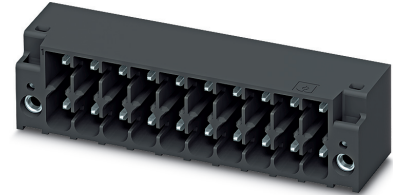


Data sheet

Item No.: 1787153

Type: DMC 1,5/16-G1F-3,5-LR P20THR

PCB headers, Reflow/wave soldering



The figure shows a 10-pos. version with 20 contacts

1 Main features



- | | | | |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos. | 16 | • Nominal current | 8 A |
| • Nominal cross section | 1.5 mm ² | • Nominal voltage | 160 V |
| • Color | black (9005) | • Connection direction | 0 ° |
| • Pitch | 3.5 mm | • Type of packaging | packed in cardboard |
| • Mounting type | THR soldering | | |

2 Your advantages

- ✓ Designed for integration into the SMT soldering process
- ✓ Screwable flange for superior mechanical stability
- ✓ Automatic locking and intuitive release through Lock and Release operating lever in contrasting color
- ✓ Conductor connection on several levels enables higher contact density
- ✓ Small component size for applications where space is at a premium



Make sure you always use the latest documentation.

It can be downloaded at: phoenixcontact.net/product/1787153

1787153 DMC 1,5/16-G1F-3,5-LR P20THR**3 Table of contents**

1	Main features.....	1
2	Your advantages	1
3	Table of contents	2
4	3D model in PDF can be activated (Acrobat Reader only).....	3
5	General Technical Data	4
6	Mounting.....	5
7	Material properties.....	5
8	Dimensions.....	6
9	Series drawing.....	7
10	Application.....	8
11	Packaging information	8
12	Mechanical tests.....	9
13	Insertion and withdrawal forces	10
14	Electrical tests	11
15	Air and creepage distances	12
16	Current carrying capacity/derating curves	13
17	Environmental and durability tests	14
18	Data transmission.....	15
19	Approvals / Certificates.....	16
20	Commercial Data.....	17
21	corresponding plugs	17
22	Accessories	17
23	Combination tests.....	18

1787153 DMC 1,5/16-G1F-3,5-LR P20THR

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



1787153 DMC 1,5/16-G1F-3,5-LR P20THR**5 General Technical Data****5.1 item properties**

Item no.	1787153
Type	DMC 1,5/16-G1F-3,5-LR P20THR
Product line	COMBICON Connectors S
Connector system	MINI COMBICON - DFMC 1,5
Product type	PCB headers
Type of contact	Male connector
Range of articles	DMC 1,5/..-G1F-THR
Pitch	3.5 mm
Number of positions	16
Number of rows	2
Number of connections	32
Number of potentials	32
Mounting type	THR soldering
Connection direction of the connector to the PCB	0 °
Pin layout	Linear pinning
Solder pins per potential	1
Type	Headers

1787153 DMC 1,5/16-G1F-3,5-LR P20THR**6 Mounting****6.1 Flange mounting**

Type of locking	Snap-in locking
Mounting flange	Lock & release threaded flange
Torque	0.2 Nm

