

# Amphenol

Amphenol-Tuchel Electronics GmbH

## M12 - Connectors C 112 Series



# We connect con

## The company

Amphenol-Tuchel Electronics is a worldwide leader in electrical connectors and contacting devices.

Our line of high quality, peak performance products are achieved through the implementation of modern manufacturing methods utilizing the latest technologies. Local markets are served through an extensive global network of distributors and manufacturing sites. Amphenol sets the standard of connector technology with an array of patent and innovations.

Our vast experience in aerospace, automotive, data transfer, military, and telecommunications enables us to provide solutions to your market challenges.



## System Description

Amphenol's M12 family of connectors features the C112 series. They are characterized by compact size, functional design, reliable sealing, durable construction and electrically stable.

The connector protects the cable and its components from loosening due to harsh vibration while operating in tough industrial environments. Electrically sensitive applications requiring EMI shielding are protected with a design that enables attenuation values in the range of a double shielded cable. This design feature incorporates a 360° shielding system from the cable to the appliance housing.

The connectors in the C112 family use a 12 mm thread. These connectors are top choice in automation and sensor technology. Power circuit requirements up to four amps can also be satisfied by this connector design.

# Continents



## Standards

Connectors meet these standards: IEC 61076-2-101 (IEC 48B/803/CD), interfaces according to (IEC 60947-5-2) and proximity switches (VDE 0660 part 208).



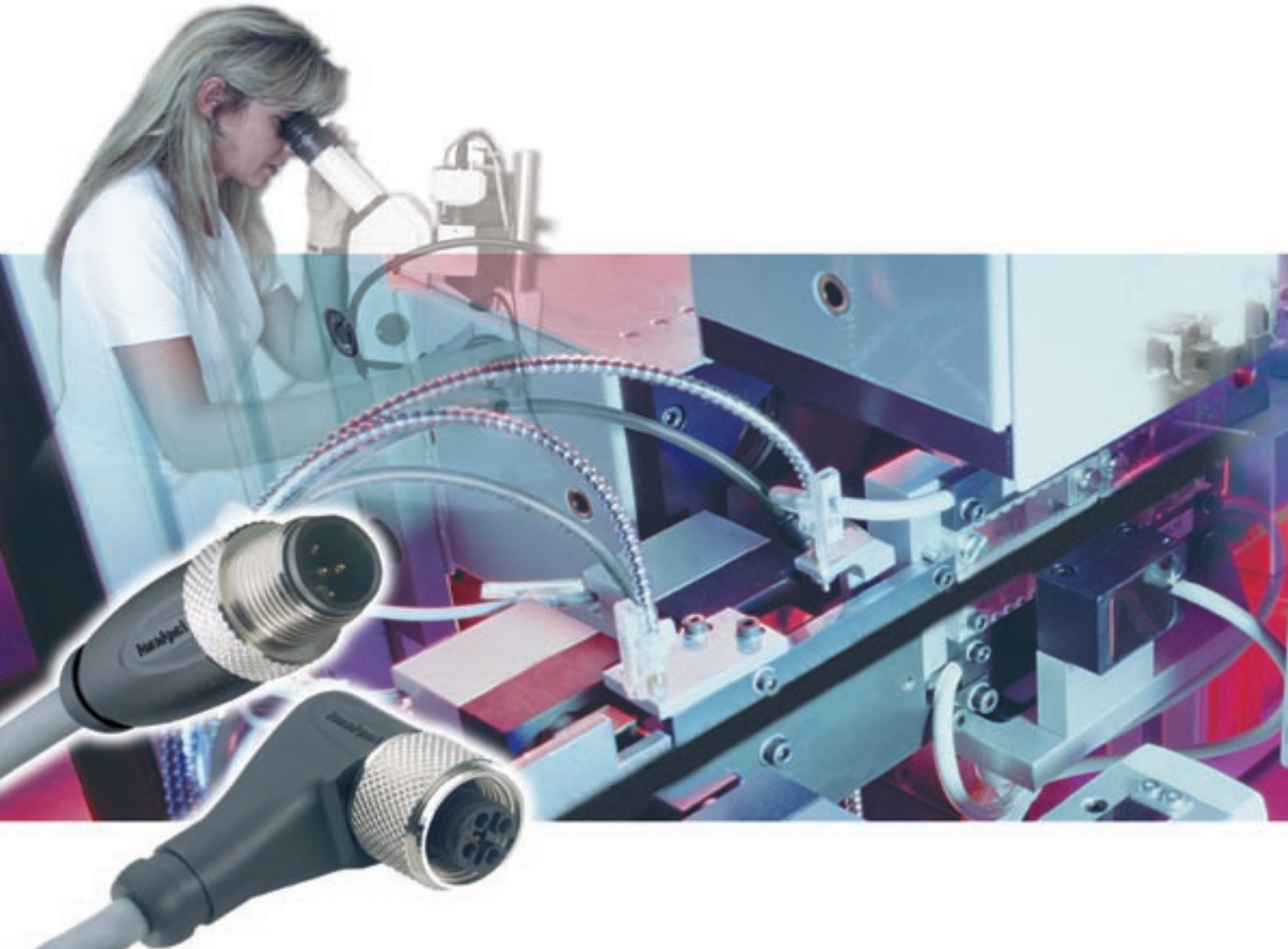
## EMI

German EMI regulations (EMI-guideline: 89/336 EWG) are met when correctly assembled in the appliance.

## Application and use

Connectors should be used according to their rated performance values. These rated values are established under specific conditions to meet product specifications or other electrical qualifications. The C112 connectors are designed for use in a variety of electrical equipment and applications that control various appliances or link communications with sensor technology.

The user is responsible to verify that the connector meets the application requirements of the product. All connector rating data in this catalog is based on the overvoltage of category III and pollution degree of 2/3 for electrical devices. All specifications are met when the connectors are completely mated.



## Assembly

The housings of the panel receptacle or plug must be reliably integrated into the protective means of the enclosure. Reference: DIN VDE 0100 part 410; 80384-4-41. During assembly,

care must be given to ensure that all components are correctly mounted and screw terminations are tightened to the correct torque.

## Termination

Customer assembled cable connectors must follow precise instructions to properly secure the strain relief system. There is an integrated strain relief clamp or a standard Pg cable entry. The standard Pg cable entry requires a strain relief close to the rear of the connector. Cable selection should

meet the same specifications as the connector (i.e., solvent resistance or fire protection). Correct polarity must be observed when terminating wires. The wire insulation should be stripped to the proper length and wire diameter.

## Remarks

The C112 connectors are designed and produced in conformance with the low voltage guidelines: 72/73 EWG and the law for safety of appliances. The connectors are designed and manufactured according to DIN VDE 57-0627. Design changes to meet quality improvements, product development or production requirements are reserved. All technical data is related to connectors operating under normal use and loads when fully mated. Connectors should not be mated or unmated while under load. Connector safety is dependent

upon the correct selection of products, installation, and assembly. The listed technical data and remarks are intended to help the user select the correct products for the appropriate applications.



## Safety classification according to DIN VDE 0627

Type	Feature	Safety classification <sup>1)</sup>			Connector		Protective earth contact		Protection against <sup>1)</sup>		Rewireable	
		A	B	C	free	fixed	with	without	D	E	yes	no
male cable con.		X			X		X	X				X
female cable connector	with LED, customer ass'y	X			X		X	X	X		X	
female cable con.		X			X		X	X	X			X
Cordset			X		X		X	X	X			X
Female panel con.		X			X		X	X	X			X
Male panel con.		X			X		X	X				X
Male panel con.	customer ass'y	X			X		X	X			X	
Distributors			X		X		X	X	X			X

<sup>1)</sup> A Connections to and from a device / B Connections within a device / C Free cable connection  
D Mated / E Unmated

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# Male/Female Cable Connectors

## C112 series



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Female cable connector, straight, shielded,  
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Female cable connector, right angled,  
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Female cable connector, right angled, shielded,  
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Female connector, right angled,  
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### Description

M12-cables available with male or female connectors, straight or angled housings and cable jacket materials in PVC or PUR.

EMI shielded M12-cables are available with male and female connectors, straight or angled housings and cable jacket materials in PVC or PUR.

Female cable connector for customer assembly available with prewired circuitry.



