

Order No.: 1955853

Type: CCVA 2,5/ 2-G-5,08 P26THR

Header, 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 ² | • Nominal voltage | 320 V |
| • Color | black | • 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
- ✓ Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- ✓ Closed contour for optimum stability of the plug-in connection



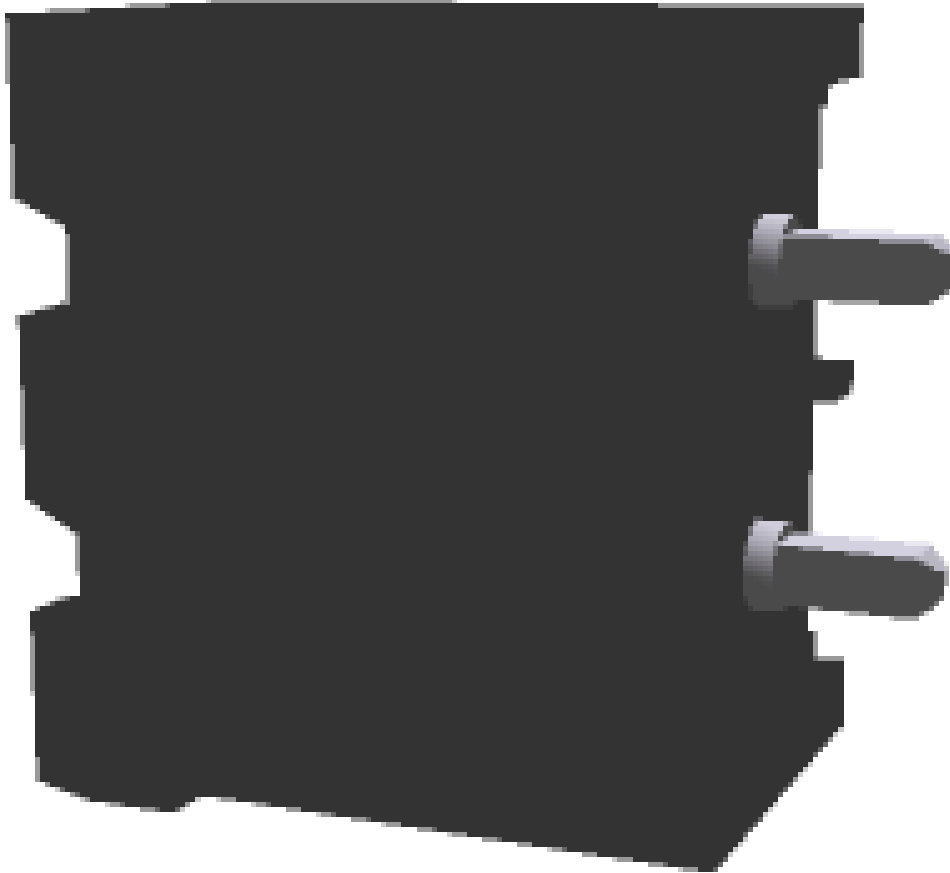
Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1955853

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



1955853 CCVA 2,5/ 2-G-5,08 P26THR**5 item properties**

Order No.	1955853
Type	CCVA 2,5/ 2-G-5,08 P26THR
Type of contact	Male connector
Range of articles	CCVA 2,5/...G
Pitch	5.08 mm
Number of positions	2
Locking	without
Mounting type	THR soldering
Pin layout	Linear pinning
Product note	User information and design recommendations for through hole reflow technology can be found under "Downloads"

5.1 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
Surface contact area	Ni 1 µm ... 3 µm , Sn 3 µm ... 5 µm
Soldering area surface	Ni 1 µm ... 3 µm , Sn 3 µm ... 5 µm
Surface characteristics	Tin-plated
Insulating material data	
Insulating material	Housing
Insulating material	LCP
CTI according to IEC 60112	175
Flammability rating according to UL 94	V0
Color	black (9005)

6 Dimensions**6.1 Dimensions for the product**

Length	8.6 mm
Width	12.96 mm
Height (without solder pin)	12 mm
Total height	14.6 mm
Solder pin [P]	2.6 mm
Dimension a	5.08 mm

6.2 Dimensions for PCB design

Hole diameter	1.6 mm
Pin dimensions	1,0 x 1,0

1955853 CCVA 2,5/ 2-G-5,08 P26THR**7 Series drawing****8 Packaging information**

Type of packaging	packed in cardboard
Pieces per package	50

9 Application**9.1 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
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9.2 Processing notes

