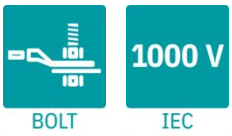
# RBO 16-FE-HC - Bolt connection terminal block

3247991

https://www.phoenixcontact.com/us/products/3247991

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Bolt connection terminal block, nom. voltage: 1000 V, nominal current: 520 A, number of connections: 2, number of positions: 1, connection method: Bolt connection, Rated cross section: 300 mm$^2$, mounting type: NS 35/7,5, NS 35/15, direct screw connection, color: black/yellow

## Your advantages

- Tested for railway applications

## Commercial data

| | |
|---|---|
| Item number | 3247991 |
| Packing unit | 5 pc |
| Minimum order quantity | 5 pc |
| Sales key | BE44 |
| Product key | BE4412 |
| GTIN | 4046356725187 |
| Weight per piece (including packing) | 664 g |
| Weight per piece (excluding packing) | 664 g |
| Customs tariff number | 85369010 |
| Country of origin | IN |

# Technical data

## Notes

### General

| | |
|---|---|
| Note | The rated insulation voltage applies to cable lugs for compression connection acc. to DIN 46235:1983-07 and for uninsulated cable lugs acc. to DIN 46234:1980-03 with path extension. |

## Product properties

| | |
|---|---|
| Product type | Bolt connection terminal block |
| Product family | RBO |
| Area of application | Railway industry |
| | Machine building |
| | Plant engineering |
| Number of positions | 1 |
| Pitch | 54.8 mm |
| 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 | 16.22 W |

## Connection data

| | |
|---|---|
| Number of connections per level | 2 |
| Nominal cross section | 300 mm² |
| Connection method | Bolt connection |
| Stripping length | The stripping length depends on the specification provided by the cable lug manufacturer. |
| Connection in acc. with standard | IEC 60947-7-1 |
| Nominal cross section | 300 mm² |
| Nominal current | 520 A |
| Maximum load current | 520 A (At a conductor cross-section of 300 mm²) |
| Nominal voltage | 1000 V |

### Cable lug connection DIN 46234:1980-03

| | |
|---|---|
| Connection in acc. with standard | DIN 46234:1980-03 |
| Cross section | 25 mm² ... 300 mm² |
| Cross section range AWG | 4 ... 600 kcmil (converted acc. to IEC) |

| | |
|---|---|
| Hole diameter | 17 mm |
| Width | 38 mm |
| Bolt diameter | 16 mm |
| Screw thread | M16 |
| Tightening torque | 25 ... 35 Nm |
| Connection in acc. with standard | DIN 46235:1983-07 |
| Cross section | 25 mm² ... 300 mm² |
| Cross section range AWG | 4 ... 600 kcmil (converted acc. to IEC) |
| Hole diameter | 17 mm |
| Width | 48 mm |
| Bolt diameter | 16 mm |
| Screw thread | M16 |
| Tightening torque | 25 ... 35 Nm |

## Ex data

Rated data (ATEX/IECEx)

| | |
|---|---|
| Identification | Ⓔx II 2 GD Ex eb IIC Gb |
| Operating temperature range | -60 °C ... 110 °C |
| Ex-certified accessories | 0800886 E/NS 35 N |
| List of bridges | / RBO 16-VS 2 / 3244685 |
| | / RBO 16-VS 3 / 3244698 |
| Bridge data | 520 A (300 mm²) |
| Ex temperature increase | 40 K (520 A / 300 mm²) |
| for bridging with bridge | 1100 V |
| Rated insulation voltage | 1000 V |
| output | (Permanent) |

Ex level General

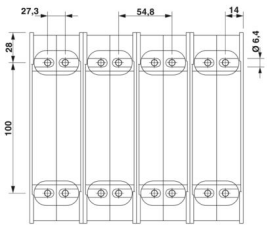
| | |
|---|---|
| Rated voltage | 1100 V |
| Rated current | 520 A |
| Maximum load current | 520 A |
| Contact resistance | 0.02 mΩ |

Ex connection data General

| | |
|---|---|
| Torque range | 25 Nm ... 35 Nm |
| Nominal cross section | 300 mm² |
| Rated cross section AWG | 600 kcmil |
| Connection capacity rigid | 25 mm² ... 300 mm² |
| Connection capacity AWG | 4 ... 600 kcmil |
| Connection capacity flexible | 25 mm² ... 300 mm² |
| Connection capacity AWG | 4 ... 600 kcmil |
| 2 conductors with same cross section, solid | 25 mm² ... 300 mm² |
| 2 conductors with the same cross-section AWG rigid | 4 ... 600 kcmil |
| 2 conductors with same cross section, stranded | 25 mm² ... 300 mm² |

| | |
|---|---|
| 2 conductors with the same cross-section AWG flexible | 4 ... 600 kcmil |

## Dimensions

| | |
|---|---|
| Dimensional drawing |  |
| Width | 54.8 mm |
| Height | 283.5 mm |
| Depth on NS 35/7,5 | 91.8 mm |
| Depth on NS 35/15 | 99.3 mm |
| Bolt length | 45 mm |
| Hole diameter | 6.4 mm |
| Pitch | 54.8 mm |

## Material specifications

| | |
|---|---|
| Color | multicolored (RAL -) |
| | black (RAL 9005) |
| | yellow (RAL 1018) |
| 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 ≤ 45 K |
| Result | Test passed |

| | |
|---|---|
| Short-time withstand current 300 mm² | 36 kA |
| Result | Test passed |

