

# PT 16 N BU - Feed-through terminal block



3212142

<https://www.phoenixcontact.com/us/products/3212142>

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16 mm<sup>2</sup>



Push-in



76 A

IEC



1000 V

IEC



Feed-through terminal block, nom. voltage: 1000 V, nominal current: 76 A, number of connections: 2, connection method: Push-in connection, Rated cross section: 16 mm<sup>2</sup>, cross section: 0.5 mm<sup>2</sup> - 25 mm<sup>2</sup>, 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
- Optimized for manual and automated wiring

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 3212142       |
| Packing unit                         | 50 pc         |
| Minimum order quantity               | 50 pc         |
| Sales key                            | BE22          |
| Product key                          | BE2211        |
| GTIN                                 | 4046356494830 |
| Weight per piece (including packing) | 31.444 g      |
| Weight per piece (excluding packing) | 31.08 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        | PT                          |
| Area of application   | Railway industry            |
|                       | Machine building            |
|                       | Plant engineering           |
| 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                                                                         | Push-in connection                                            |
| Stripping length                                                                          | 18 mm ... 20 mm                                               |
| Internal cylindrical gage                                                                 | A7                                                            |
| Connection in acc. with standard                                                          | IEC 60947-7-1                                                 |
| Conductor cross-section rigid                                                             | 0.5 mm <sup>2</sup> ... 25 mm <sup>2</sup>                    |
| Cross section AWG                                                                         | 20 ... 4 (converted acc. to IEC)                              |
| Conductor cross-section flexible                                                          | 0.5 mm <sup>2</sup> ... 25 mm <sup>2</sup>                    |
| Conductor cross-section, flexible [AWG]                                                   | 20 ... 4 (converted acc. to IEC)                              |
| Conductor cross-section flexible (ferrule without plastic sleeve)                         | 0.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>                    |
| Flexible conductor cross-section (ferrule with plastic sleeve)                            | 0.5 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                                                                      | 85 A (with 25 mm <sup>2</sup> conductor cross-section, rigid) |
| Nominal voltage                                                                           | 1000 V                                                        |

### Connection cross sections directly pluggable

|                                                                   |                                            |
|-------------------------------------------------------------------|--------------------------------------------|
| Conductor cross-section rigid                                     | 2.5 mm <sup>2</sup> ... 25 mm <sup>2</sup> |
| Conductor cross-section flexible (ferrule without plastic sleeve) | 2.5 mm <sup>2</sup> ... 16 mm <sup>2</sup> |
| Flexible conductor cross-section (ferrule with plastic sleeve)    | 2.5 mm <sup>2</sup> ... 16 mm <sup>2</sup> |

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## Ex data

### Rated data (ATEX/IECEx)

|                                 |                                     |
|---------------------------------|-------------------------------------|
| Identification                  | Ex II 2 GD Ex eb IIC Gb             |
| Operating temperature range (1) | -60 °C ... 85 °C                    |
| Operating temperature range (2) | -40 °C ... 110 °C                   |
| Ex-certified accessories        | 3212060 D-PT 16 N                   |
|                                 | 1206612 SZF 3-1,0X5,5               |
|                                 | 3022276 CLIPFIX 35-5                |
|                                 | 3022218 CLIPFIX 35                  |
| List of bridges                 | Plug-in bridge / FBS 2-12 / 3005950 |
| Bridge data                     | 60.5 A (16 mm <sup>2</sup> )        |
| Ex temperature increase         | 40 K (65.5 A / 16 mm <sup>2</sup> ) |
| for bridging with bridge        | 550 V                               |
| Rated insulation voltage        | 500 V                               |
| output                          | (Permanent)                         |

### Ex level General

|                      |         |
|----------------------|---------|
| Rated voltage        | 550 V   |
| Rated current        | 65.5 A  |
| Maximum load current | 78 A    |
| Contact resistance   | 0.31 mΩ |

### Ex connection data General

|                              |                                            |
|------------------------------|--------------------------------------------|
| Nominal cross section        | 16 mm <sup>2</sup>                         |
| Rated cross section AWG      | 6                                          |
| Connection capacity rigid    | 0.5 mm <sup>2</sup> ... 25 mm <sup>2</sup> |
| Connection capacity AWG      | 20 ... 4                                   |
| Connection capacity flexible | 0.5 mm <sup>2</sup> ... 16 mm <sup>2</sup> |
| Connection capacity AWG      | 20 ... 6                                   |

## Dimensions

|                    |         |
|--------------------|---------|
| Width              | 12.2 mm |
| End cover width    | 2.2 mm  |
| Height             | 75.4 mm |
| Depth on NS 35/7,5 | 52.6 mm |
| Depth on NS 35/15  | 60.1 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          |

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|                                                         |             |
|---------------------------------------------------------|-------------|
| 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 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 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 | 0.5 mm <sup>2</sup> / 0.3 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

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## Service life

|                             |     |
|-----------------------------|-----|
| Insertion/withdrawal cycles | 100 |
|-----------------------------|-----|

## 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              | $6.12 \text{ (m/s}^2\text{)}^2\text{/Hz}$      |
| Acceleration           | $30.6 \text{ m/s}^2$                           |
| 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                   | $300 \text{ m/s}^2$                 |
| 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

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/3212142>

| <b>CSA</b><br>Approval ID: 158887 |                       |                       |                   |                             |
|-----------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B                                 | 600 V                 | 70 A                  | 20 - 4            | -                           |
| C                                 | 600 V                 | 70 A                  | 20 - 4            | -                           |

| <b>IECEE CB Scheme</b><br>Approval ID: DE1-62846 |                       |                       |                   |                             |
|--------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine                                            | 1000 V                | 76 A                  | -                 | 0.5 - 16                    |

|                                                 |  |  |  |  |
|-------------------------------------------------|--|--|--|--|
| <b>EAC</b><br>Approval ID: RU C-DE.BL08.B.00644 |  |  |  |  |
|-------------------------------------------------|--|--|--|--|

| <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                  | 20 - 4            | -                           |
| C                                              | 600 V                 | 85 A                  | 20 - 4            | -                           |

|                                       |  |  |  |  |
|---------------------------------------|--|--|--|--|
| <b>LR</b><br>Approval ID: LR2371832TA |  |  |  |  |
|---------------------------------------|--|--|--|--|

| <b>VDE Zeichengenehmigung</b><br>Approval ID: 40040917 |                       |                       |                   |                             |
|--------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                        | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine                                                  | 1000 V                | 76 A                  | -                 | 0.5 - 16                    |

|                                               |  |  |  |  |
|-----------------------------------------------|--|--|--|--|
| <b>cUL Recognized</b><br>Approval ID: E192998 |  |  |  |  |
|-----------------------------------------------|--|--|--|--|

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|       | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|-------|-----------------------|-----------------------|-------------------|-----------------------------|
| keine |                       |                       |                   |                             |
|       | 550 V                 | 85 A                  | 20 - 4            | -                           |



**EAC Ex**

Approval ID: RU C-DE.AB72.B.02351



**IECEx**

Approval ID: IECEx SEV13.0005U



**UL Recognized**

Approval ID: E192998

|       | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|-------|-----------------------|-----------------------|-------------------|-----------------------------|
| keine |                       |                       |                   |                             |
|       | 550 V                 | 85 A                  | 20 - 4            | -                           |



**ATEX**

Approval ID: SEV13ATEX0159U



**CCC**

Approval ID: 2020322313000631



**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% |
|-------------------------------------|----------------------------|

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