

STTB 2,5 - Double-level spring-cage terminal block



3031270

<https://www.phoenixcontact.com/gb/products/3031270>

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Double-level spring-cage terminal block, nom. voltage: 500 V, nominal current: 22 A, connection method: Spring-cage connection, Rated cross section: 2.5 mm², cross section: 0.08 mm² - 4 mm², mounting type: NS 35/7,5, NS 35/15, color: gray

Your advantages

- Compact design for maximum space savings
- Tested for railway applications

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 3031270 |
| Packing unit | 50 pc |
| Minimum order quantity | 50 pc |
| Sales key | BE2114 |
| Product key | BE2114 |
| GTIN | 4017918186814 |
| Weight per piece (including packing) | 10.495 g |
| Weight per piece (excluding packing) | 9.839 g |
| Customs tariff number | 85369010 |
| Country of origin | DE |

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Technical data

Product properties

| | |
|-----------------------|----------------------------|
| Product type | Multi-level terminal block |
| Product family | ST |
| 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 mm ² |
| Connection method | Spring-cage connection |
| Stripping length | 8 mm ... 10 mm |
| Internal cylindrical gage | A3 |
| Connection in acc. with standard | IEC 60947-7-1 |
| Conductor cross-section rigid | 0.08 mm ² ... 4 mm ² |
| Cross section AWG | 28 ... 12 (converted acc. to IEC) |
| Conductor cross-section flexible | 0.08 mm ² ... 2.5 mm ² |
| Conductor cross-section, flexible [AWG] | 28 ... 14 (converted acc. to IEC) |
| Conductor cross-section flexible (ferrule without plastic sleeve) | 0.14 mm ² ... 2.5 mm ² |
| Flexible conductor cross-section (ferrule with plastic sleeve) | 0.14 mm ² ... 2.5 mm ² |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm ² |
| Nominal current | 22 A |
| Maximum load current | 26 A (with 4 mm ² conductor cross-section) |
| Nominal voltage | 500 V |
| Nominal cross section | 2.5 mm ² |

Ex data

Rated data (ATEX/IECEx)

| | |
|----------------|------------------------|
| Identification | ⊕ II 2 GD Ex eb IIC Gb |
|----------------|------------------------|

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| | |
|--|--------------------------------------|
| Operating temperature range | -60 °C ... 85 °C |
| Ex-certified accessories | 3030459 D-STTB 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 |
| Bridge data | 17 A / 2.5 mm ² |
| Ex temperature increase | 40 K (21.9 A / 2.5 mm ²) |
| for bridging with bridge | 440 V |
| - At bridging between non-adjacent terminal blocks | 352 V |
| - At bridging between non-adjacent terminal blocks via PE terminal block | 352 V |
| - At cut-to-length bridging with cover | 220 V |
| - At cut-to-length bridging with partition plate | 220 V |
| Rated insulation voltage | 400 V |
| output | (Permanent) |

Ex level General

| | |
|----------------------|--------|
| Rated voltage | 440 V |
| Rated current | 19.5 A |
| Maximum load current | 23.5 A |

Ex connection data General

| | |
|------------------------------|--|
| Nominal cross section | 2.5 mm ² |
| Rated cross section AWG | 14 |
| Connection capacity rigid | 0.08 mm ² ... 4 mm ² |
| Connection capacity AWG | 28 ... 12 |
| Connection capacity flexible | 0.08 mm ² ... 2.5 mm ² |
| Connection capacity AWG | 28 ... 14 |
| output | (Permanent) |

Ex level Level 1

| | |
|--------------------|-------------|
| Contact resistance | 1.04 mΩ |
| output | (Permanent) |

Ex level Level 2

| | |
|--------------------|---------|
| Contact resistance | 0.83 mΩ |
|--------------------|---------|

Dimensions

| | |
|-------|--------|
| Width | 5.2 mm |
|-------|--------|

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| | |
|--------------------|---------|
| End cover width | 2.2 mm |
| Height | 67.5 mm |
| Depth on NS 35/7,5 | 47.5 mm |
| Depth on NS 35/15 | 55 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 |
| 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 \leq 45 K |
| Result | Test passed |
| Short-time withstand current 2.5 mm ² | 0.3 kA |
| | 0.3 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 |
|--------|-------------|

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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 | 0.08 mm ² / 0.1 kg |
| | 2.5 mm ² / 0.7 kg |
| | 4 mm ² / 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 ²) ² /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 ... 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) |

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| | |
|--|-----------------|
| 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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Drawings

Circuit diagram



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Approvals


To download certificates, visit the product detail page: <https://www.phoenixcontact.com/gb/products/3031270>


|  CSA Approval ID: 13631 | | | | |
|--|-----------------------|-----------------------|-------------------|----------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| B | 300 V | 20 A | 28 - 12 | - |
| C | 300 V | 20 A | 28 - 12 | - |

|  IECEE CB Scheme Approval ID: DE1-66179 | | | | |
|--|-----------------------|-----------------------|-------------------|----------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | 500 V | 22 A | - | 0.2 - 2.5 |

|  KR Approval ID: HMB17372-EL002 | | | | |
|--|--|--|--|--|
|--|--|--|--|--|

|  NK Approval ID: 09 ME 140 | | | | |
|---|--|--|--|--|
|---|--|--|--|--|

|  VDE Zeichengenehmigung Approval ID: 40009033 | | | | |
|--|-----------------------|-----------------------|-------------------|----------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | 500 V | 22 A | - | 0.2 - 2.5 |


|  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 | 28 - 12 | - |
| C | 300 V | 20 A | 28 - 12 | - |
| D | 600 V | 5 A | 28 - 12 | - |


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|  ATEX Approval ID: KEMA00ATEX2052U | | | | |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | | | | |
| Only flexible conductors | 440 V | 19.5 A | - | 0.08 - 2.5 |
| Only rigid conductors | 440 V | 23.5 A | - | 0.08 - 4 |

|  IECEx Approval ID: IECEx KEM 06.0051U | | | | |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | | | | |
| Only flexible conductors | 440 V | 19.5 A | - | 0.08 - 2.5 |
| Only rigid conductors | 440 V | 23.5 A | - | 0.08 - 4 |

|  CCC Approval ID: 2020322313000621 | | | | |
|---|--|--|--|--|
| | | | | |

|  UKCA-EX Approval ID: DEKRA 21UKEX0300U | | | | |
|--|--|--|--|--|
| | | | | |

|  EAC Ex Approval ID: KZ 7500525010101950 | | | | |
|---|--|--|--|--|
| | | | | |

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Classifications

ECLASS

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

ETIM

| | |
|----------|----------|
| ETIM 9.0 | 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% |
|-------------------------------------|----------------------------|

EF3.0 Climate Change

| | |
|---------|---------------|
| CO2e kg | 0.072 kg CO2e |
|---------|---------------|

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