

Data sheet | Item number: 231-652

1-conductor male connector; 2.5 mm²; Pin spacing 5.08 mm; 22-pole; 2,50 mm²; orange

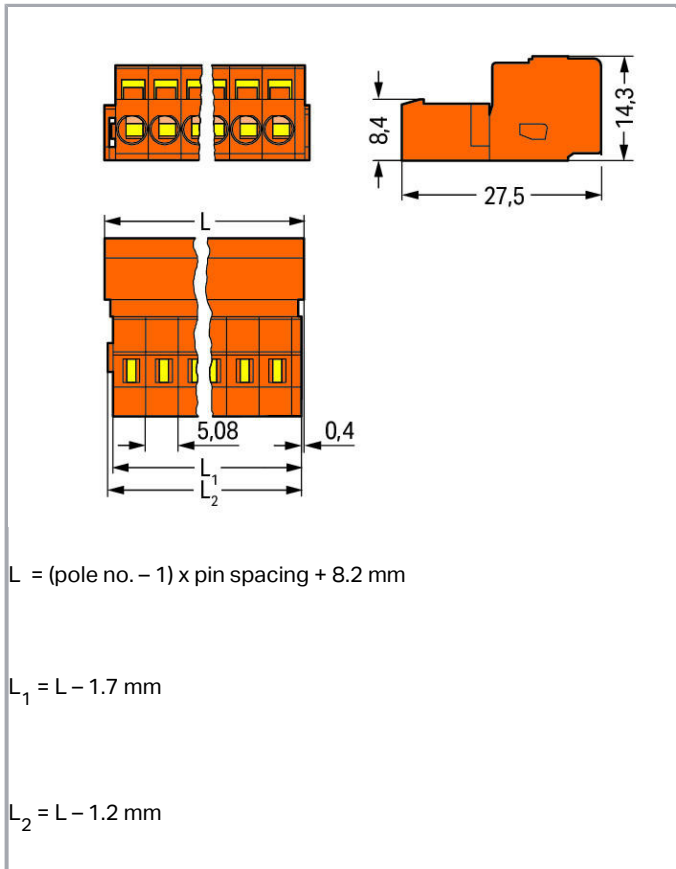
www.wago.com/231-652



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

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Do you have any questions about our products?
We are always happy to take your call at +49 (571) 887-44222.



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

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



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 mm ² / 28 ... 12 AWG
Fine-stranded conductor	0,08 ... 2,5 mm ² / 28 ... 12 AWG
Fine-stranded conductor with ferrule with plastic collar	0,25 ... 1,5 mm ²
Fine-stranded conductor with ferrule without plastic collar	0,25 ... 2,5 mm ²
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

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No. of poles	22
Total number of connection points	22
Total number of potentials	22
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	114,96 mm / 4.526 inch
Height	14,3 mm / 0.563 inch
Depth	27,5 mm / 1.083 inch

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	0.549 MJ
Weight	33.8 g

Environmental Requirements

Limit temperature range	-60 ... +100 °C
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Commercial data



Product Group	3 (Multi Conn. System)
Packaging type	BOX
Country of origin	DE

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




GTIN	4044918261265
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
	LR Lloyds Register	IEC 61984	96/20035 (E5)

UL-Approvals

Logo	Approval	Additional Approval Text	Certificate name
	UL UL International Germany GmbH	UL 1977	E45171
	UR Underwriters Laboratories Inc.	UL 1059	E45172

