

Amphenol

Amphenol-Tuchel Electronics GmbH

Connectors

Series C 148 U



Worldwide Performance

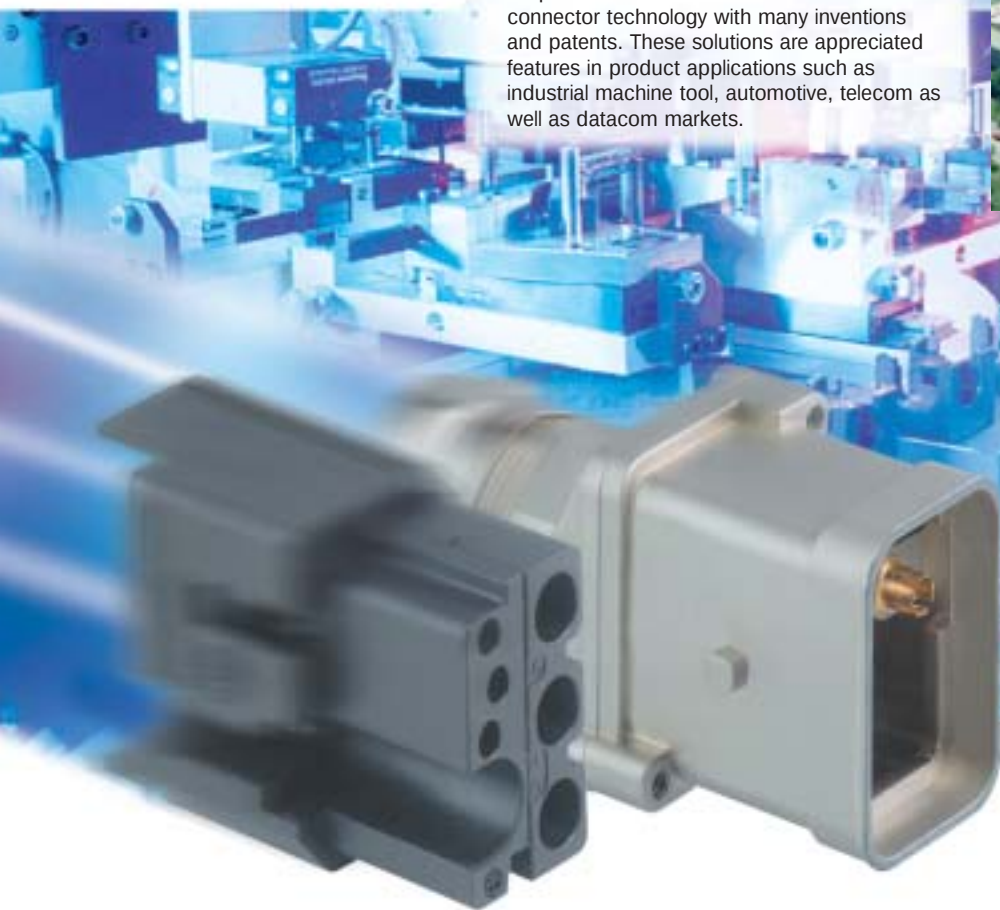
The Company

Amphenol-Tuchel Electronics GmbH is a global company and a leading manufacturer of electrical connector solutions.

The superior quality of our product line is a result of state of the art engineering and technology in conjunction with leading edge production methods.

Our worldwide production and sales channels provide local competence in a global marketplace.

Amphenol has set standards in electrical connector technology with many inventions and patents. These solutions are appreciated features in product applications such as industrial machine tool, automotive, telecom as well as datacom markets.



System description

The connectors of the Amphenol product series C 148 U are characterised by a robust and compact design, simple handling, and high mechanical and electrical strength. These connectors, designed for use in control systems and servo-drives, thus meet all requirements demanded of a decentralised plug-connector system for use under rough operating conditions. They are suitable for wire sizes of 0.5 mm² to 10 mm² and cover about 95% of all possible applications.