General characteristics	Standard	Standard Version	Shielded	Customer Assembly
Number of contacts		3 / 4 / 5 <sup>3)</sup>	3 / 4 / 5 <sup>3)</sup>	3 / 3+PE

#### Electrical characteristics

Contact resistance	IEC 60 512-2, test 2 a	≤ 10 mΩ (without cable)		≤ 10 mΩ (without cable)
Current carrying capacity	IEC 60 512-3, test 5 b	4 A at T <sub>u</sub> = 40°C		without LED 7 A at T <sub>u</sub> = 40°C with LED 3,5 A at T <sub>u</sub> = 40°C
Rated voltage	IEC 60 664-1 <sup>2)</sup>	3+4 cont. 250 V AC/DC	30 V AC/DC	without LED 250 V AC/DC
	IEC 60 664-1 <sup>2)</sup>	5 cont. 125 V AC/DC	30 V AC/DC	with LED 36 V DC
Rated impulse voltage	IEC 60 664-1 <sup>2)</sup>	3+4 cont. 4 kV	1,8 kV	without LED 2,0 kV
	IEC 60 664-1 <sup>2)</sup>	5 cont. 2,5 kV	1,8 kV	–
Insulation resistance	IEC 60 512-2, test 3 a	> 10 <sup>9</sup> Ω		> 10 <sup>8</sup> Ω
Pollution degree	IEC 60 664-1 <sup>2)</sup>	3 <sup>1)</sup>		3
Overvoltage category	IEC 60 664-1 <sup>2)</sup>	III		III
Material group	IEC 60 664-1 <sup>2)</sup>	I		II
Test voltage	IEC 60 664-1 <sup>2)</sup>	3 + 4 cont. 2,0 kVeff 5 cont. 1,4 kVeff	1 kVeff	–

#### Climatic characteristics

Climatic category	IEC 60 068-1	25 / 85 / 21	without LED: 30 / 100 / 56
			with LED: 30 / 80 / 56
Temperature range	IEC 60 512-6, test 11 i+j	–25°C - +85°C –13°F - +185°F	without LED: –30°C - +100°C –22°F - +212°F
			with LED: –30°C - +80°C –22°F - +176°F

#### Materials

Contact insert		TPU	PA
Contact plating		Au	Ag
Overmolding		TPU	PA
Housing		–	PA
Knurled screw / knurled nut		CuZn nickel plated	PA
O-Ring		Viton	NBR

#### Mechanical characteristics

Protection class	IEC 60 529	IP 67 when properly mated	IP 65 when properly mated
Mechanical operation	IEC 60 512-5, Test 9 a (without corrosion protection)	≥ 100 mating cycles	≥ 50 mating cycles
Insertion force	IEC 60 512-7, Test 13 b	≤ 20 N	≤ 20 N
Withdrawal force	IEC 60 512-7, Test 13 b	≤ 20 N	≤ 20 N

#### Other technical characteristics

Type of termination		crimp (overmolded)	screw clamps
Wire size		0,34 mm <sup>2</sup> (AWG 22)	0,14 - 0,5 mm <sup>2</sup> (AWG 24-20)
Flammability		UL 94 HB	UL 94 V-0
Locking		Screw coupling	Screw coupling

<sup>1)</sup> 5 contact version in mated position only. Unmated for maintenance purposes only.

<sup>2)</sup> IEC 60664-1 corresponds to DIN VDE 0110

<sup>3)</sup> Contact no. 5 is "first mate – last break" and can be used for grounding purpose. When grounding the customer must mark the wire.

Furthermore it has to be guaranteed that this connector is not mated with such connectors where contact no 5 is under voltage



### Cable construction PVC

- Partly oil and chemical proof
- Especially suited for dry areas

	Color code	Conductors	Cable jacket	
			Ø mm	material
Cable 01	Brown, blue, black	3 x 0,34 mm <sup>2</sup> (AWG 22)	5	PVC
Cable 02	Brown, white, blue, black	4 x 0,34 mm <sup>2</sup> (AWG 22)	5	PVC
Cable 03	Brown, white, blue, black, grey	5 x 0,34 mm <sup>2</sup> (AWG 22)	5	PVC
Cable 07	Brown, blue, black	3 x 0,34 mm <sup>2</sup> (AWG 22)	5	PVC shielded
Cable 08	Brown, white, blue, black	4 x 0,34 mm <sup>2</sup> (AWG 22)	5	PVC shielded
Cable 09	Brown, white, blue, black, grey	5 x 0,34 mm <sup>2</sup> (AWG 22)	5	PVC shielded

### Cable construction PUR

- Very good oil and chemical resistance
- Especially suited for applications in the machine and installation area with rough environments, also in the food industry

	Color code	Conductors	Cable jacket	
			Ø mm	material
Cable 04	Brown, blue, black	3 x 0,34 mm <sup>2</sup> (AWG 22)	5	PUR
Cable 05	Brown, white, blue, black	4 x 0,34 mm <sup>2</sup> (AWG 22)	5	PUR
Cable 06	Brown, white, blue, black, grey	5 x 0,34 mm <sup>2</sup> (AWG 22)	5	PUR
Cable 10	Brown, blue, black	3 x 0,34 mm <sup>2</sup> (AWG 22)	5	PUR shielded
Cable 11	Brown, white, blue, black	4 x 0,34 mm <sup>2</sup> (AWG 22)	5	PUR shielded
Cable 12	Brown, white, blue, black, grey	5 x 0,34 mm <sup>2</sup> (AWG 22)	5	PUR shielded

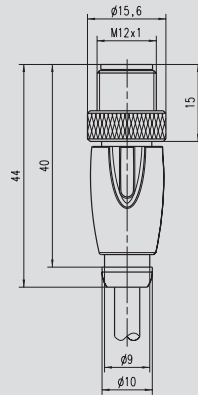
### Ordering example for different cable lengths

C 112	10A	013	---	10
	2.0 m		020	
	5.0 m		050	

Standard cable lengths: 2 m and 5 m.  
Non-standard cable lengths upon request. Minimum order quantities will apply.



**Male cable connector, straight with anti-vibration coupling nut**



Contacts	Cable jacket	Order No.
3	PVC	<b>C112 10A013 ___ 10</b>
	PUR	<b>C112 10A043 ___ 10</b>
4	PVC	<b>C112 10A024 ___ 10</b>
	PUR	<b>C112 10A054 ___ 10</b>
5	PVC	<b>C112 10A035 ___ 10</b>
	PUR	<b>C112 10A065 ___ 10</b>

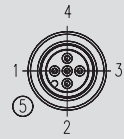
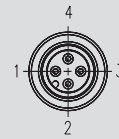
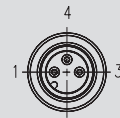
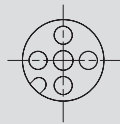
Standard cable lengths: 2 m and 5 m.  
Non-standard cable lengths and coding upon request.

Contact arrangement

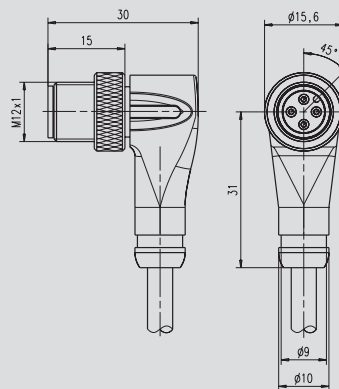
3 contacts

4 contacts

5 contacts  
⑤ first mate – last break



**Male cable connector, right angled with anti-vibration coupling nut**



Contacts	Cable jacket	Order No.
3	PVC	<b>C112 10B013 ___ 10</b>
	PUR	<b>C112 10B043 ___ 10</b>
4	PVC	<b>C112 10B024 ___ 10</b>
	PUR	<b>C112 10B054 ___ 10</b>
5	PVC	<b>C112 10B035 ___ 10</b>
	PUR	<b>C112 10B065 ___ 10</b>

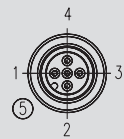
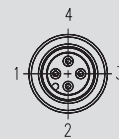
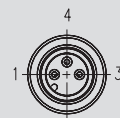
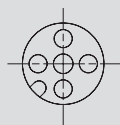
Standard cable lengths: 2 m and 5 m.  
Non-standard cable lengths and coding upon request.

