

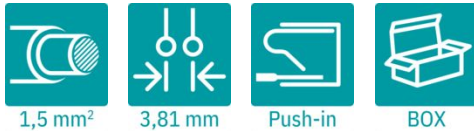
DD31PS 1,5/20-3,81-X - PCB connector



1500441

<https://www.phoenixcontact.com/us/products/1500441>

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PCB connector, nominal cross section: 1.5 mm², color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Sn, contact connection type: Socket, number of rows: 2, number of positions: 20, product range: DD31PS 1,5/..., pitch: 3.81 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, locking clip: - without locking clip, plug-in system: CONNEXIS DD, locking: Snap-in locking, mounting method: Latching flange, type of packaging: packed in cardboard

Your advantages

- Time saving push-in connection, tools not required
- Intuitive operation due to color-coded actuating push button
- Operation and conductor connection from one direction enable integration into front of device
- Contacts arranged in a double row enable high packing density in a compact area
- Intuitive locking mechanism prevents accidental disconnection

Commercial data

Item number	1500441
Packing unit	50 pc
Minimum order quantity	50 pc
Sales key	AA02
Product key	AABFUF
GTIN	4063151955595
Weight per piece (including packing)	19.614 g
Weight per piece (excluding packing)	19.614 g
Customs tariff number	85366990
Country of origin	CN

DD31PS 1,5/20-3,81-X - PCB connector



1500441

<https://www.phoenixcontact.com/us/products/1500441>

Technical data

Product properties

Product type	PCB connector
Product family	DD31PS 1,5/..
Product line	CONNEXIS Connectors S
Number of positions	20
Pitch	3.81 mm
Number of rows	2

Electrical properties

Properties

Nominal current I_N	8 A
Nominal voltage U_N	160 V
Contact resistance	1.8 mΩ
Rated voltage (III/3)	160 V
Rated surge voltage (III/3)	2.5 kV
Rated voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
Rated voltage (II/2)	320 V
Rated surge voltage (II/2)	2.5 kV

Connection data

Connection technology

Connector system	CONNEXIS DD
Nominal cross section	1.5 mm ²
Contact connection type	Socket

Interlock

Locking type	Snap-in locking
Mounting type	Latching flange

Conductor connection

Connection method	Push-in spring connection
Conductor/PCB connection direction	0 °
Conductor cross-section rigid	0.2 mm ² ... 1.5 mm ²
Conductor cross-section flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross-section AWG	24 ... 16
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
Stripping length	10 mm

Material specifications

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1500441

<https://www.phoenixcontact.com/us/products/1500441>

Material data - contact

Note	WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface characteristics	hot-dip tin-plated
Metal surface terminal point (top layer)	Tin (4 µm - 8 µm Sn)
Metal surface contact area (top layer)	Tin (4 µm - 8 µm Sn)

Material data - housing

Color (Housing)	black (9005)
Insulating material	PBT
Insulating material group	II
CTI according to IEC 60112	$400 \leq CTI < 600$
Flammability rating according to UL 94	V0

Material data – actuating element

Color (Actuating element)	orange (2003)
Insulating material	PBT
Insulating material group	IIIa
CTI according to IEC 60112	275
Flammability rating according to UL 94	V0

Dimensions

Dimensional drawing	
Pitch	3.81 mm
Width [w]	52 mm
Height [h]	15.2 mm
Length [l]	28.85 mm

Notes

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.
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Mechanical tests

Conductor connection

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

Test for conductor damage and slackening

Specification	IEC 60999-1:1999-11
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1500441

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Result	Test passed
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Repeated connection and disconnection

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

Pull-out test

Specification	IEC 60999-1:1999-11
Conductor cross-section/conductor type/tractive force setpoint/actual value	0.2 mm ² / solid / > 10 N
	0.2 mm ² / flexible / > 10 N
	1.5 mm ² / solid / > 40 N
	1.5 mm ² / flexible / > 40 N

Insertion and withdrawal forces

Specification	IEC 60512-13-2:2006-02
Result	Test passed
No. of cycles	25
Insertion strength per pos. approx.	5 N
Withdraw strength per pos. approx.	3 N

