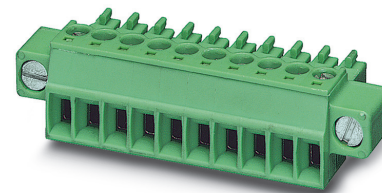


Data sheet

Order No.: 1827842

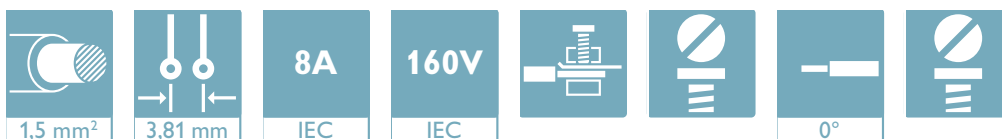
Type: MC 1,5/16-STF-3,81

PCB connector, Screw connection with tension sleeve



The figure shows a 10-position version of the product

1 Main features



- | | | | |
|---------------------------|--------------------------------------|------------------------|---------------------|
| • No. of pos. | 16 | • 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.

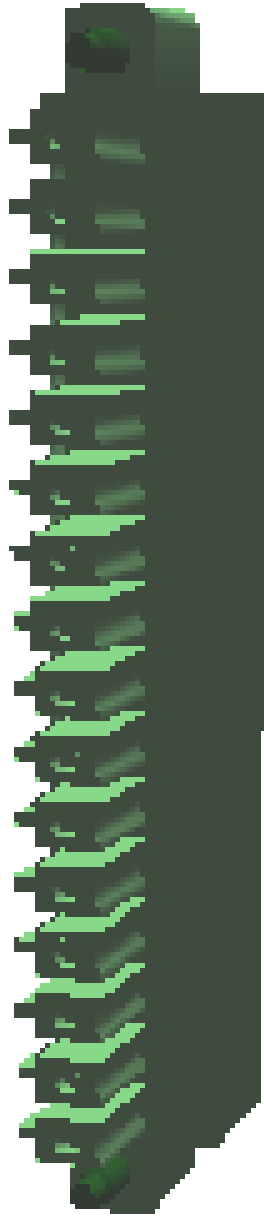
It can be downloaded at: phoenixcontact.net/product/1827842

3 Table of contents

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1827842 MC 1,5/16-STF-3,81

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



1827842 MC 1,5/16-STF-3,81**5 General Technical Data****5.1 item properties**

Order No.	1827842
Type	MC 1,5/16-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	16
Number of levels	1
Number of connections	16
Number of potentials	16
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

