

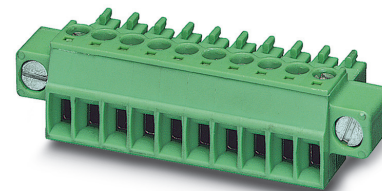
Data sheet

2021-06-17
Product version 09
Document revision 01

Order No.: 1827729

Type: MC 1,5/ 4-STF-3,81

PCB connector, Screw connection with tension sleeve



The figure shows a 10-position version of the product

1 Main features



- | | | | |
|---------------------------|--------------------------------------|------------------------|---------------------|
| • No. of pos. | 4 | • Nominal current | 8 A |
| • Conductor cross section | 1.5 mm ² | • Nominal voltage | 160 V |
| • Color | green (6021) | • Connection direction | 0° |
| • Pitch | 3.81 mm | • Type of packaging | packed in cardboard |
| • Connection method | Screw connection with tension sleeve | | |

2 Your advantages

- ✓ Well-known connection principle allows worldwide use
- ✓ Low temperature rise, thanks to maximum contact force
- ✓ Allows connection of two conductors
- ✓ Screwable flange for superior mechanical stability



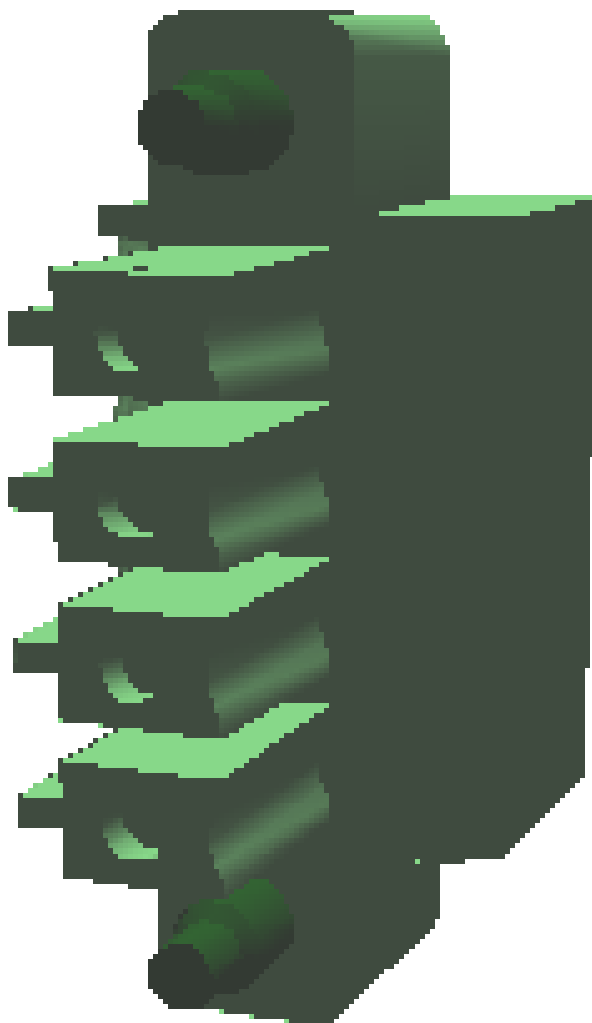
Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1827729

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1827729 MC 1,5/ 4-STF-3,81

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



1827729 MC 1,5/ 4-STF-3,81**5 General Technical Data****5.1 item properties**

Order No.	1827729
Type	MC 1,5/ 4-STF-3,81
Connector system	MINI COMBICON
Product type	PCB connector
Type of contact	Female connector
Range of articles	MC 1,5/..-STF
Pitch	3.81 mm
Number of positions	4
Number of levels	1
Number of connections	4
Number of potentials	4
Connection method	Screw connection with tension sleeve
Screw thread	M2
Drive form screw head	Slotted (L)
Connection direction of the conductor to plug-in direction	0 °
Solder pins per potential	1
Type	Standard