Resistance of inscriptions

Specification	IEC 60068-2-70:1995-12
Result	Test passed

Polarization and coding

Specification	IEC 60512-13-5:2006-02
Result	Test passed

Visual inspection

Specification	IEC 60512-1-1:2002-02
Result	Test passed

Dimension check

Specification	IEC 60512-1-2:2002-02
Result	Test passed

Environmental and real-life conditions

Durability test

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	2.95 kV
Contact resistance R ₁	1.8 mΩ
Contact resistance R ₂	1.9 mΩ
Insertion/withdrawal cycles	25

Climatic test

Specification	EN ISO 22479:2022-06
Corrosive stress	0.2 dm ³ SO ₂ on 300 dm ³ /40 °C/1 cycle

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1500441

<https://www.phoenixcontact.com/us/products/1500441>

Thermal stress	105 °C/168 h
Power-frequency withstand voltage	1.39 kV

Vibration test

Specification	IEC 60068-2-6:2007-12
Frequency	10 - 150 - 10 Hz
Sweep speed	1 octave/min
Amplitude	0.35 mm (10 Hz ... 60.1 Hz)
Acceleration	50 m/s ² (60.1 Hz ... 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis

Shocks

Specification	IEC 60068-2-27:2008-02
Pulse shape	Semi-sinusoidal
Acceleration	5g
Shock duration	11 ms
Test directions	X-, Y- and Z-axis (pos. and neg.)

Railway application: Shocks

Acceleration	5g
Shock duration	11 ms
Test directions	X-, Y- and Z-axis (pos. and neg.)

Ambient conditions

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 ... 105 °C (dependent on the derating curve)

Electrical tests

Thermal test | Test group C

Specification	IEC 60512-5-1:2002-02
Tested number of positions	20

Insulation resistance

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

Air clearances and creepage distances |

Specification	IEC 60664-1:2020-05
Insulating material group	II
Comparative tracking index (IEC 60112)	CTI ≥400 to <600
Rated insulation voltage (III/3)	160 V
Rated surge voltage (III/3)	2.5 kV
minimum clearance value - non-homogenous field (III/3)	1.5 mm

DD31PS 1,5/20-3,81-X - PCB connector



1500441

<https://www.phoenixcontact.com/us/products/1500441>

minimum creepage distance (III/3)	2.2 mm
Rated insulation voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
minimum clearance value - non-homogenous field (III/2)	1.5 mm
minimum creepage distance (III/2)	1.5 mm
Rated insulation voltage (II/2)	320 V
Rated surge voltage (II/2)	2.5 kV
minimum clearance value - non-homogenous field (II/2)	1.5 mm
minimum creepage distance (II/2)	2.2 mm

Packaging specifications

Type of packaging	packed in cardboard
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1500441

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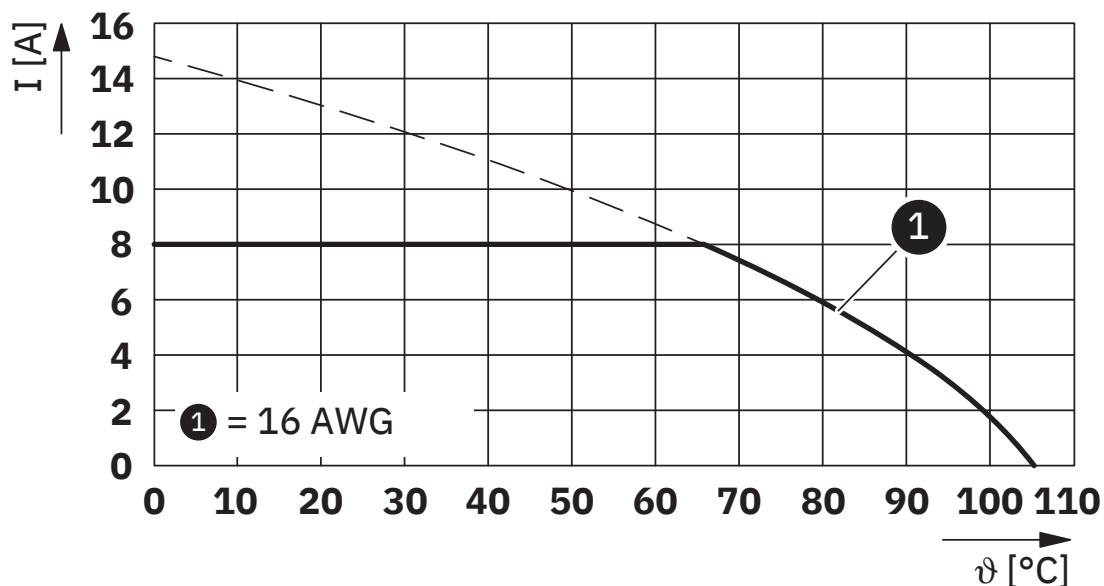
Drawings

