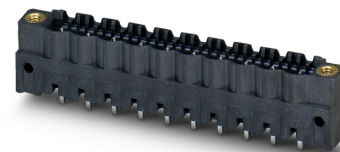


Item No.: 1955633

Type: CCV 2,5/ 2-GF-5,08 P26THR

PCB headers, Reflow/wave soldering



The figure shows a 10-position version of the product

## 1 Main features



- |                         |                     |                        |                     |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos.           | 2                   | • Nominal current      | 12 A                |
| • Nominal cross section | 2.5 mm <sup>2</sup> | • Nominal voltage      | 320 V               |
| • Color                 | black (RAL 9005)    | • Connection direction | 90 °                |
| • Pitch                 | 5.08 mm             | • Type of packaging    | packed in cardboard |
| • Mounting type         | THR soldering       |                        |                     |

## 2 Your advantages

- ✓ Designed for integration into the SMT soldering process
- ✓ Vertical connection enables multi-row arrangement on the PCB
- ✓ Screwable flange for superior mechanical stability
- ✓ Maximum flexibility when it comes to device design – one header for connectors with different connection technologies



Make sure you always use the latest documentation.  
It can be downloaded at: [phoenixcontact.com/product/1955633](https://phoenixcontact.com/product/1955633)

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



**1955633 CCV 2,5/ 2-GF-5,08 P26THR****5 General Technical Data****5.1 item properties**

Item no.	1955633
Type	CCV 2,5/ 2-GF-5,08 P26THR
Product line	COMBICON Connectors M
Connector system	COMBICON MSTB 2,5
Product type	PCB headers
Contact connection type	Pin
Range of articles	CCV 2,5/..-GF
Pitch	5.08 mm
Number of positions	2
Number of rows	1
Number of connections	2
Number of potentials	2
Connection direction of the connector to the PCB	90 °
Pin layout	Linear pinning
Solder pins per potential	1
Product note	For user information and design recommendations for through-hole reflow technology, go to: Downloads
Type	Component suitable for through hole reflow

**1955633 CCV 2,5/ 2-GF-5,08 P26THR****6 Mounting****6.1 Flange mounting**

Type of locking	Screw locking mechanism
Mounting flange	Threaded flange
Tightening torque	0.3 Nm