1827842 MC 1,5/16-STF-3,81**6 Mounting****6.1 Flange mounting**

Type of locking	Screw locking
Mounting flange	Screw flange
Torque	0.3 Nm

1827842 MC 1,5/16-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
-----------------------------	-----------

1827842 MC 1,5/16-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

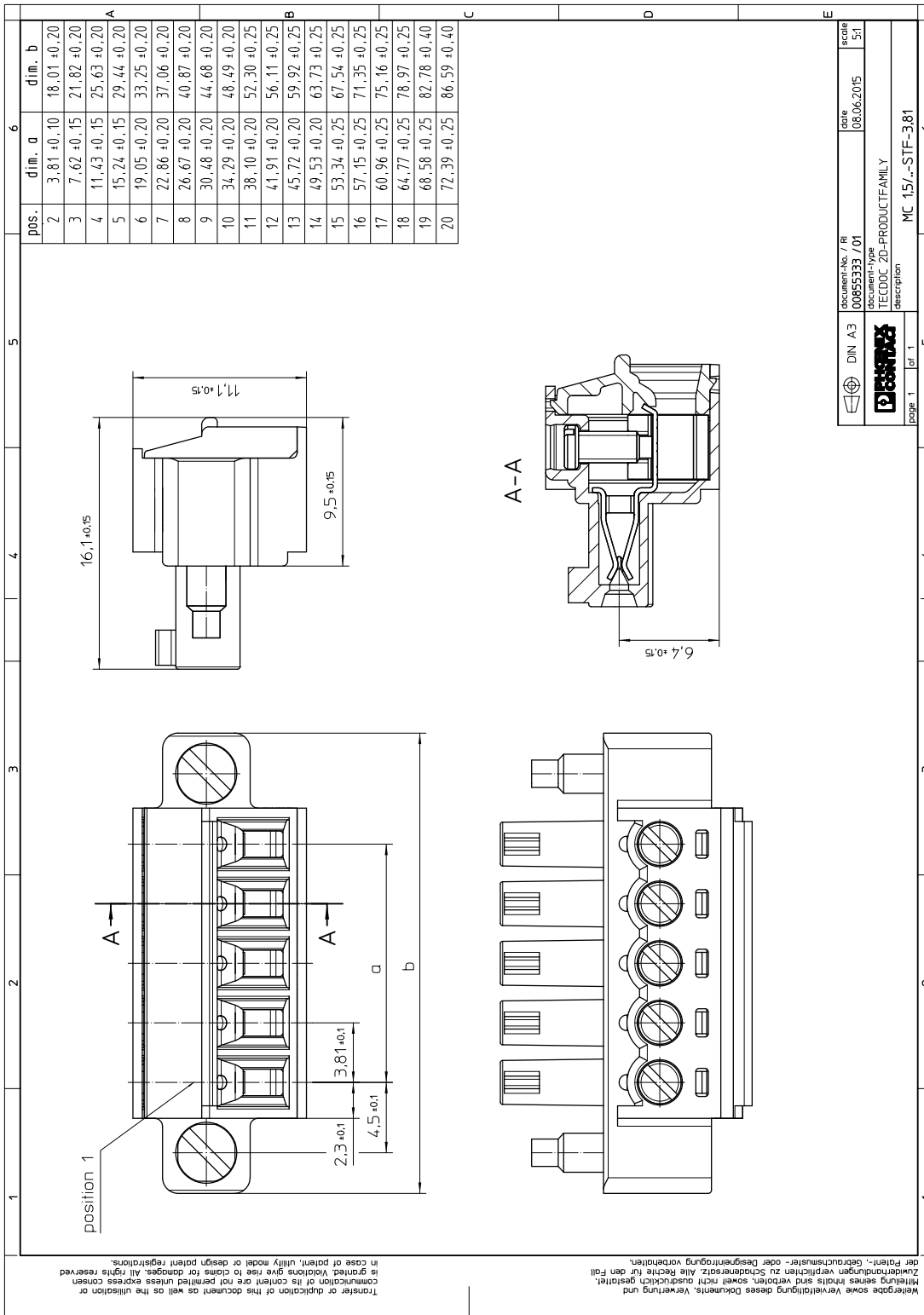
	Housing
Color	green (6021)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
Glow wire flammability index GWFI according to EN 60695-2-12	850
Glow wire ignition temperature GWIT according to EN 60695-2-13	775
Temperature for the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

1827842 MC 1,5/16-STF-3,81**9 Dimensions****9.1 Dimensions for the product**

Length	16.1 mm
Width	71.35 mm
Installed height	11.1 mm
Total height	11.1 mm

1827842 MC 1,5/16-STF-3,81

10 Series drawing



1827842 MC 1,5/16-STF-3,81

11 Packaging information

Type of packaging	packed in cardboard
Pieces per package	50

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)

1827842 MC 1,5/16-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

1827842 MC 1,5/16-STF-3,81

Polarization when inserted
Requirement >20 N

Test passed

Specification

IEC 60512-13-5:2006-02

1827842 MC 1,5/16-STF-3,81**15 Insertion and withdrawal forces**

Insertion and withdrawal force	
Specification	Test passed
No. of cycles	25
Insertion strength per pos. approx.	6 N
Withdraw strength per pos. approx.	4 N

1827842 MC 1,5/16-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

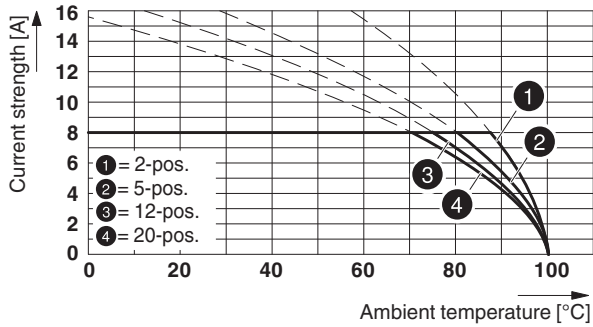
Component	PCB connector		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	160 V	160 V	320 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV
Degree of pollution	3	2	2
Overvoltage category	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

