

# 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>
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### 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
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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	0.32 mm

## Environmental and real-life conditions

## Durability test

Specification	IEC 60512-9-1:2010-03 (following)
Contact resistance R <sub>1</sub>	10 mΩ
Contact resistance R <sub>2</sub>	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 <sup>2</sup> (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 <sup>2</sup>
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

Ambient temperature (operation)	-55 °C ... 125 °C
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

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## Drawings

Diagram



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

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## Approvals

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 <b>cUL Recognized</b> 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	-

 <b>UL Recognized</b> 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
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### UNSPSC

UNSPSC 21.0	39121400
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### 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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### EF3.1 Climate Change

CO2e kg	0.245 kg CO2e
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