

# MSB 2,5-M - Mini feed-through terminal block



3244067

<https://www.phoenixcontact.com/us/products/3244067>

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Mini feed-through terminal block, Mounting in conjunction with flange or securing pin terminal, nom. voltage: 800 V, nominal current: 24 A, number of connections: 2, connection method: Spring-cage connection, 1 level, Rated cross section: 2.5 mm<sup>2</sup>, cross section: 0.08 mm<sup>2</sup> - 4 mm<sup>2</sup>, mounting type: other, color: gray

## Your advantages

- Clear arrangement thanks to marking of all terminal points
- Space saving thanks to compact design and mounting option on a 15 mm DIN rail

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 3244067             |
| Packing unit                         | 50 pc               |
| Minimum order quantity               | 50 pc               |
| Sales key                            | BE02                |
| Product key                          | BE2165              |
| Catalog page                         | Page 223 (C-1-2019) |
| GTIN                                 | 4046356145374       |
| Weight per piece (including packing) | 3.932 g             |
| Weight per piece (excluding packing) | 3.848 g             |
| Customs tariff number                | 85369010            |
| Country of origin                    | CN                  |

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## Technical data

### Product properties

|                       |                          |
|-----------------------|--------------------------|
| Product type          | Miniature terminal block |
| Number of connections | 2                        |
| Number of rows        | 1                        |

### Insulation characteristics

|                      |     |
|----------------------|-----|
| Overvoltage category | III |
| Degree of pollution  | 3   |

### Electrical properties

|   |        |
|---|--------|
| Rated surge voltage                             | 8 kV   |
| Maximum power dissipation for nominal condition | 0.77 W |

### Connection data

|                                 |                     |
|---------------------------------|---------------------|
| Number of connections per level | 2                   |
| Nominal cross section           | 2.5 mm <sup>2</sup> |

#### 1 level

|   |   |
|---|---|
| Stripping length  | 8 mm  |
| Internal cylindrical gage   | A3  |
| Connection in acc. with standard  | IEC 60947-7-1   |
| Conductor cross section rigid   | 0.08 mm <sup>2</sup> ... 4 mm <sup>2</sup>            |
| Cross section AWG   | 28 ... 12 (converted acc. to IEC)                     |
| Conductor cross section flexible  | 0.08 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>          |
| Conductor cross section, flexible [AWG]   | 28 ... 14 (converted acc. to IEC)                     |
| Conductor cross-section flexible (ferrule without plastic sleeve)                         | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>          |
| Flexible conductor cross section (ferrule with plastic sleeve)                            | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>          |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm <sup>2</sup>                                   |
| Nominal current   | 24 A  |
| Maximum load current  | 30 A (with 4 mm <sup>2</sup> conductor cross section) |
| Nominal voltage   | 800 V   |
| Nominal cross section   | 2.5 mm <sup>2</sup>                                   |
| Connection in acc. with standard  | IEC/EN 60079-7  |
| Cross section AWG   | 28 ... 12 (converted acc. to IEC)                     |
| Conductor cross section, flexible [AWG]   | 28 ... 14 (converted acc. to IEC)                     |

### Ex data

#### Rated data (ATEX/IECEx)

|                             |                       |
|-----------------------------|-----------------------|
| Identification              | ⊕ II 2 G Ex eb IIC Gb |
| Operating temperature range | -60 °C ... 110 °C     |
|                             | 3024177 D-MZB 1,5     |

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|  |  |
|--|--|
| Ex-certified accessories   | 3024180 D-MSB 1,5-F<br>1204517 SZF 1-0,6X3,5 |
| Ex temperature increase  | 40 K (21.3 A / 2.5 mm <sup>2</sup> )         |
| Rated insulation voltage when mounting on DIN rails                | 630 V  |
| Rated insulation voltage when directly mounted on mounting surface | 500 V  |
| output   | (Permanent)                                  |

## Ex level General

|  |         |
|--|---------|
| Rated voltage when mounting on DIN rails                 | 690 V   |
| Rated voltage during direct mounting on mounting surface | 550 V   |
| Rated current  | 21 A    |
| Maximum load current                                     | 26 A    |
| Contact resistance                                       | 0.87 mΩ |

## Ex connection data General

|                              |  |
|------------------------------|--|
| Nominal cross section        | 2.5 mm <sup>2</sup>                          |
| Rated cross section AWG      | 14   |
| Connection capacity rigid    | 0.08 mm <sup>2</sup> ... 4 mm <sup>2</sup>   |
| Connection capacity AWG      | 28 ... 12                                    |
| Connection capacity flexible | 0.08 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Connection capacity AWG      | 28 ... 14                                    |

## Dimensions

|                 |        |
|-----------------|--------|
| Width           | 5.2 mm |
| End cover width | 4 mm   |
| Height          | 32 mm  |
| Depth           | 22 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          |
| Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) | 130 °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     |
| Calorimetric heat release NFPA 130 (ASTM E 1354)                        | 28 MJ/kg        |
| 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 2.5 mm <sup>2</sup> | 0.3 kA                              |
| Short-time withstand current 4 mm <sup>2</sup>   | 0.48 kA                             |
| Result   | Test passed                         |

### Power-frequency withstand voltage

|                       |             |
|-----------------------|-------------|
| Test voltage setpoint | 2 kV        |
| Result                | Test passed |

## Mechanical properties

### Mechanical data

|                 |     |
|-----------------|-----|
| Open side panel | Yes |
|-----------------|-----|

## Mechanical tests

### Mechanical strength

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

### Test for conductor damage and slackening

|                                |                               |
|--------------------------------|-------------------------------|
| Rotation speed                 | 10 rpm                        |
| Revolutions                    | 135                           |
| Conductor cross section/weight | 0.08 mm <sup>2</sup> / 0.1 kg |
|                                | 2.5 mm <sup>2</sup> / 0.7 kg  |
|                                | 4 mm <sup>2</sup> / 0.9 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      | Service life test category 1, class B, body mounted |

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|                        |  |
|------------------------|--|
| Frequency              | $f_1 = 5 \text{ Hz}$ to $f_2 = 150 \text{ Hz}$ |
| ASD level              | $0.964 \text{ (m/s}^2\text{)}^2\text{/Hz}$     |
| Acceleration           | 0.58g  |
| 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  |
|                                  | IEC/EN 60079-7 |

## Mounting

|               |       |
|---------------|-------|
| Mounting type | other |
|---------------|-------|

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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 $\text{mm}^2$ |
| Use group B  | 600 V                 | 20 A                  | 28 - 12           | -                           |
| Use group C  | 600 V                 | 20 A                  | 28 - 12           | -                           |

|  <b>IECEE CB Scheme</b><br>Approval ID: DE1-62820 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|  | 800 V                 | 24 A                  | -                 | 0.2 - 2.5                   |

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40029769 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|  | 800 V                 | 24 A                  | -                 | 0.2 - 2.5                   |

|  <b>cULus Recognized</b><br>Approval ID: E60425 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| Use group B  | 600 V                 | 20 A                  | 28 - 12           | -                           |
| Use group C  | 600 V                 | 20 A                  | 28 - 12           | -                           |

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

|  <b>IECEx</b><br>Approval ID: IECExPTB08.0048U |  |  |  |  |
|---|--|--|--|--|
|---|--|--|--|--|

|  <b>ATEX</b><br>Approval ID: PTB08ATEX1075U |  |  |  |  |
|--|--|--|--|--|
|--|--|--|--|--|

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CCC

Approval ID: 2020322313000629

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27141120 |
| ECLASS-13.0 | 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% |
|-------------------------------------|----------------------------|

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