

## Mini feed-through terminal block - MSB 2,5-F - 3244041

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Mini feed-through terminal block, nom. voltage: 800 V, nominal current: 24 A, connection method: Spring-cage connection, number of connections: 2, cross section: 0.08 mm<sup>2</sup> - 4 mm<sup>2</sup>, AWG: 28 - 12, width: 5.2 mm, height: 22 mm, color: gray, mounting type: on mounting plate

### Your advantages

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



### Key Commercial Data

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 50 pc                                                                                                   |
| GTIN         | <br>4 046356 145411 |
| GTIN         | 4046356145411                                                                                           |

### Technical data

#### General

|                                                 |                                                       |
|-------------------------------------------------|-------------------------------------------------------|
| Number of levels                                | 1                                                     |
| Number of connections                           | 2                                                     |
| Nominal cross section                           | 2.5 mm <sup>2</sup>                                   |
| Color                                           | gray                                                  |
| Insulating material                             | PA                                                    |
| Flammability rating according to UL 94          | V0                                                    |
| Rated surge voltage                             | 8 kV                                                  |
| Degree of pollution                             | 3                                                     |
| Overvoltage category                            | III                                                   |
| Insulating material group                       | I                                                     |
| Maximum power dissipation for nominal condition | 0.77 W                                                |
| Maximum load current                            | 30 A (with 4 mm <sup>2</sup> conductor cross section) |
| Nominal current I <sub>N</sub>                  | 24 A                                                  |
| Nominal voltage U <sub>N</sub>                  | 800 V                                                 |

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## Technical data

### General

|                                                                                           |                                                                        |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Open side panel                                                                           | Yes                                                                    |
| Ambient temperature (operation)                                                           | -60 °C ... 85 °C                                                       |
| Ambient temperature (storage/transport)                                                   | -25 °C ... 55 °C (For a short time, not exceeding 24 h, -60 to +70 °C) |
| Permissible humidity (storage/transport)                                                  | 30 % ... 70 %                                                          |
| Ambient temperature (assembly)                                                            | -5 °C ... 70 °C                                                        |
| Ambient temperature (actuation)                                                           | -5 °C ... 70 °C                                                        |
| Shock protection test specification                                                       | DIN EN 50274 (VDE 0660-514):2002-11                                    |
| Back of the hand protection                                                               | guaranteed                                                             |
| Finger protection                                                                         | guaranteed                                                             |
| Result of surge voltage test                                                              | Test passed                                                            |
| Result of power-frequency withstand voltage test                                          | Test passed                                                            |
| Power frequency withstand voltage setpoint                                                | 2 kV                                                                   |
| Result of the test for mechanical stability of terminal points (5 x conductor connection) | Test passed                                                            |
| Result of bending test                                                                    | Test passed                                                            |
| Bending test rotation speed                                                               | 10 rpm                                                                 |
| Bending test turns                                                                        | 135                                                                    |
| Bending test 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                                             |
| Tensile test result                                                                       | Test passed                                                            |
| Result of voltage-drop test                                                               | Test passed                                                            |
| Result of temperature-rise test                                                           | Test passed                                                            |
| Requirement temperature-rise test                                                         | Increase in temperature ≤ 45 K                                         |
| Short circuit stability result                                                            | Test passed                                                            |
| Conductor cross section short circuit testing                                             | 2.5 mm <sup>2</sup>                                                    |
| Short-time current                                                                        | 0.3 kA                                                                 |
| Conductor cross section short circuit testing                                             | 4 mm <sup>2</sup>                                                      |
| Short-time current                                                                        | 0.48 kA                                                                |
| Result of thermal test                                                                    | Test passed                                                            |
| Ageing test for screwless modular terminal block temperature cycles                       | 192                                                                    |
| Proof of thermal characteristics (needle flame) effective duration                        | 30 s                                                                   |
| Result of aging test                                                                      | Test passed                                                            |
| Oscillation, broadband noise test result                                                  | Test passed                                                            |
| Test specification, oscillation, broadband noise                                          | DIN EN 50155 (VDE 0115-200):2008-03                                    |
| Test spectrum                                                                             | Service life test category 1, class B, body mounted                    |
| Test frequency                                                                            | f <sub>1</sub> = 5 Hz to f <sub>2</sub> = 150 Hz                       |
| ASD level                                                                                 | 1.857 (m/s <sup>2</sup> ) <sup>2</sup> /Hz                             |
| Acceleration                                                                              | 0,8 g                                                                  |
| Test duration per axis                                                                    | 5 h                                                                    |
| Test directions                                                                           | X-, Y- and Z-axis                                                      |

