2018-04-04
Product version 03
Document revision 0

Data sheet

Order No.: 1952885

Type: MCDNV 1,5/12-G1-3,5 P26THR

Header

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

1 Main features

- No. of pos. 12
- Nominal cross section 1.5 mm²
- Color black
- Pitch 3.5 mm
- Mounting type THR soldering
- Nominal current 8 A
- Nominal voltage 160 V
- Connection direction 90 °
- Type of packaging packed in cardboard

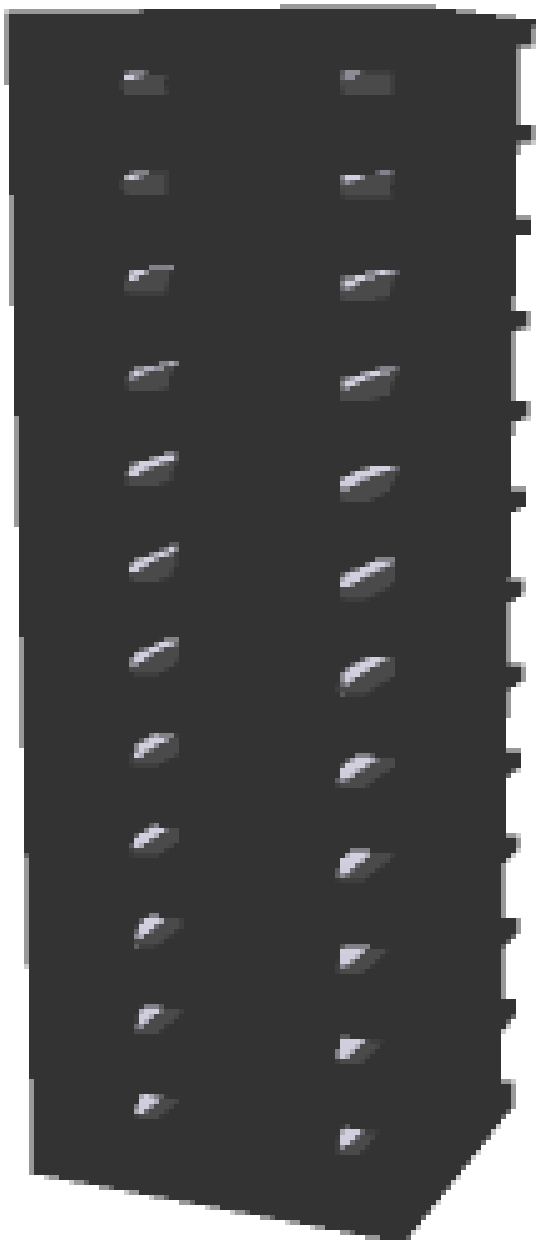
2 Your advantages

- 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
- Conductor connection on several levels enables higher contact density

Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1952885

3 Table of contents

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



5 item properties

Order No.	1952885
Type	MCDNV 1,5/12-G1-3,5 P26THR
Type of contact	Male connector
Range of articles	MCDNV 1,5/..-G1-THR
Pitch	3.5 mm
Number of positions	12
Locking	without
Mounting type	THR soldering
Pin layout	Linear pinning
Product note	The pin length is 26 mm. User information and design recommendations on Through Hole Reflow Technology can be found at: http: "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 1.3 µm ... 3 µm , Sn 3 µm ... 5 µm	
Soldering area surface	Ni 1.3 µm ... 3 µm , Sn 3 µm ... 5 µm	
Surface characteristics	Tin-plated	

Insulating material data	Housing	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

