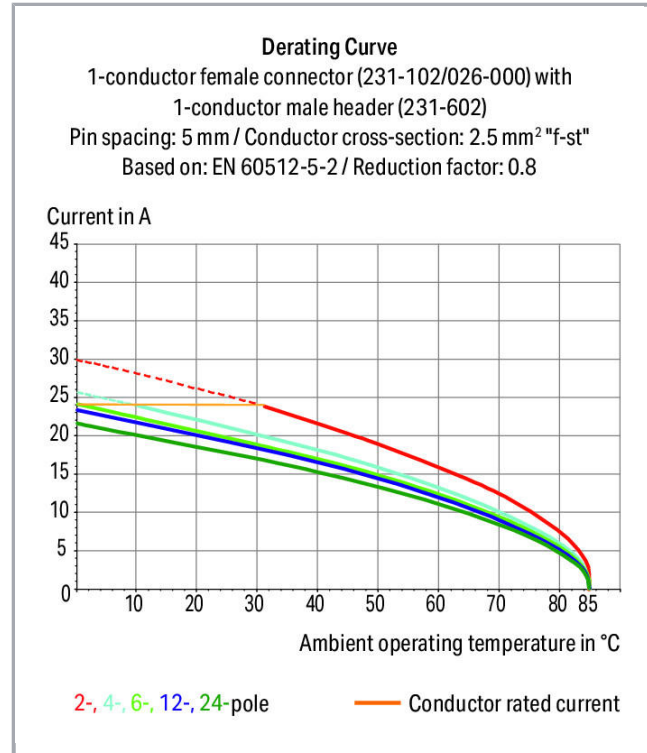


Data sheet | Item number: 231-646

1-conductor male connector; 2.5 mm²; Pin spacing 5.08 mm; 16-pole; 2,50 mm²; orange

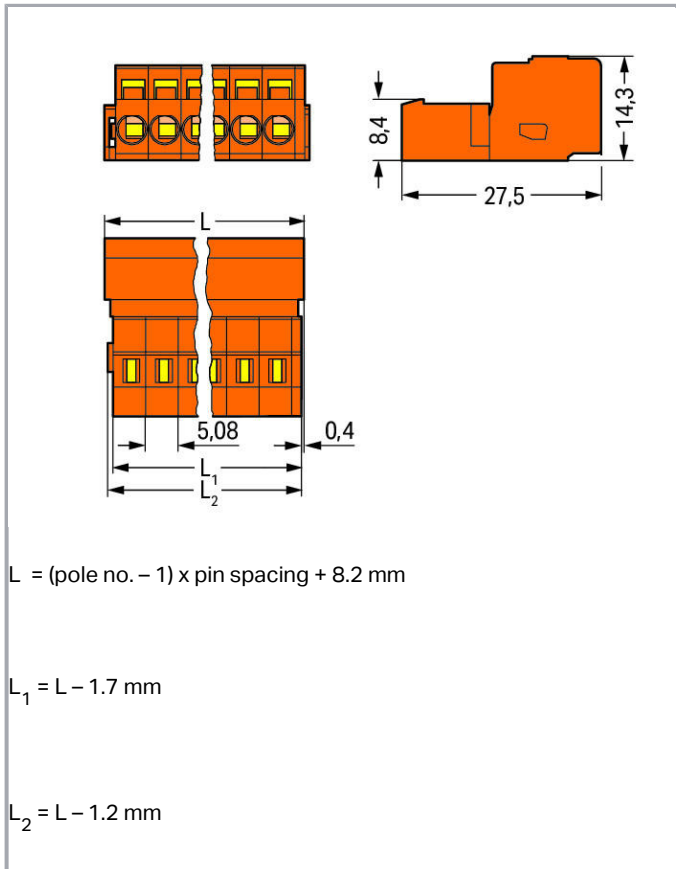
www.wago.com/231-646



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

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Do you have any questions about our products?
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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 MCS – MULTI CONNECTION SYSTEM includes connectors without breaking capacity in accordance with DIN EN 61984. When used as intended, these connectors must 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
Nominal voltage (III/3)	320 V
Rated surge voltage (III/3)	4 kV
Rated voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Nominal voltage (II/2)	630 V
Rated surge 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 UL 1977	600 V
Rated current UL 1977	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 insulated ferrule	0,25 ... 1,5 mm ²
Fine-stranded conductor; with uninsulated ferrule	0,25 ... 2,5 mm ²
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

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



Pole No.	16
Total number of connection points	16
Total number of potentials	16
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	84,48 mm / 3.326 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 conductor
Mismating protection	No

Material Data

Color	orange
Material group	I
Insulation 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	0.403 MJ
Weight	24.4 g

Environmental Requirements

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

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!



