

# DMC 0,5/ 2-G1SH-2,54P20THR24 - PCB header



1097546

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PCB headers, color: black, nominal current: 5 A, rated voltage (III/2): 160 V, contact surface: Au, contact connection type: Pin, number of positions: 2, product range: DMC 0,5/..-G1-SH-THR, pitch: 2.54 mm, mounting: THR soldering / wave soldering, solder pin [P]: 2 mm, plug-in system: COMBICON DFMC 0,5 shielded, Electrical properties: shielded, Pin connector pattern alignment: Standard, locking: shielded connection, mounting method: without, type of packaging: 24 mm wide tape, Suitable for CAT5

## Your advantages

- Satisfies CAT5 requirements in accordance with EN 50173 and ISO/IEC 11801

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1097546       |
| Packing unit                         | 300 pc        |
| Minimum order quantity               | 300 pc        |
| Sales key                            | AA01          |
| Product key                          | AAAJAA        |
| GTIN                                 | 4055626938936 |
| Weight per piece (including packing) | 2.639 g       |
| Weight per piece (excluding packing) | 2.22 g        |
| Customs tariff number                | 85366930      |
| Country of origin                    | PL            |

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## Technical data

### Product properties

|                           |                        |
|---------------------------|------------------------|
| Product type              | PCB headers            |
| Product family            | DMC 0,5/...-G1-SH-THR  |
| Product line              | COMBICON Connectors XS |
| Number of positions       | 2                      |
| Pitch                     | 2.54 mm                |
| Electrical characteristic | shielded               |

### Electrical properties

#### Properties

|                             |          |
|-----------------------------|----------|
| Nominal current $I_N$       | 5 A      |
| Nominal voltage $U_N$       | 160 V    |
| Contact resistance          | 4.8 mΩ   |
| Rated voltage (III/3)       | 50 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)        | 160 V    |
| Rated surge voltage (II/2)  | 2.5 kV   |
| Electrical characteristic   | shielded |

#### Data transmission

|                                         |                  |
|-----------------------------------------|------------------|
| Signal type                             | EtherCAT®        |
| Frequency range                         | to 100 MHz       |
| Transmission medium                     | Copper           |
| Transmission characteristics (category) | CAT5 (IEC 11801) |
| Data transmission rate                  | 100 Mbps         |
| Power transmission                      | PoE+             |

### Mounting

|               |                                |
|---------------|--------------------------------|
| Mounting type | THR soldering / wave soldering |
|---------------|--------------------------------|

#### 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 |
|------|----------------------------------------------------------------------------------|

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|                                             |                        |
|---------------------------------------------|------------------------|
| Contact material                            | Cu alloy               |
| Surface characteristics                     | Completely gold-plated |
| Metal surface contact area (top layer)      | Gold (0.25 Au)         |
| Metal surface contact area (middle layer)   | Nickel (2 - 4 µm Ni)   |
| Metal surface soldering area (top layer)    | Gold (0.25 Au)         |
| Metal surface soldering area (middle layer) | Nickel (2 - 4 µm Ni)   |

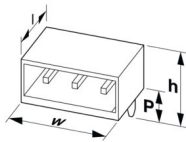
## Material data - housing

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

|                     |                                                                                                             |
|---------------------|-------------------------------------------------------------------------------------------------------------|
| Note on application | The item is qualified for CAT5 Ethernet applications. For this reason, it is suited for use in IoT devices. |
|---------------------|-------------------------------------------------------------------------------------------------------------|

## Dimensions

|                       |                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing   |  |
| Pitch                 | 2.54 mm                                                                              |
| Width [w]             | 9.66 mm                                                                              |
| Height [h]            | 10.29 mm                                                                             |
| Length [l]            | 11.54 mm                                                                             |
| Installed height      | 8.29 mm                                                                              |
| Solder pin length [P] | 2 mm                                                                                 |

## PCB design

|               |        |
|---------------|--------|
| Hole diameter | 1.2 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 |
|---------------|------------------------|

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|                                                |                        |
|------------------------------------------------|------------------------|
| 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<br>Requirements >20 N | Test passed            |
| Insertion and withdrawal forces                |                        |
| Result                                         | Test passed            |
| No. of cycles                                  | 100                    |
| Insertion strength per pos. approx.            | 3 N                    |
| Withdraw strength per pos. approx.             | 3 N                    |

## Electrical tests

### Thermal test | Test group C

|                            |                       |
|----------------------------|-----------------------|
| Specification              | IEC 60512-5-1:2002-02 |
| Tested number of positions | 2                     |

### 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)                       | 50 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)                      | 1.9 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)                        | 160 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)                       | 1.6 mm              |

## Environmental and real-life conditions

### Vibration test

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60068-2-6:2007-12 |
|---------------|-----------------------|