7 Material properties**7.1 Material of metal parts**

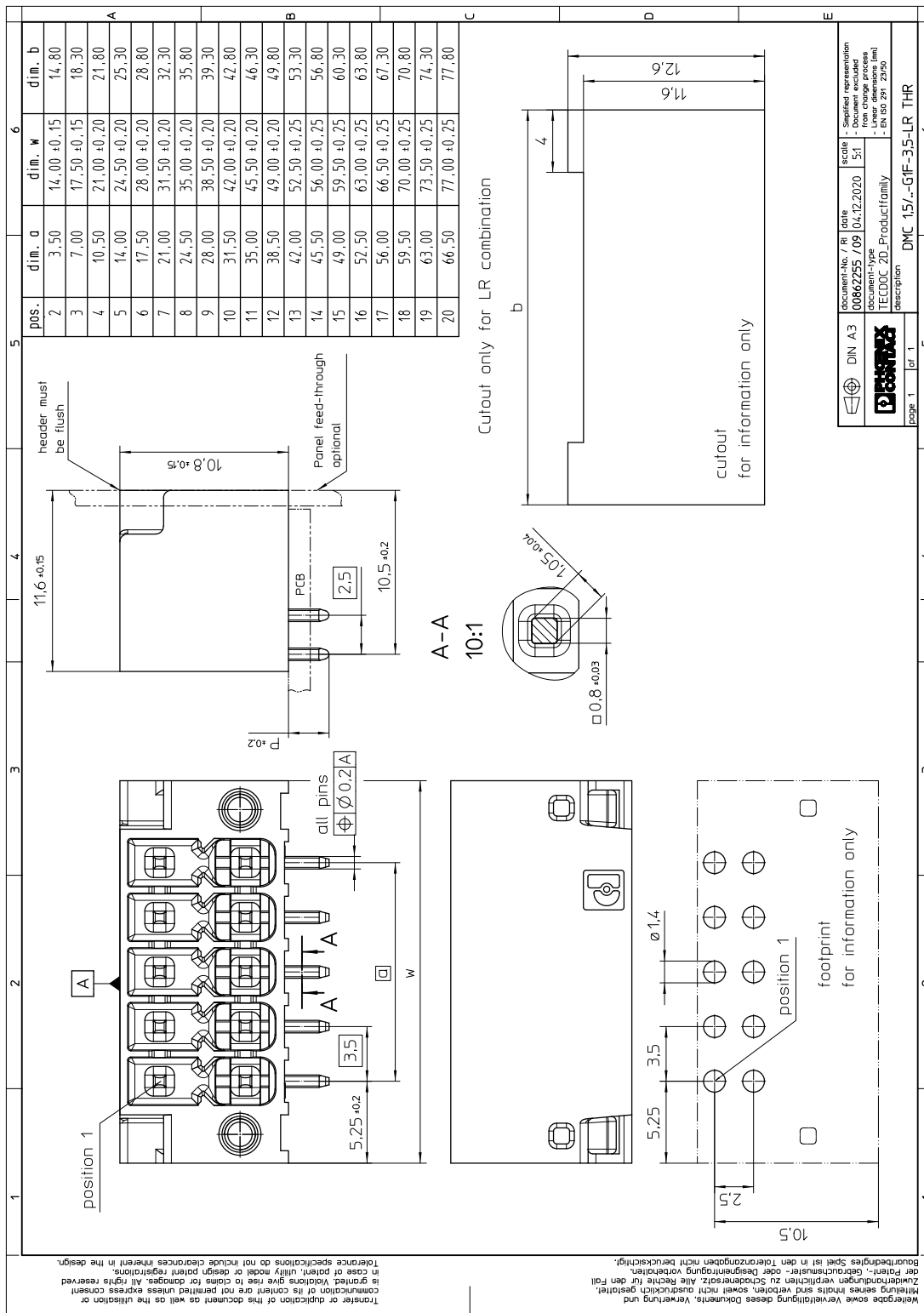
Note	WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface contact area	Nickel (1 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Soldering area surface	Nickel (1 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Surface characteristics	Tin-plated
Insulating material data	Housing
Color	black (9005)
Insulating material	LCP
Insulating material group	IIIa
CTI according to IEC 60112	175
Flammability rating according to UL 94	V0

1787153 DMC 1,5/16-G1F-3,5-LR P20THR**8 Dimensions****8.1 Dimensions for the product**

Length	11.6 mm
Width	63 mm
Height (without solder pin)	10.8 mm
Total height	12.8 mm
Solder pin [P]	2 mm

1787153 DMC 1,5/16-G1F-3,5-LR P20THR

9 Series drawing



1787153 DMC 1,5/16-G1F-3,5-LR P20THR**10 Application****11 Packaging information**

Type of packaging	packed in cardboard
Pieces per package	50

11.1 Processing notes

Process	Reflow/wave soldering
Specification	Following IPC/JEDEC J-STD-020D.1:2008-03
Specification	Following IEC 60068-2-54:2006-04
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

11.2 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 ... 100 °C (dependent on the derating curve)

1787153 DMC 1,5/16-G1F-3,5-LR P20THR**12 Mechanical tests****12.1 Visual examination**

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

12.2 Dimensional test

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

12.3 Resistance of marking

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

12.4 Polarization and coding

Polarization and coding	Test passed
Specification	IEC 60512-13-5:2006-02
Test force	20 N

12.5 Contact retention in insert

Contact holder in insert Requirements >20 N	Test passed
Specification	IEC 60512-15-1:2008-05

1787153 DMC 1,5/16-G1F-3,5-LR P20THR**13 Insertion and withdrawal forces**

Insertion and withdrawal force	
Specification	Test passed
No. of cycles	25
Insertion strength per pos. approx.	3 N
Withdraw strength per pos. approx.	2 N

1787153 DMC 1,5/16-G1F-3,5-LR P20THR**14 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	2 mΩ
Degree of pollution	2

1787153 DMC 1,5/16-G1F-3,5-LR P20THR**15 Air and creepage distances**

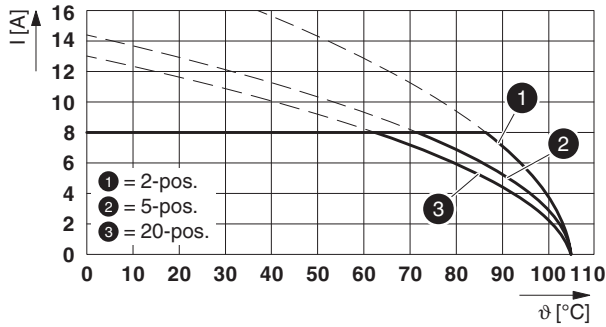
Component	PCB headers		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	IIIa		
Comparative tracking index (IEC 60112:2003-01)	CTI 175		
Rated insulation voltage	160 V	160 V	250 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV
Degree of pollution	3	2	2
Overvoltage 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	2.5 mm	1.6 mm	2.5 mm

