

SMSTB 2,5/ 4-ST - PCB connector

1768781

<https://www.phoenixcontact.com/us/products/1768781>

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PCB connector, nominal cross section: 2.5 mm², color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Sn, contact connection type: Socket, number of potentials: 4, number of rows: 1, number of positions: 4, number of connections: 4, product range: SMSTB 2,5/...-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: -45 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting method: without, type of packaging: packed in cardboard

Your advantages

- Well-known connection principle allows worldwide use
- Optimized for tight installation situations: operation and conductor connection from one direction
- Angled conductor connection enables operation and conductor connection from one direction
- Low temperature rise, thanks to maximum contact force

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 1768781 |
| Packing unit | 100 pc |
| Minimum order quantity | 50 pc |
| Sales key | AA03 |
| Product key | AACAFK |
| GTIN | 4017918034146 |
| Weight per piece (including packing) | 7.648 g |
| Weight per piece (excluding packing) | 7.314 g |
| Customs tariff number | 85366990 |
| Country of origin | PL |

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Technical data

Product properties

| | |
|-----------------------|-----------------------|
| Product type | PCB connector |
| Product family | SMSTB 2,5/...-ST |
| Product line | COMBICON Connectors M |
| Type | Standard |
| Number of positions | 4 |
| Pitch | 5 mm |
| Number of connections | 4 |
| Number of rows | 1 |
| Number of potentials | 4 |
| Mounting type | without |

Electrical properties

Properties

| | |
|-----------------------------|----------------|
| Nominal current I_N | 12 A |
| Nominal voltage U_N | 320 V |
| Contact resistance | 2.3 m Ω |
| Rated voltage (III/3) | 250 V |
| Rated surge voltage (III/3) | 4 kV |
| Rated voltage (III/2) | 320 V |
| Rated surge voltage (III/2) | 4 kV |
| Rated voltage (II/2) | 630 V |
| Rated surge voltage (II/2) | 4 kV |

Connection data

Connection technology

| | |
|-------------------------|---------------------|
| Type | Standard |
| Connector system | COMBICON MSTB 2,5 |
| Nominal cross section | 2.5 mm ² |
| Contact connection type | Socket |

Interlock

| | |
|---------------|---------|
| Locking type | without |
| Mounting type | without |

Conductor connection

| | |
|------------------------------------|---|
| Connection method | Screw connection with tension sleeve |
| Conductor/PCB connection direction | -45 ° |
| Conductor cross-section rigid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section AWG | 24 ... 12 |

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| | |
|---|--|
| Conductor cross-section, flexible, with ferrule, without plastic sleeve | 0.25 mm ² ... 2.5 mm ² |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve | 0.25 mm ² ... 2.5 mm ² |
| 2 conductors with same cross section, rigid | 0.2 mm ² ... 1 mm ² |
| 2 conductors with same cross section, flexible | 0.2 mm ² ... 1.5 mm ² |
| 2 conductors with same cross section, flexible, with ferrule without plastic sleeve | 0.25 mm ² ... 1 mm ² |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 0.5 mm ² ... 1.5 mm ² |
| Cylindrical gauge a x b / diameter | 2.8 mm x 2.0 mm / 2.4 mm |
| Stripping length | 7 mm |
| Drive form screw head | Slotted (L) |
| Tightening torque | 0.5 Nm ... 0.6 Nm |

Specifications for ferrules without insulating collar

| | |
|---------------------------|--------------------|
| recommended crimping tool | 1212034 CRIMPFOX 6 |
|---------------------------|--------------------|

Specifications for ferrules with insulating collar

| | |
|---------------------------|--------------------|
| recommended crimping tool | 1212034 CRIMPFOX 6 |
|---------------------------|--------------------|

Material specifications

Material data - contact

| | |
|--|--|
| Note | WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201 |
| Contact material | Cu alloy |
| Surface characteristics | hot-dip tin-plated |
| Metal surface terminal point (top layer) | Tin (4 µm - 8 µm Sn) |
| Metal surface contact area (top layer) | Tin (4 µm - 8 µm Sn) |