1827729 MC 1,5/ 4-STF-3,81

6 Mounting

6.1 Flange mounting

Type of locking

Screw locking

Mounting flange

Screw flange

Torque

0.3 Nm

1827729 MC 1,5/ 4-STF-3,81**7 Conductor connection****7.1 Connection capacity**

Nominal cross section	1.5 mm ²
Conductor cross section, rigid	0.14 mm ² ... 1.5 mm ²
Conductor cross section, flexible	0.14 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
2 conductors with same cross section, solid	0.08 mm ² ... 0.5 mm ²
2 conductors with same cross section, stranded	0.08 mm ² ... 0.75 mm ²
2 conductors with same cross section, stranded, with ferrule without plastic sleeve	0.25 mm ² ... 0.34 mm ²
2 conductors with the same cross section flexible with TWIN ferrule and plastic sleeve	0.5 mm ² ... 0.5 mm ²
Cylindrical gauge a x b / diameter	2.4 mm x 1.5 mm / 1.6 mm
Stripping length	7 mm
Tightening torque	0.22 Nm ... 0.25 Nm

7.2 Connection capacity AWG

Conductor cross section AWG	28 ... 16
-----------------------------	-----------

1827729 MC 1,5/ 4-STF-3,81**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
Color	green (6021)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
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

