

# MSTBVA 2,5/ 3-G-5,08 GY - PCB header



1764002

<https://www.phoenixcontact.com/ca/products/1764002>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



PCB headers, nominal cross section: 2.5 mm<sup>2</sup>, color: gray, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Pin, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: MSTBVA 2,5/..-G, pitch: 5.08 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.9 mm, number of solder pins per potential: 1, plug-in system: COMBICON MSTB 2,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard

## Your advantages

- Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- Well-known mounting principle allows worldwide use
- Vertical connection enables multi-row arrangement on the PCB
- Closed contour for optimum stability of the plug-in connection
- Easy PCB replacement thanks to plug-in modules

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1764002       |
| Packing unit                         | 50 pc         |
| Minimum order quantity               | 50 pc         |
| Sales key                            | AA03          |
| Product key                          | AACSMF        |
| GTIN                                 | 4017918221010 |
| Weight per piece (including packing) | 1.396 g       |
| Weight per piece (excluding packing) | 1.364 g       |
| Customs tariff number                | 85366930      |
| Country of origin                    | DE            |

# MSTBVA 2,5/ 3-G-5,08 GY - PCB header



1764002

<https://www.phoenixcontact.com/ca/products/1764002>

## Technical data

### Product properties

|                           |                       |
|---------------------------|-----------------------|
| Product type              | PCB headers           |
| Product family            | MSTBVA 2,5/..-G       |
| Product line              | COMBICON Connectors M |
| Number of positions       | 3                     |
| Pitch                     | 5.08 mm               |
| Number of connections     | 3                     |
| Number of rows            | 1                     |
| Number of potentials      | 3                     |
| Mounting flange           | without               |
| Pin layout                | Linear pinning        |
| Solder pins per potential | 1                     |

### Electrical properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 12 A   |
| Nominal voltage $U_N$       | 320 V  |
| Degree of pollution         | 3      |
| Contact resistance          | 2.4 mΩ |
| Rated voltage (III/3)       | 320 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   |

### Mounting

|               |                |
|---------------|----------------|
| Mounting type | Wave soldering |
| Pin layout    | Linear pinning |

### 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                     | Tin-plated                                                                       |
| Metal surface contact area (top layer)      | Tin (3 - 5 μm Sn)                                                                |
| Metal surface contact area (middle layer)   | Nickel (1.3 - 3 μm Ni)                                                           |
| Metal surface soldering area (top layer)    | Tin (3 - 5 μm Sn)                                                                |
| Metal surface soldering area (middle layer) | Nickel (1.3 - 3 μm Ni)                                                           |

#### Material data - housing

|                 |             |
|-----------------|-------------|
| Color (Housing) | gray (7042) |
|-----------------|-------------|

# MSTBVA 2,5/ 3-G-5,08 GY - PCB header



1764002

<https://www.phoenixcontact.com/ca/products/1764002>

|                                                                   |        |
|-------------------------------------------------------------------|--------|
| 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 |

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

## Dimensions

|                       |                                                                                     |
|-----------------------|-------------------------------------------------------------------------------------|
| Dimensional drawing   |  |
| Pitch                 | 5.08 mm                                                                             |
| Width [w]             | 17.24 mm                                                                            |
| Height [h]            | 15.9 mm                                                                             |
| Length [l]            | 8.57 mm                                                                             |
| Installed height      | 12 mm                                                                               |
| Solder pin length [P] | 3.9 mm                                                                              |
| Pin dimensions        | 1 x 1 mm                                                                            |

## PCB design

|               |        |
|---------------|--------|
| Hole diameter | 1.4 mm |
|---------------|--------|

## Mechanical tests

### Visual inspection

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

### Dimension check

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

### Resistance of inscriptions

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

### Polarization and coding

# MSTBVA 2,5/ 3-G-5,08 GY - PCB header



1764002

<https://www.phoenixcontact.com/ca/products/1764002>

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

## Contact holder in insert

|                                                |                        |
|------------------------------------------------|------------------------|
| Specification                                  | IEC 60512-15-1:2008-05 |
| Contact holder in insert<br>Requirements >20 N | Test passed            |

## Insertion and withdrawal forces

|                                     |             |
|-------------------------------------|-------------|
| Result                              | Test passed |
| No. of cycles                       | 25          |
| Insertion strength per pos. approx. | 8 N         |
| Withdraw strength per pos. approx.  | 6 N         |

## 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                |

### 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)                       | 320 V               |
| Rated surge voltage (III/3)                            | 4 kV                |
| minimum clearance value - non-homogenous field (III/3) | 3 mm                |
| minimum creepage distance (III/3)                      | 4 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              |

## Environmental and real-life conditions

### Vibration test

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60068-2-6:2007-12 |
| Frequency     | 10 - 150 - 10 Hz      |
| Sweep speed   | 1 octave/min          |

# MSTBVA 2,5/ 3-G-5,08 GY - PCB header



1764002

<https://www.phoenixcontact.com/ca/products/1764002>

|                        |                             |
|------------------------|-----------------------------|
| Amplitude              | 0.35 mm (10 Hz ... 60.1 Hz) |
| Acceleration           | 5g (60.1 Hz ... 150 Hz)     |
| Test duration per axis | 2.5 h                       |