**7 Material properties****7.1 Material of metal parts**

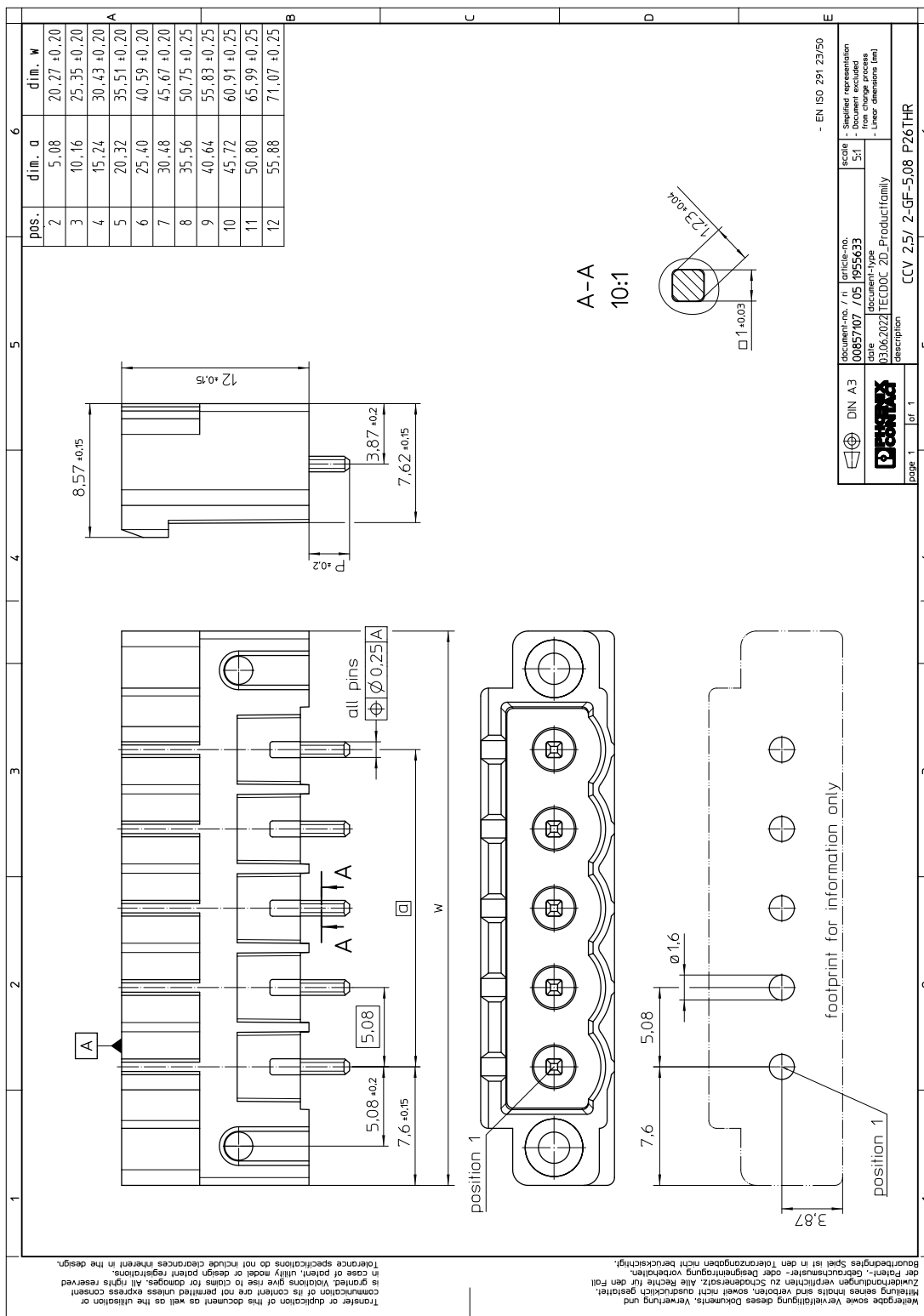
Note	WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface contact area	Nickel (1.3 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Soldering area surface	Nickel (1.3 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Surface characteristics	Tin-plated
Insulating material data	Housing
Color	black (RAL 9005)
Insulating material	LCP
Insulating material group	IIIa
CTI according to IEC 60112	175
Flammability rating according to UL 94	V0

**1955633 CCV 2,5/ 2-GF-5,08 P26THR****8 Dimensions****8.1 Dimensions for the product**

Length	8.57 mm
Width	20.27 mm
Height (without solder pin)	12 mm
Total height	14.6 mm
Solder pin [P]	2.6 mm

1955633 CCV 2,5/ 2-GF-5,08 P26THR

9 Series drawing



**1955633 CCV 2,5/ 2-GF-5,08 P26THR****10 Product notes****10.1 General information**

Details for soldering processes	Processing using reflow processes in compliance with IEC 60068-2-58 or DIN EN 61760-1 (latest version) Moisture Sensitive Level (MSL) = 1 according to IPC/JEDEC J-STD-020-C
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.
Details for soldering processes	Processing using reflow processes in compliance with IEC 60068-2-58 or DIN EN 61760-1 (latest version) Moisture Sensitive Level (MSL) = 1 according to IPC/JEDEC J-STD-020-C

**11 Application****12 Packaging specifications**

Type of packaging	packed in cardboard
Packing unit	50

**12.1 Processing notes**

Process	Reflow/wave soldering
Specification	IPC/JEDEC J-STD-020D.1:2008-03 (following)
Specification	IEC 61760-1:2006-04 (following)
Specification	IEC 60068-2-58:2005-02 (following)
Moisture Sensitive Level	MSL 1
Classification temperature $T_c$	max. 260 °C
Solder cycles in the reflow	3
swash circumference	see dimensional drawing

