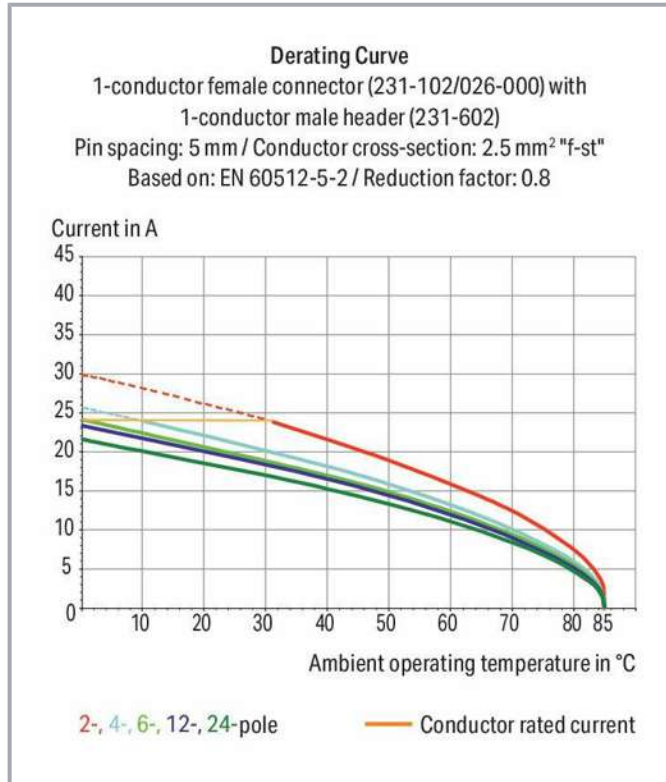
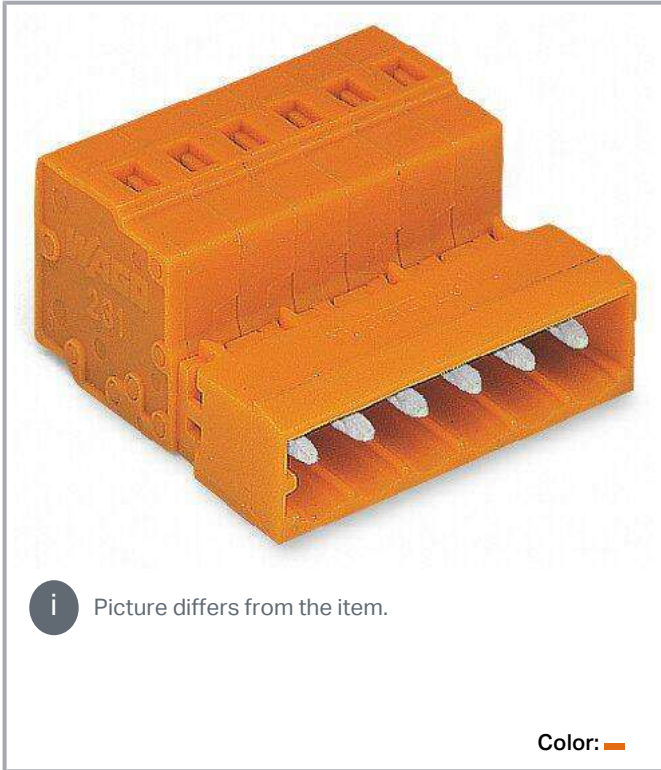


Data sheet | Item number: 231-649

Male connector; 19-pole; Pin spacing 5.08 mm ; orange

www.wago.com/231-649



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

WAGO Corporation
Germantown, WI 53022
Phone: 1-800-DIN-RAIL (346-7245) | Fax: (262) 255-6222
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Do you have any questions about our products?
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Dimensions in mm

$L = (\text{pole no.} - 1) \times \text{pin spacing} + 8.2 \text{ mm}$

$L_1 = L - 1.7 \text{ mm}$

$L_2 = L - 1.2 \text{ mm}$

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

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

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- With coding fingers

Data

Notes

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.

Variants:

Other pole numbers
Gold-plated or partially gold-plated contact surfaces
Other versions (or variants) can be requested from WAGO Sales or configured at <https://configurator.wago.com/>

Electrical data

IEC Approvals

Ratings per	IEC/EN 60664-1
Rated 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) $\hat{=}$ Overvoltage category III / Pollution degree 2

UL Approvals

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

Ratings per UL

Rated voltage UL 1977	600 V
Rated current UL 1977	15 A

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

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CSA Approvals

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

Total number of connection points	19
Total number of potentials	19
Number of connection types	1
Number of levels	1

Connection 1

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
Number of poles	19
Conductor entry direction to mating direction	0°

Physical data

Pin spacing	5.08 mm / 0.2 inch
Width	99.72 mm / 3.926 inch
Height	14.3 mm / 0.563 inch
Depth	27.5 mm / 1.083 inch

