

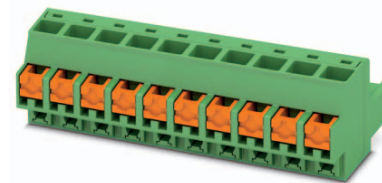
# Data sheet

2017-07-06  
Product version 00  
Document revision 1

Order No.: 1860633

Type: FK COW 2,5/11-ST-5,08

Plug component, Push-in spring connection



The figure shows a 10-position version

## 1 Main features



- |                           |                           |                        |                     |
|---------------------------|---------------------------|------------------------|---------------------|
| • No. of pos.             | 11                        | • Nominal current      | 12 A                |
| • Conductor cross section | 2.5 mm <sup>2</sup>       | • Nominal voltage      | 320 V               |
| • Color                   | green                     | • Connection direction | 90 °                |
| • Pitch                   | 5.08 mm                   | • Type of packaging    | packed in cardboard |
| • Connection method       | Push-in spring connection |                        |                     |

## 2 Your advantages

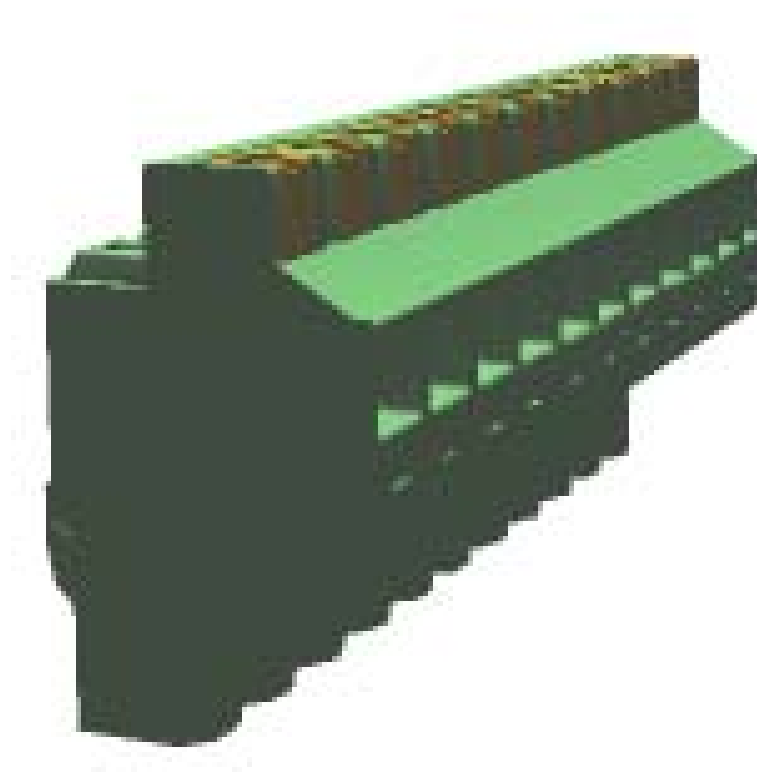
- ✓ The conductor connection orthogonal to the direction of operation simplifies the cabling of DIN-rail-mountable devices
- ✓ Time saving push-in connection, tools not required
- ✓ Intuitive use through colour coded actuation lever
- ✓ Quick and convenient testing using integrated test option
- ✓ Can be combined with the MSTB 2',5 range



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It can be downloaded at: [phoenixcontact.net/product/1860633](https://phoenixcontact.net/product/1860633)

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**1860633 FKOW 2,5/11-ST-5,08****4 3D model in PDF can be activated (Acrobat Reader only)**

**1860633 FK COW 2,5/11-ST-5,08****5 item properties**

|                     |                           |
|---------------------|---------------------------|
| Order No.           | 1860633                   |
| Type                | FKCOW 2,5/11-ST-5,08      |
| Type of contact     | Female connector          |
| Range of articles   | FKCOW 2,5/...-ST          |
| Pitch               | 5.08 mm                   |
| Number of positions | 11                        |
| Connection method   | Push-in spring connection |

**5.1 Connection capacity**

|                                   |                                            |
|-----------------------------------|--------------------------------------------|
| Conductor cross section, solid    | 0.2 mm <sup>2</sup> to 2.5 mm <sup>2</sup> |
| Conductor cross section, flexible | 0.2 mm <sup>2</sup> to 2.5 mm <sup>2</sup> |
| Conductor cross section AWG/kcmil | 24 to 12                                   |
| Stripping length                  | 10 mm                                      |

