

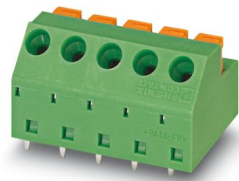
# MFKDSP/ 2-5,08 - PCB terminal block



1790283

<https://www.phoenixcontact.com/us/products/1790283>

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Printed circuit board terminal, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 1 mm<sup>2</sup>, number of potentials: 2, number of rows: 1, number of positions per row: 2, product range: MFKDSP, pitch: 5.08 mm, connection method: Push-in spring connection, mounting: Wave soldering, conductor/PCB connection direction: 45 °, color: green, Pin layout: Linear pinning, Solder pin [P]: 3.3 mm, number of solder pins per potential: 2, type of packaging: packed in cardboard

## Your advantages

- Time saving push-in connection, tools not required
- Defined contact force ensures that contact remains stable over the long term
- Intuitive operation due to color-coded actuating push button
- Angled connection enables multi-row arrangement on the PCB
- Quick and convenient testing using integrated test option
- Two solder pins reduce the mechanical strain on the soldering spots

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1790283       |
| Packing unit                         | 50 pc         |
| Minimum order quantity               | 50 pc         |
| Sales key                            | AA12          |
| Product key                          | AALFFA        |
| GTIN                                 | 4017918044213 |
| Weight per piece (including packing) | 2.516 g       |
| Weight per piece (excluding packing) | 2.058 g       |
| Customs tariff number                | 85369010      |
| Country of origin                    | PL            |

## Technical data

### Product properties

|                           |                                |
|---------------------------|--------------------------------|
| Product type              | Printed circuit board terminal |
| Product family            | MFKDSP                         |
| Product line              | COMBICON Terminals S           |
| Type                      | PC termination block           |
| Number of positions       | 2                              |
| Pitch                     | 5.08 mm                        |
| Number of connections     | 2                              |
| Number of rows            | 1                              |
| Number of potentials      | 2                              |
| Pin layout                | Linear pinning                 |
| Solder pins per potential | 2                              |

### Electrical properties

#### Properties

|                             |       |
|-----------------------------|-------|
| Nominal current $I_N$       | 12 A  |
| Nominal voltage $U_N$       | 320 V |
| Rated voltage (III/3)       | 250 V |
| Rated surge voltage (III/3) | 4 kV  |
| Rated voltage (III/2)       | 320 V |
| Rated surge voltage (III/2) | 4 kV  |
| Rated voltage (II/2)        | 630 V |
| Rated surge voltage (II/2)  | 4 kV  |

### Connection data

#### Connection technology

|                       |                      |
|-----------------------|----------------------|
| Type                  | PC termination block |
| Nominal cross section | 1 mm <sup>2</sup>    |

#### Conductor connection

|                                                                       |                                               |
|-----------------------------------------------------------------------|-----------------------------------------------|
| Connection method                                                     | Push-in spring connection                     |
| Conductor cross-section rigid                                         | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>   |
| Conductor cross-section flexible                                      | 0.2 mm <sup>2</sup> ... 1 mm <sup>2</sup>     |
| Conductor cross-section AWG                                           | 24 ... 16                                     |
| Conductor cross-section flexible, with ferrule without plastic sleeve | 0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup> |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve  | 0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup> |
| Stripping length                                                      | 10 mm                                         |

### 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                            | Steel/copper                                                                     |
| Surface characteristics                     | Tin-plated                                                                       |
| Metal surface terminal point (top layer)    | Tin (5 - 7 µm Sn)                                                                |
| Metal surface terminal point (middle layer) | Copper (2 - 5 µm Cu)                                                             |
| Metal surface soldering area (top layer)    | Tin (5 - 7 µm Sn)                                                                |
| Metal surface soldering area (middle layer) | Copper (2 - 5 µm Cu)                                                             |

### Material data - housing

|                                                                   |              |
|-------------------------------------------------------------------|--------------|
| Color (Housing)                                                   | green (6021) |
| Insulating material                                               | PA           |
| Insulating material group                                         | I            |
| CTI according to IEC 60112                                        | 600          |
| Flammability rating according to UL 94                            | 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       |

### Material data – actuating element

|                                        |               |
|----------------------------------------|---------------|
| Color (Actuating element)              | orange (2003) |
| Insulating material                    | PA            |
| Insulating material group              | I             |
| CTI according to IEC 60112             | 600           |
| Flammability rating according to UL 94 | V0            |

## Dimensions

|                       |                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing   |  |
| Pitch                 | 5.08 mm                                                                              |
| Width [w]             | 10.16 mm                                                                             |
| Height [h]            | 16.22 mm                                                                             |
| Length [l]            | 16.2 mm                                                                              |
| Installed height      | 12.92 mm                                                                             |
| Solder pin length [P] | 3.3 mm                                                                               |
| Pin dimensions        | 0.5 x 1 mm                                                                           |

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## PCB design

|               |          |
|---------------|----------|
| Pin spacing   | 10.16 mm |
| Hole diameter | 1.3 mm   |

