

Data sheet

Item No.: 1464104

Type: XPC 1,5/ 2-ST-3,5 BK

PCB connector, Push-X-connection



1 Main features



- | | | | |
|---------------------------|---------------------|------------------------|---------------------|
| • No. of pos. | 2 | • Nominal current | 8 A |
| • Conductor cross section | 1.5 mm ² | • Nominal voltage | 160 V |
| • Color | black (RAL 9005) | • Connection direction | 0 ° |
| • Pitch | 3.5 mm | • Type of packaging | packed in cardboard |
| • Connection method | Push-X-connection | | |

2 Your advantages

- ✓ Highly convenient operation thanks to direct, effortless, and tool-free conductor connection
- ✓ Quick connection of all conductor types with and even without ferrules
- ✓ Reliable wiring thanks to acoustic and visual feedback
- ✓ Quick conductor release by simply pressing the orange release button
- ✓ Plug-in compatibility with existing headers of the COMBICON portfolio
- ✓ Quick and convenient testing using integrated test option



Make sure you always use the latest documentation.

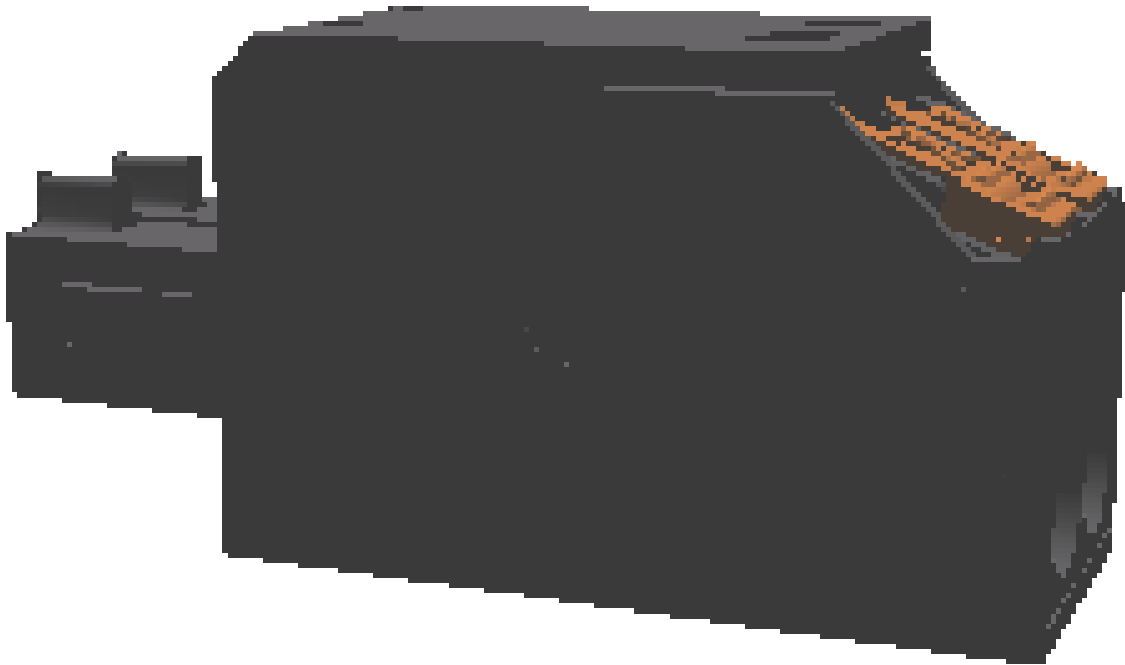
It can be downloaded at: phoenixcontact.net/product/1464104

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4 3D model in PDF can be activated (Acrobat Reader only)



1464104 XPC 1,5/ 2-ST-3,5 BK**5 General Technical Data****5.1 item properties**

| | |
|--|-----------------------|
| Item no. | 1464104 |
| Type | XPC 1,5/ 2-ST-3,5 BK |
| Product line | COMBICON Connectors S |
| Connector system | COMBICON MC 1,5 |
| Product type | PCB connector |
| Type of contact | Socket |
| Range of articles | XPC 1,5/..-ST |
| Pitch | 3.5 mm |
| Number of positions | 2 |
| Number of rows | 1 |
| Connection method | Push-X-connection |
| Connection direction of the conductor to plug-in direction | 0 ° |

