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Circular Connectors



Note from the CEO

Ladies and Gentlemen,

For over 75 years Amphenol has enjoyed success as the interconnection technology provider of choice to industry-leading companies around the world. One of our key strategic areas of focus has been and is the Industrial market. Our organization works with leading manufacturers across a wide range of applications - including Energy Generation & Distribution, Transportation, Heavy Equipment, Factory Automation, Wireless Outdoor, ChipCard Readers - enabling smarter, faster and better technologies to connect products to customer solutions.

The Industrial market footprint of Amphenol covers over facilities in more than 12 different European countries and more than 30 countries worldwide. Our successful expansion into new regions as well as new industrial applications is a direct reflection of our agile, entrepreneurial management team and our unwavering commitment to execute Amphenol's strategies for the benefit of our customers, shareholders and employees.

Thank you for partnering with Amphenol. Our entire organization is at your service.



R. Adam Norwitt
President and CEO, Amphenol Corporation





SECURITY, RELIABILITY AND COMFORTABLE SERVICE FROM ONE SOURCE.



Approvals, Testhouse	Characteristics	Approval Numbers
VDE 	3+PE, 400 V, 16 A 6+PE, 250 V, 10 A (solder version) 6+PE, 250 V, 13 A (crimp version)	56 79 ÜG
SEV 	3+PE, 400 V, 16 A 6+PE, 250 V, 10 A (solder version) 6+PE, 250 V, 13 A (crimp version)	
UL ¹⁾ 	3+PE, 400V, 16A 6+PE, 250V, 13A 3+PE, 600 V, 13 A at AWG 16 (High Voltage) 3+PE, 600 V, 5 A at AWG 26 (High Voltage) 6+PE, 600 V, 13 A at AWG 16 (High Voltage) 6+PE, 600 V, 5 A at AWG 26 (High Voltage)	E 63093
CSA 	3+PE, 250 V, 12 A 6+PE, 250 V, 8 A 3+PE, 600 V, 10,5 A at AWG 16 (High Voltage) 6+PE, 600 V, 10,5 A at AWG 16 (High Voltage)	48932

In general approvals refer to versions of the connector series. Test report upon request.

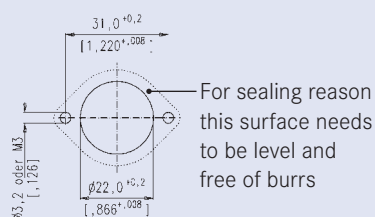


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Standard

Description	No. of contacts	Part number		Drawing	Figure
		Silver plating	Gold plating		
Male cable connector straight strain relief with clamping ring 6 -12,5 mm					
Screw blue black	3 + PE 3 + PE	C016 20H003 100 10 C016 20H003 100 12	C016 20H003 200 10 C016 20H003 200 12		
Solder blue black	6 + PE 6 + PE	C016 30H006 100 10 C016 30H006 100 12	C016 30H006 200 10 C016 30H006 200 12		
Crimp ¹⁾ blue black	6 + PE 6 + PE	C016 10H006 000 10 C016 10H006 000 12	C016 10H006 000 10 C016 10H006 000 12		
Male cable connector straight with internal cable clamping and clamping ring 6 - 10,0 mm					
Screw blue black	3 + PE 3 + PE	C016 20H003 110 10 C016 20H003 110 12	C016 20H003 210 10 C016 20H003 210 12		
Solder blue black	6 + PE 6 + PE	C016 30H006 110 10 C016 30H006 110 12	C016 30H006 210 10 C016 30H006 210 12		
Crimp ¹⁾ blue black	6 + PE 6 + PE	C016 10H006 010 10 C016 10H006 010 12	C016 10H006 010 10 C016 10H006 010 12		
Male cable connector angled strain relief with clamping ring 6 -12,5 mm					
Screw blue black	3 + PE 3 + PE	C016 20K003 100 10 C016 20K003 100 12	C016 20K003 200 10 C016 20K003 200 12		
Solder blue black	6 + PE 6 + PE	C016 30K006 100 10 C016 30K006 100 12	C016 30K006 200 10 C016 30K006 200 12		
Crimp ¹⁾ blue black	6 + PE 6 + PE	C016 10K006 000 10 C016 10K006 000 12	C016 10K006 000 10 C016 10K006 000 12		
Male Receptacle					
Screw black	3 + PE	C016 20C003 100 12	C016 20C003 200 12	A 14,0	
Solder black	6 + PE	C016 30C006 100 12	C016 30C006 200 12	12,0	
Crimp ¹⁾ black	6 + PE	C016 10C006 000 12	C016 10C006 000 12	16,5	

