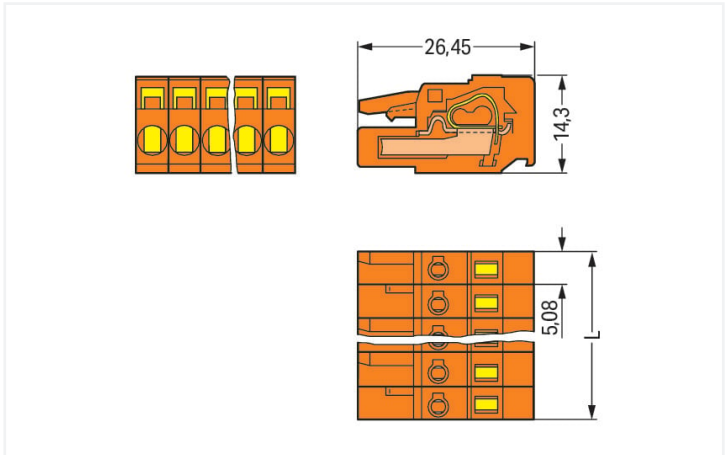


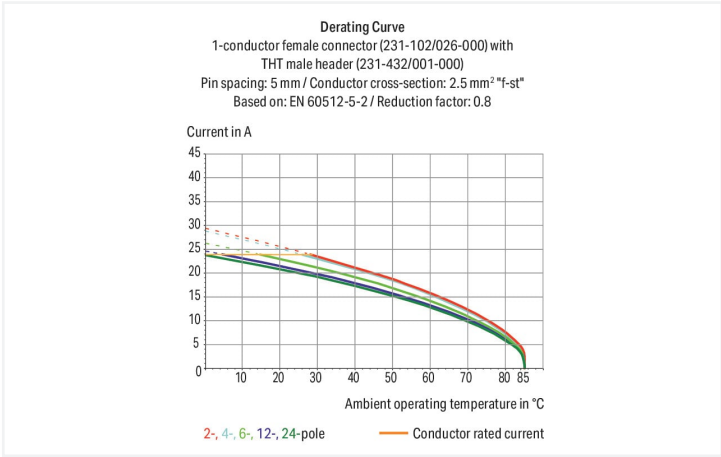
**Data Sheet | Item Number: 231-311/102-000**  
1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 11-  
pole; with integrated end plate; 2,50 mm²; orange  
<https://www.wago.com/231-311/102-000>



Color: ■ orange



Dimensions in mm  
L = pole no. x pin spacing  
2- to 3-pole female connectors – one latch only



- Universal connection for all conductor types
- Easy cable pre-assembly and on-unit wiring via vertical and horizontal CAGE CLAMP® actuation
- Integrated test ports
- 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:          | Gold-plated or partially gold-plated contact surfaces<br>Other versions (or variants) can be requested from WAGO Sales or configured at <a href="https://configurator.wago.com/">https://configurator.wago.com/</a> .                                                                                                                                                                                                   |



Electrical data

| Ratings per          | IEC/EN 60664-1 |       |       |
|----------------------|----------------|-------|-------|
| Overvoltage category | III            | III   | II    |
| Pollution degree     | 3              | 2     | 2     |
| Nominal voltage      | 320 V          | 320 V | 630 V |
| Rated surge voltage  | 4 kV           | 4 kV  | 4 kV  |
| Rated current        | 16 A           | 16 A  | 16 A  |

| Approvals per | UL 1059 |   |       |
|---------------|---------|---|-------|
| Use group     | B       | C | D     |
| Rated voltage | 300 V   | - | 300 V |
| Rated current | 15 A    | - | 10 A  |

| Approvals per | UL 1977 |
|---------------|---------|
| Rated voltage | 600 V   |
| Rated current | 15 A    |

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

Connection data

|                            |    |
|----------------------------|----|
| Connection points          | 11 |
| Total number of potentials | 11 |
| Number of connection types | 1  |
| Number of levels           | 1  |

| Connection 1                                      |                                            |
|---------------------------------------------------|--------------------------------------------|
| 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                                       | 11                                         |
| Conductor entry direction to mating direction     | 0°                                         |