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



Counterpart

	Item no.2231-322/026-000 1-conductor female plug; push-button; 2.5 mm ² ; Pin spacing 5.08 mm; 22-pole; 2,50 mm ² ; orange	www.wago.com/2231-322/026-000
	Item no.2231-322/008-000 1-conductor female plug; push-button; Snap-in mounting feet; 2.5 mm ² ; Pin spacing 5.08 mm; 22-pole; 2,50 mm ² ; orange	www.wago.com/2231-322/008-000
	Item no.2231-322/037-000 1-conductor female plug; push-button; Locking lever; 2.5 mm ² ; Pin spacing 5.08 mm; 22-pole; 2,50 mm ² ; orange	www.wago.com/2231-322/037-000
	Item no.2231-322/102-000 1-conductor female plug; push-button; with integrated end plate; 2.5 mm ² ; Pin spacing 5.08 mm; 22-pole; 2,50 mm ² ; orange	www.wago.com/2231-322/102-000
	Item no.2231-322/031-000 1-conductor female plug; push-button; clamping collar; 2.5 mm ² ; Pin spacing 5.08 mm; 22-pole; 2,50 mm ² ; orange	www.wago.com/2231-322/031-000
	Item no.231-321/027-000 1-conductor female plug; clamping collar; 2.5 mm ² ; Pin spacing 5.08 mm; 21-pole; 2,50 mm ² ; orange	www.wago.com/231-321/027-000
	Item no.231-322/026-000 1-conductor female plug; 2.5 mm ² ; Pin spacing 5.08 mm; 22-pole; 2,50 mm ² ; orange	www.wago.com/231-322/026-000
	Item no.231-322/008-000 1-conductor female plug; Snap-in mounting feet; 2.5 mm ² ; Pin spacing 5.08 mm; 22-pole; 2,50 mm ² ; orange	www.wago.com/231-322/008-000
	Item no.231-322/031-000 1-conductor female plug; clamping collar; 2.5 mm ² ; Pin spacing 5.08 mm; 22-pole; 2,50 mm ² ; orange	www.wago.com/231-322/031-000
	Item no.231-322/102-000 1-conductor female plug; with integrated end plate; 2.5 mm ² ; Pin spacing 5.08 mm; 22-pole; 2,50 mm ² ; orange	www.wago.com/231-322/102-000
	Item no.231-322/037-000 1-conductor female plug; Locking lever; 2.5 mm ² ; Pin spacing 5.08 mm; 22-pole; 2,50 mm ² ; orange	www.wago.com/231-322/037-000

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



Item no.232-182

THT female header; 0.6 x 1.0 mm solder pin; straight; Pin spacing 5.08 mm; 22-pole; orange

www.wago.com/232-182



Item no.232-182/039-000

THT female header; 0.6 x 1.0 mm solder pin; straight; Locking lever; Pin spacing 5.08 mm; 22-pole; orange

www.wago.com/232-182/039-000



Item no.232-182/031-000

THT female header; 0.6 x 1.0 mm solder pin; straight; clamping collar; Pin spacing 5.08 mm; 22-pole; orange

www.wago.com/232-182/031-000



Item no.232-182/047-000

THT female header; 0.6 x 1.0 mm solder pin; straight; Spacer flange; Pin spacing 5.08 mm; 22-pole; orange

www.wago.com/232-182/047-000



Item no.232-282/031-000

THT female header; 0.6 x 1.0 mm solder pin; angled; clamping collar; Pin spacing 5.08 mm; 22-pole; orange

www.wago.com/232-282/031-000



Item no.232-282/039-000

THT female header; 0.6 x 1.0 mm solder pin; angled; Locking lever; Pin spacing 5.08 mm; 22-pole; orange

www.wago.com/232-282/039-000



Item no.232-282

THT female header; 0.6 x 1.0 mm solder pin; angled; Pin spacing 5.08 mm; 22-pole; orange

www.wago.com/232-282



Item no.232-282/047-000

THT female header; 0.6 x 1.0 mm solder pin; angled; Spacer flange; Pin spacing 5.08 mm; 22-pole; orange

www.wago.com/232-282/047-000



Item no.232-422/026-000



1-conductor female plug; angled; 2.5 mm²; Pin spacing 5.08 mm; 22-pole; 2,50 mm²; orange

www.wago.com/232-422/026-000

Compatible products

Jumper


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

	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









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
	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








tools

	Item no.: 209-130 Operating tool; suitable for 264, 280 and 281 Series; 1-way; of insulating material	www.wago.com/209-130
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Subject to changes. Please also observe the further product documentation!

	Item no.: 209-132 Operating tool; for connecting comb-style jumper bar; 2-way; of insulating material	www.wago.com/209-132
	Item no.: 210-657 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.: 231-291 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
	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
General accessories		
	Item no.: 231-669 Lockout caps; for covering unused clamping units; orange	www.wago.com/231-669
ferrule		
	Item no.: 216-101 Ferrule; Sleeve for 0.5 mm ² / AWG 22; uninsulated; electro-tin plated	www.wago.com/216-101
	Item no.: 216-102 Ferrule; Sleeve for 0.75 mm ² / AWG 20; uninsulated; electro-tin plated	www.wago.com/216-102
	Item no.: 216-103 Ferrule; Sleeve for 1 mm ² / AWG 18; uninsulated; electro-tin plated	www.wago.com/216-103
	Item no.: 216-104	

