

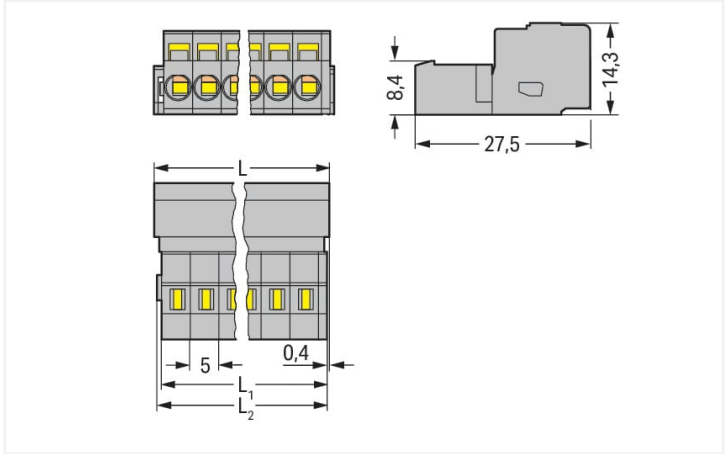
Data Sheet | Item Number: 231-612

1-conductor male connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; 2,50 mm²; gray

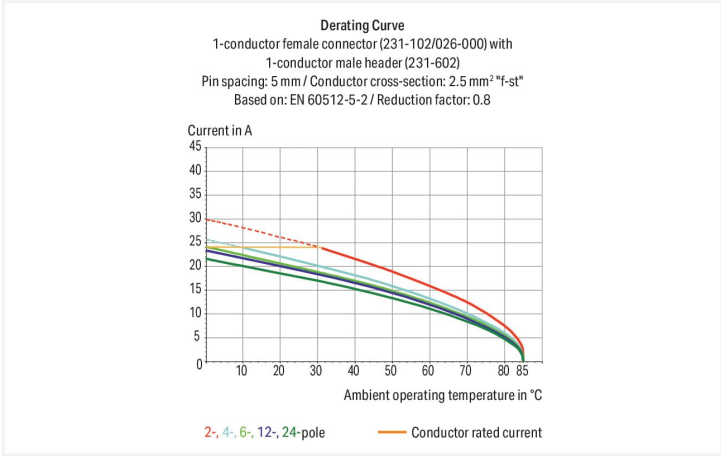
<https://www.wago.com/231-612>



Color: ■ gray



Dimensions in mm
 $L = (\text{pole no.} - 1) \times \text{pin spacing} + 8.2 \text{ mm}$
 $L1 = L - 1.7 \text{ mm}$
 $L2 = L - 1.2 \text{ mm}$



- 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

Notes	
Safety information	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. 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

Ratings per IEC/EN 60664-1				Approvals per UL 1059			
Overvoltage category	III	III	II	Use group	B	C	D
Pollution degree	3	2	2	Rated voltage	300 V	-	300 V
Nominal voltage	320 V	320 V	630 V	Rated current	15 A	-	10 A
Rated surge voltage	4 kV	4 kV	4 kV				
Rated current	12 A	12 A	12 A				

Approvals per UL 1977				Approvals per CSA			
Rated voltage	600 V			Use group	B	C	D
Rated current	15 A			Rated voltage	300 V	-	300 V
				Rated current	15 A	-	10 A

Connection data

Connection points	12	Connection 1 <table><tr><td>Connection technology</td><td>CAGE CLAMP®</td></tr><tr><td>Actuation type</td><td>Operating tool</td></tr><tr><td>Actuation direction 1</td><td>Operation parallel to conductor entry</td></tr><tr><td>Actuation direction 2</td><td>Operation perpendicular to conductor entry</td></tr><tr><td>Solid conductor</td><td>0.08 ... 2.5 mm² / 28 ... 12 AWG</td></tr><tr><td>Fine-stranded conductor</td><td>0.08 ... 2.5 mm² / 28 ... 12 AWG</td></tr><tr><td>Fine-stranded conductor; with insulated ferrule</td><td>0.25 ... 1.5 mm²</td></tr><tr><td>Fine-stranded conductor; with uninsulated ferrule</td><td>0.25 ... 2.5 mm²</td></tr><tr><td>Strip length</td><td>8 ... 9 mm / 0.31 ... 0.35 inches</td></tr><tr><td>Pole number</td><td>12</td></tr><tr><td>Conductor entry direction to mating direction</td><td>0 °</td></tr></table>	Connection technology	CAGE CLAMP®	Actuation type	Operating tool	Actuation direction 1	Operation parallel to conductor entry	Actuation direction 2	Operation perpendicular to conductor entry	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 insulated ferrule	0.25 ... 1.5 mm²	Fine-stranded conductor; with uninsulated ferrule	0.25 ... 2.5 mm²	Strip length	8 ... 9 mm / 0.31 ... 0.35 inches	Pole number	12	Conductor entry direction to mating direction	0 °
Connection technology	CAGE CLAMP®																							
Actuation type	Operating tool																							
Actuation direction 1	Operation parallel to conductor entry																							
Actuation direction 2	Operation perpendicular to conductor entry																							
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 insulated ferrule	0.25 ... 1.5 mm²																							
Fine-stranded conductor; with uninsulated ferrule	0.25 ... 2.5 mm²																							
Strip length	8 ... 9 mm / 0.31 ... 0.35 inches																							
Pole number	12																							
Conductor entry direction to mating direction	0 °																							
Total number of potentials	12																							
Number of connection types	1																							
Number of levels	1																							

