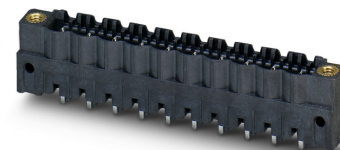


Item No.: 1955730

Type: CCV 2,5/12-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. | 12 | • Nominal current | 12 A |
| • Nominal cross section | 2.5 mm ² | • 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/1955730

3 Table of contents

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1955730 CCV 2,5/12-GF-5,08 P26THR

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



1955730 CCV 2,5/12-GF-5,08 P26THR**5 General Technical Data****5.1 item properties**

Item no.	1955730
Type	CCV 2,5/12-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	12
Number of rows	1
Number of connections	12
Number of potentials	12
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

1955730 CCV 2,5/12-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**

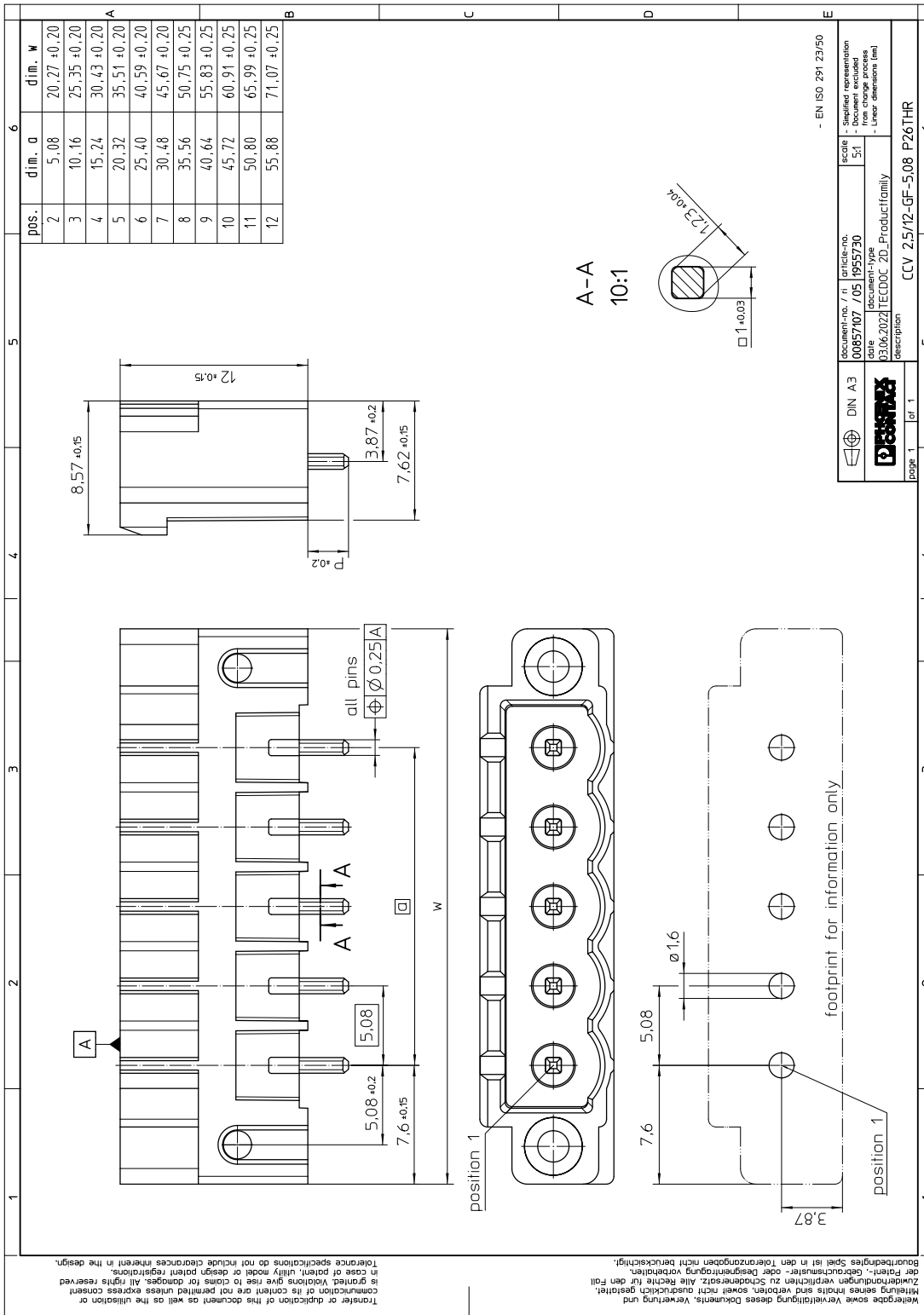
Note	WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface contact area	Nickel (1.3 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Soldering area surface	Nickel (1.3 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Surface characteristics	Tin-plated
Insulating material data	Housing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

