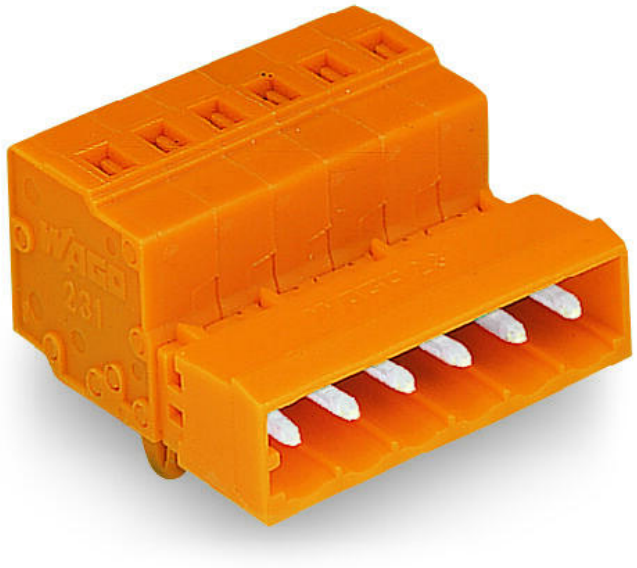
1-conductor male connector; Snap-in mounting feet; 2.5 mm²; Pin spacing 5.08 mm; 20-pole; 2,50 mm²; orange

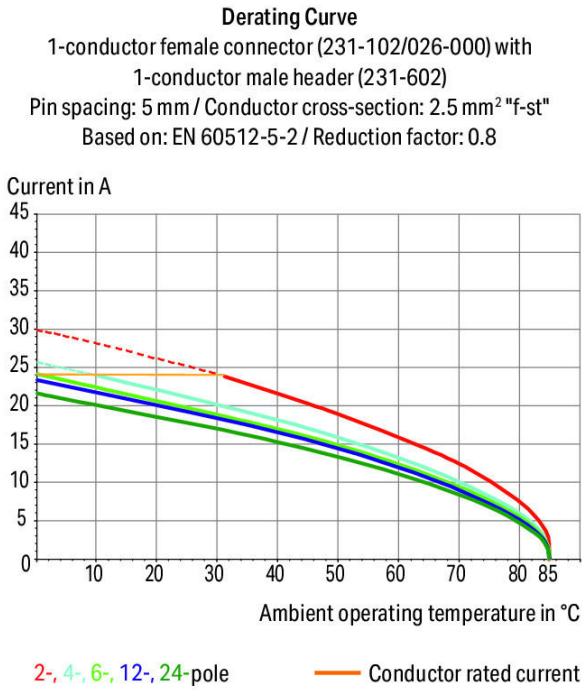
www.wago.com/231-650/018-000



RoHS ✓ Compliant

BOMcheck.net

Color:



Subject to changes. Please also observe the further product documentation!

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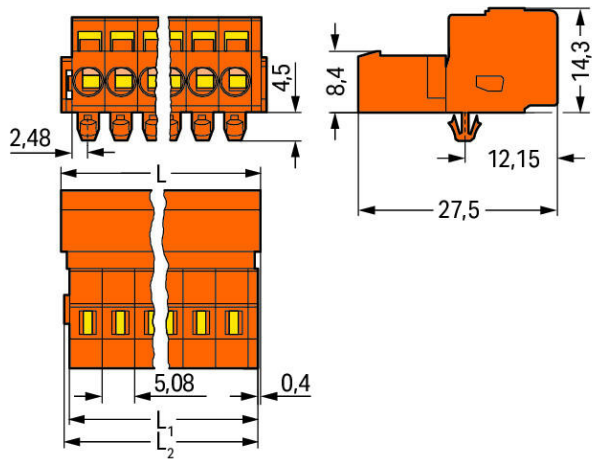

L = (pole no. – 1) x pin spacing + 8.2 mm

L_1 = L – 1.7 mm

L_2 = L – 1.2 mm

Item description

- Universal connection for all conductor types
- Easy cable pre-assembly and on-unit wiring via vertical and horizontal CAGE CLAMP® actuation
- For wire-to-wire and board-to-wire connections
- Versions available with snap-in mounting feet or flanges for panel or through-panel mounting
- With coding fingers

Safety information 1:
The *MULTI CONNECTION SYSTEM (MCS)* is designed without breaking capacity for compliance with DIN EN 61984. When used as intended, MCS Connectors shall not be connected/disconnected when live or under load. The circuit design should ensure header pins, which can be touched, are not live when unmated.