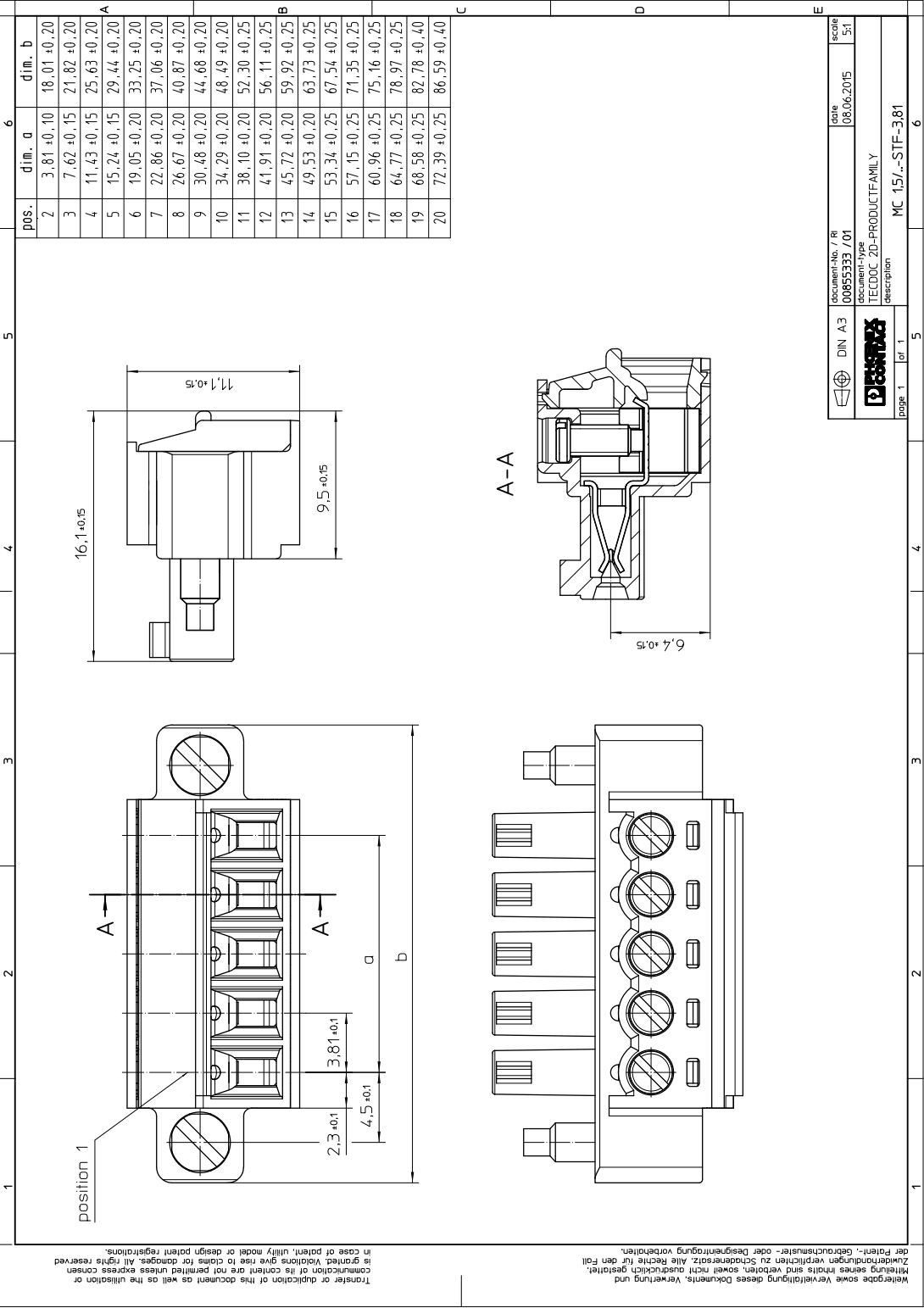
1827729 MC 1,5/ 4-STF-3,81

9 Dimensions

9.1 Dimensions for the product

Length	16.1 mm
Width	25.63 mm
Installed height	11.1 mm
Total height	11.1 mm

10 Series drawing



1827729 MC 1,5/ 4-STF-3,81

11 Packaging information

Type of packaging	packed in cardboard
Pieces per package	250

12 Application

12.1 Temperature limit values

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Ambient temperature (assembly)	-5 °C ... 100 °C
Ambient temperature (operation)	-40 °C ... 100 °C (dependent on the derating curve)

1827729 MC 1,5/ 4-STF-3,81**13 General tests****13.1 Specification**

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

14 Mechanical tests**14.1 Check for damage to conductor or loosening**

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

14.2 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 / > 7 N
Conductor cross section/conductor type/tractive force actual value	0.14 mm ² / flexible / > 7 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

14.3 Torque test

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

14.4 Visual examination

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

14.5 Dimensional test

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

14.6 Resistance of marking

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

14.7 Polarization and coding

1827729 MC 1,5/ 4-STF-3,81

Polarization when inserted
Requirement >20 N

Test passed

Specification

IEC 60512-13-5:2006-02

1827729 MC 1,5/ 4-STF-3,81**15 Insertion and withdrawal forces**

Insertion and withdrawal force

Test passed

Specification

IEC 60512-13-2:2006-02

No. of cycles

25

Insertion strength per pos. approx.

6 N

Withdraw strength per pos. approx.

4 N

1827729 MC 1,5/ 4-STF-3,81**16 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	1.3 mΩ
Degree of pollution	2

16.1 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 60112:2003-01)	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

