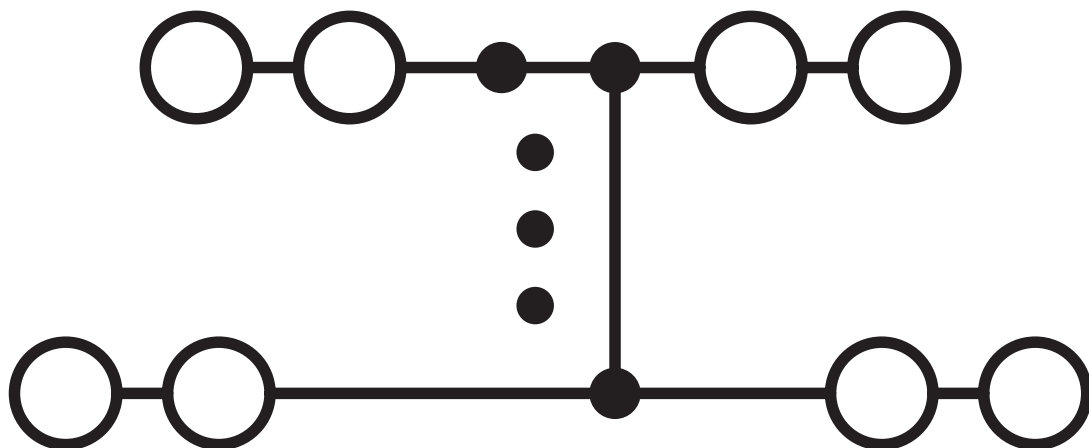
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|  |          |
|--|----------|
|  | NS 35/15 |
|--|----------|

## Drawings

Circuit diagram



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## Approvals

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**CSA**  
Approval ID: 158887



**IECEE CB Scheme**  
Approval ID: NL-58817

|       | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|-------|-----------------------|-----------------------|-------------------|-----------------------------|
| keine |                       |                       |                   |                             |
|       | 250 V                 | 17.5 A                | -                 | -                           |



**EAC**  
Approval ID: RU C-DE.BL08.B.00682



**cULus Recognized**  
Approval ID: E60425



**KEMA-KEUR**  
Approval ID: 71-102890

|                          | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|--------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
| keine                    |                       |                       |                   |                             |
| Only flexible conductors | 250 V                 | 17.5 A                | -                 | 0.14 - 1.5                  |
| Only rigid conductors    | 250 V                 | 17.5 A                | -                 | 0.14 - 2.5                  |

**DNV**

Approval ID: TAE000016Y



**EAC**  
Approval ID: KZ7500651131219505

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27250119 |
| ECLASS-15.0 | 27250119 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC000897 |
|-----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121400 |
|-------------|----------|

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## Environmental product compliance

|                                         |                                          |
|-----------------------------------------|------------------------------------------|
| EU RoHS                                 |                                          |
| Fulfills EU RoHS substance requirements | Yes, No exemptions                       |
| China RoHS                              |                                          |
| Environment friendly use period (EFUP)  | EFUP-E                                   |
|                                         | No hazardous substances above the limits |
| EU REACH SVHC                           |                                          |
| REACH candidate substance (CAS No.)     | No substance above 0.1 wt%               |

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