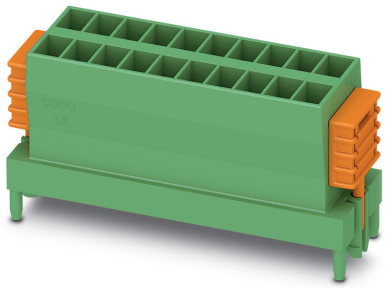
2020-02-20
Product version 01
Document revision 01

Data sheet

Order No.: 1016523

Type: CDDC 1,5/13-PV-3,5

PCB direct plug, Crimp connection



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

1 Main features



- No. of pos. 13
- Conductor cross section 1.5 mm²
- Color green (6021)
- Pitch 3.5 mm
- Connection method Crimp connection
- Nominal current 8 A
- Nominal voltage 160 V
- Connection direction 90 °
- Type of packaging packed in cardboard

2 Your advantages

- SKEDD direct plug-in technology enables flexible positioning on the PCB
- Reduced component and process costs: simple insertion by hand and vibration-resistant connection
- Contacts arranged in a double row enable high packing density in a compact area
- Wide range of applications, thanks to suitability for PCBs with chemically tin-plated or Hot Air Leveling (HAL) surface
- Cost-effective connection of crimped conductors in large quantities
- Tools for manual and automatic crimping available as an option

Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1016523

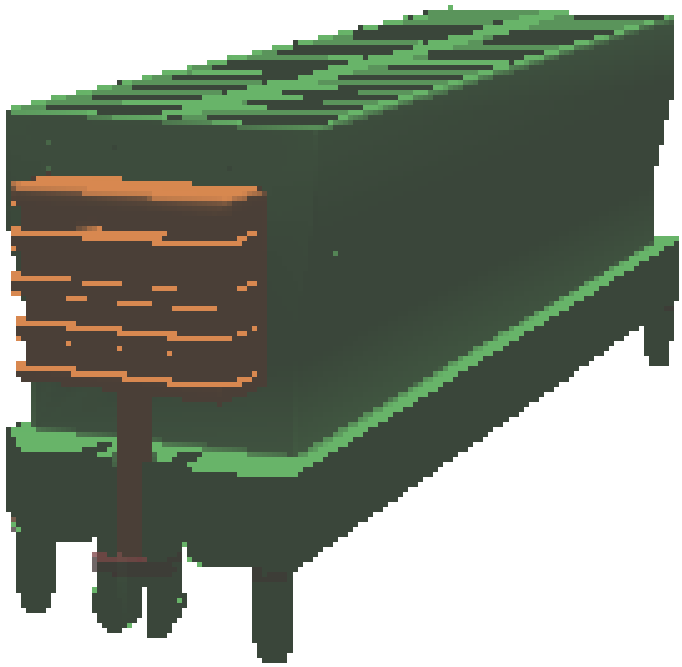
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4 3D model in PDF can be activated (Acrobat Reader only)



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5 General Technical Data

5.1 item properties

Order No.	1016523
Type	CDDC 1,5/13-PV-3,5
Plug-in system	SKEDD
Product type	PCB direct plug
Range of articles	CDDC 1,5/..-PV
Pitch	3.5 mm
Range of positions	2...16
Number of positions	13
Number of levels	2
Number of connections	26
Number of potentials	26
Connection method	Crimp connection
Mounting type	SKEDD - Direct plug-in technology
Connection direction of the connector to the PCB	90 °
Connection direction of the conductor to the PCB	90 °
Pin layout	Linear pinning

5.2 Mounting

Type of locking	Snap-in locking
	Self-locking flange

5.3 Connection capacity

Nominal cross section	1.5 mm^2
Conductor cross section, flexible	0.14 mm^2 ... 1.5 mm^2

