

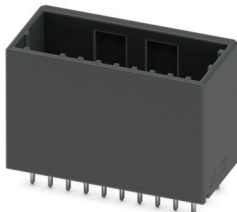
# DD21H 0,85/20-V-2,5-X - PCB header



1378333

<https://www.phoenixcontact.com/us/products/1378333>

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PCB headers, color: black, nominal current: 5 A, rated voltage (III/2): 160 V, contact surface: Sn, contact connection type: Pin, number of rows: 2, number of positions: 20, product range: DD21H 0,85/..-V, pitch: 2.5 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.4 mm, number of solder pins per potential: 1, plug-in system: CONNEXIS DD, Pin connector pattern alignment: Standard, locking: Snap-in locking, mounting method: Engagement nose, type of packaging: packed in cardboard

## Your advantages

- Well-known mounting principle allows worldwide use
- Vertical connection enables multi-row arrangement on the PCB
- Easy PCB replacement thanks to plug-in modules
- Intuitive locking mechanism prevents accidental disconnection

## Commercial data

Item number	1378333
Packing unit	50 pc
Minimum order quantity	50 pc
Note	Made to order (non-returnable)
Sales key	AA01
Product key	AAASXC
GTIN	4063151746179
Weight per piece (including packing)	10.59 g
Weight per piece (excluding packing)	10.59 g
Customs tariff number	85366990
Country of origin	CN

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## Technical data

### Product properties

Product type	PCB headers
Product family	DD21H 0,85/..-V
Product line	CONNEXIS Connectors XS
Number of positions	20
Pitch	2.5 mm
Number of rows	2
Pin layout	Linear pinning
Solder pins per potential	1

### Electrical properties

#### Properties

Nominal current $I_N$	5 A
Nominal voltage $U_N$	160 V
Contact resistance	2 m $\Omega$
Rated voltage (III/3)	40 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)	200 V
Rated surge voltage (II/2)	2.5 kV

### Mounting

Mounting type	Wave soldering
Pin layout	Linear pinning

### Material specifications

#### 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	Tin-plated
Metal surface contact area (top layer)	Tin (3 $\mu\text{m}$ - 5 $\mu\text{m}$ Sn)
Metal surface contact area (middle layer)	Nickel (1.3 $\mu\text{m}$ - 3 $\mu\text{m}$ Ni)
Metal surface soldering area (top layer)	Tin (3 $\mu\text{m}$ - 5 $\mu\text{m}$ Sn)
Metal surface soldering area (middle layer)	Nickel (1.3 $\mu\text{m}$ - 3 $\mu\text{m}$ Ni)

#### Material data - housing

Color (Housing)	black (9005)
Insulating material	PBT
Insulating material group	II

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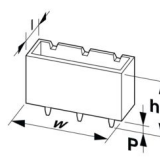
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CTI according to IEC 60112	$400 \leq CTI < 600$
Flammability rating according to UL 94	V0

## Notes

Note on the contact	These connectors conform to DIN EN 61984, connectors without switching power (COC). When used for their intended purpose, they must not be plugged in or disconnected live or under load.
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## Dimensions

Dimensional drawing	
Pitch	2.5 mm
Width [w]	27.7 mm
Height [h]	21.19 mm
Length [l]	13.2 mm
Installed height	17.79 mm
Solder pin length [P]	3.4 mm
Pin dimensions	0.5 x 0.5 mm

## PCB design

Hole diameter	2 mm
	0.8 mm

## Mechanical tests

### Visual inspection

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

### Dimension check

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

### 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

### Contact holder in insert

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

## 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)	40 V
Rated surge voltage (III/3)	2.5 kV
minimum clearance value - non-homogenous field (III/3)	1.5 mm
minimum creepage distance (III/3)	1.6 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)	200 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)	1.5 mm

## 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 <sub>1</sub>	2 mΩ
Contact resistance R <sub>2</sub>	2 mΩ
Insertion/withdrawal cycles	25

### Climatic test

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Specification	ISO 6988:1985-02
Corrosive stress	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/1 cycle
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 <sup>2</sup> (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	Half-sine
Acceleration	30g
Shock duration	11 ms
Test directions	X-, Y- and Z-axis (pos. and neg.)

## Railway application: Shocks

Acceleration	30g
Shock duration	11 ms
Test directions	X-, Y- and Z-axis (pos. and neg.)

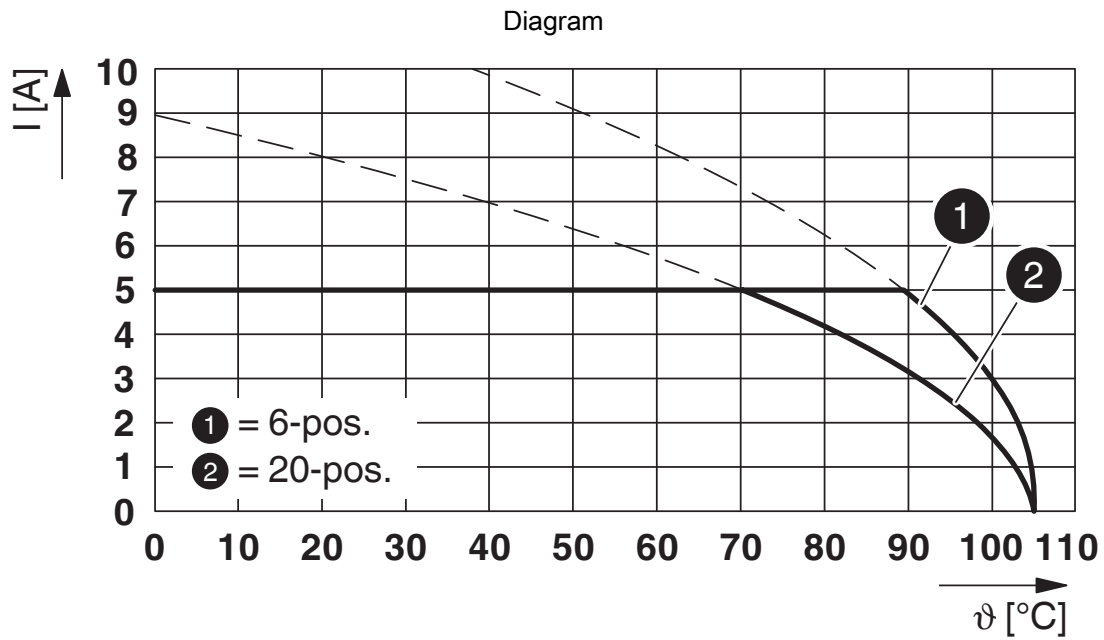
## Ambient conditions

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C
Ambient temperature (operation)	-55 °C ... 105 °C (dependent on the derating curve)

## Packaging specifications

Type of packaging	packed in cardboard
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## Drawings



Type: DD21PC 0,85/...-2,5-X with DD21H 0,85/...-V-2,5-X

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1378333>

 <b>UL Recognized</b> Approval ID: E118976-20240611				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
keine				
	125 V	3.2 A	-	-

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## Classifications

### ECLASS

ECLASS-13.0	27460201
ECLASS-15.0	27460201

### ETIM

ETIM 10.0	EC002637
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### UNSPSC

UNSPSC 21.0	39121400
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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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