Material data - housing

| | |
|---|--------------|
| Color (Housing) | green (6021) |
| Insulating material | PA |
| Insulating material group | I |
| CTI according to IEC 60112 | 600 |
| Flammability rating according to UL 94 | V0 |
| Glow wire flammability index GWFI according to EN 60695-2-12 | 850 |
| Glow wire ignition temperature GWIT according to EN 60695-2-13 | 775 |
| Temperature for the ball pressure test according to EN 60695-10-2 | 125 °C |

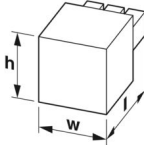
Dimensions

SMSTB 2,5/ 4-ST - PCB connector



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| | |
|---------------------|--|
| Dimensional drawing |  |
| Pitch | 5 mm |
| Width [w] | 20 mm |
| Height [h] | 15.5 mm |
| Length [l] | 25.6 mm |

Notes

| | |
|--------------------|--|
| Notes on operation | In accordance with IEC 61984, COMBICON connectors have no switching power (COC). During designated use, they must not be plugged in or disconnected when carrying voltage or under load. |
|--------------------|--|

Mechanical tests

Test for conductor damage and slackening

| | |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
| Result | Test passed |

Pull-out test

| | |
|---|---|
| Specification | IEC 60999-1:1999-11 |
| Conductor cross-section/conductor type/tractive force setpoint/actual value | 0.2 mm ² / solid / > 10 N |
| | 0.2 mm ² / flexible / > 10 N |
| | 2.5 mm ² / solid / > 50 N |
| | 2.5 mm ² / flexible / > 50 N |

Insertion and withdrawal forces

| | |
|-------------------------------------|------------------------|
| Specification | IEC 60512-13-2:2006-02 |
| Result | Test passed |
| No. of cycles | 25 |
| Insertion strength per pos. approx. | 8 N |
| Withdraw strength per pos. approx. | 6 N |

Torque test

| | |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
|---------------|---------------------|

Resistance of inscriptions

| | |
|---------------|------------------------|
| Specification | IEC 60068-2-70:1995-12 |
| Result | Test passed |

Polarization and coding

| | |
|---------------|------------------------|
| Specification | IEC 60512-13-5:2006-02 |
| Result | Test passed |

Visual inspection

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| | |
|---------------|-----------------------|
| Specification | IEC 60512-1-1:2002-02 |
| Result | Test passed |

Dimension check

| | |
|---------------|-----------------------|
| Specification | IEC 60512-1-2:2002-02 |
| Result | Test passed |

Environmental and real-life conditions

Durability test

| | |
|--|-----------------------|
| Specification | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level | 4.8 kV |
| Contact resistance R ₁ | 2.3 mΩ |
| Contact resistance R ₂ | 2.3 mΩ |
| Insertion/withdrawal cycles | 25 |
| Insulation resistance, neighboring positions | > 5 MΩ |

Climatic test

| | |
|-----------------------------------|---|
| Specification | ISO 6988:1985-02 |
| Corrosive stress | 0.2 dm ³ SO ₂ on 300 dm ³ /40 °C/1 cycle |
| Thermal stress | 100 °C/168 h |
| Power-frequency withstand voltage | 2.21 kV |

Vibration test

| | |
|------------------------|-----------------------------|
| Specification | IEC 60068-2-6:2007-12 |
| Frequency | 10 - 150 - 10 Hz |
| Sweep speed | 1 octave/min |
| Amplitude | 0.35 mm (10 Hz ... 60.1 Hz) |
| Acceleration | 5g (60.1 Hz ... 150 Hz) |
| Test duration per axis | 2.5 h |
| Test directions | X-, Y- and Z-axis |

Ambient conditions

| | |
|---|---|
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Relative humidity (storage/transport) | 30 % ... 70 % |
| Ambient temperature (assembly) | -5 °C ... 100 °C |
| Ambient temperature (operation) | -40 °C ... 100 °C (dependent on the derating curve) |