5.4 Connection capacity AWG

Conductor cross section AWG	26 ... 16

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6 Material properties

6.1 Material of plastic parts

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

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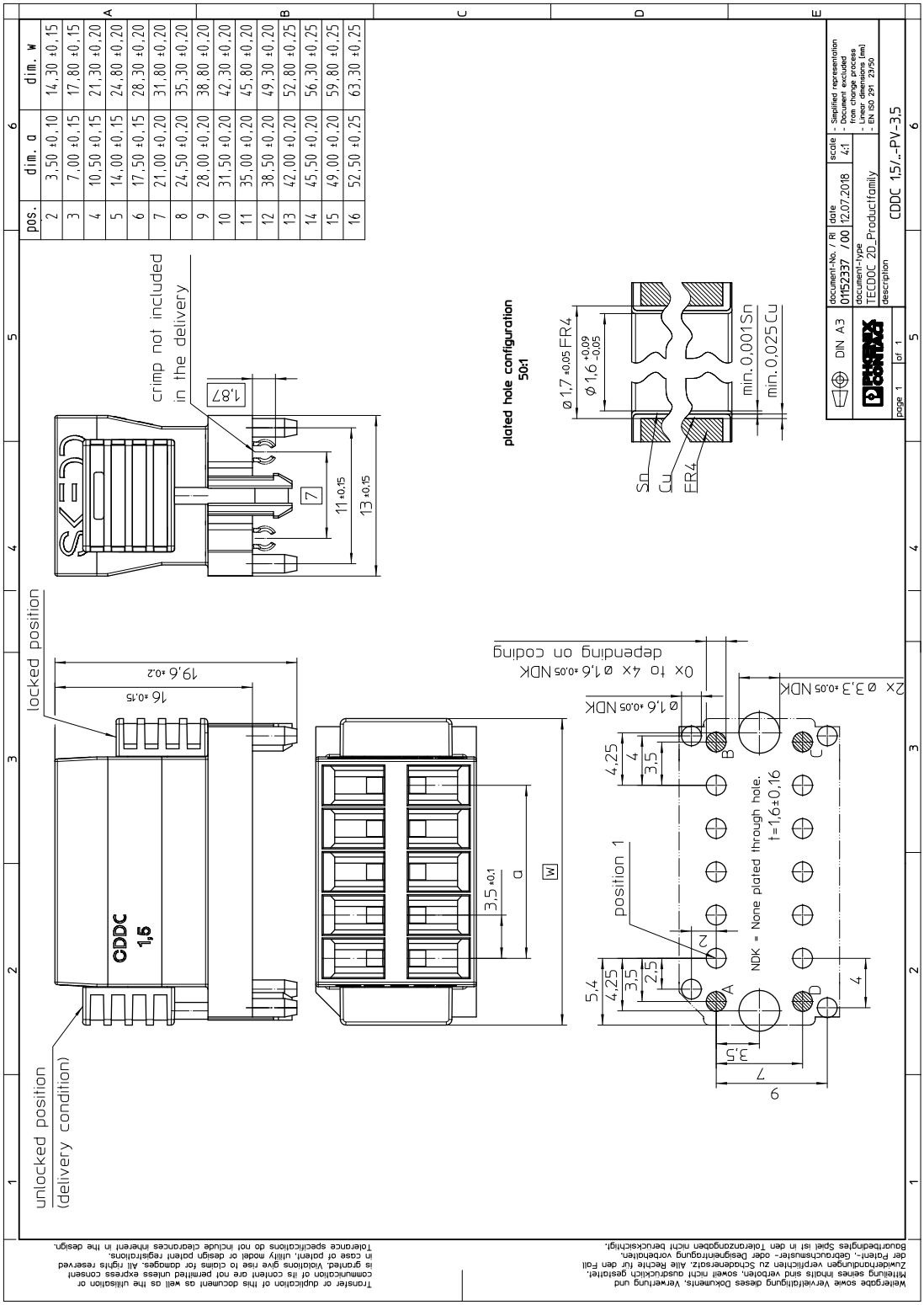
7 Dimensions

7.1 Dimensions for the product

Length	13 mm
Width	52.8 mm
Height	16 mm
Total height	19.6 mm
Dimension a	

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8 Series drawing



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9 Packaging information

Type of packaging	packed in cardboard
Pieces per package	50

10 Application

10.1 General information

Note on the contact	The information on the basic material and the finish properties of the crimp contacts is to be found in the E-Shop in the technical data for the respective crimp contact.
Note on application	All laboratory tests are performed in combination with the crimp contacts specified as accessories.
Note on application	The current depends on the crimp contact and conductor cross section used.
Note on application	The corresponding crimp contacts are to be found in the "Accessories" tab.
Note on application	The crimp contacts may only be processed with approved crimping tools.