**12.2 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)

**1955633 CCV 2,5/ 2-GF-5,08 P26THR****13 Mechanical tests****13.1 Visual examination**

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

**13.2 Dimensional test**

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

**13.3 Resistance of marking**

Resistance of marking	Test passed
Specification	IEC 60068-2-70:1995-12

**13.4 Polarization and coding**

Polarization and coding	Test passed
Specification	IEC 60512-13-5:2006-02
Test force	20 N

**13.5 Contact retention in insert**

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

**1955633 CCV 2,5/ 2-GF-5,08 P26THR****14 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.	6 N

**1955633 CCV 2,5/ 2-GF-5,08 P26THR****15 Electrical tests**

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 mΩ
Degree of pollution	2

**1955633 CCV 2,5/ 2-GF-5,08 P26THR****16 Air and creepage distances**

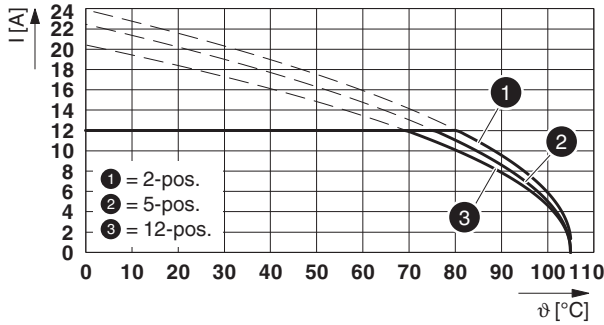
Component	PCB headers		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	IIIa		
Comparative tracking index (IEC 60112)	CTI 175		
Rated insulation voltage	250 V	320 V	400 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	3 mm	3 mm	3 mm
Minimum value of the creepage path requirement in acc. with table	4 mm	3.2 mm	4 mm

1955633 CCV 2,5/ 2-GF-5,08 P26THR

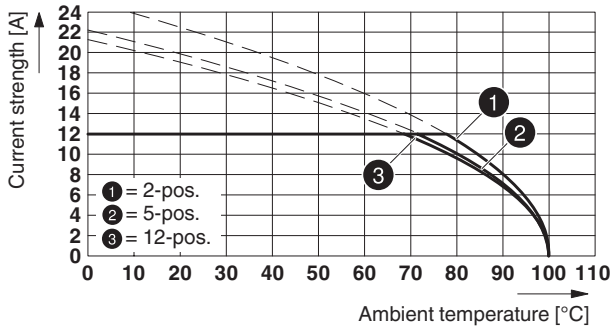
17 Current carrying capacity/derating curves

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	2.5 mm <sup>2</sup>

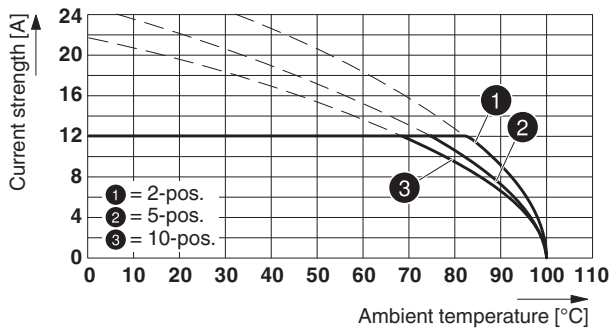
Type: FKCS 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P...THR



