

# ST 16 - Feed-through terminal block



3036149

<https://www.phoenixcontact.com/us/products/3036149>

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Feed-through terminal block, nom. voltage: 1000 V, nominal current: 76 A, number of connections: 2, connection method: Spring-cage connection, Rated cross section: 16 mm<sup>2</sup>, cross section: 0.2 mm<sup>2</sup> - 25 mm<sup>2</sup>, mounting type: NS 35/7,5, NS 35/15, color: gray

## 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                          | 3036149       |
| Packing unit                         | 50 pc         |
| Minimum order quantity               | 50 pc         |
| Sales key                            | BE02          |
| Product key                          | BE2111        |
| GTIN                                 | 4017918819309 |
| Weight per piece (including packing) | 37.42 g       |
| Weight per piece (excluding packing) | 36.86 g       |
| Customs tariff number                | 85369010      |
| Country of origin                    | PL            |

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## Technical data

### Product properties

|                       |                             |
|-----------------------|-----------------------------|
| Product type          | Feed-through terminal block |
| Product family        | ST                          |
| 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 | 2.43 W |

### Connection data

|   |  |
|---|--|
| Number of connections per level   | 2  |
| Nominal cross section   | 16 mm <sup>2</sup>                                     |
| Connection method   | Spring-cage connection                                 |
| Stripping length  | 18 mm  |
| Internal cylindrical gage   | A7<br>B6   |
| Connection in acc. with standard  | IEC 60947-7-1  |
| Conductor cross-section rigid   | 0.2 mm <sup>2</sup> ... 25 mm <sup>2</sup>             |
| Cross section AWG   | 24 ... 4 (converted acc. to IEC)                       |
| Conductor cross-section flexible  | 0.2 mm <sup>2</sup> ... 16 mm <sup>2</sup>             |
| Conductor cross-section, flexible [AWG]   | 24 ... 6 (converted acc. to IEC)                       |
| Conductor cross-section flexible (ferrule without plastic sleeve)                         | 0.25 mm <sup>2</sup> ... 16 mm <sup>2</sup>            |
| Flexible conductor cross-section (ferrule with plastic sleeve)                            | 0.25 mm <sup>2</sup> ... 16 mm <sup>2</sup>            |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 1.5 mm <sup>2</sup> ... 4 mm <sup>2</sup>              |
| Nominal cross section   | 16 mm <sup>2</sup>                                     |
| Nominal current   | 76 A   |
| Maximum load current  | 90 A (with 25 mm <sup>2</sup> conductor cross-section) |
| Nominal voltage   | 1000 V   |

### Ex data

#### Rated data (ATEX/IECEx)

|                             |  |
|-----------------------------|--|
| Identification              | Ⓔ II 2 GD Ex eb IIC Gb                   |
| Operating temperature range | -60 °C ... 85 °C                         |
| Ex-certified accessories    | 3036657 D-ST 16<br>1206612 SZF 3-1,0X5,5 |

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|   |                                     |
|---|-------------------------------------|
|   | 3022276 CLIPFIX 35-5                |
|   | 3022218 CLIPFIX 35                  |
| List of bridges                                     | Plug-in bridge / FBS 2-12 / 3005950 |
| Bridge data   | 60 A (16 mm <sup>2</sup> )          |
| Ex temperature increase<br>for bridging with bridge | 40 K (71.3 A / 16 mm <sup>2</sup> ) |
| Rated insulation voltage                            | 550 V                               |
| output  | (Permanent)                         |

## Ex level General

|                      |         |
|----------------------|---------|
| Rated voltage        | 550 V   |
| Rated current        | 64.5 A  |
| Maximum load current | 81.5 A  |
| Contact resistance   | 0.34 mΩ |

## Ex connection data General

|                              |  |
|------------------------------|--|
| Nominal cross section        | 16 mm <sup>2</sup>                         |
| Rated cross section AWG      | 6  |
| Connection capacity rigid    | 1.5 mm <sup>2</sup> ... 25 mm <sup>2</sup> |
| Connection capacity AWG      | 16 ... 4                                   |
| Connection capacity flexible | 1.5 mm <sup>2</sup> ... 16 mm <sup>2</sup> |
| Connection capacity AWG      | 16 ... 6                                   |

## Dimensions

|                    |         |
|--------------------|---------|
| Width              | 12.2 mm |
| End cover width    | 2.2 mm  |
| Height             | 80 mm   |
| Depth on NS 35/7,5 | 51.5 mm |
| Depth on NS 35/15  | 59 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          |

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## 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 16 mm <sup>2</sup> | 1.92 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 32/NS 35 |
| Test force setpoint     | 5 N         |
| Result                  | Test passed |

### Test for conductor damage and slackening

|                                |                              |
|--------------------------------|------------------------------|
| Rotation speed                 | 10 (+/- 2) rpm               |
| Revolutions                    | 135                          |
| Conductor cross-section/weight | 0.2 mm <sup>2</sup> / 0.2 kg |
|                                | 16 mm <sup>2</sup> / 2.9 kg  |
|                                | 25 mm <sup>2</sup> / 4.5 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 |

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## 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              | $6.12 \text{ (m/s}^2\text{)}^2\text{/Hz}$      |
| 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):2022-06 |
| 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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## Drawings

Circuit diagram



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## Approvals


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|  <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                 | 85 A                  | 16 - 4            | -                           |
| C  | 600 V                 | 85 A                  | 16 - 4            | -                           |


|  <b>IECEE CB Scheme</b><br>Approval ID: DE1-62791 |  |  |  |  |
|--|--|--|--|--|
|--|--|--|--|--|

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

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

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40009030 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine  | 1000 V                | 76 A                  | -                 | 1.5 - 16                    |

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

|  <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                 | 85 A                  | 16 - 4            | -                           |
| C  | 600 V                 | 85 A                  | 16 - 4            | -                           |

|  <b>ATEX</b><br>Approval ID: KEMA01ATEX2260U |  |  |  |  |
|---|--|--|--|--|
|---|--|--|--|--|

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**IECEX**

Approval ID: IECEX KEM 06.0033U



**CCC**

Approval ID: 2020322313000621



**UKCA-EX**

Approval ID: DEKRA 21 UKEX0303U



**EAC Ex**

Approval ID: KZ 7500525010101950

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## Classifications

### ECLASS

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

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | 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% |
|-------------------------------------|----------------------------|

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 0.197 kg CO2e |
|---------|---------------|

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