10.2 Temperature limit values

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Ambient temperature (assembly)	-5 °C ... 100 °C
Ambient temperature (operation)	-55 °C ... 105 °C (dependent on the derating curve)

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11 General tests

11.1 Specification

Specification	IEC 61984
Specification	IEC 60352-2

12 Mechanical tests

12.1 Tensile strength of crimped connections

Result	Test passed
Specification	IEC 60512-16-4:2008-06
Conductor cross section/conductor type/tractive force setpoint/actual value	0.14 mm^2 / flexible / > 18 N 1.5 mm^2 / flexible / > 150 N

12.2 Visual examination

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

12.3 Dimensional test

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

12.4 Resistance of marking

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

12.5 Polarization and coding

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

12.6 Contact retention in insert

Contact retention in insert	Test passed
Specification	IEC 60512-15-1:2008-05
Test force per pos.	20 N

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13 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.	4 N
Withdraw strength per pos. approx.	3 N

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14 Electrical tests

14.1 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	1.5 mΩ
Degree of pollution	2

14.2 Air and creepage distances

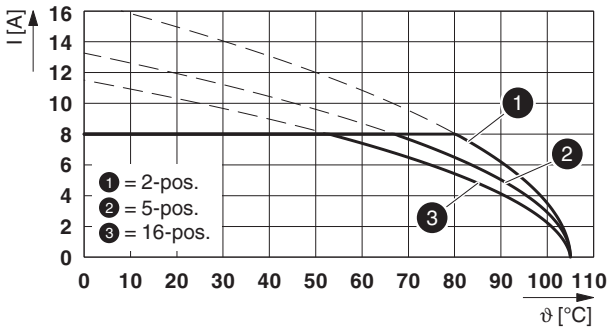
Component	PCB direct plug		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	160 V	160 V	320 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV
Degree of pollution	3	2	2
Overvoltage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

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15 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

Type: CDDC 1,5/...-PV-3,5



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16 Environmental and durability tests

16.1 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	The connected conductor loops were guided to the test sample at a distance of approx. 10 cm.

16.2 Shock test

Specification	IEC 60068-2-27:2008-02
Result	Test passed
Pulse shape	Semi-sinusoidal
Peak acceleration	300 m/s^2
Shock duration	18 ms
Number of shocks per direction	3
Test directions	X-, Y- and Z-axis (pos. and neg.)

17 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	Crimp connections

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18 Approvals / Certificates

cULus Recognized	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm²]
Usegroup B				
	150 V	8 A	26 - 16	-
Usegroup D				
	300 V	8 A	26 - 16	-

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19 Commercial Data

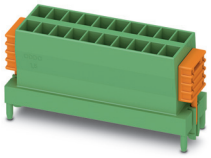
Order No.	1016523
Type	CDDC 1,5/13-PV-3,5
Pieces per package	50
Net weight	2.22 g
GTIN	4055626498720
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

20 Accessories

Description	Order No.	Type
Coding profile, inserted into the hole on the plug, made from red insulating material, diameter: 1.35 mm	1985564	CP-PT 1,5
Crimp contact	1016664	CDC-MP 0,14-0,5
Crimp contact	1016663	CDC-MP 0,14-0,5-R
Crimp contact	1016662	CDC-MP 0,5-1,5
Crimp contact	1016661	CDC-MP 0,5-1,5-R

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21 Combination tests



CDDC 1,5/..-PV

IEC 61984	IEC 61984			
Mechanical tests (A)				
Insertion/withdrawal force per position	approx. 4 N / 3 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	1.5 mΩ			
Insertion/withdrawal cycles	25			
Contact resistance R_2	1.6 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			
Thermal tests (C)				
Tested number of positions	16			
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	-55 °C/2 h			
Test sequence 2: heat storage	105 °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			

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