Power-frequency withstand voltage

| | |
|---|---|
| Test voltage setpoint | 2.2 kV |
| Result | Test passed |

## Mechanical properties

Mechanical data

| | |
|---|---|
| Open side panel | No |

## Mechanical tests

Mechanical strength

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

Attachment on the carrier

| | |
|---|---|
| DIN rail/fixing support | NS 35 |
| Test force setpoint | 20 N |
| Result | Test passed |

## Environmental and real-life conditions

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 1, class B, body mounted |
| Frequency | $f_1$ = 5 Hz to $f_2$ = 150 Hz |
| ASD level | 1.857 $(m/s^2)^2/Hz$ |
| Acceleration | 0.8g |
| 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 % |
| Permissible humidity (storage/transport) | 30 % ... 70 % |

## Standards and regulations

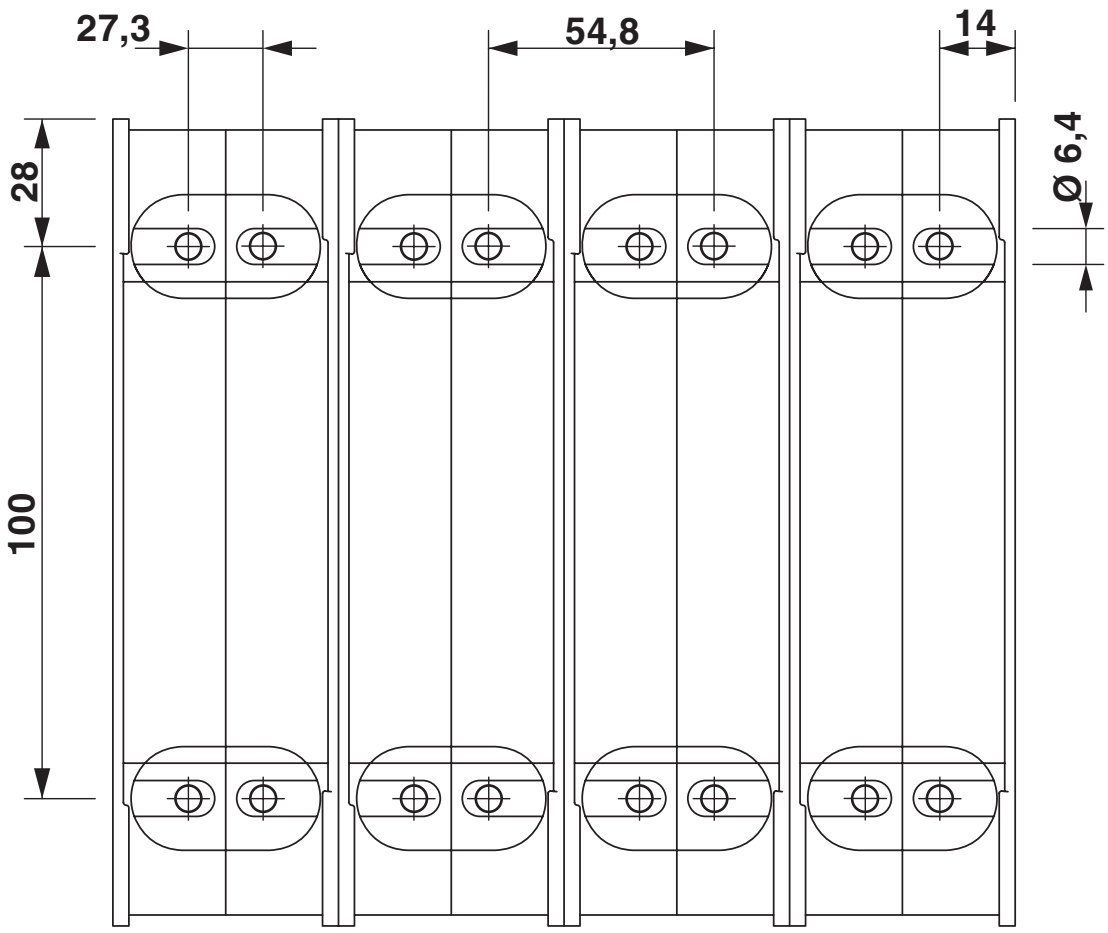
| | |
|---|---|
| Connection in acc. with standard | IEC 60947-7-1 |

## Mounting

| | |
|---|---|
| Mounting type | NS 35/7,5 |
| | NS 35/15 |
| | direct screw connection |

## Drawings

Dimensional drawing



Circuit diagram



## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/3247991

**CSA**
Approval ID: 13631

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| C | | | | |
| | 1000 V | 540 A | 4 - 1000 | - |

**UL Recognized**
Approval ID: E60425

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| B | | | | |
| | 600 V | 540 A | 4 - 1000 | - |
| C | | | | |
| | 600 V | 540 A | 4 - 1000 | - |
| E | | | | |
| | 1000 V | 540 A | 4 - 1000 | - |

**EAC**
Approval ID: RU C-DE.BL08.B.00540

**DNV**
Approval ID: TAE00004G1

**IECEx**
Approval ID: IECExSEV13.0003U

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| keine | | | | |
| | 1100 V | 520 A | - | 25 - 300 |

**ATEX**
Approval ID: SEV13ATEX0132U

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| keine | | | | |
| | 1100 V | 520 A | - | 25 - 300 |

**CCC**
Approval ID: 2020322313000627

**UKCA-EX**
Approval ID: CML 22UKEX1230U

**EAC Ex**
Approval ID: KZ 7500525010101950

## Classifications

### ECLASS

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

### ETIM

| | |
|---|---|
| ETIM 10.0 | EC000897 |

### UNSPSC

| | |
|---|---|
| UNSPSC 21.0 | 39121400 |

## 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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