Data
Electrical data

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Ratings per IEC/EN 60664-1

Ratings per	IEC/EN 60664-1
Rated voltage (III / 3)	320 V
Rated impulse voltage (III / 3)	4 kV
Rated voltage (III / 2)	320 V
Rated impulse voltage (III / 2)	4 kV
Rated voltage (II / 2)	630 V
Rated impulse voltage (II / 2)	4 kV
Rated current	12 A
Legend (ratings)	(III / 2) ≙ Overvoltage category III / Pollution degree 2

Approvals per UL 1059

Rated voltage UL (Use Group B)	300 V
Rated current UL (Use Group B)	15 A
Rated voltage UL (Use Group D)	300 V
Rated current UL (Use Group D)	10 A
Approvals per	UL 1059

Approvals per UL 1977

Rated voltage per UL 1977 (factory wiring only)	600 V
Rated current per UL 1977 (factory wiring only)	15 A

Approvals per CSA

Rated voltage CSA (Use Group B)	300 V
Rated current CSA (Use Group B)	15 A
Rated voltage CSA (Use Group D)	300 V
Rated current CSA (Use Group D)	10 A

Connection data

Connection technology	CAGE CLAMP®
Actuation type	Operating tool
Solid conductor	0,08 … 2,5 mm² / 28 … 12 AWG
Fine-stranded conductor	0,08 … 2,5 mm² / 28 … 12 AWG
Fine-stranded conductor with ferrule with plastic collar	0,25 … 1,5 mm²
Fine-stranded conductor with ferrule without plastic collar	0,25 … 2,5 mm²
Strip length	8 … 9 mm / 0.31 … 0.35 inch

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No. of poles	20
Total number of connection points	20
Total number of potentials	20
Number of connection types	1
Number of levels	1
Conductor entry direction to mating direction	0 °

Geometrical Data

Pin spacing	5,08 mm / 0.2 inch
Width	104,8 mm / 4.126 inch
Height	18,8 mm / 0.74 inch
Height from the surface	14,3 mm / 0.563 inch
Depth	27,5 mm / 1.083 inch

Mechanical data

Gehäuseblechstärke	0,6 … 1,2 mm / 0.024 … 0.047 inch
Mounting type	Snap-in mounting foot
Type of mounting	Panel mounting

Plug connection

Contact type (pluggable connector)	Male connector/plug
Connector connection type	for conductors
Mismating protection	No

Material Data

Color	orange
Material group	I
Insulating material	Polyamide 66 (PA 66)
Flammability class per UL94	V0
Clamping spring material	Chrome nickel spring steel (CrNi)
Contact material	Electrolytic copper (E_{Cu})
Contact plating	tin-plated
Fire load	0.501 MJ
Weight	29.4 g

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Environmental Requirements

Limit temperature range	-60 … +100 °C

Commercial data

Product Group	3 (Multi Conn. System)
Packaging type	BOX
Country of origin	DE
GTIN	4044918261197
Customs Tariff No.	85366990990

Approvals / Certificates

Country specific Approvals

Logo	Approval	Additional Approval Text	Certificate name
	CB DEKRA Certification B.V.	IEC 61984	NL-39756
	CSA DEKRA Certification B.V.	C22.2	1466354
	KEMA/KEUR DEKRA Certification B.V.	EN 61984	2190761.01

Ship Approvals

Logo	Approval	Additional Approval Text	Certificate name
	ABS American Bureau of Shipping	-	19-HG1869876-PDA
	DNV GL Det Norske Veritas, Germanischer Lloyd	-	TAE000016Z

