

# PTU 4-TWIN-MT - Knife-disconnect terminal block



1157696

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Knife-disconnect terminal block, nom. voltage: 500 V, nominal current: 20 A, connection method: Push-in connection, Rated cross section: 4 mm<sup>2</sup>, cross section: 0.2 mm<sup>2</sup> - 6 mm<sup>2</sup>, connection method: Screw connection, Rated cross section: 4 mm<sup>2</sup>, cross section: 0.2 mm<sup>2</sup> - 6 mm<sup>2</sup>, mounting: NS 35/7,5, NS 35/15, color: gray

## Your advantages

- The Push-in connection terminal blocks are characterized by the system features of the CLIPLINE complete system and by easy and tool-free wiring of conductors with ferrules or solid conductors
- The compact design and front connection enable wiring in a confined space
- In addition to the testing option in the double function shaft, all terminal blocks provide an additional test pick-off
- The push-in connection is used inside the control cabinet and the universal screw connection is used on the end customer side

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1157696                        |
| Packing unit                         | 50 pc                          |
| Minimum order quantity               | 50 pc                          |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | *****                          |
| Product key                          | BE2231                         |
| GTIN                                 | 4063151163051                  |
| Weight per piece (including packing) | 22.222 g                       |
| Weight per piece (excluding packing) | 22.222 g                       |
| Customs tariff number                | 85369010                       |
| Country of origin                    | RU                             |

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## Technical data

### Notes

#### General

|      |                                                                                                                                                                                                                     |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note | When establishing a connection on the open housing side of a feed-through modular terminal block of the same series and size, the block must be provided with a cover if the expected insulation voltage is >320 V. |
|      | The max. load current must not be exceeded by the total current of all connected conductors.                                                                                                                        |

### Product properties

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

#### Data management status

|                  |    |
|------------------|----|
| Article revision | 00 |
|------------------|----|

#### Insulation characteristics

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

### Electrical properties

|                     |      |
|---------------------|------|
| Rated surge voltage | 6 kV |
|---------------------|------|

### Connection data

|                                      |                   |
|--------------------------------------|-------------------|
| Type of additional hybrid connection | UT 4              |
| Number of connections per level      | 2                 |
| Nominal cross section                | 4 mm <sup>2</sup> |

#### Level 1 above 1

|                                                                                                                   |                                            |
|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Stripping length                                                                                                  | 10 mm ... 12 mm                            |
| Internal cylindrical gage                                                                                         | A4                                         |
| Connection in acc. with standard                                                                                  | IEC 60947-7-1                              |
| Conductor cross section rigid                                                                                     | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>  |
| Cross section AWG                                                                                                 | 24 ... 10 (converted acc. to IEC)          |
| Conductor cross section flexible                                                                                  | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>  |
| Conductor cross section, flexible [AWG]                                                                           | 24 ... 12 (converted acc. to IEC)          |
| Conductor cross-section flexible (ferrule without plastic sleeve)                                                 | 0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup> |
| Flexible conductor cross section (ferrule with plastic sleeve)                                                    | 0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup> |
| Conductor cross-section flexible (2 conductors with the same cross-section, with TWIN ferrule and plastic sleeve) | 0.5 mm <sup>2</sup> ... 1 mm <sup>2</sup>  |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve                         | 0.5 mm <sup>2</sup> ... 1 mm <sup>2</sup>  |

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|                       |                   |
|-----------------------|-------------------|
| Nominal current       | 20 A              |
| Maximum load current  | 20 A              |
| Nominal voltage       | 500 V             |
| Nominal cross section | 4 mm <sup>2</sup> |