Contact arrangement

3 contacts

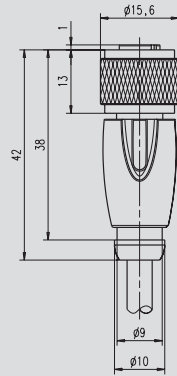
4 contacts

5 contacts  
⑤ first mate – last break





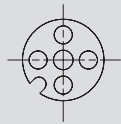
**Female cable connector, straight  
with anti-vibration coupling nut**



Contacts	Cable jacket	Order No.
3	PVC	<b>C112 10C013 ___ 10</b>
	PUR	<b>C112 10C043 ___ 10</b>
4	PVC	<b>C112 10C024 ___ 10</b>
	PUR	<b>C112 10C054 ___ 10</b>
5	PVC	<b>C112 10C035 ___ 10</b>
	PUR	<b>C112 10C065 ___ 10</b>

Standard cable lengths: 2 m and 5 m.  
Non-standard cable lengths and coding upon request.

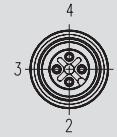
Contact arrangement



3 contacts



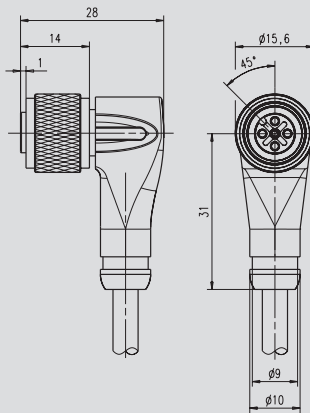
4 contacts



5 contacts



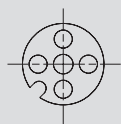
**Female cable connector,  
right angled  
with anti-vibration coupling nut**



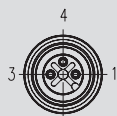
Contacts	Cable jacket	Order No.
3	PVC	<b>C112 10D013 ___ 10</b>
	PUR	<b>C112 10D043 ___ 10</b>
4	PVC	<b>C112 10D024 ___ 10</b>
	PUR	<b>C112 10D054 ___ 10</b>
5	PVC	<b>C112 10D035 ___ 10</b>
	PUR	<b>C112 10D065 ___ 10</b>

Standard cable lengths: 2 m and 5 m.  
Non-standard cable lengths and coding upon request.

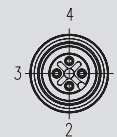
Contact arrangement



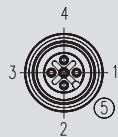
3 contacts



4 contacts

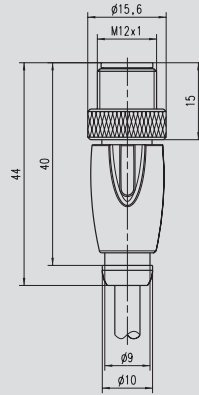


5 contacts





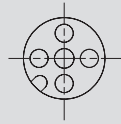
**Male cable connector,  
straight, shielded  
with anti-vibration coupling nut**



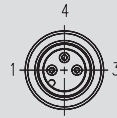
Contacts	Cable jacket	Order No.
3	PVC	<b>C112 11A073 ___ 10</b>
	PUR	<b>C112 11A103 ___ 10</b>
4	PVC	<b>C112 11A084 ___ 10</b>
	PUR	<b>C112 11A114 ___ 10</b>
5	PVC	<b>C112 11A095 ___ 10</b>
	PUR	<b>C112 11A125 ___ 10</b>

Standard cable lengths: 2 m and 5 m.  
Non-standard cable lengths and coding upon request.

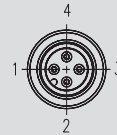
Contact arrangement



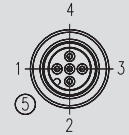
3 contacts



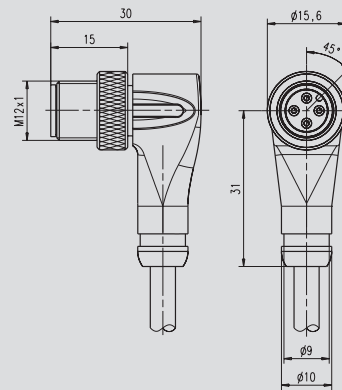
4 contacts



5 contacts  
⑤ first mate – last break



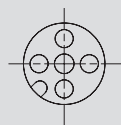
**Male cable connector,  
right angled, shielded  
with anti-vibration coupling nut**



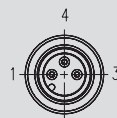
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3	PVC	<b>C112 11B073 ___ 10</b>
	PUR	<b>C112 11B103 ___ 10</b>
4	PVC	<b>C112 11B084 ___ 10</b>
	PUR	<b>C112 11B114 ___ 10</b>
5	PVC	<b>C112 11B095 ___ 10</b>
	PUR	<b>C112 11B125 ___ 10</b>

Standard cable lengths: 2 m and 5 m.  
Non-standard cable lengths and coding upon request.

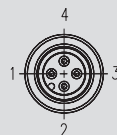
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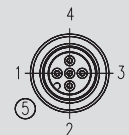
3 contacts



4 contacts

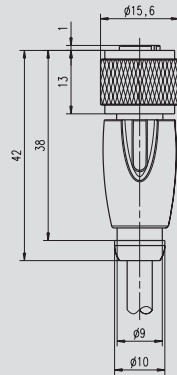


5 contacts  
⑤ first mate – last break





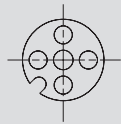
**Female cable connector,  
straight, shielded  
with anti-vibration coupling nut**



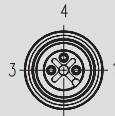
Contacts	Cable jacket	Order No.
3	PVC	<b>C112 11C073 ___ 10</b>
	PUR	<b>C112 11C103 ___ 10</b>
4	PVC	<b>C112 11C084 ___ 10</b>
	PUR	<b>C112 11C114 ___ 10</b>
5	PVC	<b>C112 11C095 ___ 10</b>
	PUR	<b>C112 11C125 ___ 10</b>

Standard cable lengths: 2 m and 5 m.  
Non-standard cable lengths and coding upon request.

Contact arrangement



3 contacts



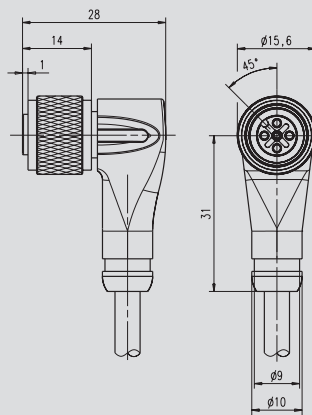
4 contacts



5 contacts



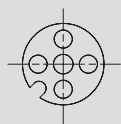
**Female cable connector,  
right angled, shielded  
with anti-vibration coupling nut**



Contacts	Cable jacket	Order No.
3	PVC	<b>C112 11D073 ___ 10</b>
	PUR	<b>C112 11D103 ___ 10</b>
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Standard cable lengths: 2 m and 5 m.  
Non-standard cable lengths and coding upon request.

