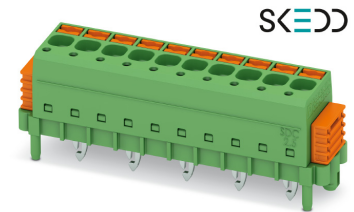


Data sheet

Item No.: 1864150

Type: SDC 2,5/14-PV-5,0-ZB

PCB direct plug, Push-in spring connection



The figure shows a 10-position version

1 Main features



- | | | | |
|---------------------------|---------------------------|------------------------|---------------------|
| • No. of pos. | 14 | • Nominal current | 12 A |
| • Conductor cross section | 2.5 mm ² | • Nominal voltage | 320 V |
| • Color | green (6021) | • Connection direction | 90 ° |
| • Pitch | 5 mm | • Type of packaging | packed in cardboard |
| • Connection method | Push-in spring connection | | |

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
- ✓ Wide range of applications, thanks to suitability for PCBs with chemically tin-plated or Hot Air Leveling (HAL) surface
- ✓ Time saving push-in connection, tools not required
- ✓ Intuitive use through colour coded actuation lever
- ✓ Quick and convenient testing using integrated test option



Make sure you always use the latest documentation.

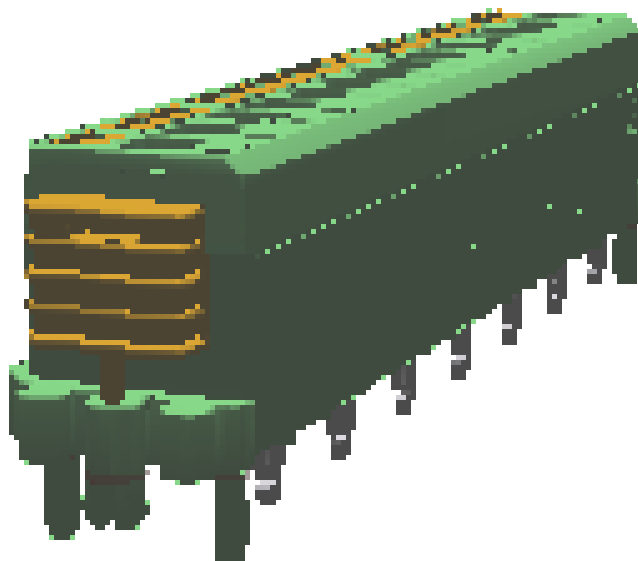
It can be downloaded at: phoenixcontact.net/product/1864150

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1864150 SDC 2,5/14-PV-5,0-ZB

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



1864150 SDC 2,5/14-PV-5,0-ZB**5 General Technical Data****5.1 item properties**

Item no.	1864150
Type	SDC 2,5/14-PV-5,0-ZB
Connector system	SKEDD
Product type	PCB direct plug
Range of articles	SDC 2,5/..-PV
Pitch	5 mm
Number of positions	14
Number of rows	1
Number of connections	14
Number of potentials	14
Connection method	Push-in spring connection
Connection direction of the connector to the PCB	90 °
Connection direction of the conductor to plug-in direction	90 °
Pin layout	Zigzag pinning W
Solder pins per potential	1

1864150 SDC 2,5/14-PV-5,0-ZB

6 Mounting

6.1 Flange mounting

Type of locking	
Mounting flange	Self-locking flange

1864150 SDC 2,5/14-PV-5,0-ZB**7 Conductor connection****7.1 Connection capacity**

Nominal cross section	2.5 mm ²
Conductor cross section, rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross section, flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm ² ... 2.5 mm ²
Conductor cross section flexible, with ferrule with plastic sleeve	0.25 mm ² ... 2.5 mm ²
Cylindrical gauge a x b / diameter	2.4 mm x 1.5 mm / 2.4 mm
Stripping length	10 mm

7.2 Connection capacity AWG

Conductor cross section AWG	24 ... 12
-----------------------------	-----------

1864150 SDC 2,5/14-PV-5,0-ZB**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	Nickel (1.5 - 4 µm Ni) , Tin (4 - 8 µm Sn)
Surface contact area	Nickel (1.5 - 4 µm Ni) , Tin (4 - 8 µm Sn)
Surface characteristics	Tin-plated

