# PTTB 2,5 BU - Double-level terminal block

3210570

https://www.phoenixcontact.com/us/products/3210570

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Double-level terminal block, nom. voltage: 500 V, nominal current: 22 A, connection method: Push-in connection, 1st and 2nd level, Rated cross section: 2.5 mm$^2$, cross section: 0.14 mm$^2$ - 4 mm$^2$, mounting type: NS 35/7,5, NS 35/15, color: blue

## Your advantages

- Time-saving conductor connection thanks to tool-free direct-connection technology
- Convenient plugging with lower insertion force
- High conductor pull-out forces due to the spring design
- Vibration-resistant and maintenance-free conductor connection
- Full flexibility thanks to the standardized CLIPLINE complete bridging, marking, and testing accessories
- High space savings thanks to the compact integration of two separate circuits in a single terminal block
- Optimized for manual and automated wiring

## Commercial data

| | |
|---|---|
| Item number | 3210570 |
| Packing unit | 50 pc |
| Minimum order quantity | 50 pc |
| Sales key | BE22 |
| Product key | BE2214 |
| GTIN | 4046356418997 |
| Weight per piece (including packing) | 10.62 g |
| Weight per piece (excluding packing) | 10.2 g |
| Customs tariff number | 85369010 |
| Country of origin | PL |

# Technical data

## Product properties

| | |
|---|---|
| Product type | Multi-level terminal block |
| Product family | PT |
| Area of application | Railway industry |
| | Machine building |
| | Plant engineering |
| | Process industry |
| Number of connections | 4 |
| Number of rows | 2 |
| Potentials | 2 |

### 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 | 2 |
| Nominal cross section | 2.5 mm² |
| Rated cross section AWG | 12 |

### 1st and 2nd level

| | |
|---|---|
| Connection method | Push-in connection |
| Stripping length | 8 mm ... 10 mm |
| Internal cylindrical gage | A4 |
| Connection in acc. with standard | IEC 60947-7-1 |
| Conductor cross-section rigid | 0.14 mm² ... 4 mm² |
| Cross section AWG | 26 ... 12 (converted acc. to IEC) |
| Conductor cross-section flexible | 0.14 mm² ... 4 mm² |
| Conductor cross-section, flexible [AWG] | 26 ... 12 (converted acc. to IEC) |
| Conductor cross-section flexible (ferrule without plastic sleeve) | 0.14 mm² ... 2.5 mm² |
| Flexible conductor cross-section (ferrule with plastic sleeve) | 0.14 mm² ... 2.5 mm² |
| Conductor cross-section flexible (2 conductors with the same cross-section, with TWIN ferrule and plastic sleeve) | 0.5 mm² |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm² |
| Nominal cross section | 2.5 mm² |
| Nominal current | 22 A |
| Maximum load current | 26 A (with 4 mm² conductor cross-section, rigid) |
| Nominal voltage | 500 V |

| | |
|---|---|
| Cross section AWG | 26 ... 12 (converted acc. to IEC) |

1st and 2nd level Connection cross sections directly pluggable

| | |
|---|---|
| Conductor cross-section rigid | 0.34 mm² ... 4 mm² |
| Conductor cross-section flexible (ferrule without plastic sleeve) | 0.34 mm² ... 2.5 mm² |
| Flexible conductor cross-section (ferrule with plastic sleeve) | 0.34 mm² ... 2.5 mm² |