Plug-in connection

Contact type (pluggable connector)	Male connector/plug
Connector (connection type)	for conductor
Mismating protection	No
Locking of plug-in connection	Without

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

Material data

Color	orange
Material group	I
Insulation material	Polyamide (PA66)
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	0.476 MJ
Weight	29.3 g

Environmental requirements



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

Commercial data

Product Group	3 (Multi Conn. System)
PU (SPU)	10 Stück
Packaging type	box
Country of origin	DE
GTIN	4044918261159
Customs tariff number	8536694040



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

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






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

Counterpart

	Item no.2231-319/008-000 Female plug; 19-pole; push-button; snap-in mounting feet;12 AWG max; pin spacing 5.08 mm;1-conductor per pole; orange	www.wago.com/2231-319/008-000
	Item no.2231-319/026-000 Female plug; 19-pole; push-button; 12 AWG max; pin spacing 5.08 mm;1-conductor per pole; orange	www.wago.com/2231-319/026-000
	Item no.2231-319/031-000 Female plug; 19-pole; push-button; mounting flange;12 AWG max; pin spacing 5.08 mm;1-conductor per pole; orange	www.wago.com/2231-319/031-000
	Item no.2231-319/102-000 Female plug; 19-pole; push-button; with integrated end plate;12 AWG max; pin spacing 5.08 mm;1-conductor per pole; orange	www.wago.com/2231-319/102-000
	Item no.2231-319/037-000 Female plug; 19-pole; push-button; locking lever;12 AWG max; pin spacing 5.08 mm;1-conductor per pole; orange	www.wago.com/2231-319/037-000

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

	Item no.231-319/008-000 1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 19-pole; Snap-in mounting feet; 2,50 mm²; orange	www.wago.com/231-319/008-000
	Item no.231-319/026-000 1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 19-pole; 2,50 mm²; orange	www.wago.com/231-319/026-000
	Item no.231-319/027-000 1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 19-pole; clamping collar; 2,50 mm²; orange	www.wago.com/231-319/027-000
	Item no.231-319/037-000 1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 19-pole; Lateral locking levers; 2,50 mm²; orange	www.wago.com/231-319/037-000
	Item no.231-319/031-000 1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 19-pole; clamping collar; 2,50 mm²; orange	www.wago.com/231-319/031-000
	Item no.232-179/031-000 THT female header; straight; Pin spacing 5.08 mm; 19-pole; clamping collar; 0.6 x 1.0 mm solder pin; orange	www.wago.com/232-179/031-000
	Item no.232-179 THT female header; straight; Pin spacing 5.08 mm; 19-pole; 0.6 x 1.0 mm solder pin; orange	www.wago.com/232-179
	Item no.231-319/102-000 1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 19-pole; with integrated end plate; 2,50 mm²; orange	www.wago.com/231-319/102-000
	Item no.232-179/039-000 THT female header; straight; Pin spacing 5.08 mm; 19-pole; Locking lever; 0.6 x 1.0 mm solder pin; orange	www.wago.com/232-179/039-000
	Item no.232-179/047-000 THT female header; straight; Pin spacing 5.08 mm; 19-pole; Spacer flange; 0.6 x 1.0 mm solder pin; orange	www.wago.com/232-179/047-000
	Item no.232-279 THT female header; angled; Pin spacing 5.08 mm; 19-pole; 0.6 x 1.0 mm solder pin; orange	www.wago.com/232-279
	Item no.232-279/031-000 THT female header; angled; Pin spacing 5.08 mm; 19-pole; clamping collar; 0.6 x 1.0 mm solder pin; orange	www.wago.com/232-279/031-000

Item no.232-279/039-000

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



THT female header; angled; Pin spacing 5.08 mm; 19-pole; Locking lever; 0.6 x 1.0 mm solder pin; orange

www.wago.com/232-279/039-000



Item no.232-279/047-000

THT female header; angled; Pin spacing 5.08 mm; 19-pole; Spacer flange; 0.6 x 1.0 mm solder pin; orange

www.wago.com/232-279/047-000



Item no.232-319/026-000

1-conductor female connector, angled; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 19-pole; 2,50 mm²; orange

www.wago.com/232-319/026-000

Optional accessories

Cover

Cover



Item no.: 231-669

Lockout caps; for covering unused clamping units; orange

www.wago.com/231-669

Marking accessories

Marking strip

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.: 210-332/508-206

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.: 210-332/508-205

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

Ferrules

Ferrule

Item no.: 216-101

Ferrule; Sleeve for 0.5 mm² / AWG 22; uninsulated; electro-tin plated; silver-colored