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GTIN	4044918260961
Customs tariff number	85366990990

Approvals / Certificates



Country specific Approvals

Logo	Approval	Additional Approval Text	Certificate name
	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.2231-316/008-000 1-conductor female plug; push-button; Snap-in mounting feet; 2.5 mm ² ; Pin spacing 5.08 mm; 16-pole; 2,50 mm ² ; orange	www.wago.com/2231-316/008-000
	Item no.2231-316/031-000 1-conductor female plug; push-button; clamping collar; 2.5 mm ² ; Pin spacing 5.08 mm; 16-pole; 2,50 mm ² ; orange	www.wago.com/2231-316/031-000
	Item no.2231-316/037-000 1-conductor female plug; push-button; Locking lever; 2.5 mm ² ; Pin spacing 5.08 mm; 16-pole; 2,50 mm ² ; orange	www.wago.com/2231-316/037-000
	Item no.2231-316/026-000 1-conductor female plug; push-button; 2.5 mm ² ; Pin spacing 5.08 mm; 16-pole; 2,50 mm ² ; orange	www.wago.com/2231-316/026-000
	Item no.2231-316/102-000 1-conductor female plug; push-button; with integrated end plate; 2.5 mm ² ; Pin spacing 5.08 mm; 16-pole; 2,50 mm ² ; orange	www.wago.com/2231-316/102-000
	Item no.231-316/008-000 1-conductor female plug; Snap-in mounting feet; 2.5 mm ² ; Pin spacing 5.08 mm; 16-pole; 2,50 mm ² ; orange	www.wago.com/231-316/008-000
	Item no.231-2316/026-000 2-conductor female connector; 2.5 mm ² ; Pin spacing 5.08 mm; 16-pole; 2,50 mm ² ; orange	www.wago.com/231-2316/026-000
	Item no.231-2316/037-000 2-conductor female connector; Locking lever; 2.5 mm ² ; Pin spacing 5.08 mm; 16-pole; 2,50 mm ² ; orange	www.wago.com/231-2316/037-000
	Item no.231-316/026-000 1-conductor female plug; 2.5 mm ² ; Pin spacing 5.08 mm; 16-pole; 2,50 mm ² ; orange	www.wago.com/231-316/026-000
	Item no.231-316/037-000 1-conductor female plug; Locking lever; 2.5 mm ² ; Pin spacing 5.08 mm; 16-pole; 2,50 mm ² ; orange	www.wago.com/231-316/037-000
	Item no.231-316/027-000 1-conductor female plug; clamping collar; 2.5 mm ² ; Pin spacing 5.08 mm; 16-pole; 2,50 mm ² ; orange	www.wago.com/231-316/027-000
	Item no.231-316/102-000 1-conductor female plug; with integrated end plate; 2.5 mm ² ; Pin spacing 5.08 mm; 16-pole; 2,50 mm ² ; orange	www.wago.com/231-316/102-000
	Item no.231-316/031-000 1-conductor female plug; clamping collar; 2.5 mm ² ; Pin spacing 5.08 mm; 16-pole; 2,50 mm ² ; orange	www.wago.com/231-316/031-000

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



Item no.232-176

THT female header; 0.6 x 1.0 mm solder pin; straight; Pin spacing 5.08 mm; 16-pole; orange

www.wago.com/232-176



Item no.232-176/047-000

THT female header; 0.6 x 1.0 mm solder pin; straight; Spacer flange; Pin spacing 5.08 mm; 16-pole; orange

www.wago.com/232-176/047-000



Item no.232-176/039-000

THT female header; 0.6 x 1.0 mm solder pin; straight; Locking lever; Pin spacing 5.08 mm; 16-pole; orange

www.wago.com/232-176/039-000



Item no.232-176/031-000

THT female header; 0.6 x 1.0 mm solder pin; straight; clamping collar; Pin spacing 5.08 mm; 16-pole; orange