1464104 XPC 1,5/ 2-ST-3,5 BK**6 Mounting****6.1 Flange mounting**

| | |
|-----------------|---------|
| Type of locking | without |
| Mounting flange | without |

1464104 XPC 1,5/ 2-ST-3,5 BK**7 Conductor connection****7.1 Connection capacity**

| | |
|---|---|
| Nominal cross section | 1.5 mm ² |
| Conductor cross section, rigid | 0.34 mm ² ... 1.5 mm ² |
| Conductor cross section, flexible | 0.5 mm ² ... 1.5 mm ² |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm ² ... 1.5 mm ² |
| Conductor cross section flexible, with ferrule with plastic sleeve | 0.25 mm ² ... 0.75 mm ² |
| Cylindrical gauge a x b / diameter | 2.4 mm x 1.5 mm / - |
| Stripping length | 10 mm |

7.2 Connection capacity AWG

| | |
|-----------------------------|-----------|
| Conductor cross section AWG | 20 ... 16 |
|-----------------------------|-----------|

1464104 XPC 1,5/ 2-ST-3,5 BK**8 Material properties****8.1 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 | Tin (4 - 8 µm Sn) |
| Surface contact area | Tin (4 - 8 µm Sn) |
| Surface characteristics | hot-dip tin-plated |

8.2 Material of plastic parts

| | Housing | Actuation element |
|--|------------------|-------------------|
| Color | black (RAL 9005) | orange (RAL 2003) |
| Insulating material | PA | PBT |
| Insulating material group | I | I |
| CTI according to IEC 60112 | 600 | 600 |
| Flammability rating according to UL 94 | V0 | V0 |