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

9.3 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)

1955853 CCVA 2,5/ 2-G-5,08 P26THR**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.	6 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

1955853 CCVA 2,5/ 2-G-5,08 P26THR**11 Electrical tests****11.1 Electrical data**

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	1.3 mΩ
Degree of pollution	2

11.2 Air and creepage distances

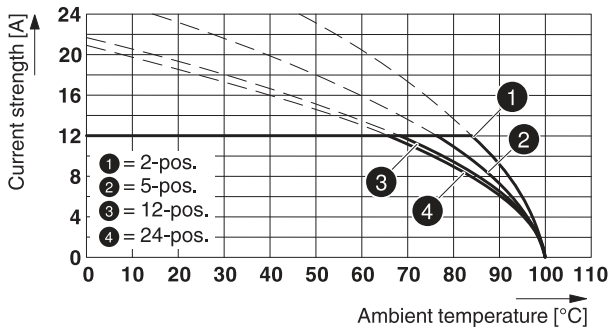
Component	Header		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	IIIa		
Comparative tracking index (IEC 60112:2003-01)	CTI 175		
Rated insulation voltage	250 V	320 V	400 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category	III	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

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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 ²
Note	

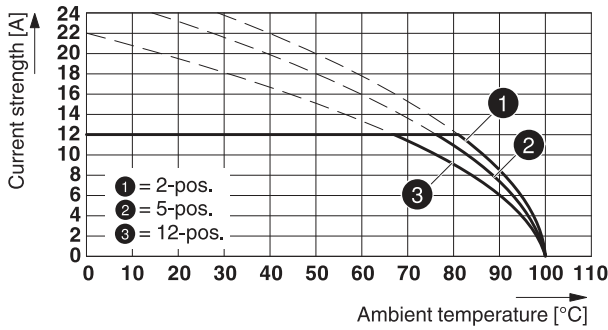
Type: MSTB 2,5/...-ST-5,08 with CCVA 2,5/...-G-5,08 P26THR



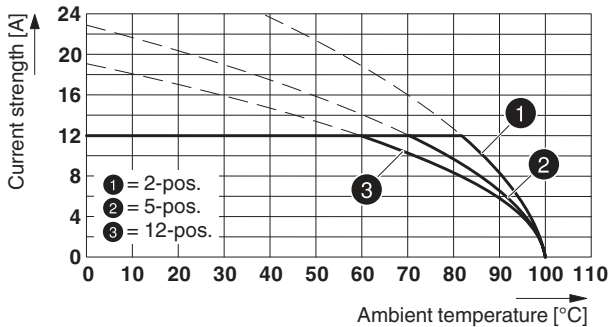
Type: MSTBP 2,5/...-ST-5,08 with CCVA 2,5/...-G-5,08 P26THR