Electrical tests

Thermal test | Test group C

| | |
|----------------------------|-----------------------|
| Specification | IEC 60512-5-1:2002-02 |
| Tested number of positions | 24 |

Insulation resistance

| | |
|--|-----------------------|
| Specification | IEC 60512-3-1:2002-02 |
| Insulation resistance, neighboring positions | > 5 MΩ |

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Air clearances and creepage distances |

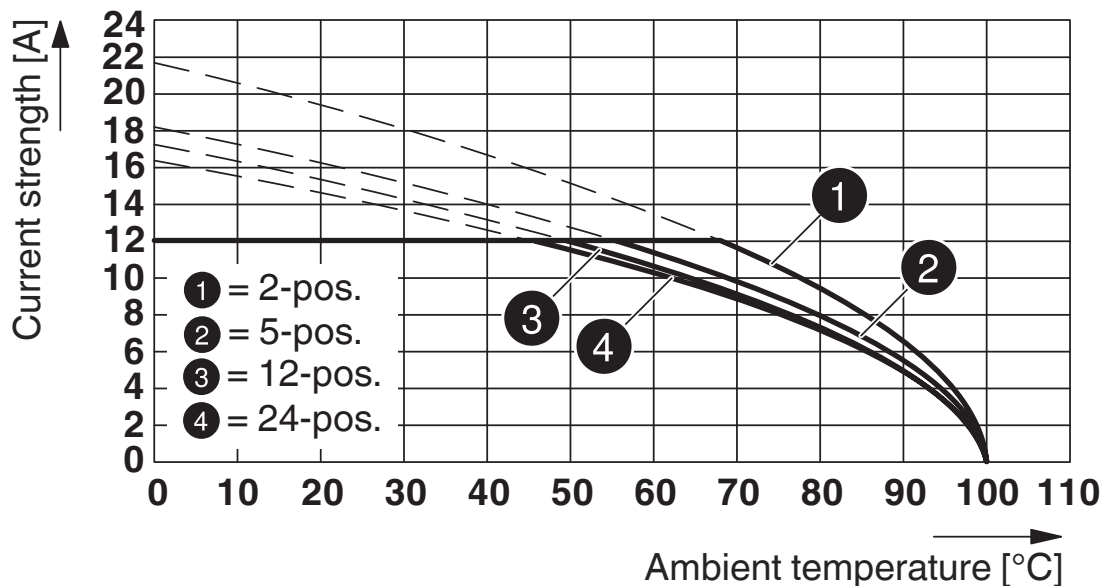
| | |
|--|---------------------|
| Specification | IEC 60664-1:2007-04 |
| Insulating material group | I |
| Comparative tracking index (IEC 60112) | CTI 600 |
| Rated insulation voltage (III/3) | 250 V |
| Rated surge voltage (III/3) | 4 kV |
| minimum clearance value - non-homogenous field (III/3) | 3 mm |
| minimum creepage distance (III/3) | 3.2 mm |
| Rated insulation voltage (III/2) | 320 V |
| Rated surge voltage (III/2) | 4 kV |
| minimum clearance value - non-homogenous field (III/2) | 3 mm |
| minimum creepage distance (III/2) | 3 mm |
| Rated insulation voltage (II/2) | 630 V |
| Rated surge voltage (II/2) | 4 kV |
| minimum clearance value - non-homogenous field (II/2) | 3 mm |
| minimum creepage distance (II/2) | 3.2 mm |

Packaging specifications

| | |
|-------------------|---------------------|
| Type of packaging | packed in cardboard |
|-------------------|---------------------|

