

# PT 2,5-QUATTRO-MTB - Knife-disconnect terminal block



3210184

<https://www.phoenixcontact.com/au/products/3210184>

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Knife-disconnect terminal block, nom. voltage: 400 V, nominal current: 16 A, connection method: Push-in connection, Rated cross section: 2.5 mm<sup>2</sup>, cross section: 0.14 mm<sup>2</sup> - 4 mm<sup>2</sup>, mounting: NS 35/7,5, NS 35/15, color: gray

## Your advantages

- The Push-in connection terminal blocks are characterized by the system features of the CLIPLINE complete system and by easy and tool-free wiring of conductors with ferrules or solid conductors
- The compact design and front connection enable wiring in a confined space
- In addition to the testing option in the double function shaft, all terminal blocks provide an additional test pick-off
- Tested for railway applications

## Commercial data

|                                      |                    |
|--------------------------------------|--------------------|
| Item number                          | 3210184            |
| Packing unit                         | 50 pc              |
| Minimum order quantity               | 50 pc              |
| Sales key                            | BE2231             |
| Product key                          | BE2231             |
| Catalog page                         | Page 79 (C-1-2019) |
| GTIN                                 | 4046356693721      |
| Weight per piece (including packing) | 12.123 g           |
| Weight per piece (excluding packing) | 11.176 g           |
| Customs tariff number                | 85369010           |
| Country of origin                    | PL                 |

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## Technical data

### Notes

#### General

|      |                                                                                              |
|------|----------------------------------------------------------------------------------------------|
| Note | The max. load current must not be exceeded by the total current of all connected conductors. |
|------|----------------------------------------------------------------------------------------------|

### Product properties

|                       |                           |
|-----------------------|---------------------------|
| Product type          | Disconnect terminal block |
| Product family        | PT                        |
| Area of application   | Railway industry          |
|                       | Machine building          |
|                       | Plant engineering         |
| Number of connections | 4                         |
| Number of rows        | 1                         |
| Potentials            | 1                         |

#### Insulation characteristics

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

### Electrical properties

|                                                 |        |
|-------------------------------------------------|--------|
| Rated surge voltage                             | 6 kV   |
| Maximum power dissipation for nominal condition | 0.77 W |

### Connection data

|                                                                                           |                                                              |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| Number of connections per level                                                           | 4                                                            |
| Nominal cross section                                                                     | 2.5 mm <sup>2</sup>                                          |
| Stripping length                                                                          | 8 mm ... 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> ... 4 mm <sup>2</sup>                   |
| Conductor cross section, flexible [AWG]                                                   | 26 ... 12 (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>                 |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm <sup>2</sup>                                          |
| Nominal current                                                                           | 16 A                                                         |
| Maximum load current                                                                      | 16 A (with 4 mm <sup>2</sup> conductor cross section, rigid) |
| Nominal voltage                                                                           | 400 V                                                        |
| Nominal cross section                                                                     | 2.5 mm <sup>2</sup>                                          |

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## Connection cross sections directly pluggable

|                                                                   |                                              |
|-------------------------------------------------------------------|----------------------------------------------|
| Conductor cross section rigid                                     | 0.34 mm <sup>2</sup> ... 4 mm <sup>2</sup>   |
| Conductor cross-section flexible (ferrule without plastic sleeve) | 0.5 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>  |
| Flexible conductor cross section (ferrule with plastic sleeve)    | 0.34 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |

## Dimensions

|                    |         |
|--------------------|---------|
| Width              | 5.2 mm  |
| End cover width    | 2.2 mm  |
| Height             | 92.2 mm |
| Depth              | 35.2 mm |
| Depth on NS 35/7,5 | 36.7 mm |
| Depth on NS 35/15  | 44.2 mm |

## Material specifications

|                                                                         |                 |
|-------------------------------------------------------------------------|-----------------|
| Color                                                                   | gray (RAL 7042) |
| 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)                        | 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 1.5 mm <sup>2</sup> | 0.18 kA                        |
| Short-time withstand current 2.5 mm <sup>2</sup> | 0.3 kA                         |
| Result                                           | Test passed                    |