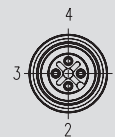
Contact arrangement



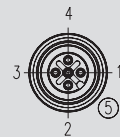
3 contacts



4 contacts

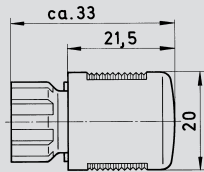
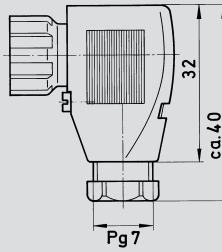


5 contacts





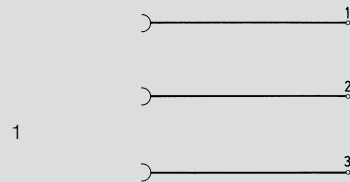
**Female cable connector,  
right angled**  
for customer assembly



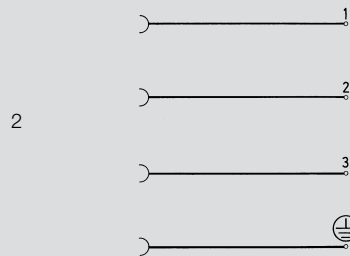
Con- tacts	LED 1	LED 2	Circuit	Order-Nr.
3	-	-	1	<b>C112 13D004 000 01</b>
3+PE	-	-	2	<b>C112 13D004 000 02</b>
3	yel.	-	3	<b>C112 13D004 000 03</b>
		-	4	<b>C112 13D004 000 04</b>
		-	5	<b>C112 13D004 000 05</b>
3	gre.	yel.	6	<b>C112 13D004 000 06</b>
		-	7	<b>C112 13D004 000 07</b>
		-	8	<b>C112 13D004 000 08</b>

Circuit

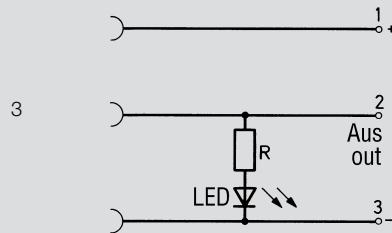
Wiring scheme



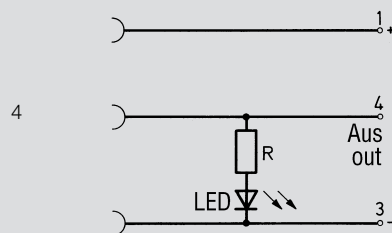
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2



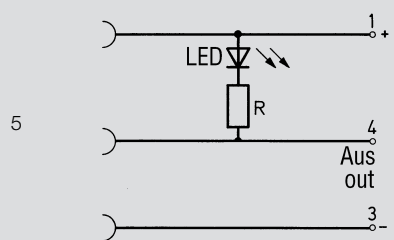
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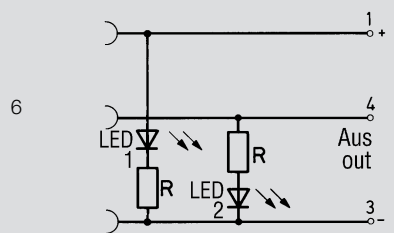
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Circuit

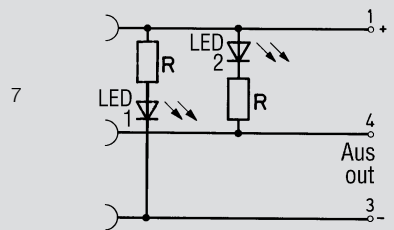
Wiring scheme



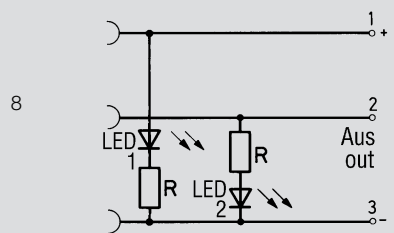
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6



7



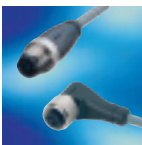
8

# Cordsets

## C 112 series



Cordset  
Male connector, straight/Female connector, straight  
with anti-vibration coupling nut ... Page 18



Cordset  
Male connector, straight/Female connector, right angled  
with anti-vibration coupling nut ... Page 18



Cordset, shielded  
Male connector, straight/Female connector, straight  
with anti-vibration coupling nut ... Page 19



Cordset, shielded  
Male connector, straight/Female connector, right angled  
with anti-vibration coupling nut ... Page 19

### Description

M12 cordset with male and female connector, straight or right angled and standard cable with PVC or PUR insulation.

Shielded EMI protected M12 cordsets with male and female connector, straight or right angled, and standard cable with PVC or PUR insulation.



General characteristics	Standard	Standard Version	Shielded
Number of contacts		3 / 4 / 5 <sup>3)</sup>	3 / 4 / 5 <sup>3)</sup>

#### Electrical characteristics

Contact resistance	IEC 60 512-2, test 2 a	≤ 10 mΩ (without cable)	
Current carrying capacity	IEC 60 512-3, test 5 b	4 A at T <sub>u</sub> = 40°C	
Rated voltage	IEC 60 664-1 <sup>2)</sup>	3+4 cont. 250 V AC/DC	3+4 cont. 30 V AC/DC
	IEC 60 664-1 <sup>2)</sup>	5 cont. 125 V AC/DC	5 cont. 30 V AC/DC
Rated impulse voltage	IEC 60 664-1 <sup>2)</sup>	3+4cont. 4 kV	3+4 cont. 1,8 kV
Insulation resistance	IEC 60 664-1 <sup>2)</sup>	5 cont. 2,5 kV	5 cont. 1,8 kV
	IEC 60 512-2, test 3 a	> 10 <sup>9</sup> Ω	
Pollution degree	IEC 60 664-1 <sup>2)</sup>	3 <sup>1)</sup>	
Overvoltage category	IEC 60 664-1 <sup>2)</sup>	III	
Material group	IEC 60 664-1 <sup>2)</sup>	I	
Test voltage	IEC 60 644-1 <sup>2)</sup>	3 + 4 cont. 2,0 kVeff	1 kVeff
		5 cont. 1,4 kVeff	

#### Climatic characteristics

Climatic category	IEC 60 668-1	25 / 85 / 21	
Temperature range	IEC 60 512-6, test 11 i+j	-25°C - +85°C	
		-13°F - +185°F	

#### Materials

Contact insert		TPU
Contact plating		Au
Overmolding		TPU
Housing		-
Knurled screw / knurled nut		CuZn nickel plated
O-Ring		Viton

#### Mechanical characteristics

Protection class	IEC 60 529	IP 67, when properly mated
Mechanical operation	IEC 60 512-5, test 9 a (without corrosion)	≥ 100 mating cycles
Insertion force	IEC 60 512-7, test 13 b	≤ 20 N
Withdrawal force	IEC 60 512-7, test 13 b	≤ 20 N

#### Other technical characteristics

Type of termination		crimp (overmolded)
Wire size		0,34 mm <sup>2</sup> (AWG 22)
Flammability		UL 94 HB
Locking		Screw coupling

<sup>1)</sup> 5 contact version in mated position only. Unmated for maintenance purposes only.

<sup>2)</sup> IEC 60664-1 corresponds to DIN VDE 0110

<sup>3)</sup> Contact no. 5 is "first mate – last break" and can be used for grounding purpose. When grounding the customer must mark the wire. Furthermore it has to be guaranteed that this connector is not mated with such connectors where contact no 5 is under voltage



### Cable construction PVC

- Fair oil and chemical resistance
- Especially suited for dry areas

	Color code	Conductors	Cable jacket	
			Ø mm	material
Cable 01	Brown, blue, black	3 x 0,34 mm <sup>2</sup> (AWG 22)	5	PVC
Cable 02	Brown, white, blue, black	4 x 0,34 mm <sup>2</sup> (AWG 22)	5	PVC
Cable 03	Brown, white, blue, black, grey	5 x 0,34 mm <sup>2</sup> (AWG 22)	5	PVC
Cable 07	Brown, blue, black	3 x 0,34 mm <sup>2</sup> (AWG 22)	5	PVC shielded
Cable 08	Brown, white, blue, black	4 x 0,34 mm <sup>2</sup> (AWG 22)	5	PVC shielded
Cable 09	Brown, white, blue, black, grey	5 x 0,34 mm <sup>2</sup> (AWG 22)	5	PVC shielded

### Cable construction PUR

- Good oil and chemical resistance
- Especially suited for applications in abrasive environments

	Color code	Conductors	Cable jacket	
			Ø mm	material
Cable 04	Brown, blue, black	3 x 0,34 mm <sup>2</sup> (AWG 22)	5	PUR
Cable 05	Brown, white, blue, black	4 x 0,34 mm <sup>2</sup> (AWG 22)	5	PUR
Cable 06	Brown, white, blue, black, grey	5 x 0,34 mm <sup>2</sup> (AWG 22)	5	PUR
Cable 10	Brown, blue, black	3 x 0,34 mm <sup>2</sup> (AWG 22)	5	PUR shielded
Cable 11	Brown, white, blue, black	4 x 0,34 mm <sup>2</sup> (AWG 22)	5	PUR shielded
Cable 12	Brown, white, blue, black, grey	5 x 0,34 mm <sup>2</sup> (AWG 22)	5	PUR shielded

### Ordering example for different cable lengths

C 112	20C	013	___	10
	0.6 m		006	
	1.0 m		010	
	2.0 m		020	

Standard cable length: 0.6 m, 1.0 m and 2.0 m.