## Durability test

|                                              |                       |
|----------------------------------------------|-----------------------|
| Specification                                | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level       | 4.8 kV                |
| Contact resistance R <sub>1</sub>            | 2.4 mΩ                |
| Contact resistance R <sub>2</sub>            | 2.5 mΩ                |
| Insertion/withdrawal cycles                  | 25                    |
| Insulation resistance, neighboring positions | > 5 MΩ                |

## Climatic test

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

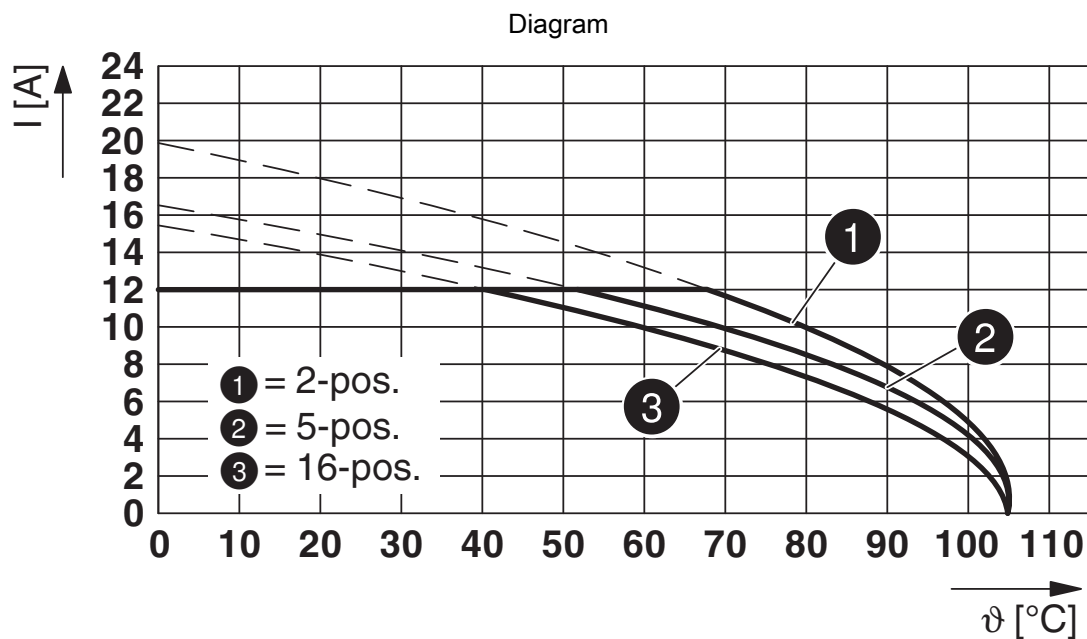
## Ambient conditions

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

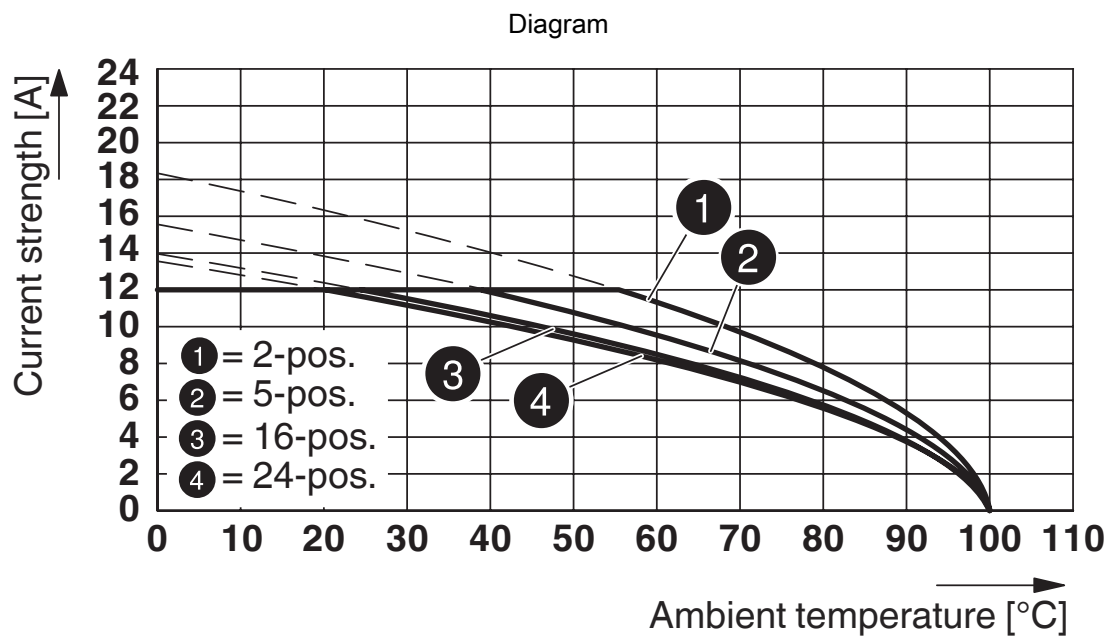
## Packaging specifications

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

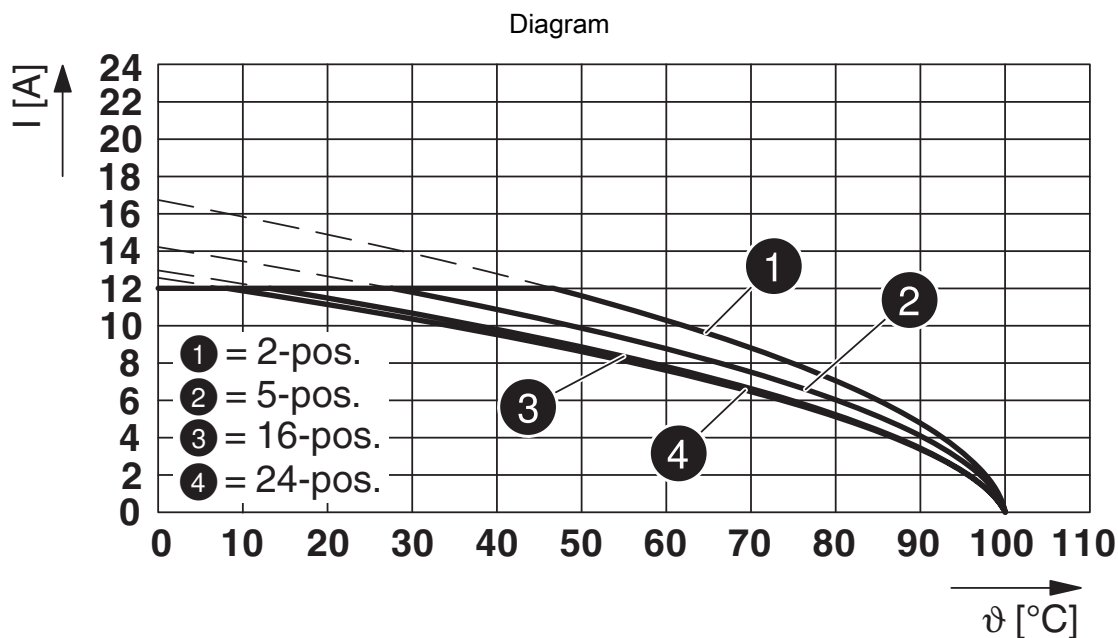
## Drawings



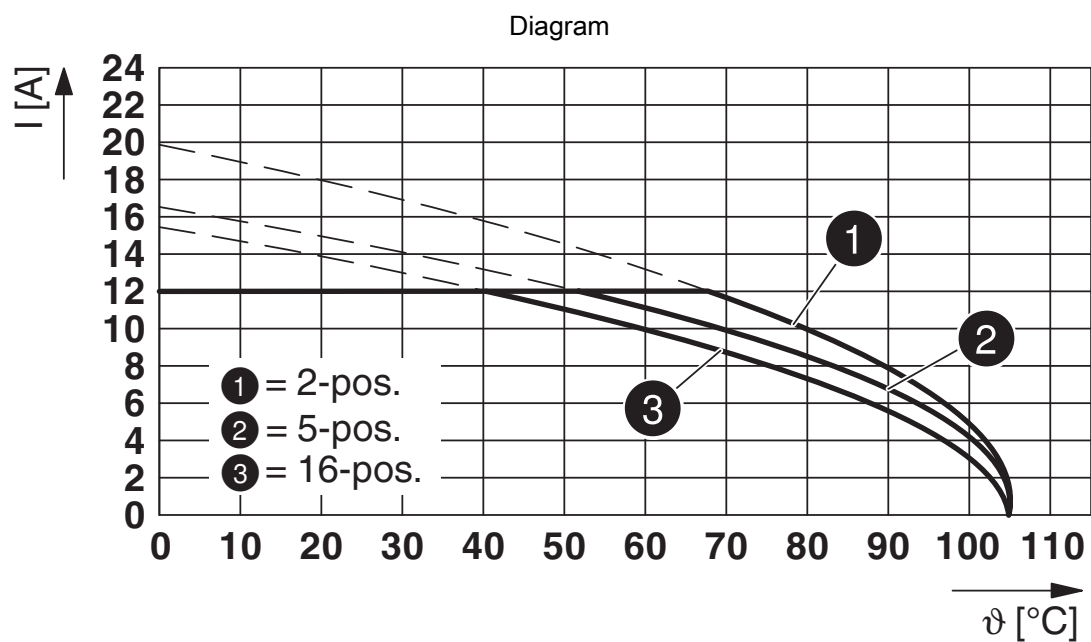
Type: FKCVW 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08