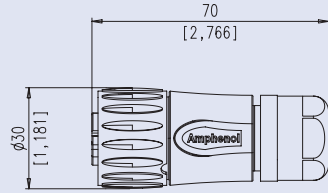
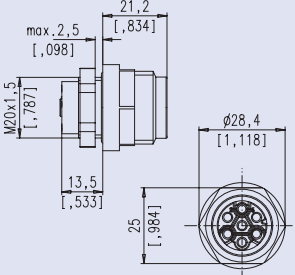
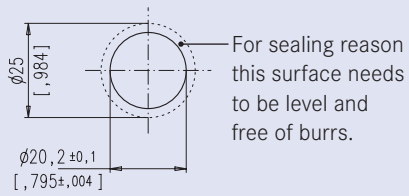
Mounting Instruction ²⁾



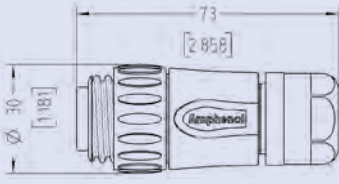
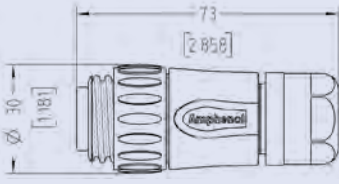
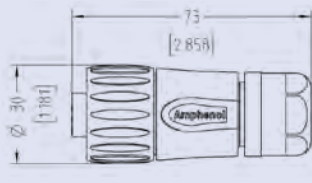
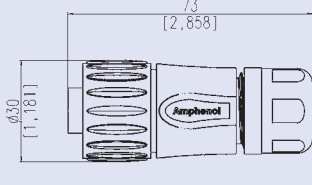


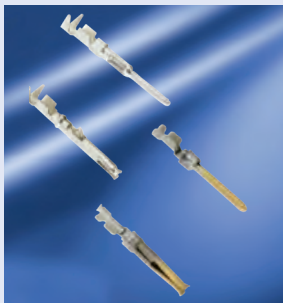
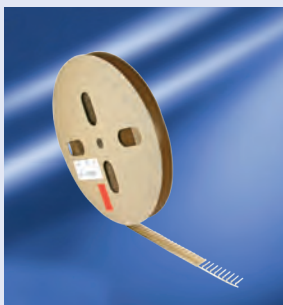
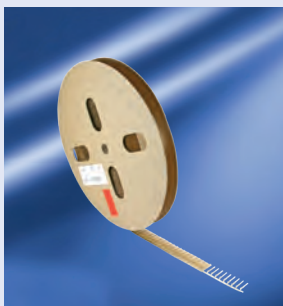
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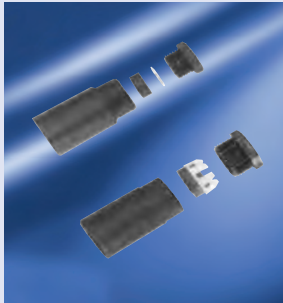
High Voltage

Description	No. of contacts	Part number	Drawing	Figure
Female cable connector straight with clamping ring, cable diameter 6 -12,5 mm				
Crimp ¹⁾ black	3 + PE 6 + PE	C016 10D003 806 12 C016 10D006 806 12		
Male receptacle				
Crimp ¹⁾ black	3 + PE 6 + PE	C016 10P003 806 12 C016 10P006 806 12		
Mounting Instruction ²⁾				
				
Remark				
• Standard dust cups don't fit on high voltage versions special caps upon request. • Thread size M20 x 1,5 • If turn protection is required, we recommend to glue receptacles.				



Description	No. of contacts	Part number Silver plating	Drawing	Figure
Male cable connector straight with 4 pressure plates				
Screw black ¹⁾	3 + PE	C016 20H003 804 12		
Male cable connector straight 1 pressure plate at PE				
Screw black ¹⁾	3 + PE	C016 20H003 803 12		
Female cable connector straight with 4 pressure plates				
Screw black ¹⁾	3 + PE	C016 20D003 806 12		
Female cable connector straight with turned contacts				
Screw black ¹⁾	6 + PE	C016 30D006 800 12		