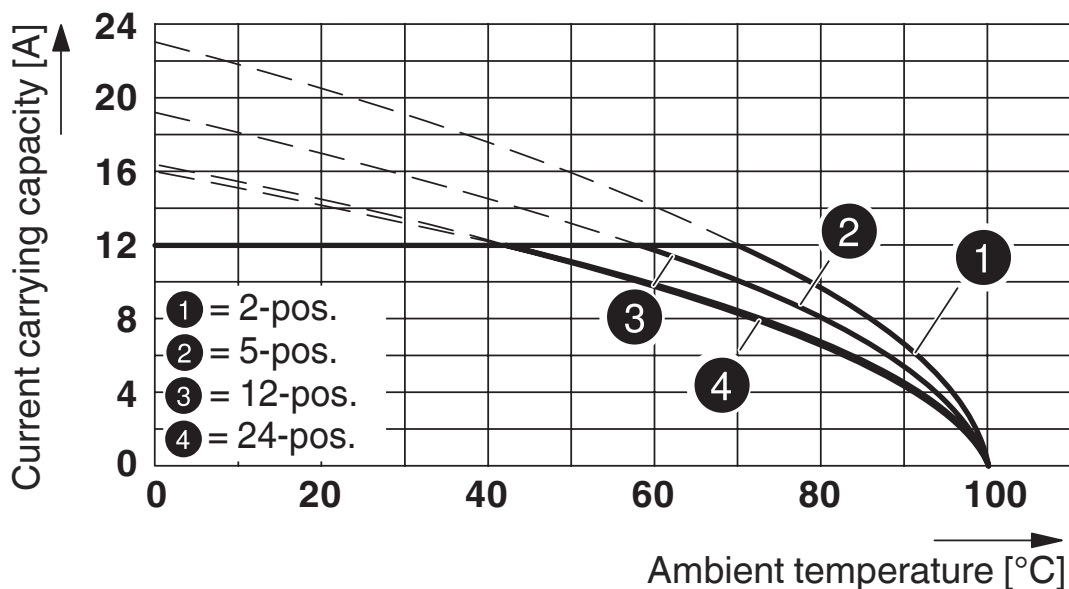
Drawings

Diagram



Type: SMSTB 2,5/...-ST with MSTB 2,5/...-G

Diagram



Type: SMSTB 2,5/...-ST with SMSTBA 2,5/...-G

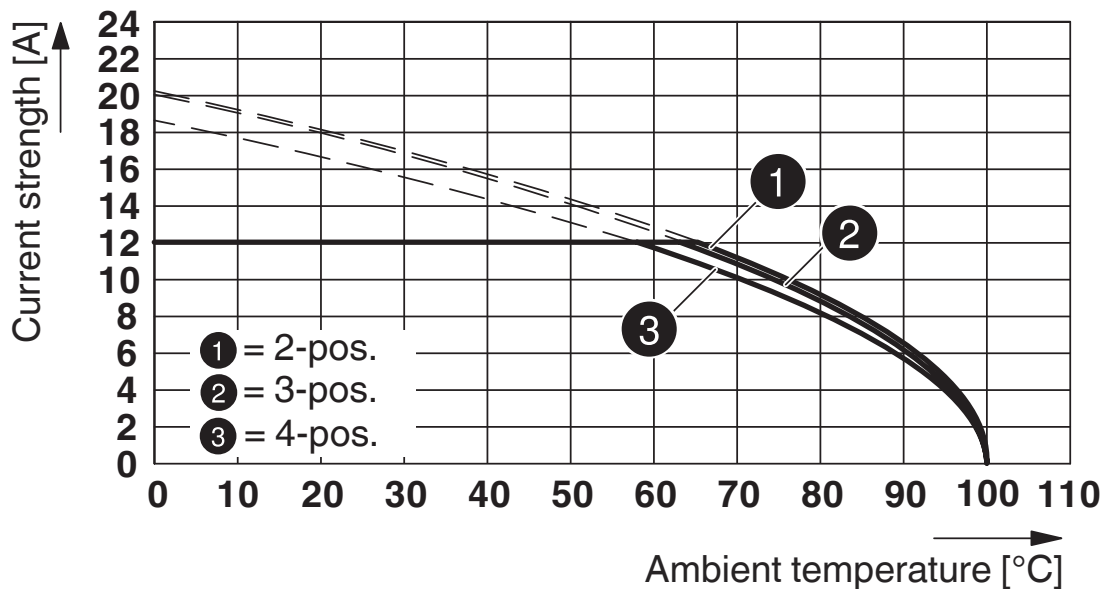
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