1955730 CCV 2,5/12-GF-5,08 P26THR**8 Dimensions****8.1 Dimensions for the product**

Length	8.57 mm
Width	71.07 mm
Height (without solder pin)	12 mm
Total height	14.6 mm
Solder pin [P]	2.6 mm

1955730 CCV 2,5/12-GF-5,08 P26THR

9 Series drawing



1955730 CCV 2,5/12-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)

1955730 CCV 2,5/12-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

1955730 CCV 2,5/12-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

1955730 CCV 2,5/12-GF-5,08 P26THR**15 Electrical tests**

Rated current / conductor cross section	12 A / 2.5 mm ²
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	1 mΩ
Degree of pollution	2

1955730 CCV 2,5/12-GF-5,08 P26THR**16 Air and creepage distances**

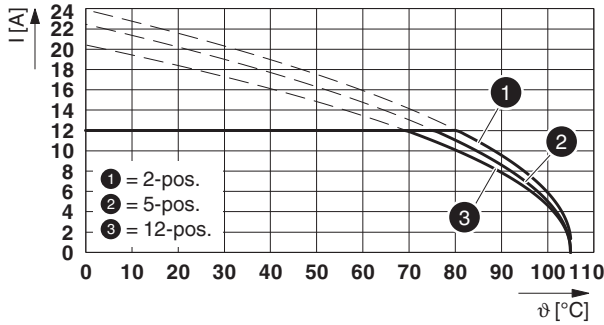
Component	PCB headers		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	IIIa		
Comparative tracking index (IEC 60112)	CTI 175		
Rated insulation voltage	250 V	320 V	400 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	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

1955730 CCV 2,5/12-GF-5,08 P26THR

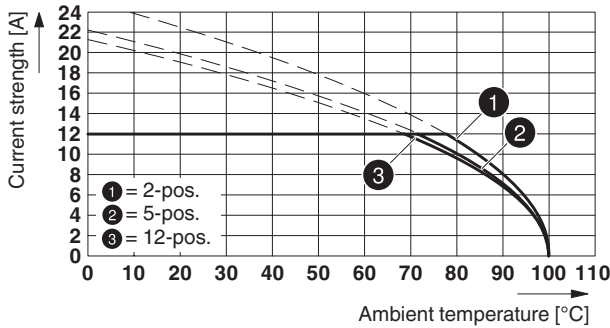
17 Current carrying capacity/derating curves

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 ²

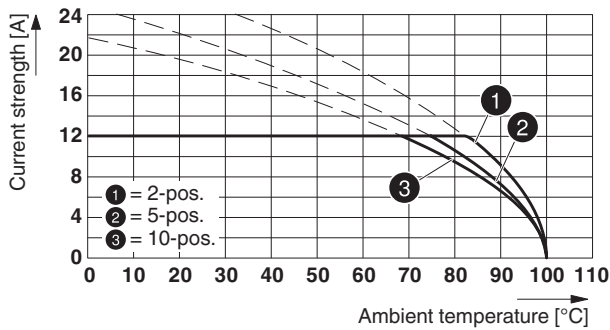
Type: FKCS 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P...THR