Supplied as	for wire gauge	Insulation Ø in mm	Pieces	Part number		Figure
				Male contact	Female contact	
Stamped single contacts 1,6 mm 6+PE						
silver plating Standard	0,14 - 0,5 mm ²	1,0 - 2,0	100	VN 01 016 0011 1	VN 02 016 0003 1	
	0,5 - 1,5 mm ²	1,8 - 2,8	100	VN 01 016 0004 1	VN 02 016 0002 1	
silver plating High voltage	0,14 - 0,5 mm ²	1,0 - 2,0	100	VN 01 016 0003 1	VN 02 016 0003 1	
	0,5 - 1,5 mm ²	1,8 - 2,8	100	VN 01 016 0002 1	VN 02 016 0002 1	
gold plating Standard	0,14 - 0,5 mm ²	1,0 - 2,0	100	VN 01 016 0011 2	VN 02 016 0003 2	
	0,5 - 1,5 mm ²	1,8 - 2,8	100	VN 01 016 0004 2	VN 02 016 0002 2	
gold plating High voltage	0,14 - 0,5 mm ²	1,0 - 2,0	100	VN 01 016 0003 2	VN 02 016 0003 2	
	0,5 - 1,5 mm ²	1,8 - 2,8	100	VN 01 016 0002 2	VN 02 016 0002 2	
Stamped contact on reel for hand crimping tools 1,6 mm 6+PE						
silver plating Standard	0,14 - 0,5 mm ²	1,0 - 2,0	200	ZN 01 016 0011 1	ZN 02 016 0003 1	
	0,5 - 1,5 mm ²	1,8 - 2,8	200	ZN 01 016 0004 1	ZN 02 016 0002 1	
silver plating High voltage	0,14 - 0,5 mm ²	1,0 - 2,0	200	ZN 01 016 0003 1	ZN 02 016 0003 1	
	0,5 - 1,5 mm ²	1,8 - 2,8	200	ZN 01 016 0002 1	ZN 02 016 0002 1	
gold plating Standard	0,14 - 0,5 mm ²	1,0 - 2,0	200	ZN 01 016 0011 2	ZN 02 016 0003 2	
	0,5 - 1,5 mm ²	1,8 - 2,8	200	ZN 01 016 0004 2	ZN 02 016 0002 2	
gold plating High voltage	0,14 - 0,5 mm ²	1,0 - 2,0	200	ZN 01 016 0003 2	ZN 02 016 0003 2	
	0,5 - 1,5 mm ²	1,8 - 2,8	200	ZN 01 016 0002 2	ZN 02 016 0002 2	
Stamped contact on reel for crimping machines contact feeding right hand side 1,6 mm 6+PE						
silver plating Standard	0,14 - 0,5 mm ²	1,0 - 2,0	2000	HN 01 016 0011 1	HN 02 016 0003 1	
	0,5 - 1,5 mm ²	1,8 - 2,8	2000	HN 01 016 0004 1	HN 02 016 0002 1	
silver plating High voltage	0,14 - 0,5 mm ²	1,0 - 2,0	2000	HN 01 016 0003 1	HN 02 016 0003 1	
	0,5 - 1,5 mm ²	1,8 - 2,8	2000	HN 01 016 0002 1	HN 02 016 0002 1	
gold plating Standard	0,14 - 0,5 mm ²	1,0 - 2,0	2000	HN 01 016 0011 2	HN 02 016 0003 2	
	0,5 - 1,5 mm ²	1,8 - 2,8	2000	HN 01 016 0004 2	HN 02 016 0002 2	
gold plating High voltage	0,14 - 0,5 mm ²	1,0 - 2,0	2000	HN 01 016 0003 2	HN 02 016 0003 2	
	0,5 - 1,5 mm ²	1,8 - 2,8	2000	HN 01 016 0002 2	HN 02 016 0002 2	
Stamped contact on reel for crimping machines contact feeding left hand side 1,6 mm 6+PE						
silver plating Standard	0,14 - 0,5 mm ²	1,0 - 2,0	2000	TN 01 016 0011 1	TN 02 016 0003 1	
	0,5 - 1,5 mm ²	1,8 - 2,8	2000	TN 01 016 0004 1	TN 02 016 0002 1	
silver plating High voltage	0,14 - 0,5 mm ²	1,0 - 2,0	2000	TN 01 016 0003 1	TN 02 016 0003 1	
	0,5 - 1,5 mm ²	1,8 - 2,8	2000	TN 01 016 0002 1	TN 02 016 0002 1	
gold plating Standard	0,14 - 0,5 mm ²	1,0 - 2,0	2000	TN 01 016 0011 2	TN 02 016 0003 2	
	0,5 - 1,5 mm ²	1,8 - 2,8	2000	TN 01 016 0004 2	TN 02 016 0002 2	
gold plating High voltage	0,14 - 0,5 mm ²	1,0 - 2,0	2000	TN 01 016 0003 2	TN 02 016 0003 2	
	0,5 - 1,5 mm ²	1,8 - 2,8	2000	TN 01 016 0002 2	TN 02 016 0002 2	