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

	Ferrule; Sleeve for 1.5 mm ² / AWG 16; uninsulated; electro-tin plated	www.wago.com/216-104
	Item no.: 216-106 Ferrule; Sleeve for 2.5 mm ² / AWG 14; uninsulated; electro-tin plated	www.wago.com/216-106
	Item no.: 216-121 Ferrule; Sleeve for 0.5 mm ² / AWG 22; uninsulated; electro-tin plated	www.wago.com/216-121
	Item no.: 216-122 Ferrule; Sleeve for 0.75 mm ² / AWG 20; uninsulated; electro-tin plated	www.wago.com/216-122
	Item no.: 216-123 Ferrule; Sleeve for 1 mm ² / AWG 18; uninsulated; electro-tin plated	www.wago.com/216-123
	Item no.: 216-124 Ferrule; Sleeve for 1.5 mm ² / AWG 16; uninsulated; electro-tin plated	www.wago.com/216-124
	Item no.: 216-131 Ferrule; Sleeve for 0.25 mm ² / AWG 24; uninsulated; electro-tin plated	www.wago.com/216-131
	Item no.: 216-132 Ferrule; Sleeve for 0.34 mm ² / AWG 24; uninsulated; electro-tin plated	www.wago.com/216-132
	Item no.: 216-141 Ferrule; Sleeve for 0.5 mm ² / 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 mm ² / 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 mm ² / 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 mm ² / 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 mm ² / AWG 24; uninsulated; electro-tin plated	www.wago.com/216-151
	Item no.: 216-152 Ferrule; Sleeve for 0.34 mm ² / AWG 24; uninsulated; electro-tin plated	www.wago.com/216-152
	Item no.: 216-201 Ferrule; Sleeve for 0.5 mm ² / 20 AWG; insulated; electro-tin plated; white	www.wago.com/216-201
	Item no.: 216-202 Ferrule; Sleeve for 0.75 mm ² / 18 AWG; insulated; electro-tin plated; gray	www.wago.com/216-202
	Item no.: 216-203 Ferrule; Sleeve for 1 mm ² / AWG 18; insulated; electro-tin plated; red	www.wago.com/216-203
	Item no.: 216-204 Ferrule; Sleeve for 1.5 mm ² / AWG 16; insulated; electro-tin plated; black	www.wago.com/216-204

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



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



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

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

Insulation stop

	Item no.: 231-670 Insulation stop; 0.08-0.2 mm ² / 0.2 mm ² "s"; white	www.wago.com/231-670
	Item no.: 231-671 Insulation stop; 0.25 - 0.5 mm ² ; light gray	www.wago.com/231-671
	Item no.: 231-672 Insulation stop; 0.75 - 1 mm ² ; dark gray	www.wago.com/231-672

Coding

	Item no.: 231-129 Coding key; snap-on type; light gray	www.wago.com/231-129
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Downloads

Documentation

Additional Information

Technical explanations	Apr 3, 2019	pdf 3.6 MB	Download
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CAD/CAE-Data

CAD data

2D/3D Models 231-652	URL	Download
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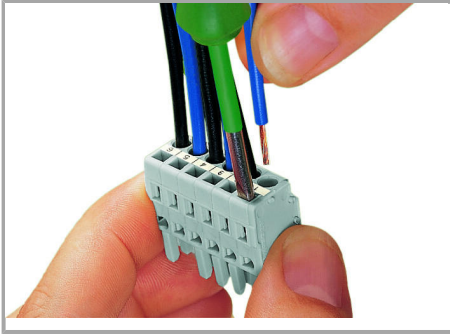
CAE data

EPLAN Data Portal 231-652	URL	Download
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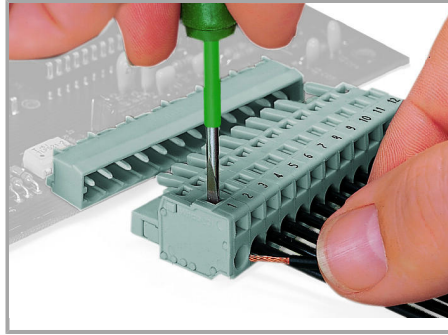
Installation Notes

Inserting a conductor

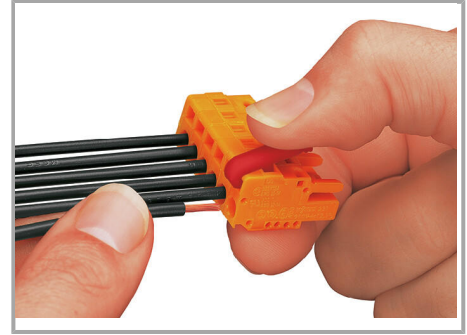
Subject to changes. Please also observe the further product documentation!