**5.2 Specifications for ferrules**

|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ferrules without insulating collar, according to DIN 46228-1 | Cross section: 0.25 mm <sup>2</sup> ; Length: 7 mm<br>Cross section: 0.34 mm <sup>2</sup> ; Length: 7 mm<br>Cross section: 0.5 mm <sup>2</sup> ; Length: 8 mm ... 10 mm<br>Cross section: 0.75 mm <sup>2</sup> ; Length: 8 mm ... 10 mm<br>Cross section: 1 mm <sup>2</sup> ; Length: 8 mm ... 10 mm<br>Cross section: 1.5 mm <sup>2</sup> ; Length: 8 mm ... 10 mm<br>Cross section: 2.5 mm <sup>2</sup> ; Length: 8 mm ... 10 mm     |
| Ferrules with insulating collar, according to DIN 46228-4    | Cross section: 0.14 mm <sup>2</sup> ; Length: 8 mm<br>Cross section: 0.25 mm <sup>2</sup> ; Length: 8 mm ... 10 mm<br>Cross section: 0.34 mm <sup>2</sup> ; Length: 8 mm ... 10 mm<br>Cross section: 0.5 mm <sup>2</sup> ; Length: 8 mm ... 10 mm<br>Cross section: 0.75 mm <sup>2</sup> ; Length: 8 mm ... 10 mm<br>Cross section: 1.5 mm <sup>2</sup> ; Length: 8 mm ... 10 mm<br>Cross section: 2.5 mm <sup>2</sup> ; Length: 10 mm |

**5.3 Material data**

|                                        |                                                                         |     |
|----------------------------------------|-------------------------------------------------------------------------|-----|
| Material of metal parts                |                                                                         |     |
| Note                                   | WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201 |     |
| Contact material                       | Cu alloy                                                                |     |
| Terminal point surface                 | Sn 4 µm ... 8 µm                                                        |     |
| Surface contact area                   | Sn 4 µm ... 8 µm                                                        |     |
| Surface characteristics                | hot-dip tin-plated                                                      |     |
| Insulating material data               | Housing                                                                 |     |
| Insulating material                    | PA                                                                      | PBT |
| CTI according to IEC 60112             | 600                                                                     | 275 |
| Flammability rating according to UL 94 | V0                                                                      | V0  |
| Color                                  | green (6021)                                                            |     |

**6 Dimensions****6.1 Dimensions for the product**

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|              |          |
|--------------|----------|
| Length       | 23.7 mm  |
| Width        | 55.75 mm |
| Total height | 16.8 mm  |
| Dimension a  | 50.80 mm |

**1860633 FKOW 2,5/11-ST-5,08**

## 7 Series drawing

## 8 Packaging information

|                    |                     |
|--------------------|---------------------|
| Type of packaging  | packed in cardboard |
| Pieces per package | 50                  |

## 9 Application

### 9.1 Temperature limit values

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

**1860633 FKOW 2,5/11-ST-5,08****10 Mechanical tests****Mechanical test group A**

|                                     |                        |
|-------------------------------------|------------------------|
| Specification                       | IEC 61984:2008-10      |
| Visual test                         | Test passed            |
| Specification                       | IEC 60512-1-1:2002-02  |
| Dimensional test                    | Test passed            |
| Specification                       | IEC 60512-1-2:2002-02  |
| Resistance of marking               | Test passed            |
| Specification                       | IEC 60068-2-70:1995-12 |
| Insertion and withdrawal force      | Test passed            |
| Specification                       | IEC 60512-13-2:2006-02 |
| No. of cycles                       | 25                     |
| Insertion strength per pos. approx. | 8 N                    |
| Withdraw strength per pos. approx.  | 11 N                   |
| Polarization and coding             | Test passed            |
| Specification                       | IEC 60512-13-5:2006-02 |
| Test force                          | 20 N                   |
| Contact retention in insert         | Test passed            |
| Specification                       | IEC 60512-15-1:2008-05 |
| Test force per pos.                 | 20 N                   |

**10.1 Termination and connection method**

|                                            |                     |
|--------------------------------------------|---------------------|
| Specification                              | IEC 60999-1:1999-11 |
| Check for damage to conductor or loosening | Test passed         |