UL-Approvals

Logo	Approval	Additional Approval Text	Certificate name

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UL UL International Germany GmbH	UL 1977	E45171
UR Underwriters Laboratories Inc.	UL 1059	E45172

Counterpart

Item no.231-320/026-000
1-conductor female plug; 2.5 mm²; Pin spacing 5.08 mm; 20-pole; 2,50 mm²; orange

www.wago.com/231-320/026-000

Compatible products

assembling

Item no.: 209-137
Mounting adapter; can be used as end plate; 6.5 mm wide; gray

www.wago.com/209-137

ferrule

Item no.: 216-101
Ferrule; Sleeve for 0.5 mm² / AWG 22; uninsulated; electro-tin plated

www.wago.com/216-101

Item no.: 216-102
Ferrule; Sleeve for 0.75 mm² / AWG 20; uninsulated; electro-tin plated

www.wago.com/216-102

Item no.: 216-103
Ferrule; Sleeve for 1 mm² / AWG 18; uninsulated; electro-tin plated

www.wago.com/216-103

Item no.: 216-104
Ferrule; Sleeve for 1.5 mm² / AWG 16; uninsulated; electro-tin plated

www.wago.com/216-104

Item no.: 216-106
Ferrule; Sleeve for 2.5 mm² / AWG 14; uninsulated; electro-tin plated

www.wago.com/216-106

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	Item no.: 216-121 Ferrule; Sleeve for 0.5 mm² / AWG 22; uninsulated; electro-tin plated	www.wago.com/216-121
	Item no.: 216-122 Ferrule; Sleeve for 0.75 mm² / AWG 20; uninsulated; electro-tin plated	www.wago.com/216-122
	Item no.: 216-123 Ferrule; Sleeve for 1 mm² / AWG 18; uninsulated; electro-tin plated	www.wago.com/216-123
	Item no.: 216-124 Ferrule; Sleeve for 1.5 mm² / AWG 16; uninsulated; electro-tin plated	www.wago.com/216-124
	Item no.: 216-131 Ferrule; Sleeve for 0.25 mm² / AWG 24; uninsulated; electro-tin plated	www.wago.com/216-131
	Item no.: 216-132 Ferrule; Sleeve for 0.34 mm² / AWG 24; uninsulated; electro-tin plated	www.wago.com/216-132
	Item no.: 216-141 Ferrule; Sleeve for 0.5 mm² / 20 AWG; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92	www.wago.com/216-141
	Item no.: 216-142 Ferrule; Sleeve for 0.75 mm² / 18 AWG; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92	www.wago.com/216-142
	Item no.: 216-143 Ferrule; Sleeve for 1 mm² / AWG 18; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92	www.wago.com/216-143
	Item no.: 216-144 Ferrule; Sleeve for 1.5 mm² / AWG 16; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92	www.wago.com/216-144
	Item no.: 216-151 Ferrule; Sleeve for 0.25 mm² / AWG 24; uninsulated; electro-tin plated	www.wago.com/216-151
	Item no.: 216-152 Ferrule; Sleeve for 0.34 mm² / AWG 24; uninsulated; electro-tin plated	www.wago.com/216-152
	Item no.: 216-201 Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; white	www.wago.com/216-201
	Item no.: 216-202 Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; gray	www.wago.com/216-202
	Item no.: 216-203 Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; red	www.wago.com/216-203
	Item no.: 216-204 Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; black	www.wago.com/216-204
	Item no.: 216-221 Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; white	www.wago.com/216-221
	Item no.: 216-222 Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; gray	www.wago.com/216-222

