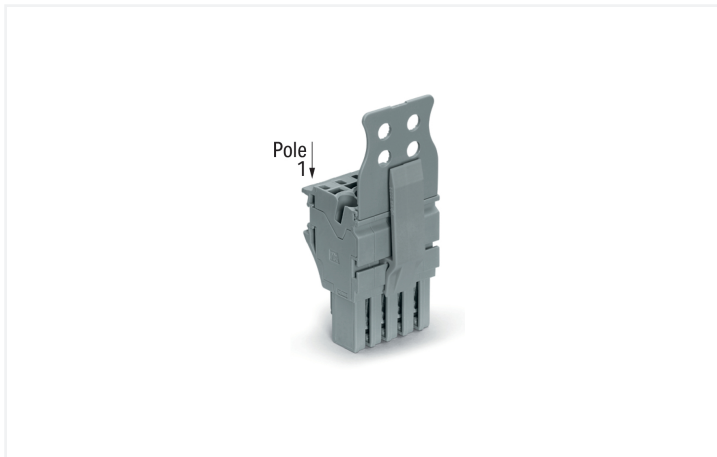


<https://www.wago.com/2022-112/146-000>



Similar to illustration

Our female connector (item number 2022-112/146-000) is designed for seamless electrical installations. Strip lengths must be between 10 and 12 mm when connecting conductors to this female connector. Pluggable rail-mount terminal blocks are hugely popular in switchgear and control systems, for example, in railroad technology. They combine the best of rail-mount terminal blocks and connectors to create the perfect solution. Variable wiring systems make pre-assembly easy, which saves both time and money in production, installation, operation, and maintenance. This product features conductor terminals and utilizes Push-in CAGE CLAMP®. Our Push-in CAGE CLAMP® is a universal, maintenance-free connection solution for all conductor types, offering a key advantage: It allows direct insertion of both solid and fine-stranded conductors with ferrules without needing tools. No preparation is required: for example, crimping the conductor's ferrule is not necessary. The item's dimensions are (62.4 x 74 x 27.2) mm (width x height x depth). This female connector is suitable for conductor cross sections ranging from 0.25 mm<sup>2</sup> to 4 mm<sup>2</sup>.

This female connector/socket is operated with an operating tool. The strain relief plate is a safety precaution for connected conductors that also makes cables easier to handle..

## Safety Information

According to EN 61984, pluggable connectors without current interrupting capacity must not be mated or unmated when live or under load.

| Ratings per                                   |       | IEC/EN 61984 |    | Approvals per |       | UL 1059 |   |
|-----------------------------------------------|-------|--------------|----|---------------|-------|---------|---|
| Overvoltage category                          | III   | III          | II | Use group     | B     | C       | D |
| Pollution degree                              | 3     | 2            | 2  | Rated voltage | 600 V | 600 V   | - |
| Nominal voltage                               | 690 V | -            | -  | Rated current | 20 A  | 20 A    | - |
| Rated impulse withstand voltage               | 6 kV  | -            | -  |               |       |         |   |
| Rated current                                 | 24 A  | -            | -  |               |       |         |   |
| Current at conductor cross-section (max.) mm² | 32 A  | -            | -  |               |       |         |   |



| Approvals per |   | CSA 22.2 No 158 |   |  |
|---------------|---|-----------------|---|--|
| Use group     | B | C               | D |  |
| Rated voltage | - | 600 V           | - |  |
| Rated current | - | 20 A            | - |  |

| General information |                    |
|---------------------|--------------------|
| Wiring direction    | Front-entry wiring |

| Connection Data            |    |                                                            |                                                                                                                                   |
|----------------------------|----|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Clamping units             | 12 | <b>Connection 1</b>                                        |                                                                                                                                   |
| Total number of potentials | 12 | Connection technology                                      | Push-in CAGE CLAMP®                                                                                                               |
|                            |    | Actuation type                                             | Operating tool                                                                                                                    |
|                            |    | Connectable conductor materials                            | Copper                                                                                                                            |
|                            |    | Nominal cross-section                                      | 2.5 mm²                                                                                                                           |
|                            |    | Solid conductor                                            | 0.25 ... 4 mm² / 22 ... 12 AWG                                                                                                    |
|                            |    | Solid conductor; push-in termination                       | 0.75 ... 4 mm² / 18 ... 12 AWG                                                                                                    |
|                            |    | Fine-stranded conductor                                    | 0.25 ... 4 mm² / 22 ... 12 AWG                                                                                                    |
|                            |    | Fine-stranded conductor; with insulated ferrule            | 0.25 ... 2.5 mm² / 22 ... 14 AWG                                                                                                  |
|                            |    | Fine-stranded conductor; with ferrule; push-in termination | 1 ... 2.5 mm² / 18 ... 14 AWG                                                                                                     |
|                            |    | Note (conductor cross-section)                             | Depending on the conductor characteristic, a conductor with a smaller cross-section can also be inserted via push-in termination. |
|                            |    | Strip length                                               | 10 ... 12 mm / 0.39 ... 0.47 inches                                                                                               |
|                            |    | Pole number                                                | 12                                                                                                                                |
|                            |    | Wiring direction                                           | Front-entry wiring                                                                                                                |