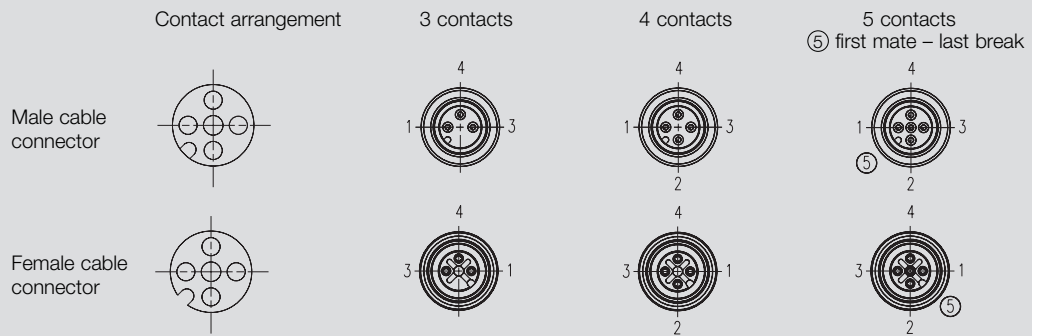
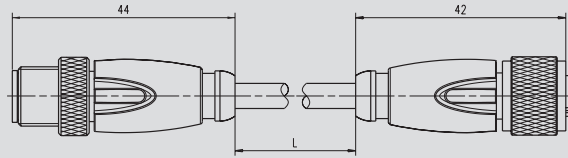
Non-standard cable lengths upon request. Minimum order quantities will apply.



**Cordset**  
**Male connector, straight /**  
**Female connector, straight**  
 with anti-vibration coupling nut

Contacts	Cable jacket	Order No.
3	PVC	<b>C-112 20C013 ___ 10</b>
	PUR	<b>C-112 20C043 ___ 10</b>
4	PVC	<b>C-112 20C024 ___ 10</b>
	PUR	<b>C-112 20C054 ___ 10</b>
5	PVC	<b>C-112 20C035 ___ 10</b>
	PUR	<b>C-112 20C065 ___ 10</b>

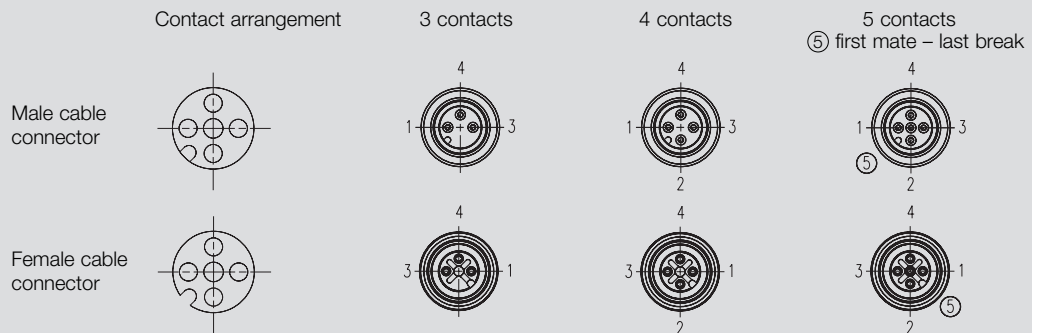
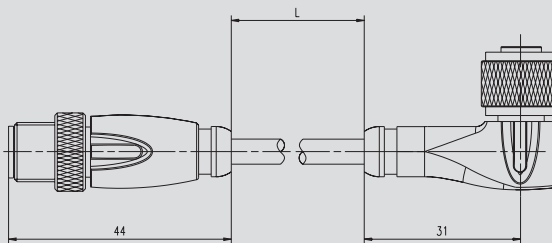
Standard cable lengths: 0.6 m, 1.0 m and 2.0 m.  
 Non-standard cable lengths and coding upon request.



**Cordset**  
**Male connector, straight /**  
**Female connector, right angled**  
 with anti-vibration coupling nut

Contacts	Cable jacket	Order No.
3	PVC	<b>C-112 20D013 ___ 10</b>
	PUR	<b>C-112 20D043 ___ 10</b>
4	PVC	<b>C-112 20D024 ___ 10</b>
	PUR	<b>C-112 20D054 ___ 10</b>
5	PVC	<b>C-112 20D035 ___ 10</b>
	PUR	<b>C-112 20D065 ___ 10</b>

Standard cable lengths:  
 0.6 m, 1.0 m and 2.0 m.  
 Non-standard cable lengths and coding upon request.

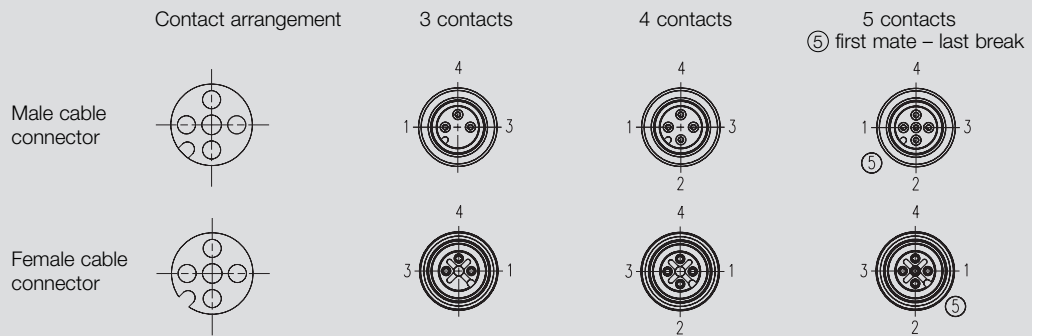
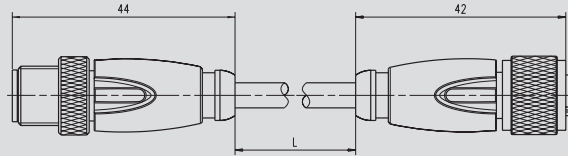




**Cordset, shielded**  
**Male connector, straight /**  
**Female connector, straight**  
 with anti-vibration coupling nut

Contacts	Cable jacket	Order No.
3	PVC	<b>C112 21C073 ___ 10</b>
	PUR	<b>C112 21C103 ___ 10</b>
4	PVC	<b>C112 21C084 ___ 10</b>
	PUR	<b>C112 21C114 ___ 10</b>
5	PVC	<b>C112 21C095 ___ 10</b>
	PUR	<b>C112 21C125 ___ 10</b>

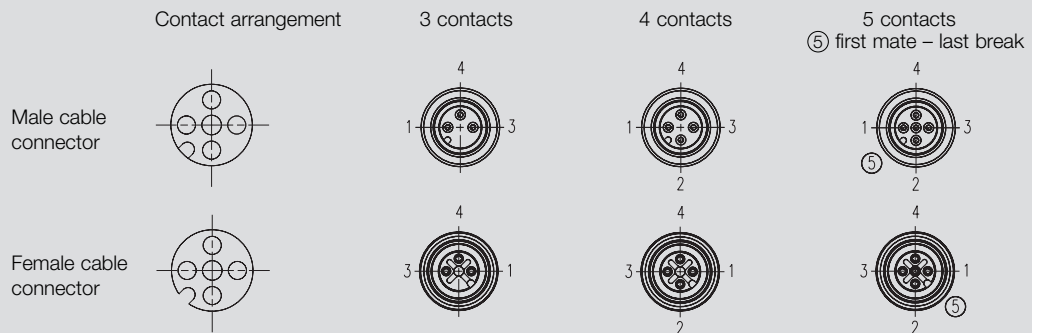
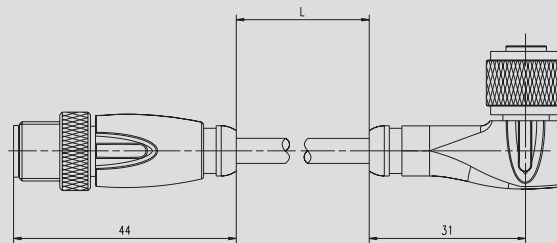
Standard cable lengths:  
 0.6 m, 1.0 m and 2.0 m.  
 Non-standard cable  
 lengths and coding upon  
 request.