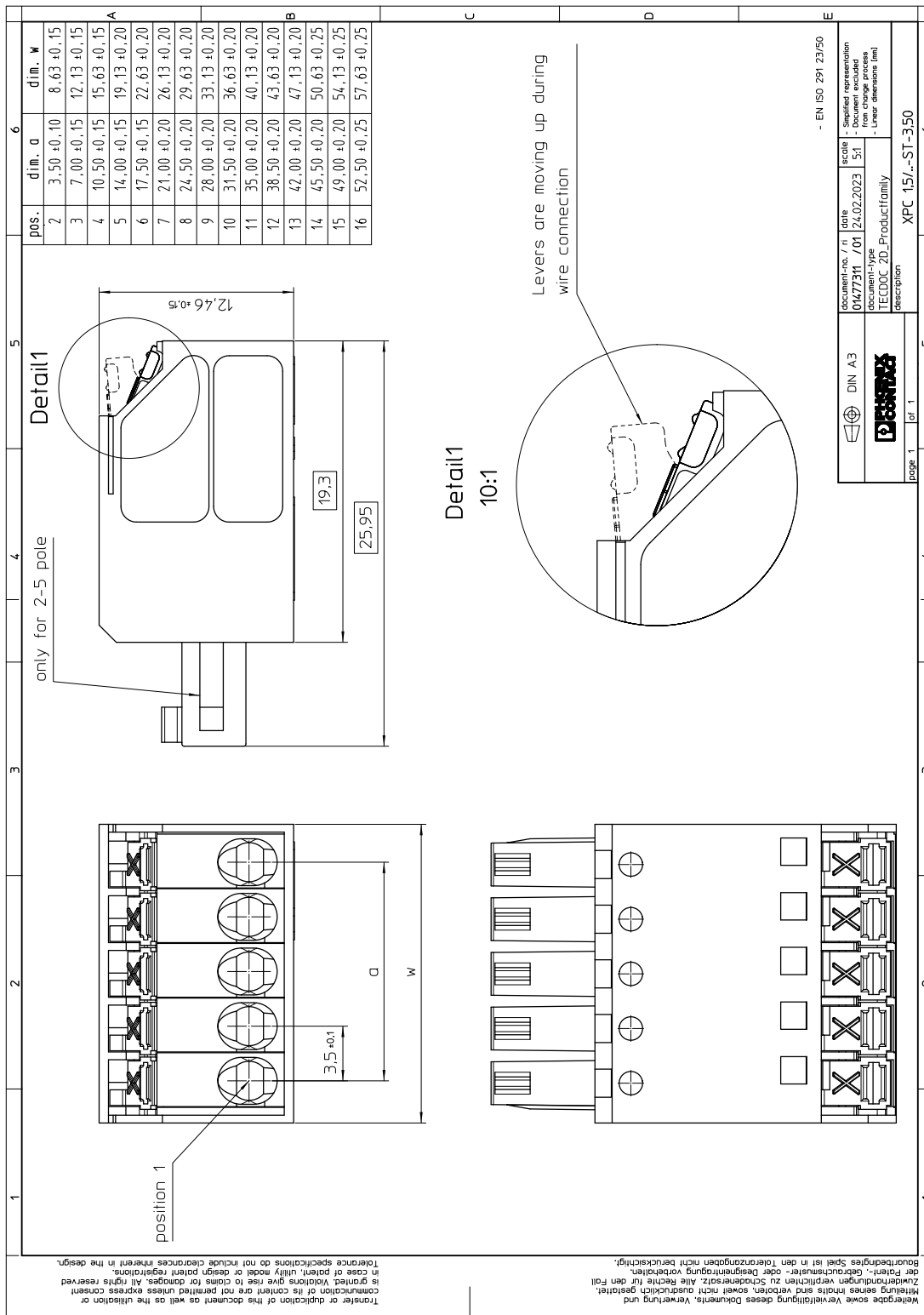
1464104 XPC 1,5/ 2-ST-3,5 BK

9 Dimensions**9.1 Dimensions for the product**

| | |
|--------------|----------|
| Length | 25.95 mm |
| Width | 8.63 mm |
| Total height | 12.46 mm |

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10 Series drawing



1464104 XPC 1,5/ 2-ST-3,5 BK**11 Product notes****11.1 General information**

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.

12 Packaging information

Type of packaging

packed in cardboard

Pieces per package

100

13 Application**13.1 Temperature limit values**

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 ... 105 °C (dependent on the derating curve)

1464104 XPC 1,5/ 2-ST-3,5 BK**14 General tests****14.1 Specification**

| | |
|-------------------|---------------------------------|
| Specification | IEC 61984 |
| Specification | IEC 60999-1 |
| Brief description | Printed-circuit board connector |

15 Mechanical tests**15.1 Check for damage to conductor or loosening**

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

15.2 Pull-out test

| | |
|--|---|
| Specification | IEC 60999-1:1999-11 |
| Result | Test passed |
| Conductor cross section/conductor type/tractive force actual value | 0.34 mm ² / solid / > 15 N |
| Conductor cross section/conductor type/tractive force actual value | 0.5 mm ² / flexible / > 20 N |
| Conductor cross section/conductor type/tractive force actual value | 1.5 mm ² / solid / > 40 N |
| Conductor cross section/conductor type/tractive force actual value | 1.5 mm ² / flexible / > 40 N |

15.3 Repeated connection and disconnection

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

15.4 Conductor connection

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

15.5 Visual examination

| | |
|--------------------|-----------------------|
| Specification | IEC 61984:2008-10 |
| Visual examination | Test passed |
| Specification | IEC 60512-1-1:2002-02 |

15.6 Dimensional test

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

15.7 Resistance of marking

1464104 XPC 1,5/ 2-ST-3,5 BK

Resistance of marking

Test passed

Specification

IEC 60068-2-70:1995-12

15.8 Polarization and coding

Polarization when inserted
Requirement >20 N

Test passed

Specification

IEC 60512-13-5:2006-02

1464104 XPC 1,5/ 2-ST-3,5 BK**16 Insertion and withdrawal forces**

| Insertion and withdrawal force | |
|-------------------------------------|-------------|
| Specification | Test passed |
| No. of cycles | 25 |
| Insertion strength per pos. approx. | 8 N |
| Withdraw strength per pos. approx. | 5 N |

1464104 XPC 1,5/ 2-ST-3,5 BK**17 Electrical tests**

| | |
|---|---------------------------|
| Rated current / conductor cross section | 8 A / 1.5 mm ² |
| Rated insulation voltage (III/2) | 160 V |
| Rated surge voltage (III/2) | 2.5 kV |
| Contact resistance | 2.2 mΩ |
| Degree of pollution | 2 |