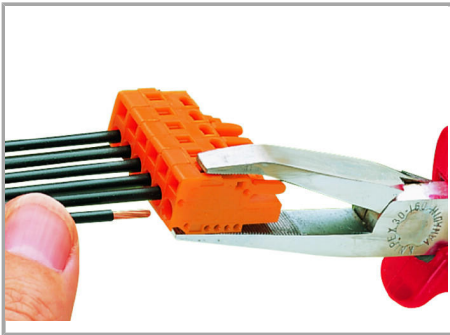
Inserting a conductor via 3.5 mm screwdriver – CAGE CLAMP® actuation parallel to conductor entry.



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

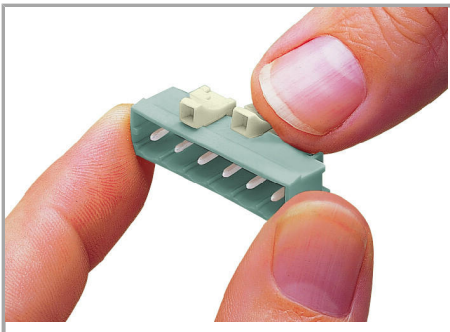


Inserting a conductor into CAGE CLAMP® unit via operating lever (231-291).



Inserting a conductor via operating tool.

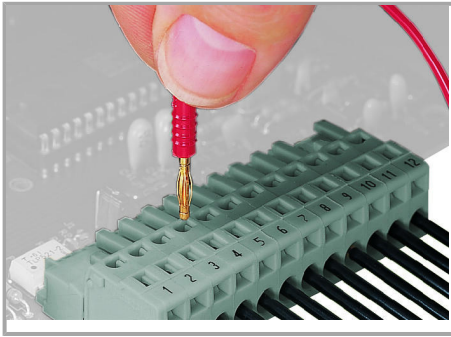
Coding



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

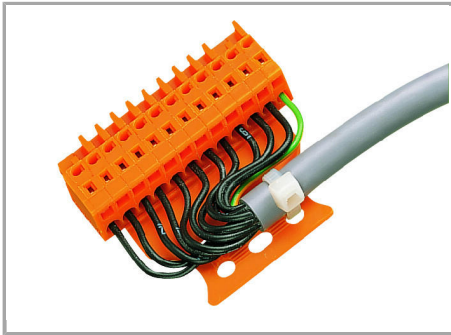
Testing

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

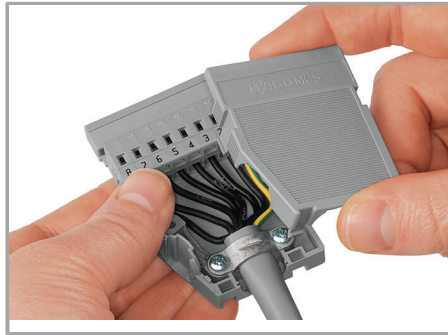


Testing perpendicular to conductor entry via 2 or 2.3 mm Ø test plug – female connector with CAGE CLAMP®.

Assembly

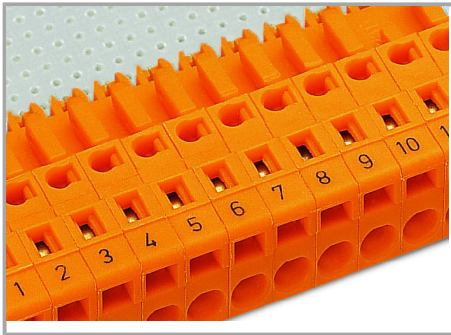


Male connector with strain relief plate



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

Marking



Labeling via direct marking or self-adhesive strips.

Product family

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<i>MCS</i> MIDI Classic

[Learn more about the product family.](#)

[Show all products from the family](#)

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