| Physical data |                        |
|---------------|------------------------|
| Width         | 62.4 mm / 2.457 inches |
| Height        | 74 mm / 2.913 inches   |
| Depth         | 27.2 mm / 1.071 inches |
| Module width  | 5.2 mm / 0.205 inches  |

| Mechanical data          |              |
|--------------------------|--------------|
| Variable coding          | Yes          |
| Marking level            | Side marking |
| 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                     |
| Locking of plug-in connection        | Locking lever           |
| Strain relief                        | Strain relief plate     |



| Material data                      |                                                                          |
|------------------------------------|--------------------------------------------------------------------------|
| Note (material data)               | <a href="#">Information on material specifications can be found here</a> |
| Color                              | gray                                                                     |
| Material group                     | I                                                                        |
| Insulation material (main housing) | Polyamide (PA66)                                                         |
| Flammability class per UL94        | V0                                                                       |
| Fire load                          | 0.887 MJ                                                                 |
| Weight                             | 46.2 g                                                                   |

| Environmental requirements                                                                          |                                                     |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Processing temperature                                                                              | -35 ... +85 °C                                      |
| Continuous operating temperature                                                                    | -60 ... +105 °C                                     |
| Environmental Testing                                                                               |                                                     |
| Test specification:<br>Railway applications –<br>Rolling stock –<br>Electronic equipment            | DIN EN 50155 (VDE 0115-200):2022-06                 |
| Test procedure:<br>Railway applications –<br>Rolling stock equipment –<br>Vibration and shock tests | DIN EN 61373 (VDE 0115-0106):2011-04                |
| Spectrum/Mounting location                                                                          | Service life test, Category 1, Class A/B            |
| Functional test with noise-like oscillations                                                        | Test passed according to Section 8 of the standard  |
| Frequency                                                                                           | f <sub>1</sub> = 5 Hz to f <sub>2</sub> = 150 Hz    |
| Acceleration                                                                                        | 0.101g (highest test level used for all axes)       |
| Test duration per axis                                                                              | 10 min.                                             |
| Test directions                                                                                     | X, Y and Z axes                                     |
| Monitoring of contact faults and interruptions                                                      | Passed                                              |
| Voltage drop measurement before and after each axis                                                 | Passed                                              |
| Simulated service life test through increased levels of noise-like oscillations                     | Test passed according to Section 9 of the standard  |
| Frequency                                                                                           | f <sub>1</sub> = 5 Hz to f <sub>2</sub> = 150 Hz    |
| Acceleration                                                                                        | 0.572g (highest test level used for all axes)       |
| Test duration per axis                                                                              | 5 h                                                 |
| Test directions                                                                                     | X, Y and Z axes                                     |
| Extended testing: Monitoring of contact faults and interruptions                                    | Passed                                              |
| Extended testing: Voltage drop measurement before and after each axis                               | Passed                                              |
| Shock test                                                                                          | Test passed according to Section 10 of the standard |
| Shock pulse form                                                                                    | Half sine                                           |
| Acceleration                                                                                        | 5g (highest test level used for all axes)           |
| Shock duration                                                                                      | 30 ms                                               |
| Number of shocks (per axis)                                                                         | 3 pos. und 3 neg.                                   |
| Test directions                                                                                     | X, Y and Z axes                                     |
| Extended testing: Monitoring of contact faults and interruptions                                    | Passed                                              |
| Extended testing: Voltage drop measurement before and after each axis                               | Passed                                              |
| Vibration and shock stress for rolling stock equipment                                              | Passed                                              |



| Commercial data       |                   |
|-----------------------|-------------------|
| Product Group         | 18 (X-COM-System) |
| PU (SPU)              | 20 pcs            |
| Packaging type        | Box               |
| Country of origin     | DE                |
| GTIN                  | 4066966666670     |
| Customs tariff number | 85366990990       |

| Product Classification |                      |
|------------------------|----------------------|
| UNSPSC                 | 39121409             |
| eCl@ss 10.0            | 27-14-11-06          |
| eCl@ss 9.0             | 27-14-11-06          |
| ETIM 9.0               | EC001284             |
| ETIM 10.0              | EC001284             |
| ECCN                   | NO US CLASSIFICATION |