1827729 MC 1,5/ 4-STF-3,81

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

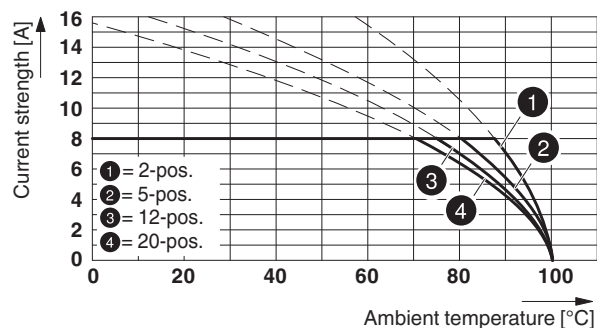
Reduction factor

0.8

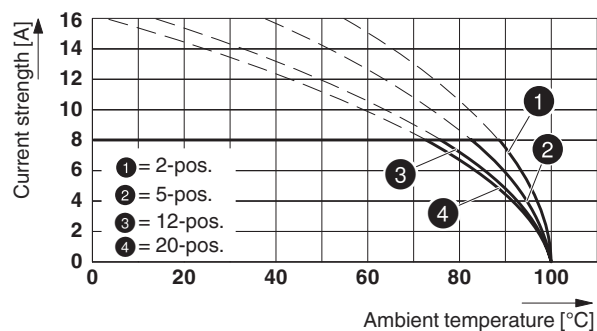
Conductor cross section

1.5 mm²

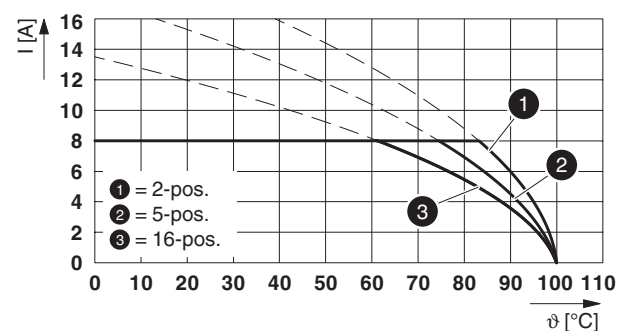
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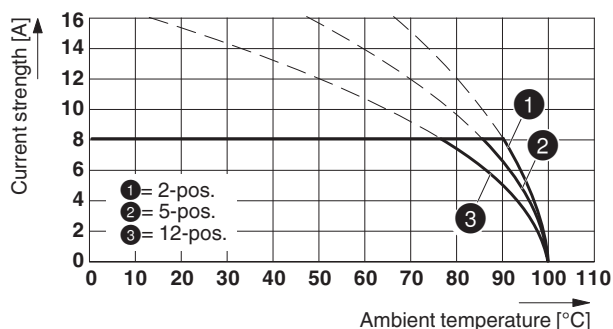
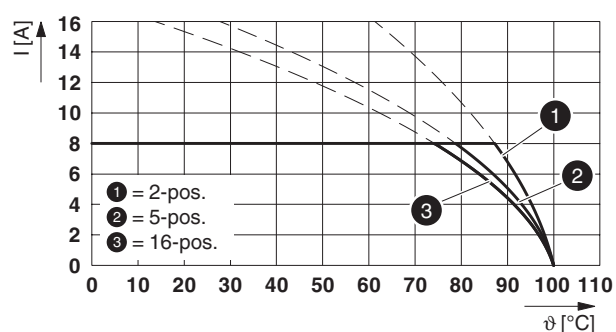
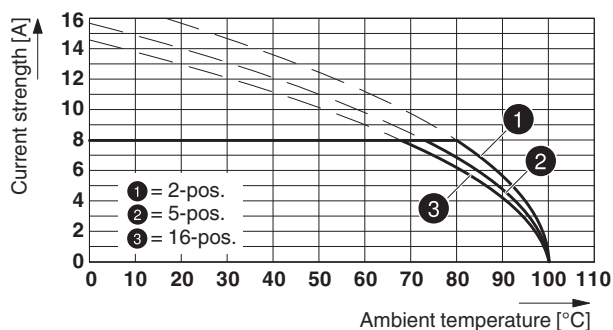
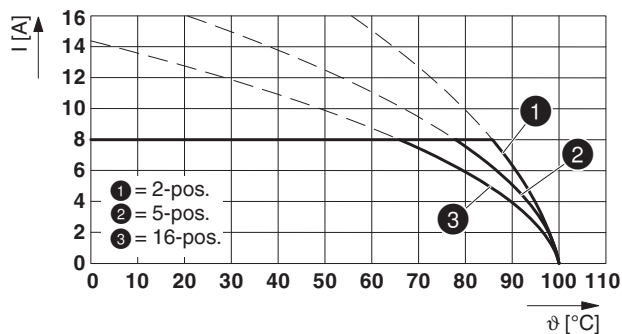