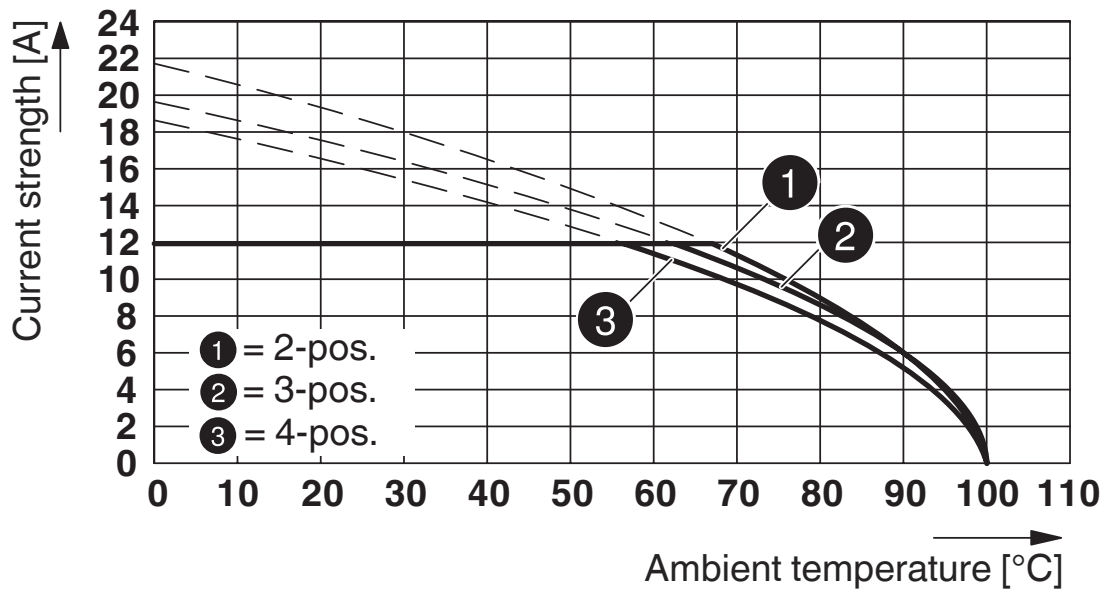
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Diagram



Type: SMSTB 2,5/...-ST with MSTBO 2,5/...-G1R

Diagram



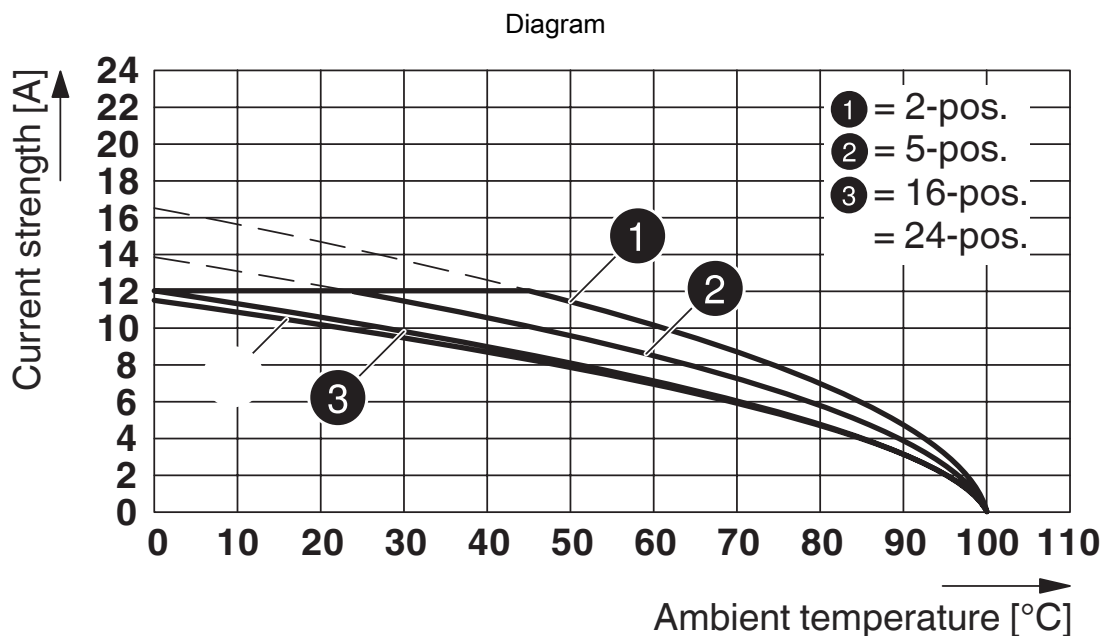
Type: SMSTB 2,5/...-ST with MSTBO 2,5/...-G1L

