

# MSDBV 2,5 BU - Mini feed-through terminal block



3249156

<https://www.phoenixcontact.com/us/products/3249156>

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Mini feed-through terminal block, nom. voltage: 800 V, nominal current: 24 A, number of connections: 4, connection method: Spring-cage connection, Rated cross section: 2.5 mm<sup>2</sup>, 1 level, cross section: 0.08 mm<sup>2</sup> - 4 mm<sup>2</sup>, mounting type: NS 15, color: blue

## Your advantages

- For mounting on NS 15 ... DIN rail
- Clear arrangement thanks to marking of all terminal points
- Space saving thanks to compact design and mounting option on a 15 mm DIN rail
- Easy potential distribution thanks to standardized plug-in bridges

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 3249156       |
| Packing unit                         | 50 pc         |
| Minimum order quantity               | 50 pc         |
| Sales key                            | NULL          |
| Product key                          | BE2163        |
| GTIN                                 | 4046356165853 |
| Weight per piece (including packing) | 7.2 g         |
| Weight per piece (excluding packing) | 3.83 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 | 4                        |
| Number of rows        | 1                        |
| Potentials            | 2                        |

### 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

|                                                                                           |                                                       |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Connection method                                                                         | Spring-cage connection                                |
| 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 cross section                                                                     | 2.5 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                                                 |
| Connection in acc. with standard                                                          | IEC/EN 60079-7                                        |

### Dimensions

|                 |         |
|-----------------|---------|
| Width           | 10.4 mm |
| End cover width | 4 mm    |
| Height          | 32 mm   |
| Depth           | 22 mm   |
| Depth on NS 15  | 30 mm   |

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## 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          |
| 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          |

## Electrical tests

### Surge voltage test

|        |             |
|--------|-------------|
| 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 | 0.002 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 |
| Result                  | Test passed |

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## Test for conductor damage and slackening

|                                |                               |
|--------------------------------|-------------------------------|
| Rotation speed                 | 10 (+/- 2) 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):2018-05            |
| 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                              |

### Shocks

|                                |                                   |
|--------------------------------|-----------------------------------|
| 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.) |

### 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 |

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## Mounting

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

|       |
|-------|
| NS 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/3249156>

|  <b>CSA</b><br>Approval ID: 13631 |                       |                       |                   |                      |
|--------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|----------------------|
|                                                                                                                    | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
| B                                                                                                                  | 600 V                 | 20 A                  | 28 - 12           | -                    |
| C                                                                                                                  | 600 V                 | 20 A                  | 28 - 12           | -                    |
| D                                                                                                                  | 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 $mm^2$ |
| keine                                                                                                                              | 800 V                 | 24 A                  | -                 | 0.2 - 2.5            |

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

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40029769 |                       |                       |                   |                      |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|----------------------|
|                                                                                                                                            | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
| keine                                                                                                                                      | 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 $mm^2$ |
| B                                                                                                                                  | 600 V                 | 20 A                  | 28 - 12           | -                    |
| C                                                                                                                                  | 600 V                 | 20 A                  | 28 - 12           | -                    |
| D                                                                                                                                  | 600 V                 | 5 A                   | 28 - 12           | -                    |

|  <b>EAC</b><br>Approval ID: KZ7500651131219505 |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|-----------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|

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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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