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

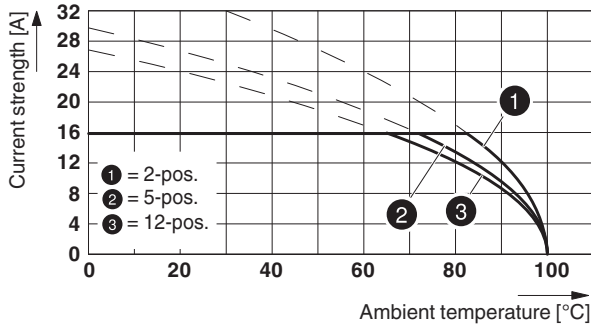


Type: TFKC 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P26THR

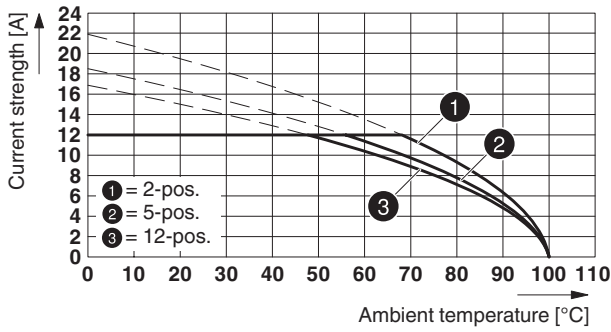


1955730 CCV 2,5/12-GF-5,08 P26THR

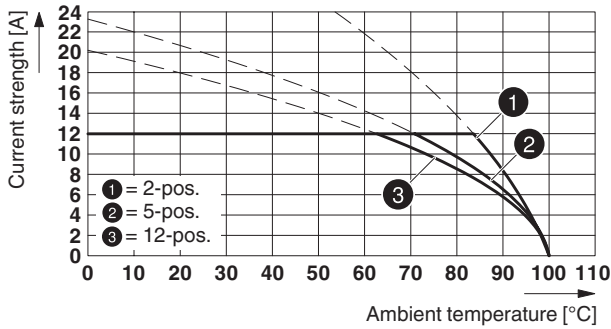
Derating curve for: MSTB 2,5 HC/..-STF-5,08 with CCV 2,5/..-GF-5,08 P26THR



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

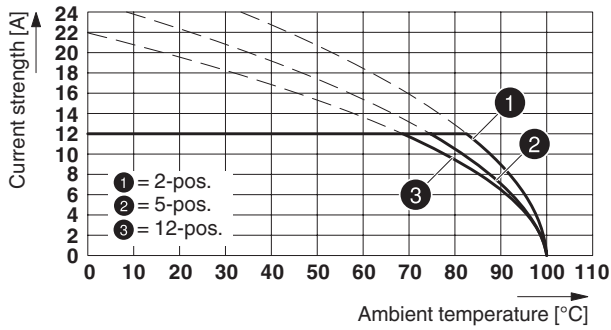


Type: FRONT-MSTB 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P26THR

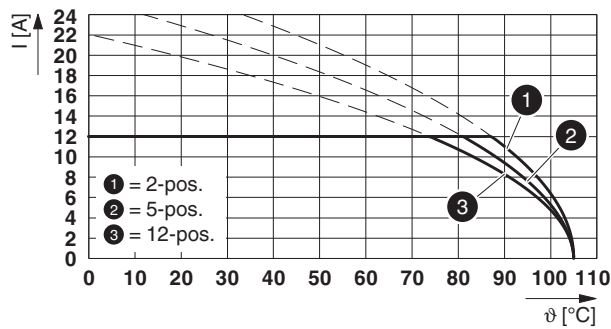


1955730 CCV 2,5/12-GF-5,08 P26THR

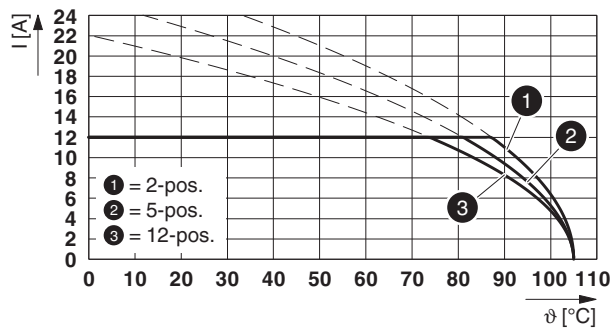
Type: MSTBT 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P26THR



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

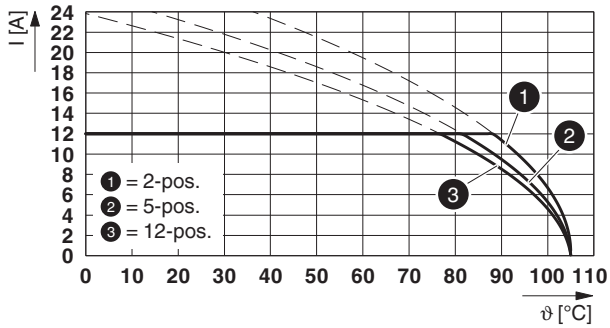


Type: FKCVW 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P...THR

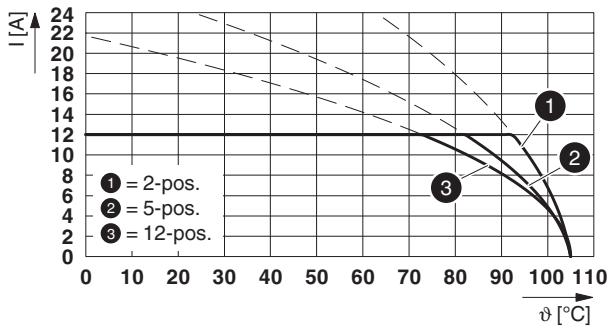


1955730 CCV 2,5/12-GF-5,08 P26THR

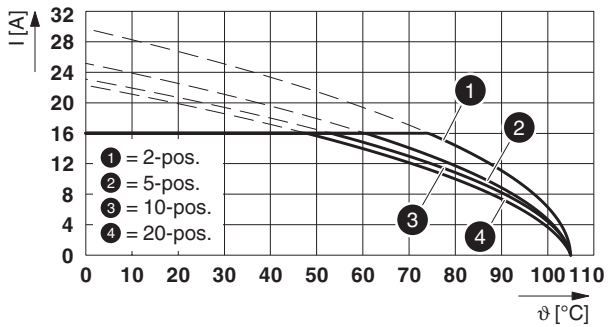
Type: FKCN 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P...THR