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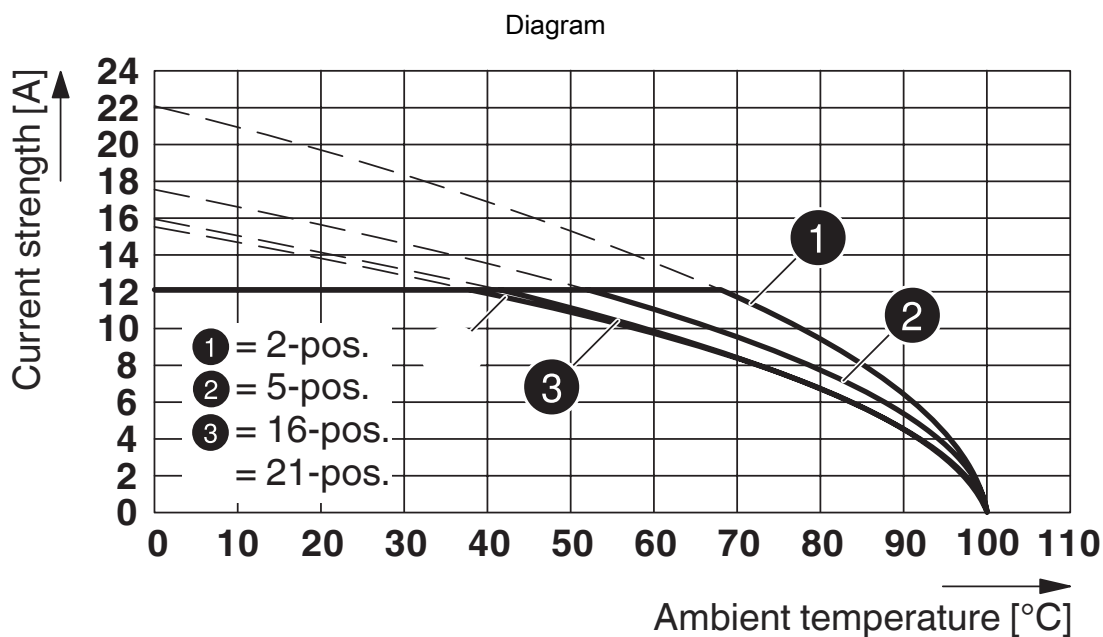


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Type: SMSTB 2,5/...-ST with MSTBV 2,5/...-G