## Mechanical tests

### Test for conductor damage and slackening

|               |                     |
|---------------|---------------------|
| 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 <sup>2</sup> / solid / > 10 N    |
|                                                                             | 0.2 mm <sup>2</sup> / flexible / > 10 N |
|                                                                             | 1.5 mm <sup>2</sup> / solid / > 40 N    |
|                                                                             | 1 mm <sup>2</sup> / flexible / > 35 N   |

## Electrical tests

### Temperature-rise test

|                                   |                                                                                                                                |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Specification                     | IEC 60947-7-4:2019-01                                                                                                          |
| Requirement temperature-rise test | The sum of ambient temperature and temperature rise of the PCB terminal block shall not exceed the upper limiting temperature. |

### Short-time withstand current

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60947-7-4:2019-01 |
|---------------|-----------------------|

### Insulation resistance

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

### Air clearances and creepage distances |

|                                                        |                                               |
|--------------------------------------------------------|-----------------------------------------------|
| Specification                                          | IEC 60947-1:2007-06 + A1:2010-12 + A2:2014-09 |
| Insulating material group                              | I                                             |
| Comparative tracking index (IEC 60112)                 | CTI 600                                       |
| Rated insulation voltage (III/3)                       | 250 V                                         |
| Rated surge voltage (III/3)                            | 4 kV                                          |
| minimum clearance value - non-homogenous field (III/3) | 3 mm                                          |
| minimum creepage distance (III/3)                      | 3.2 mm                                        |
| Rated insulation voltage (III/2)                       | 320 V                                         |
| Rated surge voltage (III/2)                            | 4 kV                                          |
| minimum clearance value - non-homogenous field (III/2) | 3 mm                                          |
| minimum creepage distance (III/2)                      | 3 mm                                          |
| Rated insulation voltage (II/2)                        | 630 V                                         |
| Rated surge voltage (II/2)                             | 4 kV                                          |
| minimum clearance value - non-homogenous field (II/2)  | 3 mm                                          |

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|                                  |        |
|----------------------------------|--------|
| minimum creepage distance (II/2) | 3.2 mm |
|----------------------------------|--------|

## Environmental and real-life conditions

### 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           |

### Glow-wire test

|                  |                        |
|------------------|------------------------|
| Specification    | IEC 60695-2-10:2013-04 |
| Temperature      | 850 °C                 |
| Time of exposure | 5 s                    |

### Aging

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60947-7-4:2019-01 |
|---------------|-----------------------|

### Ambient conditions

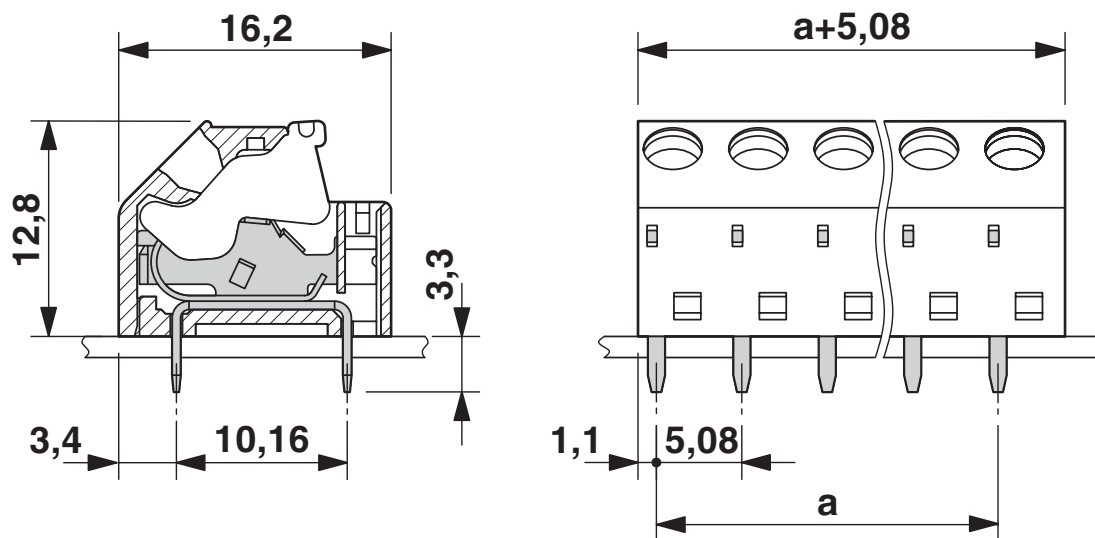
|                                         |                                                                               |
|-----------------------------------------|-------------------------------------------------------------------------------|
| Ambient temperature (operation)         | -40 °C ... 105 °C (Depending on the current carrying capacity/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

