

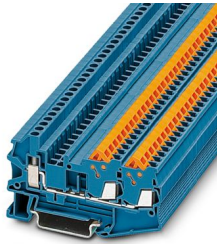
# QTCU 1,5-TWIN BU - Feed-through terminal block



3050057

<https://www.phoenixcontact.com/us/products/3050057>

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Feed-through terminal block, nom. voltage: 800 V, nominal current: 17.5 A, connection method: Quick connection, Rated cross section: 1.5 mm<sup>2</sup>, cross section: 0.25 mm<sup>2</sup> - 1.5 mm<sup>2</sup>, connection method: Screw connection, Rated cross section: 1.5 mm<sup>2</sup>, cross section: 0.14 mm<sup>2</sup> - 4 mm<sup>2</sup>, mounting: NS 35/7,5, NS 35/15, color: blue

## Your advantages

- The time-saving QUICKON fast connection is used on the control cabinet side
- The hybrid versions combine the advantages of the different connection technologies
- The screw connection is used on the connection side

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 3050057       |
| Packing unit                         | 50 pc         |
| Minimum order quantity               | 50 pc         |
| Sales key                            | BE03          |
| Product key                          | BE3112        |
| GTIN                                 | 4017918975760 |
| Weight per piece (including packing) | 12.01 g       |
| Weight per piece (excluding packing) | 12.01 g       |
| Customs tariff number                | 85369010      |
| Country of origin                    | CN            |

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## Technical data

### Product properties

|                       |                       |
|-----------------------|-----------------------|
| Product type          | Hybrid terminal block |
| Number of connections | 3                     |
| Number of rows        | 1                     |
| Potentials            | 1                     |

### Insulation characteristics

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

### Electrical properties

|   |        |
|---|--------|
| Rated surge voltage                             | 8 kV   |
| Maximum power dissipation for nominal condition | 0.56 W |

### Connection data

|   |   |
|---|---|
| Number of connections per level                                   | 3   |
| Frequency of connections with the same cross section              | 100   |
| Nominal cross section   | 1.5 mm <sup>2</sup>                                       |
| Connection method   | Quick connection  |
| Material wire insulation  | PVC / PE  |
| Connection in acc. with standard                                  | IEC 60947-7-1   |
| Conductor cross-section rigid                                     | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>              |
| Cross section AWG   | 24 ... 16 (converted acc. to IEC)                         |
| Conductor cross-section flexible                                  | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>              |
| Conductor cross-section, flexible [AWG]                           | 24 ... 16 (converted acc. to IEC)                         |
| Cross section, sensor conductors                                  | 0.25 mm <sup>2</sup> ... 0.34 mm <sup>2</sup>             |
| Nominal cross section   | 1.5 mm <sup>2</sup>                                       |
| Nominal current   | 17.5 A  |
| Maximum load current  | 17.5 A (with 1.5 mm <sup>2</sup> conductor cross-section) |
| Nominal voltage   | 800 V   |
| Connection method   | Screw connection  |
| Screw thread  | M3  |
| Tightening torque   | 0.5 ... 0.6 Nm  |
| Stripping length  | 9 mm  |
| Connection in acc. with standard                                  | IEC 60947-7-1   |
| Conductor cross-section rigid                                     | 0.14 mm <sup>2</sup> ... 4 mm <sup>2</sup>                |
| Cross section AWG   | 26 ... 12 (converted acc. to IEC)                         |
| Conductor cross-section flexible                                  | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>              |
| 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 same cross section, rigid                       | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>              |
| 2 conductors with same cross section, flexible                    | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>              |

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|   |   |
|---|---|
| 2 conductors with same cross section, flexible, with ferrule without plastic sleeve       | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>              |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>               |
| Nominal cross section   | 1.5 mm <sup>2</sup>                                       |
| Nominal current   | 17.5 A  |
| Maximum load current  | 17.5 A (with 1.5 mm <sup>2</sup> conductor cross-section) |
| Nominal voltage   | 800 V   |

## Ex data

### Rated data (ATEX/IECEx)

|  |  |
|--|--|
| Identification                                     | Ⓔ II 2 GD Ex eb IIC Gb   |
| Operating temperature range                        | -45 °C ... 90 °C   |
| Ex-certified accessories                           | 3206296 D-QTCU 1,5-TWIN<br>3206212 ATP-QTC TWIN<br>1204517 SZF 1-0,6X3,5<br>3022276 CLIPFIX 35-5<br>3022218 CLIPFIX 35   |
| List of bridges                                    | Plug-in bridge / FBS 2-5 / 3030161<br>Plug-in bridge / FBS 3-5 / 3030174<br>Plug-in bridge / FBS 4-5 / 3030187<br>Plug-in bridge / FBS 5-5 / 3030190<br>Plug-in bridge / FBS 10-5 / 3030213<br>Plug-in bridge / FBS 20-5 / 3030226 |
| Ex temperature increase                            | 40 K (18.5 A / 1.5 mm <sup>2</sup> )   |
| for bridging with bridge                           | 550 V  |
| - At bridging between non-adjacent terminal blocks | 275 V  |
| - At cut-to-length bridging with cover             | 220 V  |
| - At cut-to-length bridging with partition plate   | 275 V  |
| Rated insulation voltage                           | 500 V  |
| output   | (Permanent)  |

