

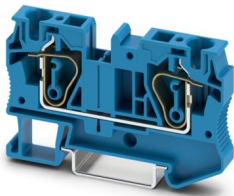
# ST 6 BU - Feed-through terminal block



3031490

<https://www.phoenixcontact.com/us/products/3031490>

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Feed-through terminal block, nom. voltage: 1000 V, nominal current: 41 A, number of connections: 2, connection method: Spring-cage connection, Rated cross section: 6 mm<sup>2</sup>, cross section: 0.2 mm<sup>2</sup> - 10 mm<sup>2</sup>, mounting type: NS 35/7,5, NS 35/15, color: blue

## Your advantages

- Simple wiring of very small, flexible conductors
- Enables one-handed wiring
- No restriction on cross-sections when using conductors with ferrules
- Reliable vibration resistance thanks to spring-loaded contact elements
- Vibration-resistant and maintenance-free conductor connection
- Full flexibility thanks to the standardized CLIPLINE complete bridging, marking, and testing accessories

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 3031490       |
| Packing unit                         | 50 pc         |
| Minimum order quantity               | 50 pc         |
| Sales key                            | BE02          |
| Product key                          | BE2111        |
| GTIN                                 | 4017918186951 |
| Weight per piece (including packing) | 16.505 g      |
| Weight per piece (excluding packing) | 16.5 g        |
| Customs tariff number                | 85369010      |
| Country of origin                    | DE            |

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## Technical data

### Product properties

|                       |                             |
|-----------------------|-----------------------------|
| Product type          | Feed-through terminal block |
| Product family        | ST                          |
| Area of application   | Railway industry            |
|                       | Machine building            |
|                       | Plant engineering           |
|                       | Process industry            |
| Number of connections | 2                           |
| 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 | 1.31 W |

### Connection data

|                                                                                           |                                                        |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Number of connections per level                                                           | 2                                                      |
| Nominal cross section                                                                     | 6 mm <sup>2</sup>                                      |
| Connection method                                                                         | Spring-cage connection                                 |
| Stripping length                                                                          | 12 mm                                                  |
| Internal cylindrical gage                                                                 | A5                                                     |
| Connection in acc. with standard                                                          | IEC 60947-7-1                                          |
| Conductor cross-section rigid                                                             | 0.2 mm <sup>2</sup> ... 10 mm <sup>2</sup>             |
| Cross section AWG                                                                         | 24 ... 8 (converted acc. to IEC)                       |
| Conductor cross-section flexible                                                          | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>              |
| Conductor cross-section, flexible [AWG]                                                   | 24 ... 10 (converted acc. to IEC)                      |
| Conductor cross-section flexible ultrasound-compressed                                    | 0.34 mm <sup>2</sup> ... 10 mm <sup>2</sup>            |
| Conductor cross-section, flexible [AWG] ultrasound-compressed                             | 22 ... 8 (converted acc. to IEC)                       |
| Conductor cross-section flexible (ferrule without plastic sleeve)                         | 0.25 mm <sup>2</sup> ... 6 mm <sup>2</sup>             |
| Flexible conductor cross-section (ferrule with plastic sleeve)                            | 0.25 mm <sup>2</sup> ... 6 mm <sup>2</sup>             |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>            |
| Nominal current                                                                           | 41 A                                                   |
| Maximum load current                                                                      | 52 A (with 10 mm <sup>2</sup> conductor cross-section) |
| Nominal voltage                                                                           | 1000 V                                                 |
| Nominal cross section                                                                     | 6 mm <sup>2</sup>                                      |

### Ex data

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## Rated data (ATEX/IECEX)

|                                                                          |                                     |
|--------------------------------------------------------------------------|-------------------------------------|
| Identification                                                           | II 2 GD Ex eb IIC Gb                |
| Operating temperature range                                              | -60 °C ... 85 °C                    |
| Ex-certified accessories                                                 | 3030433 D-ST 6                      |
|                                                                          | 3024481 ATP-ST 6                    |
|                                                                          | 1204520 SZF 2-0,8X4,0               |
|                                                                          | 3022276 CLIPFIX 35-5                |
|                                                                          | 3022218 CLIPFIX 35                  |
| List of bridges                                                          | Plug-in bridge / FBS 2-8 / 3030284  |
|                                                                          | Plug-in bridge / FBS 3-8 / 3030297  |
|                                                                          | Plug-in bridge / FBS 4-8 / 3030307  |
|                                                                          | Plug-in bridge / FBS 5-8 / 3030310  |
|                                                                          | Plug-in bridge / FBS 10-8 / 3030323 |
| Bridge data                                                              | 35 A (6 mm <sup>2</sup> )           |
| Ex temperature increase                                                  | 40 K (40.4 A / 6 mm <sup>2</sup> )  |
| for bridging with bridge                                                 | 550 V                               |
| - At bridging between non-adjacent terminal blocks                       | 440 V                               |
| - At bridging between non-adjacent terminal blocks via PE terminal block | 440 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        | 36.5 A  |
| Maximum load current | 45 A    |
| Contact resistance   | 0.56 mΩ |