Type: MSTB 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P26THR

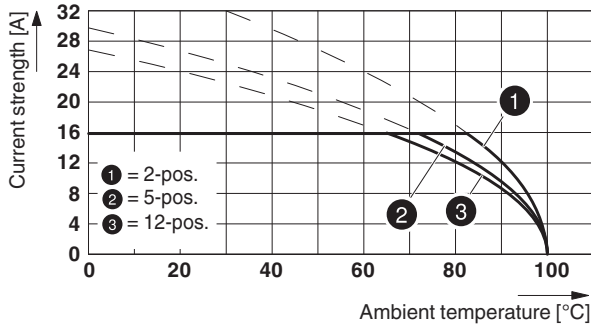


Type: TFKC 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P26THR

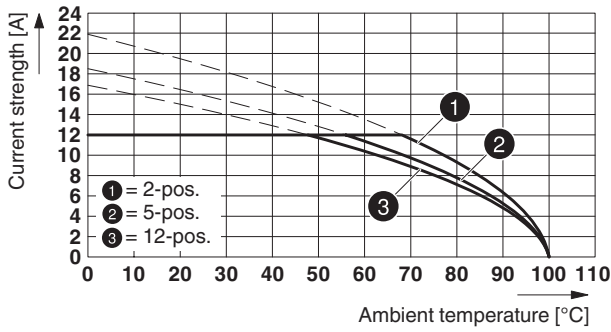


**1955633 CCV 2,5/ 2-GF-5,08 P26THR**

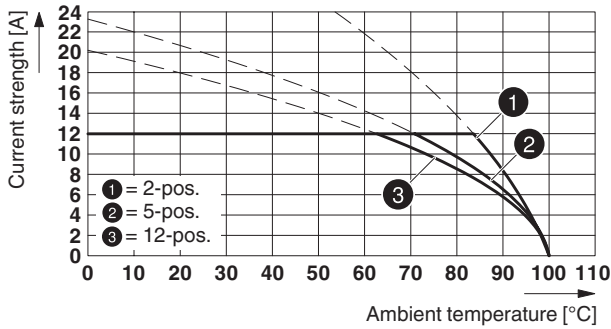
**Derating curve for: MSTB 2,5 HC/..-STF-5,08 with CCV 2,5/..-GF-5,08 P26THR**



**Type: SMSTB 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P...THR**

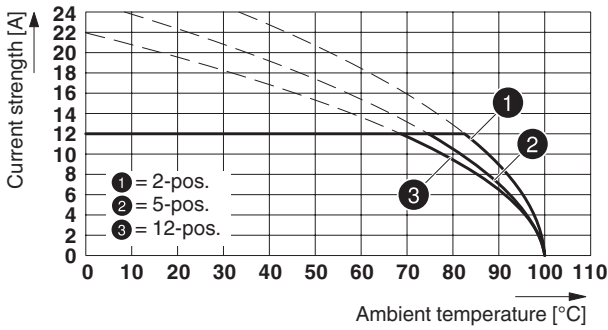


**Type: FRONT-MSTB 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P26THR**

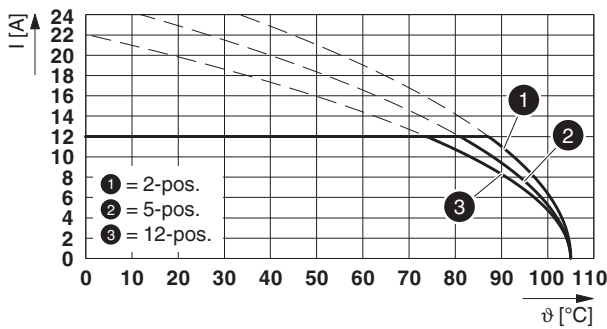


**1955633 CCV 2,5/ 2-GF-5,08 P26THR**

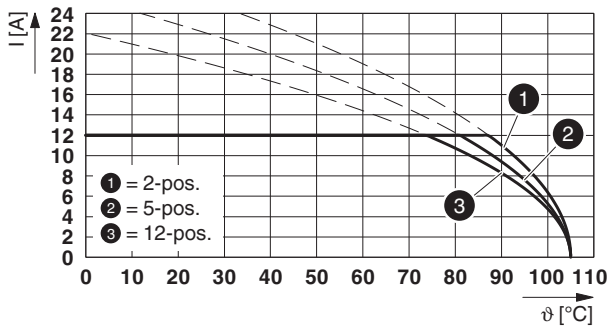
Type: MSTBT 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P26THR



