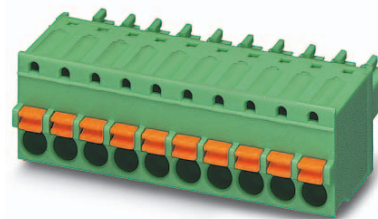


Order No.: 1851177

Type: FK-MCP 1,5/15-ST-3,81

Plug component, Push-in spring connection



The figure shows a 10-position version of the product

1 Main features



- | | | | |
|---------------------------|---------------------------|------------------------|---------------------|
| • No. of pos. | 15 | • Nominal current | 8 A |
| • Conductor cross section | 1.5 mm ² | • Nominal voltage | 160 V |
| • Color | green | • Connection direction | 0 ° |
| • Pitch | 3.81 mm | • Type of packaging | packed in cardboard |
| • Connection method | Push-in spring connection | | |

2 Your advantages

- ✓ Time saving push-in connection, tools not required
- ✓ Defined contact force ensures that contact remains stable over the long term
- ✓ Intuitive use through colour coded actuation lever
- ✓ Operation and conductor connection from one direction enable integration into front of device
- ✓ Quick and convenient testing using integrated test option



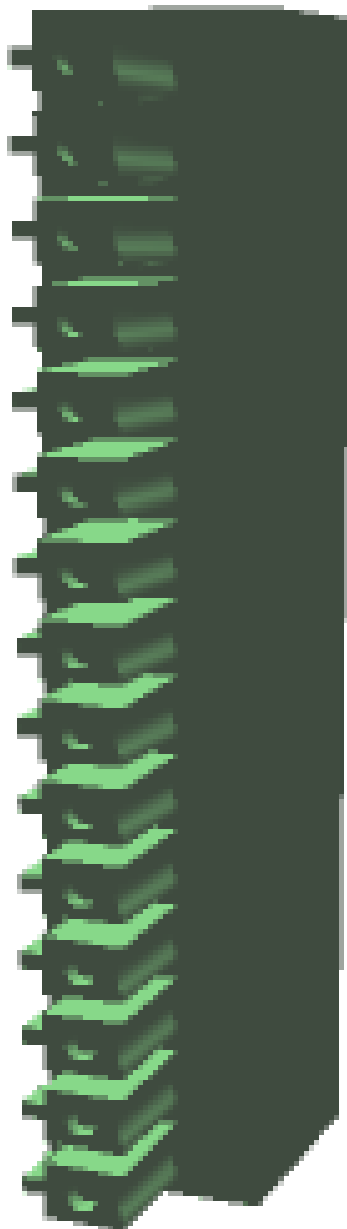
Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1851177

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1851177 FK-MCP 1,5/15-ST-3,81

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



1851177 FK-MCP 1,5/15-ST-3,81**5 item properties**

Order No.	1851177
Type	FK-MCP 1,5/15-ST-3,81
Type of contact	Female connector
Range of articles	FK-MCP 1,5/-ST
Pitch	3.81 mm
Number of positions	15
Connection method	Push-in spring connection
Locking	without

5.1 Connection capacity

Conductor cross section, solid	0.14 mm ² to 1.5 mm ²
Conductor cross section, flexible	0.14 mm ² to 1.5 mm ²
Conductor cross section AWG/kcmil	26 to 16
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² to 1.5 mm ²
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm ² to 0.75 mm ²
Cylindrical gauge a x b / diameter	2.4 mm x 1.5 mm / 1.6 mm
Stripping length	9 mm

5.2 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	Actuation element
Insulating material	PA	POM
CTI according to IEC 60112	600	600
Flammability rating according to UL 94	V0	HB
Color	green (6021)	orange (2003)
Glow wire flammability index GWFI according to EN 60695-2-12	850	
Glow wire ignition temperature GWIT according to EN 60695-2-13	775	
Temperature for the ball pressure test according to EN 60695-10-2	125 °C	

6 Dimensions**6.1 Dimensions for the product**

Length	21 mm
Width	57.94 mm
Total height	12.4 mm
Dimension a	53.34 mm

1851177 FK-MCP 1,5/15-ST-3,81

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)