Description	Part number		Figure
Back shells (Packaging units 10 pieces)			
Back shell PG 9 with thrust collar	T 3102 003 7 X		
Back shell PG 11 with thrust collar	T 3102 004 7 X		
Back shell PG 13.5 with clamping ring	T 3102 005 7 X		
Rubber gasket			
for cable diameter 4-6mm²	N 06 007 0004	While mounting the rubber gasket for 4-6mm², the cable clamp shall be bolted with the convex section face-down in order to ensure the strain relief.	

Description	Wire gauge	Contact locator	Part number	
			Crimping dies	Tool
Removal tool for crimp contacts	-	-	-	FG 0300 146 1
Hand crimp tools for single contacts	0,14 - 0,5 mm ²	TA 0002 146 0001	TA 0000 202	TA 0500
	0,5 - 1,5 mm ²	TA 0002 146 0001	TA 0000 163	TA 0500
Hand crimp tools for contacts on reel	0,14 - 0,5 mm ²	-	-	TA 0700 203
	0,5 - 1,5 mm ²	-	-	TA 0700 309

Mounting instruction, straight cable connector

Stripping lengths	Measure a ¹⁾	Measure b	
Screw contacts with internal cable clamping without internal cable clamping	18 ⁺¹ 25 ⁺¹	7 ^{+1 2)} 7 ^{+1 2)}	
Solder contacts with internal cable clamping without internal cable clamping	14 ⁺¹ 22 ⁺¹	4 ⁺¹ 4 ⁺¹	
Crimp contacts 0,14 – 0,50 mm ² 0,50 – 1,5 mm ² with internal cable clamping without internal cable clamping	14 ⁺¹ 22 ⁺¹	3 ^{+0,5} 3,5 ⁺¹	

Mounting instruction, right angled cable connector

Stripping lengths	Measure a ¹⁾	Measure b	
Screw contacts without internal cable clamping	35 ⁺¹	7 ^{+1 2)}	
Solder contacts without internal cable clamping	32 ⁺¹	4 ⁺¹	
Crimp contacts 0,14 – 0,5 mm ² 0,50 – 1,5 mm ² without internal cable clamping	32 ⁺¹	3 ^{+0,5} 3,5 ⁺¹	

Crimp Termination

A crimp connection is a non-detachable electrical connection between a wire and a crimp contact produced with the crimp technology. Precise crimping dies which are matched to the crimp barrel and the wire size and a defined deformation result in a reliable electrical connection.

There are open crimp barrels (stamped contacts) and closed crimp barrels (turned contacts).

The main advantages of crimp connections are:

- Efficient termination of contacts
- Reproducible terminations achieve consistent electrical and mechanical results

The requirements for crimp connections are defined in IEC 60352 Part 2 / DIN EN 60352 Part 2.

An important point of the quality of a crimp connection is the achieved tensile strength of the termination.

Easily measured, the tensile strength is a practicable means for quality control purposes.

Diagram 2 below shows the required minimum tensile strength for open and closed barrels depending on the wire size