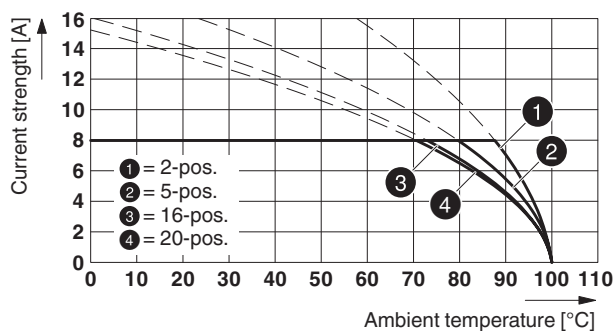
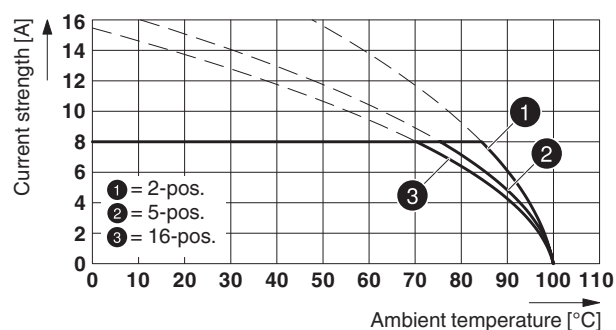
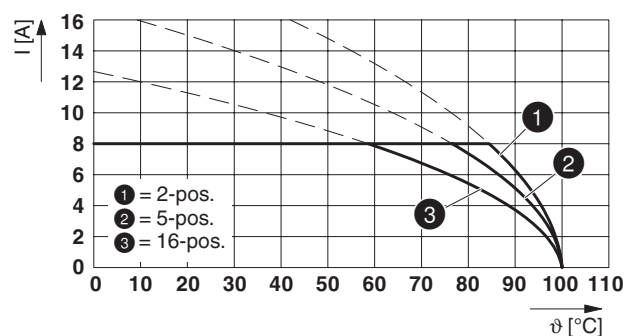
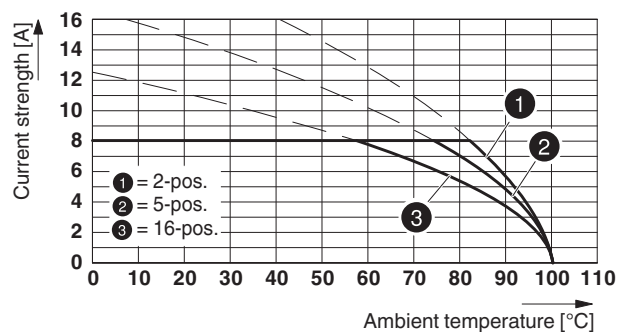
Type: MC 1,5/...-STF-3,81 with MCV 1,5/...-GF-3,81



Type: MC 1,5/...-STF-3,81 with MCD 1,5/...-GF-3,81



1827729 MC 1,5/ 4-STF-3,81**Type: MC 1,5/...-STF-3,81 with MCV 1,5/...-GF-3,81 P26 THR****Type: MC 1,5/...-STF-3,81 with SMC 1,5/...-GF-3,81****Type: MC 1,5/...-STF-3,81 with DFK-MC 1,5/...-GF-3,81 (with flat plug)****Type: MC 1,5/...-STF-3,81 with MCDV 1,5/...-G1F-3,81**

1827729 MC 1,5/ 4-STF-3,81**Type: MC 1,5/...-STF-3,81 with MC 1,5/...-GF-3,81 P26THR****Type: MC 1,5/...-STF-3,81 with IMC 1,5/...-STGF-3,81****Type: MC 1,5/...-STF-3,81 with MCDV 1,5/...-GF-3,81****Type: MC 1,5/...-STF-3,81 with MCD 1,5/...-G1F-3,81**

1827729 MC 1,5/ 4-STF-3,81**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 - 60.1 Hz)
Acceleration	5g (60.1 - 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis
Note	The connected conductor loops were guided to the test sample at a distance of approx. 10 cm.

