

MCDN 1,5/12-G1-3,5 RNP14THR - PCB header



1953305

<https://www.phoenixcontact.com/us/products/1953305>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



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

PCB headers, nominal cross section: 1.5 mm², color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Sn, contact connection type: Pin, number of potentials: 24, number of rows: 2, number of positions: 12, number of connections: 24, product range: MCDN 1,5/..-G1-RN-THR, pitch: 3.5 mm, mounting: THR soldering / wave soldering, pin layout: Linear pinning, solder pin [P]: 1.4 mm, number of solder pins per potential: 1, plug-in system: COMBICON FMC 1,5 - MCDN 1,5, Pin connector pattern alignment: Standard, locking: Snap-in locking, mounting method: Engagement nose, type of packaging: packed in cardboard, Article with engagement nose. The pin length is 14 mm. User information and design recommendations on Through Hole Reflow Technology can be found at: "Downloads"

Your advantages

- Designed for integration into the SMT soldering process
- Intuitive locking mechanism prevents accidental disconnection
- Conductor connection on several levels enables higher contact density

Commercial data

| | |
|--------------------------------------|--------------------------------|
| Item number | 1953305 |
| Packing unit | 50 pc |
| Minimum order quantity | 50 pc |
| Note | Made to order (non-returnable) |
| Sales key | AA02 |
| Product key | AABTGA |
| GTIN | 4017918918989 |
| Weight per piece (including packing) | 8.42 g |
| Weight per piece (excluding packing) | 7.839 g |
| Customs tariff number | 85366930 |
| Country of origin | DE |

MCDN 1,5/12-G1-3,5 RNP14THR - PCB header



1953305

<https://www.phoenixcontact.com/us/products/1953305>

Technical data

Product properties

| | |
|---------------------------|--------------------------------------------|
| Product type | PCB headers |
| Product family | MCDN 1,5/..-G1-RN-THR |
| Product line | COMBICON Connectors S |
| Type | Component suitable for through hole reflow |
| Number of positions | 12 |
| Pitch | 3.5 mm |
| Number of connections | 24 |
| Number of rows | 2 |
| Number of potentials | 24 |
| Mounting type | Engagement nose |
| Pin layout | Linear pinning |
| Solder pins per potential | 1 |

Electrical properties

Properties

| | |
|-----------------------------|----------------|
| Nominal current I_N | 8 A |
| Nominal voltage U_N | 160 V |
| Contact resistance | 2.1 m Ω |
| 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) | 250 V |
| Rated surge voltage (II/2) | 2.5 kV |

Mounting

| | |
|---------------|--------------------------------|
| Mounting type | THR soldering / wave soldering |
| Pin layout | Linear pinning |

Processing notes

| | |
|----------------------------------|-----------------------|
| Process | Reflow/wave soldering |
| Moisture Sensitive Level | MSL 1 |
| Classification temperature T_c | 260 °C |
| Solder cycles in the reflow | 3 |

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 |

MCDN 1,5/12-G1-3,5 RNP14THR - PCB header



1953305

<https://www.phoenixcontact.com/us/products/1953305>

| | |
|---------------------------------------------|-------------------------|
| Surface characteristics | Tin-plated |
| Metal surface contact area (top layer) | Tin (3 µm - 5 µm Sn) |
| Metal surface contact area (middle layer) | Nickel (1 µm - 3 µm Ni) |
| Metal surface soldering area (top layer) | Tin (3 µm - 5 µm Sn) |
| Metal surface soldering area (middle layer) | Nickel (1 µm - 3 µm Ni) |

Material data - housing

| | |
|----------------------------------------|--------------|
| Color (Housing) | black (9005) |
| Insulating material | LCP |
| Insulating material group | IIIa |
| CTI according to IEC 60112 | 175 |
| Flammability rating according to UL 94 | V0 |

Notes

| | |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Dimensions

| | |
|-----------------------|--------------|
| Dimensional drawing | |
| Pitch | 3.5 mm |
| Width [w] | 45.7 mm |
| Height [h] | 16.6 mm |
| Length [l] | 13.3 mm |
| Installed height | 15.2 mm |
| Solder pin length [P] | 1.4 mm |
| Pin dimensions | 0.8 x 0.8 mm |

PCB design

| | |
|---------------|---------|
| Pin spacing | 3.50 mm |
| Hole diameter | 1.4 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 |

MCDN 1,5/12-G1-3,5 RNP14THR - PCB header



1953305

<https://www.phoenixcontact.com/us/products/1953305>

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 |
| Contact holder in insert Requirements >20 N | Test passed |

Insertion and withdrawal forces

| | |
|-------------------------------------|------------------------|
| Specification | IEC 60512-13-2:2006-02 |
| Result | Test passed |
| No. of cycles | 25 |
| Insertion strength per pos. approx. | 8 N |
| Withdraw strength per pos. approx. | 6 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 60664-1:2007-04 |
| Insulating material group | IIIa |
| Comparative tracking index (IEC 60112) | CTI 175 |
| 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 |
| minimum creepage distance (III/3) | 2.5 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) | 1.6 mm |
| Rated insulation voltage (II/2) | 250 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) | 2.5 mm |