1851177 FK-MCP 1,5/15-ST-3,81**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.	9 N
Withdraw strength per pos. approx.	7 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.	31 N

10.1 Termination and connection method

Specification	IEC 60999-1:1999-11
Conductor connection	Test passed
Repeated connection and disconnection	Test passed
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	0.14 mm ² / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.14 mm ² / stranded / > 10 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 / stranded / > 40 N

1851177 FK-MCP 1,5/15-ST-3,81**11 Electrical tests****11.1 Electrical data**

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	1.6 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	I		
Comparative tracking index (IEC 60112:2003-01)	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

11.3 Electrical function

Specification	IEC 60999-1:1999-11
Result	Test passed
Voltage drop	Voltage drop (U) after the load ≤ 15 mV
Conductor cross section, flexible	0.14 mm ² to 1.5 mm ²
Conductor cross section, solid	0.14 mm ² to 1.5 mm ²

11.4 Temperature cycles

Specification	IEC 60999-1:1999-11
Result	Test passed
Voltage drop	Voltage drop (U) after the load ≤ 22.5 mV or $1.5 \times U_{\text{after 24 h}}$ The small value is to be used.
Test current (minimum cross section)	
Test current (maximum cross section)	
Temperature cycles	192
Conductor cross section, flexible	0.14 mm ² to 1.5 mm ²
Conductor cross section, solid	0.14 mm ² to 1.5 mm ²

