

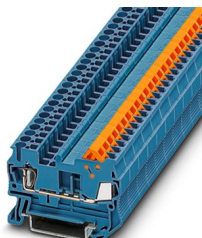
# QTCS 1,5 BU - Feed-through terminal block



3050141

<https://www.phoenixcontact.com/sg/products/3050141>

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Feed-through terminal block, nom. voltage: 800 V, nominal current: 17.5 A, 1 level, 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: Spring-cage connection, Rated cross section: 1.5 mm<sup>2</sup>, cross section: 0.08 mm<sup>2</sup> - 4 mm<sup>2</sup>, mounting: NS 35/7,5, NS 35/15, color: blue

## Your advantages

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

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 3050141                        |
| Packing unit                         | 50 pc                          |
| Minimum order quantity               | 50 pc                          |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | 0170*                          |
| Product key                          | BE3119                         |
| Catalog page                         | Page 261 (C-1-2019)            |
| GTIN                                 | 4017918975821                  |
| Weight per piece (including packing) | 7.37 g                         |
| Weight per piece (excluding packing) | 6 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 | 2                     |
| Number of rows        | 1                     |
| Potentials            | 1                     |

### Data management status

|                  |    |
|------------------|----|
| Article revision | 05 |
|------------------|----|

### 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                      | 2                   |
| Frequency of connections with the same cross section | 100                 |
| Nominal cross section                                | 1.5 mm <sup>2</sup> |

#### 1 level

|                                         |                                                           |
|-----------------------------------------|-----------------------------------------------------------|
| Stripping length                        | 10 mm                                                     |
| 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 current                         | 17.5 A                                                    |
| Maximum load current                    | 17.5 A (with 1.5 mm <sup>2</sup> conductor cross section) |
| Nominal voltage                         | 800 V                                                     |
| Nominal cross section                   | 1.5 mm <sup>2</sup>                                       |

#### Level 1 below 1

|                                                                   |                                              |
|-------------------------------------------------------------------|----------------------------------------------|
| 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 (ferrule without plastic sleeve) | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |

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|                                                                                           |                                                           |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| 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 current                                                                           | 17.5 A                                                    |
| Maximum load current                                                                      | 17.5 A (with 1.5 mm <sup>2</sup> conductor cross section) |
| Nominal voltage                                                                           | 800 V                                                     |
| Nominal cross section                                                                     | 1.5 mm <sup>2</sup>                                       |

## Ex data

### Rated data (ATEX/IECEx)

|                                                    |                                      |
|----------------------------------------------------|--------------------------------------|
| Identification                                     | Ⓔ II 2 GD Ex eb IIC Gb               |
| Operating temperature range                        | -45 °C ... 90 °C                     |
| Ex-certified accessories                           | 3206270 D-QTCS 1,5                   |
|                                                    | 3206209 ATP-QTC                      |
|                                                    | 1204517 SZF 1-0,6X3,5                |
|                                                    | 3022276 CLIPFIX 35-5                 |
|                                                    | 3022218 CLIPFIX 35                   |
| List of bridges                                    | Plug-in bridge / FBS 2-5 / 3030161   |
|                                                    | Plug-in bridge / FBS 3-5 / 3030174   |
|                                                    | Plug-in bridge / FBS 4-5 / 3030187   |
|                                                    | Plug-in bridge / FBS 5-5 / 3030190   |
|                                                    | Plug-in bridge / FBS 10-5 / 3030213  |
|                                                    | Plug-in bridge / FBS 20-5 / 3030226  |
| Ex temperature increase                            | 40 K (17.6 A / 1.5 mm <sup>2</sup> ) |
| Rated voltage                                      | 550 V                                |
| 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 current        | 16 A    |
| Maximum load current | 16 A    |
| Contact resistance   | 1.25 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                                    |
| Frequency of connections with the same cross section | 100                                          |

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## Ex connection data Spring-cage connection

|                              |                                              |
|------------------------------|----------------------------------------------|
| Stripping length             | 10 mm                                        |
| Nominal cross section        | 1.5 mm <sup>2</sup>                          |
| Rated cross section AWG      | 16                                           |
| Connection capacity rigid    | 0.08 mm <sup>2</sup> ... 4 mm <sup>2</sup>   |
| Connection capacity AWG      | 28 ... 12                                    |
| Connection capacity flexible | 0.08 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Connection capacity AWG      | 28 ... 14                                    |

## Dimensions

|                 |        |
|-----------------|--------|
| Width           | 5.2 mm |
| End cover width | 2.2 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          |
| 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          |

## Cable/line

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

## Electrical tests

### Surge voltage test

|                       |             |
|-----------------------|-------------|
| Test voltage setpoint | 9.8 kV      |
| Result                | Test passed |

### Temperature-rise test

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

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## 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 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 | 0.14 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 |
|------------------|------|

### 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 (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       |

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|                                |                                   |
|--------------------------------|-----------------------------------|
| 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 ... 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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## Drawings

Circuit diagram



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27141120 |
|-------------|----------|

### ETIM

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