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## Technical data

### General

|                                                                         |                                     |
|-------------------------------------------------------------------------|-------------------------------------|
| Shock test result                                                       | Test passed                         |
| Test specification, shock test                                          | DIN EN 50155 (VDE 0115-200):2008-03 |
| Shock form                                                              | Half-sine                           |
| Acceleration                                                            | 5g                                  |
| Shock duration                                                          | 30 ms                               |
| Number of shocks per direction                                          | 3                                   |
| Test directions                                                         | X-, Y- and Z-axis (pos. and neg.)   |
| Relative insulation material temperature index (Elec., UL 746 B)        | 130 °C                              |
| Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21)) | 130 °C                              |
| Static insulating material application in cold                          | -60 °C                              |
| Surface flammability NFPA 130 (ASTM E 162)                              | passed                              |
| Specific optical density of smoke NFPA 130 (ASTM E 662)                 | passed                              |
| Calorimetric heat release NFPA 130 (ASTM E 1354)                        | 28 MJ/kg                            |
| Smoke gas toxicity NFPA 130 (SMP 800C)                                  | passed                              |
| 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                         |

### Dimensions

|                 |        |
|-----------------|--------|
| Width           | 5.2 mm |
| End cover width | 4 mm   |
| Length          | 32 mm  |
| Height          | 22 mm  |

### Connection data

|                                                                            |                        |
|----------------------------------------------------------------------------|------------------------|
| Connection                                                                 | 1 level                |
| Connection method                                                          | Spring-cage connection |
| Stripping length                                                           | 8 mm                   |
| Connection in acc. with standard                                           | IEC 60947-7-1          |
| Conductor cross section solid min.                                         | 0.08 mm <sup>2</sup>   |
| Conductor cross section solid max.                                         | 4 mm <sup>2</sup>      |
| Conductor cross section AWG min.                                           | 28                     |
| Conductor cross section AWG max.                                           | 12                     |
| Conductor cross section flexible min.                                      | 0.08 mm <sup>2</sup>   |
| Conductor cross section flexible max.                                      | 2.5 mm <sup>2</sup>    |
| Min. AWG conductor cross section, flexible                                 | 28                     |
| Max. AWG conductor cross section, flexible                                 | 14                     |
| Conductor cross section flexible, with ferrule without plastic sleeve min. | 0.14 mm <sup>2</sup>   |
| Conductor cross section flexible, with ferrule without plastic sleeve max. | 2.5 mm <sup>2</sup>    |
| Conductor cross section flexible, with ferrule with plastic sleeve min.    | 0.14 mm <sup>2</sup>   |

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## Technical data

### Connection data

|                                                                                                        |                     |
|--------------------------------------------------------------------------------------------------------|---------------------|
| Conductor cross section flexible, with ferrule with plastic sleeve max.                                | 2.5 mm <sup>2</sup> |
| Two conductors with the same cross section, flexible, with TWIN ferrules, with plastic sleeve, maximum | 0.5 mm <sup>2</sup> |
| Connection in acc. with standard                                                                       | IEC/EN 60079-7      |
| Conductor cross section AWG min.                                                                       | 28                  |
| Conductor cross section AWG max.                                                                       | 12                  |
| Min. AWG conductor cross section, flexible                                                             | 28                  |
| Max. AWG conductor cross section, flexible                                                             | 14                  |
| Internal cylindrical gage                                                                              | A3                  |