89007_1000_en

Type: MSTBT 2,5/...-ST-5,08 with CCVA 2,5/...-G-5,08 P26 THR

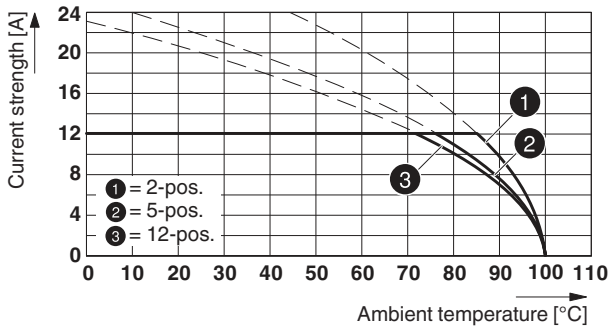


Type: FRONT-MSTB 2,5/...-ST-5,08 with CCVA 2,5/...-G-5,08 P26THR

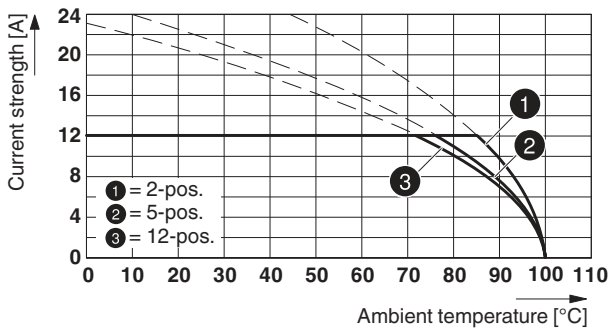


1955853 CCVA 2,5/ 2-G-5,08 P26THR

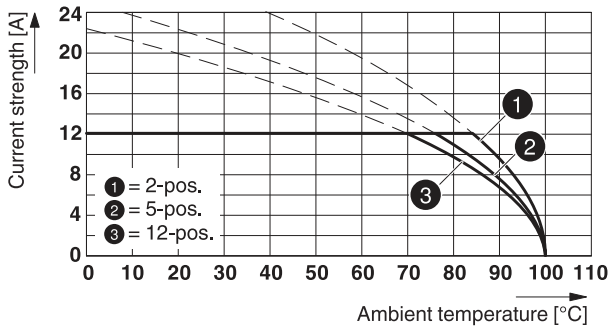
Type: FK2 2,5/...-ST-5,08 with CCVA 2,5/...-G-5,08 P26THR



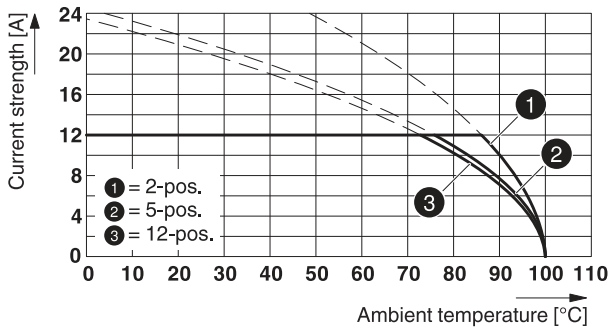
Type: FKCS 2,5/...-ST-5,08 with CCVA 2,5/...-G-5,08 P26THR



Type: FKCT 2,5/...-ST-5,08 with CCVA 2,5/...-G-5,08 P...THR



Type: FKCN 2,5/...-ST-5,08 with CCVA 2,5/...-G-5,08 P26THR



1955853 CCVA 2,5/ 2-G-5,08 P26THR**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
Protection against electric shock	Not encapsulated - touch-proof when inserted
Protection class	
Protective conductor	without PE
Lock	no

15 Approvals

VDE Gutachten mit Fertigungsüberwachung 

mm²/AWG/kcmil

Voltage	400 V			
Current	12 A			

IECEE CB Scheme 

cULus Recognized 

Use group	B	D		
mm ² /AWG/kcmil				
Voltage	300 V	300 V		
Current	10 A	10 A		

EAC 

IECEE CB Scheme 

mm²/AWG/kcmil

Voltage	400 V			
Current	12 A			

1955853 CCVA 2,5/ 2-G-5,08 P26THR**16 Commercial Data**

Order No.	1955853
Type	CCVA 2,5/ 2-G-5,08 P26THR
Pieces per package	50
Net weight	1.07 g
GTIN	4017918926618
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

17 corresponding plugs






Order No.	Type
1719008	TVMSTB 2,5/ 2-ST-5,08
1754568	FKCN 2,5/ 2-ST-5,08
1757019	MSTB 2,5/ 2-ST-5,08
1769010	MSTBP 2,5/ 2-ST-5,08
1777280	FRONT-MSTB 2,5/ 2-ST-5,08
1779987	MSTBT 2,5/ 2-ST-5,08
1792249	MVSTBR 2,5/ 2-ST-5,08
1792757	MVSTBW 2,5/ 2-ST-5,08
1808816	MSTBC 2,5/ 2-ST-5,08
1809501	MSTBC 2,5/ 2-STZ-5,08
1824120	MSTBU 2,5/ 2-STD-5,08
1824353	MSTBU 2,5/ 2-ST-5,08-FL
1826283	SMSTB 2,5/ 2-ST-5,08
1853010	TMSTBP 2,5/ 2-ST-5,08
1873058	FKC 2,5/ 2-ST-5,08
1873650	FKCVW 2,5/ 2-ST-5,08
1873951	FKCVR 2,5/ 2-ST-5,08
1883255	QC 1/ 2-ST-5,08
1902110	FKCT 2,5/ 2-ST-5,08
1962600	TFKC 2,5/ 2-ST-5,08
1975079	FKCS 2,5/ 2-ST-5,08

18 Accessories

Description	Order 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
	0805085	SK 5,08/3,8:SO
	0805412	SK 5,08/3,8:UNBEDRUCKT
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT

