

3031445

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Feed-through terminal block, nom. voltage: 800 V, nominal current: 32 A, number of connections: 4, connection method: Spring-cage connection, Rated cross section: 4 mm<sup>2</sup>, cross section: 0.08 mm<sup>2</sup> - 6 mm<sup>2</sup>, mounting type: NS 35/7,5, NS 35/15, color: gray

Your advantages

- Cross connection to any number of terminal blocks with the consistent FBS ... plug-in bridge system
- Compact potential distributors, the double connection enables four conductors to be connected on one potential
- Tested for railway applications

Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 3031445       |
| Packing unit                         | 50 pc         |
| Minimum order quantity               | 50 pc         |
| Sales key                            | BE02          |
| Product key                          | BE2113        |
| GTIN                                 | 4017918186890 |
| Weight per piece (including packing) | 14.414 g      |
| Weight per piece (excluding packing) | 13.421 g      |
| Customs tariff number                | 85369010      |
| Country of origin                    | DE            |

# ST 4-QUATTRO - Feed-through terminal block



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## Technical data

### Product properties

|                       |                                |
|-----------------------|--------------------------------|
| Product type          | Multi-conductor terminal block |
| Product family        | ST                             |
| Area of application   | Railway industry               |
|                       | Machine building               |
|                       | Plant engineering              |
|                       | Process industry               |
| Number of connections | 4                              |
| Number of rows        | 1                              |
| Potentials            | 1                              |

### Insulation characteristics

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

### Electrical properties

|                                                 |        |
|-------------------------------------------------|--------|
| Rated surge voltage                             | 8 kV   |
| Maximum power dissipation for nominal condition | 1.02 W |

### Connection data

|                                                                                           |                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of connections per level                                                           | 4                                                                                                                                                                 |
| Nominal cross section                                                                     | 4 mm <sup>2</sup>                                                                                                                                                 |
| Connection method                                                                         | Spring-cage connection                                                                                                                                            |
| Stripping length                                                                          | 8 mm ... 10 mm                                                                                                                                                    |
| Internal cylindrical gage                                                                 | A4                                                                                                                                                                |
| Connection in acc. with standard                                                          | IEC 60947-7-1                                                                                                                                                     |
| Conductor cross-section rigid                                                             | 0.08 mm <sup>2</sup> ... 6 mm <sup>2</sup>                                                                                                                        |
| Cross section AWG                                                                         | 28 ... 10 (converted acc. to IEC)                                                                                                                                 |
| Conductor cross-section flexible                                                          | 0.08 mm <sup>2</sup> ... 4 mm <sup>2</sup>                                                                                                                        |
| Conductor cross-section, flexible [AWG]                                                   | 28 ... 12 (converted acc. to IEC)                                                                                                                                 |
| Conductor cross-section flexible (ferrule without plastic sleeve)                         | 0.14 mm <sup>2</sup> ... 4 mm <sup>2</sup>                                                                                                                        |
| Flexible conductor cross-section (ferrule with plastic sleeve)                            | 0.14 mm <sup>2</sup> ... 4 mm <sup>2</sup>                                                                                                                        |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm <sup>2</sup> ... 1 mm <sup>2</sup>                                                                                                                         |
| Nominal current                                                                           | 32 A (with 6 mm <sup>2</sup> conductor cross-section)                                                                                                             |
| Maximum load current                                                                      | 40 A (In the case of a 6 mm <sup>2</sup> conductor cross section, the maximum load current must not be exceeded by the total current of all connected conductors) |
| Nominal voltage                                                                           | 800 V                                                                                                                                                             |
| Nominal cross section                                                                     | 4 mm <sup>2</sup>                                                                                                                                                 |

### Ex data

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## Rated data (ATEX/IECEx)

|                                                                          |                                     |
|--------------------------------------------------------------------------|-------------------------------------|
| Identification                                                           | Ex II 2 GD Ex eb IIC Gb             |
| Operating temperature range                                              | -60 °C ... 85 °C                    |
| Ex-certified accessories                                                 | 3030527 D-ST 4-QUATTRO              |
|                                                                          | 3030815 ATP-ST QUATTRO              |
|                                                                          | 3036615 DS-ST 4                     |
|                                                                          | 1204517 SZF 1-0,6X3,5               |
|                                                                          | 3022276 CLIPFIX 35-5                |
|                                                                          | 3022218 CLIPFIX 35                  |
| List of bridges                                                          | Plug-in bridge / FBS 2-6 / 3030336  |
|                                                                          | Plug-in bridge / FBS 3-6 / 3030242  |
|                                                                          | Plug-in bridge / FBS 4-6 / 3030255  |
|                                                                          | Plug-in bridge / FBS 5-6 / 3030349  |
|                                                                          | Plug-in bridge / FBS 10-6 / 3030271 |
|                                                                          | Plug-in bridge / FBS 20-6 / 3030365 |
| Bridge data                                                              | 28 A (4 mm <sup>2</sup> )           |
| Ex temperature increase                                                  | 40 K (31.6 A / 4 mm <sup>2</sup> )  |
| for bridging with bridge                                                 | 550 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                         | 275 V                               |
| Rated insulation voltage                                                 | 500 V                               |
| output                                                                   | (Permanent)                         |