Assembly Instructions

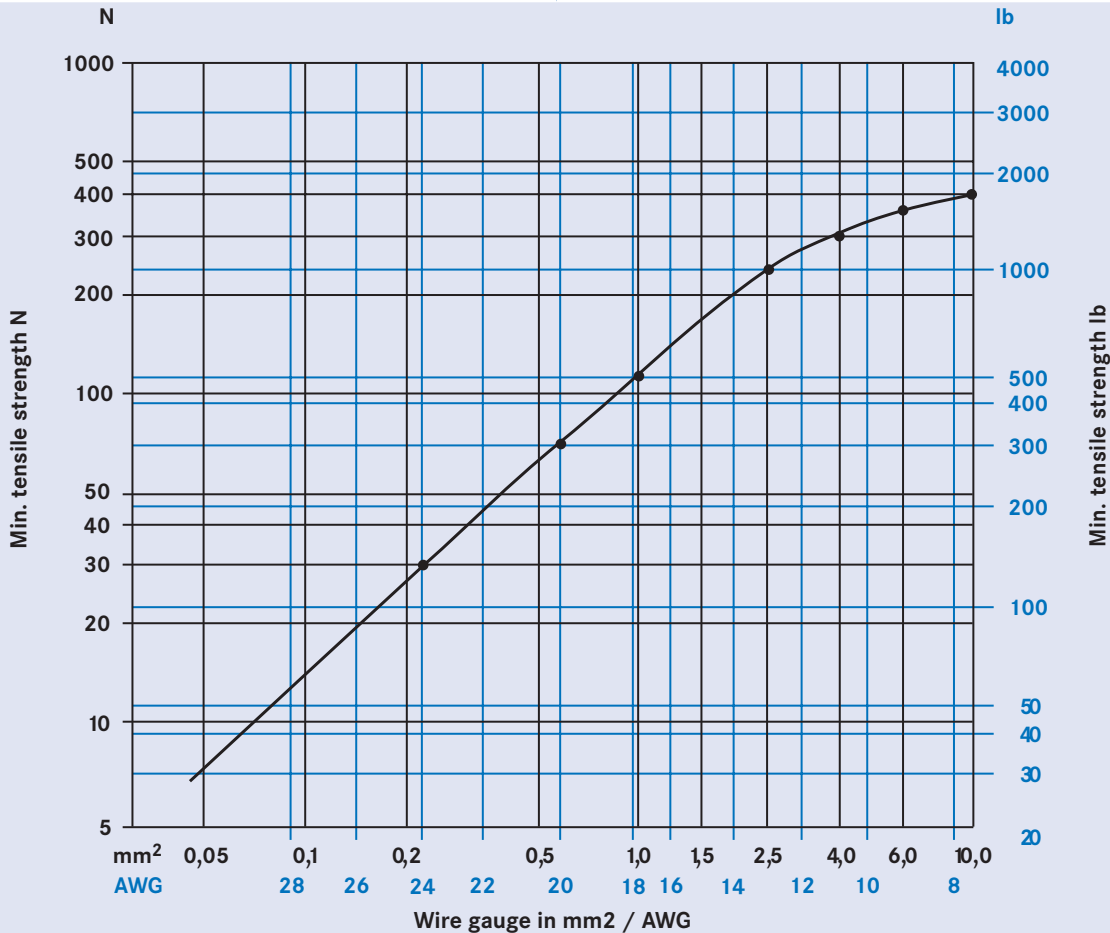
For crimp contacts use the released crimp tool.

The insertion and extraction of crimp contacts shall only be approved with the corresponding insertion/extraction tool.

A detailed description of the crimp technology can be found in our crimp tooling catalogues.

Crimp contacts are in this catalogue on page 20

Diagramm 2





1. General Remarks

These connectors are designed and produced in conformity with the low voltage directive (73/23/EWG) respectively Gerätesicherheitsgesetz (German law) and are especially in accordance with the standards DIN EN 61984 / IEC 61984 (VDE 0627); IEC 60664-1 (VDE 0110-1) and IEC 60529.

The connectors may be used only within the technical ratings. All technical data refer to mated connectors under live conditions. The safety of the connector system depends on the correct selection of products, proper assembly of the connector device and a precise fit of the connectors

2. Application Remarks

Connectors with / without breaking capacity must be used according to specified technical ratings.

The technical data represents the initial value of mated parts under predetermined conditions and length of time. These values could change with different test parameters or product requirements.

The connectors of the series are designed for the areas of application including the construction and installation of controlling and electrical devices.

The product has been tested for the intended purposes only. If the connection is used other than originally intended, or in another manner that we have not previously tested, the consumer assumes full responsibility.

All rated data for the connectors listed in this catalogue are based on overvoltage

category III and pollution degree 3 for electronic applications if not stated differently. Connectors were completely mated according to their respective safety locking mechanism. Selection and testing of connectors with / without breaking capacity to meet specific product or industrial requirements such as rated voltage and the related clearances and creepage distances are the responsibility of the user.

3. Assembling Remarks

Protection against electrical shock of the termination of the connectors shall be secured by correct mounting. Connectors of the same or different series being mounted side by side may be protected against incorrect mating by the use of coding options. Care must be taken to ensure the parts are correctly mated and screws are tightened with the proper torque.

4. Termination Remarks

Cable connectors are effectively secured when using the strain relief (internal clamping ring). All cable properties or specifications must be compatible with the connector design and materials.

Please make sure that the usability of the cable in conjunction with the clamping ring is given.

Designated wire conductors must be terminated to the correct poles in the connector.

Crimp contacts must be fully inserted into the plastic housing and strain relief 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 nicked or cut strains during the stripping action.

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