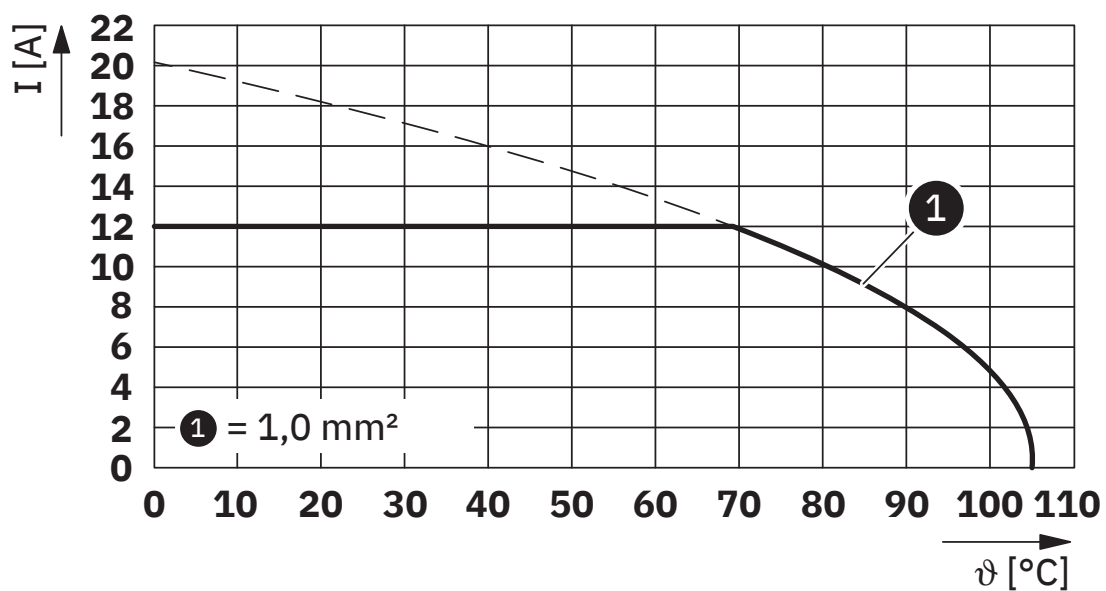
|                   |                     |
|-------------------|---------------------|
| Type of packaging | packed in cardboard |
|-------------------|---------------------|

## Drawings

Dimensional drawing



Diagram



Type: MFKDSP/...-5,08

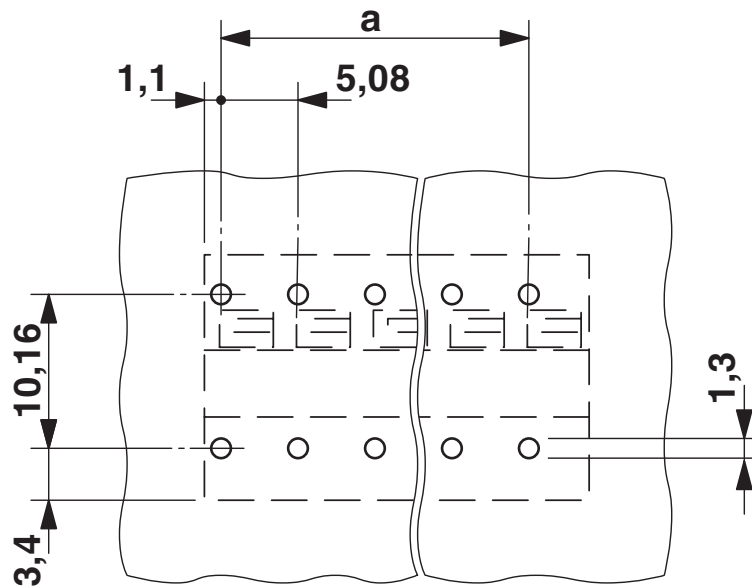
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Drilling plan/solder pad geometry



# MFKDSP/ 2-5,08 - PCB terminal block



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1790283>

|  <b>CSA</b><br>Approval ID: 13631 |                       |                       |                   |                             |
|--------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                    | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B                                                                                                                  |                       |                       |                   |                             |
|                                                                                                                    | 300 V                 | 10 A                  | 22 - 18           | -                           |
| D                                                                                                                  |                       |                       |                   |                             |
|                                                                                                                    | 300 V                 | 10 A                  | 22 - 18           | -                           |

|  <b>cULus Recognized</b><br>Approval ID: E60425-19870330 |                       |                       |                   |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-------------------|-----------------------------|
|                                                                                                                                           | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B                                                                                                                                         |                       |                       |                   |                             |
|                                                                                                                                           | 300 V                 | 7 A                   | 22 - 18           | -                           |
| D                                                                                                                                         |                       |                       |                   |                             |
|                                                                                                                                           | 300 V                 | 7 A                   | 22 - 18           | -                           |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27460101 |
| ECLASS-15.0 | 27460101 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002643 |
|----------|----------|

### 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% |
|-------------------------------------|----------------------------|

### EF3.0 Climate Change

|         |              |
|---------|--------------|
| CO2e kg | 0.04 kg CO2e |
|---------|--------------|

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