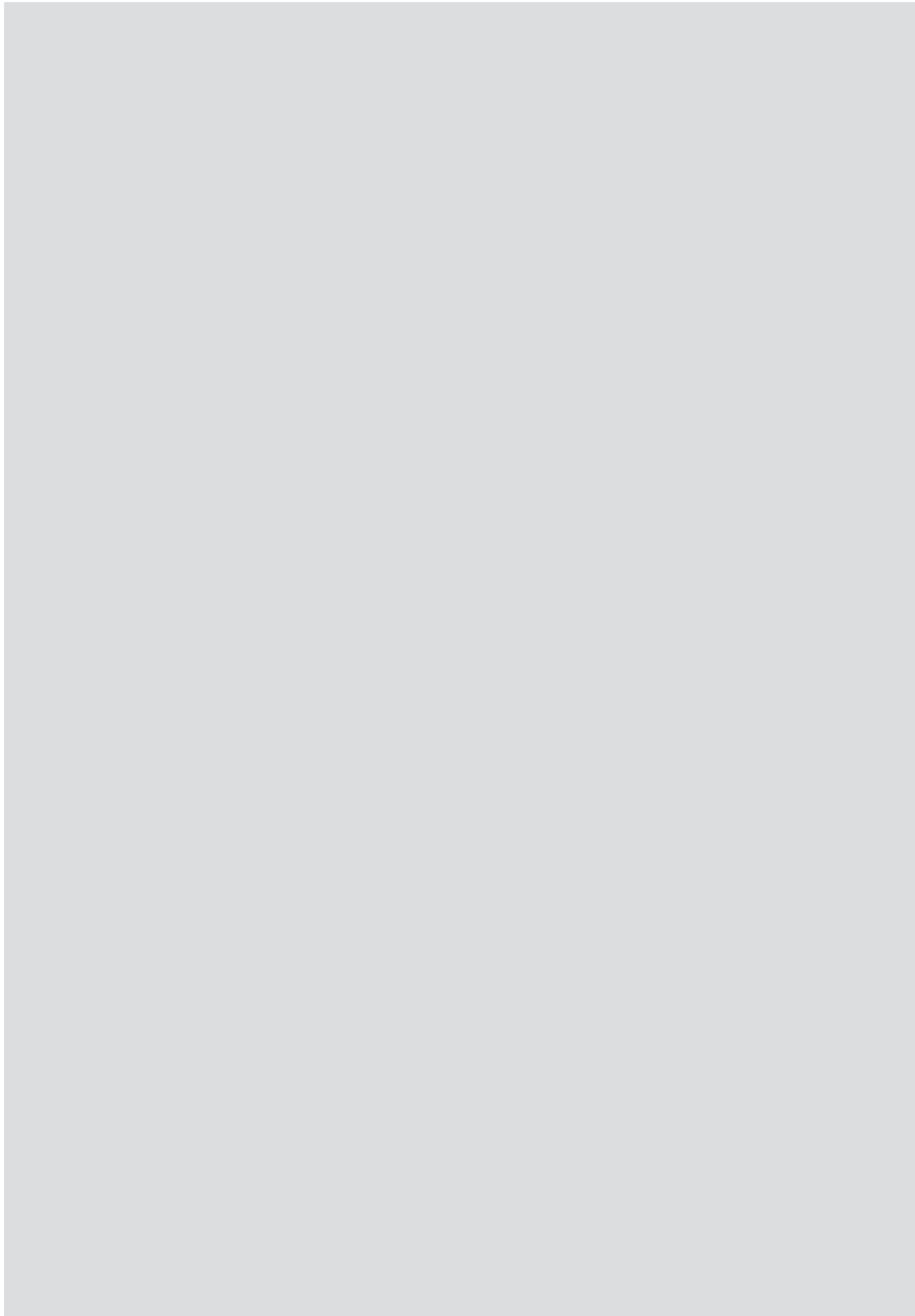


**Cordset, shielded**  
**Male connector, straight /**  
**Female connector, right angled**  
 with anti-vibration coupling nut

Contacts	Cable jacket	Order No.
3	PVC	<b>C112 21D073 ___ 10</b>
	PUR	<b>C112 21D103 ___ 10</b>
4	PVC	<b>C112 21D084 ___ 10</b>
	PUR	<b>C112 21D114 ___ 10</b>
5	PVC	<b>C112 21D095 ___ 10</b>
	PUR	<b>C112 21D125 ___ 10</b>

Standard cable lengths:  
 0.6 m, 1.0 m and 2.0 m.  
 Non-standard cable lengths  
 and coding upon request.



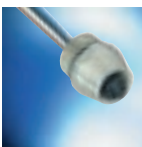


# Male and female panel connectors

## C 112 Series



Male panel connector, front mounting assembled with wires ... Page 23



Female panel connector, front mounting assembled with wires ... Page 23



Male panel connector, rear mounting assembled with wires ... Page 24



Female panel connector, rear mounting assembled with wires ... Page 24

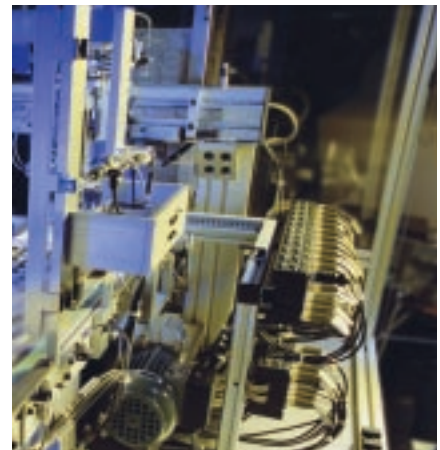


Male panel connector for customer assembly ... Page 25

### Description

M12 male and female panel connectors for front or rear mounting, assembled with wires.

M12 male panel connector for customer assembly



General characteristics	Standard	Standard Version	Customer Assembly
Number of contacts		3 / 4 / 5	3 / 4

#### Electrical characteristics

Contact resistance	IEC 60 512-2, test 2 a	≤ 10 mΩ (without cable)	≤ 10 mΩ (without cable)
Current carrying capacity	IEC 60 512-3, test 5 b	4 A at T <sub>u</sub> = 40°C	4 A at T <sub>u</sub> = 40°C
Rated voltage	IEC 60 664-1 <sup>2)</sup>	3+4 cont. 250 V AC/DC	250 V AC/DC
	IEC 60 664-1 <sup>2)</sup>	5 cont. 30 V AC/DC	
Rated impulse voltage	IEC 60 664-1 <sup>2)</sup>	3+4 cont. 4,0 kV	2,0 kV
	IEC 60 664-1 <sup>2)</sup>	5 cont. 2,5 kV	
Insulation resistance	IEC 60 512-2, test 3 a	> 10 <sup>9</sup> Ω	> 10 <sup>8</sup> Ω
Pollution degree	IEC 60 664-1 <sup>2)</sup>	3 <sup>1)</sup>	3
Overtoltage category	IEC 60 664-1 <sup>2)</sup>	III	III
Material group	IEC 60 664-1 <sup>2)</sup>	I	II
Test voltage	IEC 60 664-1 <sup>2)</sup>	3 + 4 cont. 2,0 kVeff	
		5 cont. 1,4 kVeff	

#### Climatic characteristics

Climatic category	IEC 60 068-1	25 / 85 / 21	30 / 100 / 56
Temperature range	IEC 60 512-6, test 1.1	-25°C - +85°C	-30°C - +100°C
		-13°F - +185°F	-22°F - +212°F

#### Materials

Contact insert		TPU	PA
Contact plating		Au	Ag
Housing / Mounting screw		CuZn nickel plated	PA
O-Ring		Viton	NBR

#### Mechanical characteristics

Protection class	IEC 60 529	IP 67 when properly mated	IP 65 when properly mated
Mechanical operation	IEC 60 512-5, test 9 a (without corrosion protection)	≥ 100 mating cycles	≥ 50 mating cycles
Insertion force	IEC 60 512-7, test 13 b	≤ 20 N	≤ 20 N
Withdrawal force	IEC 60 512-7, test 13 b	≤ 20 N	≤ 20 N

#### Other technical characteristics

Type of termination		crimp	solder
Wire size		0,34 mm <sup>2</sup> (AWG 22)	0,14 - 0,5 mm <sup>2</sup>
Flammability		UL 94 HB	UL 94 V-0
Locking		Screw coupling	Screw coupling

<sup>1)</sup> 5 contact version in mated position only. Unmated for maintenance purposes only.