Type: MSTBP 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08

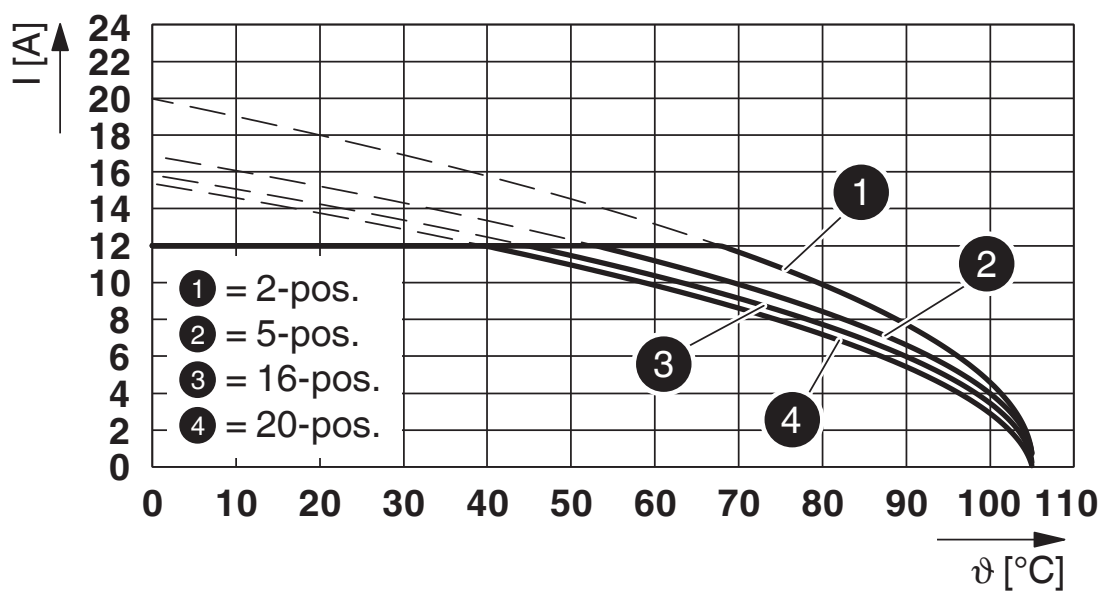


Type: SMSTB 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08



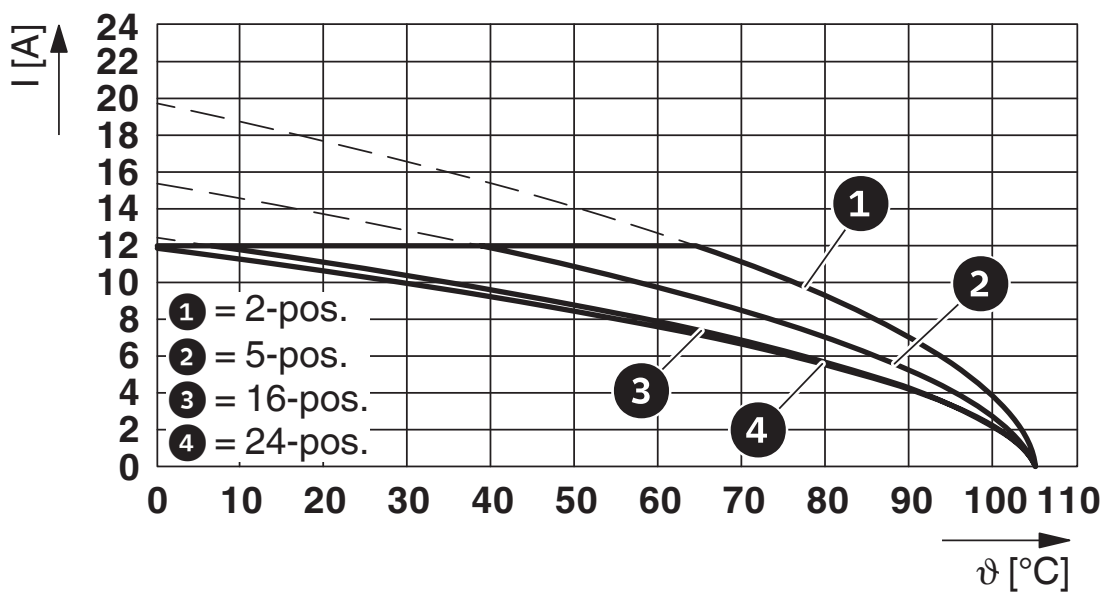
Type: FKCVR 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08