1955853 CCVA 2,5/ 2-G-5,08 P26THR

19 Combination tests

					
CCVA 2,5/..-G	MSTB 2,5/..-ST	MSTBP 2,5/..-ST	MSTBT 2,5/..-ST	MVSTBR 2,5/..-ST	
Specification	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. 8 N / 6 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	1.3 mΩ	1.3 mΩ	1.2 mΩ		
Insertion/withdrawal cycles	25	25	25		
Contact resistance R ₂	1.4 mΩ	1.4 mΩ	1.3 mΩ		
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	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		
Insulation resistance Requirements > 5 MΩ	> 7.0 TΩ	> 3.6 TΩ	> 2 TΩ		
Thermal tests (C)					
Tested number of positions	24	12	12		
Tested conductor cross section	2.5 mm ²	2.5 mm ²	2.5 mm ²		
Test current	12 A DC	12 A DC	12 A DC		
Upper limiting temperature Requirements < 100°C	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		
Test sequence 2: heat storage	100 °C/168 h	100 °C/168 h	100 °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)	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		
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		

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CCVA 2,5/...-G



SMSTB 2,5/...-ST

FRONT-MSTB 2,5/
...-ST

TMSTBP 2,5/...-ST



TVMSTB 2,5/...-ST

Specification	IEC 61984	IEC 61984	IEC 61984	IEC 61984
Mechanical tests (A)				
Insertion/withdrawal force per position		approx. 8 N / 6 N		
Polarization when inserted Requirement >20 N		Test passed		
Contact holder in insert Requirements >20 N		Test passed		
Durability tests (B)				
Insertion/withdrawal cycles		25		
Rated impulse voltage at sea level Voltage waveform $\geq (1.2/50 \mu\text{s})$		4.8 kV		
Power-frequency withstand voltage Voltage waveform $\geq (50/60 \text{ Hz})$		2.21 kV		
Insulation resistance Requirements > 5 M Ω		> 12 T Ω		
Thermal tests (C)				
Tested number of positions		12		
Tested conductor cross section		2.5 mm ²		
Test current		12 A DC		
Upper limiting temperature Requirements < 100°C		Test passed		
Climatic tests (D)				
Test sequence 1: low temperature storage		-40 °C/2 h		
Test sequence 2: heat storage		100 °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		
Rated impulse voltage at sea level Voltage waveform $\geq (1.2/50 \mu\text{s})$		4.8 kV		
Power-frequency withstand voltage Voltage waveform $\geq (50/60 \text{ Hz})$		2.21 kV		
Environmental and endurance tests (E)				
Specification		IEC 61984:2008-10		
Degree of protection		Finger safety with IP20 test finger		

1955853 CCVA 2,5/ 2-G-5,08 P26THR

**CCVA 2,5/..-G****FKC 2,5/..-ST****FKCS 2,5/..-ST****FKCT 2,5/..-ST****FKCN 2,5/..-ST**

Specification

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. 8 N / 6 N

approx. 10 N / 9 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 1.1 m Ω 1.1 m Ω 1.2 m Ω 1.1 m Ω

Insertion/withdrawal cycles

25

25

25

25

Contact resistance R_2 1.3 m Ω 1.3 m Ω 1.3 m Ω 1.1 m Ω Rated impulse voltage at sea level
Voltage waveform \geq (1.2/50 μ s)

4.8 kV

4.8 kV

4.8 kV

4.8 kV

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

2.21 kV

2.21 kV

2.21 kV

2.21 kV

Insulation resistance
Requirements > 5 M Ω > 0.7 T Ω > 0.7 T Ω > 3 T Ω > 50 G Ω **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 DC

12 A DC

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

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 \geq (1.2/50 μ s)

4.8 kV

4.8 kV

4.8 kV

4.8 kV

Power-frequency withstand voltage
Voltage waveform \geq (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

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CCVA 2,5/..-G



FKCVR 2,5/..-ST

Specification

IEC 61984

Mechanical tests (A)

Insertion/withdrawal force per position

Polarization when inserted
Requirement >20 N

Contact holder in insert
Requirements >20 N

Durability tests (B)

Insertion/withdrawal cycles

Rated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$

Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$

Insulation resistance
Requirements > 5 M Ω

Thermal tests (C)

Tested number of positions

Tested conductor cross section

Test current

Upper limiting temperature
Requirements < 100°C

Climatic tests (D)

Test sequence 1: low temperature storage

Test sequence 2: heat storage

Test sequence 3: noxious gas storage
(ISO 6988)

Rated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$

Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$

Environmental and endurance tests (E)

Specification

Degree of protection