Type: FKCVR 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P...THR

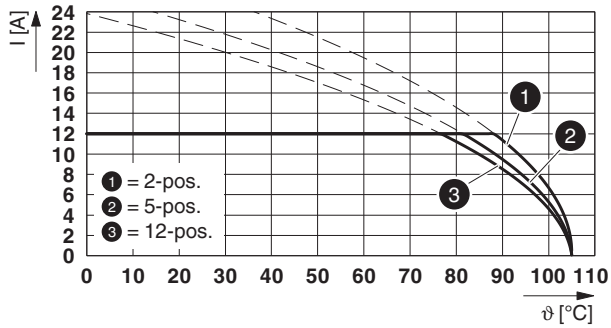


Type: FKCVW 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P...THR

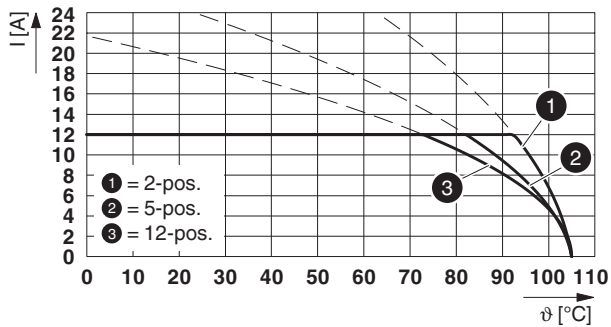


1955633 CCV 2,5/ 2-GF-5,08 P26THR

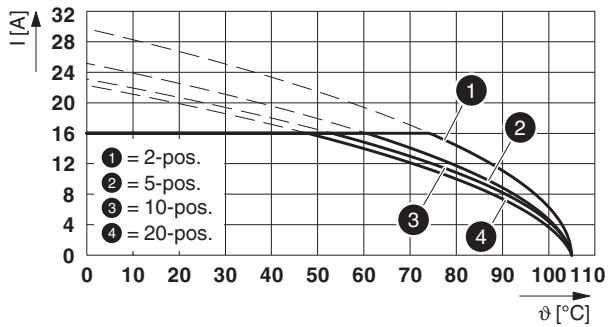
Type: FKCN 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P...THR



Type: FKCT 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P...THR



Type: LPC 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P...THR



**1955633 CCV 2,5/ 2-GF-5,08 P26THR****18 Environmental and durability tests****18.1 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	5g (60.1 Hz ... 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis
Note	

**18.2 Insulation resistance**

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

## **19 Data transmission**

**1955633 CCV 2,5/ 2-GF-5,08 P26THR****20 Approvals / Certificates**

cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
<b>Usegroup B</b>				
Standard	300 V	16 A	-	-
<b>Usegroup D</b>				
Standard	300 V	10 A	-	-
Alternative 1	150 V	15 A	-	-
VDE Gutachten mit Fertigungsüberwachung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm <sup>2</sup> ]
	400 V	12 A	-	-

**1955633 CCV 2,5/ 2-GF-5,08 P26THR****21 Commercial Data**

Item no.	1955633
Type	CCV 2,5/ 2-GF-5,08 P26THR
Packing unit	50
Net weight	1.988 g
GTIN	4017918926397
	Information that applies locally, see link on page 1

**22 corresponding plugs**

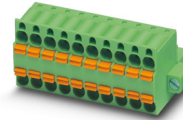
Item no.	Type
1719095	TVMSTB 2,5/ 2-STF-5,08
1754791	FKCN 2,5/ 2-STF-5,08
1777808	FRONT-MSTB 2,5/ 2-STF-5,08
1777989	MSTB 2,5/ 2-STF-5,08
1805301	MSTBT 2,5/ 2-STF-5,08
1809734	MSTBC 2,5/ 2-STZF-5,08
1834903	MVSTBW 2,5/ 2-STF-5,08
1835096	MVSTBR 2,5/ 2-STF-5,08
1853104	TMSTBP 2,5/ 2-STF-5,08
1873207	FKC 2,5/ 2-STF-5,08
1873809	FKCVW 2,5/ 2-STF-5,08
1874109	FKCVR 2,5/ 2-STF-5,08
1883352	QC 1/ 2-STF-5,08
1902301	FKCT 2,5/ 2-STF-5,08
1962697	TFKC 2,5/ 2-STF-5,08
1971060	SMSTB 2,5/ 2-STF-5,08
1975260	FKCS 2,5/ 2-STF-5,08