www.wago.com/216-101

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

















Item no.: 216-104 Ferrule; Sleeve for 1.5 mm ² / AWG 16; uninsulated; electro-tin plated; silver-colored	www.wago.com/216-104
Item no.: 216-106 Ferrule; Sleeve for 2.5 mm ² / AWG 14; uninsulated; electro-tin plated; silver-colored	www.wago.com/216-106
Item no.: 216-102 Ferrule; Sleeve for 0.75 mm ² / AWG 20; uninsulated; electro-tin plated; silver-colored	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.: 216-123 Ferrule; Sleeve for 1 mm ² / AWG 18; uninsulated; electro-tin plated; silver-colored	www.wago.com/216-123
Item no.: 216-122 Ferrule; Sleeve for 0.75 mm ² / AWG 20; uninsulated; electro-tin plated; silver-colored	www.wago.com/216-122
Item no.: 216-124 Ferrule; Sleeve for 1.5 mm ² / AWG 16; uninsulated; electro-tin plated	www.wago.com/216-124
Item no.: 216-142 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.: 216-132 Ferrule; Sleeve for 0.34 mm ² / AWG 24; uninsulated; electro-tin plated	www.wago.com/216-132
Item no.: 216-121 Ferrule; Sleeve for 0.5 mm ² / AWG 22; uninsulated; electro-tin plated; silver-colored	www.wago.com/216-121
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.: 216-131 Ferrule; Sleeve for 0.25 mm ² / AWG 24; uninsulated; electro-tin plated; silver-colored	www.wago.com/216-131
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.: 216-152 Ferrule; Sleeve for 0.34 mm ² / AWG 24; uninsulated; electro-tin plated	www.wago.com/216-152
Item no.: 216-203 Ferrule; Sleeve for 1 mm ² / AWG 18; insulated; electro-tin plated; red	www.wago.com/216-203
Item no.: 216-202 Ferrule; Sleeve for 0.75 mm ² / 18 AWG; insulated; electro-tin plated; gray	www.wago.com/216-202
Item no.: 216-151 Ferrule; Sleeve for 0.25 mm ² / AWG 24; uninsulated; electro-tin plated	www.wago.com/216-151
Item no.: 216-204 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.: 216-144 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; silver-colored	www.wago.com/216-144
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.: 216-223 Ferrule; Sleeve for 1 mm ² / AWG 18; insulated; electro-tin plated; red	www.wago.com/216-223
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.: 216-222 Ferrule; Sleeve for 0.75 mm ² / 18 AWG; insulated; electro-tin plated; gray	www.wago.com/216-222
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.: 216-224 Ferrule; Sleeve for 1.5 mm ² / AWG 16; insulated; electro-tin plated; black	www.wago.com/216-224
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.: 216-263 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.: 216-262 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.: 216-301 Ferrule; Sleeve for 0.25 mm ² / AWG 24; insulated; electro-tin plated; yellow	www.wago.com/216-301
Item no.: 216-321 Ferrule; Sleeve for 0.25 mm ² / AWG 24; insulated; electro-tin plated; yellow	www.wago.com/216-321
Item no.: 216-322 Ferrule; Sleeve for 0.34 mm ² / 22 AWG; insulated; electro-tin plated; green	www.wago.com/216-322

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

	<p>Item no.: 216-302 Ferrule; Sleeve for 0.34 mm² / 22 AWG; insulated; electro-tin plated; light turquoise</p>	www.wago.com/216-302
Insulations stops		
Insulation stop		
	<p>Item no.: 231-672 Insulation stop; 0.75 - 1 mm²; dark gray</p>	www.wago.com/231-672
	<p>Item no.: 231-670 Insulation stop; 0.08-0.2 mm² / 0.2 mm² "s"; white</p>	www.wago.com/231-670
	<p>Item no.: 231-671 Insulation stop; 0.25 - 0.5 mm²; light gray</p>	www.wago.com/231-671
Tools		
Operating tool		
	<p>Item no.: 209-130 Operating tool; suitable for 264, 280 and 281 Series; 1-way; of insulating material; white</p>	www.wago.com/209-130
	<p>Item no.: 209-132 Operating tool; for connecting comb-style jumper bar; 2-way; of insulating material</p>	www.wago.com/209-132
	<p>Item no.: 210-657 Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short; multicoloured</p>	www.wago.com/210-657
	<p>Item no.: 210-720 Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured</p>	www.wago.com/210-720
	<p>Item no.: 231-131 Operating tool; made of insulating material; 1-way; loose; white</p>	www.wago.com/231-131
	<p>Item no.: 231-291 Operating tool; made of insulating material; 1-way; loose; red</p>	www.wago.com/231-291
	<p>Item no.: 280-432 Operating tool; made of insulating material; 2-way; white</p>	www.wago.com/280-432
	<p>Item no.: 280-434 Operating tool; made of insulating material; 4-way</p>	www.wago.com/280-434
	<p>Item no.: 280-437 Operating tool; made of insulating material; 7-way</p>	www.wago.com/280-437
	<p>Item no.: 280-440 Operating tool; made of insulating material; 10-way</p>	www.wago.com/280-440