**10.2 Pull-out test****Termination and connection method: pull-out test**

|                                                                    |                                         |
|--------------------------------------------------------------------|-----------------------------------------|
| Specification                                                      | IEC 60999-1:1999-11                     |
| Result                                                             | Test passed                             |
| Conductor cross section/conductor type/tractive force actual value | 0.2 mm <sup>2</sup> / solid / > 10 N    |
| Conductor cross section/conductor type/tractive force actual value | 0.2 mm <sup>2</sup> / stranded / > 10 N |
| Conductor cross section/conductor type/tractive force actual value | 2.5 mm <sup>2</sup> / solid / > 50 N    |
| Conductor cross section/conductor type/tractive force actual value | 2.5 mm <sup>2</sup> / stranded / > 50 N |
| Conductor cross section/conductor type/tractive force actual value | AWG 12 / stranded / > 60 N              |

**1860633 FKOW 2,5/11-ST-5,08****11 Electrical tests****11.1 Electrical data**

|                                         |                            |
|-----------------------------------------|----------------------------|
| Rated current / conductor cross section | 12 A / 2.5 mm <sup>2</sup> |
| Rated insulation voltage (III/2)        | 320 V                      |
| Rated surge voltage (III/2)             | 4 kV                       |
| Contact resistance                      | 1.3 mΩ                     |
| Degree of pollution                     | 2                          |

**11.2 Air and creepage distances**

|                                                                   |                     |       |        |
|-------------------------------------------------------------------|---------------------|-------|--------|
| Component                                                         | Plug component      |       |        |
| Specification                                                     | IEC 60664-1:2007-04 |       |        |
| Mains type                                                        | unearthed mains     |       |        |
| Insulating material group                                         |                     |       |        |
| Comparative tracking index (IEC 60112:2003-01)                    | CTI 600             |       |        |
| Rated insulation voltage                                          | 250 V               | 320 V | 630 V  |
| Rated surge voltage                                               | 4 kV                | 4 kV  | 4 kV   |
| Degree of pollution                                               | 3                   | 2     | 2      |
| Overvoltage category                                              | III                 | III   | II     |
| Minimum clearance case A (inhomogeneous field)                    | 3 mm                | 3 mm  | 3 mm   |
| Minimum value of the creepage path requirement in acc. with table | 3.2 mm              | 3 mm  | 3.2 mm |

**1860633 FKCOW 2,5/11-ST-5,08****12 Current carrying capacity/derating curves**

|                         |                                               |
|-------------------------|-----------------------------------------------|
| Specification           | IEC 61984:2008-10                             |
| Note                    | Representation based on IEC 60512-5-2:2002-02 |
| Reduction factor        | 0.8                                           |
| Number of positions     | See diagram                                   |
| Conductor cross section | 2.5 mm <sup>2</sup>                           |

**Type: FKCO(R/W) 2,5/...-ST-5,08-LR with MSTBA(R/W) 2,5/...-G-5,08-LR**

81345\_1000\_en

**Type: FKCO(R/W) 2,5/...-ST-5,08(-LR) with MSTBVA 2,5/...-ST-5,08(-LR)**

81491\_1000\_en

**1860633 FKOW 2,5/11-ST-5,08****13 Environmental and durability tests****13.1 Vibration test**

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

**14 Classification for connectors**

|                                   |                                              |
|-----------------------------------|----------------------------------------------|
| Specification                     | IEC 61984:2008-10                            |
| Main features                     | Connectors without switching capacity (COC)  |
| Construction form                 | Fixed connectors                             |
| Strain relief elements            | without strain relief                        |
| Connection method                 | Can be reconnected                           |
| Protection against electric shock | Not encapsulated - touch-proof when inserted |
| Protective conductor              | without PE                                   |
| Lock                              | no                                           |
| Connection method                 | Screwless terminal points                    |

**15 Approvals**

|                                                                                                      |       |       |  |  |
|------------------------------------------------------------------------------------------------------|-------|-------|--|--|
| cULus Recognized  |       |       |  |  |
| Use group                                                                                            | B     | D     |  |  |
| mm <sup>2</sup> /AWG/kcmil                                                                           | 26-12 | 26-12 |  |  |
| Voltage                                                                                              | 300 V | 300 V |  |  |
| Current                                                                                              | 12 A  | 10 A  |  |  |

**1860633 FK COW 2,5/11-ST-5,08****16 Commercial Data**

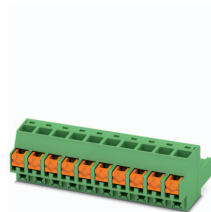
|                    |                                                      |
|--------------------|------------------------------------------------------|
| Order No.          | 1860633                                              |
| Type               | FKCOW 2,5/11-ST-5,08                                 |
| Pieces per package | 50                                                   |
| Net weight         | 2.22 g                                               |
| GTIN               | 4055626124384                                        |
|                    | Information that applies locally, see link on page 1 |
| Country of origin  | Information that applies locally, see link on page 1 |