www.wago.com/232-176/031-000



Item no.232-276

THT female header; 0.6 x 1.0 mm solder pin; angled; Pin spacing 5.08 mm; 16-pole; orange

www.wago.com/232-276



Item no.232-276/039-000

THT female header; 0.6 x 1.0 mm solder pin; angled; Locking lever; Pin spacing 5.08 mm; 16-pole; orange

www.wago.com/232-276/039-000



Item no.232-316/026-000

1-conductor female plug; angled; 2.5 mm²; Pin spacing 5.08 mm; 16-pole; 2,50 mm²; orange

www.wago.com/232-316/026-000

Compatible products

General accessories



Item no.: 231-669

Lockout caps; for covering unused clamping units; orange

www.wago.com/231-669

Insulation stop



Item no.: 231-670

Insulation stop; 0.08-0.2 mm² / 0.2 mm² "s"; white

www.wago.com/231-670

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

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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



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

Strain relief plate



Item no.: 232-646
Strain relief housing

www.wago.com/232-646

Coding



Item no.: 231-129
Coding key; snap-on type; light gray

www.wago.com/231-129

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


















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

	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 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

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

		
	Item no.: 216-204 Ferrule; Sleeve for 1.5 mm ² / AWG 16; insulated; electro-tin plated; black	www.wago.com/216-204
	Item no.: 216-221 Ferrule; Sleeve for 0.5 mm ² / 20 AWG; insulated; electro-tin plated; white	www.wago.com/216-221
	Item no.: 216-222 Ferrule; Sleeve for 0.75 mm ² / 18 AWG; insulated; electro-tin plated; gray	www.wago.com/216-222
	Item no.: 216-223 Ferrule; Sleeve for 1 mm ² / AWG 18; insulated; electro-tin plated; red	www.wago.com/216-223
	Item no.: 216-224 Ferrule; Sleeve for 1.5 mm ² / AWG 16; insulated; electro-tin plated; black	www.wago.com/216-224
	Item no.: 216-241 Ferrule; Sleeve for 0.5 mm ² / 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 mm ² / 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 mm ² / 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 mm ² / 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 mm ² / 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 mm ² / 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 mm ² / 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 mm ² / 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 mm ² / AWG 24; insulated; electro-tin plated; yellow	www.wago.com/216-301
	Item no.: 216-302 Ferrule; Sleeve for 0.34 mm ² / 22 AWG; insulated; electro-tin plated; green	www.wago.com/216-302
	Item no.: 216-321 Ferrule; Sleeve for 0.25 mm ² / AWG 24; insulated; electro-tin plated; yellow	www.wago.com/216-321

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

	Item no.: 216-322 Ferrule; Sleeve for 0.34 mm ² / 22 AWG; insulated; electro-tin plated; green	www.wago.com/216-322
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.: 210-657 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
Jumper		
	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	

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



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

Downloads

Documentation

Additional Information

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

CAD data

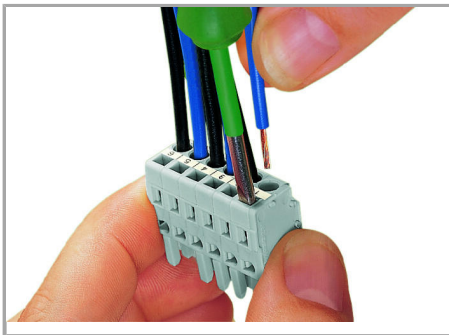
2D/3D Models 231-646	URL	Download
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CAE data

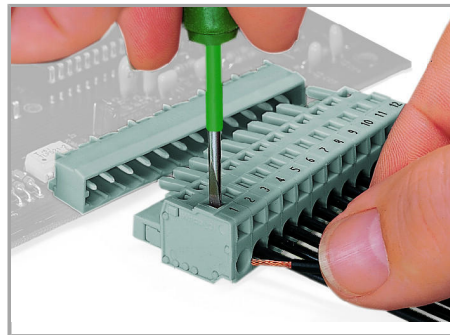
EPLAN Data Portal 231-646	URL	Download
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Installation Notes