The modular usability of the individual components reduces the amount of stock which has to be kept. A further advantage is the simple, quick and reliable assembly of connectors for equipment and cables. No special tools are needed for inserting the contacts into the insulated body.

The proven crimp technology is very suitable for connecting wires to contacts for systems subject to vibration stresses. All of the connectors are designed for use in electromagnetic interference fields. The EMI protection is ensured by the metallic construction and the full connection of the cable shield within the connectors. The application sector for the C 148 U series extends from mechanical engineering to drive solutions and decentralised control systems with power buses.



Main features

- Right angled and straight connectors
- Robust metal construction
- Meets IP 65 and IP 67 specifications
- Locking levers coupling
- Number of contacts 3 + PE (power contacts) + 3 (signal contacts)
- 630 V rated voltage
- 60 A rated current at T_U 40°C
- Cable strain relief with cable clamp
- Cable dia. 8 - 23 mm
- EMI protected in mated and locked condition
- Crimp termination
- Excellent cost/value ratio
- Premating earth contact
- Cable and panel connector connected with premating earth contact

C 148 U Technical Data

General Characteristics

General Characteristics	Standard	Value
No. of contacts		3 + 3 + PE
Termination		crimp
Wire size power contacts		1.5 - 10 mm ² ; 16 - 8 AWG
Wire size signal contacts		0.5 - 1.5 mm ² ; 20 -16 AWG
Coupling		Locking levers
Flammability	UL 94	V-0

Electrical Characteristics

Rated voltage	IEC 60 664-1	630 V AC/DC (500 V AC/DC signal contacts)
Rated impulse voltage	IEC 60 664-1	6.0 KV
Material group	IEC 60 664-1	II
Contact resistance	IEC 60 512-2, Test 2 a	≤ 3 mΩ (≤ 5 mΩ signal contacts)
Insulation resistance	IEC 60 512-2, Test 3 a	≥ 10 ⁸ Ω
Current carrying capacity (power contacts)	IEC 60 512-3, Test 5 b	approx. 60 A (see derating curves)
Current carrying capacity (signal contacts)	IEC 60 512-3, Test 5 b	5 A

Climatic Conditions

Climatic Conditions	Contact Inserts	Housing
Climatic category	IEC 60 068-1	25 / 125 / 21
Lower temperature limit	IEC 60 512-6, Test 11 j	-25 °C / 16 h
Upper temperature limit	IEC 60 512-6, Test 11 i	+125 °C / 1000 h

Mechanical Characteristics

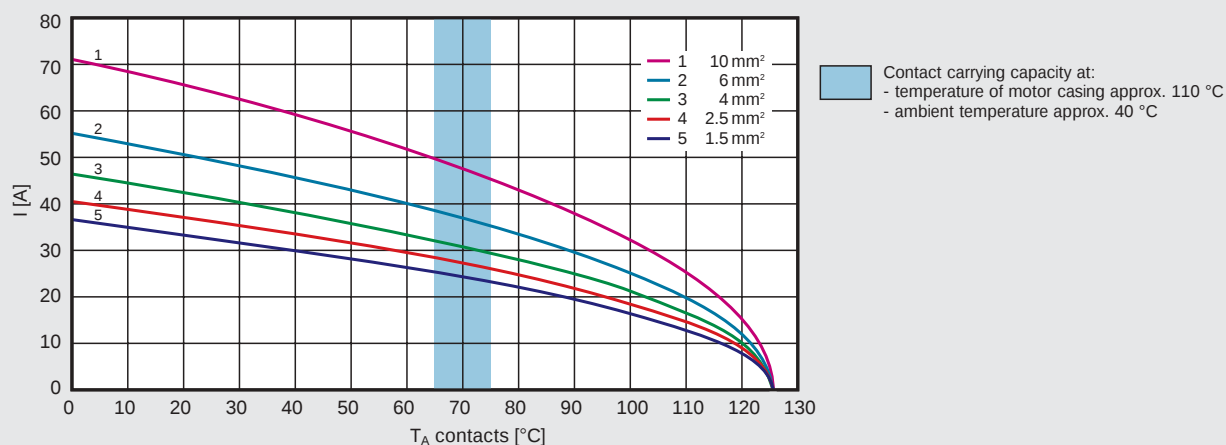
Insertion and withdrawn forces	IEC 60 512-7, Test 13 b	≤ 30 N
Mechanical life cycle	IEC 60 512-5, Test 9 a	≥ 100 mating cycles
Locking force	IEC 60 512-7, Test 13 a	≤ 150 N
Protection class	IEC 60 529	IP 65 / IP 67