Physical data

Pin spacing	5 mm / 0.197 inches
Width	63.2 mm / 2.488 inches
Height	14.3 mm / 0.563 inches
Depth	27.5 mm / 1.083 inches

Mechanical data

Variable coding	Yes
Anti-rotation protection	Yes

Plug-in connection

Contact type (pluggable connector)	Male connector/plug
Connector (connection type)	for conductor
Mismatching protection	No



Material data	
Note (material data)	Information on material specifications can be found here
Color	gray
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
Fire load	0.458 MJ
Weight	18 g

Environmental requirements	
Limit temperature range	-60 ... +100 °C
Processing temperature	-35 ... +60 °C

Commercial data	
Product Group	3 (Multi Conn. System)
eCl@ss 10.0	27-44-03-09
eCl@ss 9.0	27-44-03-09
ETIM 8.0	EC002638
ETIM 7.0	EC002638
PU (SPU)	25 pcs
Packaging type	Box
Country of origin	DE
GTIN	4044918258302
Customs tariff number	85366930000

Environmental Product Compliance	
RoHS Compliance Status	Compliant, No Exemption

Approvals / Certificates

General approvals			Declarations of conformity and manufacturer's declarations		
  					
Approval	Standard	Certificate Name	Approval	Standard	Certificate Name
CB DEKRA Certification B.V.	IEC 61984	NL-39756/A1	Railway WAGO GmbH & Co. KG	-	Railway Ready
CSA DEKRA Certification B.V.	C22.2	1466354			
KEMA/KEUR DEKRA Certification B.V.	EN 61984	71-121453			
UR Underwriters Laboratories Inc.	UL 1977	E45171			



Approvals for marine applications



Approval	Standard	Certificate Name
ABS American Bureau of Ship- ping	-	19-HG1869876-PDA
DNV DNV GL SE	-	TAE000016Z
LR Lloyds Register	IEC 61984	96/20035 (E5)

Downloads

Environmental Product Compliance

Compliance Search
Environmental Product Compliance 231-612

Documentation

Additional Information
Technical Section
03.04.2019
pdf 2027.26 KB

CAD/CAE-Data

CAD data
2D/3D Models 231-612

CAE data
EPLAN Data Portal 231-612
ZUKEN Portal 231-612

1 Compatible Products

1.1 System counterpart

1.1.1 Female connector/socket

 Item No.: 232-112/026-000 1-conductor female connector, angled; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; 2,50 mm²; gray	 Item No.: 232-212/026-000 1-conductor female connector, angled; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; 2,50 mm²; gray	 Item No.: 731-512/031-000 1-conductor female connector, angled; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; clamping collar; DIN-35 rail/ panel mounting; 2,50 mm²; gray	 Item No.: 731-512/008-000 1-conductor female connector, angled; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; Snap-in mounting feet; 2,50 mm²; gray
 Item No.: 231-112/026-000 1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12- pole; 2,50 mm²; gray	 Item No.: 231-112/027-000 1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12- pole; clamping collar; 2,50 mm²; gray	 Item No.: 231-112/031-000 1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12- pole; clamping collar; 2,50 mm²; gray	 Item No.: 231-112/037-000 1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12- pole; Lateral locking levers; 2,50 mm²; gray



1.1.1 Female connector/socket



Item No.: 231-112/125-000
1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; Snap-in flange; 2,50 mm²; gray



Item No.: 231-112/008-000
1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; Snap-in mounting feet; 2,50 mm²; gray



Item No.: 231-112/102-000
1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; with integrated end plate; 2,50 mm²; gray



Item No.: 2231-1112/327-000
1-conductor female connector; lever; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; 2,50 mm²; gray



Item No.: 2231-1112/038-000
1-conductor female connector; lever; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; Lateral locking levers; 2,50 mm²; gray



Item No.: 2231-112/026-000
1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; 2,50 mm²; gray



Item No.: 2231-112/031-000
1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; clamping collar; 2,50 mm²; gray



