

# MTKD-NICR/NI EX - Thermoelectric voltage terminal block pair



3100063

<https://www.phoenixcontact.com/us/products/3100063>

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Thermoelectric voltage terminal block pair, TC type K, nom. voltage: 400 V, nominal current: 1 A, number of connections: 4, number of positions: 2, connection method: Screw connection, 1 level, cross section: 0.2 mm<sup>2</sup> - 4 mm<sup>2</sup>, mounting type: NS 35/7,5, NS 35/15, NS 32, color: gray

## Your advantages

- These special terminal blocks are used to extend thermocouple equalizing conductors in corresponding measuring circuits
- This ensures that no false thermoelectric voltages occur at the junctions of the thermocouple/terminal block/compensating line and that the basic values in accordance with EN 60584/DIN EN 60584 are observed
- The equalizing conductors are made from materials which, up to temperatures of 200°C, have the same thermal characteristics as the corresponding thermocouples

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 3100063       |
| Packing unit                         | 50 pc         |
| Minimum order quantity               | 50 pc         |
| Sales key                            | BE12          |
| Product key                          | BE1211        |
| GTIN                                 | 4046356678162 |
| Weight per piece (including packing) | 15.466 g      |
| Weight per piece (excluding packing) | 16.146 g      |
| Customs tariff number                | 85369010      |
| Country of origin                    | PL            |

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## Technical data

### Product properties

|                       |                             |
|-----------------------|-----------------------------|
| Product type          | Feed-through terminal block |
| Product family        | MTK                         |
| Number of positions   | 2                           |
| Number of connections | 4                           |
| Number of rows        | 1                           |
| Potentials            | 1                           |

### Electrical properties

|                                                 |        |
|-------------------------------------------------|--------|
| Maximum power dissipation for nominal condition | 0.77 W |
|-------------------------------------------------|--------|

### Connection data

|                                 |                     |
|---------------------------------|---------------------|
| Number of connections per level | 4                   |
| Nominal cross section           | 2.5 mm <sup>2</sup> |

#### 1 level

|                                                                   |                                                                     |
|-------------------------------------------------------------------|---------------------------------------------------------------------|
| Connection method                                                 | Screw connection                                                    |
| Screw thread                                                      | M3                                                                  |
| Tightening torque                                                 | 0.6 ... 0.8 Nm                                                      |
| Stripping length                                                  | 7 mm                                                                |
| Internal cylindrical gage                                         | A3                                                                  |
| Connection in acc. with standard                                  | IEC 60947-7-1                                                       |
| Conductor cross-section rigid                                     | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>                           |
| Cross section AWG                                                 | 24 ... 12 (converted acc. to IEC)                                   |
| Conductor cross-section flexible                                  | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>                         |
| Conductor cross-section, flexible [AWG]                           | 24 ... 14 (converted acc. to IEC)                                   |
| Conductor cross-section flexible (ferrule without plastic sleeve) | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>                         |
| Flexible conductor cross-section (ferrule with plastic sleeve)    | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>                         |
| Nominal current                                                   | 1 A                                                                 |
| Maximum load current                                              | 1 A (with 4 mm <sup>2</sup> conductor cross-section)                |
| Nominal voltage                                                   | 400 V (Voltage to the neighboring feed-through terminal block MTK.) |

### Ex data

#### Rated data (ATEX/IECEx)

|                             |                                  |
|-----------------------------|----------------------------------|
| Identification              | Ⓔ II 2 G Ex eb IIC Gb            |
| Operating temperature range | -50 °C ... 110 °C                |
| Ex-certified accessories    | 3101029 D-MTK                    |
|                             | 3101223 ATS-MTK                  |
|                             | 1205066 SZS 1,0X4,0 VDE          |
|                             | 1201442 E/UK                     |
| Ex temperature increase     | 5 K (1.1 A / 1 mm <sup>2</sup> ) |

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|                          |             |
|--------------------------|-------------|
| Rated insulation voltage | 250 V       |
| output                   | (Permanent) |

## Ex level General

|                      |       |
|----------------------|-------|
| Rated voltage        | 275 V |
| Maximum load current | 1 A   |
| Contact resistance   | 11 mΩ |

## Ex connection data General

|                              |                                             |
|------------------------------|---------------------------------------------|
| Torque range                 | 0.6 Nm ... 0.8 Nm                           |
| Nominal cross section        | 1 mm <sup>2</sup>                           |
| Rated cross section AWG      | 16                                          |
| Connection capacity rigid    | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>   |
| Connection capacity AWG      | 24 ... 12                                   |
| Connection capacity flexible | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Connection capacity AWG      | 24 ... 14                                   |

## Dimensions

|                    |         |
|--------------------|---------|
| Width              | 10.4 mm |
| End cover width    | 1 mm    |
| Height             | 46.2 mm |
| Depth on NS 32     | 44.9 mm |
| Depth on NS 35/7,5 | 39.9 mm |
| Depth on NS 35/15  | 47.4 mm |

## Material specifications

|                                                                         |                 |
|-------------------------------------------------------------------------|-----------------|
| Color                                                                   | gray (RAL 7042) |
| Flammability rating according to UL 94                                  | V0              |
| 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          |

## Mechanical properties

### Mechanical data

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

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## Environmental and real-life conditions

### 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  |
|               | NS 32     |

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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/3100063>

|  <b>cULus Recognized</b><br>Approval ID: E60425 |                       |                       |                   |                             |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B                                                                                                                                | 250 V                 | 10 A                  | 28 - 12           | -                           |
| D                                                                                                                                | 300 V                 | 10 A                  | 28 - 12           | -                           |

|  <b>EAC Ex</b><br>Approval ID: RU C-DE.Ax07.B.03227 |  |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|--------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|

|  <b>IECEx</b><br>Approval ID: IECExSEV19.0061U |                       |                       |                   |                             |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine                                                                                                                             | 275 V                 | 1 A                   | -                 | 0.2 - 4                     |
| Only flexible conductors                                                                                                          | 275 V                 | 1 A                   | -                 | 0.2 - 2.5                   |

|  <b>ATEX</b><br>Approval ID: SEV19ATEX0335U |                       |                       |                   |                             |
|--------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine                                                                                                                          | 275 V                 | 1 A                   | -                 | 0.2 - 4                     |
| Only flexible conductors                                                                                                       | 275 V                 | 1 A                   | -                 | 0.2 - 2.5                   |

|  <b>UKCA-EX</b><br>Approval ID: CML 22UKEX1229U |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|

|  <b>EAC Ex</b><br>Approval ID: KZ 7500525010101950 |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|---------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|

|  <b>CCC</b><br>Approval ID: 2020322313000629 |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|---------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27250115 |
| ECLASS-15.0 | 27250115 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC000904 |
|----------|----------|

### 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% |
|-------------------------------------|----------------------------|

### EF3.0 Climate Change

|         |              |
|---------|--------------|
| CO2e kg | 0.16 kg CO2e |
|---------|--------------|

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