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	Item no.: 216-223 Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; red	www.wago.com/216-223
	Item no.: 216-224 Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; black	www.wago.com/216-224
	Item no.: 216-241 Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; white	www.wago.com/216-241
	Item no.: 216-242 Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; gray	www.wago.com/216-242
	Item no.: 216-243 Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; red	www.wago.com/216-243
	Item no.: 216-244 Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; black	www.wago.com/216-244
	Item no.: 216-262 Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; gray	www.wago.com/216-262
	Item no.: 216-263 Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; red	www.wago.com/216-263
	Item no.: 216-264 Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; black	www.wago.com/216-264
	Item no.: 216-284 Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; black	www.wago.com/216-284
	Item no.: 216-301 Ferrule; Sleeve for 0.25 mm² / AWG 24; insulated; electro-tin plated; yellow	www.wago.com/216-301
	Item no.: 216-302 Ferrule; Sleeve for 0.34 mm² / 22 AWG; insulated; electro-tin plated; green	www.wago.com/216-302
	Item no.: 216-321 Ferrule; Sleeve for 0.25 mm² / AWG 24; insulated; electro-tin plated; yellow	www.wago.com/216-321
	Item no.: 216-322 Ferrule; Sleeve for 0.34 mm² / 22 AWG; insulated; electro-tin plated; green	www.wago.com/216-322
Coding		
	Item no.: 231-129 Coding key; snap-on type; light gray	www.wago.com/231-129
Jumper		

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	Item no.: 231-902 Comb-style jumper bar; for 5 mm and 5.08 mm pin spacing; reduces conductor size to 1.5 mm; gray	www.wago.com/231-902
	Item no.: 231-903 Comb-style jumper bar; 3-way; suitable for 231 Series female connectors; with 5 mm pin spacing; insulated; gray	www.wago.com/231-903
	Item no.: 231-905 Comb-style jumper bar; 5-way; suitable for 231 Series female connectors; with 5 mm pin spacing; insulated; gray	www.wago.com/231-905
	Item no.: 231-907 Comb-style jumper bar; 7-way; suitable for 231 Series female connectors; with 5 mm pin spacing; insulated; gray	www.wago.com/231-907
	Item no.: 231-910 Comb-style jumper bar; 10-way; suitable for 231 Series female connectors; with 5 mm pin spacing; insulated; gray	www.wago.com/231-910
General accessories		
	Item no.: 231-669 Lockout caps; for covering unused clamping units; orange	www.wago.com/231-669
tools		
	Item no.: 209-130 Operating tool; suitable for 264, 280 and 281 Series; 1-way; of insulating material	www.wago.com/209-130
	Item no.: 209-132 Operating tool; for connecting comb-style jumper bar; 2-way; of insulating material	www.wago.com/209-132
	Item no.: 210-250 Operating tool; for MCS MINI & MIDI with CAGE CLAMP® connection; red	www.wago.com/210-250
	Item no.: 210-657 Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short	www.wago.com/210-657
	Item no.: 210-720 Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft	www.wago.com/210-720
	Item no.: 231-131 Push-button; loose	www.wago.com/231-131
	Item no.: 231-159 Operating tool; natural	www.wago.com/231-159
	Item no.: 231-231 Combination operating tool; red	www.wago.com/231-231
	Item no.: 231-291 Operating tool; loose; red	www.wago.com/231-291
	Item no.: 280-432 Operating tool; made of insulating material; 2-way	www.wago.com/280-432
	Item no.: 280-433 Operating tool; made of insulating material; 3-way	www.wago.com/280-433