Materials

Contact insert	PA 6.6
Contacts	Cu-alloy
Contact plating	Ag
Housing	Zn die cast
Housing plating	Ni

Technical data refer to connectors in mated and locked condition.

C 148 U Derating curves power contacts



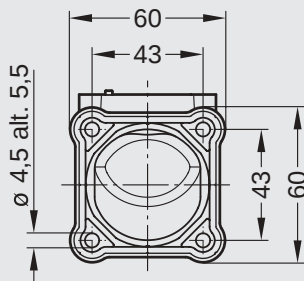
C 148 U Panel Connectors



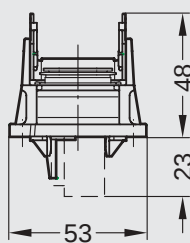
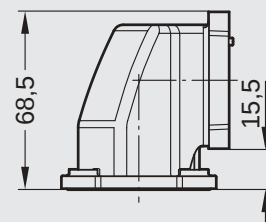
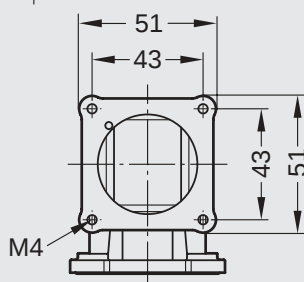
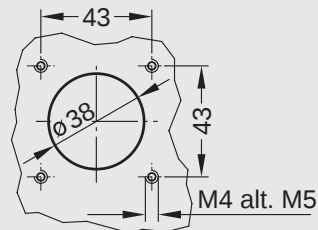
Panel connectors for male contact inserts, for wire sizes 0.5 - 10 mm², 20 - 8 AWG. The straight panel connector housing can also be used without the angled housing. For contacts see page 7.

Description	Part No.
Angled housing M5	C148 G20 000 G1
Straight housing	C148 10F001 000 1
Male contact insert	C148 10A006 000 1
Angled housing M4	upon request

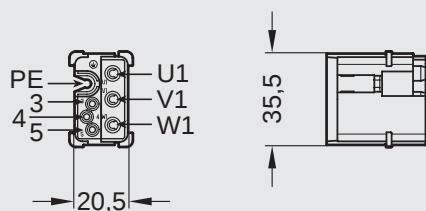
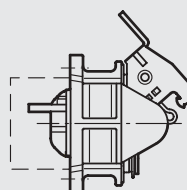
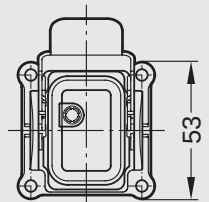
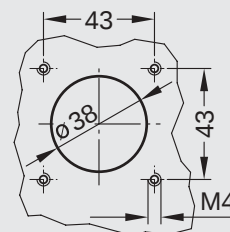
Each packaging contains 25 pieces.