Item No.: 2231-112/037-000
1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; Lateral locking levers; 2,50 mm²; gray



Item No.: 2231-112/008-000
1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; Snap-in mounting feet; 2,50 mm²; gray



Item No.: 2231-112/102-000
1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; with integrated end plate; 2,50 mm²; gray



Item No.: 231-2112/037-000
2-conductor female connector; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; Lateral locking levers; 2,50 mm²; gray



Item No.: 231-2112/026-000
2-conductor female connector; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 12-pole; with integrated end plate; 2,50 mm²; gray



Item No.: 232-242/005-000/039-000
Female connector for rail-mount terminal blocks; 0.6 x 1 mm pins; angled; Locking lever; Pin spacing 5 mm; 12-pole; gray



Item No.: 232-242/005-000
Female connector for rail-mount terminal blocks; 0.6 x 1 mm pins; angled; Pin spacing 5 mm; 12-pole; gray



Item No.: 232-142/005-000/039-000
Female connector for rail-mount terminal blocks; 0.6 x 1 mm pins; straight; Locking lever; Pin spacing 5 mm; 12-pole; gray



Item No.: 232-142/005-000
Female connector for rail-mount terminal blocks; 0.6 x 1 mm pins; straight; Pin spacing 5 mm; 12-pole; gray



Item No.: 232-242
THT female header; angled; Pin spacing 5 mm; 12-pole; 0.6 x 1.0 mm solder pin; gray



Item No.: 232-242/031-000
THT female header; angled; Pin spacing 5 mm; 12-pole; clamping collar; 0.6 x 1.0 mm solder pin; gray



Item No.: 232-242/039-000
THT female header; angled; Pin spacing 5 mm; 12-pole; Locking lever; 0.6 x 1.0 mm solder pin; gray



Item No.: 232-242/047-000
THT female header; angled; Pin spacing 5 mm; 12-pole; Spacer flange; 0.6 x 1.0 mm solder pin; gray



Item No.: 232-142
THT female header; straight; Pin spacing 5 mm; 12-pole; 0.6 x 1.0 mm solder pin; gray



Item No.: 232-142/031-000
THT female header; straight; Pin spacing 5 mm; 12-pole; clamping collar; 0.6 x 1.0 mm solder pin; gray



Item No.: 232-142/039-000
THT female header; straight; Pin spacing 5 mm; 12-pole; Locking lever; 0.6 x 1.0 mm solder pin; gray



Item No.: 232-142/047-000
THT female header; straight; Pin spacing 5 mm; 12-pole; Spacer flange; 0.6 x 1.0 mm solder pin; gray

1.2 Optional Accessories

1.2.1 Coding

1.2.1.1 Coding



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

1.2.2 Cover

1.2.2.1 Cover



Item No.: 231-668
Lockout caps; for covering unused clamping units; gray



1.2.3 Ferrule

1.2.3.1 Ferrule

 Item No.: 216-301 Ferrule; Sleeve for 0.25 mm² / AWG 24; insulated; electro-tin plated; yellow	 Item No.: 216-321 Ferrule; Sleeve for 0.25 mm² / AWG 24; insulated; electro-tin plated; yellow	 Item No.: 216-151 Ferrule; Sleeve for 0.25 mm² / AWG 24; uninsulated; electro-tin plated	 Item No.: 216-131 Ferrule; Sleeve for 0.25 mm² / AWG 24; uninsulated; electro-tin plated; silver-colored
 Item No.: 216-302 Ferrule; Sleeve for 0.34 mm² / 22 AWG; insulated; electro-tin plated; light turquoise	 Item No.: 216-322 Ferrule; Sleeve for 0.34 mm² / 22 AWG; insulated; electro-tin plated; light turquoise	 Item No.: 216-132 Ferrule; Sleeve for 0.34 mm² / AWG 24; uninsulated; electro-tin plated	 Item No.: 216-152 Ferrule; Sleeve for 0.34 mm² / AWG 24; uninsulated; electro-tin plated
 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	 Item No.: 216-201 Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; white	 Item No.: 216-221 Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; white	 Item No.: 216-141 Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92
 Item No.: 216-101 Ferrule; Sleeve for 0.5 mm² / AWG 22; un-insulated; electro-tin plated; silver-colored	 Item No.: 216-121 Ferrule; Sleeve for 0.5 mm² / AWG 22; un-insulated; electro-tin plated; silver-colored	 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	 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
 Item No.: 216-202 Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; gray	 Item No.: 216-222 Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; gray	 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	 Item No.: 216-102 Ferrule; Sleeve for 0.75 mm² / AWG 20; uninsulated; electro-tin plated; silver-colored
 Item No.: 216-122 Ferrule; Sleeve for 0.75 mm² / AWG 20; uninsulated; electro-tin plated; silver-colored	 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	 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	 Item No.: 216-203 Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; red
 Item No.: 216-223 Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; red	 Item No.: 216-103 Ferrule; Sleeve for 1 mm² / AWG 18; uninsulated; electro-tin plated	 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	 Item No.: 216-123 Ferrule; Sleeve for 1 mm² / AWG 18; uninsulated; electro-tin plated; silver-colored
 Item No.: 216-204 Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; black	 Item No.: 216-224 Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; black	 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	 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
 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	 Item No.: 216-124 Ferrule; Sleeve for 1.5 mm² / AWG 16; un-insulated; electro-tin plated	 Item No.: 216-144 Ferrule; Sleeve for 1.5 mm² / AWG 16; un-insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92; silver-colored	 Item No.: 216-104 Ferrule; Sleeve for 1.5 mm² / AWG 16; un-insulated; electro-tin plated; silver-colored
 Item No.: 216-106 Ferrule; Sleeve for 2.5 mm² / AWG 14; un-insulated; electro-tin plated; silver-colored			