1851177 FK-MCP 1,5/15-ST-3,81

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

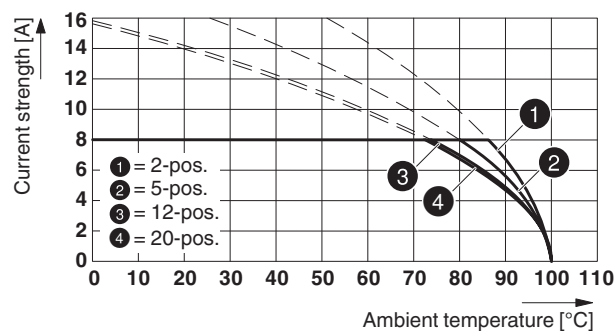
Number of positions

See diagram

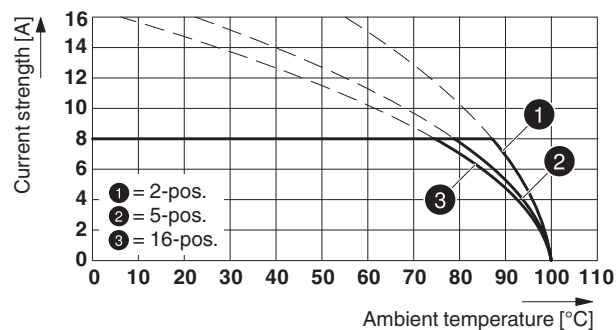
Conductor cross section

1.5 mm²

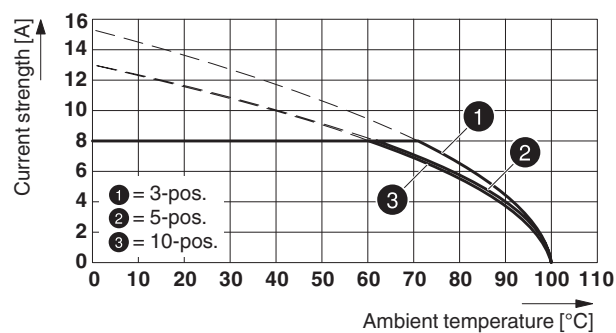
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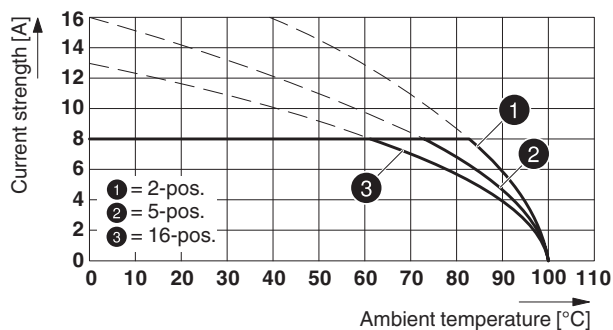
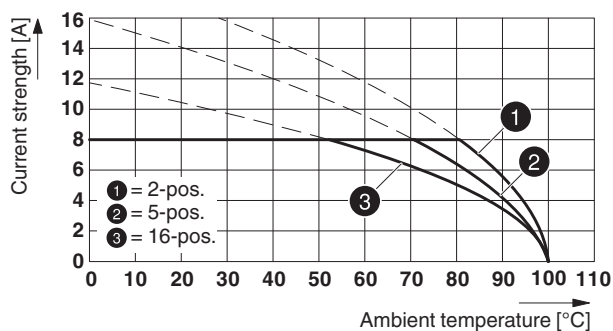
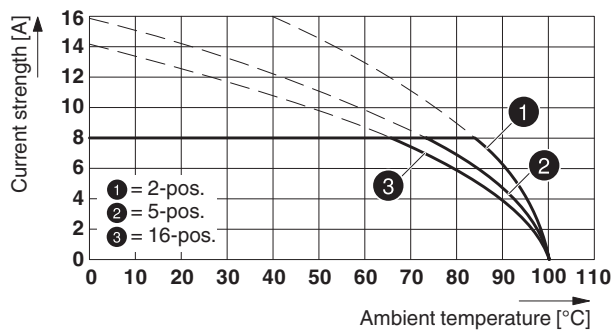
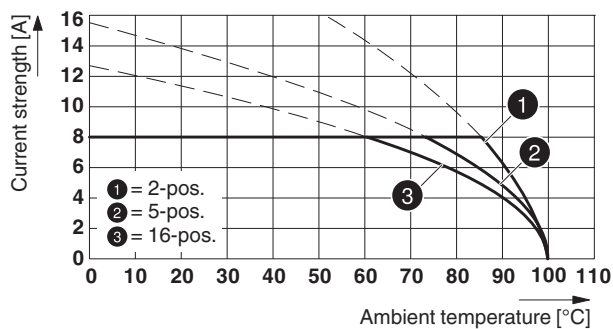


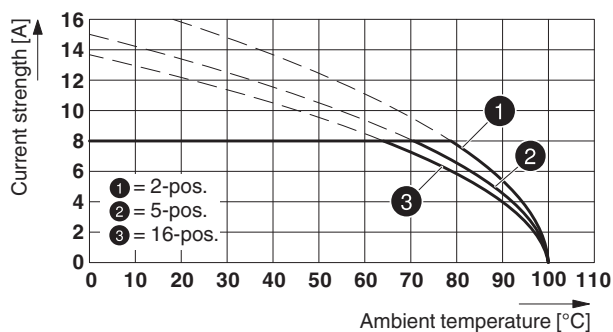
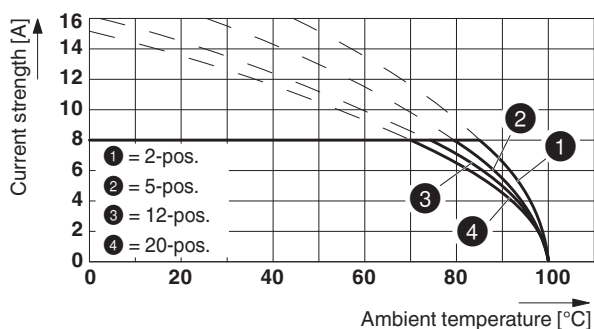
Type: FK-MCP 1,5/...-ST-3,81 with SMC 1,5/...-G-3,81



Type: FK-MCP 1,5/...-ST-3,81 with MCO 1,5/...-GR-3,81



1851177 FK-MCP 1,5/15-ST-3,81**Type: FK-MCP 1,5/...-ST-3,81 with MCD 1,5/...-G-3,81****Type: FK-MCP 1,5/...-ST-3,81 with MCD 1,5/...-G1-3,81****Type: FK-MCP 1,5/...-ST-3,81 with MCDV 1,5/...-G-3,81****Type: FK-MCP 1,5/...-ST-3,81 with MCDV 1,5/...-G1-3,81**