MONTAGEAUSSCHNITT
PANEL CUT - OUT

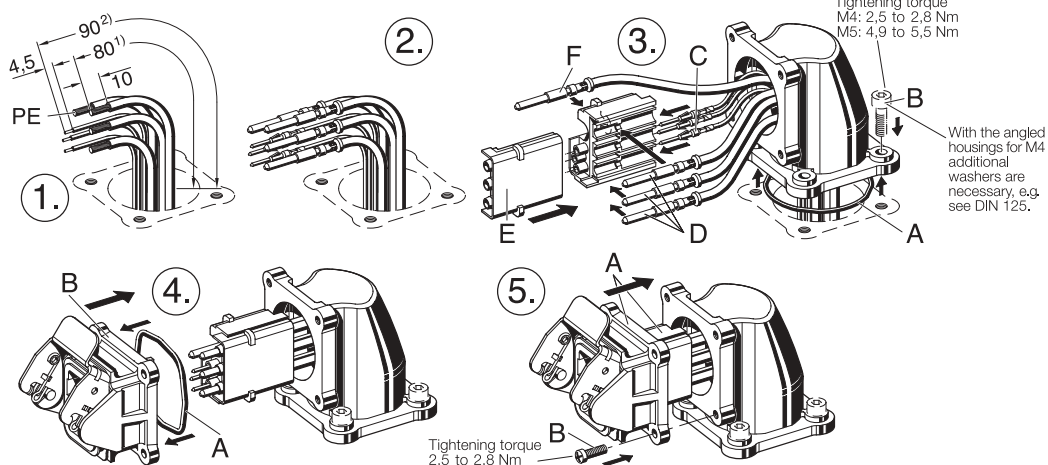


MONTAGEAUSSCHNITT
PANEL CUT - OUT



Assembly Instruction

Refer also page 8,
Assembly + Termination



1) Power wire; PE = 83mm
2) Signal wire

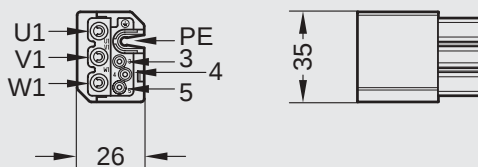
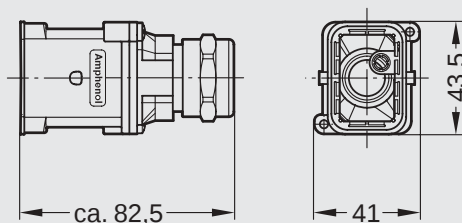
C 148 U Cable Connectors



Cable connectors for female contact inserts,
for cable diameter
8 - 23 mm and wire sizes
0.5 - 10 mm², 20 - 8 AWG.
For contacts see page 7.

Description	ø Cable	Part No.
Female cable connector	8 - 14 mm	C148 10G006 200 1
Female cable connector	14 - 17 mm	C148 10G006 201 1
Female cable connector	17 - 20 mm	C148 10G006 202 1
Female cable connector	20 - 23 mm	C148 10G006 203 1
Female contact insert		C148 10B006 000 1

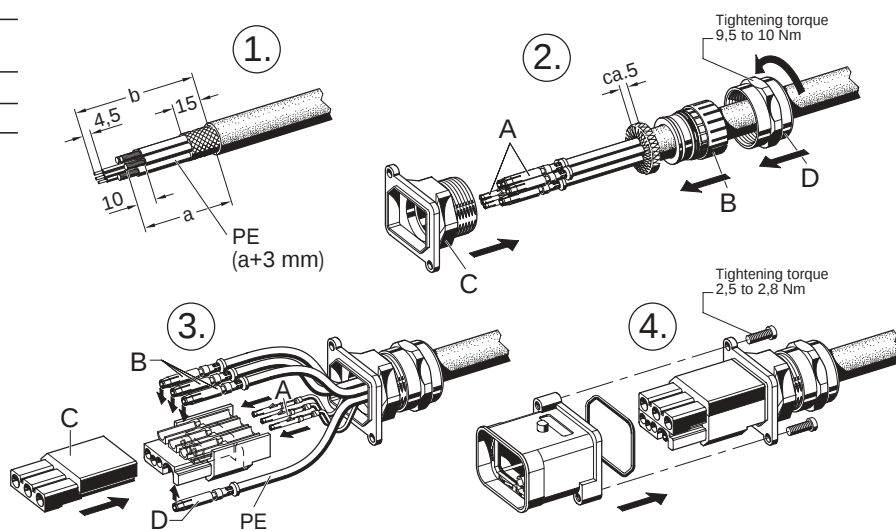
Each packaging contains 25 pieces.



