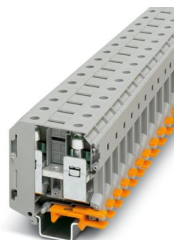


# UKH 70 - High-current terminal block

3213140

<https://www.phoenixcontact.com/ie/products/3213140>

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High-current terminal block, nom. voltage: 1000 V, nominal current: 192 A, number of connections: 2, number of positions: 1, connection method: Screw connection, Rated cross section: 70 mm<sup>2</sup>, cross section: 16 mm<sup>2</sup> - 95 mm<sup>2</sup>, mounting type: NS 35/7,5, NS 35/15, NS 35/15-2,3, NS 32, color: gray

## Your advantages

- Reliable cable connection is ensured by three-point centering of the conductor in the prismatic sleeve base<br/>
- Tested for railway applications
- Low contact resistance of the contact surface due to ribbing
- Screw locking by means of spring-loaded elements in the clamping part

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## Technical data

### Notes

#### General

|      |   |
|------|---|
| Note | For a reliable contact of multi stranded conductors it is recommended to untwist multi stranded conductors. |
|------|---|

### Product properties

|                       |                             |
|-----------------------|-----------------------------|
| Product type          | High current terminal block |
| Area of application   | Railway industry            |
|                       | Machine building            |
|                       | Plant engineering           |
| Number of positions   | 1                           |
| 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 | 6.27 W |

### Connection data

|                                 |                    |
|---------------------------------|--------------------|
| Number of connections per level | 2                  |
| Nominal cross section           | 70 mm <sup>2</sup> |

#### Level 1 above 1 below 1

|   |   |
|---|---|
| Connection method   | Screw connection                          |
| Screw thread  | M8  |
| Tightening torque   | 8 ... 10 Nm                               |
| Stripping length  | 24 mm                                     |
| Internal cylindrical gage   | A11                                       |
| Connection in acc. with standard                                  | IEC 60947-7-1                             |
| Conductor cross-section rigid                                     | 16 mm <sup>2</sup> ... 95 mm <sup>2</sup> |
| Cross section AWG   | 4 ... 3/0 (converted acc. to IEC)         |
| Conductor cross-section flexible                                  | 25 mm <sup>2</sup> ... 70 mm <sup>2</sup> |
| Conductor cross-section, flexible [AWG]                           | 2 ... 2/0 (converted acc. to IEC)         |
| Conductor cross-section flexible (ferrule without plastic sleeve) | 16 mm <sup>2</sup> ... 70 mm <sup>2</sup> |
| Flexible conductor cross-section (ferrule with plastic sleeve)    | 16 mm <sup>2</sup> ... 70 mm <sup>2</sup> |
| 2 conductors with same cross section, rigid                       | 16 mm <sup>2</sup> ... 25 mm <sup>2</sup> |
| 2 conductors with same cross section, flexible                    | 16 mm <sup>2</sup> ... 25 mm <sup>2</sup> |

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|   |  |
|---|--|
| 2 conductors with same cross section, flexible, with ferrule without plastic sleeve | 16 mm <sup>2</sup> ... 25 mm <sup>2</sup>  |
| Nominal cross section   | 70 mm <sup>2</sup>   |
| Nominal current   | 192 A  |
| Maximum load current  | 192 A (with 70 mm <sup>2</sup> conductor cross-section)  |
| Nominal voltage   | 1000 V   |
| Note  | Note: Product releases, connection cross sections and notes on connecting aluminum cables can be found in the download area. |

## Ex data

### Rated data (ATEX/IECEx)

|                             |                                    |
|-----------------------------|------------------------------------|
| Identification              | Ⓔ II 2 GD Ex eb IIC Gb             |
| Operating temperature range | -60 °C ... 110 °C                  |
| Ex-certified accessories    | 1201934 VDE-ISS 6                  |
|                             | 1201659 E/AL-NS 32                 |
|                             | 1201662 E/AL-NS 35                 |
| List of bridges             | / FBI 2-20 N EX / 3213210          |
|                             | / FBI 3-20 N EX / 3213211          |
| Bridge data                 | 180 A (70 mm <sup>2</sup> )        |
| Ex temperature increase     | 40 K (180 A / 70 mm <sup>2</sup> ) |
| Rated insulation voltage    | 800 V (NS 35)                      |
|                             | 630 V (NS 32)                      |
| output                      | (Permanent)                        |

### Ex level General

|                      |               |
|----------------------|---------------|
| Rated voltage        | 880 V (NS 35) |
|                      | 690 V (NS 32) |
| Rated current        | 180 A         |
| Maximum load current | 180 A         |
| Contact resistance   | 0.08 mΩ       |

### Ex connection data General

|   |   |
|---|---|
| Torque range  | 8 Nm ... 10 Nm                            |
| Nominal cross section                                 | 70 mm <sup>2</sup>                        |
| Rated cross section AWG                               | 2/0                                       |
| Connection capacity rigid                             | 16 mm <sup>2</sup> ... 95 mm <sup>2</sup> |
| Connection capacity AWG                               | 4 ... 3/0                                 |
| Connection capacity flexible                          | 25 mm <sup>2</sup> ... 70 mm <sup>2</sup> |
| Connection capacity AWG                               | 3 ... 2/0                                 |
| 2 conductors with same cross section, solid           | 16 mm <sup>2</sup> ... 25 mm <sup>2</sup> |
| 2 conductors with the same cross-section AWG rigid    | 4 ... 3                                   |
| 2 conductors with same cross section, stranded        | 16 mm <sup>2</sup> ... 25 mm <sup>2</sup> |
| 2 conductors with the same cross-section AWG flexible | 4 ... 3                                   |

## Dimensions

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|                    |         |
|--------------------|---------|
| Width              | 20.3 mm |
| Height             | 70.5 mm |
| Depth              | 78.3 mm |
| Depth on NS 32     | 85.4 mm |
| Depth on NS 35/7,5 | 80 mm   |
| Depth on NS 35/15  | 87.5 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                         |
| Short-time withstand current 70 mm <sup>2</sup> | 8.4 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 |
|--------|-------------|

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## Attachment on the carrier

|                         |             |
|-------------------------|-------------|
| DIN rail/fixing support | NS 32/NS 35 |
| Test force setpoint     | 10 N        |
| Result                  | Test passed |

## Test for conductor damage and slackening

|                                |                             |
|--------------------------------|-----------------------------|
| Rotation speed                 | 10 (+/- 2) rpm              |
| Revolutions                    | 135                         |
| Conductor cross-section/weight | 16 mm <sup>2</sup> / 2.9 kg |
|                                | 70 mm <sup>2</sup> /10.4 kg |
|                                | 95 mm <sup>2</sup> /14 kg   |
| 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):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):2022-06 |
| 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     |
|               | NS 35/15-2,3 |
|               | NS 32        |

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