1787153 DMC 1,5/16-G1F-3,5-LR P20THR

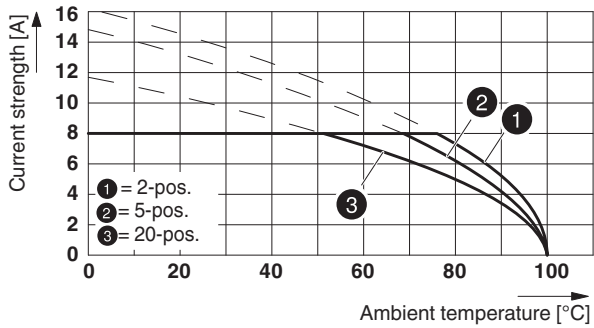
16 Current carrying capacity/derating curves

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: DFMC 1,5/...-ST-3,5-LR with DMC 1,5/...-G1F-3,5-LR P...THR



Type: DFMC 1,5/...-STF-3,5 with DMC 1,5/...-G1F-3,5-LR P...THR



1787153 DMC 1,5/16-G1F-3,5-LR P20THR**17 Environmental and durability tests****17.1 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	50 m/s ² (60.1 - 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis
Note	





17.2 Insulation resistance

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

1787153 DMC 1,5/16-G1F-3,5-LR P20THR

18 Data transmission

1787153 DMC 1,5/16-G1F-3,5-LR P20THR**19 Approvals / Certificates**

IECEE CB Scheme 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	160 V	8 A	-	-
EAC 				
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B	150 V	8 A	-	-
Usegroup C	50 V	8 A	-	-
Usegroup D	300 V	8 A	-	-
VDE Gutachten mit Fertigungsüberwachung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	160 V	8 A	-	-

1787153 DMC 1,5/16-G1F-3,5-LR P20THR**20 Commercial Data**

Item no.	1787153
Type	DMC 1,5/16-G1F-3,5-LR P20THR
Pieces per package	50
Net weight	7.07 g
GTIN	4046356596763
	Information that applies locally, see link on page 1

21 corresponding plugs

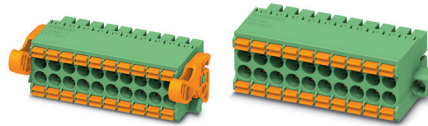
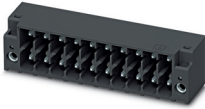
Item no.	Type
1790438	DFMC 1,5/16-STF-3,5
1790629	DFMC 1,5/16-ST-3,5-LR

22 Accessories

Description	Item No.	Type
Coding profile, for insertion between the coding ribs of the connector and the header following the reflow soldering process, insulating material, color: natural	1790647	CP-DMC 1,5 NAT

1787153 DMC 1,5/16-G1F-3,5-LR P20THR

23 Combination tests



DMC 1,5/..-G1F-THR

DFMC 1,5/..-ST-LR

DFMC 1,5/..-STF

IEC 61984

IEC 61984

IEC 61984

Mechanical tests (A)

Insertion/withdrawal force per position

approx. 3 N / 2 N

approx. 3 N / 2 N

Polarization when inserted
Requirement >20 N

Test passed

Test passed

Contact holder in insert
Requirements >20 N

Test passed

Test passed

Durability tests (B)

Contact resistance R₁ 1st level

2 mΩ

2.1 mΩ

Contact resistance R₁ 2nd level

Insertion/withdrawal cycles

25

25

Contact resistance R₂

2.3 mΩ

2.4 mΩ

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

2.95 kV

2.95 kV

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

1.39 kV

1.39 kV

Insulation resistance
Requirements > 5 MΩ

> 5 MΩ

> 5 MΩ

Thermal tests (C)

Tested number of positions

20

20

Tested conductor cross section

1.5 mm²1.5 mm²

Test current

8 A

8 A DC

Upper limiting temperature
Requirements < 100°C

Test passed

Test passed

Climatic tests (D)

Test sequence 1: low temperature storage

-40 °C/2 h

-40 °C/2 h

Test sequence 2: heat storage

105 °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 cycleRated impulse voltage at sea level
Voltage waveform ≥ (1.2/50 μs)

2.95 kV

2.95 kV

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

1.39 kV

1.39 kV

Environmental and endurance tests (E)

Specification

IEC 61984:2008-10

IEC 61984:2008-10

Degree of protection

Finger safety with IP20
test fingerFinger safety with IP20
test finger