Diagram

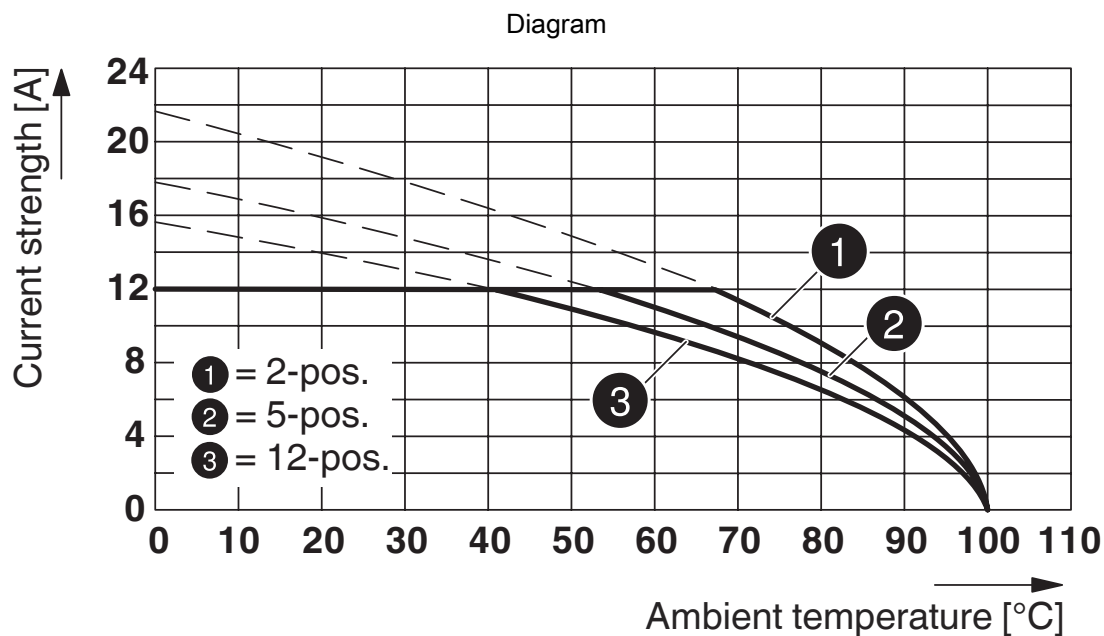


Type: FKCT 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08

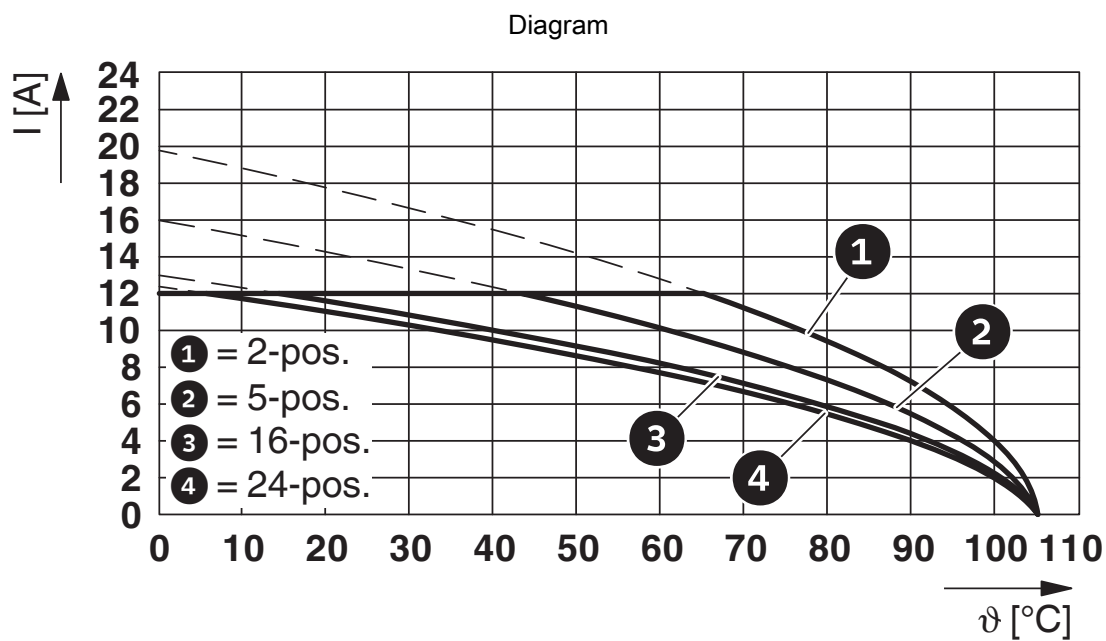
Diagram



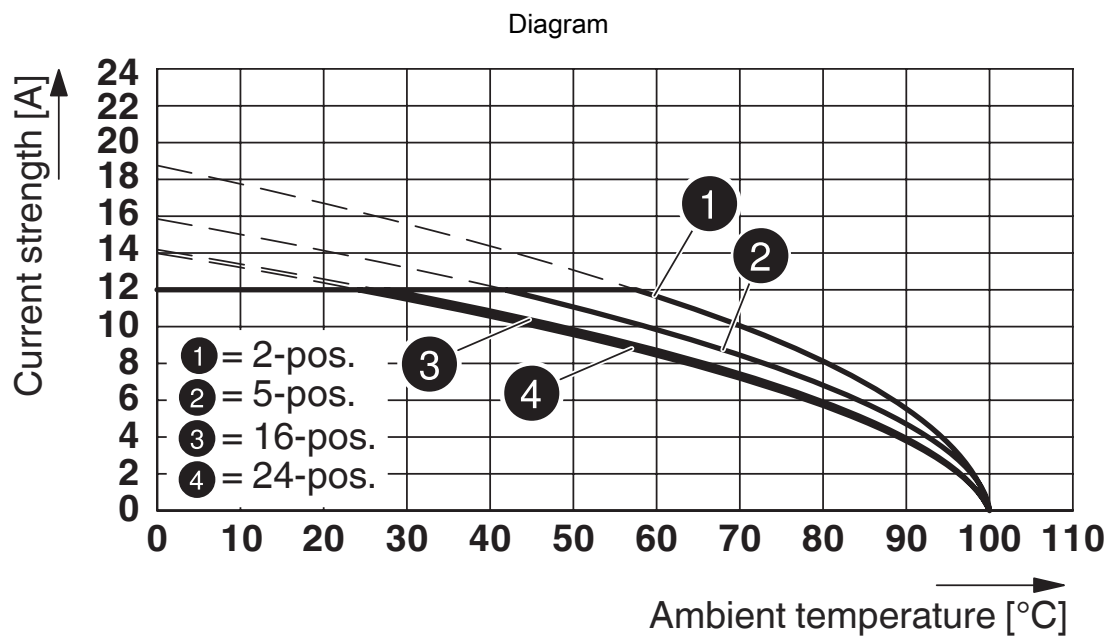
Type: IC 2,5/...-G-5,08 with MSTBVA 2,5/...-G-5,08