**23 Accessories**

Description	Item No.	Type
Coding section, inserted into the recess in the header or the inverted plug, red insulating material	1734401	CR-MSTB
HT coding section, prior to the reflow soldering process it is inserted into the recess on the header, made from high-temperature-resistant beige insulation material	1954362	CR-MSTB NAT HT
	0804293	SK 5,08/3,8:FORTL.ZAHLEN
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT

## 1955633 CCV 2,5/ 2-GF-5,08 P26THR

## 24 Combination tests

**CCV 2,5/..-GF****FKCS 2,5/..-STF****MSTB 2,5/..-STF****TFKC 2,5/..-STF****MSTB 2,5 HC/..-STF**

IEC 61984

IEC 61984

IEC 61984

IEC 61984

IEC 61984

**Mechanical tests (A)**

Insertion/withdrawal force per position	approx. 8 N / 6 N	approx. 8 N / 6 N	approx. 12 N / 9 N	approx. 5 N / 5 N
Polarization when inserted Requirement >20 N	Test passed	Test passed	Test passed	Test passed
Contact holder in insert Requirements >20 N	Test passed	Test passed	Test passed	Test passed

**Durability tests (B)**

Contact resistance R <sub>1</sub> 1st level	1 mΩ	1.3 mΩ	1.2 mΩ	0.6 mΩ
Contact resistance R <sub>1</sub> 2nd level				
Insertion/withdrawal cycles	25	25	25	50
Contact resistance R <sub>2</sub>	1 mΩ	1.3 mΩ	1.2 mΩ	0.8 mΩ
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV
Insulation resistance Requirements > 5 MΩ	> 5 MΩ	> 5 MΩ	> 5 MΩ	10 <sup>12</sup> Ω

**Thermal tests (C)**

Tested number of positions	12	12	10	12
Tested conductor cross section	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
Test current	12 A	12 A	12 A	16 A DC
Upper limiting temperature Requirements < 100°C	Test passed	Test passed	Test passed	Test passed

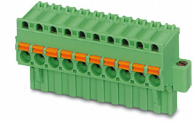
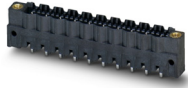
**Climatic tests (D)**

Test sequence 1: low temperature storage	-40 °C/2 h	-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 passed
Test sequence 2: heat storage	105 °C/168 h	100 °C/168 h	100 °C/168 h	100 °C/168 h
Test sequence 3: noxious gas storage (ISO 6988)	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV

**Environmental and endurance tests (E)**

Specification	IEC 61984:2008-10	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	Finger safety with IP20 test finger

## 1955633 CCV 2,5/ 2-GF-5,08 P26THR

**CCV 2,5/..-GF****SMSTB 2,5/..-STF****FRONT-MSTB 2,5/..-STF****MSTBT 2,5/..-STF****FKCVR 2,5/..-STF**

IEC 61984

IEC 61984

IEC 61984

IEC 61984

IEC 61984

**Mechanical tests (A)**

Insertion/withdrawal force per position

approx. 8 N / 6 N

approx. 8 N / 6 N

approx. 10 N / 7 N

approx. 9 N / 7 N

Polarization when inserted  
Requirement >20 N

Test passed

Test passed

Test passed

Test passed

Contact holder in insert  
Requirements >20 N

Test passed

Test passed

Test passed

Test passed

**Durability tests (B)**Contact resistance R<sub>1</sub> 1st level

2.2 mΩ

1.3 mΩ

1.2 mΩ

1 mΩ

Contact resistance R<sub>1</sub> 2nd level

Insertion/withdrawal cycles

25

25

25

25

Contact resistance R<sub>2</sub>

2.2 mΩ

1.4 mΩ

1.3 mΩ

1.2 mΩ

Rated impulse voltage at sea level  
Voltage waveform ≥ (1.2/50 μs)

4.8 kV

4.8 kV

4.8 kV

4.8 kV

Power-frequency withstand voltage  
Voltage waveform ≥ (50/60 Hz)