8.2 Material of plastic parts

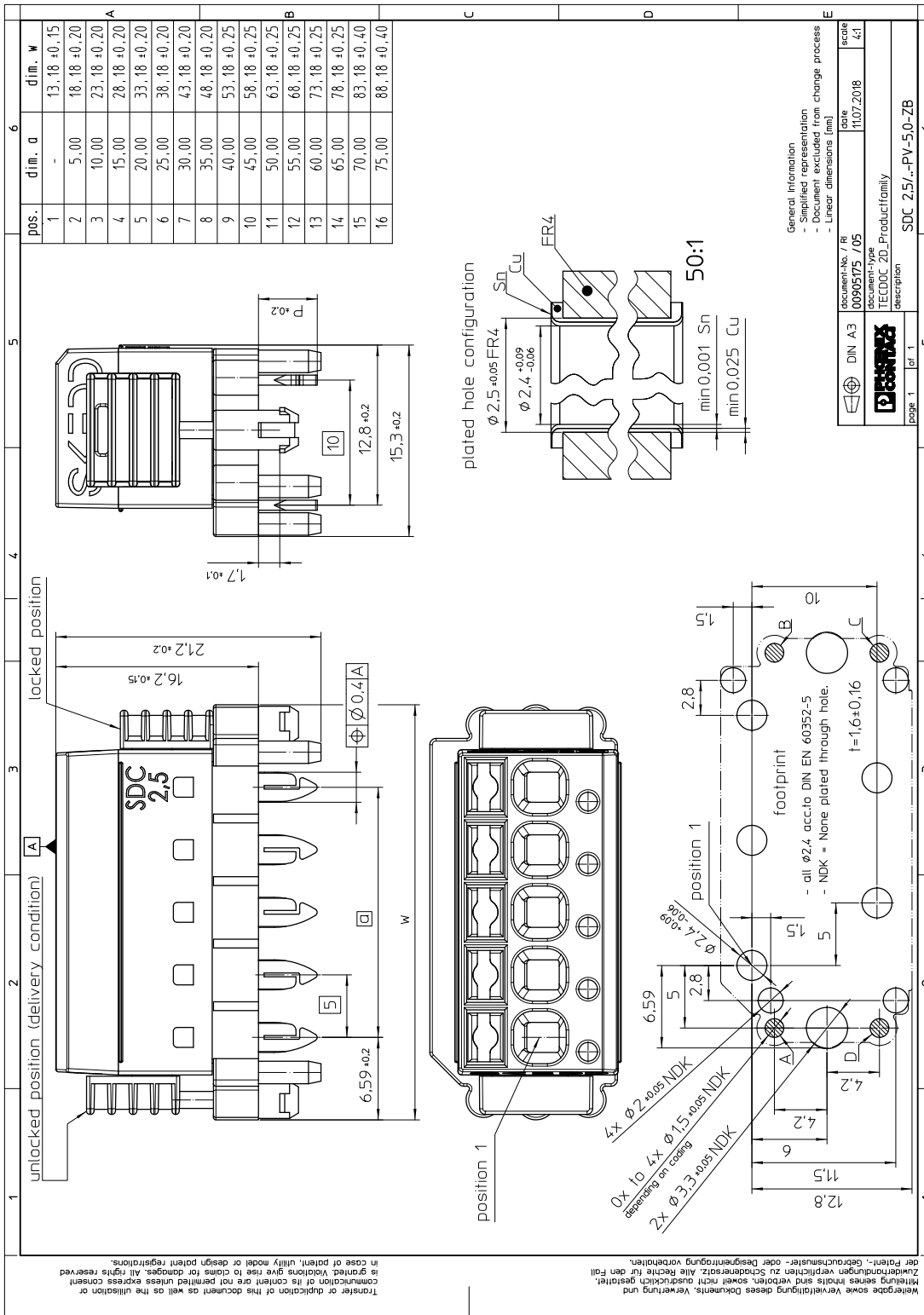
	Housing	Actuation element
Color	green (6021)	
Insulating material	PA	PBT
Insulating material group	I	IIIa
CTI according to IEC 60112	600	275
Flammability rating according to UL 94	V0	V0
Glow wire flammability index GWFI according to EN 60695-2-12	850	
Glow wire ignition temperature GWIT according to EN 60695-2-13	775	
Temperature for the ball pressure test according to EN 60695-10-2	125 °C	