Assembly Instruction

Refer also page 8,
Assembly + Termination

ø Cable	a Power wire	b Signal wire
8 - 17 mm	43 mm	54 mm
17 - 23 mm	52 mm	63 mm



C 148 U Turned Crimp Contacts

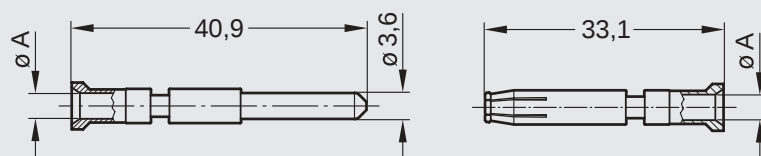


Turned crimp contacts
for $\varnothing$ 3.6 mm

Description	Wire size in mm ²	AWG	A in mm	Quantity	Part No.
Male contact	1.5	16	1.75	100	VN 01 036 0008 (1)
	2.5	14	2.25	100	VN 01 036 0009 (1)
	4	12	2.85	100	VN 01 036 0010 (1)
	6	10	3.5	100	VN 01 036 0011 (1)
	10	8	4.4	100	VN 01 036 0014 (1)
Female contact	1.5	16	1.75	100	VN 02 036 0007 (1)
	2.5	14	2.25	100	VN 02 036 0008 (1)
	4	12	2.85	100	VN 02 036 0009 (1)
	6	10	3.5	100	VN 02 036 0010 (1)
	10	8	4.4	100	VN 02 036 0013 (1)

Crimping tools

4-Ident hand crimping tool	TB 0002
Contact locator	TB 0000 146 0007
Calibration pin set	TP 0000 146 1200

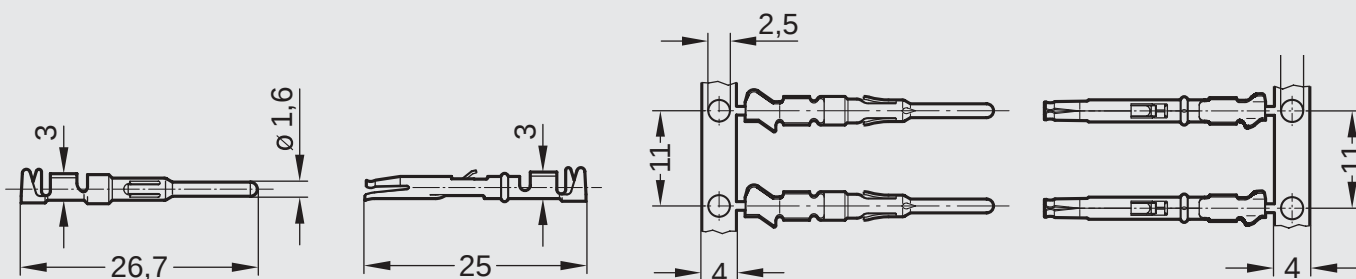


C 148 U Stamped Crimp Contacts



Description	Wire size in mm²	Supplied as	Quantity	Part No. Contacts	Crimping tool	Part No. Crimping tools	
Male contact	0.5 - 1.5 20 - 16 AWG	single contact	100	VN 01 016 0002 (1)	Hand crimping tool	TA 0000	
					Crimping dies	TA 0000 163	
		single contact	200	ZN 01 016 0002 (1)	Contact locator	TA 0002 146 0001	
					Hand crimping tool	FA 0000 110	
		contacts on reel	2000	HN 01 016 0002 (1)	Crimping dies	FA 0000 163	
Female contact	0.5 - 1.5 20 - 16 AWG	single contact	100	VN 02 016 0002 (1)	Semi automated crimping tool upon request		
						Hand crimping tool	TA 0000
						Crimping dies	TA 0000 163
		contacts on reel	200	ZN 02 016 0002 (1)	Contact locator	TA 0002 146 0001	
						Hand crimping tool	FA 0000 110
		contacts on reel	2000	HN 02 016 0002 (1)	Crimping dies	FA 0000 163	
						Semi automated crimping tool upon request	
Removal tool for all stamped crimp contacts						FG 0300 146 1	

**Stamped crimp
contacts**
for $\varnothing$ 1.6 mm



1. General Remarks

The connectors of the C 148 U series are designed to meet the high demands of industrial applications under harsh environmental conditions. The connectors are designed and built in accordance with DIN VDE 0627. We reserve the right to change the design due to improvements in quality, product developments, or production requirements.