Physical data

|             |                         |
|-------------|-------------------------|
| Pin spacing | 5.08 mm / 0.2 inches    |
| Width       | 55.88 mm / 2.2 inches   |
| Height      | 14.3 mm / 0.563 inches  |
| Depth       | 26.45 mm / 1.041 inches |

Mechanical data

|                          |     |
|--------------------------|-----|
| Variable coding          | Yes |
| Anti-rotation protection | Yes |

Plug-in connection

|                                      |                         |
|--------------------------------------|-------------------------|
| Contact type (pluggable connector)   | Female connector/socket |
| Connector (connection type)          | for conductor           |
| Mismating protection                 | No                      |
| Plugging without loss of pin spacing | Yes                     |



| Material data               |                                                                                                                        |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------|
| Note (material data)        | <a href="https://www.wago.com/us/material-specifications">Information on material specifications can be found here</a> |
| Color                       | orange                                                                                                                 |
| Material group              | I                                                                                                                      |
| Insulation material         | Polyamide (PA66)                                                                                                       |
| Flammability class per UL94 | V0                                                                                                                     |
| Clamping spring material    | Chrome-nickel spring steel (CrNi)                                                                                      |
| Contact material            | Copper alloy                                                                                                           |
| Contact plating             | Tin                                                                                                                    |
| Fire load                   | 0.275 MJ                                                                                                               |
| Weight                      | 20 g                                                                                                                   |

| Environmental requirements |                |
|----------------------------|----------------|
| Limit temperature range    | -60 ... +85 °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                  | 4044918372756          |
| Customs tariff number | 85366990990            |

| 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<br>DEKRA Certification B.V.                                                                                                                                                                                                                                                                                                                 | EN 61984, IEC 61984 | NL-39756/A1      | Railway<br>WAGO GmbH & Co. KG                                                       | -        | Railway Ready    |
| CSA<br>DEKRA Certification B.V.                                                                                                                                                                                                                                                                                                                | C22.2               | 1466354          |                                                                                     |          |                  |
| KEMA/KEUR<br>DEKRA Certification B.V.                                                                                                                                                                                                                                                                                                          | EN 61984            | 71-121453        |                                                                                     |          |                  |
| UL<br>UL International Germany GmbH                                                                                                                                                                                                                                                                                                            | UL 1977             | E45171           |                                                                                     |          |                  |
| UR<br>Underwriters Laboratories Inc.                                                                                                                                                                                                                                                                                                           | UL 1059             | E45172           |                                                                                     |          |                  |



Approvals for marine applications



| Approval                                | Standard | Certificate Name |
|-----------------------------------------|----------|------------------|
| ABS<br>American Bureau of Ship-<br>ping | -        | 19-HG1869876-PDA |

Downloads

Environmental Product Compliance

| Compliance Search                                      |
|--------------------------------------------------------|
| Environmental Product<br>Compliance<br>231-311/102-000 |



Documentation

| Additional Information                               |
|------------------------------------------------------|
| Technical Section<br>03.04.2019<br>pdf<br>2010.85 KB |



CAD/CAE-Data

| CAD data                        |
|---------------------------------|
| 2D/3D Models<br>231-311/102-000 |



| CAE data                             |
|--------------------------------------|
| EPLAN Data Portal<br>231-311/102-000 |
| ZUKEN Portal<br>231-311/102-000      |



1 Compatible Products

1.1 System counterpart

1.1.1 Male connector/plug



**Item No.: 231-641**  
1-conductor male connector; CAGE  
CLAMP®; 2.5 mm²; Pin spacing 5.08 mm;  
11-pole; 2,50 mm²; orange

**Item No.: 231-541/001-000**  
THT male header; 1.0 x 1.0 mm solder pin;  
angled; Pin spacing 5.08 mm; 11-pole;  
orange