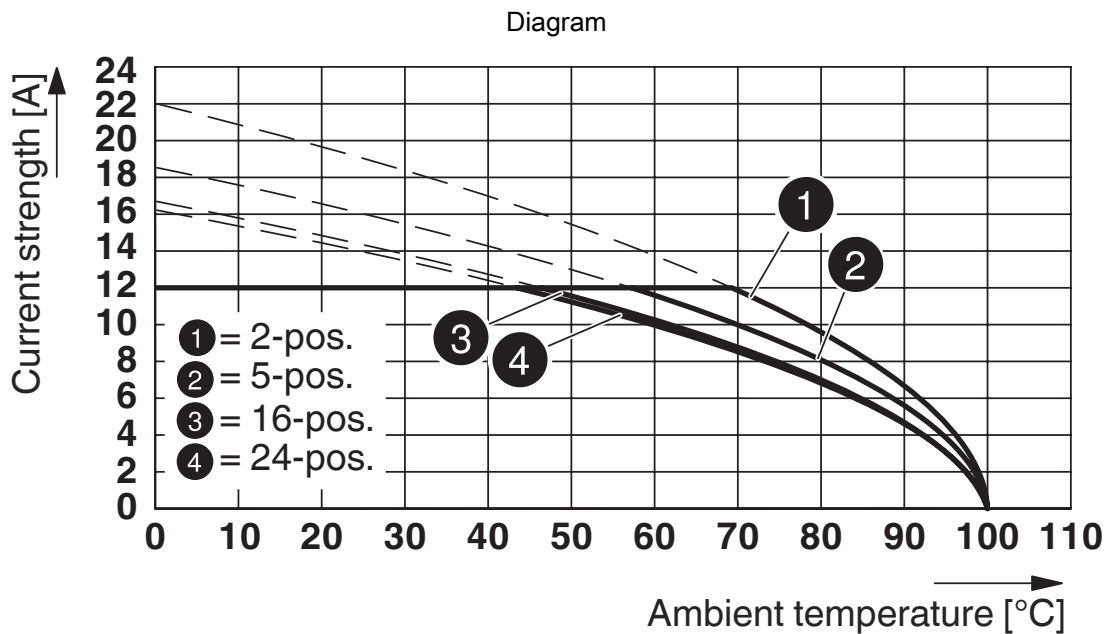
Type: SMSTB 2,5/...-ST with MSTBW 2,5/...-G

SMSTB 2,5/ 4-ST - PCB connector

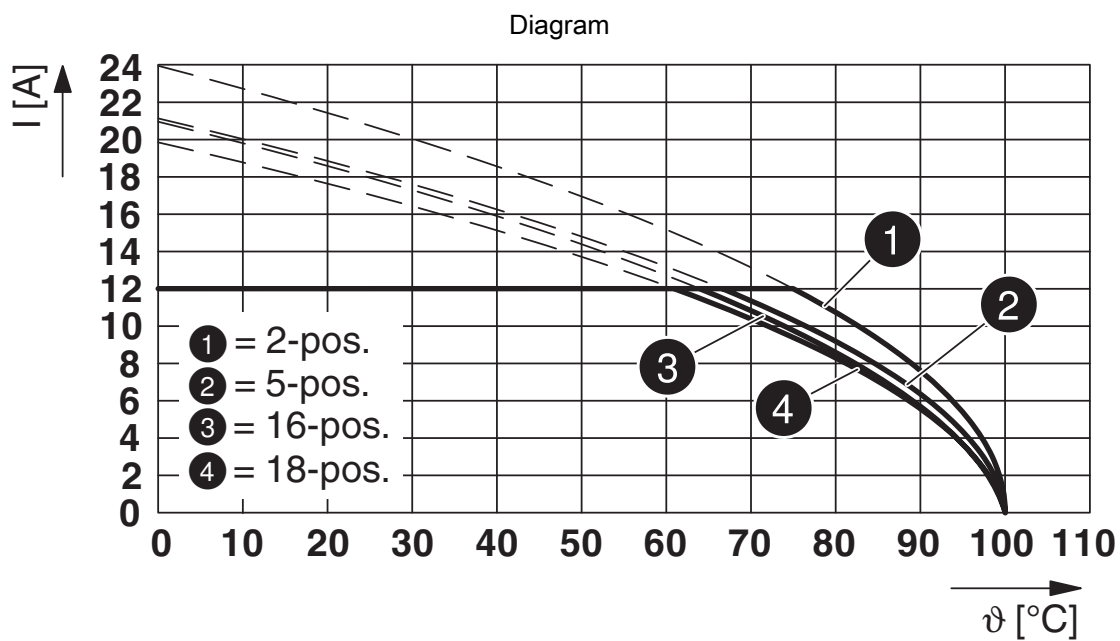


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Type: SMSTB 2,5/...-ST with SMSTB 2,5/...-G