<sup>2)</sup> IEC 60664-1 corresponds to DIN VDE 0110

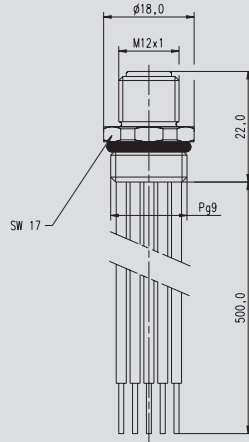
#### Wire construction

	Color code	Conductors	Insulation
Wire 01	Brown, blue, black	3 x 0,34 mm <sup>2</sup> (AWG 22)	PVC
Wire 02	Brown, white, blue, black	4 x 0,34 mm <sup>2</sup> (AWG 22)	PVC
Wire 03	Brown, white, blue, black, grey	5 x 0,34 mm <sup>2</sup> (AWG 22)	PVC

Standard length: 0.5 m. Non-standard cable lengths and coding upon request.



**Male panel connector,  
front mounting  
assembled with wires**



Contacts	Cable jacket	Order No.
3	PVC	<b>C112 30A013 005 10</b>
4	PVC	<b>C112 30A024 005 10</b>
5	PVC	<b>C112 30A035 005 10</b>

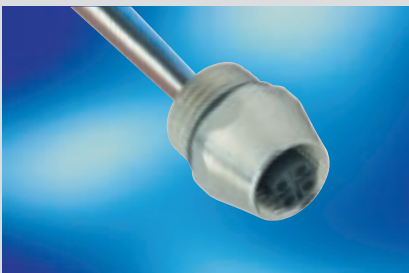
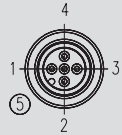
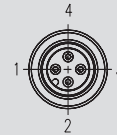
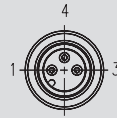
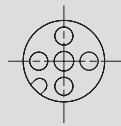
Standard length: 0.5 m  
Non-standard cable lengths and coding upon request.

Contact arrangement

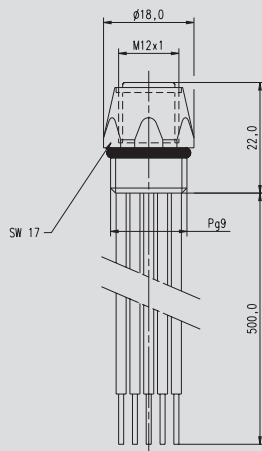
3 contacts

4 contacts

5 contacts



**Female panel connector,  
front mounting  
assembled with wires**



Contacts	Cable jacket	Order No.
3	PVC	<b>C112 30C013 005 10</b>
4	PVC	<b>C112 30C024 005 10</b>
5	PVC	<b>C112 30C035 005 10</b>

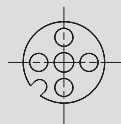
Standard length: 0.5 m  
Non-standard cable lengths and coding upon request.

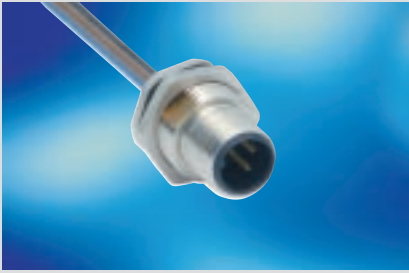
Contact arrangement

3 contacts

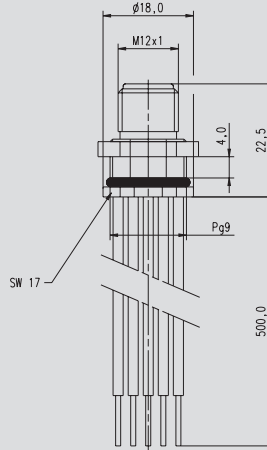
4 contacts

5 contacts





**Male panel connector,  
rear mounting  
assembled with wires**



Contacts	Insulation	Order No.
3	PVC	<b>C112 30B013 005 10</b>
4	PVC	<b>C112 30B024 005 10</b>
5	PVC	<b>C112 30B035 005 10</b>

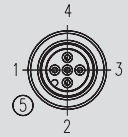
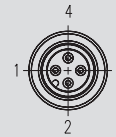
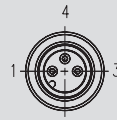
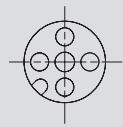
Standard length: 0.5 m  
Non-standard cable lengths and coding upon request.

Contact arrangement

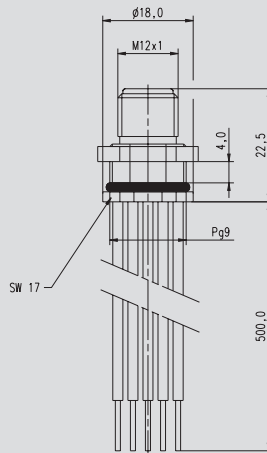
3 contacts

4 contacts

5 contacts



**Female panel connector,  
rear mounting  
assembled with wires**



Contacts	Insulation	Order No.
3	PVC	<b>C112 30D013 005 10</b>
4	PVC	<b>C112 30D024 005 10</b>
5	PVC	<b>C112 30D035 005 10</b>

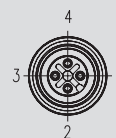
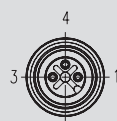
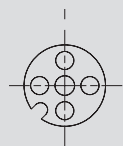
Standard length: 0.5 m  
Non-standard cable lengths and coding upon request.

