

# FP 0,8/ 20-MV 7,15 - SMD male connectors



1154018

<https://www.phoenixcontact.com/us/products/1154018>

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SMD male connector, nominal current: 1.7 A, test voltage: 500 V AC, number of positions: 20, pitch: 0.8 mm, color: black, contact surface: Au, contact connection type: Pin, mounting: SMD soldering

## Your advantages

- Gold-plated contacts ensure transfer quality remains stable over the long term
- Reliable mechanical and electrical connections, thanks to the double-sided ScaleX contact system
- Robustness: ScaleX technology for high tolerance compensation and protection of contacts
- Flexible device design: various numbers of positions, designs, and stack heights with high wipe lengths



## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1154018       |
| Packing unit                         | 300 pc        |
| Minimum order quantity               | 300 pc        |
| Sales key                            | AA23          |
| Product key                          | AAWGDD        |
| GTIN                                 | 4063151154561 |
| Weight per piece (including packing) | 3.05 g        |
| Weight per piece (excluding packing) | 0.95 g        |
| Customs tariff number                | 85366930      |
| Country of origin                    | CN            |

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## Technical data

### Product properties

|                     |                     |
|---------------------|---------------------|
| Product type        | SMD male connector  |
| Product family      | FP 0,8/...-MV 7,15  |
| Number of positions | 20                  |
| Pitch               | 0.8 mm              |
| Number of rows      | 2                   |
| Pin layout          | Linear pad geometry |

### Electrical properties

#### Properties

|                       |                                               |
|-----------------------|-----------------------------------------------|
| Nominal current $I_N$ | 1.7 A IEC 60512-5-2:2002-02 (at 20°C 80-pos.) |
| Contact resistance    | 25 mΩ                                         |
| Test voltage          | 500 V AC IEC 60512-4-1:2003-05                |

#### Data transmission

|                        |         |
|------------------------|---------|
| Data transmission rate | 16 Gbps |
|------------------------|---------|

### Mounting

|               |                     |
|---------------|---------------------|
| Mounting type | SMD soldering       |
| Pin layout    | Linear pad geometry |

#### Processing notes

|                                  |                  |
|----------------------------------|------------------|
| Process                          | Reflow 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                                                                         |
| Surface characteristics                     | Selective coating                                                                |
| Metal surface contact area (top layer)      | Gold (min. 0.5 μm Au)                                                            |
| Metal surface contact area (middle layer)   | Nickel (1.27 μm - 4 μm Ni)                                                       |
| Metal surface soldering area (top layer)    | Tin (2 μm - 6 μm Sn)                                                             |
| Metal surface soldering area (middle layer) | Nickel (1.27 μm - 4 μm Ni)                                                       |

#### Material data - housing

|                           |              |
|---------------------------|--------------|
| Color (Housing)           | black (9005) |
| Insulating material       | LCP          |
| Insulating material group | IIIb         |

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|                                        |     |
|----------------------------------------|-----|
| CTI according to IEC 60112             | 150 |
| Flammability rating according to UL 94 | V0  |

## Notes

|                                 |                                                                                                                                                                                                                      |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes on operation              | The permissible voltage during operation depends on the application, taking into consideration the air clearances and creepage distances within the scope of insulation requirements in accordance with IEC 60664-1. |
| Details for soldering processes | The items are suitable for assembly on both sides and for overhead soldering.                                                                                                                                        |

## Dimensions

|                     |          |
|---------------------|----------|
| Dimensional drawing |          |
| Pitch               | 0.8 mm   |
| Width [w]           | 11.9 mm  |
| Height [h]          | 12.25 mm |
| Length [l]          | 6.1 mm   |
| Installed height    | 11.65 mm |

## Application

|                                            |                                                                                      |
|--------------------------------------------|--------------------------------------------------------------------------------------|
| Contact cover                              | 0.8 mm                                                                               |
| Center offset                              | ± 0.7 mm in longitudinal and transverse direction                                    |
| Stack height                               | 12 mm Tolerance: +1,5 mm (in combination with Range of articles:FP 0,8/...-FV 4,85)  |
|                                            | 15 mm Tolerance: +1,5 mm (in combination with Range of articles:FP 0,8/...-FV 7,85)  |
|                                            | 18 mm Tolerance: +1,5 mm (in combination with Range of articles:FP 0,8/...-FV 10,85) |
| Wipe length                                | 1.5 mm                                                                               |
| Angular tolerance                          | ± 5 ° in longitudinal and transverse direction (when plugging in)                    |
|                                            | ± 5 ° in longitudinal and transverse direction (when plugged in)                     |
| Axial offset in X direction (longitudinal) | ± 0.3 mm (Tolerance compensation when plugged in)                                    |
| Axial offset in Y direction (transversal)  | ± 0.3 mm (Tolerance compensation when plugged in)                                    |