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	Item no.: 280-434 Operating tool; made of insulating material; 4-way	www.wago.com/280-434
	Item no.: 280-435 Operating tool; made of insulating material; 5-way; gray	www.wago.com/280-435
	Item no.: 280-436 Operating tool; made of insulating material; 6-way	www.wago.com/280-436
	Item no.: 280-437 Operating tool; made of insulating material; 7-way	www.wago.com/280-437
	Item no.: 280-438 Operating tool; made of insulating material; 8-way	www.wago.com/280-438
	Item no.: 280-440 Operating tool; made of insulating material; 10-way	www.wago.com/280-440
Insulation stop		
	Item no.: 231-670 Insulation stop; 0.08-0.2 mm² / 0.2 mm² “s”; white	www.wago.com/231-670
	Item no.: 231-671 Insulation stop; 0.25 - 0.5 mm²; light gray	www.wago.com/231-671
	Item no.: 231-672 Insulation stop; 0.75 - 1 mm²; dark gray	www.wago.com/231-672
Marking accessories		
	Item no.: 210-331/508-103 Marking strips; as a DIN A4 sheet; MARKED; 1-12 (200x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white	www.wago.com/210-331/508-103
	Item no.: 210-331/508-104 Marking strips; as a DIN A4 sheet; MARKED; 13-24 (200x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white	www.wago.com/210-331/508-104
	Item no.: 210-332/508-202 Marking strips; as a DIN A4 sheet; MARKED; 1-16 (160x); Height of marker strip: 3 mm; Strip length 182 mm; Horizontal marking; Self-adhesive; white	www.wago.com/210-332/508-202
	Item no.: 210-332/508-204 Marking strips; as a DIN A4 sheet; MARKED; 17-32 (160x); Height of marker strip: 3 mm; Strip length 182 mm; Horizontal marking; Self-adhesive; white	www.wago.com/210-332/508-204
	Item no.: 210-332/508-205 Marking strips; as a DIN A4 sheet; MARKED; 1-32 (80x); Height of marker strip: 3 mm; Strip length 182 mm; Horizontal marking; Self-adhesive; white	www.wago.com/210-332/508-205
	Item no.: 210-332/508-206 Marking strips; as a DIN A4 sheet; MARKED; 33-48 (160x); Height of marker strip: 3 mm; Strip length 182 mm; Horizontal marking; Self-adhesive; white	www.wago.com/210-332/508-206

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	Item no.: 210-833 Marking strips; on reel; 6 mm wide; plain; Self-adhesive; white	www.wago.com/210-833
	Item no.: 210-834 Marking strips; on reel; 5 mm wide; plain; Self-adhesive; white	www.wago.com/210-834

Mounting adapter

	Item no.: 209-148 Multi mounting adapter; for male and female connectors with snap-in mounting feet	www.wago.com/209-148

Downloads

Documentation

Additional Information

Technical explanations	Apr 3, 2019	pdf 3.6 MB	Download

CAD/CAE-Data

CAD data

2D/3D Models 231-650/018-000	URL	Download

CAE data

EPLAN Data Portal 231-650/018-000	URL	Download

Installation Notes

Inserting a conductor

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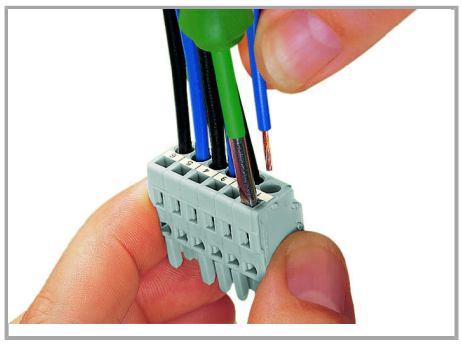
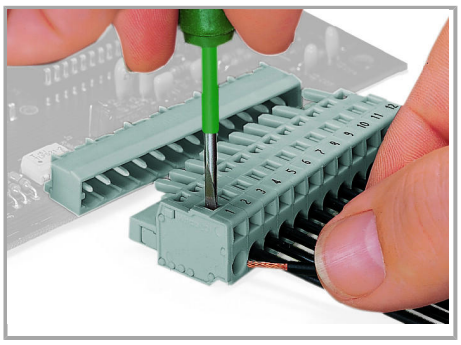
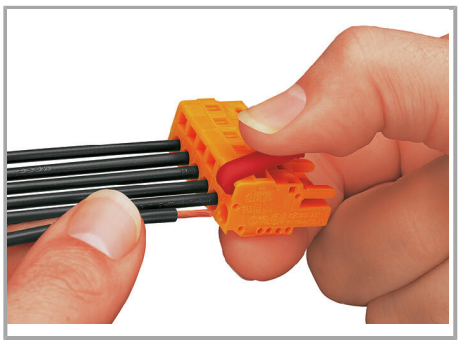


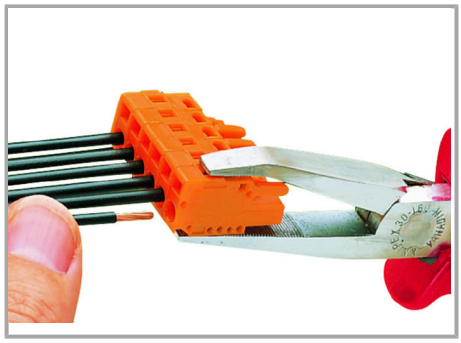
Inserting a conductor via 3.5 mm screwdriver – CAGE CLAMP® actuation parallel to conductor entry.