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

## Durability test

|                                              |                       |
|----------------------------------------------|-----------------------|
| Specification                                | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level       | 2.95 kV               |
| Contact resistance R <sub>1</sub>            | 4.8 mΩ                |
| Contact resistance R <sub>2</sub>            | 4.9 mΩ                |
| Insertion/withdrawal cycles                  | 100                   |
| Insulation resistance, neighboring positions | > 5 MΩ                |

## Climatic test

|                                   |                                                                           |
|-----------------------------------|---------------------------------------------------------------------------|
| 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                    | 80 °C/168 h                                                               |
| Power-frequency withstand voltage | 1.39 kV                                                                   |

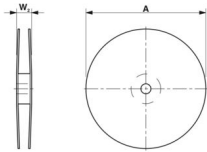
## Shocks

|                 |                                   |
|-----------------|-----------------------------------|
| Specification   | IEC 60068-2-27:2008-02            |
| Pulse shape     | Semi-sinusoidal                   |
| Acceleration    | 350 m/s <sup>2</sup>              |
| Shock duration  | 11 ms                             |
| Test directions | X-, Y- and Z-axis (pos. and neg.) |

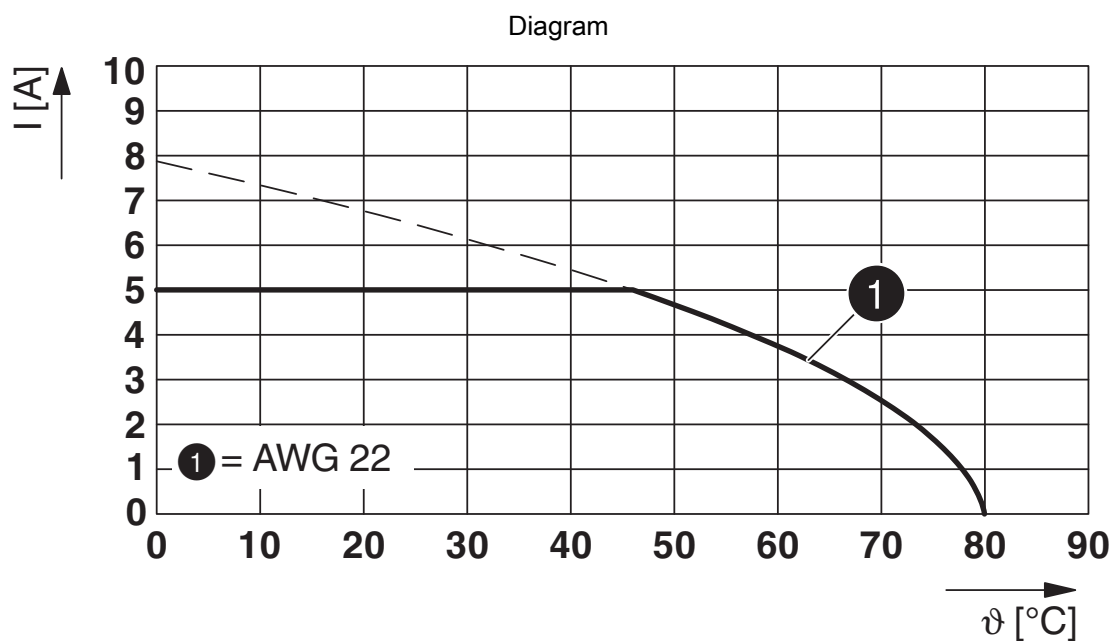
## Ambient conditions

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

## Packaging specifications

|                             |                                                                                      |
|-----------------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing         |  |
| Type of packaging           | 24 mm wide tape                                                                      |
| [W] tape width              | 24 mm                                                                                |
| [W2] coil overall dimension | ≤ 30.4 mm                                                                            |
| [A] coil diameter           | ≤ 330 mm                                                                             |
| Outer packaging type        | Transparent-Bag                                                                      |

## Drawings



Type: DMCC 0,5/...-ST-SH-2,54 with DMC 0,5/...-G1-SH-2,54P...THRR...

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1097546>

|  <b>cULus Recognized</b><br>Approval ID: E60425-19920306 |                       |                       |                   |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                           | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B                                                                                                                                         | 150 V                 | 6 A                   | -                 | -                           |
| C                                                                                                                                         | 50 V                  | 6 A                   | -                 | -                           |

|  <b>VDE report with production monitoring</b><br>Approval ID: 40042389 |                       |                       |                   |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                                         | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine                                                                                                                                                   | 160 V                 | 6 A                   | -                 | -                           |

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## Classifications

### ECLASS

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

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002637 |
|----------|----------|

### UNSPSC

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

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## 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%               |

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