1864150 SDC 2,5/14-PV-5,0-ZB**9 Dimensions****9.1 Dimensions for the product**

Length	15.3 mm
Width	78.18 mm
Installed height	16.2 mm
Total height	21.2 mm
Solder pin [P]	4.7 mm

1864150 SDC 2,5/14-PV-5,0-ZB

10 Series drawing



1864150 SDC 2,5/14-PV-5,0-ZB**11 Product notes****11.1 General information**

Notes on operation	In accordance with IEC 61984, COMBICON connectors have no switching power (COC). During designated use, they must not be plugged in or disconnected when carrying voltage or under load.
--------------------	--

12 Packaging information

Type of packaging	packed in cardboard
Pieces per package	50

13 Application

Ferrules without insulating collar, according to DIN 46228-1	
Recommended crimping pliers	1212045 CRIMPFOX 10S
Ferrules without insulating collar, according to DIN 46228-1	Cross section: 0.25 mm ² ; Length: 7 mm Cross section: 0.34 mm ² ; Length: 7 mm Cross section: 0.5 mm ² ; Length: 8 mm ... 10 mm Cross section: 0.75 mm ² ; Length: 10 mm Cross section: 1 mm ² ; Length: 10 mm Cross section: 2.5 mm ² ; Length: 10 mm
Ferrules with insulating collar, according to DIN 46228-4	
Recommended crimping pliers	1212045 CRIMPFOX 10S
Ferrules with insulating collar, according to DIN 46228-4	Cross section: 0.25 mm ² ; Length: 8 mm Cross section: 0.34 mm ² ; Length: 8 mm ... 10 mm Cross section: 0.5 mm ² ; Length: 8 mm ... 10 mm Cross section: 0.75 mm ² ; Length: 8 mm ... 10 mm Cross section: 1 mm ² ; Length: 8 mm ... 10 mm Cross section: 1.5 mm ² ; Length: 8 mm ... 10 mm Cross section: 2.5 mm ² ; Length: 10 mm

13.1 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)

1864150 SDC 2,5/14-PV-5,0-ZB**14 General tests****14.1 Specification**

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

15 Mechanical tests**15.1 Check for damage to conductor or loosening**

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

15.2 Pull-out test

Specification	IEC 60999-1:1999-11
Result	Test passed
Conductor cross section/conductor type/tractive force actual value	0.2 mm ² / solid / > 10 N
Conductor cross section/conductor type/tractive force actual value	0.2 mm ² / flexible / > 10 N
Conductor cross section/conductor type/tractive force actual value	2.5 mm ² / solid / > 50 N
Conductor cross section/conductor type/tractive force actual value	2.5 mm ² / flexible / > 50 N

15.3 Repeated connection and disconnection

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

15.4 Conductor connection

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

15.5 Visual examination

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

15.6 Dimensional test

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

15.7 Resistance of marking

1864150 SDC 2,5/14-PV-5,0-ZB

Resistance of marking

Test passed

Specification

IEC 60068-2-70:1995-12

15.8 Polarization and coding

Polarization when inserted
Requirement >20 N

Test passed

Specification

IEC 60512-13-5:2006-02

1864150 SDC 2,5/14-PV-5,0-ZB**16 Insertion and withdrawal forces**

Insertion and withdrawal force	
Specification	Test passed
No. of cycles	25
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	6 N

1864150 SDC 2,5/14-PV-5,0-ZB**17 Electrical tests**

Rated current / conductor cross section	12 A / 2.5 mm ²
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	1.1 mΩ
Degree of pollution	2

17.1 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)	CTI 275		
Rated insulation voltage	200 V	320 V	320 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	3 mm	3 mm	3 mm
Minimum value of the creepage path requirement in acc. with table	3.2 mm	3.2 mm	3.2 mm

