

FR 1,27/ 20-FWL - IDC female connectors

1378546

<https://www.phoenixcontact.com/us/products/1378546>

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IDC female connector, nominal current: 1.4 A, test voltage: 500 V AC, number of positions: 20, pitch: 1.27 mm, color: black, contact surface: Au, contact connection type: Socket

Your advantages

- Time savings during the development process with customer-specific simulations for data integrity
- Design-in support during device development using MCAD/ECAD data and a free sample service
- Can be ordered pre-assembled: IDC female connectors with flat-ribbon cable enable immediate use in the device
- Gold-plated contacts ensure transfer quality remains stable over the long term

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 1378546 |
| Packing unit | 121 pc |
| Minimum order quantity | 121 pc |
| Sales key | AA24 |
| Product key | AAXMAA |
| GTIN | 4063151747244 |
| Weight per piece (including packing) | 2.679 g |
| Weight per piece (excluding packing) | 1.21 g |
| Customs tariff number | 85366990 |
| Country of origin | CN |

Technical data

Notes

| | |
|--------------------|---|
| Notes on operation | <p>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.</p> <p>The possible data transmission rate of an FR 1,27 cable assembly is influenced by various factors, such as the cable length. Up to 1 Gbps is possible.</p> |
|--------------------|---|

Product properties

| | |
|---------------------|----------------------|
| Product type | IDC female connector |
| Product family | FR 1,27/...-FWL |
| Number of positions | 20 |
| Pitch | 1.27 mm |
| Number of rows | 2 |

Electrical properties

Properties

| | |
|-----------------------|---|
| Nominal current I_N | 1.4 A IEC 60512-5-2:2002-02 (at 20°C 50-pos.) |
| Contact resistance | 10 mΩ |
| Test voltage | 500 V AC IEC 60512-4-1:2003-05 |

Connection data

Conductor connection

| | |
|-----------------------------|-------------------------|
| Connection method | Displacement connection |
| Conductor cross-section AWG | 30 |

Interlock

| | |
|---------------|-----------------|
| Locking type | Snap-in locking |
| Mounting type | Latching flange |

Dimensions

| | |
|------------|----------|
| Pitch | 1.27 mm |
| Width [w] | 19.05 mm |
| Height [h] | 14.55 mm |
| Length [l] | 5 mm |

Application

| | |
|-------------------|---|
| Contact cover | 0.9 mm |
| Center offset | ± 0.7 mm in longitudinal and transverse direction |
| Angular tolerance | ± 5 ° in longitudinal and transverse direction |

Material specifications

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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 terminal point (top layer) | Tin (3 µm - 6 µm Sn) |
| Metal surface terminal point (middle layer) | Nickel (1.27 µm - 4 µm Ni) |
| 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) |

Material data - housing

| | |
|--|--------------|
| Color (Housing) | black (9005) |
| Insulating material | LCP |
| Insulating material group | IIIb |
| CTI according to IEC 60112 | 150 |
| Flammability rating according to UL 94 | V0 |

Connector

Connection 1

| | |
|----------------------------|-----|
| Insulating material | LCP |
| CTI according to IEC 60112 | 150 |

Electrical tests

Thermal test | Test group C

| | |
|---------------|-----------------------|
| Specification | IEC 60512-5-2:2002-02 |
|---------------|-----------------------|

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 | 0.32 mm |

Environmental and real-life conditions

Durability test

| | |
|--|-----------------------------------|
| Specification | IEC 60512-9-1:2010-03 (following) |
| Contact resistance R ₁ | 10 mΩ |
| Contact resistance R ₂ | 12 mΩ |
| Insertion/withdrawal cycles | 500 |
| Insulation resistance, neighboring positions | ≥ 5 GΩ |

Vibration test

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

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| | |
|------------------------|--|
| Frequency | 10 - 2000 - 10 Hz |
| Sweep speed | 1 octave/min |
| Amplitude | 1.5 mm (10 Hz ... 58 Hz) |
| Acceleration | 200 m/s ² (58 Hz ... 2000 Hz) |
| Test duration per axis | 1 h |
| Test directions | X-, Y- and Z-axis |

Shocks

| | |
|-----------------|-----------------------------------|
| Specification | IEC 60068-2-27:2008-02 |
| Pulse shape | Semi-sinusoidal |
| Acceleration | 490 m/s ² |
| 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 ... 125 °C |

Ambient conditions

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|---|-------------------|
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| 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 | Tray |
| Outer packaging type | Carton |

Drawings

Diagram



Type: FR 1,27/...-FWL with FR 1,27/...-MV 3,25

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1378546>

|  cUL Recognized Approval ID: E118976-20230317 | | | | |
|--|-----------------------|-----------------------|-------------------|----------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | | | | |
| Only flexible conductors | 29.9 V | 1.4 A | - 30 | - |

|  UL Recognized Approval ID: E118976-20230317 | | | | |
|---|-----------------------|-----------------------|-------------------|----------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | | | | |
| Only flexible conductors | 29.9 V | 2 A | - 30 | - |

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27460202 |
| ECLASS-15.0 | 27460202 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC002638 |
|-----------|----------|

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 | 0.245 kg CO2e |
|---------|---------------|

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