

# STS 4-QUATTRO - Feed-through terminal block



3031681

<https://www.phoenixcontact.com/pc/products/3031681>

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Feed-through terminal block, nom. voltage: 800 V, nominal current: 32 A, number of connections: 4, connection method: Spring-cage connection, 1 level, Rated cross section: 4 mm<sup>2</sup>, cross section: 0.08 mm<sup>2</sup> - 6 mm<sup>2</sup>, mounting type: NS 35/7,5, NS 35/15, color: gray

## Your advantages

- Ground terminal blocks of the same shape are available

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 3031681             |
| Packing unit                         | 50 pc               |
| Minimum order quantity               | 50 pc               |
| Product key                          | BE2113              |
| Catalog page                         | Page 234 (C-1-2019) |
| GTIN                                 | 4017918193331       |
| Weight per piece (including packing) | 13.468 g            |
| Weight per piece (excluding packing) | 12.403 g            |
| Customs tariff number                | 85369010            |
| Country of origin                    | DE                  |

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## Technical data

### Product properties

|                       |                                |
|-----------------------|--------------------------------|
| Product type          | Multi-conductor terminal block |
| Product family        | STS                            |
| Number of connections | 4                              |
| 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 | 1.02 W |

### Connection data

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

#### 1 level

|                                                                                           |                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stripping length                                                                          | 8 mm ... 10 mm                                                                                                                                                    |
| Internal cylindrical gage                                                                 | A4                                                                                                                                                                |
| Connection in acc. with standard                                                          | IEC 60947-7-1                                                                                                                                                     |
| Conductor cross section rigid                                                             | 0.08 mm <sup>2</sup> ... 6 mm <sup>2</sup>                                                                                                                        |
| Cross section AWG                                                                         | 28 ... 10 (converted acc. to IEC)                                                                                                                                 |
| Conductor cross section flexible                                                          | 0.08 mm <sup>2</sup> ... 4 mm <sup>2</sup>                                                                                                                        |
| Conductor cross section, flexible [AWG]                                                   | 28 ... 12 (converted acc. to IEC)                                                                                                                                 |
| Conductor cross-section flexible (ferrule without plastic sleeve)                         | 0.14 mm <sup>2</sup> ... 4 mm <sup>2</sup>                                                                                                                        |
| Flexible conductor cross section (ferrule with plastic sleeve)                            | 0.14 mm <sup>2</sup> ... 4 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>                                                                                                                         |
| Nominal current                                                                           | 32 A (with 6 mm <sup>2</sup> conductor cross section)                                                                                                             |
| Maximum load current                                                                      | 38 A (In the case of a 6 mm <sup>2</sup> conductor cross section, the maximum load current must not be exceeded by the total current of all connected conductors) |
| Nominal voltage                                                                           | 800 V                                                                                                                                                             |
| Nominal cross section                                                                     | 4 mm <sup>2</sup>                                                                                                                                                 |

### Ex data

#### Rated data (ATEX/IECEx)

|                             |                       |
|-----------------------------|-----------------------|
| Identification              | Ⓔ II 2 G Ex eb IIC Gb |
| Operating temperature range | -60 °C ... 110 °C     |
|                             | 3031704 D-ST5 4       |

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|                          |                                    |
|--------------------------|------------------------------------|
| Ex-certified accessories | 1204517 SZF 1-0,6X3,5              |
|                          | 3022276 CLIPFIX 35-5               |
|                          | 3022218 CLIPFIX 35                 |
| Ex temperature increase  | 40 K (28.5 A / 4 mm <sup>2</sup> ) |
| Rated voltage            | 550 V                              |
| Rated insulation voltage | 500 V                              |
| output                   | (Permanent)                        |

## Ex level General

|                      |         |
|----------------------|---------|
| Rated current        | 28.5 A  |
| Maximum load current | 35 A    |
| Contact resistance   | 0.84 mΩ |

## Ex connection data General

|                              |                                            |
|------------------------------|--------------------------------------------|
| Nominal cross section        | 4 mm <sup>2</sup>                          |
| Rated cross section AWG      | 12                                         |
| Connection capacity rigid    | 0.08 mm <sup>2</sup> ... 6 mm <sup>2</sup> |
| Connection capacity AWG      | 28 ... 10                                  |
| Connection capacity flexible | 0.08 mm <sup>2</sup> ... 4 mm <sup>2</sup> |
| Connection capacity AWG      | 28 ... 12                                  |