### Power-frequency withstand voltage

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|                       |             |
|-----------------------|-------------|
| Test voltage setpoint | 1.89 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 |
|                                | 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):2018-05            |
| 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):2018-05 |
|---------------|-------------------------------------|

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|                                |                                   |
|--------------------------------|-----------------------------------|
| 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 ... 110 °C (Operating temperature range incl. self-heating; for max. short-term operating temperature, see 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 (operation)         | 20 % ... 90 %                                                                                                                |
| Permissible humidity (storage/transport) | 30 % ... 70 %                                                                                                                |

## Standards and regulations

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

## Mounting

|               |           |
|---------------|-----------|
| Mounting type | NS 35/7,5 |
|               | NS 35/15  |

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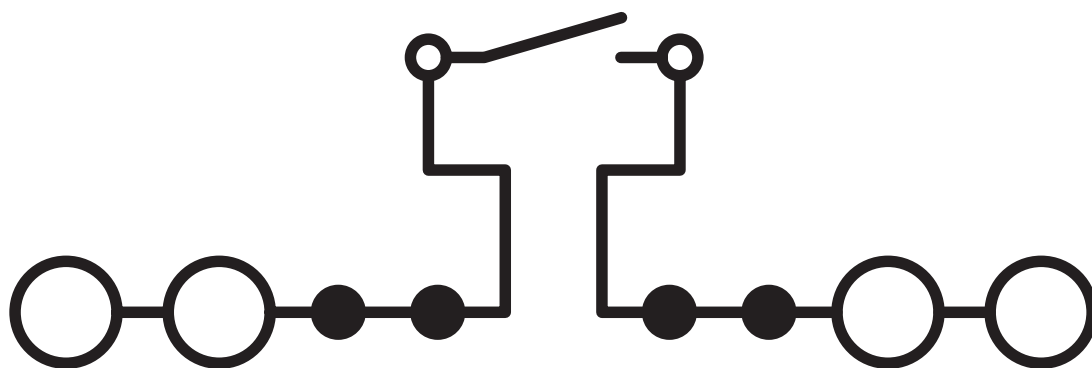


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## Drawings

Circuit diagram



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## Approvals

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### DNV

Approval ID: TAE000010T



### IECEE CB Scheme

Approval ID: DE1-61292

|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | 400 V                 | 16 A                  | -                 | - 2.5                       |



### EAC

Approval ID: RU C-DE.BL08.B.00644



### cULus Recognized

Approval ID: E60425

|                          | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|--------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
| Use group B              |                       |                       |                   |                             |
| Only flexible conductors | 300 V                 | 20 A                  | 26 - 12           | -                           |
| Only rigid conductors    | 300 V                 | 16 A                  | 26 - 12           | -                           |
| Use group C              |                       |                       |                   |                             |
| Only flexible conductors | 300 V                 | 20 A                  | 26 - 12           | -                           |
| Only rigid conductors    | 300 V                 | 16 A                  | 26 - 12           | -                           |
| Use group D              |                       |                       |                   |                             |
|                          | 600 V                 | 5 A                   | 26 - 12           | -                           |
| Use group F              |                       |                       |                   |                             |
|                          | 400 V                 | 20 A                  | 26 - 12           | -                           |



### LR

Approval ID: LR2371832TA



### BV

Approval ID: 25278/C1 BV



### VDE Zeichengenehmigung

Approval ID: 40037618

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|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | 400 V                 | 16 A                  | -                 | 0.2 - 2.5                   |



**EAC**

Approval ID: KZ7500651131219505



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27250108 |
|-------------|----------|

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC000902 |
|----------|----------|

### 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%               |
| EF3.0 Climate Change                    |                                          |
| CO2e kg                                 | 0.084 kg CO2e                            |

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