Diagram



Type: DD31PS 1,5/...-3,81-X with DD31H 2,2/...-H-3,81-X

Diagram



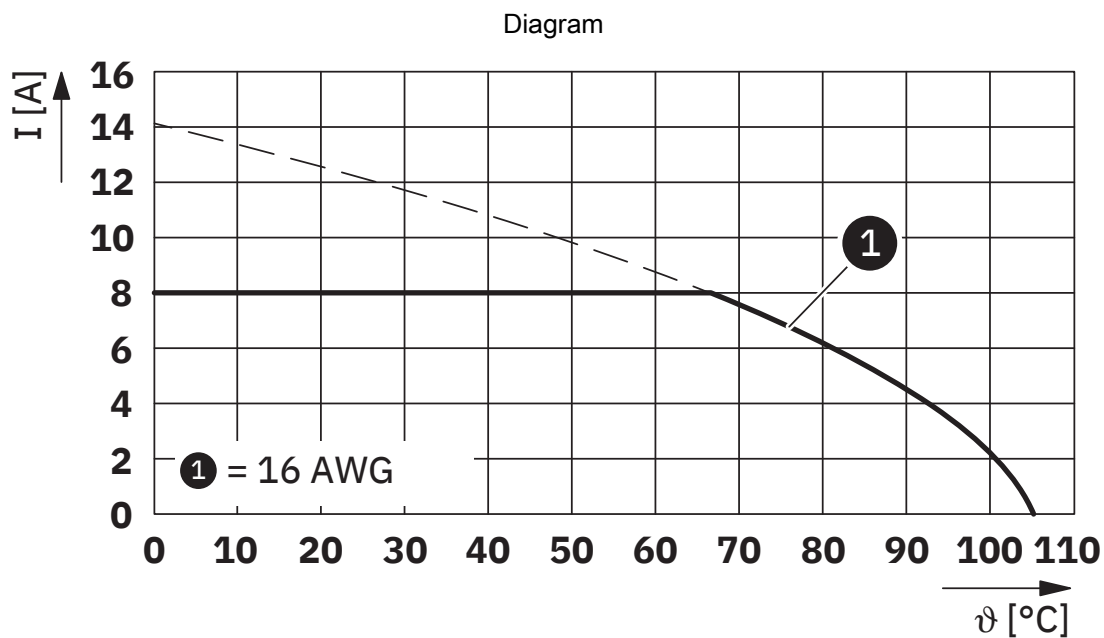
Type: DD31PS 1,5/...-3,81-X with DD31H 2,2/...-V-3,81-X

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1500441

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Type: DD31PS 1,5/...-3,81-X with DD31H 2,2/...-FH-3,81-X

DD31PS 1,5/20-3,81-X - PCB connector



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1500441>

 cULus Recognized Approval ID: E60425-20240617				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
B				
Standard	150 V	8 A	24 - 16	-
C				
Standard	150 V	8 A	24 - 16	-
D				
Standard	150 V	15 A	24 - 16	-
Alternative 1	300 V	10 A	24 - 16	-

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1500441

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Classifications

ECLASS

ECLASS-13.0	27460202
ECLASS-15.0	27460202

ETIM

ETIM 10.0	EC002638
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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