**Item No.: 231-341/001-000**  
THT male header; 1.0 x 1.0 mm solder pin;  
straight; Pin spacing 5.08 mm; 11-pole;  
orange



| 1.2 Optional Accessories                                                                                                                                                               |                                                                                                                                                                                    |                                                                                                                                                                                        |                                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.2.1 Cover                                                                                                                                                                            |                                                                                                                                                                                    |                                                                                                                                                                                        |                                                                                                                                                                                        |
| 1.2.1.1 Cover                                                                                                                                                                          |                                                                                                                                                                                    |                                                                                                                                                                                        |                                                                                                                                                                                        |
|                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                        |                                                                                                                                                                                        |
| <p><b>Item No.: 231-669</b><br/>Lockout caps; for covering unused clamping units; orange</p>                                                                                           |                                                                                                                                                                                    |                                                                                                                                                                                        |                                                                                                                                                                                        |
| 1.2.2 Ferrule                                                                                                                                                                          |                                                                                                                                                                                    |                                                                                                                                                                                        |                                                                                                                                                                                        |
| 1.2.2.1 Ferrule                                                                                                                                                                        |                                                                                                                                                                                    |                                                                                                                                                                                        |                                                                                                                                                                                        |
|                                                                                                       |                                                                                                   |                                                                                                       |                                                                                                     |
| <p><b>Item No.: 216-301</b><br/>Ferrule; Sleeve for 0.25 mm² / AWG 24; insulated; electro-tin plated; yellow</p>                                                                       | <p><b>Item No.: 216-321</b><br/>Ferrule; Sleeve for 0.25 mm² / AWG 24; insulated; electro-tin plated; yellow</p>                                                                   | <p><b>Item No.: 216-151</b><br/>Ferrule; Sleeve for 0.25 mm² / AWG 24; uninsulated; electro-tin plated</p>                                                                             | <p><b>Item No.: 216-131</b><br/>Ferrule; Sleeve for 0.25 mm² / AWG 24; uninsulated; electro-tin plated; silver-colored</p>                                                             |
|                                                                                                       |                                                                                                   |                                                                                                       |                                                                                                     |
| <p><b>Item No.: 216-302</b><br/>Ferrule; Sleeve for 0.34 mm² / 22 AWG; insulated; electro-tin plated; light turquoise</p>                                                              | <p><b>Item No.: 216-322</b><br/>Ferrule; Sleeve for 0.34 mm² / 22 AWG; insulated; electro-tin plated; light turquoise</p>                                                          | <p><b>Item No.: 216-132</b><br/>Ferrule; Sleeve for 0.34 mm² / AWG 24; uninsulated; electro-tin plated</p>                                                                             | <p><b>Item No.: 216-152</b><br/>Ferrule; Sleeve for 0.34 mm² / AWG 24; uninsulated; electro-tin plated</p>                                                                             |
|                                                                                                      |                                                                                                  |                                                                                                      |                                                                                                    |
| <p><b>Item No.: 216-241</b><br/>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</p> | <p><b>Item No.: 216-201</b><br/>Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; white</p>                                                                     | <p><b>Item No.: 216-221</b><br/>Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; white</p>                                                                         | <p><b>Item No.: 216-141</b><br/>Ferrule; Sleeve for 0.5 mm² / 20 AWG; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92</p>      |
|                                                                                                     |                                                                                                 |                                                                                                     |                                                                                                   |
| <p><b>Item No.: 216-101</b><br/>Ferrule; Sleeve for 0.5 mm² / AWG 22; uninsulated; electro-tin plated; silver-colored</p>                                                              | <p><b>Item No.: 216-121</b><br/>Ferrule; Sleeve for 0.5 mm² / AWG 22; uninsulated; electro-tin plated; silver-colored</p>                                                          | <p><b>Item No.: 216-242</b><br/>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</p> | <p><b>Item No.: 216-262</b><br/>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</p> |
|                                                                                                     |                                                                                                 |                                                                                                     |                                                                                                   |
| <p><b>Item No.: 216-202</b><br/>Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; gray</p>                                                                         | <p><b>Item No.: 216-222</b><br/>Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; gray</p>                                                                     | <p><b>Item No.: 216-142</b><br/>Ferrule; Sleeve for 0.75 mm² / 18 AWG; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92</p>     | <p><b>Item No.: 216-102</b><br/>Ferrule; Sleeve for 0.75 mm² / AWG 20; uninsulated; electro-tin plated; silver-colored</p>                                                             |
|                                                                                                     |                                                                                                 |                                                                                                     |                                                                                                   |
| <p><b>Item No.: 216-122</b><br/>Ferrule; Sleeve for 0.75 mm² / AWG 20; uninsulated; electro-tin plated; silver-colored</p>                                                             | <p><b>Item No.: 216-243</b><br/>Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; red</p> | <p><b>Item No.: 216-263</b><br/>Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; red</p>     | <p><b>Item No.: 216-203</b><br/>Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; red</p>                                                                             |
|                                                                                                     |                                                                                                 |                                                                                                     |                                                                                                   |
| <p><b>Item No.: 216-223</b><br/>Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; red</p>                                                                             | <p><b>Item No.: 216-103</b><br/>Ferrule; Sleeve for 1 mm² / AWG 18; uninsulated; electro-tin plated</p>                                                                            | <p><b>Item No.: 216-143</b><br/>Ferrule; Sleeve for 1 mm² / AWG 18; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92</p>        | <p><b>Item No.: 216-123</b><br/>Ferrule; Sleeve for 1 mm² / AWG 18; uninsulated; electro-tin plated; silver-colored</p>                                                                |
|                                                                                                     |                                                                                                 |                                                                                                     |                                                                                                   |
| <p><b>Item No.: 216-204</b><br/>Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; black</p>                                                                         | <p><b>Item No.: 216-224</b><br/>Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; black</p>                                                                     | <p><b>Item No.: 216-244</b><br/>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</p> | <p><b>Item No.: 216-264</b><br/>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</p> |