1851177 FK-MCP 1,5/15-ST-3,81**Type: FK-MCP 1,5/...-ST-3,81 with MCVU 1,5/...-GFD-3,81****Type: FK-MCP 1,5/...-ST-3,81 with MC 1,5/...-G-3,81 P... THR****Type: FK-MCP 1,5/...-ST-3,81 with IMC 1,5/...-ST-3,81**

88374_1000_en

1851177 FK-MCP 1,5/15-ST-3,81**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

CSA 				
Use group	B			
mm ² /AWG/kcmil	28-16			
Voltage	300 V			
Current	8 A			
VDE Gutachten mit Fertigungsüberwachung 				
mm ² /AWG/kcmil	0.2-1.5			
Voltage	160 V			
Current	8 A			
IECEE CB Scheme 				
mm ² /AWG/kcmil	0.2-1.5			
Voltage	160 V			
Current	8 A			
CCA				
mm ² /AWG/kcmil	0.2-1.5			
Voltage	160 V			
Current	8 A			

1851177 FK-MCP 1,5/15-ST-3,81cULus Recognized 

Use group

B

mm²/AWG/kcmil

28-16

Voltage

300 V

Current

8 A

EAC 

1851177 FK-MCP 1,5/15-ST-3,81**16 Commercial Data**

Order No.	1851177
Type	FK-MCP 1,5/15-ST-3,81
Pieces per package	50
Net weight	13.629 g
GTIN	4017918109707
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

17 corresponding headers

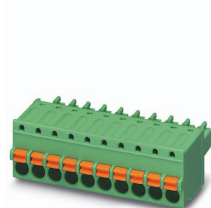
Order No.	Type
1803400	MC 1,5/15-G-3,81
1803552	MCV 1,5/15-G-3,81
1827402	SMC 1,5/15-G-3,81
1830088	MCD 1,5/15-G-3,81
1830538	MCDV 1,5/15-G-3,81
1837560	MCVDU 1,5/15-G-3,81
1843208	MCD 1,5/15-G1-3,81
1847864	MCDV 1,5/15-G1-3,81
1860773	EMCV 1,5/15-G-3,81
1897937	EMC 1,5/15-G-3,81

18 Accessories

Description	Order 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
	0804109	SK 3,81/2,8:FORTL.ZAHLEN
	0805056	SK 3,81/2,8:SO
	0803883	SK U/2,8 WH:UNBEDRUCKT
Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm ² ... 6.0 mm ² , lateral entry, trapezoidal crimp	1212034	CRIMPFOX 6
	1944372	MPS-MT 1-S

1851177 FK-MCP 1,5/15-ST-3,81

19 Combination tests

**FK-MCP 1,5/15-ST**

Specification

Mechanical tests (A)

Insertion/withdrawal force per position

Polarization when inserted
Requirement >20 NContact holder in insert
Requirements >20 N**Durability tests (B)**Contact resistance R_1

Insertion/withdrawal cycles

Contact resistance R_2 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

**MCV 1,5/15-G**

IEC 61984

approx. 9 N / 7 N

Test passed

Test passed

1.6 m Ω

25

1.6 m Ω

2.95 kV

1.39 kV

> 50 G Ω

20

1.5 mm²

8 A

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

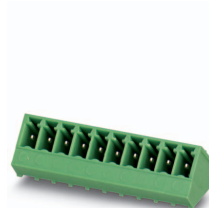
2.95 kV

1.39 kV

IEC 61984:2008-10

Finger safety with IP20
test finger**MC 1,5/15-G**

IEC 61984

**SMC 1,5/15-G**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

1.8 m Ω

25

1.8 m Ω

2.95 kV

1.39 kV

> 0.2 T Ω

16

1.5 mm²

8 A

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

2.95 kV

1.39 kV

IEC 61984:2008-10

Finger safety with IP20
test finger**MCO 1,5/15-GR**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