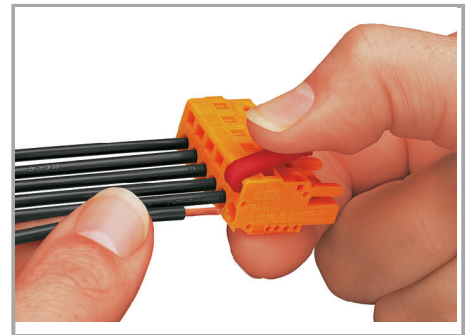
Inserting a conductor



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

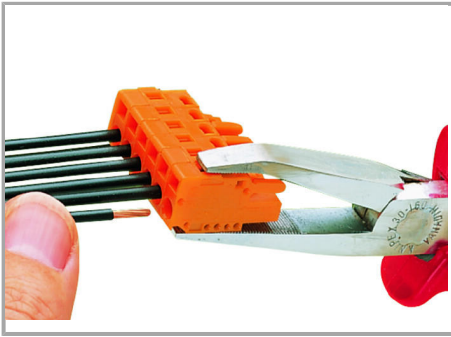


Inserting a conductor via 3.5 mm screwdriver – CAGE CLAMP® actuation perpendicular to conductor entry.



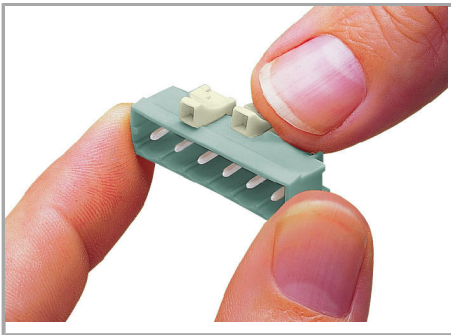
Inserting a conductor into CAGE CLAMP® unit via operating lever (231-291).

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



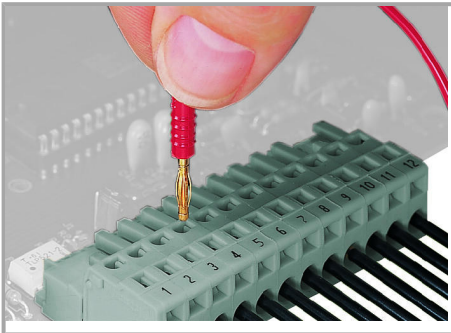
Inserting a conductor via operating tool.

Coding



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

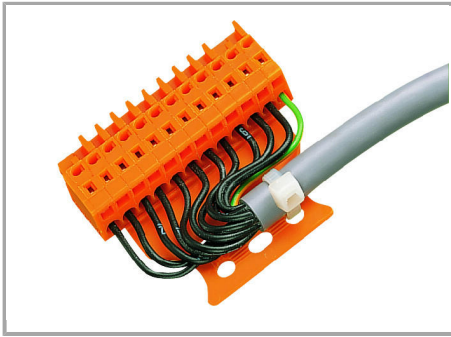
Testing



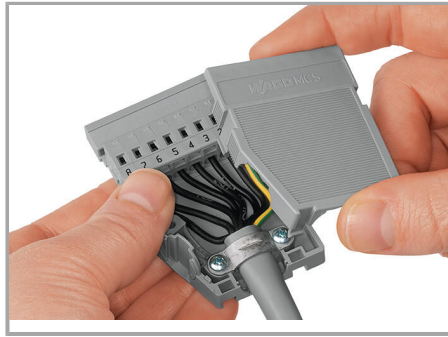
Testing perpendicular to conductor entry via 2 or 2.3 mm Ø test plug – female connector with CAGE CLAMP®.

Assembly

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

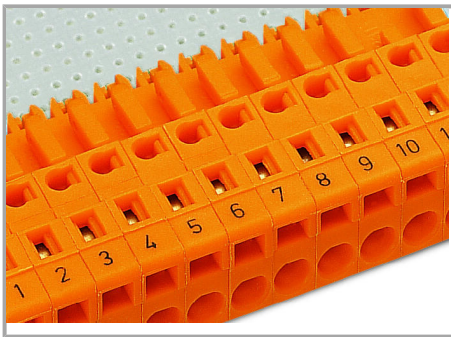


Male connector with strain relief plate



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

Marking



Labeling via direct marking or self-adhesive strips.

Product family

[*MCS*](#) MIDI Classic

[Show all products from the family](#)

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