**17 Accessories**

| Description                                                                                                                                                      | Order No. | Type                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------|
| Coding profile, is inserted into the slot on the plug or inverted header, red insulating material                                                                | 1734634   | CP-MSTB                  |
|                                                                                                                                                                  | 0201744   | MPS-MT                   |
|                                                                                                                                                                  | 0201647   | RPS                      |
| Actuation tool, for ST terminal blocks, insulated, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip | 1205053   | SZS 0,6X3,5              |
|                                                                                                                                                                  | 0804293   | SK 5,08/3,8:FORTL.ZAHLEN |

## 1860633 FKOW 2,5/11-ST-5,08

## 18 Combination tests



FKOW 2,5/..-ST



MSTBA 2,5/..-G-LR



MSTBVA 2,5/..-G-LR

|                                                                                 |                                                                               |                                                                               |  |  |
|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--|--|
| Specification                                                                   | IEC 61984                                                                     | IEC 61984                                                                     |  |  |
| <b>Mechanical tests (A)</b>                                                     |                                                                               |                                                                               |  |  |
| Insertion/withdrawal force per position                                         | approx. 8 N / 11 N                                                            | approx. 10 N / 12 N                                                           |  |  |
| Polarization when inserted<br>Requirement > 20 N                                | Test passed                                                                   | Test passed                                                                   |  |  |
| Contact holder in insert<br>Requirements > 20 N                                 | Test passed                                                                   | Test passed                                                                   |  |  |
| <b>Endurance tests (B)</b>                                                      |                                                                               |                                                                               |  |  |
| Contact resistance $R_1$                                                        | 1.3 m $\Omega$                                                                | 2.5 m $\Omega$                                                                |  |  |
| Insertion/withdrawal cycles                                                     | 25                                                                            | 25                                                                            |  |  |
| Contact resistance $R_2$                                                        | 1.3 m $\Omega$                                                                | 2.4 m $\Omega$                                                                |  |  |
| Rated impulse voltage at sea level<br>Voltage waveform $\geq (1.2/50 \mu s)$    | 4.8 kV                                                                        | 4.8 kV                                                                        |  |  |
| Power-frequency withstand voltage<br>Voltage waveform $\geq (50/60 \text{ Hz})$ | 2.21 kV                                                                       | 2.21 kV                                                                       |  |  |
| Insulation resistance<br>Requirements > 5 M $\Omega$                            | > 1.5 T $\Omega$                                                              | > 1 T $\Omega$                                                                |  |  |
| <b>Thermal tests (C)</b>                                                        |                                                                               |                                                                               |  |  |
| Tested number of positions                                                      | 24                                                                            | 24                                                                            |  |  |
| Tested conductor cross section                                                  | 2.5 mm <sup>2</sup>                                                           | 2.5 mm <sup>2</sup>                                                           |  |  |
| Test current                                                                    | 12 A                                                                          | 12 A                                                                          |  |  |
| Upper limiting temperature<br>Requirements < 100°C                              | Test passed                                                                   | Test passed                                                                   |  |  |
| <b>Climatic tests (D)</b>                                                       |                                                                               |                                                                               |  |  |
| Test sequence 1: low temperature storage                                        | -40 °C/2 h                                                                    | -40 °C/2 h                                                                    |  |  |
| Test sequence 2: heat storage                                                   | 100 °C/168 h                                                                  | 100 °C/168 h                                                                  |  |  |
| Test sequence 3: noxious gas storage<br>(ISO 6988)                              | 0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /<br>40 °C/1 cycle | 0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /<br>40 °C/1 cycle |  |  |
| Rated impulse voltage at sea level<br>Voltage waveform $\geq (1.2/50 \mu s)$    | 4.8 kV                                                                        | 4.8 kV                                                                        |  |  |
| Power-frequency withstand voltage<br>Voltage waveform $\geq (50/60 \text{ Hz})$ | 2.21 kV                                                                       | 2.21 kV                                                                       |  |  |
| <b>Environmental and endurance tests (E)</b>                                    |                                                                               |                                                                               |  |  |
| Specification                                                                   | IEC 61984:2008-10                                                             | IEC 61984:2008-10                                                             |  |  |
| Degree of protection                                                            | Finger safety with IP20<br>test finger                                        | Finger safety with IP20<br>test finger                                        |  |  |

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