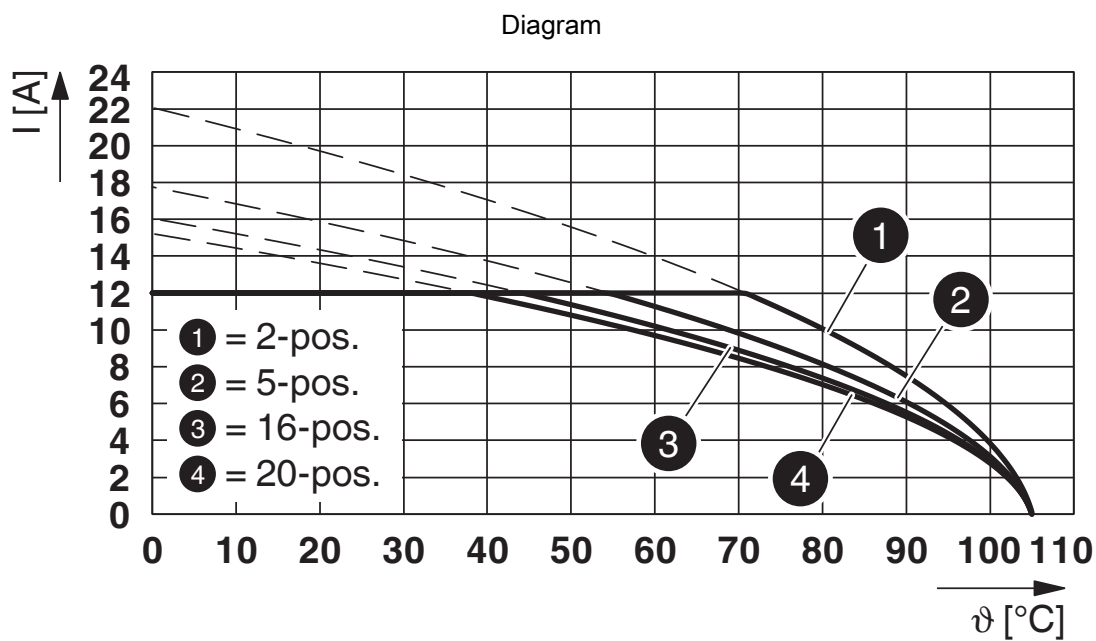
Type: FKCN 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08