## Ex data

Rated data (ATEX/IECEx)

| | |
|---|---|
| Identification | Ⓔx II 2 G Ex eb IIC Gb |
| Operating temperature range (1) | -60 °C ... 85 °C |
| Operating temperature range (2) | -40 °C ... 110 °C |
| Ex-certified accessories | 3211634 D-PTTB 2,5 |
| | 3030747 ATP-STTB 4 |
| | 1204517 SZF 1-0,6X3,5 |
| | 3022276 CLIPFIX 35-5 |
| | 3022218 CLIPFIX 35 |
| List of bridges | Plug-in bridge / FBS 2-5 / 3030161 |
| | Plug-in bridge / FBS 3-5 / 3030174 |
| | Plug-in bridge / FBS 4-5 / 3030187 |
| | Plug-in bridge / FBS 5-5 / 3030190 |
| | Plug-in bridge / FBS 10-5 / 3030213 |
| | Plug-in bridge / FBS 20-5 / 3030226 |
| | Plug-in bridge / FBS 50-5 / 3038930 |
| Bridge data | 16 A / 2.5 mm² |
| Ex temperature increase | 40 K (18 A / 2.5 mm²) |
| for bridging with bridge | 440 V |
| - At bridging between non-adjacent terminal blocks | 352 V |
| - At cut-to-length bridging | 166 V |
| - At cut-to-length bridging with cover | 352 V |
| - At cut-to-length bridging with partition plate | 440 V |
| Rated insulation voltage | 400 V |
| output | (Permanent) |

Ex level General

| | |
|---|---|
| Rated voltage | 440 V |
| Rated current | 18 A |
| Maximum load current | 22 A |

Ex connection data General

| | |
|---|---|
| Nominal cross section | 2.5 mm² |
| Rated cross section AWG | 14 |
| Connection capacity rigid | 0.14 mm² ... 4 mm² |
| Connection capacity AWG | 26 ... 12 |
| Connection capacity flexible | 0.14 mm² ... 2.5 mm² |

| | |
|---|---|
| Connection capacity AWG | 26 ... 14 |
| output | (Permanent) |

Ex level Level 1

| | |
|---|---|
| Contact resistance | 1.2 mΩ |
| output | (Permanent) |

Ex level Level 2

| | |
|---|---|
| Contact resistance | 0.92 mΩ |

## Dimensions

| | |
|---|---|
| Width | 5.2 mm |
| End cover width | 2.2 mm |
| Height | 68 mm |
| Depth | 45.8 mm |
| Depth on NS 35/7,5 | 47.5 mm |
| Depth on NS 35/15 | 55 mm |

## Material specifications

| | |
|---|---|
| Color | blue (RAL 5015) |
| Flammability rating according to UL 94 | V0 |
| Insulating material group | I |
| Insulating material | PA |
| Static insulating material application in cold | -60 °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 |
| 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 4 mm² | 0.48 kA |
| Result | Test passed |

Power-frequency withstand voltage

| | |
|---|---|
| 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 32/NS 35 |
| Test force setpoint | 1 N |
| Result | Test passed |

Test for conductor damage and slackening

| | |
|---|---|
| Rotation speed | 10 (+/- 2) rpm |
| Revolutions | 135 |
| Conductor cross-section/weight | 0.14 mm² / 0.2 kg |
| | 2.5 mm² / 0.7 kg |
| | 4 mm² / 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):2022-06 |
| Spectrum | Long life test category 2, bogie-mounted |
| Frequency | $f_1$ = 5 Hz to $f_2$ = 250 Hz |
| ASD level | 6.12 (m/s²)²/Hz |
| Acceleration | 30.6 m/s² |
| 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 | 300 m/s² |
| 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