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



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.: 280-438
Operating tool; made of insulating material; 8-way

www.wago.com/280-438



Item no.: 280-433
Operating tool; made of insulating material; 3-way

www.wago.com/280-433

Coding

Coding



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

www.wago.com/231-129

Jumpers

Jumper



Item no.: 231-905
Jumper; for conductor entry; 5-way; insulated; gray

www.wago.com/231-905



Item no.: 231-903
Jumper; for conductor entry; 3-way; insulated; gray

www.wago.com/231-903



Item no.: 231-907
Jumper; for conductor entry; 7-way; insulated; gray

www.wago.com/231-907



Item no.: 231-910
Jumper; for conductor entry; 10-way; insulated; gray

www.wago.com/231-910



Item no.: 231-902
Jumper; for conductor entry; 2-way; insulated; gray

www.wago.com/231-902

Downloads

Documentation

Additional Information

Technical explanations	2019 Apr 3	pdf 2.0 MB	Download
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CAD files

CAD data

2D/3D Models 231-649	URL	Download
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Subject to changes. Please also observe the further product documentation!

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Germantown, WI 53022
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CAE data

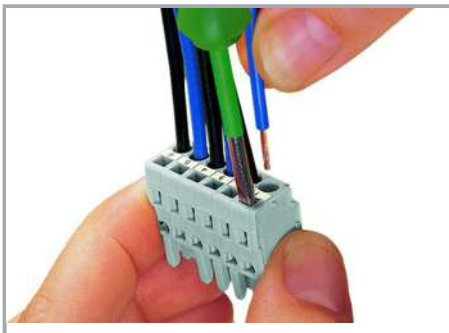
EPLAN Data Portal 231-649	URL	Download
ZUKEN Portal 231-649	URL	Download

Environmental Product Compliance

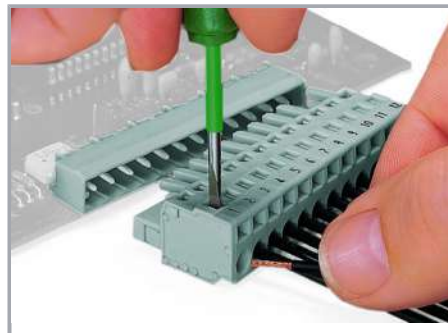
Compliance Search

Environmental Product Compliance 231-649	URL	Download
1-conductor male connector; CAGE CLAMP®; 2.5 mm ² ; Pin spacing 5.08 mm; 19-pole; 2,50 mm ² ; orange		

Installation Notes



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.



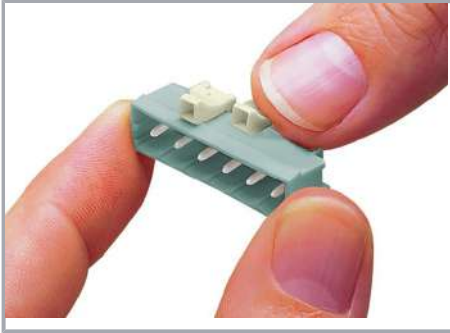
Inserting a conductor into CAGE CLAMP® unit via operating lever (231-291).



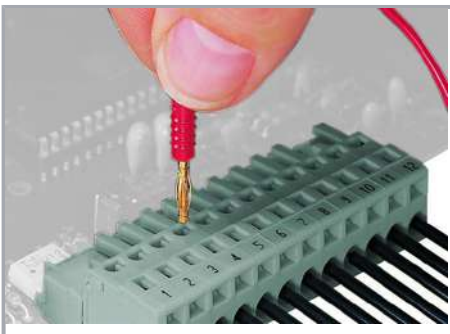
Inserting a conductor via operating tool.

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

Coding



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



Testing – female connector with CAGE CLAMP®

Integrated test ports for testing perpendicular to conductor entry via 2 or 2.3 mm Ø test plug

Installation



Male connector with strain relief plate



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

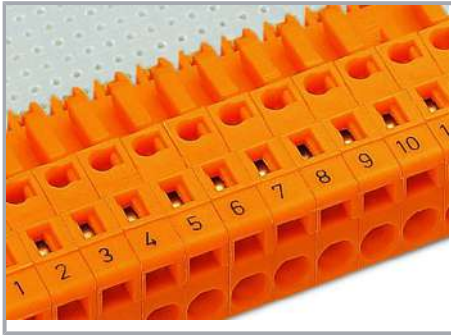
Subject to changes. Please also observe the further product documentation!

Data sheet | Item number: 231-649

www.wago.com/231-649



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!

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