1827842 MC 1,5/16-STF-3,81

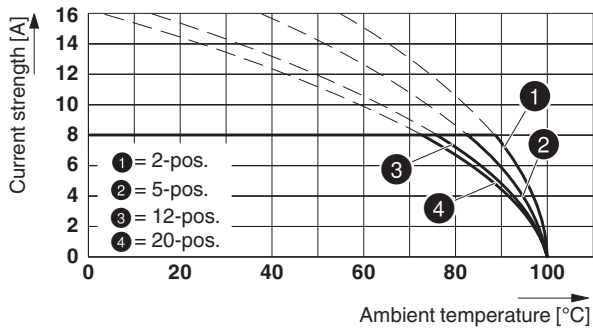
17 Current carrying capacity/derating curves

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 mm ²

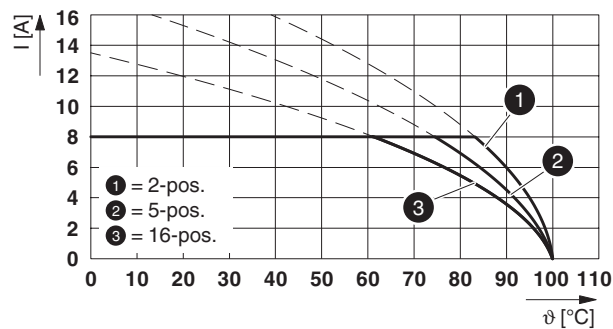
Type: MC 1,5/...-STF-3,81 with MC 1,5/...-GF-3,81



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

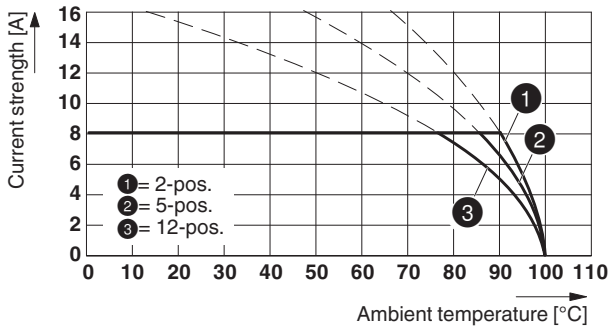


Type: MC 1,5/...-STF-3,81 with MCD 1,5/...-GF-3,81

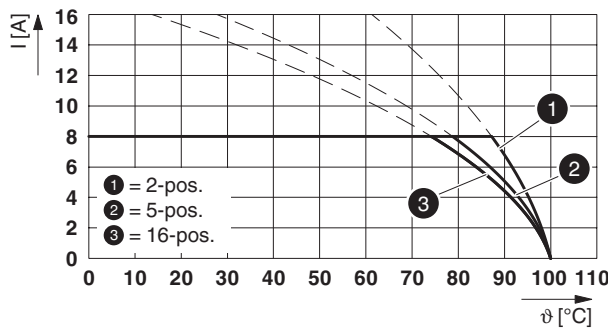


1827842 MC 1,5/16-STF-3,81

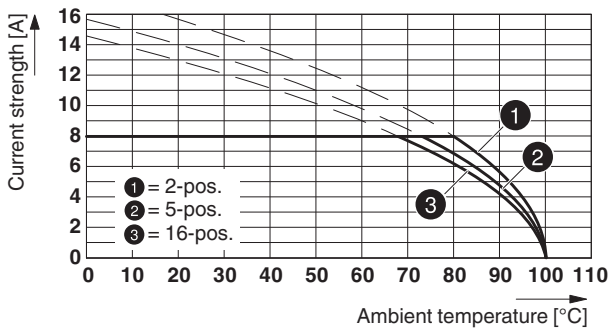
Type: MC 1,5/...-STF-3,81 with MCV 1,5/...-GF-3,81 P26 THR



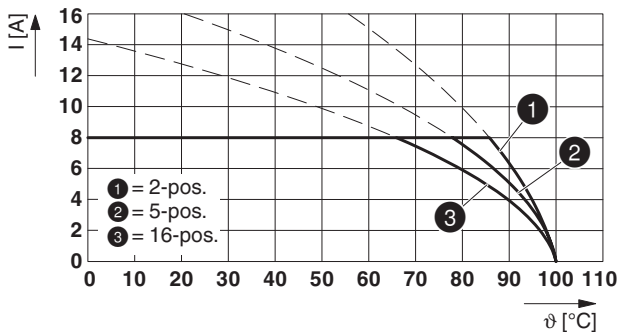
Type: MC 1,5/...-STF-3,81 with SMC 1,5/...-GF-3,81