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



1955730 CCV 2,5/12-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

1955730 CCV 2,5/12-GF-5,08 P26THR**20 Approvals / Certificates**

cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
Standard	300 V	16 A	-	-
Usegroup D				
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 ²]
	400 V	12 A	-	-

1955730 CCV 2,5/12-GF-5,08 P26THR**21 Commercial Data**

Item no.	1955730
Type	CCV 2,5/12-GF-5,08 P26THR
Packing unit	50
Net weight	5.254 g
GTIN	4017918926496
	Information that applies locally, see link on page 1

22 corresponding plugs

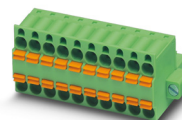
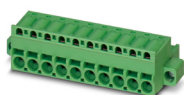
Item no.	Type
1754898	FKCN 2,5/12-STF-5,08
1777895	FRONT-MSTB 2,5/12-STF-5,08
1778085	MSTB 2,5/12-STF-5,08
1805398	MSTBT 2,5/12-STF-5,08
1809831	MSTBC 2,5/12-STZF-5,08
1835009	MVSTBW 2,5/12-STF-5,08
1835193	MVSTBR 2,5/12-STF-5,08
1873304	FKC 2,5/12-STF-5,08
1873906	FKCVW 2,5/12-STF-5,08
1874206	FKCVR 2,5/12-STF-5,08
1883459	QC 1/12-STF-5,08
1902408	FKCT 2,5/12-STF-5,08
1971167	SMSTB 2,5/12-STF-5,08
1975367	FKCS 2,5/12-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

1955730 CCV 2,5/12-GF-5,08 P26THR

24 Combination tests

**CCV 2,5/12-GF****FKCS 2,5/12-STF****MSTB 2,5/12-STF****TFKC 2,5/12-STF****MSTB 2,5 HC/12-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 R₁ 1st level

1 mΩ

1.3 mΩ

1.2 mΩ

0.6 mΩ

Contact resistance R₁ 2nd level

Insertion/withdrawal cycles

25

25

25

50

Contact resistance R₂

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

10¹² Ω**Thermal tests (C)**

Tested number of positions

12

12

10

12

Tested conductor cross section

2.5 mm²2.5 mm²2.5 mm²2.5 mm²

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 dm³ SO₂ on 300 dm³/
40 °C/1 cycle0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle0.2 dm³ SO₂ on 300 dm³/
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

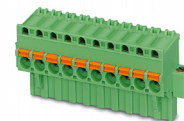
IEC 61984:2008-10

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

1955730 CCV 2,5/12-GF-5,08 P26THR

**CCV 2,5/12-GF****SMSTB 2,5/12-STF****FRONT-MSTB 2,5/12-STF****MSTBT 2,5/12-STF****FKCVR 2,5/12-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 R₁ 1st level

2.2 mΩ

1.3 mΩ

1.2 mΩ

1 mΩ

Contact resistance R₁ 2nd level

Insertion/withdrawal cycles

25

25

25

25

Contact resistance R₂

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

> 5 MΩ

> 5 MΩ

> 5 MΩ

> 5 MΩ

Thermal tests (C)

Tested number of positions

12

12

12

12

Tested conductor cross section

2.5 mm²2.5 mm²2.5 mm²2.5 mm²

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 dm³ SO₂ on 300 dm³/
40 °C/1 cycle0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle0.2 dm³ SO₂ on 300 dm³/
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

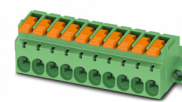
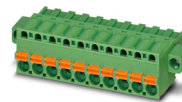
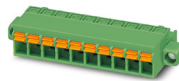
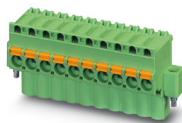
IEC 61984:2008-10

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

1955730 CCV 2,5/12-GF-5,08 P26THR

**CCV 2,5/12-GF**

IEC 61984

FKCVW 2,5/12-STF

IEC 61984

FKCN 2,5/12-STF

IEC 61984

FKCT 2,5/12-STF

IEC 61984

LPC 2,5/12-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 ₁ 1st level	1 mΩ	0.9 mΩ	1.1 mΩ	0.9 mΩ
Contact resistance R ₁ 2nd level				
Insertion/withdrawal cycles	25	25	25	25
Contact resistance R ₂	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 ²	2.5 mm ²	2.5 mm ²	2.5 mm ²
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 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	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)	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