### Standards and Regulations

|                                        |                |
|----------------------------------------|----------------|
| Connection in acc. with standard       | CSA            |
|                                        | IEC 60947-7-1  |
|                                        | IEC/EN 60079-7 |
| Flammability rating according to UL 94 | V0             |

### Environmental Product Compliance

|            |                                                         |
|------------|---------------------------------------------------------|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

## Drawings

Circuit diagram



## Classifications

### eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27141120 |
| eCl@ss 4.0    | 27141100 |
| eCl@ss 4.1    | 27141100 |
| eCl@ss 5.0    | 27141100 |
| eCl@ss 5.1    | 27141100 |
| eCl@ss 6.0    | 27141100 |
| eCl@ss 7.0    | 27141120 |
| eCl@ss 8.0    | 27141120 |
| eCl@ss 9.0    | 27141120 |

### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC000902 |
|----------|----------|

## Mini feed-through terminal block - MSB 2,5-F - 3244041

### Classifications

#### ETIM

|          |          |
|----------|----------|
| ETIM 3.0 | EC000897 |
| ETIM 4.0 | EC000897 |
| ETIM 5.0 | EC000897 |
| ETIM 6.0 | EC000897 |
| ETIM 7.0 | EC000897 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30211811 |
| UNSPSC 7.0901 | 39121410 |
| UNSPSC 11     | 39121410 |
| UNSPSC 12.01  | 39121410 |
| UNSPSC 13.2   | 39121410 |
| UNSPSC 18.0   | 39121410 |
| UNSPSC 19.0   | 39121410 |
| UNSPSC 20.0   | 39121410 |
| UNSPSC 21.0   | 39121410 |

### Approvals

#### Approvals

#### Approvals

DNV GL / CSA / UL Recognized / cUL Recognized / IECEx CB Scheme / VDE Zeichengenehmigung / EAC / cULus Recognized

#### Ex Approvals

IECEx / ATEX / EAC Ex

#### Approval details

|        |                                                                                     |                                                                                   |            |
|--------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------|
| DNV GL |  | <a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a> | TAE00001CS |
|--------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------|

|                            |                                                                                     |                                                                                                                                         |       |
|----------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------|
| CSA                        |  | <a href="http://www.csagroup.org/services-industries/product-listing/">http://www.csagroup.org/services-industries/product-listing/</a> | 13631 |
|                            | B                                                                                   | C                                                                                                                                       |       |
| Nominal voltage UN         | 600 V                                                                               | 600 V                                                                                                                                   |       |
| Nominal current IN         | 20 A                                                                                | 20 A                                                                                                                                    |       |
| mm <sup>2</sup> /AWG/kcmil | 28-12                                                                               | 28-12                                                                                                                                   |       |

## Mini feed-through terminal block - MSB 2,5-F - 3244041

### Approvals

|                    |                                                                                   |                                                                                                                                                       |              |
|--------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| UL Recognized      |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 60425 |
|                    | B                                                                                 | C                                                                                                                                                     |              |
| Nominal voltage UN | 600 V                                                                             | 600 V                                                                                                                                                 |              |
| Nominal current IN | 20 A                                                                              | 20 A                                                                                                                                                  |              |
| mm²/AWG/kcmil      | 28-12                                                                             | 28-12                                                                                                                                                 |              |

|                    |                                                                                   |                                                                                                                                                       |              |
|--------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| cUL Recognized     |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 60425 |
|                    | B                                                                                 | C                                                                                                                                                     |              |
| Nominal voltage UN | 600 V                                                                             | 600 V                                                                                                                                                 |              |
| Nominal current IN | 20 A                                                                              | 20 A                                                                                                                                                  |              |
| mm²/AWG/kcmil      | 28-12                                                                             | 28-12                                                                                                                                                 |              |

|                    |                                                                                     |                                                           |           |
|--------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------|-----------|
| IECEE CB Scheme    |  | <a href="http://www.iecee.org/">http://www.iecee.org/</a> | DE1-52239 |
|                    |                                                                                     |                                                           |           |
| Nominal voltage UN | 800 V                                                                               |                                                           |           |
| Nominal current IN | 24 A                                                                                |                                                           |           |
| mm²/AWG/kcmil      | 2.5                                                                                 |                                                           |           |