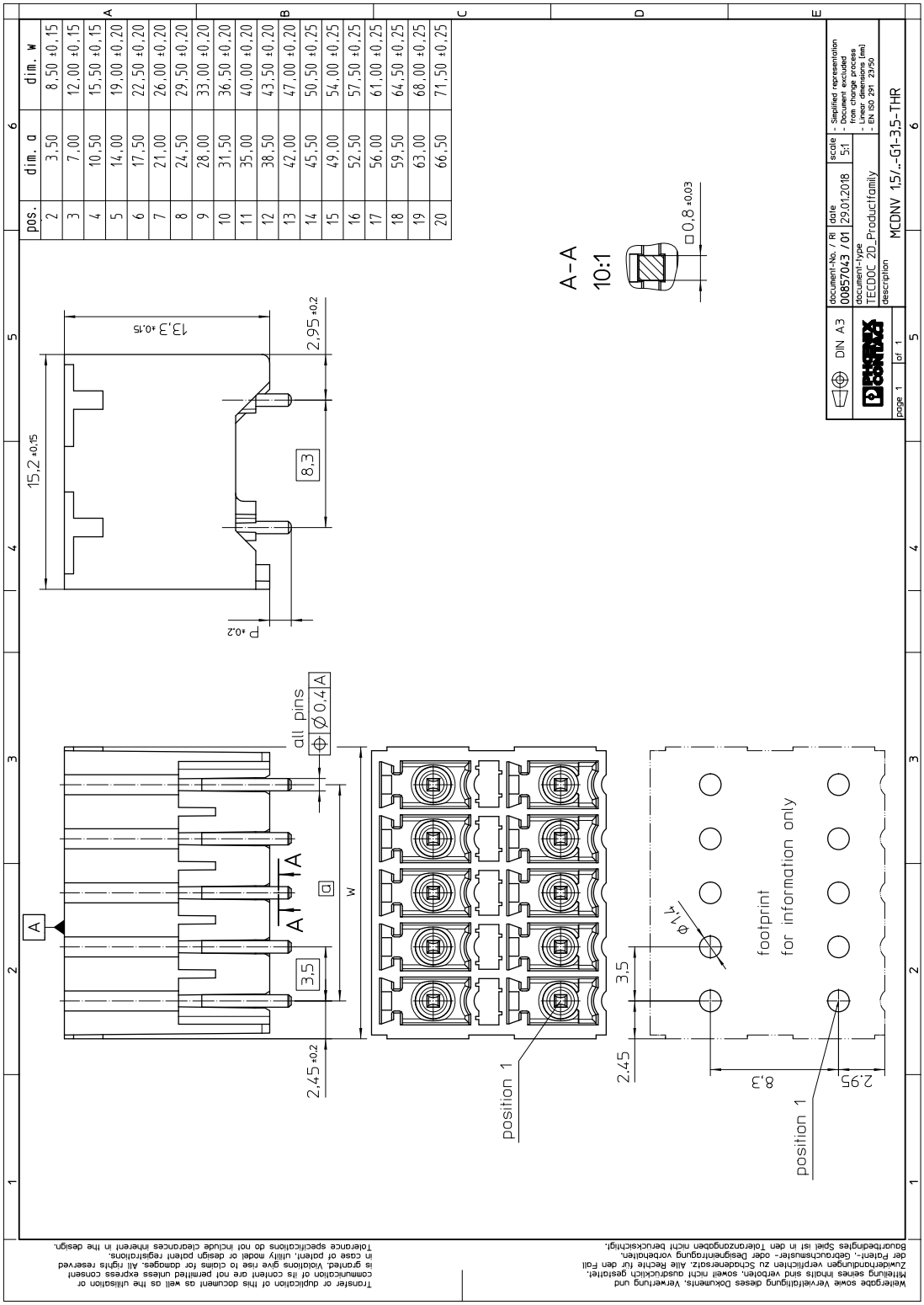
Length	16 mm
Width	43.5 mm
Height (without solder pin)	16 mm
Total height	13.3 mm
Solder pin [P]	2.6 mm
Dimension a	38.5 mm

6.2 Dimensions for PCB design

Hole diameter	1.4 mm
Pin dimensions	0,8 x 0,8 mm
Pin spacing	3.50 mm

1952885 MCDNV 1,5/12-G1-3,5 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

9.2 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)

10 Mechanical tests

Mechanical test group A	
Specification	IEC 61984:2008-10
Visual examination	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.	27 N

11 Electrical tests

11.1 Electrical data

Rated current / conductor cross section	8 A / 1.5 mm²
Rated insulation voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
Contact resistance	1.8 mΩ
Degree of pollution	2

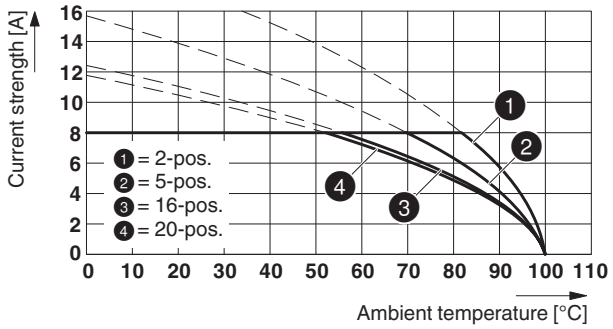
11.2 Air and creepage distances

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	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	1.6 mm	2.5 mm
Minimum value of the creepage path requirement in acc. with table	2.5 mm	1.6 mm	2.5 mm

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
Note	

Typ: FMC 1,5/...-ST-3,5 with MCDNV 1,5/...-G1-3,5 P...THR



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	160 V			
Current	8 A			

cULus Recognized				
Use group	B	D		
mm²/AWG/kcmil				
Voltage	150 V	150 V		
Current	8 A	8 A		

IECEE CB Scheme				
mm²/AWG/kcmil				
Voltage	160 V			
Current	8 A			

EAC

16 Commercial Data

Order No.	1952885
Type	MCDNV 1,5/12-G1-3,5 P26THR
Pieces per package	50
Net weight	7.6 g
GTIN	4017918920098
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

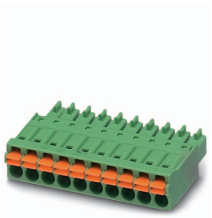
17 corresponding plugs

Order No.	Type
1952364	FMC 1,5/12-ST-3,5

18 Accessories

Description	Order No.	Type
Coding profile, is inserted into the slot on the plug or inverted header, red insulating material	1734634	CP-MSTB
	0804109	SK 3,81/2,8:FORTL.ZAHLEN
	0805030	SK 3,5/2,8:SO

19 Combination tests



MCDNV 1,5/..-G1-THR	FMC 1,5/..-ST
Specification	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)	
Contact resistance R_1	1.8 mΩ
Insertion/withdrawal cycles	25
Contact resistance R_2	1.9 mΩ
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	2.95 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	1.39 kV
Insulation resistance Requirements > 5 MΩ	> 0.7 TΩ
Thermal tests (C)	
Tested number of positions	20
Tested conductor cross section	1.5 mm^2
Test current	8 A
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 ≥ (1.2/50 µs)	2.95 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	1.39 kV
Environmental and endurance tests (E)	
Specification	IEC 61984:2008-10
Degree of protection	Finger safety with IP20 test finger