1464104 XPC 1,5/ 2-ST-3,5 BK**18 Air and creepage distances**

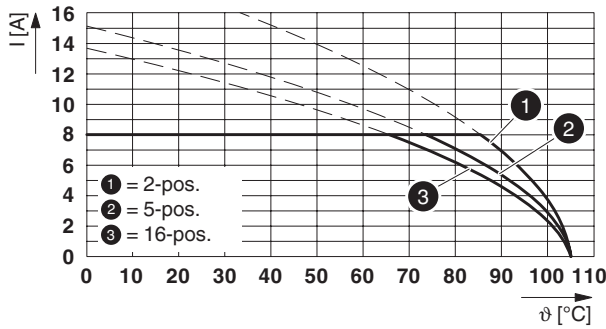
| | | | |
|---|---------------------|--------|--------|
| Component | PCB connector | | |
| Specification | IEC 60664-1:2007-04 | | |
| Mains type | unearthed mains | | |
| Insulating material group | I | | |
| Comparative tracking index (IEC 60112) | CTI 600 | | |
| Rated insulation voltage | 160 V | 160 V | 320 V |
| Rated surge voltage | 2.5 kV | 2.5 kV | 2.5 kV |
| Degree of pollution | 3 | 2 | 2 |
| Overvoltage category | III | III | II |
| Minimum clearance case A (inhomogeneous field) | 1.5 mm | 1.5 mm | 1.5 mm |
| Minimum value of the creepage path requirement in acc. with table | 2 mm | 1.5 mm | 1.6 mm |

1464104 XPC 1,5/ 2-ST-3,5 BK

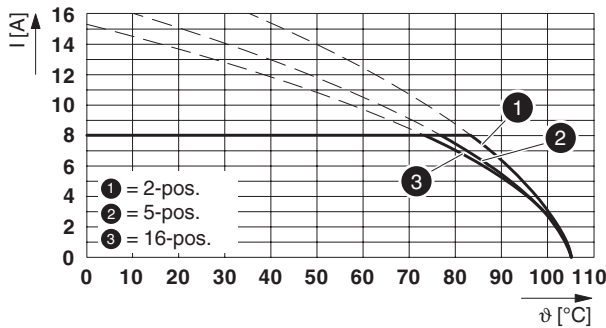
19 Current carrying capacity/derating curves

| | |
|-------------------------|---|
| Specification | IEC 61984:2008-10 |
| Note | Representation based on IEC 60512-5-2:2002-02 |
| Note | For number of positions, see diagram |
| Reduction factor | 0.8 |
| Conductor cross section | 1.5 mm ² |

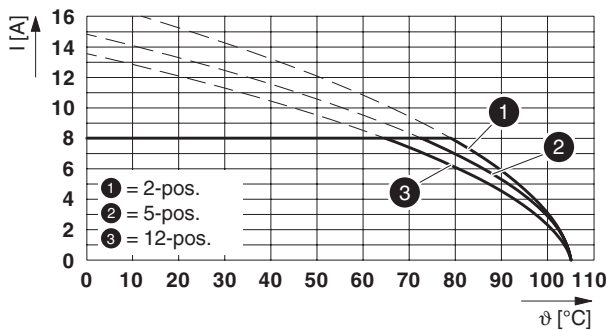
Type: XPC 1,5/...-ST-3,5 with MC 1,5/...-G-3,5 P... THR



Type: XPC 1,5/...-ST-3,5 with MCV 1,5/...-G-3,5



Type: XPC 1,5/...-ST-3,5 with IFMC 1,5/...-ST-3,5



1464104 XPC 1,5/ 2-ST-3,5 BK**20 Environmental and durability tests****20.1 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 Hz ... 60.1 Hz) |
| Acceleration | 50 m/s ² (60.1 Hz ... 150 Hz) |
| Test duration per axis | 2.5 h |
| Test directions | X-, Y- and Z-axis |
| Note | |

20.2 Insulation resistance

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

1464104 XPC 1,5/ 2-ST-3,5 BK**21 Type approval and special tests****22 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 |
| Locking | no |
| Connection method | Screwless terminal points |

1464104 XPC 1,5/ 2-ST-3,5 BK**23 Commercial Data**

| | |
|--------------------|--|
| Item no. | 1464104 |
| Type | XPC 1,5/ 2-ST-3,5 BK |
| Pieces per package | 100 |
| Net weight | 2.22 g |
| GTIN | 4063151857509 |
| | Information that applies locally, see link on page 1 |