|                        |                                                                                     |                                                                                                                                                                                                           |          |
|------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| VDE Zeichengenehmigung |  | <a href="http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx">http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx</a> | 40037485 |
|                        |                                                                                     |                                                                                                                                                                                                           |          |
| Nominal voltage UN     | 800 V                                                                               |                                                                                                                                                                                                           |          |
| Nominal current IN     | 24 A                                                                                |                                                                                                                                                                                                           |          |
| mm²/AWG/kcmil          | 0.2-2.5                                                                             |                                                                                                                                                                                                           |          |

|     |                                                                                     |                          |
|-----|-------------------------------------------------------------------------------------|--------------------------|
| EAC |  | RU C-<br>DE.A*30.B.01742 |
|-----|-------------------------------------------------------------------------------------|--------------------------|

|                  |                                                                                     |
|------------------|-------------------------------------------------------------------------------------|
| cULus Recognized |  |
|------------------|-------------------------------------------------------------------------------------|

## Mini feed-through terminal block - MSB 2,5-F - 3244041

### Accessories

#### Accessories

##### End cover

End cover - D-MSB 1,5-F - 3024180



End cover, length: 32 mm, width: 9.9 mm, height: 22 mm, color: gray

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End cover - D-MSB 1,5-F BU - 3024449



End cover, length: 32 mm, width: 9.9 mm, height: 22 mm, color: blue

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### Labeled terminal marker

Zack Marker strip, flat - ZBF 5 CUS - 0825025



Zack Marker strip, flat, can be ordered: Strip, white, labeled according to customer specifications, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

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Zack Marker strip, flat - ZBF 5,LGS:FORTL.ZAHLEN - 0808671



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 491 ... 500, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

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Zack Marker strip, flat - ZBF 5,QR:FORTL.ZAHLEN - 0808697



Zack Marker strip, flat, Strip, white, labeled, Printed vertically: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... 100, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

## Mini feed-through terminal block - MSB 2,5-F - 3244041

### Accessories

#### Zack Marker strip, flat - ZBF 5,LGS:GERADE ZAHLEN - 0810821



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: consecutive numbers 2 ... 20, 22 ... 40, etc. up to 82 ... 100, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

#### Zack Marker strip, flat - ZBF 5,LGS:UNGERADE ZAHLEN - 0810863



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: Odd numbers 1 - 19, 21 - 39, etc. up to 81 - 99, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

#### Marker for terminal blocks - UC-TMF 5 CUS - 0824638



Marker for terminal blocks, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: snap into flat marker groove, for terminal block width: 5.2 mm, lettering field size: 4.6 x 5.1 mm, Number of individual labels: 96

#### Marker for terminal blocks - UCT-TMF 5 CUS - 0829658



Marker for terminal blocks, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: snap into flat marker groove, for terminal block width: 5.2 mm, lettering field size: 4.4 x 4.7 mm, Number of individual labels: 72

### Screwdriver tools

#### Screwdriver - SZF 1-0,6X3,5 - 1204517



Actuation tool, for ST terminal blocks, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip

# Mini feed-through terminal block - MSB 2,5-F - 3244041

## Accessories

Actuation tool - ST-BW - 1207608



Actuation tool, for all 2.5 mm<sup>2</sup> - 4.0 mm<sup>2</sup> spring-cages

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## Terminal marking

Zack Marker strip, flat - ZBF 5:UNBEDRUCKT - 0808642



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.1 x 5.2 mm, Number of individual labels: 10

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Marker for terminal blocks - UC-TMF 5 - 0818153



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 5.2 mm, lettering field size: 4.6 x 5.1 mm, Number of individual labels: 96

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Marker for terminal blocks - UCT-TMF 5 - 0828744



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: snap into flat marker groove, for terminal block width: 5.2 mm, lettering field size: 4.4 x 4.7 mm, Number of individual labels: 72

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