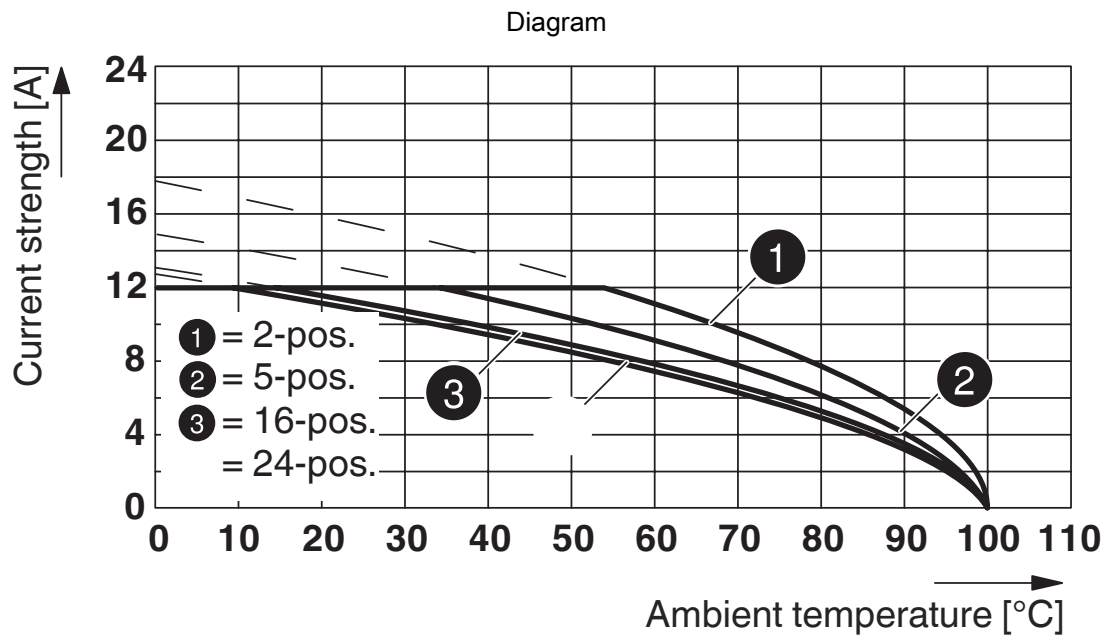
Type: SMSTB 2,5/...-ST with FKIC 2,5/...-ST

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Type: SMSTB 2,5/...-ST with MSTBVA 2,5/...-G

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1768781>

|  CSA Approval ID: 13631-2585951 | | | | |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| B | | | | |
| | 300 V | 15 A | 28 - 12 | - |
| D | | | | |
| | 300 V | 10 A | 28 - 12 | - |

|  cULus Recognized Approval ID: E60425-19931011 | | | | |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| B | | | | |
| | 300 V | 15 A | 30 - 12 | - |
| D | | | | |
| | 300 V | 10 A | 30 - 12 | - |

|  VDE approval of drawings Approval ID: 40004701 | | | | |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | | | | |
| | 250 V | 12 A | - | 0.2 - 2.5 |

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27460202 |
| ECLASS-15.0 | 27460202 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC002638 |
|-----------|----------|

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% |
|-------------------------------------|----------------------------|

EF3.1 Climate Change

| | |
|---------|---------------|
| CO2e kg | 0.114 kg CO2e |
|---------|---------------|

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