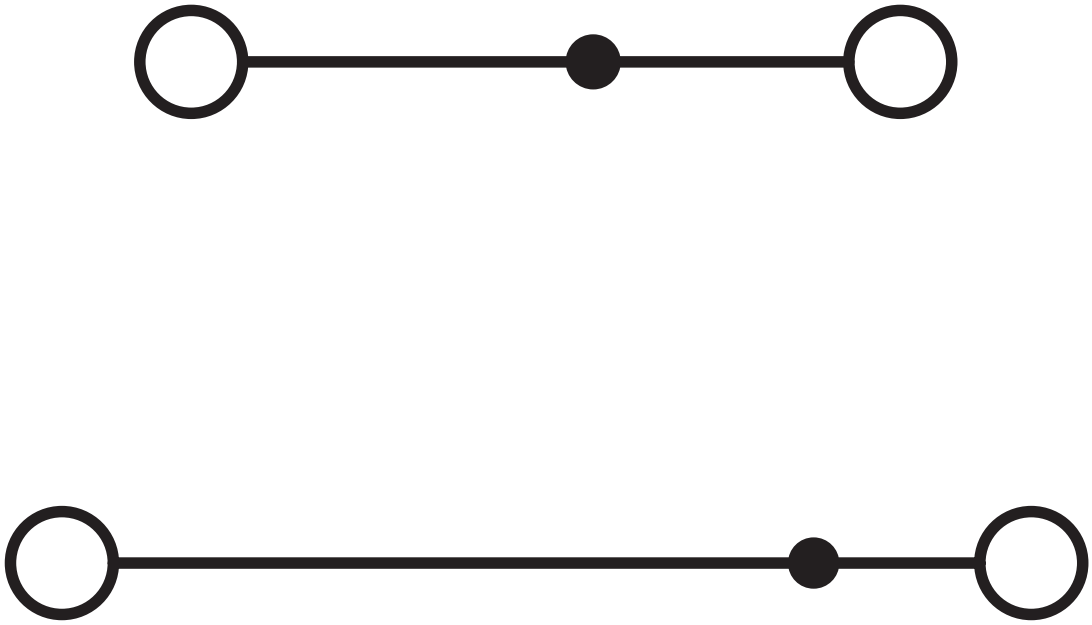
| | |
|---|---|
| Connection in acc. with standard | IEC 60947-7-1 |

## Mounting

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

## Drawings

Circuit diagram



## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/3210570

**CSA**
Approval ID: 158887

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| B | | | | |
| | 300 V | 20 A | 26 - 12 | - |
| C | | | | |
| | 300 V | 20 A | 26 - 12 | - |
| D | | | | |
| | 600 V | 5 A | 26 - 12 | - |

**IECEE CB Scheme**
Approval ID: DE1-66980

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| keine | | | | |
| | 500 V | 22 A | - | 0.2 - 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 $mm^2$ |
|---|---|---|---|---|
| B | | | | |
| | 300 V | 20 A | 26 - 12 | - |
| C | | | | |
| | 300 V | 20 A | 26 - 12 | - |
| D | | | | |
| | 600 V | 5 A | 26 - 12 | - |

**LR**
Approval ID: LR2371832TA

**NK**
Approval ID: 22ME0007

**BV**

Approval ID: 25278/C1 BV

**VDE Zeichengenehmigung**
Approval ID: 40032222

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| keine | | | | |
| | 500 V | 22 A | - | 0.2 - 2.5 |

**ABS**
Approval ID: 21-2192245-PDA

**NK**
Approval ID: 14ME0912

**DNV**
Approval ID: TAE000010T

**EAC Ex**
Approval ID: RU C-DE.AB72.B.02351

**IECEx**
Approval ID: IECExPTB10.0021U

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| keine | | | | |
| Only flexible conductors | 440 V | 18 A | - | 0.14 - 2.5 |
| Only rigid conductors | 440 V | 22 A | - | 0.14 - 4 |

**ATEX**
Approval ID: PTB09ATEX1111U

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| keine | | | | |
| Only flexible conductors | 440 V | 18 A | - | 0.14 - 2.5 |
| Only rigid conductors | 440 V | 22 A | - | 0.14 - 4 |

**CCC**

Approval ID: 2020322313000631

**UKCA-EX**
Approval ID: CSAE 22UKEX1096U

**EAC Ex**
Approval ID: KZ 7500525010101950

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 27250102 |
| ECLASS-15.0 | 27250102 |

### ETIM

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

### UNSPSC

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

## 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% |

EF3.1 Climate Change

| | |
|---|---|
| CO2e kg | 6.207 kg CO2e |


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