All technical details refer to connectors, which according to the regulated uses should not be mated or separated when electrical voltage is applied. The data and instructions as listed are to help the user select the correct product and to ascertain correct and matched applications.

2. Application

Connectors must only be used according to the specified calculated dimensions. Please note that calculated quantities are frequently only shown as initial values which have been determined under special test conditions and are subject to change especially under longer terms or different forces. The connectors of the C 148 U series are designed for applications in the equipment and machine tool industry as well as for instrumentation. Selection and testing of connectors and/or plug and panel devices are designed to meet specific product or industrial requirements, such as calculated voltage and the related clearances and creepage distances.

It is the responsibility of the user to check whether the connection differs to the specified requirements and therefore to judge whether the application is suitable.

All calculated data for the connectors listed in this catalog are based on overload category III and contamination level 3 (for machine tool applications). In the applications be sure the connectors are completely mated according to their respective safety locking mechanism. All technical data refer to mated connectors under locked conditions.

3. Assembly

Certain appliances and equipment include protective measures that relate to the coupling devices of the male and female receptacle housings.

Care must be taken to ensure the parts are correctly mated and screws are tightened with the proper torque.

In order to stop the loosening of the screw, we recommend the use of washers or screws which are supplied with a suitable secure glue.

In regards to the screwing together of angled housings and straight housings, we recommend our screws N 03 040 0022 (1), and to the screwing on of the angled housings screws with a suitable surface coating can be used, e.g. see DIN 912 or DIN 7985 (strength level 8.8).

4. Termination

Cable connectors are effectively secured when using the internal cable clamp. When the connector contains a simple gland bushing for retention, the cable should have a strain relief close behind the connector. All cable properties or specifications must be compatible with the connector design and materials. Designated wire conductors must be soldered to the correct positions. Crimped contacts must be terminated with the specified tools of the manufacturer.

Contacts must be fully inserted into the plastic housing and retention assured with a slight tug on the wire. Wire should be stripped correctly according to printed specifications to insure no electrical contact can be made between the conductors. There should be no cut strands during the stripping action.

7. EMI

The specified requirements according to the EMI-Law (EMI-Directive 89/336EWG) must be ensured by corresponding installation in the equipment.

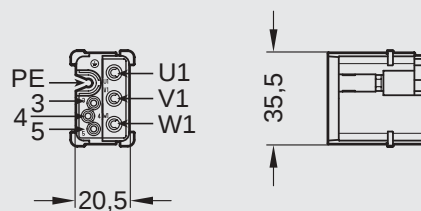
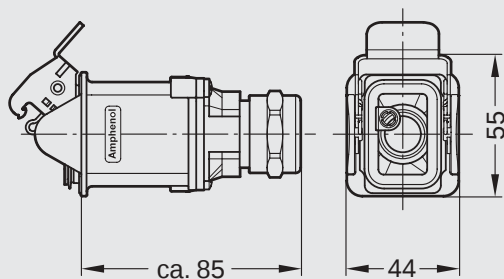
C 148 U Cable Connectors



Cable connectors for male contact inserts,
for cable diameters
8 - 23 mm and wire sizes
0.5 - 10 mm², 20 - 8 AWG.
For contacts see page 7.