2.8 m Ω

25

2.9 m Ω

2.95 kV

1.39 kV

> 0.3 T Ω

10

1.5 mm²

8 A

Test passed

-40 °C/2 h

100 °C/168 h

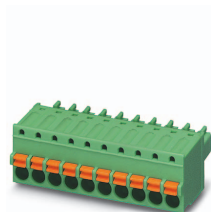
0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

2.95 kV

1.39 kV

IEC 61984:2008-10

Finger safety with IP20
test finger

1851177 FK-MCP 1,5/15-ST-3,81**FK-MCP 1,5/15-ST**

Specification

Mechanical tests (A)

Insertion/withdrawal force per position

Polarization when inserted
Requirement >20 NContact holder in insert
Requirements >20 N**Durability tests (B)**Contact resistance R_1

Insertion/withdrawal cycles

Contact resistance R_2 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

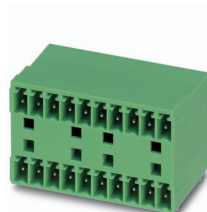
Test sequence 3: noxious gas storage
(ISO 6988)Rated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$ Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$ **Environmental and endurance tests (E)**

Specification

Degree of protection

**MCD 1,5/15-G**

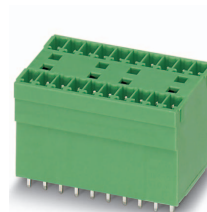
IEC 61984

**MCD 1,5/15-G1**

IEC 61984

**MCDV 1,5/15-G**

IEC 61984

**MCDV 1,5/15-G1**

IEC 61984

approx. 9 N / 6 N

Test passed

Test passed

1.9 m Ω

25

1.9 m Ω

2.5 kV

1.39 kV

> 100 G Ω

16

1.5 mm²

8 A

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

2.5 kV

1.39 kV

IEC 61984:2008-10

Finger safety with IP20
test finger

approx. 8 N / 6 N

Test passed

Test passed

2 m Ω

25

2.2 m Ω

2.95 kV

1.39 kV

> 0.4 T Ω

16

1.5 mm²

8 A

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

2.95 kV

1.39 kV

IEC 61984:2008-10

Finger safety with IP20
test finger

approx. 8 N / 6 N

Test passed

Test passed

2 m Ω

25

2.2 m Ω

2.95 kV

1.39 kV

> 0.1 T Ω

16

1.5 mm²

8 A

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

2.95 kV

1.39 kV

IEC 61984:2008-10

Finger safety with IP20
test finger

approx. 8 N / 6 N

Test passed

Test passed

1.9 m Ω

25

1.9 m Ω

2.95 kV

1.39 kV

> 0.1 T Ω

16

1.5 mm²

8 A

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

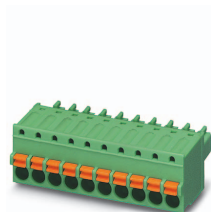
2.95 kV

1.39 kV

IEC 61984:2008-10

Finger safety with IP20
test finger

1851177 FK-MCP 1,5/15-ST-3,81

**FK-MCP 1,5/15-ST****MCVU 1,5/15-GFD****MC 1,5/15-G-THR****IMC 1,5/15-ST**

Specification

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

3.5 mΩ

1.4 mΩ

2 mΩ

Insertion/withdrawal cycles

25

25

25

Contact resistance R_2

3.7 mΩ

1.5 mΩ

2.2 mΩ

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

2.95 kV

2.95 kV

2.95 kV

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

1.39 kV

1.39 kV

1.39 kV

Insulation resistance
Requirements > 5 MΩ

> 20 GΩ

> 5 TΩ

> 0.2 TΩ

Thermal tests (C)

Tested number of positions

16

20

16

Tested conductor cross section

1.5 mm²1.5 mm²1.5 mm²

Test current

8 A

8 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 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 $\geq (1.2/50 \mu s)$

2.95 kV

2.95 kV

2.95 kV

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

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 fingerFinger safety with IP20
test fingerFinger safety with IP20
test finger