| 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 |
| CSA<br>CSA Group                                                                   | C22.2 No. 158 | 2437422          | Railway<br>WAGO GmbH & Co. KG                                                       | -        | Z00004392.000    |

| Downloads                                            |                                                                                     |
|------------------------------------------------------|-------------------------------------------------------------------------------------|
| Environmental Product Compliance                     |                                                                                     |
| Compliance Search                                    |                                                                                     |
| Environmental Product Compliance<br>2022-112/146-000 |  |

| Documentation    |            |                  |                                                                                     |
|------------------|------------|------------------|-------------------------------------------------------------------------------------|
| Bid Text         |            |                  |                                                                                     |
| 2022-112/146-000 | 17.05.2019 | xml<br>4.22 KB   |  |
| 2022-112/146-000 | 14.05.2019 | docx<br>15.35 KB |  |



| CAD/CAE-Data                     |                                       |
|----------------------------------|---------------------------------------|
| CAD data                         | CAE data                              |
| 2D/3D Models<br>2022-112/146-000 | EPLAN Data Portal<br>2022-112/146-000 |
|                                  | WSCAD Universe<br>2022-112/146-000    |
|                                  | ZUKEN Portal<br>2022-112/146-000      |

1 Compatible Products

1.1 Optional Accessories

1.1.1 Ferrule

1.1.1.1 Ferrule

|                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <br><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  | <br><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  | <br><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  | <br><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      |
| <br><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     | <br><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 | <br><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 | <br><b>Item No.: 216-284</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 |
| <br><b>Item No.: 216-246</b><br>Ferrule; Sleeve for 2.5 mm² / AWG 14; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; blue | <br><b>Item No.: 216-266</b><br>Ferrule; Sleeve for 2.5 mm² / AWG 14; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; blue | <br><b>Item No.: 216-286</b><br>Ferrule; Sleeve for 2.5 mm² / AWG 14; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; blue |                                                                                                                                                                                                                                                                        |

1.1.2 Insulation stop

1.1.2.1 Insulation stop

|                                                                                                                                                                                 |                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <br><b>Item No.: 2002-171</b><br>Insulation stop; 0.25 - 0.5 mm²; 5 pieces/strip; light gray | <br><b>Item No.: 2002-172</b><br>Insulation stop; 0.75 - 1 mm²; 5 pieces/strip; dark gray |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



1.1.3 Marking

1.1.3.1 Label



**Item No.: 210-805**  
Labels; for Smart Printer; permanent adhesive; 6 x 15 mm; 3000 pieces on roll; white



**Item No.: 210-805/000-002**  
Labels; for Smart Printer; permanent adhesive; 6 x 15 mm; 3000 pieces on roll; yellow

1.1.3.2 Marker



**Item No.: 793-5501**  
WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; white



**Item No.: 2009-115**  
WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white

1.1.3.3 Marking strip



**Item No.: 210-833**  
Marking strips; 25 m on roll; 6 mm wide; plain; Self-adhesive; white



**Item No.: 2009-110**  
Marking strips; for Smart Printer; on reel; not stretchable; plain; snap-on type; white



**Item No.: 210-831**  
Marking strips; on reel; 2.3 mm wide; plain; Self-adhesive; white



**Item No.: 210-832**  
Marking strips; on reel; 3 mm wide; plain; Self-adhesive; white



**Item No.: 210-834**  
Marking strips; on reel; 5 mm wide; plain; Self-adhesive; white

1.1.4 Protective warning marker

1.1.4.1 Cover



**Item No.: 2002-115**  
Protective warning marker; for 5 terminal blocks; with high-voltage symbol, black; yellow

1.1.5 Screwless end stop

1.1.5.1 Mounting accessories



**Item No.: 249-117**  
Screwless end stop; 10 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray



**Item No.: 249-116**  
Screwless end stop; 6 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray

1.1.6 Tool

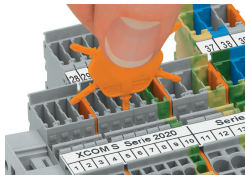
1.1.6.1 Operating tool



Item No.: 210-720  
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured

Installation Notes

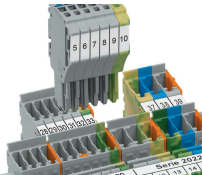
Coding



Insert coding pin into the corresponding slot and twist it off.



Coding a female plug: remove coding finger using a suitable tool.



Insert coded female plug into X-COM®S-SYSTEM terminal block assembly.