1953305

<https://www.phoenixcontact.com/us/products/1953305>

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 | 2.1 m Ω |
| Contact resistance R_2 | 2.4 m Ω |
| Insertion/withdrawal cycles | 25 |
| Insulation resistance, neighboring positions | > 5 M Ω |

Climatic test

| | |
|-----------------------------------|---------------------------------------------------------------------------|
| Specification | ISO 6988:1985-02 |
| Corrosive stress | 0.2 dm ³ SO ₂ on 300 dm ³ /40 °C/1 cycle |
| Thermal stress | 100 °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 | 5g (60.1 Hz ... 150 Hz) |
| Test duration per axis | 2.5 h |
| Test directions | X-, Y- and Z-axis |

Ambient conditions

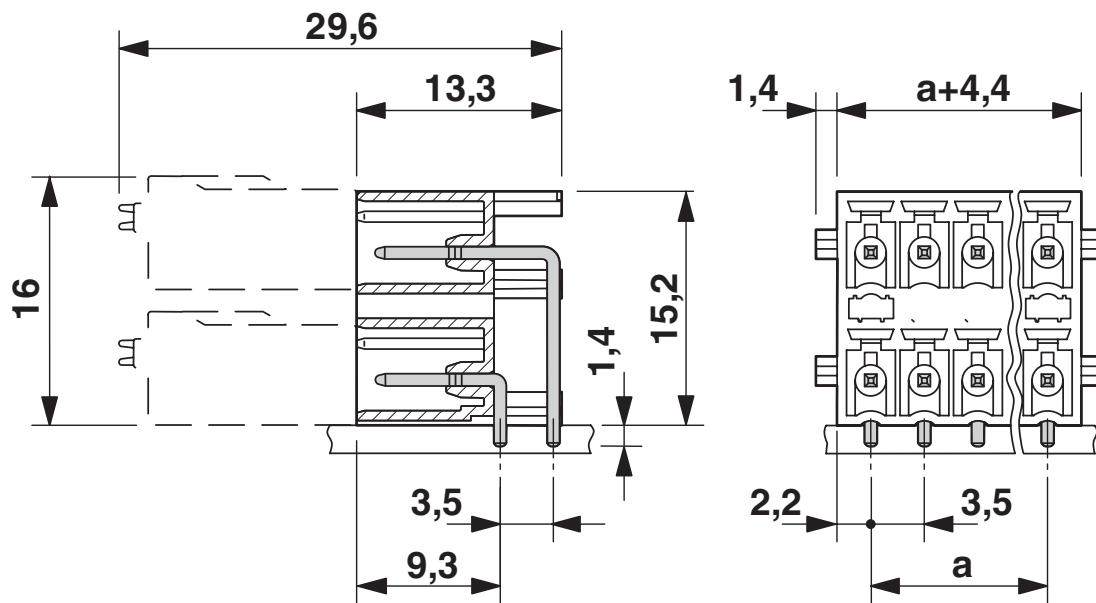
| | |
|-----------------------------------------|-----------------------------------------------------|
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Relative humidity (storage/transport) | 30 % ... 70 % |
| Ambient temperature (assembly) | -5 °C ... 100 °C |
| Ambient temperature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

Packaging specifications

| | |
|-------------------|---------------------|
| Type of packaging | packed in cardboard |
|-------------------|---------------------|

Drawings

Dimensional drawing



Diagram



Type: FMC 1,5/...-ST-3,5-RF with MCDN 1,5/...-G1-3,5 RNP..THR

MCDN 1,5/12-G1-3,5 RNP14THR - PCB header

1953305

<https://www.phoenixcontact.com/us/products/1953305>



Drilling plan/solder pad geometry



*) \leq 8-pos. = 1.3 / $>$ 8-pos. = 1.4

MCDN 1,5/12-G1-3,5 RNP14THR - PCB header



1953305

<https://www.phoenixcontact.com/us/products/1953305>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1953305>

|  cULus Recognized Approval ID: E60425-20110128 | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| B | 150 V | 8 A | - | - |
| D | 150 V | 8 A | - | - |

|  VDE Zeichengenehmigung Approval ID: 40011723 | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | 160 V | 8 A | - | - |

MCDN 1,5/12-G1-3,5 RNP14THR - PCB header



1953305

<https://www.phoenixcontact.com/us/products/1953305>

Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27460201 |
| ECLASS-15.0 | 27460201 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC002637 |
|-----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 39121400 |
|-------------|----------|

MCDN 1,5/12-G1-3,5 RNP14THR - PCB header



1953305

<https://www.phoenixcontact.com/us/products/1953305>

Environmental product compliance

EU RoHS

| | |
|-----------------------------------------|--------------------|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |
|-----------------------------------------|--------------------|

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% |
|-------------------------------------|----------------------------|

Phoenix Contact 2026 © - all rights reserved
<https://www.phoenixcontact.com>

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com