Type: MC 1,5/...-STF-3,81 with DFK-MC 1,5/...-GF-3,81 (with flat plug)

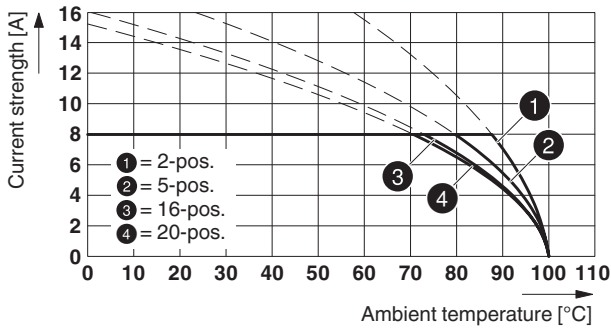


Type: MC 1,5/...-STF-3,81 with MCDV 1,5/...-G1F-3,81

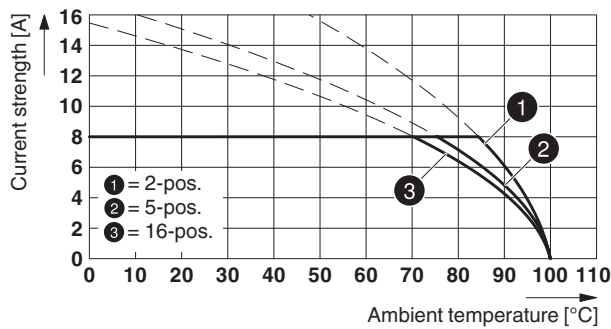


1827842 MC 1,5/16-STF-3,81

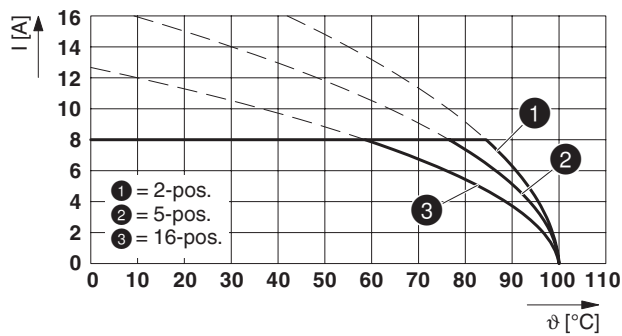
Type: MC 1,5/...-STF-3,81 with MC 1,5/...-GF-3,81 P26THR



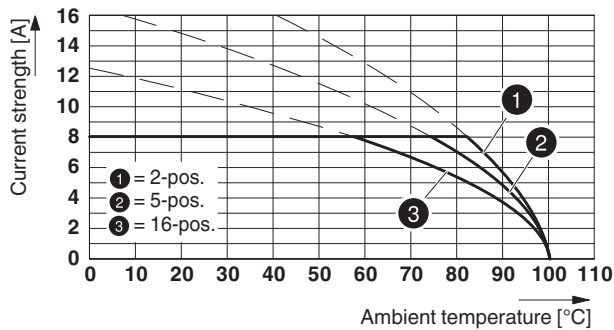
Type: MC 1,5/...-STF-3,81 with IMC 1,5/...-STGF-3,81



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



1827842 MC 1,5/16-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

1827842 MC 1,5/16-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

1827842 MC 1,5/16-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

1827842 MC 1,5/16-STF-3,81**22 Commercial Data**

Order No.	1827842
Type	MC 1,5/16-STF-3,81
Pieces per package	50
Net weight	11.801 g
GTIN	4017918050306
	Information that applies locally, see link on page 1
	Information that applies locally, see link on page 1

23 corresponding headers

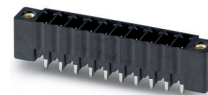
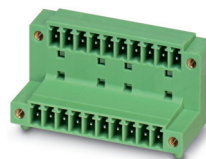
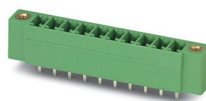
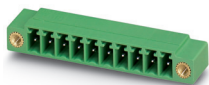
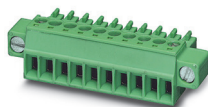
Order No.	Type
1827567	SMC 1,5/16-GF-3,81
1828003	MC 1,5/16-GF-3,81
1830240	MCD 1,5/16-GF-3,81
1830392	MCDV 1,5/16-GF-3,81
1830732	MCV 1,5/16-GF-3,81
1842908	MCDV 1,5/16-G1F-3,81
1843062	MCD 1,5/16-G1F-3,81
1879421	EMCV 1,5/16-GF-3,81
1897089	EMC 1,5/16-GF-3,81