## PCB design

|               |              |
|---------------|--------------|
| Pad geometry  | 0.5 x 2.4 mm |
| Hole diameter | 0.75 mm      |

## Electrical tests

### Thermal test | Test group C

|                            |                       |
|----------------------------|-----------------------|
| Specification              | IEC 60512-5-2:2002-02 |
| Tested number of positions | 80                    |

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## Insulation resistance

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

## Air clearances and creepage distances |

|                                                   |         |
|---------------------------------------------------|---------|
| Insulating material group                         | IIIb    |
| Minimum value for clearance and creepage distance | 0.25 mm |

## Environmental and real-life conditions

### Durability test

|                                              |                                   |
|----------------------------------------------|-----------------------------------|
| Specification                                | IEC 60512-9-1:2010-03 (following) |
| Contact resistance R <sub>1</sub>            | 25 mΩ                             |
| Contact resistance R <sub>2</sub>            | 25 mΩ                             |
| Insertion/withdrawal cycles                  | 500                               |
| Insulation resistance, neighboring positions | ≥ 5 GΩ                            |

### Vibration test

|                        |                                          |
|------------------------|------------------------------------------|
| Specification          | IEC 60068-2-6:2007-12                    |
| Frequency              | 10 - 2000 - 10 Hz                        |
| Sweep speed            | 1 octave/min                             |
| Amplitude              | 1.5 mm (10 Hz ... 58 Hz)                 |
| Acceleration           | 200 m/s <sup>2</sup> (58 Hz ... 2000 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    | 490 m/s <sup>2</sup>              |
| Shock duration  | 11 ms                             |
| Test directions | X-, Y- and Z-axis (pos. and neg.) |

### Railway application: Oscillation/broadband noise

|                        |                                                          |
|------------------------|----------------------------------------------------------|
| Specification          | DIN EN 50155 (VDE 0115-200):2022-06<br>IEC 61373:2010-05 |
| Spectrum               | Long life test category 2, bogie-mounted                 |
| Frequency              | f <sub>1</sub> = 5 Hz to f <sub>2</sub> = 250 Hz         |
| ASD level              | 6.12 (m/s <sup>2</sup> ) <sup>2</sup> /Hz                |
| Acceleration           | 30.6 m/s <sup>2</sup>                                    |
| Test duration per axis | 5 h                                                      |
| Test directions        | X-, Y- and Z-axis                                        |
| Contact interruption   | < 1 μs                                                   |
| Result                 | Test passed                                              |

### Railway application: Shocks

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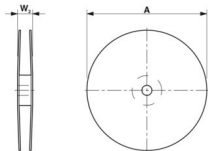
<https://www.phoenixcontact.com/us/products/1154018>

|                                |                                     |
|--------------------------------|-------------------------------------|
| Specification                  | DIN EN 50155 (VDE 0115-200):2022-06 |
|                                | IEC 61373:2010-05                   |
| Pulse shape                    | Semi-sinusoidal                     |
| Acceleration                   | 490 m/s <sup>2</sup>                |
| Shock duration                 | 11 ms                               |
| Number of shocks per direction | 3                                   |
| Test directions                | X-, Y- and Z-axis (pos. and neg.)   |
| Contact interruption           | < 1 μs                              |
| Result                         | Test passed                         |