Inserting a conductor via 3.5 mm screwdriver – CAGE CLAMP® actuation perpendicular to conductor entry.

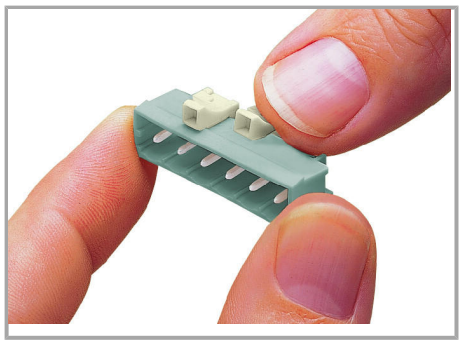


Inserting a conductor into CAGE CLAMP® unit via operating lever (231-291).



Inserting a conductor via operating tool.

Coding



Coding a male header – fitting coding key(s).

Testing

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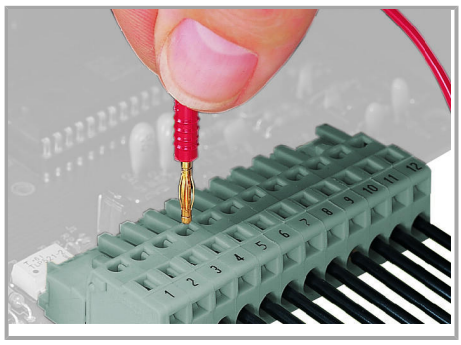
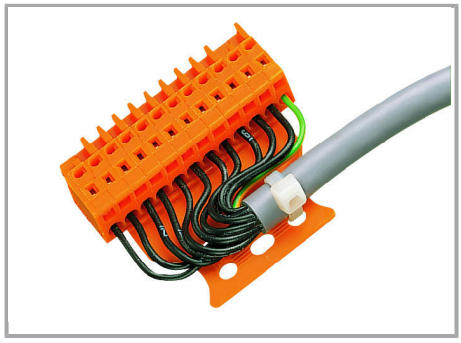
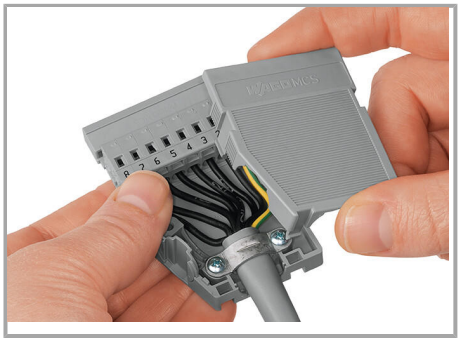


Testing perpendicular to conductor entry via 2 or 2.3 mm Ø test plug – female connector with CAGE CLAMP®.

Assembly

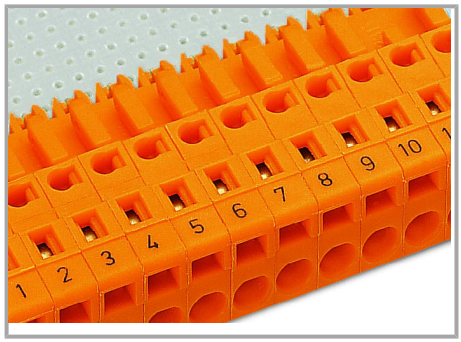


Male connector with strain relief plate



Strain relief housing shown with a male connector equipped with CAGE CLAMP®

Marking



Labeling via direct marking or self-adhesive strips.

Product family

Subject to changes. Please also observe the further product documentation!

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