

# ZPV 1,5/2,5 (8/1) - Potential distributors



3031047

<https://www.phoenixcontact.com/pc/products/3031047>

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Potential distributors, nom. voltage: 500 V, nominal current: 24 A, connection method: Spring-cage connection, 1st level connection left, Rated cross section: 2.5 mm<sup>2</sup>, cross section: 0.14 mm<sup>2</sup> - 4 mm<sup>2</sup>, connection method: Spring-cage connection, 1st level connection right, Rated cross section: 1.5 mm<sup>2</sup>, cross section: 0.14 mm<sup>2</sup> - 2.5 mm<sup>2</sup>, mounting: NS 35/7,5, NS 35/15, color: gray

## Your advantages

- The operating voltage is supplied via a 2.5 mm<sup>2</sup> spring-cage connection and distributed using eight 1.5 mm<sup>2</sup> connections
- Actuators and active initiators are simply and clearly supplied with operating voltage
- They are mainly used in small control cabinets with high-performance controllers

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 3031047             |
| Packing unit                         | 50 pc               |
| Minimum order quantity               | 1 pc                |
| Product key                          | BE6211              |
| Catalog page                         | Page 240 (C-3-2013) |
| GTIN                                 | 4017918169572       |
| Weight per piece (including packing) | 23 g                |
| Weight per piece (excluding packing) | 21.663 g            |
| Customs tariff number                | 85369010            |
| Country of origin                    | TR                  |

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## Technical data

### Product properties

|                       |                       |
|-----------------------|-----------------------|
| Product type          | Potential distributor |
| Number of connections | 2                     |
| Number of rows        | 2                     |
| Potentials            | 8                     |

### Insulation characteristics

|                      |     |
|----------------------|-----|
| Overvoltage category | III |
| Degree of pollution  | 3   |

### Electrical properties

|                                                 |        |
|-------------------------------------------------|--------|
| Rated surge voltage                             | 6 kV   |
| Maximum power dissipation for nominal condition | 0.56 W |

### Connection data

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

#### 1st level connection left

|                                                                                                                   |                                                       |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Stripping length                                                                                                  | 10 mm                                                 |
| Internal cylindrical gage                                                                                         | A3                                                    |
| Connection in acc. with standard                                                                                  | IEC 60947-7-1                                         |
| Conductor cross section rigid                                                                                     | 0.14 mm <sup>2</sup> ... 4 mm <sup>2</sup>            |
| Cross section AWG                                                                                                 | 26 ... 12 (converted acc. to IEC)                     |
| Conductor cross section flexible                                                                                  | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>          |
| Conductor cross section, flexible [AWG]                                                                           | 26 ... 14 (converted acc. to IEC)                     |
| Conductor cross-section flexible (ferrule without plastic sleeve)                                                 | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>          |
| Flexible conductor cross section (ferrule with plastic sleeve)                                                    | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>          |
| Conductor cross-section flexible (2 conductors with the same cross-section, with TWIN ferrule and plastic sleeve) | 0.5 mm <sup>2</sup>                                   |
| Nominal current                                                                                                   | 24 A                                                  |
| Maximum load current                                                                                              | 24 A (with 4 mm <sup>2</sup> conductor cross section) |
| Nominal voltage                                                                                                   | 500 V                                                 |
| Nominal cross section                                                                                             | 2.5 mm <sup>2</sup>                                   |

#### 1st level connection right

|                                                                   |                                              |
|-------------------------------------------------------------------|----------------------------------------------|
| Stripping length                                                  | 10 mm                                        |
| Internal cylindrical gage                                         | A1                                           |
| 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 ... 16 (converted acc. to IEC)            |
| Conductor cross section flexible                                  | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross-section flexible (ferrule without plastic sleeve) | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |

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|                                                                |                      |
|----------------------------------------------------------------|----------------------|
| Flexible conductor cross section (ferrule with plastic sleeve) | 0.14 mm² ... 1.5 mm² |
| Nominal current                                                | 17.5 A               |
| Maximum load current                                           | 17.5 A               |
| Nominal voltage                                                | 500 V                |
| Nominal cross section                                          | 1.5 mm²              |

## Dimensions

|                    |         |
|--------------------|---------|
| Width              | 5.2 mm  |
| End cover width    | 2 mm    |
| Height             | 141 mm  |
| Depth on NS 35/7,5 | 51 mm   |
| Depth on NS 35/15  | 58.5 mm |

## Material specifications

|                                                                         |             |
|-------------------------------------------------------------------------|-------------|
| Color                                                                   | gray        |
| 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)) | 130 °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)                        | 28 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 | 7.3 kV      |
| Result                | Test passed |

### Temperature-rise test

|                                      |                                |
|--------------------------------------|--------------------------------|
| Requirement temperature-rise test    | Increase in temperature ≤ 45 K |
| Result                               | Test passed                    |
| Short-time withstand current 2.5 mm² | 0.3 kA                         |
| Short-time withstand current 1.5 mm² | 0.18 kA                        |
| Result                               | Test passed                    |

### Power-frequency withstand voltage

|                       |         |
|-----------------------|---------|
| Test voltage setpoint | 1.89 kV |
|-----------------------|---------|

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|        |             |
|--------|-------------|
| 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 |
|                                | 2.5 mm <sup>2</sup> / 0.7 kg  |
|                                | 4 mm <sup>2</sup> / 0.9 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               | Service life test category 2, bogie-mounted      |
| Frequency              | f <sub>1</sub> = 5 Hz to f <sub>2</sub> = 250 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                           |

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

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## Drawings

### Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/3031047>

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

|  <b>cULus Recognized</b><br>Approval ID: E60425 |                       |                       |                   |                      |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|----------------------|
|                                                                                                                                  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
| Use group B                                                                                                                      |                       |                       |                   |                      |
|                                                                                                                                  | 300 V                 | 15 A                  | 24 - 10           | -                    |
| Use group C                                                                                                                      |                       |                       |                   |                      |
|                                                                                                                                  | 150 V                 | 15 A                  | 24 - 10           | -                    |
| Use group D                                                                                                                      |                       |                       |                   |                      |
|                                                                                                                                  | 300 V                 | 10 A                  | 24 - 10           | -                    |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27141120 |
| ECLASS-13.0 | 27250105 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC000897 |
|----------|----------|

### UNSPSC

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

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## Environmental product compliance

|            |                                                         |
|------------|---------------------------------------------------------|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

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