Type: ICV 2,5/...-G-5,08 with MSTBVA 2,5/...-G-5,08



Type: MSTB 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08

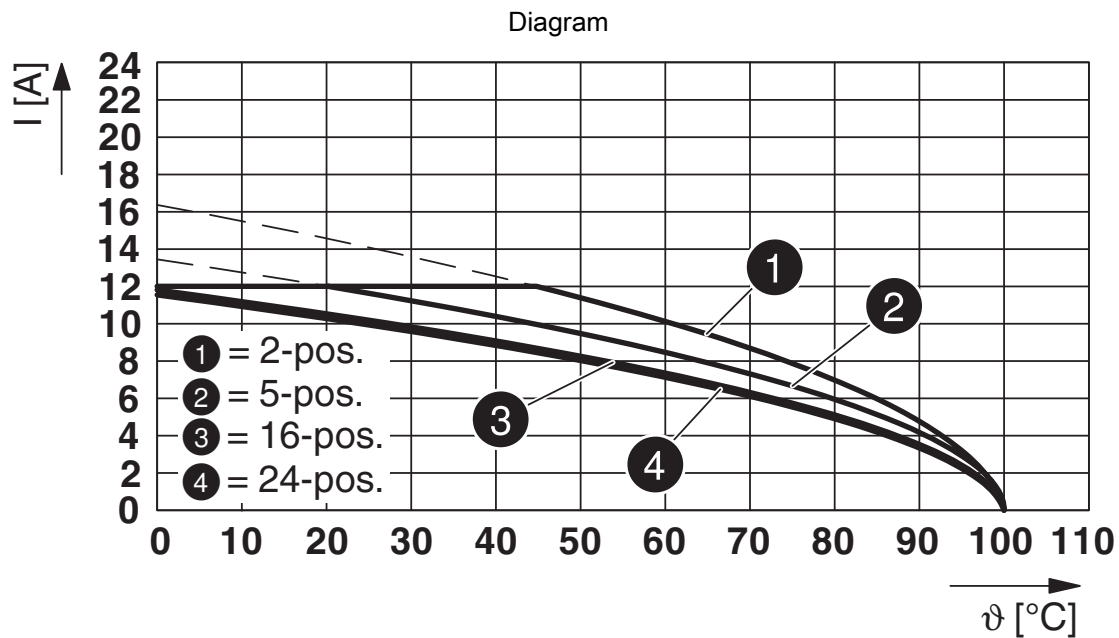


Type: FKCS 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08

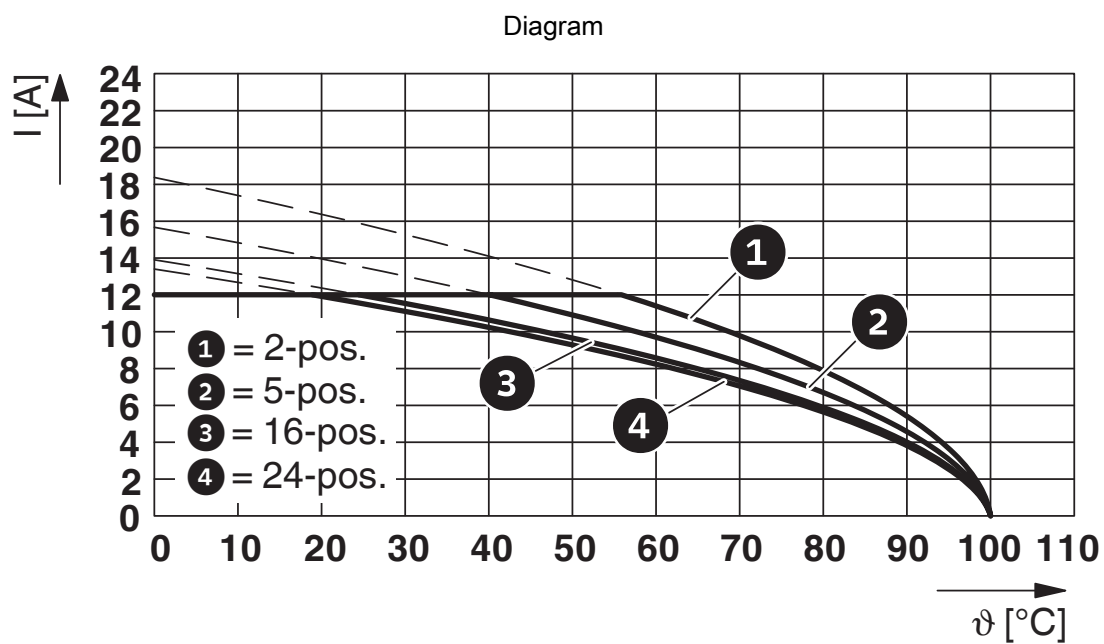
# MSTBVA 2,5/ 3-G-5,08 GY - PCB header

1764002

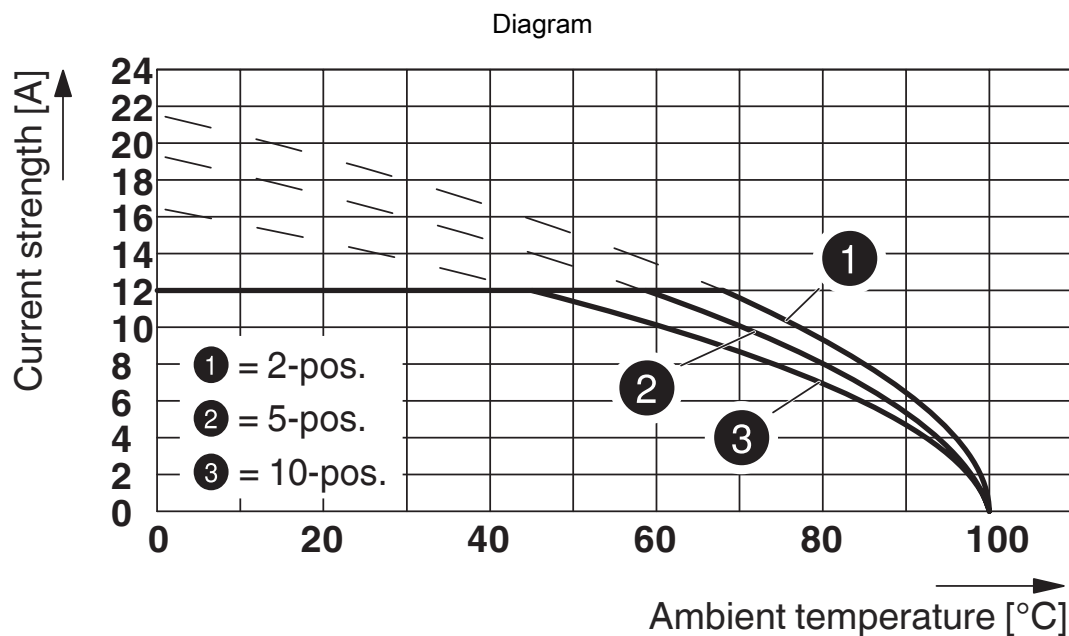
<https://www.phoenixcontact.com/ca/products/1764002>