2.21 kV

2.21 kV

2.21 kV

2.21 kV

Insulation resistance  
Requirements > 5 MΩ

&gt; 5 MΩ

&gt; 5 MΩ

&gt; 5 MΩ

&gt; 5 MΩ

**Thermal tests (C)**

Tested number of positions

12

12

12

12

Tested conductor cross section

2.5 mm<sup>2</sup>2.5 mm<sup>2</sup>2.5 mm<sup>2</sup>2.5 mm<sup>2</sup>

Test current

12 A

12 A

12 A

12 A

Upper limiting temperature  
Requirements < 100°C

Test passed

Test passed

Test passed

Test passed

**Climatic tests (D)**

Test sequence 1: low temperature storage

-40 °C/2 h

-40 °C/2 h

-40 °C/2 h

-40 °C/2 h

Test sequence 2: heat storage

100 °C/168 h

100 °C/168 h

100 °C/168 h

105 °C/168 h

Test sequence 3: noxious gas storage  
(ISO 6988)0.2 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
40 °C/1 cycle0.2 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
40 °C/1 cycle0.2 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
40 °C/1 cycle0.2 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
40 °C/1 cycleRated impulse voltage at sea level  
Voltage waveform ≥ (1.2/50 μs)

4.8 kV

4.8 kV

4.8 kV

4.8 kV

Power-frequency withstand voltage  
Voltage waveform ≥ (50/60 Hz)

2.21 kV

2.21 kV

2.21 kV

2.21 kV

**Environmental and endurance tests (E)**

Specification

IEC 61984:2008-10

IEC 61984:2008-10

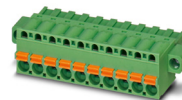
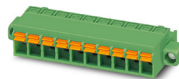
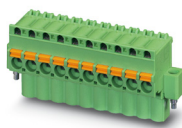
IEC 61984:2008-10

IEC 61984:2008-10

Degree of protection

Finger safety with IP20  
test fingerFinger safety with IP20  
test fingerFinger safety with IP20  
test fingerFinger safety with IP20  
test finger

## 1955633 CCV 2,5/ 2-GF-5,08 P26THR

**CCV 2,5/..-GF**

IEC 61984

**FKCVW 2,5/..-STF**

IEC 61984

**FKCN 2,5/..-STF**

IEC 61984

**FKCT 2,5/..-STF**

IEC 61984

**LPC 2,5/..-STF**

IEC 61984

**Mechanical tests (A)**

Insertion/withdrawal force per position	approx. 9 N / 7 N	approx. 11 N / 9 N	approx. 10 N / 8 N	approx. 8 N / 6 N
Polarization when inserted Requirement >20 N	Test passed	Test passed	Test passed	Test passed
Contact holder in insert Requirements >20 N	Test passed	Test passed	Test passed	Test passed

**Durability tests (B)**

Contact resistance R <sub>1</sub> 1st level	1 mΩ	0.9 mΩ	1.1 mΩ	0.9 mΩ
Contact resistance R <sub>1</sub> 2nd level				
Insertion/withdrawal cycles	25	25	25	25
Contact resistance R <sub>2</sub>	1.2 mΩ	1 mΩ	1.2 mΩ	1.2 mΩ
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV
Insulation resistance Requirements > 5 MΩ	> 5 MΩ	> 5 MΩ	> 5 MΩ	> 5 MΩ

**Thermal tests (C)**

Tested number of positions	12	12	12	20
Tested conductor cross section	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
Test current	12 A	12 A	12 A	16 A
Upper limiting temperature Requirements < 100°C	Test passed	Test passed	Test passed	Test passed

**Climatic tests (D)**

Test sequence 1: low temperature storage	-40 °C/2 h	-40 °C/2 h	-40 °C/2 h	-40 °C/2 h
Test sequence 2: heat storage	105 °C/168 h	105 °C/168 h	105 °C/168 h	105 °C/168 h
Test sequence 3: noxious gas storage (ISO 6988)	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV

**Environmental and endurance tests (E)**

Specification	IEC 61984:2008-10	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	Finger safety with IP20 test finger