Description	Ø Cable	Part No.
Male cable connector	8 - 14 mm	C148 10G006 400 1
Male cable connector	14 - 17 mm	C148 10G006 401 1
Male cable connector	17 - 20 mm	C148 10G006 402 1
Male cable connector	20 - 23 mm	C148 10G006 403 1
Male contact insert		C148 10A006 000 1

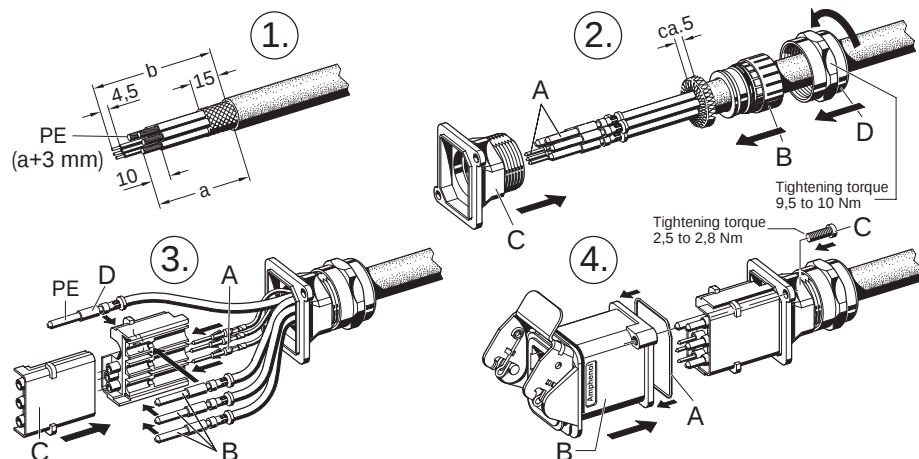
Each packaging contains 25 pieces.



Assembly Instruction

Refer also page 8,
Assembly + Termination

Ø Cable	a Power wire	b Signal wire
8 - 17 mm	41 mm	52 mm
17 - 23 mm	50 mm	61 mm



International

Argentina

Amphenol Argentina
Av. Callao 930
2nd Floor Office B "Plaza"
C1023 AAP Buenos Aires
Phone +54 / 11 / 4815 35 79
Fax +54 / 11 / 4814 57 79

Australia

Amphenol Australia Ltd.
2 Fiveways Blvd
Keysborough
Victoria 31 73
Phone +61 / 3 / 8796 / 8888
Fax +61 / 3 / 8796 / 8801

Brasilia

Amphenol do Brasil Ltda.
Rua Diogo Moreira 132, 20th Floor
CEP 05423-010 Sao Paulo SP
Phone +55 / 11 / 3815.1003
Fax +55 / 11 / 3815.1629

France

Amphenol Socapex France
21 Chemin du Défois
B.P. 349
39105 Dole Cedex
Phone +33 / 3 / 8482 94 00
Fax +33 / 3 / 8482 94 11

Great Britain

Pyle-National
A division of Amphenol Ltd.
Unit D1, Crossgate Drive
Queens Drive
Industrial Estate
Nottingham, NG2 1LW
Phone: +44 / 115 / 986 6200
Fax +44 / 115 / 986 6212

Hongkong

Amphenol East Asia Limited
Units 2201-02, Railway Plaza
39 Chatham Road South
Tsimshatsui, Kowloon
Phone +852 / 26 99 / 26 63
Fax +852 / 26 88 / 09 74

India

Amphetronix Limited
Plot No. 105 Bhosari Industrial Area
Pune - 411 026
Phone +91 / 20 / 7121418
Fax +91 / 20 / 7120581

Italy

Amphenol Italia S.p.A.
Via Barbaiana n. 5
I-20020 Lainate (MI)
Phone +39 / 2 / 93 254.1
Fax +39 / 2 / 93 254.445

Japan

Amphenol Japan, K.K.
2-3-27, Kudan Minami
Chiyoda-Ku
Tokyo 102
Phone +81 / 3 / 32 63 / 56 11
Fax +81 / 3 / 52 76 / 70 59

Korea

Amphenol DaeShin Limited
#802 Joong-Dong 1131-5
Wonmi-Ku
Bucheon-City
Kyunggi-Do
Korea 420-020
Phone +82 / 2 / 785 / 1588
Fax +82 / 2 / 589 / 1514