1.2.4 Insulation stop

1.2.4.1 Insulation stop

Item No.: 231-670 Insulation stop; 0.08-0.2 mm² / 0.2 mm² "s"; white	Item No.: 231-671 Insulation stop; 0.25 - 0.5 mm²; light gray	Item No.: 231-672 Insulation stop; 0.75 - 1 mm²; dark gray

1.2.5 Jumper

1.2.5.1 Jumper

Item No.: 231-910 Jumper; for conductor entry; 10-way; insulated; gray	Item No.: 231-902 Jumper; for conductor entry; 2-way; insulated; gray	Item No.: 231-903 Jumper; for conductor entry; 3-way; insulated; gray	Item No.: 231-905 Jumper; for conductor entry; 5-way; insulated; gray
Item No.: 231-907 Jumper; for conductor entry; 7-way; insulated; gray			

1.2.6 Marking

1.2.6.1 Marking strip

Item No.: 210-331/500-103 Marking strips; as a DIN A4 sheet; MARKED; 1-12 (300x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white	Item No.: 210-332/500-202 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	Item No.: 210-332/500-205 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	Item No.: 210-331/500-104 Marking strips; as a DIN A4 sheet; MARKED; 13-24 (300x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white
Item No.: 210-332/500-204 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	Item No.: 210-332/500-206 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		

1.2.7 Strain relief

1.2.7.1 Strain relief housing

Item No.: 232-612 Strain relief housing; for female and male connectors; 2 parts; Pin spacing 5 mm; 12-pole; gray

1.2.8 Tool

1.2.8.1 Operating tool

 Item No.: 231-231 Combination operating tool; red	 Item No.: 210-720 Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured	 Item No.: 210-657 Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short; multicoloured	 Item No.: 209-132 Operating tool; for connecting comb-style jumper bar; made of insulating material; 2-way; natural
 Item No.: 210-250 Operating tool; for MCS MINI and MIDI with CAGE CLAMP® connection; red	 Item No.: 280-440 Operating tool; made of insulating material; 10-way	 Item No.: 209-130 Operating tool; made of insulating material; 1-way; for 264 Series (1-/2-way), 280, 281 Series (up to 3-way); natural	 Item No.: 231-291 Operating tool; made of insulating material; 1-way; loose; red
 Item No.: 231-131 Operating tool; made of insulating material; 1-way; loose; white	 Item No.: 280-432 Operating tool; made of insulating material; 2-way; white	 Item No.: 280-433 Operating tool; made of insulating material; 3-way	 Item No.: 280-434 Operating tool; made of insulating material; 4-way
 Item No.: 280-435 Operating tool; made of insulating material; 5-way; gray	 Item No.: 280-436 Operating tool; made of insulating material; 6-way	 Item No.: 280-437 Operating tool; made of insulating material; 7-way	 Item No.: 280-438 Operating tool; made of insulating material; 8-way
 Item No.: 231-159 Operating tool; natural			

Installation Notes

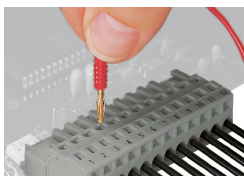
Conductor termination

 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 tool (231-291).	 Inserting a conductor via operating tool.
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Coding

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

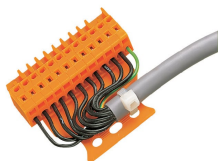
Testing



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

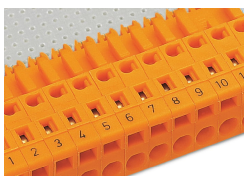


Male connector with strain relief plate



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

Marking



Labeling via direct marking or self-adhesive strips.