1.2.2.1 Ferrule



**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

1.2.3 Insulation stop

1.2.3.1 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

1.2.4 Jumper

1.2.4.1 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

1.2.5 Marking

1.2.5.1 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



**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



**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



**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



**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



**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

1.2.6 Test and measurement

1.2.6.1 Testing accessories



**Item No.: 210-136**  
Test plug; 2 mm Ø; with 500 mm cable; red



**Item No.: 231-661**  
Test plugs for female connectors; for 5 mm and 5.08 mm pin spacing; 2,50 mm²; light gray

1.2.7 Tool

1.2.7.1 Operating tool



**Item No.: 231-231**  
Combination operating tool; red



**Item No.: 209-132**  
Operating tool; for connecting comb-style jumper bar; made of insulating material; 2-way; natural



**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



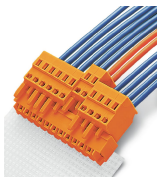
**Item No.: 280-438**  
Operating tool; made of insulating material; 8-way



**Item No.: 231-159**  
Operating tool; natural

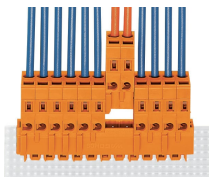
Installation Notes

Application



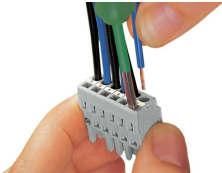
Total pole number for female connectors  
= pole number for male header

Application

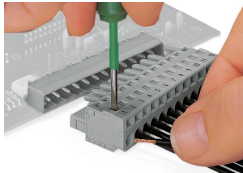


Female connectors with a built-in end plate require no extra space, while maintaining the nominal cross-section. This means: Total length of female connectors is reduced to "pole no. x pin spacing"!

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).



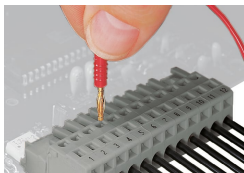
Inserting a conductor via operating tool.

Coding



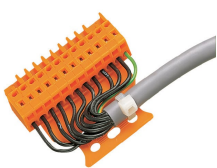
Coding a female connector by removing coding finger(s).

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

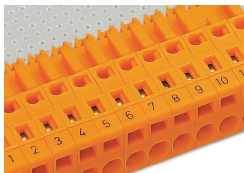


Male connector with strain relief plate



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

Marking



Labeling via direct marking or self-adhesive strips.