## Ex connection data General

|                              |                                            |
|------------------------------|--------------------------------------------|
| Nominal cross section        | 6 mm <sup>2</sup>                          |
| Rated cross section AWG      | 10                                         |
| Connection capacity rigid    | 0.2 mm <sup>2</sup> ... 10 mm <sup>2</sup> |
| Connection capacity AWG      | 24 ... 8                                   |
| Connection capacity flexible | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>  |
| Connection capacity AWG      | 24 ... 10                                  |

## Dimensions

|                    |         |
|--------------------|---------|
| Width              | 8.2 mm  |
| End cover width    | 2.2 mm  |
| Height             | 69.5 mm |
| Depth on NS 35/7,5 | 43.5 mm |
| Depth on NS 35/15  | 51 mm   |

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## 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 | 9.8 kV      |
| Result                | Test passed |

### Temperature-rise test

|                                                 |                                     |
|-------------------------------------------------|-------------------------------------|
| Requirement temperature-rise test               | Increase in temperature $\leq 45$ K |
| Result                                          | Test passed                         |
| Short-time withstand current 6 mm <sup>2</sup>  | 0.72 kA                             |
| Short-time withstand current 10 mm <sup>2</sup> | 1.2 kA                              |
| Result                                          | Test passed                         |

### Power-frequency withstand voltage

|                       |             |
|-----------------------|-------------|
| Test voltage setpoint | 2.2 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     | 5 N         |
| Result                  | Test passed |

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## Test for conductor damage and slackening

|                                |                              |
|--------------------------------|------------------------------|
| Rotation speed                 | 10 rpm                       |
| Revolutions                    | 135                          |
| Conductor cross-section/weight | 0.2 mm <sup>2</sup> / 0.2 kg |
|                                | 6 mm <sup>2</sup> / 1.4 kg   |
|                                | 10 mm <sup>2</sup> / 2 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               | Long life test category 2, bogie-mounted       |
| Frequency              | $f_1 = 5 \text{ Hz}$ to $f_2 = 250 \text{ Hz}$ |
| ASD level              | 11.83 (m/s <sup>2</sup> ) <sup>2</sup> /Hz     |
| Acceleration           | 4.25g                                          |
| 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)                                                    |
| 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 %                                                                                                                |

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## 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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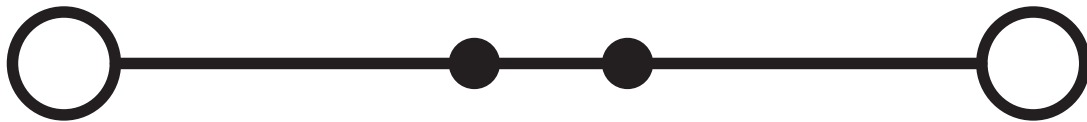
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## Drawings

Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/3031490>

|  <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                 | 50 A                  | 24 - 8            | -                           |
| C                                                                                                                  |                       |                       |                   |                             |
|                                                                                                                    | 600 V                 | 50 A                  | 24 - 8            | -                           |

|                                                                                                                                    |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|  <b>IECEE CB Scheme</b><br>Approval ID: DE1-62810 |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|

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

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

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40009035 |                       |                       |                   |                             |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                            | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine                                                                                                                                      |                       |                       |                   |                             |
|                                                                                                                                            | 1000 V                | 41 A                  | -                 | 0.5 - 6                     |

|  <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                 | 50 A                  | 24 - 8            | -                           |
| C                                                                                                                                  |                       |                       |                   |                             |
|                                                                                                                                    | 600 V                 | 50 A                  | 24 - 8            | -                           |
| F                                                                                                                                  |                       |                       |                   |                             |
|                                                                                                                                    | 1000 V                | 50 A                  | 24 - 8            | -                           |

|                                       |  |  |  |  |
|---------------------------------------|--|--|--|--|
| <b>DNV</b><br>Approval ID: TAE00001CS |  |  |  |  |
|---------------------------------------|--|--|--|--|



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**ATEX**

Approval ID: KEMA00ATEX2129U



**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                                 | 0.068 kg CO2e                            |

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