

# 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

Note regarding documentation

Current documents such as 3D models, products family drawings, data sheets or packaging drawings are available in the Download Center.

### 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 flange	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

#### 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	Selective coating
Metal surface contact area (top layer)	Gold (Au)
Metal surface contact area (middle layer)	Nickel (Ni)
Metal surface soldering area (top layer)	Tin (Sn)
Metal surface soldering area (middle layer)	Nickel (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	$\geq 5 \text{ G}\Omega$

### Air clearances and creepage distances |

Insulating material group	IIIb
Minimum value for clearance and creepage distance	0.32 mm

## Environmental and real-life conditions

### 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	1 h
Test directions	X-, Y- and Z-axis

### 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

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Insertion/withdrawal cycles	500
Insulation resistance, neighboring positions	$\geq 5 \text{ G}\Omega$

## Shocks

Specification	IEC 60068-2-27:2008-02
Pulse shape	Semi-sinusoidal
Acceleration	$490 \text{ m/s}^2$
Shock duration	11 ms
Test directions	X-, Y- and Z-axis (pos. and neg.)

## Ambient conditions

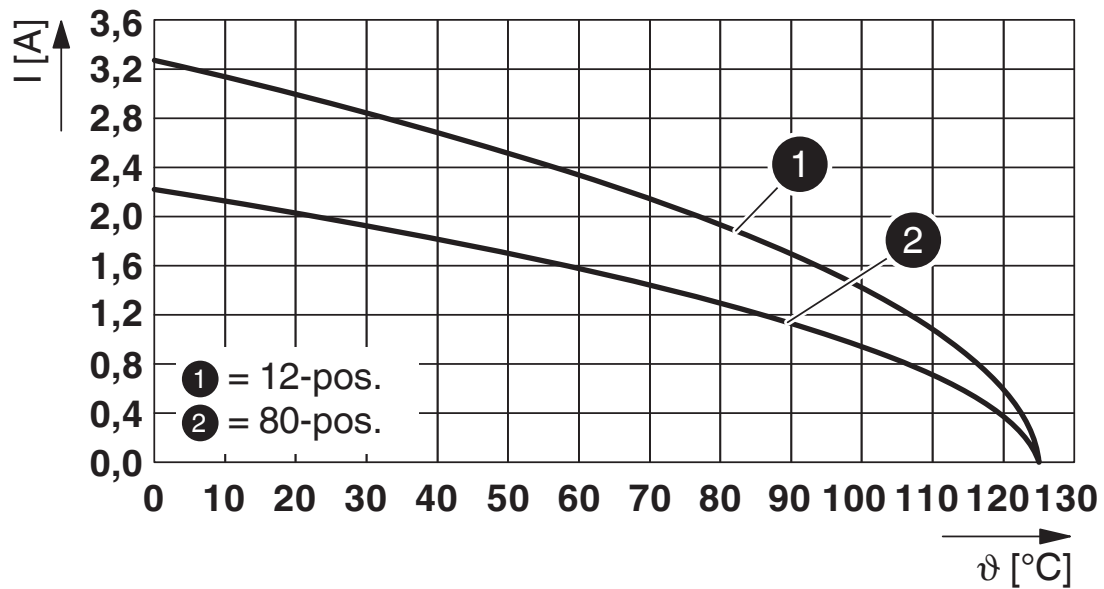
Ambient temperature (operation)	-55 °C ... 125 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C

## Packaging specifications

Type of packaging	Tray
Outer packaging type	Carton

## 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>

 <b>cUL Recognized</b> Approval ID: E118976-20230317				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
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 $\text{mm}^2$
Only flexible conductors	29.9 V	2 A	- 30	-

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## Classifications

### ECLASS

ECLASS-13.0	27460202
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### ETIM

ETIM 9.0	EC002638
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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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