## Ambient conditions

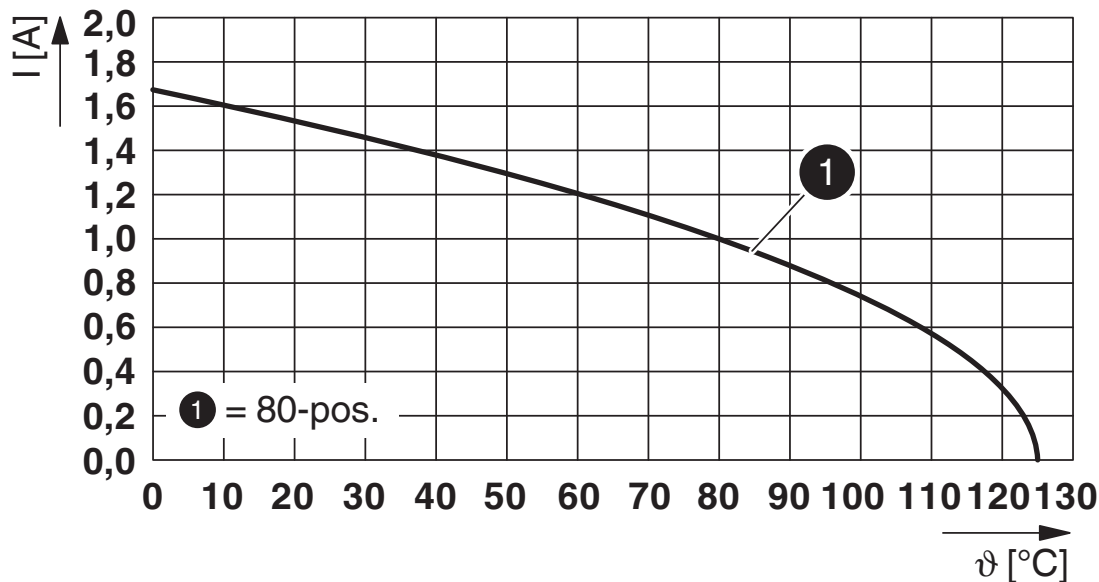
|                                         |                   |
|-----------------------------------------|-------------------|
| Ambient temperature (storage/transport) | -40 °C ... 70 °C  |
| Relative humidity (storage/transport)   | 30 % ... 70 %     |
| Ambient temperature (assembly)          | -5 °C ... 100 °C  |
| Ambient temperature (operation)         | -55 °C ... 125 °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                                                                      |

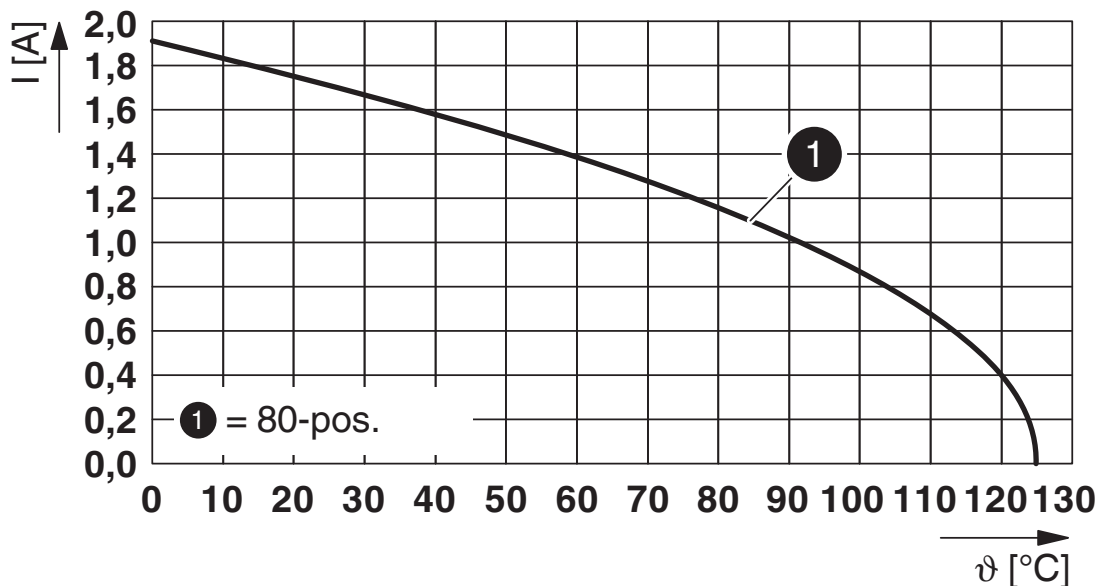
Drawings

Diagram



Type: FP 0,8/...-MV 7,15 with FP 0,8/...-FV 4,85

Diagram



Type: FP 0,8/...-MV 7,15 with FP 0,8/...-FV 10,85 – contacts

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1154018>



**cULus Recognized**

Approval ID: E118976-20190703

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## Classifications

### ECLASS

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

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | 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% |
|-------------------------------------|----------------------------|

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 0.638 kg CO2e |
|---------|---------------|

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