24 corresponding headers

| Item no. | Type |
|----------|-----------------------------|
| 1843980 | IFMC 1,5/ 2-ST-3,5 |
| 1780888 | MCV 1,5/ 2-G-3,5 P20 THRR32 |
| 1788505 | MC 1,5/ 2-G-3,5 P26 THR |
| 1788518 | MC 1,5/ 2-G-3,5 P26 THRR32 |
| 1788738 | MC 1,5/ 2-G-3,5 P20 THRR32 |
| 1788945 | MC 1,5/ 2-G-3,5 P14 THR |
| 1788958 | MC 1,5/ 2-G-3,5 P14 THRR32 |
| 1843606 | MCV 1,5/ 2-G-3,5 |
| 1844210 | MC 1,5/ 2-G-3,5 |

25 Accessories

| Description | Item No. | Type |
|--|----------|-----------------|
| Screwdriver, slot-headed, VDE insulated, size: 0.4 x 2.5 x 80 mm, 2-component grip, with non-slip grip | 1205037 | SZS 0,4X2,5 VDE |

1464104 XPC 1,5/ 2-ST-3,5 BK

26 Combination tests

**XPC 1,5/..-ST**

IEC 61984

MC 1,5/..-G-THR

IEC 61984

MCV 1,5/..-G

IEC 61984

IFMC 1,5/..-ST

IEC 61984

Mechanical tests (A)

| | | | |
|---|-------------------|-------------------|-------------------|
| Insertion/withdrawal force per position | approx. 8 N / 5 N | approx. 6 N / 4 N | approx. 3 N / 2 N |
| Polarization when inserted Requirement >20 N | Test passed | Test passed | Test passed |
| Contact holder in insert Requirements >20 N | Test passed | Test passed | Test passed |

Durability tests (B)

| | | | |
|--|---------|---------|---------|
| Contact resistance R ₁ 1st level | 2.2 mΩ | 2.2 mΩ | 4.8 mΩ |
| Contact resistance R ₁ 2nd level | | | |
| Insertion/withdrawal cycles | 25 | 25 | 25 |
| Contact resistance R ₂ | 2.1 mΩ | 2.1 mΩ | 4.6 mΩ |
| Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs) | 2.95 kV | 2.95 kV | 2.95 kV |
| Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz) | 1.39 kV | 1.39 kV | 1.39 kV |
| Insulation resistance Requirements > 5 MΩ | > 5 MΩ | > 5 MΩ | > 5 MΩ |

Thermal tests (C)

| | | | |
|--|---------------------|---------------------|---------------------|
| Tested number of positions | 16 | 16 | 12 |
| Tested conductor cross section | 1.5 mm ² | 1.5 mm ² | 1.5 mm ² |
| Test current | 8 A | 8 A | 8 A |
| Upper limiting temperature Requirements < 100°C | Test passed | Test passed | Test passed |

Climatic tests (D)

| | | | |
|--|---|---|---|
| Test current | 8 A | 8 A | 8 A |
| Test sequence 1: low temperature storage | -40 °C/2 h | -40 °C/2 h | -40 °C/2 h |
| Upper limiting temperature Requirements < 100°C | Test passed | Test passed | Test passed |
| Test sequence 2: heat storage | 105 °C/168 h | 105 °C/168 h | 105 °C/168 h |
| Test sequence 3: noxious gas storage (ISO 6988) | 0.2 dm ³ SO ₂ on 300 dm ³ / 40 °C/1 cycle | 0.2 dm ³ SO ₂ on 300 dm ³ / 40 °C/1 cycle | 0.2 dm ³ SO ₂ on 300 dm ³ / 40 °C/1 cycle |
| Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs) | 2.95 kV | 2.95 kV | 2.95 kV |
| Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz) | 1.39 kV | 1.39 kV | 1.39 kV |

Environmental and endurance tests (E)

| | | | |
|----------------------|--|--|--|
| Specification | IEC 61984:2008-10 | IEC 61984:2008-10 | IEC 61984:2008-10 |
| Degree of protection | Finger safety with IP20 test finger | Finger safety with IP20 test finger | Finger safety with IP20 test finger |