17.2 Electrical function

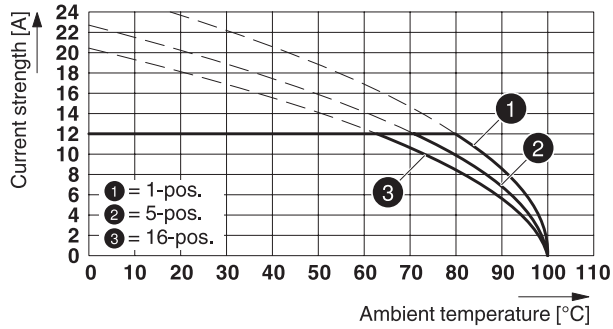
Specification	IEC 60999-1:1999-11
Result	Test passed
Voltage drop	Voltage drop (U) after the load ≤ 15 mV
Test current (minimum cross section)	4 A AC
Test current (maximum cross section)	12 A AC
Conductor cross section, flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section, rigid	0.2 mm ² ... 2.5 mm ²

17.3 Temperature cycles

Specification	IEC 60999-1:1999-11
Result	Test passed
Voltage drop	Voltage drop (U) after the load ≤ 22.5 mV or $1.5 \times U_{after 24 h}$ The small value is to be used.
Test current (minimum cross section)	4 A DC
Test current (maximum cross section)	12 A DC
Temperature cycles	192
Conductor cross section, flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section, rigid	0.2 mm ² ... 2.5 mm ²

1864150 SDC 2,5/14-PV-5,0-ZB**18 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	2.5 mm ²

Type: SDC 2,5/...-PV-5,0-ZB

1864150 SDC 2,5/14-PV-5,0-ZB**19 Environmental and durability tests****19.1 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.

19.2 Railway application, vibration test

Specification	IEC 61373:2010-05
Result	Test passed
Testing	Vibration, broadband noise
Frequency	5 - 150 Hz
Test directions	X-, Y- and Z-axis (pos. and neg.)
Spectrum	Service life test category 1, class B, body mounted

19.3 Insulation resistance

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

19.4 Insulation resistance






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

1864150 SDC 2,5/14-PV-5,0-ZB**20 Type approval and special tests****21 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
Locking	no
Connection method	Screwless terminal points

1864150 SDC 2,5/14-PV-5,0-ZB

22 Approvals / Certificates

IECEE CB Scheme 				
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	300 V	12 A	24 - 12	-
Usegroup D				
	300 V	10 A	24 - 12	-
EAC 				
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	320 V	12 A	-	0.2 - 2.5
UL Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup F				
	250 V	12 A	24 - 12	-

1864150 SDC 2,5/14-PV-5,0-ZB**23 Commercial Data**

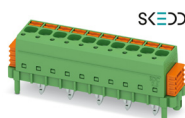
Item no.	1864150
Type	SDC 2,5/14-PV-5,0-ZB
Pieces per package	50
Net weight	15.8 g
GTIN	4055626210551
	Information that applies locally, see link on page 1

24 Accessories

Description	Item 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
	0804183	SK 5/3,8:FORTL.ZAHLEN
	0825124	SK 3,8 REEL P5 WH CUS
	0803906	SK U/3,8 WH:UNBEDRUCKT
	0805218	SK 3,8 WH:REEL
Test plug, consisting of 1.0 mm Ø test pin and 2.0 mm Ø socket	1944372	MPS-MT 1-S
Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm ² ... 6.0 mm ² , lateral entry, trapezoidal crimp	1212034	CRIMPFOX 6
	3201275	Al 0,5 -10 WH
	3201288	Al 0,75-10 GY
	3200182	Al 1 -10 RD
	3200195	Al 1,5 -10 BK
	3202533	Al 2,5 -10 BU
	3202494	A 0,5 -10
	3200234	A 0,75-10
	3200250	A 1 -10
	3200276	A 1,5 -10

1864150 SDC 2,5/14-PV-5,0-ZB

25 Combination tests



SDC 2,5/..-PV

IEC 61984	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 1st level	1.1 mΩ			
Contact resistance R ₁ 2nd level				
Insertion/withdrawal cycles	25			
Contact resistance R ₂	1.1 mΩ			
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV			
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV			
Insulation resistance Requirements > 5 MΩ	> 5 MΩ			
Thermal tests (C)				
Tested number of positions	16			
Tested conductor cross section	2.5 mm ²			
Test current	12 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)	4.8 kV			
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV			
Environmental and endurance tests (E)				
Specification	IEC 61984:2008-10			
Degree of protection	Finger safety with IP20 test finger			