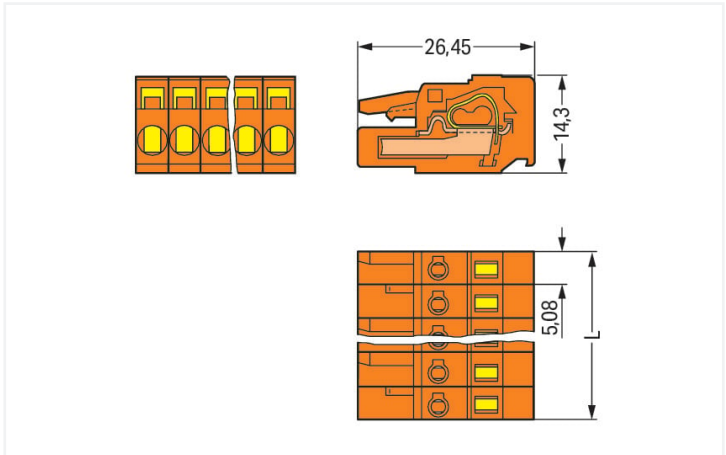


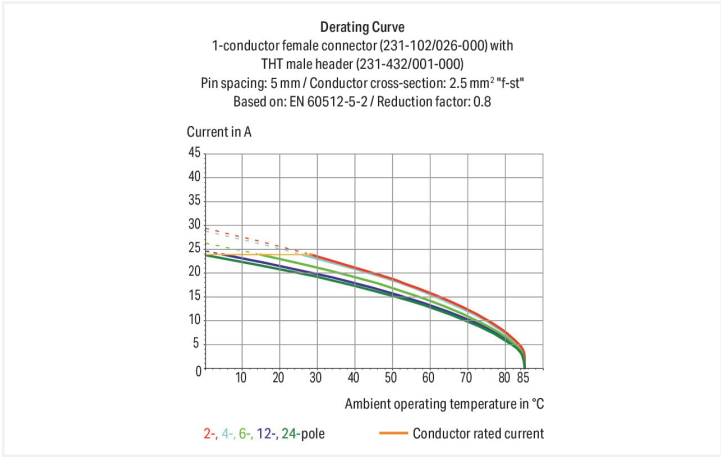
**Data Sheet | Item Number: 231-304/102-000**  
1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 4-pole; with integrated end plate; 2,50 mm²; orange  
<https://www.wago.com/231-304/102-000>



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          | 4 |
| Total number of potentials | 4 |
| 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                                       | 4  |
| Conductor entry direction to mating direction     | 0°   |

Physical data

|             |                         |
|-------------|-------------------------|
| Pin spacing | 5.08 mm / 0.2 inches    |
| Width       | 20.32 mm / 0.8 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="#">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                   |  | 0.1 MJ   |
| Weight                      |  | 7.2 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)              |  | 100 pcs                |
| Packaging type        |  | Box                    |
| Country of origin     |  | DE                     |
| GTIN                  |  | 4044918346184          |
| 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>231-304/102-000 |



Documentation

| Additional Information                               |
|--|
| Technical Section<br>03.04.2019<br>pdf<br>2027.26 KB |



CAD/CAE-Data

| CAD data                        |
|---------------------------------|
| 2D/3D Models<br>231-304/102-000 |



| CAE data                             |
|--------------------------------------|
| EPLAN Data Portal<br>231-304/102-000 |



|                                 |
|---------------------------------|
| ZUKEN Portal<br>231-304/102-000 |
|---------------------------------|



1 Compatible Products

1.1 System counterpart

1.1.1 Male connector/plug



|   |
|---|
| <b>Item No.: 231-634</b><br>1-conductor male connector; CAGE<br>CLAMP®; 2.5 mm²; Pin spacing 5.08 mm;<br>4-pole; 2,50 mm²; orange |
|---|




































|   |
|---|
| <b>Item No.: 231-534/001-000</b><br>THT male header; 1.0 x 1.0 mm solder pin;<br>angled; Pin spacing 5.08 mm; 4-pole;<br>orange |
|---|



|   |
|---|
| <b>Item No.: 231-334/001-000</b><br>THT male header; 1.0 x 1.0 mm solder pin;<br>straight; Pin spacing 5.08 mm; 4-pole;<br>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.: 231-902**  
Jumper; for conductor entry; 2-way; insulated; gray



**Item No.: 231-903**  
Jumper; for conductor entry; 3-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

#### 1.2.6.1 Strain relief housing



Item No.: 232-634

Strain relief housing; for female and male connectors; 2 parts; Pin spacing 5.08 mm; 4-pole; orange

### 1.2.7 Test and measurement

### 1.2.7.1 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 mm<sup>2</sup>; light gray

### 1.2.8 Tool

### 1.2.8.1 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.: 209-130

Operating tool; made of insulating material; 1-way; for 264 Series (1-1/2-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

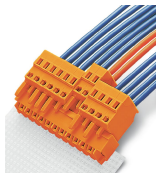


Item No.: 231-159

Operating tool; natural

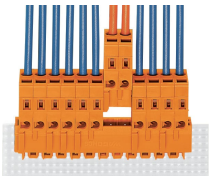
## Installation Notes

## Application



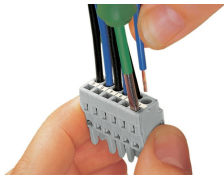
Total pole number for female connectors  
= pole number for male header

Application

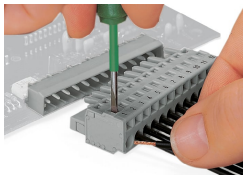


Female connectors with a built-in end plate require no extra space, while maintaining the nominal cross-section. This means: Total length of female connectors is reduced to "pole no. x pin spacing"!

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).



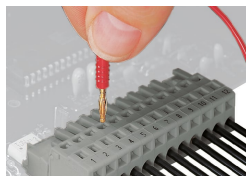
Inserting a conductor via operating tool.

Coding



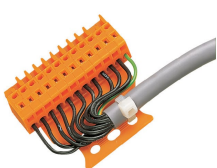
Coding a female connector by removing coding finger(s).

Testing

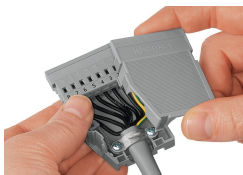


Testing – female connector with CAGE CLAMP®  
Integrated test ports for testing perpendicular to conductor entry via 2 or 2.3 mm Ø test plug

Installation



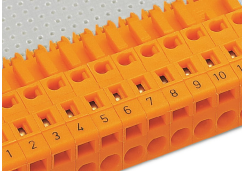
Male connector with strain relief plate



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



Marking



Labeling via direct marking or self-adhesive strips.