### Ex level General

|                      |         |
|----------------------|---------|
| Rated voltage        | 550 V   |
| Rated current        | 16.5 A  |
| Maximum load current | 16.5 A  |
| Contact resistance   | 1.21 mΩ |

### Ex connection data Fast connection

|                              |  |
|------------------------------|--|
| Nominal cross section        | 1.5 mm <sup>2</sup>                          |
| Rated cross section AWG      | 16   |
| Connection capacity rigid    | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Connection capacity AWG      | 24 ... 16                                    |
| Connection capacity flexible | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Connection capacity AWG      | 24 ... 16                                    |

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|  |     |
|--|-----|
| Frequency of connections with the same cross section | 100 |
|--|-----|

## Ex connection data Screw connection

|   |  |
|---|--|
| Stripping length                                      | 9 mm   |
| Torque range  | 0.5 Nm ... 0.6 Nm                            |
| Nominal cross section                                 | 1.5 mm <sup>2</sup>                          |
| Rated cross section AWG                               | 16   |
| Connection capacity rigid                             | 0.14 mm <sup>2</sup> ... 4 mm <sup>2</sup>   |
| Connection capacity AWG                               | 26 ... 12                                    |
| Connection capacity flexible                          | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Connection capacity AWG                               | 26 ... 14                                    |
| 2 conductors with same cross section, solid           | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| 2 conductors with the same cross-section AWG rigid    | 26 ... 16                                    |
| 2 conductors with same cross section, stranded        | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| 2 conductors with the same cross-section AWG flexible | 26 ... 16                                    |

## Dimensions

|                    |         |
|--------------------|---------|
| Width              | 5.2 mm  |
| End cover width    | 2.2 mm  |
| Height             | 76.4 mm |
| Depth on NS 35/7,5 | 42.8 mm |
| Depth on NS 35/15  | 50.3 mm |

## 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          |
| 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     |
| 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          |

## Cable/line

|                                |      |
|--------------------------------|------|
| Wire diameter incl. insulation | 3 mm |
|--------------------------------|------|

## Electrical tests

### Surge voltage test

|                       |        |
|-----------------------|--------|
| Test voltage setpoint | 9.8 kV |
|-----------------------|--------|

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

## Temperature-rise test

|  |                                     |
|--|-------------------------------------|
| Requirement temperature-rise test                | Increase in temperature $\leq 45$ K |
| Result   | Test passed                         |
|  | Test passed                         |
| Short-time withstand current 1.5 mm <sup>2</sup> | 0.18 kA                             |
| Result   | Test passed                         |

## Power-frequency withstand voltage

|        |             |
|--------|-------------|
| 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 35       |
| Test force setpoint     | 1 N         |
| Result                  | Test passed |

### Test for conductor damage and slackening

|                                |                              |
|--------------------------------|------------------------------|
| Rotation speed                 | 10 (+/- 2) rpm               |
| Revolutions                    | 135                          |
| Conductor cross-section/weight | 0.2 mm <sup>2</sup> / 0.2 kg |
|                                | 1.5 mm <sup>2</sup> / 0.4 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     | $f_1 = 5$ Hz to $f_2 = 250$ Hz           |

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|                        |                             |
|------------------------|-----------------------------|
| ASD level              | 6.12 (m/s <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 60947-7-1 |

## Mounting

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

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## Drawings

Circuit diagram



# QTCU 1,5-TWIN BU - Feed-through terminal block





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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/3050057>


|  <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>B</b>   |                       |                       |                   |                             |
| Screw connection   | 600 V                 | 0 A                   | 26 - 12           | -                           |
| Fast connection  | 600 V                 | 10 A                  | 24 - 16           | -                           |
| <b>C</b>   |                       |                       |                   |                             |
| Screw connection   | 600 V                 | 0 A                   | 26 - 12           | -                           |
| Fast connection  | 600 V                 | 10 A                  | 24 - 16           | -                           |

|  <b>CSA</b><br>Approval ID: 158887 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| <b>B</b>  |                       |                       |                   |                             |
| Screw connection  | 600 V                 | 10 A                  | 26 - 12           | -                           |
| Fast connection   | 600 V                 | 10 A                  | 24 - 16           | -                           |
| <b>C</b>  |                       |                       |                   |                             |
| Screw connection  | 600 V                 | 10 A                  | 26 - 12           | -                           |
| Fast connection   | 600 V                 | 10 A                  | 24 - 16           | -                           |

|  <b>IECEx</b><br>Approval ID: IECExKIWA19.0011U |  |  |  |  |
|--|--|--|--|--|
|--|--|--|--|--|

|  <b>ATEX</b><br>Approval ID: KIWA19ATEX0019U |  |  |  |  |
|---|--|--|--|--|
|---|--|--|--|--|

|  <b>CCC</b><br>Approval ID: 2020322313000625 |  |  |  |  |
|---|--|--|--|--|
|---|--|--|--|--|

|  <b>UKCA-EX</b><br>Approval ID: CSAE 22UKEX1429U |  |  |  |  |
|---|--|--|--|--|
|---|--|--|--|--|

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

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## Classifications

### ECLASS

ECLASS-13.0

27250201

### 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  |
| Exemption                               | 6(c) |

### China RoHS

|  |   |
|--|---|
| Environment friendly use period (EFUP) | EFUP-50   |
|  | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

### EU REACH SVHC

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1)                 |
| SCIP                                | 8183395d-8a94-4d14-8db3-53e0dd5b1bb2 |

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