## Ex level General

|                      |         |
|----------------------|---------|
| Rated voltage        | 550 V   |
| Rated current        | 27.5 A  |
| Maximum load current | 34.5 A  |
| Contact resistance   | 0.78 mΩ |

## Ex connection data General

|                              |                                            |
|------------------------------|--------------------------------------------|
| Nominal cross section        | 4 mm <sup>2</sup>                          |
| Rated cross section AWG      | 12                                         |
| Connection capacity rigid    | 0.08 mm <sup>2</sup> ... 6 mm <sup>2</sup> |
| Connection capacity AWG      | 28 ... 10                                  |
| Connection capacity flexible | 0.08 mm <sup>2</sup> ... 4 mm <sup>2</sup> |
| Connection capacity AWG      | 28 ... 12                                  |

## Dimensions

|                    |         |
|--------------------|---------|
| Width              | 6.2 mm  |
| End cover width    | 2.2 mm  |
| Height             | 87 mm   |
| Depth on NS 35/7,5 | 36.5 mm |

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|                   |       |
|-------------------|-------|
| Depth on NS 35/15 | 44 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 | 9.8 kV      |
| Result                | Test passed |

### Temperature-rise test

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

### Power-frequency withstand voltage

|                       |             |
|-----------------------|-------------|
| Test voltage setpoint | 2 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   |

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

## Test for conductor damage and slackening

|                                |                               |
|--------------------------------|-------------------------------|
| Rotation speed                 | 10 (+/- 2) rpm                |
| Revolutions                    | 135                           |
| Conductor cross-section/weight | 0.25 mm <sup>2</sup> / 0.2 kg |
|                                | 4 mm <sup>2</sup> / 0.9 kg    |
|                                | 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):2022-06            |
| 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                   | 5g                                  |
| Shock duration                 | 30 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 %                                                                                                                |

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|                                          |
|------------------------------------------|
| 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



# ST 4-QUATTRO - Feed-through terminal block



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/3031445>

|  <b>CSA</b><br>Approval ID: 13631 |                       |                       |                   |                             |
|--------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                    | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B                                                                                                                  | 600 V                 | 30 A                  | 28 - 10           | -                           |
| C                                                                                                                  | 600 V                 | 30 A                  | 28 - 10           | -                           |

|  <b>IECEE CB Scheme</b><br>Approval ID: DE1-63028_M1 |                       |                       |                   |                             |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                       | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine                                                                                                                                 | 800 V                 | 32 A                  | -                 | 0.2 - 4                     |

|                                                                                                                              |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|  <b>KR</b><br>Approval ID: HMB17372-EL002 |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|

|                                                                                                                         |  |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|  <b>NK</b><br>Approval ID: 09 ME 140 |  |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------|--|--|--|--|

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40009034 |                       |                       |                   |                             |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                            | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine                                                                                                                                      | 800 V                 | 32 A                  | -                 | 0.2 - 4                     |

|  <b>cULus Recognized</b><br>Approval ID: E60425 |                       |                       |                   |                             |
|------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                    | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B                                                                                                                                  | 600 V                 | 30 A                  | 28 - 10           | -                           |
| C                                                                                                                                  | 600 V                 | 30 A                  | 28 - 10           | -                           |

|                                                                                                                                 |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|  <b>ATEX</b><br>Approval ID: KEMA00ATEX2129U |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|

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**IECEx**

Approval ID: IECEx KEM 06.0050U



**CCC**

Approval ID: 2020322313000621



**UKCA-EX**

Approval ID: DEKRA 21UKEX0301U



**EAC Ex**

Approval ID: KZ 7500525010101950

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27250101 |
| ECLASS-15.0 | 27250101 |

### 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                                 | 0.098 kg CO2e                            |

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