Mexico

Amphenol Mexico
Prolongacion Reforma 61 - 6 B2
Col. Paseo de las Lomas
C.P. 01330 Mexico D.F.
Phone +52 / 55 / 5258.9984
Fax +52 / 55 / 5081.6890

Netherlands

Amphenol Benelux b.v.
Hoofdveste 19
3992 AK Houten
Phone +31 / 30 / 6 35 80 00
Fax +31 / 30 / 6 37 78 99

Peoples Republic of China

Amphenol-Tuchel Electronics GmbH
China Branch
210-1 Taishan Road
Changzhou 213022
Phone +86 / 05 19 / 5 11 03 01
Fax +86 / 05 19 / 5 11 02 99

Singapore

Amphenol East Asia Limited
Asia Pacific Sales Operation
Singapore Branch
300 Beach Road
#25-07 The Concourse
Singapore 199555
Phone +27 / 11 / 305-95 74
Fax +27 / 11 / 305-95 76

Sweden

Amphenol Scandinavia
Johanneslundsvägen 2
194 61 Upplands Väsby
Phone +46 / 8 / 59 41 04 40
Fax +46 / 8 / 59 03 38 00

Spain

Amphenol Ibérica
C/Comunidad de Madrid, 35-bis
oficina N° 55 "Edificio Burgosol"
E-28230 las Rozas Madrid
Phone +34 / 91 64 07 30 2
Fax +34 / 62 90 54 62 9

South Africa

Amphenol International Ltd
Chislehurst
30 Impala Road
Chislehurst
Sandton, 2146
Phone +27 / 11 / 7 83 95 17
Fax +27 / 11 / 7 83 95 19

Taiwan

Amphenol East Asia Ltd.
Taiwan Branch (H.K.)
116 Zhong Shan Road
Lane 956 Taoyuan City
Taiwan R.O.C. 330
Phone +886 / 3 / 370 / 7855
Fax +886 / 3 / 360 7259

USA

Amphenol-Tuchel Electronics
Representative Office
6900 Haggerty Road
Suite 200
Canton, Michigan 48187
Phone +1 / 734 / 451 6400
Fax +1 / 734 / 451 7197

Amphenol Corporation
Corporate Headquarters
358 Hall Avenue
Wallingford, CT 06492
Phone +1 / 203 / 2 65 / 89 00
Fax +1 / 203 / 2 65 / 86 28

Your engineering sales representatives:

Amphenol

Amphenol-Tuchel Electronics GmbH

August-Haeusser-Str. 10 · D-74080 Heilbronn · Germany · Phone +49 (0) 71 31/9 29-0 · Fax +49 (0) 71 31/9 29-486 · www.amphenol.info

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Amphenol:

[FG 0300 146 3000 1](#) [VN30 005 1000](#) [VN30 025 1000](#) [N02 080 6103 002](#) [HN01-020-0009-7](#) [HN02-020-0009-7](#)
[VN01-016-0002-4](#) [VN01-016-0003-4](#) [VN02-016-0002-4](#) [VN02-016-0024-1-C](#) [VN02-016-0028-1-C](#) [ZN02-025-0001-2](#)
[VN01-025-0029-2-C](#) [VN01-025-0030-2-C](#) [VN01-025-0033-2-C](#) [VN02-025-0029-2-C](#) [VN02-025-0030-2-C](#) [VN02-025-](#)
[0031-2-C](#) [VN02-025-0032-2-C](#) [VN02-025-0033-2-C](#) [VN01-036-0008-1](#) [VN01-036-0009-1](#) [VN01-036-0010-1](#) [VN01-](#)
[036-0011-1](#) [VN02-036-0007-1](#) [VN02-036-0008-1](#) [VN02-036-0009-1](#) [VN02-036-0010-1](#) [C148-10G006-200-1](#) [C148-](#)
[G19-000-G1](#) [HN02 016 0002 1](#) [VN020250010102](#) [VN01 016 0003 4](#) [VN02 016 0002 4](#) [VN01 016 0002 4](#)