18.2 Insulation resistance

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

1827729 MC 1,5/ 4-STF-3,81**19 Type approval and special tests****19.1 Shock testing**

Specification	IEC 60068-2-27:2008-02
Result	Test passed
Pulse shape	Semi-sinusoidal
Peak acceleration	30g
Shock duration	18 ms
Number of shocks per direction	3
Test directions	X-, Y- and Z-axis (pos. and neg.)

20 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	Screw terminal points

1827729 MC 1,5/ 4-STF-3,81**21 Approvals / Certificates**

CSA 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	300 V	8 A	28 - 16	-
Usegroup D				
	300 V	8 A	28 - 16	-
IECEE CB Scheme 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	160 V	8 A	-	0.2 - 1.5
EAC 				
VDE Gutachten mit Fertigungsüberwachung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	160 V	8 A	-	0.2 - 1.5
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	300 V	8 A	30 - 14	-
Usegroup D				
	300 V	8 A	30 - 14	-
VDE Gutachten mit Fertigungsüberwachung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	160 V	8 A	-	0.2 - 1.5

1827729 MC 1,5/ 4-STF-3,81**22 Commercial Data**

Order No.	1827729
Type	MC 1,5/ 4-STF-3,81
Pieces per package	250
Net weight	3.684 g
GTIN	4017918050184
	Information that applies locally, see link on page 1
	Information that applies locally, see link on page 1

23 corresponding headers

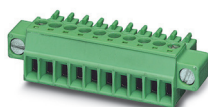
Order No.	Type
1707230	MCV 1,5/ 4-GF-3,81 P14 THR
1707654	MCV 1,5/ 4-GF-3,81 P26 THR
1713363	MCV 1,5/ 4-GF-3,81 P26 THRR56
1782048	MC 1,5/ 4-GF-3,81 P20 THRR56
1827444	SMC 1,5/ 4-GF-3,81
1827884	MC 1,5/ 4-GF-3,81
1830127	MCD 1,5/ 4-GF-3,81
1830279	MCDV 1,5/ 4-GF-3,81
1830619	MCV 1,5/ 4-GF-3,81
1842788	MCDV 1,5/ 4-G1F-3,81
1842937	MCD 1,5/ 4-G1F-3,81
1879308	EMCV 1,5/ 4-GF-3,81
1896967	EMC 1,5/ 4-GF-3,81
1908897	MC 1,5/ 4-GF-3,81 THT
1996553	MC 1,5/ 4-GF-3,81 THT-R56

24 Accessories

Description	Order No.	Type
	0804109	SK 3,81/2,8:FORTL.ZAHLEN
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
	1834369	KGG-MC 1,5/ 4
	0803883	SK U/2,8 WH:UNBEDRUCKT
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT
Insertion bridge for plugs featuring a screw connection with a 3.81 mm pitch	1733495	EBPL 2-3,81
Insertion bridge for plugs featuring a screw connection with a 3.81 mm pitch	1733505	EBPL 3-3,81
Insertion bridge for plugs featuring a screw connection with a 3.81 mm pitch	1733518	EBPL 4-3,81

1827729 MC 1,5/ 4-STF-3,81

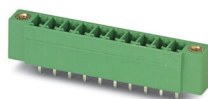
25 Combination tests



MC 1,5/..-STF



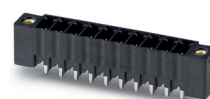
MC 1,5/..-GF



MCV 1,5/..-GF



MCD 1,5/..-GF



MCV 1,5/..-GF-THR

IEC 61984

Mechanical tests (A)