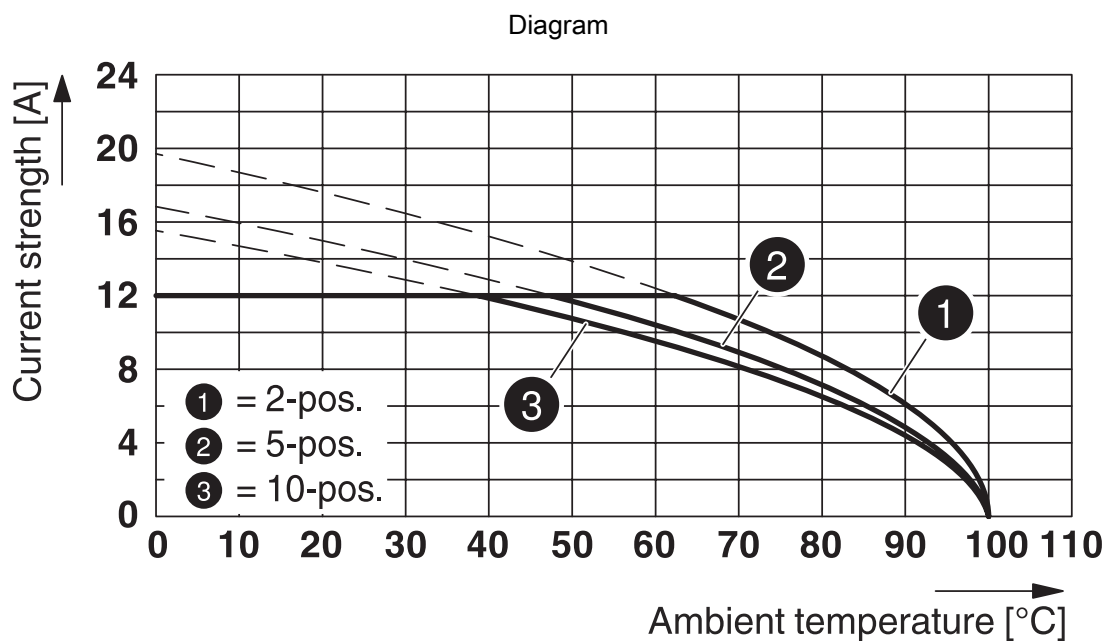
Type: MVSTB(R/W) 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08



Type: FRONT-MSTB 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08



Type: TFKC 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08



Type: TVMSTB 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08

# MSTBVA 2,5/ 3-G-5,08 GY - PCB header



1764002

<https://www.phoenixcontact.com/ca/products/1764002>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/ca/products/1764002>

|  <b>CSA</b><br>Approval ID: 13631-2585951 |                       |                       |                   |                             |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                            | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| Use group B                                                                                                                |                       |                       |                   |                             |
|                                                                                                                            | 300 V                 | 12 A                  | -                 | -                           |
| Use group D                                                                                                                |                       |                       |                   |                             |
|                                                                                                                            | 300 V                 | 10 A                  | -                 | -                           |

|  <b>cULus Recognized</b><br>Approval ID: E60425-19931011 |                       |                       |                   |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                           | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| Use group B                                                                                                                               |                       |                       |                   |                             |
|                                                                                                                                           | 300 V                 | 12 A                  | -                 | -                           |
| Use group D                                                                                                                               |                       |                       |                   |                             |
|                                                                                                                                           | 300 V                 | 10 A                  | -                 | -                           |

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40050648 |                       |                       |                   |                             |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                            | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|                                                                                                                                            | 250 V                 | 12 A                  | -                 | -                           |

# MSTBVA 2,5/ 3-G-5,08 GY - PCB header



1764002

<https://www.phoenixcontact.com/ca/products/1764002>

## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27460201 |
| ECLASS-12.0 | 27460201 |
| ECLASS-13.0 | 27460201 |

### ETIM

|          |          |
|----------|----------|
| ETIM 8.0 | EC002637 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121400 |
|-------------|----------|

# MSTBVA 2,5/ 3-G-5,08 GY - PCB header



1764002

<https://www.phoenixcontact.com/ca/products/1764002>

## 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%               |

Phoenix Contact 2024 © - all rights reserved  
<https://www.phoenixcontact.com>

PHOENIX CONTACT Ltd  
8240 Parkhill Drive  
Milton, Ontario L9T 5V7  
1-800-890-2820  
[cdinfo@phoenixcontact.ca](mailto:cdinfo@phoenixcontact.ca)