Contact arrangement

3 contacts

4 contacts

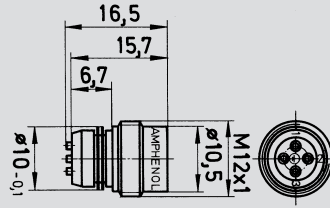
5 contacts



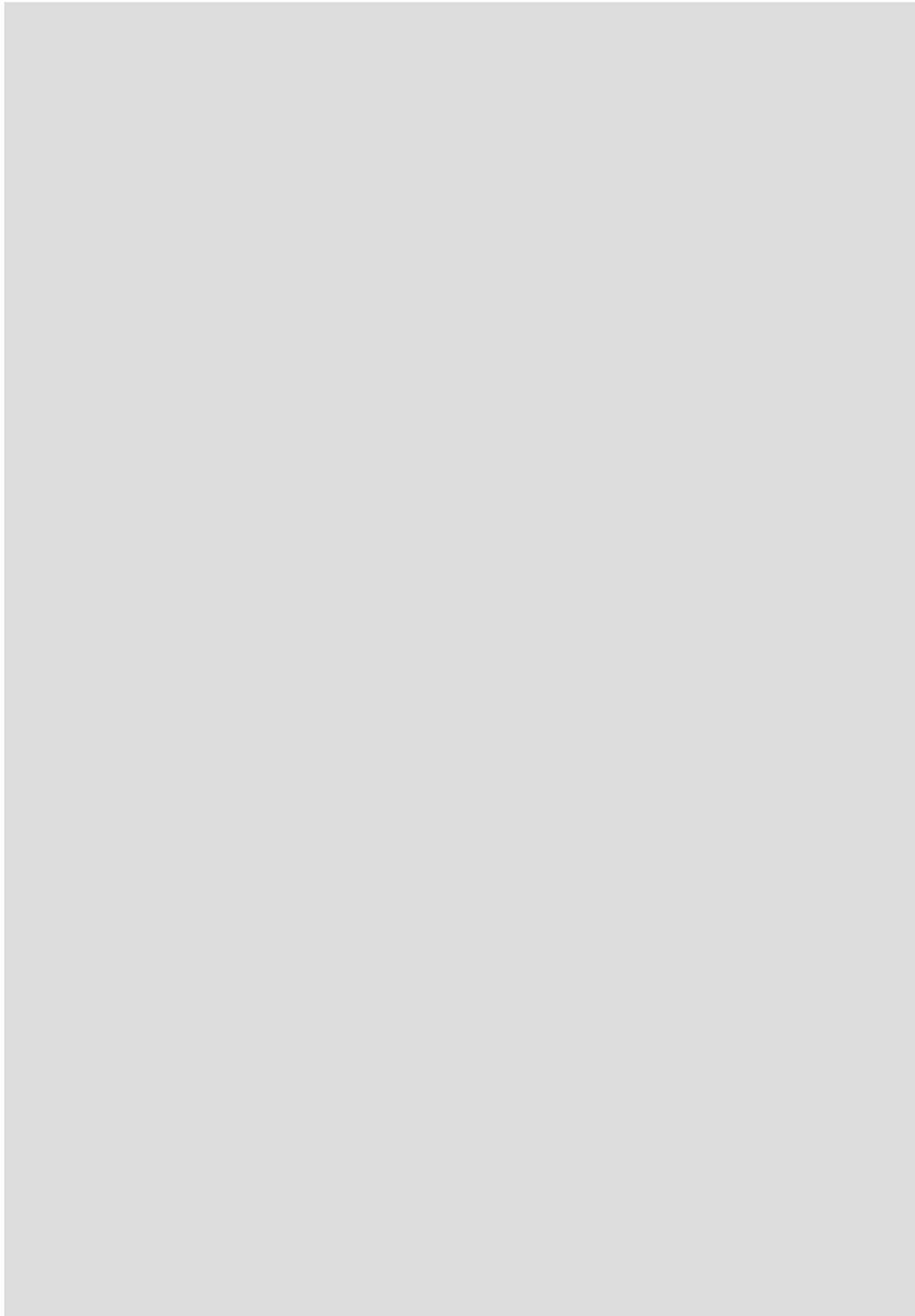




**Male panel connector**  
for customer assembly



Contacts	Order No.
3	<b>C112 31A003 000 10</b>
4	<b>C112 31A004 000 10</b>



# Distributors

## C 112 Series



Distribution boxes ... Page 29  
4-, 6- and 8-way

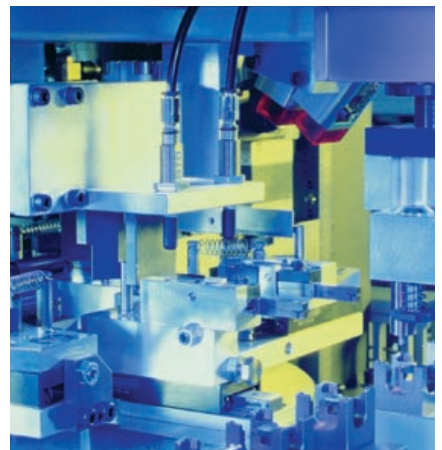


Y-Distributor 1x pin / 2x sockets ... Page 30  
Y-Distributor 1x socket / 2x pins

### Description

Ready to use M12-Distribution boxes with 4-, 6- and 8-way distribution.

M12-Y-Distributor for twofold distribution.  
1x pin / 2x sockets or 1x socket / 2x pins.



General characteristics	Standard	Y-Distributor	Distribution Box
Contacts		3 / 4 / 5	5

#### Electrical characteristics

Contact resistance	IEC 60 512-2, test 2 a	≤ 10 mΩ	≤ 5 mΩ
Current carrying capacity	IEC 60 512-3, test 5 b	4 A / 40°C	2 A / 40°C
Rated voltage	IEC 60 664-1 <sup>2)</sup>	30 V AC/DC	32 V
Rated impulse voltage	IEC 60 664-1 <sup>2)</sup>	1,44 kV	–
Insulation resistance	IEC 60 512-2, test 3 a	> 10 <sup>9</sup> Ω	> 10 <sup>9</sup> Ω
Pollution degree	IEC 60 664-1 <sup>2)</sup>	3 <sup>1)</sup>	2
Overvoltage category	IEC 60 664-1 <sup>2)</sup>	III	–
Material group	IEC 60 664-1 <sup>2)</sup>	I	–
Test voltage	IEC 60 664-1 <sup>2)</sup>	0,78 kVeff	1,0 kVeff

#### Climatic characteristics

Climatic category	IEC 60 068-1	25 / 85 / 21	–
Temperature range	IEC 60 512-6, test 11 i+j	–25°C - +85°C –13°F - +185°F	–20°C - +90°C –4°F - +194°F

#### Materials

Contact insert		TPU	PBT
Contact plating		Au	Au
Body		TPU	–
Housing		–	PBT
Knurled screw / knurled nut		CuZn nickel plated	–
O-Ring		Viton	–

#### Mechanical characteristics

Protection class	IEC 60 529	IP 67 when properly mated	IP 67 when properly mated
Mechanical operation	IEC 60 512-5, test 9 a (without corrosion)	≥ 100 mating cycles	≥ 100 mating cycles
Insertion force	IEC 60 512-7, test 13 b	≤ 20 N	≤ 20 N
Withdrawal force	IEC 60 512-7, test 13 b	≤ 20 N	≤ 20 N

#### Other technical characteristics

Type of termination		crimp (overmolded)	solder
Wire size		0,34 mm <sup>2</sup> (AWG 22)	–
Flammability		UL 94 HB	UL 94 V-0
Locking		Screw coupling	Screw coupling

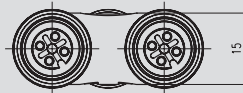
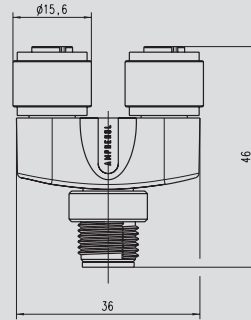
<sup>1)</sup> 5 contact version in mated position only. Unmated for maintenance purposes only.

<sup>2)</sup> IEC 60664-1 corresponds to DIN VDE 0110





**Y-Distributor**  
1x pin / 2x sockets



Contacts	Order No.
3	<b>C112 40A003 000 10</b>
4	<b>C112 40A004 000 10</b>
5	<b>C112 40A005 000 10</b>

Other codings upon request.

**Y-Distributor**  
1x socket / 2x pins

Contacts	Order No.
3	<b>C112 40B003 000 10</b>
4	<b>C112 40B004 000 10</b>
5	<b>C112 40B005 000 10</b>

Other codings upon request.

# Order number register

Order No.	Page	Order No.	Page	Order No.	Page
C112 10A013___10	10	C112 13D004 000 01	14	C112 40A005 000 10	30
C112 10A024___10	10	C112 13D004 000 02	14	C112 40B003 000 10	30
C112 10A035___10	10	C112 13D004 000 03	14	C112 40B004 000 10	30
C112 10A043___10	10	C112 13D004 000 04	14	C112 40B005 000 10	30
C112 10A054___10	10	C112 13D004 000 05	14	C112 50U004 000 10	29
C112 10A065___10	10	C112 13D004 000 06	14	C112 50U006 000 10	29
C112 10B013___10	10	C112 13D004 000 07	14	C112 50U008 000 10	29
C112 10B024___10	10	C112 13D004 000 08	14		
C112 10B035___10	10	C112 20C013___10	18		
C112 10B043___10	10	C112 20C024___10	18		
C112 10B054___10	10	C112 20C035___10	18		
C112 10B065___10	10	C112 20C043___10	18		
C112 10C013___10	11	C112 20C054___10	18		
C112 10C024___10	11	C112 20C065___10	18		
C112 10C035___10	11	C112 20D013___10	18		
C112 10C043___10	11	C112 20D024___10	18		
C112 10C054___10	11	C112 20D035___10	18		
C112 10C065___10	11	C112 20D043___10	18		
C112 10D013___10	11	C112 20D054___10	18		
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C112 11A073___10	12	C112 21C114___10	19		
C112 11A084___10	12	C112 21C125___10	19		
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C112 11B114___10	12	C112 30A035 005 10	23		
C112 11B125___10	12	C112 30B013 005 10	24		
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C112 11C114___10	13	C112 30C035 005 10	23		
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C112 11D073___10	13	C112 30D024 005 10	24		
C112 11D084___10	13	C112 30D035 005 10	24		
C112 11D095___10	13	C112 31A003 000 10	25		
C112 11D103___10	13	C112 31A004 000 10	25		
C112 11D114___10	13	C112 40A003 000 10	30		
C112 11D125___10	13	C112 40A004 000 10	30		

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