Insertion/withdrawal force per position

approx. 6 N / 4 N

approx. 7 N / 5 N

approx. 8 N / 5 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

1.3 mΩ

1.2 mΩ

1.3 mΩ

1.1 mΩ

Contact resistance R_1 2nd level

1.8 mΩ

Insertion/withdrawal cycles

25

25

25

25

Contact resistance R_2

1.5 mΩ

1.2 mΩ

1.4 mΩ

1.2 mΩ

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

2.95 kV

2.95 kV

2.95 kV

2.95 kV

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

1.39 kV

1.39 kV

1.39 kV

1.39 kV

Thermal tests (C)

Tested number of positions

20

20

16

12

Tested conductor cross section

1.5 mm²1.5 mm²1.5 mm²1.5 mm²

Test current

8 A DC

8 A DC

8 A

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

2.95 kV

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

1.39 kV

Environmental and endurance tests (E)

Specification

IEC 61984:2008-10

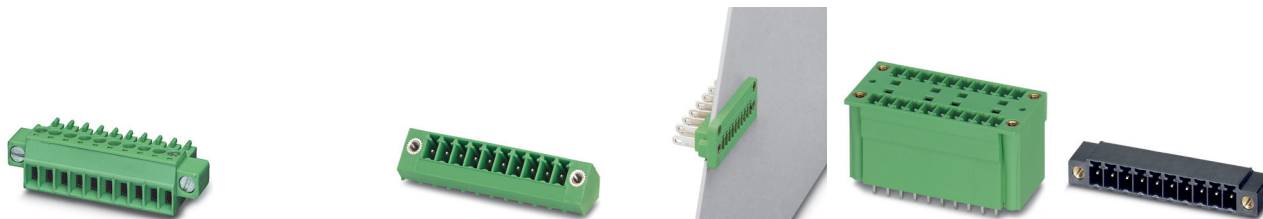
IEC 61984:2008-10

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

1827729 MC 1,5/ 4-STF-3,81**MC 1,5/...-STF**

IEC 61984

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 1st levelContact resistance R_1 2nd level

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 $\geq (50/60 \text{ Hz})$ **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

SMC 1,5/...-GF

IEC 61984

approx. 8 N / 4 N

Test passed

Test passed

1.3 mΩ

25

1.3 mΩ

2.95 kV

1.39 kV

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**DFK-MC 1,5/...-GF**

IEC 61984

approx. 7 N / 4 N

Test passed

Test passed

2.2 mΩ

25

2.2 mΩ

2.95 kV

1.39 kV

16

1.5 mm²

8 A DC

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**MCDV 1,5/...-G1F**

IEC 61984

approx. 7 N / 4 N

Test passed

Test passed

1.6 mΩ

1.6 mΩ

25

1.7 mΩ

2.95 kV

1.39 kV

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**MC 1,5/...-GF-THR**

IEC 61984

approx. 9 N / 5 N

Test passed

Test passed

1.3 mΩ

25

1.3 mΩ

2.95 kV

1.39 kV

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

1827729 MC 1,5/ 4-STF-3,81**MC 1,5/...-STF**

IEC 61984

Mechanical tests (A)

Insertion/withdrawal force per position

approx. 6 N / 3 N

approx. 6 N / 4 N

approx. 8 N / 5 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 level1.8 m Ω 1.2 m Ω 1.2 m Ω Contact resistance R_1 2nd level1.6 m Ω 2.2 m Ω

Insertion/withdrawal cycles

25

25

25

Contact resistance R_2 2.2 m Ω 1.2 m Ω 1.3 m Ω 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

Thermal tests (C)

Tested number of positions

16

16

16

Tested conductor cross section

1.5 mm²1.5 mm²1.5 mm²

Test current

8 A

8 A

8 A

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

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Degree of protection

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