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
	1834482	KGK-MC 1,5/16
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT
	0805399	SK 3,81/2,8:UNBEDRUCKT
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

1827842 MC 1,5/16-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

IEC 61984

IEC 61984

IEC 61984

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 R₁ 1st level

1.3 mΩ

1.2 mΩ

1.3 mΩ

1.1 mΩ

Contact resistance R₁ 2nd level

1.8 mΩ

Insertion/withdrawal cycles

25

25

25

25

Contact resistance R₂

1.5 mΩ

1.2 mΩ

1.4 mΩ

1.2 mΩ

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

2.95 kV

2.95 kV

2.95 kV

2.95 kV

Power-frequency withstand voltage
Voltage waveform ≥ (50/60 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 ≥ (1.2/50 μs)

2.95 kV

2.95 kV

2.95 kV

2.95 kV

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

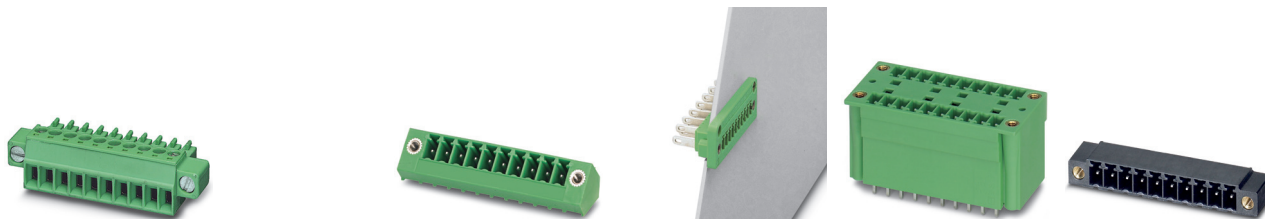
IEC 61984:2008-10

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

1827842 MC 1,5/16-STF-3,81

**MC 1,5/...STF**

IEC 61984

Mechanical tests (A)

Insertion/withdrawal force per position

SMC 1,5/...GF

IEC 61984

approx. 8 N / 4 N

DFK-MC 1,5/...GF

IEC 61984

approx. 7 N / 4 N

MCDV 1,5/...G1F

IEC 61984

approx. 7 N / 4 N

MC 1,5/...GF-THR

IEC 61984

approx. 9 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

1.3 mΩ

2.2 mΩ

1.6 mΩ

1.3 mΩ

Contact resistance R₁ 2nd level

1.6 mΩ

Insertion/withdrawal cycles

25

25

25

25

Contact resistance R₂

1.3 mΩ

2.2 mΩ

1.7 mΩ

1.3 mΩ

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

2.95 kV

2.95 kV

2.95 kV

2.95 kV

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

1.39 kV

1.39 kV

1.39 kV

1.39 kV

Thermal tests (C)

Tested number of positions

16

16

16

20

Tested conductor cross section

1.5 mm²1.5 mm²1.5 mm²1.5 mm²

Test current

8 A

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 ≥ (1.2/50 μs)

2.95 kV

2.95 kV

2.95 kV

2.95 kV

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

1827842 MC 1,5/16-STF-3,81

**MC 1,5/...-STF**

IEC 61984

Mechanical tests (A)

Insertion/withdrawal force per position

IMC 1,5/...-STGF

IEC 61984

approx. 6 N / 3 N

MCDV 1,5/...-GF

IEC 61984

approx. 6 N / 4 N

MCD 1,5/...-G1F

IEC 61984

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 R₁ 1st level

1.8 mΩ

1.2 mΩ

1.2 mΩ

Contact resistance R₁ 2nd level

1.6 mΩ

2.2 mΩ

Insertion/withdrawal cycles

25

25

25

Contact resistance R₂

2.2 mΩ

1.2 mΩ

1.3 mΩ

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

2.95 kV

2.95 kV

2.95 kV

Power-frequency withstand voltage
Voltage waveform ≥ (50/60 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 ≥ (1.2/50 μs)

2.95 kV

2.95 kV

2.95 kV

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