## Dimensions

|                    |         |
|--------------------|---------|
| Width              | 6.2 mm  |
| End cover width    | 2.2 mm  |
| Height             | 64.5 mm |
| Depth on NS 35/7,5 | 43 mm   |
| Depth on NS 35/15  | 50.5 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      |
| 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      |

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## Electrical tests

### Surge voltage test

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

### Temperature-rise test

|                                                |                                     |
|------------------------------------------------|-------------------------------------|
| Requirement temperature-rise test              | Increase in temperature $\leq 45$ K |
| Result                                         | Test passed                         |
| Short-time withstand current 4 mm <sup>2</sup> | 0.48 kA                             |
| Short-time withstand current 6 mm <sup>2</sup> | 0.72 kA                             |
| Result                                         | Test passed                         |

### Power-frequency withstand voltage

|                       |             |
|-----------------------|-------------|
| Test voltage setpoint | 2 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 rpm                        |
| Revolutions                    | 135                           |
| Conductor cross section/weight | 0.08 mm <sup>2</sup> / 0.1 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

### Aging

|                    |             |
|--------------------|-------------|
| Temperature cycles | 192         |
| Result             | Test passed |

### Needle-flame test

|                  |      |
|------------------|------|
| Time of exposure | 30 s |
|------------------|------|

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

## Oscillation/broadband noise

|                        |                                                |
|------------------------|------------------------------------------------|
| Specification          | DIN EN 50155 (VDE 0115-200):2008-03            |
| 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

|                                |                                     |
|--------------------------------|-------------------------------------|
| Specification                  | DIN EN 50155 (VDE 0115-200):2008-03 |
| 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 ... 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, no longer than 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  |

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## Drawings

Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/3031681>

|                                  |                       |                       |                   |                             |
|----------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
| <b>CSA</b><br>Approval ID: 13631 |                       |                       |                   |                             |
|                                  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| Use group B                      | 600 V                 | 30 A                  | 28 - 10           | -                           |
|                                  |                       |                       |                   |                             |
| Use group C                      | 600 V                 | 30 A                  | 28 - 10           | -                           |
|                                  |                       |                       |                   |                             |

|                                            |                       |                       |                   |                             |
|--------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
| <b>CCA</b><br>Approval ID: CH-02-IK-0258.I |                       |                       |                   |                             |
|                                            | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|                                            | -                     | -                     | -                 | - 1.5                       |

|                                        |  |  |  |  |
|----------------------------------------|--|--|--|--|
| <b>LR</b><br>Approval ID: LR21234196TA |  |  |  |  |
|----------------------------------------|--|--|--|--|

|                                        |  |  |  |  |
|----------------------------------------|--|--|--|--|
| <b>ClassNK</b><br>Approval ID: 06ME279 |  |  |  |  |
|----------------------------------------|--|--|--|--|

|                                           |  |  |  |  |
|-------------------------------------------|--|--|--|--|
| <b>ABS</b><br>Approval ID: 21-2158220-PDA |  |  |  |  |
|-------------------------------------------|--|--|--|--|

|                                                |                       |                       |                   |                             |
|------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
| <b>cULus Recognized</b><br>Approval ID: E60425 |                       |                       |                   |                             |
|                                                | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| Use group B                                    | 600 V                 | 30 A                  | 28 - 10           | -                           |
|                                                |                       |                       |                   |                             |
| Use group C                                    | 600 V                 | 30 A                  | 28 - 10           | -                           |
|                                                |                       |                       |                   |                             |

|                                       |  |  |  |  |
|---------------------------------------|--|--|--|--|
| <b>DNV</b><br>Approval ID: TAE00001CS |  |  |  |  |
|---------------------------------------|--|--|--|--|

|                                                    |  |  |  |  |
|----------------------------------------------------|--|--|--|--|
| <b>EAC Ex</b><br>Approval ID: RU C-DE.HA91.B.00066 |  |  |  |  |
|----------------------------------------------------|--|--|--|--|

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**IECEx**

Approval ID: IECExPTB07.0024U



**ATEX**

Approval ID: PTB07ATEX1027U



**CCC**

Approval ID: 2020322313000621



**UKCA-EX**

Approval ID: CSAE 22UKEX1141U

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27141120 |
| ECLASS-13.0 | 27250101 |

### 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, 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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