## Level 1 below 1

|                                                                                                                   |                                              |
|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Screw thread                                                                                                      | M3,5                                         |
| Tightening torque                                                                                                 | 1 ... 1.2 Nm                                 |
| Connection in acc. with standard                                                                                  | IEC 60947-7-1                                |
| Conductor cross section rigid                                                                                     | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>    |
| Cross section AWG                                                                                                 | 24 ... 10 (converted acc. to IEC)            |
| Conductor cross section flexible                                                                                  | 0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>    |
| Conductor cross section, flexible [AWG]                                                                           | 24 ... 12 (converted acc. to IEC)            |
| Conductor cross-section flexible (ferrule without plastic sleeve)                                                 | 0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup>   |
| Flexible conductor cross section (ferrule with plastic sleeve)                                                    | 0.25 mm <sup>2</sup> ... 4 mm <sup>2</sup>   |
| Conductor cross-section flexible (2 conductors with the same cross-section, with TWIN ferrule and plastic sleeve) | 0.5 mm <sup>2</sup> ... 1 mm <sup>2</sup>    |
| 2 conductors with same cross section, solid                                                                       | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| 2 conductors with same cross section, flexible                                                                    | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| 2 conductors with same cross section, flexible, with ferrule without plastic sleeve                               | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve                         | 0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Nominal current                                                                                                   | 20 A                                         |
| Maximum load current                                                                                              | 20 A                                         |
| Nominal voltage                                                                                                   | 500 V                                        |
| Nominal cross section                                                                                             | 4 mm <sup>2</sup>                            |

## Level 1 above 1 Connection cross sections directly pluggable

|                                                                   |                                            |
|-------------------------------------------------------------------|--------------------------------------------|
| Conductor cross section rigid                                     | 0.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>  |
| Conductor cross-section flexible (ferrule without plastic sleeve) | 0.75 mm <sup>2</sup> ... 4 mm <sup>2</sup> |
| Flexible conductor cross section (ferrule with plastic sleeve)    | 0.5 mm <sup>2</sup> ... 4 mm <sup>2</sup>  |

## Dimensions

|                 |        |
|-----------------|--------|
| Width           | 6.2 mm |
| End cover width | 2.2 mm |

## Material specifications

|                                                                         |        |
|-------------------------------------------------------------------------|--------|
| Color                                                                   | gray   |
| 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)) | 125 °C |
| Relative insulation material temperature index (Elec., UL 746 B)        | 130 °C |

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|                                                         |             |
|---------------------------------------------------------|-------------|
| 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)        | 27,5 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

|                       |             |
|-----------------------|-------------|
| Test voltage setpoint | 7.3 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                              |
| Result                                           | Test passed                         |

### Power-frequency withstand voltage

|                       |             |
|-----------------------|-------------|
| Test voltage setpoint | 1.89 kV     |
| Result                | Test passed |

## Mechanical properties

### Mechanical data

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

## Mechanical tests

### Mechanical strength

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

### Attachment on the carrier

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

### Test for conductor damage and slackening

|                                |                              |
|--------------------------------|------------------------------|
| Rotation speed                 | 10 rpm                       |
| Revolutions                    | 135                          |
| Conductor cross section/weight | 0.2 mm <sup>2</sup> / 0.2 kg |
|                                | 4 mm <sup>2</sup> / 0.9 kg   |
|                                | 6 mm <sup>2</sup> / 1.4 kg   |
| Result                         | Test passed                  |

## Environmental and real-life conditions

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## 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               | Service life test category 2, bogie-mounted    |
| Frequency              | $f_1 = 5 \text{ Hz}$ to $f_2 = 250 \text{ Hz}$ |
| ASD level              | $6.12 \text{ (m/s}^2\text{)}^2/\text{Hz}$      |
| Acceleration           | 3.12g                                          |
| Test duration per axis | 5 h                                            |
| Test directions        | X-, Y- and Z-axis                              |
| Result                 | Test passed                                    |

## 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.) |
| Result                         | Test passed                       |

## Ambient conditions

|                                          |                                                                           |
|------------------------------------------|---------------------------------------------------------------------------|
| Ambient temperature (operation)          | -60 °C ... 105 °C (max. short-term operating temperature 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 (storage/transport) | 30 % ... 70 %                                                             |

## Standards and regulations

|                                  |               |
|----------------------------------|---------------|
| Connection in acc. with standard | IEC 60947-7-1 |
|                                  | IEC 60947-7-1 |

## Mounting

|               |           |
|---------------|-----------|
| Mounting type | NS 35/7,5 |
|               | NS 35/15  |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27141126 |
|-------------|----------|

### ETIM

|          |          |
|----------|----------|
| ETIM 8.0 | EC000902 |
|----------|----------|

### 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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